

**The Urban Biomedical District  
Health Care and Economic Development in American Cities**

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THESIS

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## SUMMARY

Health care now accounts for a large portion of economic activity within cities and regions of the United States. This dissertation focuses on the history of a phenomenon that rests at the intersection between urban development and the changing health care system: spatially concentrated hospitals, academic medical centers, and other land uses related to biomedical health care. Variations of this phenomenon – which I define as the “urban biomedical district” – have become increasingly prominent as geographic features of the urban landscape, focal points of local economic development and organizational adaptations to health care regulation, and strategic targets of planning and economic development policy.

The fiscal threat of the health care system’s unchecked growth and the need for reform have been major domestic policy issues for decades. However, to date, little scholarship has directly examined health care as, simultaneously, a distinctive, complex institution and a driver of economic development in cities, with notable exceptions. This dissertation takes a different approach, foregrounding the institutional history and uneven geography of health care in a deep exploration of one increasingly prevalent genre of development.

Empirically, the research focuses on case studies of biomedical district emergence and transformation. These begin with the designation of the first formal medical districts in Chicago and Houston in the 1940s and transitions to contemporary examples of the *biomedical district* as a multi-faceted engine of economic development, and in particular how the goal of creating such a district shaped several transformative decisions in New Orleans after Hurricane Katrina. The case studies’ objective is to reconstruct an explanation of health care as an active driver of urban economies, not merely a field of economic activity that passively responds to demographic demand except where it produces trade-able innovations and services.

While the case studies raise problems of coordination, distribution, and fiscal constraint common to other forms of large-scale development, the findings also suggest that the perception of – and response to – biomedical opportunity is socially constructed by the industry-driven parameters of biomedical innovation and the organization-level process of adaptation to the health care system. I argue that biomedical districts in a proximate sense reflect responses to local crises in both urban development and health care organizations coping with reform, competition, and uneven fiscal constraint. The increasingly standardized approach to transforming biomedical districts raises deeper questions regarding the practical intersection between economic development and the health care system and the way it is contoured by the circulation of flexible policy ideas.

# Chapter 1

## Introduction

### 1.1 Health care and local economic development

If the US health care system were a separate country, it would be the world's fifth largest economy by GDP. Accounting for over 1/6th of the gross domestic product of the United States, health care now also ranks as one of the nation's largest industries. In 1960, this portion was 1/20, and remained under 1/10 until as recently as 1980. Prolonged, steady growth has elevated health care into a major area of direct spending and regulatory intervention by federal and state governments and one of the largest and fastest-growing sources of employment in essentially every metropolitan area in the US.

While quantitative indicators track the growth of the health care economy, the institutional environment linking the consumption of health care with regulation, payment, and biomedical science and technology also encompasses a dynamic field of organizational change. Since the middle of the twentieth century, health care has witnessed new frontiers of scientific advancement and several episodes of reform (most recently, the Affordable Care Act), bringing boom times to some components of the health care economy. Other components, including many hospitals, continue to cope with upheaval. The description of the turbulent 1990s in Scott et al. (2000, 1) remains even more applicable today:

We are confronted with much that is new: new technologies, new ways of delivering services, new mechanisms for paying for care, new types of healthcare organizations and cooperative and competitive relations between them, new regulatory systems (as well as deregulatory processes), new players in the sector, and new assumptions and beliefs governing healthcare.

On the national stage, the health care economy is, simultaneously, a job-creating juggernaut and an arena of constant crisis. Its internal reorganization is chaotic, its quality and access lag other industrialized countries, and its extremely high cost burdens families, businesses, and the fiscal

health of the national economy. From a more locally oriented viewpoint, scholars of planning, local economic development, and urban political economy have only rarely considered the health care economy as motive force in cities and a meaningful object of inquiry – with some notable exceptions. Between both perspectives, this dissertation focuses on another “new”: the proliferation of place-based strategies to transform spatial concentrations of traditional health care organizations – e.g., hospitals and academic medical centers – into assets for a variety of economic development objectives. As a route to understanding the intersection between the health care system and local economic development policy, the research seeks to answer a straightforward question: why does this phenomenon, which I term the biomedical district, exist?

Urban economic thought tends to frame health care as a locally serving, un-traded activity. Framed in this manner, health care’s growth does not cause economic development but responds to demand, e.g., from demographic change and growth in traded sectors, like manufacturing or specialized services. Two notable developments have indirectly brought health care into the purview of urban economic development scholarship. First, the growth of commercial opportunities in health care has brought attention to different ways of categorizing biomedical technologies under the umbrella of life sciences, especially through case studies of regional biotechnology clusters and sectoral strategies intended to support them. As with older health care organizations, these new activities blend notions of public and private, albeit in different ways. Second, the erosion of industrial employment and the footloose nature of capital investment has highlighted “anchor institutions,” which include hospitals and academic medical centers under the banner of “Eds and Meds,” as large, place-bound organizations with multi-faceted economic impacts, such as providing large numbers of good jobs and supporting the private-sector knowledge economy.

These analytical contributions and their policy implications provide insight and relevance to efforts to build more inclusive, more resilient urban economies. In some scenarios, however, they are limited in their ability to cope with the complexity of the health care economy and the source of local economic development opportunity. With little regard for the underlying *causes* of change or their dependence on a complex and shifting terrain of organizational relationships, growth is explained alternately as a response to exogenous policies, as a function of demographic change, or as emergent markets for innovative technologies – sunrise industries with possibilities of improved lives and livelihoods. To an extent, both “life sciences” and “Eds and Meds” are chaotic concepts, malleable to defining on an ad hoc basis and poorly

calibrated to grasp the underlying sources of causality in the real situations they are meant to portray. In addition, neither is motivated by an interest in the economy of health care per se. The life sciences industries provide a case study for exploring theoretical concepts related to Marhsallian industry concentrations and the regional dynamics of innovation. Under the anchor institution rubric, normative ideas about the public role of universities in struggling inner-city economies are ported to hospitals and academic medical centers, largely on the basis of structural similarities and organizational relationships. But what political, economic, and organizational conditions allow both Eds and Meds and life sciences to gain the perception of significance for urban economies? Answering this question requires a more direct engagement with the *institution*<sup>1</sup> of biomedicine and the forces driving change in the US health care system. This research thus adds to literature on the life sciences and anchor institutions by enrolling locally specific responses to the health care system's transformation into the explanation and examining how it creates barriers to effective policy.

### **Situating the urban biomedical district**

The “apparently virtuous connection between health and wealth” (Rose, 2007, 34–35) aligns the political and scientific rationalities of biomedicine with those of competitive economic governance, particularly in jurisdictions affected by economic restructuring. For many localities, biomedicine appears to offer a link between existing assets and technological innovation, stable counter-cyclical employment, and an accessible path to the “knowledge economy” future. Meanwhile, the competitive logic of urban governance unfolds a fertile terrain for the ongoing reconfiguration and expansion of biomedicine, which necessarily depends on organizationally and regionally variegated systems of innovation and health care delivery. The fragmented institution of urban governance and the competitive politics of growth so well-documented by urban scholarship work to create a receptive space for the management of biomedicine's internal contradictions, leaving unchallenged its institutional extension into ever broader areas of human life, material value, and public policy at all levels (Clarke et al., 2010; Rajan, 2006). Yet these dual but increasingly imbricated contexts of local development and biomedicine are inconstant over time and space. The conjunctures and contingencies of geographical difference and historical-institutional change occupy the core interest of the proposed research.

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1 It is necessary to clarify the use of the term institution. In this sentence, it refers to the sociological notion of repeated practices and durable relationships that shape norms and create a context for action. In other parts of the dissertation, “institution” is used in reference to hospitals and academic medical centers, which are probably more accurately thought of as large and complex organizations. In these instances, the terms organization and institution are interchangeable. I have tried to make it clear from context.

The intention of this dissertation is to reconstruct an alternative perspective on the relationship between health care and urban economic development policy, one calibrated to locate causality within the healthcare system. To do so, the research adopts a methodological strategy of tracing the genealogy of a specific phenomenon: the urban biomedical district. This object of inquiry implies, on one hand, a distinctive geographic land use formation where hospitals, academic medical centers, and other organizations embedded in the life sciences economy locate in sufficiently close proximity to represent an expression of biomedicine in *place*. On the other hand, many cities that have adopted some version of life sciences or Eds and Meds as an economic development strategy have done so through concerted investments in urban biomedical districts as a matter of policy. In practical situations, development actors and policy-makers construct and enact notions of the biomedical economy that selectively bound its limits and blend its potential relationship with other conceptualizations of how urban economies operate. Empirically, several more well established matters of concern in local economic development are applied to the contemporary development of biomedical districts, including Eds and Meds, science parks and incubator/accelerator facilities, cluster and innovation strategies, and innovation districts. The methodological focus on biomedical districts permits a focused examination of how political actors mobilize such ideas in encounters with the real complexity of urban development and organizations.

The emergence of the urban biomedical district, its evolution, and its travels through space and time rest quite directly at the intersection of these dual policy and institutional contexts. Much like Harvey's (1989, 11) description of the 1980s "serial reproduction of science parks, gentrification, world trading centers, cultural and entertainment centers, large scale interior shopping malls with postmodern accoutrements, and the like" under the condition of "urban entrepreneurialism," the serial reproduction of urban biomedical districts during the 1990s and 2000s simultaneously reveals homogenizing and differentiating tendencies at work within a broader process of crisis and restructuring in the health care system. Just as Massey et al. (1993, 2) write of science parks, urban biomedical districts "bring together and interrelate particular ideologies and practices of scientific advancement and industrial innovation; divisions of labor within society and their related social structures; and the geography of social and economic development" – and changes in important organizations (e.g., hospitals and academic medical centers) in a context of institutional transformation (Scott et al., 2000).

Organizational transformation against a backdrop of change provides a focal point of the explanation. Biomedical districts are, themselves, often governed by a dedicated organizational

capacity, although never in a directive manner and with some variation from site to site. In addition, the role of the traditional tenants of biomedical districts (e.g., academic health centers) in academic biomedicine, the translation of new technologies, and the broader organization of health care has changed considerably since the 1980s (Scott et al., 2000), which in turn alters the drivers of investment and organizational evolution within broader regional and extra-regional networks of technology development and health services provision. With coordinating functions increasingly extending beyond the walls of a hospital or the boundaries of an organization, biomedical districts themselves serve as organizing nodes in the broader geographies of the biomedical economy and structure everyday encounters with the health care system in the United States. The proposed research seeks to enroll the teaching hospital, an “organizational chameleon” subject to considerable market pressures and regulatory upheavals since the 1980s (Stevens, 1999), as an agent in the process of urban development.

With respect to planning, these themes resonate with the concern for systematically engaging the multifaceted production of urban space and rationally evaluating policy alternatives to inform more equitable, sustainable, and desirable development patterns and processes. As a response to recent calls for a reflexive (re)integration of planning and public health (Corburn, 2009) as well as overtures from the sociology of health and medicine toward political-economy (Clarke et al., 2010; Clarke and Shim, 2010), the proposed research attends to the biomedical model as an overarching ontology and institutional context that dominates the health system and (increasingly, I suspect) influences decisions in urban development policy.

While not “generalizable” in a formal sense beyond a deliberately narrow – but increasingly significant – set of policies and built forms, the comparative case study findings are expected to be “transferable” to research and practical action where health and economic development planning overlap (Lincoln and Guba, 2000; Maxwell, 2007; Yin, 2009). By focusing on changing organizational forms and contextual boundaries, the goal is to counter the tendency to slide into bad abstractions and chaotic concepts where stakeholders must contend with two complex and institutionally textured political-economic fields in health care and urban economic development. In these cases, asymmetries of power determine the causal narratives that justify policy alternatives (Sayer, 2010). To an extent, the case study’s significance depends on the likelihood of practical situations that combine similar factors – a relatively safe bet given the projected expansion of the biomedical economy for the foreseeable future.

## What is an “urban biomedical district”?

What exactly is meant by an urban biomedical district? As with many types of districts or neighborhoods, while the term “urban biomedical district” may be difficult to define in consistent manner, “you know it when you see it” (to paraphrase a frequently quoted 1964 Supreme Court decision).

To begin by unpacking the term itself, an “urban district” suggests a roughly continuous urban area with a shared identity, related land uses, and a set of defining physical, economic, cultural, or civic characteristics. The label could apply, for example, to a residential neighborhood, a waterfront district, a manufacturing corridor, or a central business district. In some instances, these districts may be defined by some sort of official designation; and a governmental agency, non-profit organization, or public-private partnership may be tasked with some set of planning responsibilities within its boundaries. The “biomedical” qualifier simply indicates that the districts of interest to present project are formally designated or otherwise informally defined by their characteristic relationship to the biomedical economy and to the US health care system. The prefix “bio” is deliberately intended to capture the most recent “second transformation of American medicine”. Since the 1980s, the extension and reconstitution of medicine’s institutional jurisdiction – as a regime of culture, truth, and political-economic relations – has unfolded in a more fragmented, market-led, and techno-scientifically transformative fashion than under postwar conditions of “medicalization” and professional dominance (Clarke and Shim, 2010; Clarke et al., 2010). Thus, it is also possible to draw a historical distinction between urban *medical* districts arising after World War II and their contemporary *biomedical* counterparts. To a large extent, examining how this distinction is articulated in the place attributes and organizational approach of biomedical districts motivates Parts II and III of this dissertation.

In practice, these built environment configurations are most clearly indicated by two characteristics. The first is a combination of health care delivery, education, and research activities, usually anchored by a major hospital or academic medical center. The second is a formal designation of the district as a development area and the presence of an organization formally charged with facilitating and guiding development of these biomedical land uses within the district and leveraging the benefits of proximity.

Another approach to defining the urban biomedical district would involve borrowing definitions from actual organizations. The following words were used by the governing body of the first urban biomedical district, the Medical Center District in Chicago, to explain its existence in the early 1960s:



Throughout the nation, every passing year witnesses a strikingly greater demand for medical services and hospital care, and competent authorities are convinced that this need will continue indefinitely on a constantly widening scale. Largely responsible for this growing trend are the tremendous advances recently achieved by medical science. The so-called wonder drugs and other new therapies have gone a long way toward conquering numerous diseases, and improved surgical techniques have practically eliminated the hazards of many operative procedures. Gratifying results of today's high efficiency in the curative arts have been brought about from the concept that medical research and education rank equally in importance with medical care in the alleviation, prevention and cure of illnesses. And these three elements – research, teaching, and service – together have produced a related phenomenon: the medical center. The reason for this development is apparent: optimum results can be obtained by grouping in one central location all the known aids to healing.<sup>2</sup>

Swapping biomedical districts for the term “Medical Centers,” this definition still applies reasonably well – and hints at several connections elaborated in this dissertation. The same organization also hints that the biomedical district is a phenomenon unique to the United States:

Institutional groupings we call Medical Centers, in which research and education go hand in hand with treatment of disease, are a phenomenon of comparatively recent years. Significantly, most of the great concentrations where this three-fold combination of health services has been established, are now in America instead of Europe.<sup>3</sup>

In another description culled from the early 1990s, Houston's Texas Medical Center was described as a “City of Medicine”:

A private city with about 19,700,000 square feet of built space, twelve miles of private streets, private utilities, private police, a newspaper and a very large parking operation. It leads strategic planning programs and serves as a forum for joint planning of the institutions and for encouraging interinstitutional cooperation.<sup>4</sup>

The large amount of built space, which in this case has easily doubled over the past two decades, justifies the “City of Medicine” label, which also suggests that biomedical districts reflect a particular kind of urbanism. They encompass not only large, complex organizations like hospitals and academic medical centers but also many of the functions associated with municipalities – infrastructure, public services, planning and policy. Likewise, smaller, more specialized variations of the socio-spatial processes of urban development are evident within biomedical districts: the competitive sorting of land use, the relationship between related and diverse activities located in proximity, waves of investment in the built environment, and

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2 Medical Center Commission, Report of the Medical Center Commission, 1961, Chicago.

3 Medical Center Commission, Report for 1961–1962 to the General Assembly of Illinois, 1963, Chicago.

4 Richard E. Wainerdi, Address to Newcomen Society, 19 November 1992, reprinted in N. Done Macon, *Munroe Dunaway Anderson, His Legacy*, 1994, Texas Medical Center (Houston), p.132.

territorially embedded knowledge and identities. Also like municipalities, biomedical districts may be defined by a discrete boundary, though the causes and effects of development extend further afield.

Finally, a few examples illustrate how the general concept of an urban biomedical district may be expressed in a variety of urban settings:

- The “Health District” is the second largest employment area in Miami-Dade County after downtown Miami. Anchored by the University of Miami’s medical campus (including a hospital and life science and technology park) and Jackson Memorial Hospital, the area consists of medical, educational, governmental, housing, and judicial institutions. Recently renamed from Civic Center to Health District, the district employs over 40,000 people.
- Grand Rapids has designated a part of its downtown as the “Medical Mile”. Housing research institutes, regional hospitals, and recently expanded health sciences campuses of Michigan State University and Grand Valley State University, the Medical Mile is often cited as a major contributor the city’s exceptional rebound for a Rustbelt city.<sup>5</sup>
- East St. Louis’ “Mid America Medical District” was formed in 2007 to help save a downtown hospital from closing, an effort that proved unsuccessful. Like other medical districts in Illinois, the East St. Louis version has the power to acquire and lease property and issue bonds. However, the district has no staff or funding and its governing commission will likely disband.<sup>6</sup>
- True to its fragmented geography, Los Angeles does not necessarily contain a single large biomedical district. However, expressions of this type of development exist in numerous smaller configurations. Perhaps the clearest is the LAC+USC complex in Boyle Heights, which contains the University of Southern California Health Sciences Campus, the closed Art Deco LA County Hospital and its present reorganization as a partnership with USC medical center. Another notable concentration exists in the East Hollywood / Los Feliz area, where Hollywood Presbyterian, Children’s Hospital, and a Kaiser Permanente Facility exist within a few blocks.

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5 See Tod Newcombe, 28 March 2013, What Makes Grand Rapids So Grant?, *Governing.com*, <http://www.governing.com/columns/urban-notebook/col-grand-rapids-michigan-economy-rebounds.html>

6 See Joseph Bustos, 26 July 2015, Mid America Medical District Size, Role in Question, *Belleville News Democrat*, <http://www.bnd.com/news/local/article28752331.html>

## Outline of chapters

The dissertation is organized into two parts. Part I delineates the research agenda and articulates the biomedical district as an empirical object of research. Chapter 2 reviews relevant literature to establish a basis for framing the urban biomedical district as a phenomenon of agglomeration and land use sorting, local development politics, and institutional change in the health care system. In doing so, it illustrates the limited ways that existing economic development literature has engaged with the health care system. As a result, existing explanations of the impact of biomedicine's expansion on urban economies are biased toward the causal contexts of types of institutional environments, namely the community-engaged university and the cluster as a network of inter-related regional firms.

Chapter 3 outlines a methodological strategy based on case studies and comparison. To defend against methodological localism (Jessop et al., 2008), the strategy seeks to leverage a mix of cursory and in-depth engagements with specific case studies in order to examine the drivers of the biomedical district's mobility and evolution as an identifiable type of urban space and as a partially routinized genre of economic development policy planning.

Chapter 4 consists of an attempt to answer a preliminary question: why might biomedical districts exist as part of the urban landscape? The path-dependence of historical investment in an organizational model that allows for agglomeration, in some cases, explains why these concentrations of health related land uses grew up over time around teaching and research hospitals. To varying extents, this phenomenon is observable in many US cities. However, recent changes to payment and regulation have undermined the viability of in-patient health care facilities, rendering plausible the question of why these types of spaces have been proliferating, partly as a matter of policy. The chapter doubles as a summary of the most important developments affecting the health care system, with a focus on their geographically uneven impacts on cities. Following this stylized, general explanation, Chapter 5 looks widely at specific contemporary examples drawn from number of districts, identifying key dimensions of variety and patterns of commonality.

Part II presents the most significant case studies drawn from three sites: Chicago, Houston, and New Orleans. Chapter 6 focuses on the first designated urban medical district, the Illinois Medical District in Chicago, which emerged from the confluence of formalization and expansion of the medical institutions and Urban Renewal-style postwar redevelopment planning. Chapter 7 turns to the second such district, the Texas Medical Center in Houston, which grew from an undeveloped forest to the largest concentration of medical institutions in the world within the

span of a few decades. Chapter 8 returns to Chicago and Houston, examining how the original two cases have only very recently undergone a process of organizational conversion, despite broader interest in unlocking their potential as economic assets in the 1980s. Also picking up the theme of crisis, Chapter 9 narrates the faulting attempts to establish a biomedical corridor in New Orleans, a long-standing goal that legitimized the transformation of safety-net health care and the largest and most controversial economic development investments in the city's history. Whereas the Chicago and Houston cases illustrate the durability of biomedical district organizations, the New Orleans case shows how a similar approach failed to gain durability and traction. Still, the idea of building a biomedical corridor has provided a legitimacy to a range of important changes after Hurricane Katrina. Chapter 10 concludes with a summary of findings and their implications for policy, practice, and research.

## **Part I**

# **Biomedicine and urban development**

## Chapter 2

# Literature Review: City Limits and Biomedical Possibilities

### 2.1 Introduction: Health care and economic development in the US

Both health care and urban development shape many foundational aspects of contemporary life while, at the same time, reflecting the wider cultural, political, and economic milieu of American society. Each arena also maps onto well-established but diverse, interdisciplinary, and multi-specialty traditions of scholarship, policy, and practical expertise. Despite having much in common, these traditions have rarely been drawn into dialog in an explicit manner in academic literature.<sup>1</sup> This chapter attempts to do so with a focus on two specific institutional and political-economic domains: biomedicine as a scientific, technological, and organizational approach to the delivery of health care;<sup>2,3</sup>

Biomedicine may be contrasted, for example, with public health, even though they both engage with the health care system and have considerable practical overlap in policies, research and educational organizations, and the professions. and local economic development as an

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1 Focusing on one aspect of this disconnect, Corburn (2009) discusses the shared roots but mutual exclusivity of public health and urban planning practice.

2 Although the two may be used somewhat interchangeably, a distinction is drawn between health care and biomedicine. The health care system refers to the entire system of organizations, professions, and governmental agencies involved in the delivery of health care, the research and development of diagnostic and treatment procedures, and the training of the workforce. Biomedicine, on the other hand, refers to the institutionalized field of science and technology that, to a large extent, guides and directs the health care system.

3 In this sentence, *institution* refers to the sociological notion of repeated practices and durable relationships that shape norms and create a context for action. In other parts of the dissertation, “institution” is used in reference to hospitals and academic medical centers, which are probably more accurately thought of as large and complex organizations. In these instances, the terms organization and institution are interchangeable. I have tried to make it clear from context.

essential policy concern for cities. In essence, the argument frames biomedicine as an important, historically and geographically variable force in the production of urban space along multiple socio-spatial dimensions. However, local economic development scholarship and practice tends to engage this complexity with assumptions that industry categories and organizational types adequately capture relationships between different types of organizations, that regional significance follows a neat division into locally serving and export-oriented economic activities, and that innovation and specialization are unqualified benefits to regional economies. The lens of local economic development tends not only to take “ordinary” biomedicine for granted but also to prioritize policies that may support many of its most problematic characteristics.

Accounting for points of exchange and comparison – and important differences – between urban development and the health care system provides a scaffolding for later analysis. To give a general example that also applies outside of the United States, both fields reflect important dimensions of the historical development of the modern nation state under the relations of capitalist production. Every nation’s development trajectory has brought the intensification of urbanization and the construction of a scientifically advanced health care system supported and regulated by the state. The policy fields of health care and urban development also have a somewhat unique expression in the United States, beginning with their shared roots in Progressive-Era responses to the problems of mass urbanization and industrialization and traced through a variety of major domestic policies and economic trends over the twentieth century.<sup>4</sup>

Health care policy has been, arguably, the most significant arena of recent direct domestic policy intervention at the national level, certainly for the Obama administration and arguably for the past few decades. While states also play a major role (e.g., Medicaid), health care is most immediately influenced at the local level by very large private, public, and non-profit enterprises. Though a mix of public, non-profit, and for-profit providers range from small practices to large businesses employing thousands, they operate within a highly regulated context and to serve a quasi-public function as a *system* for delivering health care and training the workforce. Urban economic development, however, receives little direct support from the federal level (at least, since the 1970s), although federal regulations and subsidies can have significant impacts on local economies. State policy also plays a major role in local economic development regulation and incentives. However, the dependence of localities on growth

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4 Another cause of the US exceptionalism among the health care in the developed world is that World War II largely destroyed many health care systems in Europe. This, however, does not account for the very different trajectory that lead to a single-payer system in Canada.

remains, perhaps, the most constraining factor on urban policy (Logan and Molotch, 1987). Thus, localities compete to attract and retain investment from the government and, especially, private-sector, export-oriented, globally competitive businesses. Despite the fact that urban economic development is a primarily *local* endeavor, scholars across the spectrum of theoretical traditions recognize that the wide leeway for local action occurs within structural conditions that extend globally.

In contrast, the realities of payment and accessibility necessarily limit the largest part of the health care economy, the diagnosis and treatment of illness, to domestic market conditions. Even for exportable components of biomedicine, such as devices and pharmaceuticals, domestic and, in fact, global consumption remains overwhelmingly disproportionately driven by the US. Over 30 percent of global pharmaceutical revenues – more than from all of Europe – come from the US, where drug prices are less regulated and higher than in any other industrialized country. Even foreign companies target research and development, seek regulatory approval, and conduct clinical trials to cater to the US market (Daemmrich, 2011). This relatively recent shift, beginning in the 1980s and accelerating during the 1990s, coincides with the emergence of the biotechnology and life sciences industries – and with local economic development policy designed to foster them. Notwithstanding these structural differences, a cursory familiarity with either health care or economic development would suggest that, for both, various forms of economic restructuring have shifted the action toward the local and toward the market, creating a ripe environment for experimentation among both health care and economic development organizations (Katz and Bradley, 2013).

Straddling the organizational fields of both health care and urban development, the urban biomedical district reflects the context of restructuring and local policy experimentation. In this sense, the great promise of the urban biomedical district is to leverage spatial proximity for mutual benefit, first, for improving the ability of health care organizations to adapt to changing markets and regulations and, second, for anchoring local economies with good jobs, place-based development, and industrial diversity. While biomedical district development strategies *can* serve to induce, multiply, and anchor desirable economic activity – what Imbroscio (2011) calls the “triad for community economic stability,” the observable pattern of investment is dictated by the same biomedical institutional processes that drive the US health care system to over-invest in inter-organizational competition and technological advancement without corresponding improvements in quality, access, or cost.



The next two sections are organized around two key theoretical discourses. The first is drawn from scholarship on urban development, which has long engaged with the limited scope of “local” action in urban political-economy. The second reviews how health scholars have recognized biomedicine’s problematic expansion, both in the quantitative sense of the size of the health care system as a portion of the macro-economy and in the institutional sense of its growing influence over human life, for nearly as long as efforts to curb its expansion have been frustrated. While these same scholars routinely recognize the harshly uneven geography of access in health care, uneven geography is not only a result of an inefficient, inequitable health care system but also constitutive of its resistance to reform. Economic geographers and local economic development scholars, on the other hand, have frequently mined biotechnology and life sciences for case studies of regional cluster and network formation – local nodes within global networks (Gertler and Levitte, 2005) – without considering their dependence on health care organizations to “make the market” for high-technology interventions. As a result, the task of this chapter is two-fold: to construct an original perspective for understanding the opportunity space of biomedicine as an engine of urban economic development and to add an urban-spatial perspective to the institutional development of health care. The first task is taken up again in the methodology (chapter 3) and the second, in chapter 4.

## 2.2 City limits

For decades, urban scholars have questioned the scope and limits of urban politics. In the US context, a lack of inter-governmental support forces cities to depend on external investment to grow the tax base and conditions the urban policy process to favor economic competition over any alternatives (e.g., redistribution) (Peterson, 1981). In his influential “City Limits” argument, Peterson (1981) argues that the necessarily “unitary interest” of promoting growth largely renders urban politics irrelevant. Arguably, fiscal retrenchment, industrial restructuring (Bluestone and Harrison, 1982), the ideological hegemony of the market (Brenner and Theodore, 2002; Block and Somers, 2014), and political fragmentation (Dreier et al., 2004) work to sharply constrain “local” urban politics and, by extension, the scope of policy. To some extent, this tension has provided the most salient underlying problem of urban political-economic scholarship since at least the 1980s.

While the very origin of cities in the United States have, to an extent, always been competitive, critical scholars generally recognize the increasing primacy of the unregulated market in urban development since the roll-back of the Fordist-Keynesian social, economic, and inter-

governmental policies that conditioned urban development in the postwar period. According to Cochrane's review (2007), 1970s debates on the role of the urban process in social reproduction gave way to a focus in the 1980s on cities as competitive spaces, where restructured processes of production, new forms of consumption, and intensified opportunities for profit in real estate drew an increasing influence on urban development.<sup>5</sup>

For example, Molotch (1976) and Logan and Molotch (1987) build from Marxist critiques in the 1970s, to foreground the mutual exchange values derived from urban growth to a "rentier class" of "place entrepreneurs" – propertied interests with a direct stake in local property values.<sup>6</sup> Collectively mobilizing resources to stack the deck in favor of growth-friendly policies, the nature of *place* as a complex commodity pits the growth machine's emphasis on exchange-value against the use-value of urban space, such as the breadth of tangible and intangible benefits that urban residents typically derive from their neighborhood. Notably, in this model, major corporations and other actors occupy only auxiliary roles, since these actors can derive surpluses at other locations. While capital remains, in a general sense, more mobile than labor, some forms of capital are more place-bound than others. Building from the nexus between urban land use sorting, political relations, and the capitalist economic system, the political-economy of urban development reflects the dynamics of growth machines, both in lateral external competition and in internal conflicts between the use- and exchange-values of urban land.

Viewing similar phenomena from the perspective of the growth coalition, Stone's (1989) regime theory highlights the effectiveness of a cohesive set of institutional political incentives, harmonizing and stabilizing the interests of the local state, civil society, and business around pro-growth agendas. Regime theory's methodological and explanatory emphasis on the local reciprocity of growth coalitions, however, suffers from a lack of specificity regarding how such coalitions intersect with broader, non-local restructuring processes (Hackworth, 2007, 64).<sup>7</sup>

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5 To suggest that US health care system also underwent a parallel transition from state-supported, largely non-profit and vocational system of social reproduction to a fragmenting field undergoing abrupt reorganization and intensified opportunities for profit is only a slight oversimplification. The key difference is that, while federal aid to cities was declining and regulatory protections were hollowing out, health care expenditures have grown from 5 percent of GDP in 1960 to 17.5 percent in 2014, and Medicare and Medicaid alone now comprise roughly one quarter of the federal budget. See Kaiser Family Foundation, The Facts on Medicare Spending and Financing, 24 July 2015, [kff.org/medicare/fact-sheet/medicare-spending-and-financing-fact-sheet/](http://kff.org/medicare/fact-sheet/medicare-spending-and-financing-fact-sheet/).

6 Interestingly, this formulation of the growth machine also includes hospitals due to their relative fixity in place and need to expand the patient base, although their role as drivers of the development agenda is strictly supportive.

7 This criticism applies equally to "ant-growth" coalitions and "non-regime" cities (DeLeon, 1992; Burns and Thomas, 2006, e.g., ).

While regime theory advanced beyond narrow elite or pluralist theories to offer valid explanations for postwar growth coalitions around Urban Renewal and the resurgence of 1980s downtown development programs, this validity had weakened by the 1990s. As Imbroscio (2011, 35–38) notes, the ultimate deficiencies of regime theory stem from its inattentiveness to economic determinants beyond the local political process, to the changing division between the state and the market, and to proscriptive advice for policy and institutional design. Eroding regional industrial bases; fractured racial, ethnic, and class-based electoral constituencies; jurisdictional fragmentation; and the evaporation of redevelopment resources all conspired to undermine the potential of cohesive redevelopment agendas (Jonas and Wilson, 1999; Purcell, 2000; Rast, 2001; Laslo and Judd, 2006). As a contributing factor, the proliferation of quasi-public corporations and special district “shadow governments” – a phenomenon matching the organization of many urban biomedical districts – has partially replaced the growth coalition as a mechanism of achieving consensus and mobilizing resources (Laslo and Judd, 2006; Judd and Swanstrom, 2015).

In a prescient counterpoint to the “methodological localism” of regime theory (Brenner, 2009), Harvey (1989) provides another influential reading of the shift from “managerialist” city government to “entrepreneurial” urban governance in the 1980s. More than merely characterizing the strategic stance of decision-makers in any single city as more “entrepreneurial,” Harvey highlights the disciplining and constraining effects of localities exposed to a riskier, more hollowed-out system of political-economic regulations and supports. Inter-jurisdictional competition conditions urban policy by simultaneously limiting the opportunities available to localities, while opening the scope and importance of local action in a geographically variegated economy (Leitner, 1990; Clarke and Gaile, 1998). One result, Harvey notes presciently, is the “serial reproduction” of policy approaches, investment strategies, and urban landscapes. Understandably for the period, Harvey highlights the 1980s proliferation of gentrified neighborhoods, spaces of consumption, downtown festival marketplaces, and the like. In the decades since, Harvey’s “competitive conditions of existence” have only deepened. As entrepreneurial urbanism has matured, the reproduction of economic strategies continued albeit with different coloring, such as those influenced by popular concepts like Porterian clusters and creative cities that promise a resurgence of city economies amidst a seemingly flattening global terrain (Peck, 2014). These notions have also combined with the imperative of entrepreneurial industrial development to shape the “serial reproduction” of the urban biomedical district as an economic development strategy and distinctive urban landscape, simultaneously enhancing locally serv-

ing anchor institutions, providing a platform for traded and knowledge-based life sciences activities, and improving the local health care system.

These perspectives imply a deeper question of how to analyze biomedicine as a distinctively “urban” phenomenon. Does biomedicine merely happen *in* cities, or does it have a complex, mutually constitutive relationship with the urban development process? The answers have both methodological and analytical implications. One answer is to frame cities relationally as places, characterized by the “radical exteriority” of connections to other sites and scales (Amin, 2007). In a sense that challenges its conflation with the “local” scale, the “urban” demarcates an arena where power is exerted, complexity is exploited or suppressed, contingent relations are hardened into durable built forms or institutional relationships, and alternative policies are adapted both from and for other scales and localities (MacLeod and Jones, 2011). Local contexts, thus, reflect not only difference but variegation within a broader system of relations – a tension that also clouds the status of space and place in social science theory and research methods (Massey, 2005; Jessop et al., 2008). As a first step, this complexity may be approached by focusing on distinctively and exclusively urban phenomena, such as the dynamics of agglomeration and the accompanying process of land-use sorting (Scott and Storper, 2015).

### **Agglomeration and the production of place**

Economists, sociologists, and geographers have long viewed the process of agglomeration, or the way that concentrations of activities in space generate collective benefits (or costs), as an essential factor in the formation of cities (Soja, 2000; Jacobs, 1970; Wirth, 1938; Mumford, 1961). The general principle of agglomeration connects the earliest permanent human settlements in Mesopotamia to urbanization in today’s context of global integration, although its specific parameters have obviously changed considerably. Two separate variants cover most of the economic efficiencies of agglomeration: economies of localization and urbanization. “Localization” effects, or Marshallian externalities, refer to efficiencies derived from the co-location of similar or related economic activities. Firms in related industries benefit from sharing proximity to product and factor markets (including labor) and from spillover effects, such as a supportive regulatory environment or geographically embedded forms of tacit and codified knowledge. Typically, Marshallian industrial districts support the export base of a city. “Urbanization” effects occur with proximity to a large and diverse urban economy. The expansion of cities grows markets, the variety of specializations stabilizes ebbs and flows of opportunity, and the

interaction of heterogeneous fields of practice facilitates the innovation process and the creation of new markets. As with nearly all urban economic phenomena, biomedical district formation is legible through the lens of both urbanization and localization, albeit in different ways at different times.

Traditionally, health care has been viewed as a locally serving industry, hitching its growth to the general size and wealth of its immediate market area (see, e.g., North, 1955; Tiebout, 1956). Indeed, modern hospitals and academic medical centers (AMCs) evolved during the development of the industrial city, where they grew in scale to fill a key social reproduction role in larger, more socially and economically diverse cities. Notwithstanding the role of centers of medical prestige in “exporting” therapeutic advancements, their growth primarily depended on serving the regional population. Thus, as industrialization transformed Pittsburgh into a steel town, Detroit into an automobile town, and Houston into an oil town, very few “hospital towns” arose during the same period – with Rochester, Minnesota, home of the Mayo Clinic, providing the one obvious exception. Also, for this reason, the geography of health care capacity generally maps onto the urban hierarchy. With a clear resemblance to the patterning of central place theory (Curtis, 2004, 123), small towns may only have primary care physicians, larger cities have more specialized experts and surgical centers, and only first-tier cities boast the most prestigious hospitals and advanced treatments. Likewise, major safety-net hospitals are usually located near the population center of a region, maximizing their accessibility for a patient base that tends to be drawn from lower-income, inner-city residents. To extend the simplified and spatially idealized service-delivery model, hospital locations would not concentrate at all but would reflect a pattern that maximizes accessibility based on the broader geography of production and settlement.

Of course, this simplified location model does not strictly reflect reality. The more complex nature of health care institutions also generates economies of scale and localization efficiencies. In the early 20th century, proximity would have facilitated interactions among physicians, lateral employment opportunities for workers, and easy referrals for patients. Importantly, early medical schools, often small proprietary establishments, relied on access to larger indigent-serving hospitals for training opportunities, and private physicians maintained voluntaristic relationships with hospitals that would have occasionally required their presence while also allowing them to keep an office off-site. These relationships give rise to localization economies, which is why hospitals, medical schools, and other health care establishments tend to cluster spatially. After the 1930s, this pull to concentration persisted through the modern expansion of

health care in a context of Fordist-Keynesian support.<sup>8</sup> The cases of Chicago and New Orleans presented in this dissertation demonstrate the emergence of notable concentrations – multiple large non-profit hospitals, multiple medical schools, and a large public hospital – prior to any coordinated, intentional project to plan a medical district, per se.

These dimensions of urban biomedical district formation shifted with the resurgence of policy and academic interest in agglomeration, and the coincidence is not by accident. By the 1980s and 1990s, the decline of Fordism, de-industrialization in the core economies, the removal of international trade barriers, and the decreasing friction of transportation and communication networks had left cities with an uncertain economic future. The enhanced global mobility of capital and the inertia of a geographically uneven division of labor appeared to undermine the potential for local economic development in a distanced economy (Massey, 1984; Bluestone and Harrison, 1982). Yet just as policy-makers perceived a real threat to development strategies predicated on strengthening the dynamics of localization for export-serving industries, new lines of interpretation of urban economies in the 1980s and 1990s posited a resurgence of the region.

As a counter-point to the regulatory restructuring of post-Fordism (Tickell and Peck, 1995), Marshallian industrial districts emerged as a shining beacon in a sea of harmful forces arrayed against regions and localities. While economic geographers grappled with the uneven geography of economic restructuring, the discipline saw a “resurgence of regional economies” (Storper, 1995), traced through cases studies from Third Italy (Piore and Sabel, 1984) to the California School (Scott, 1988; Storper and Walker, 1989; Storper, 1997). These “new industrial spaces” were marked by horizontal and vertical disintegration, “flexible specialization” of firms within regional supply chains, flexible and shared factor markets (including labor), and a distinct local cultural identity. In short, post-Fordism brought attention to institutions and networks within regions as sources of comparative advantage in a globally integrated economy.<sup>9</sup>

Out of this context, certain loftier, high technology portions of the health care economy – life sciences and biotechnology in particular – have attained a privileged position, both in scholarship on local economic development and in actual state and local policy interventions.

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8 Concentration was likely aided in the US by the ineffectiveness of episodic attempts at rationally planning health care system assets during a period of increasing state regulatory intervention, since more directive approach to health systems planning almost certainly would have resulted in a more accessible, geographically distributed pattern of resources.

9 While industrial district agglomerations have existed since the early industrial period, scholars began in the 1980s to perceive the phenomenon not simply in terms of economies and diseconomies of agglomeration but also as a product of embeddedness in non-economic institutions and trust in achieving sustained collaboration (Harrison, 2007).

Beginning in the early 1980s, biotechnology's transformation of the drug development process roughly coincided with the height of deindustrialization's threat to the urban economic base in US cities. For cities, biotech and the life sciences has provided a window of opportunity for attracting and nurturing local, embedded activities in an industrial geography under construction, establishing a position for deriving future benefits as the industry matures. This popularity has been further propelled by the widespread presence of necessary (but not sufficient) assets for cluster development, chiefly research conducted in universities and academic medical center settings (Feldman et al., 1994). For scholars of regional development, these activities also provide an opportunity to observe the local emergence of an exceptionally high-tech, knowledge-based, post-Fordist field of economic activity. Thus, biotech has supported a wealth of case studies on cluster dynamics, sectoral development strategies, tacit knowledge and innovation.

One of the main academic journals for local economic development, *Economic Development Quarterly*, demonstrates the prevalence of life sciences-based case studies in policy and analysis. Currid-Halkett and Stolarick's (2011) examination of the "great divide" between articles published in the journal and the strategies pursued by economic development agencies in nine cities found that three of the nine cities created "biotech parks" and two created "tax breaks for bioscience," although life sciences incubators were mentioned elsewhere but not distinguished from other incubators. What is perhaps more interesting is that the authors found "bioscience" and its synonyms to be the tenth most frequent keyword across 156 articles since 2003, and none of the previous nine refer to an industry sector.<sup>10</sup> In contrast, only one article in the same journal includes any of the keywords "health care," "hospital," or "academic medical center" (Nelson, 2009). At the local level, both research and policy on life science clusters tends to exclude the dynamics that give rise to the possibility for cluster formation in the first place: the growth of the US health care system and, especially, the increasing market for high-technology diagnosis, treatment, and pharmaceutical interventions.

## 2.3 Biomedical possibilities

### Biomedicine as an institutional context

Considered here in a broadly institutional sense as the range of organizations, industries, codified knowledges, technologies, and occupations that "produce" health according to the

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10 The keywords are (in order) economic development, cluster, labor, incentives, high tech, education, industry, innovation, redevelopment, methodology, *bioscience*, entrepreneurship, green. The authors interpreted the phrases "bioeconomy" and "life sciences" as synonyms of "bioscience".

model of biomedical science, biomedicine deeply shapes a large portion of the national economy and, by extension, the opportunities for job creation in cities and regions. Although health care has only grown to rival the size of other dominant sectors of the economy in the past few decades, policy and social science scholars have long recognized that medicine or *biomedicine* encompasses far more than an industrial sector. Even speaking of “*the* health care system” belies the diversity and complexity of what should be considered multiple overlapping systems. Medicine may be understood as a complex of:

Professional traditions with an identifiable culture and, in the case of physicians, a historically strong capacity to self-regulate;

Scientific epistemologies traced through basic research to clinical applications;

Governmental interventions through regulatory restrictions and incentives, insurance financing through indirect subsidy or direct provision, and basic research funding;

A variety of organizational forms ranging from hospital and small ambulatory care, to regulatory agencies, to research-intensive commercial companies that develop therapeutic and diagnostic technologies, to the research and training conducted in academic medical center settings;

And uniquely to the US, a variety of payment systems, from indirectly subsidized employer-provided insurance, federal government insurance for the elderly, state government insurance for the poor, separate governmental programs for the military and veterans, and Obamacare “exchange” plans for those not covered by one of the other mechanisms.

In short, biomedical health care is a variegated and complex institution, subject to historical change in the dynamics that govern the relationships among its constituent parts. In the simplest sense, the syncretism of *biomedicine* merely indicates that many of the recent changes are linked with a realignment of the life sciences and medicine. In practice, the term *biomedicine* also signals contemporaneous changes that penetrate contemporary health care, including new possibilities for the transformation of “life itself,” more market-oriented modes of organization, and shifting but path-dependent drivers of institutional change. To be clear, given the breadth of *biomedicine*’s impacts of contemporary life and the necessity of clarity, the current discussion focuses on the economic implications of institutional change, largely setting aside related and equally worthy questions of the “vital politics” of identity and *biomedicine*’s impact on the subjectivities of disease and treatment.

To conceptualize elements of *biomedicine* through simple material-economic terms like industries and markets implies a problematic abstraction from causally important factors at the level of the institutional environment. For example, Cambrosio et al. (2006) define *biomedicine* as a material, institutional, and epistemic configuration that aligns the overlapping practices associated with “normal” biology and “pathological” medicine. In other words, biomedical



entities, such as genes or antibodies, coexist in both normal and pathological processes. This coexistence occurs under a historically distinctive but endogenously determined social construction of “regulatory objectivity,” embedding individual and systemic action in a collectivized system of scientific standards that penetrates various configurations of practices, instruments, knowledge, and clinical expertise.

Since the 1970s, critics have highlighted how the “medical industrial complex” has driven cost inflation and the process of “medicalization,” extending the “clinical gaze” into ever further reaches of society (Ehrenreich and Ehrenreich, 1972; Zola, 1972). For example, childbirth, depression, and aging were all medicalized in various ways during the mid- and late-twentieth century. In short, what is deemed “medical” or what falls under medical expertise is socially constructed and therefore an open empirical and theoretical question. Moreover, “medicalization” extends beyond the level of doctor-patient relationships via the conceptual classification for defining problems and the institutional legitimation of medical management (Conrad and Schneider, 1980).

Today, while this process continues, its parameters remain a source of debate. Most agree that the drivers of medicine’s expansion have decoupled from professional dominance to encompass broader agents, actions, and processes (Conrad, 2007; Clarke and Shim, 2010; Scott et al., 2000). In one particularly provocative version, Clarke et al. (2010) argue that the current phase of “*biomedicalization*” entails new dimensions of technological and scientific transformation of biomedical organizations, infrastructures, knowledges, and even “life itself” (Rose 2007). The theoretical re-articulation serves partly to emphasize that specific arenas of medicine (e.g., professional dominance or particular economic sectors) no longer “march in lockstep” with institutional expansion (Clarke and Shim 2011: 176). Rather, the radically expanded conditions of possibility associated with the “molecular gaze” and its attendant technologies work in concert with market-driven organizational forms to shift the parameters of the bioeconomy and rework biomedicine’s long-standing potential to define the terms of its own existence, pitched increasingly toward surplus values of “biocapital” (Rose, 2007; Clarke et al., 2010; Rajan, 2006; Cooper, 2007).

As suggested by previous attempts to periodize biomedicine’s institutional trajectory, such as that proposed by (Clarke et al., 2010) and presented in summary form in table 2.1, the historical elaboration of biomedicine as an institution continues to generate a powerful set of ontological categories and institutional logics.

Table 2.1: The periodization of biomedicalization from Clarke et al. (2003, 2010)

	<b>Rise of Medicine (c1890–1945)</b>	<b>Medicalization c1940–1985</b>	<b>Biomedicalization c1980–present</b>
<i>Basic focus</i>	Legitimation, Communicable Diseases, Skills	Routinization of care, Control	Risk factors / Molecules and Genes
<i>Main Mode of Clinical Intervention</i>	Surgical success & clinical skills	Routinization of medical care	Drugs, Devices, Technologies
<i>Scientific basis</i>	Germ theory, disease classification	Medical sciences, pharmaceuticals	Molecular and Genetic biology
<i>Main Focus of Biomedical Technology</i>	Amplifying bodily indicators & imaging	Imaging, Procedures & treatments	Biotechnologies
<i>Construction of Patient Identities</i>	Charity, Illness/ Disease	Passive patients, Diagnostic identities	Responsible consumers, Technoscientific identities

Source: Adapted from Clarke and Shim (2011) and Clarke et al. (2010).

While the process of jurisdictional expansion remains crucial, the key differences between medicalization and biomedicalization include the new centrality of the life sciences, the primacy of market-oriented reforms since the 1980s, and the increased complexity of the organizational field of health care. More organizations, ideas, and technologies presently contribute to making jurisdictional claims than under previous conditions of organizational coherence and professional dominance. Moreover, tied to uneven state and private resources, propelled by changing market and regulatory contexts, and articulated by powerful actors, biomedicine's ontological categories carry a great deal more weight than the few, *ad hoc*, and only tangentially theorized accounts from scholars more centrally concerned with other dynamics of economic develop-

ment. Yet limiting scope of analysis to the local level often succumbs to instrumental and frequently misleading conceptions of biomedical opportunity as a function of market forces.

## **The problem with instrumental perspectives on markets and innovation in healthcare**

### **Health care as a market**

The market provides an important but limited lens through which to understand health care. As Scott et al. (2000, 3) write, health care organizations encounter external forces from two sources. The first is “material-resource environments” affecting healthcare organizations as technical, production systems, such as supply and demand. The second is the broader “institutional environment,” which includes “cultural belief systems, normative frameworks, and regulatory systems that provide meaning and stability”. In other words, the health care economy provides an exceptionally clear demonstration of the Polyanian notion that markets are “embedded” within social relations (Granovetter, 1985), such that seemingly rational economic decisions are always an instituted process (Block and Somers, 2014, 29).

In the highly intermediated market for health care, the source of demand – much less its geographical location – is difficult to pin down. As Fuchs (1968, 1) notes, demand in health care implies the willingness or ability to pay. This is not the same as “want” or “desire,” even if these notions are frequently conflated with demand. Nor do measures of health care utilization and expenditures reflect demand in absence of its interaction with supply. Demand is further complicated by the fact that patients, the end consumers, do not solely or even mostly determine health care demand. Rather, demand results from a complex interaction of multiple decisions. Physicians play a prominent role as arbiters of information and uncertainty problems (Arrow, 1963), as decision-makers determining the diagnosis and course of treatment, and as intermediaries between patients and advanced tests, treatments, and prescription medications. Doctor-patient decisions are further shaped by an individual’s insurance coverage, insurance plan payment policies and negotiations with providers, and the structure of incentives at health care organizations. Since physicians suggest hospitalization, prescribe drugs, order tests, and make specialist referrals, physicians both supply care and determine how much care to purchase (Fuchs, 1968, 4). One example of the multi-faceted, interactive nature of health care demand is so-called “defensive medicine,” e.g., a physician orders expensive diagnostic tests even when the costs far outweigh the benefits, usually either to allay the patient’s concerns or to avoid future liability for misdiagnoses. More generally, the fee-for-service model of payment actually

incentivizes physicians to increase the volume of care provided, not necessarily to behave as good stewards of cost or as maximizers of health outcomes.

Thus, health care demand stems from not only patients but also from decisions filtered through a web of interactions among physicians, payers, organizations, and regulatory agencies. The complex nature of health care demand has implications for how health care is typically theorized from an economic base perspective as a non-traded, locally serving activity. Local growth in health care has nearly exclusively been viewed as a passive result of demand, which is in turn derived from growth in export industries, such as manufacturing. Drawing a counterpoint from an analysis of Medicare hospital payments in five lagging regions, Nelson (2009) found that between 17 and 35 percent of Medicare revenue originated from patients outside of the region.

In a strict sense, the assumption that health care is *mostly* a locally serving regional economic activity is reasonable. Most patients seek care locally and likely only travel to access advanced diagnosis and treatment. However, conceptually relaxing the equation of demand with the patient undermines this assumption. Roughly 85 cents of every dollar spent on health care is not paid directly by the patient but by public and private insurance plans and by programs to reimburse hospitals for uncompensated care. Insurance is pooled at the state level for Medicaid; at the federal level for Medicare; and at regional, state, and multi-state level for most private insurance plans. In addition, what these plans pay for and the rates at which they pay are highly varied by geography. The Dartmouth Atlas of Health Care has extensively detailed this variation, showing that physician decisions, reimbursement rates, and overall spending per capita vary greatly from region to region and even from hospital to hospital. Excessive regional spending that does not yield corresponding benefits accounts for 20–30 percent of total health care spending, which may be interpreted as “waste” (Skinner and Fisher, 2010). In many cases, not demand but local supply determines utilization and payment. Areas with many specialists and a surplus of expensive technologies tend to experience more utilization of those services. Of course, what may be interpreted as an uneven landscape of “waste” in health care spending may also be read as basic economic activity in regions that pulls-in significantly higher levels of extra-regional dollars without providing higher quality care.

In spite of the complexity of the health care market, the way that health care is theorized to operate as a passive, locally serving, demography-driven component of urban economies has changed remarkably little since health care was a rapidly growing but still rather small portion of urban economies (e.g., North, 1955; Tiebout, 1956). Yet in addition to growth, the

internal dynamics of the health care market have changed considerably. Given the widely recognized distorting incentives and problems of moral hazard and information and, perhaps, the boundaries of acceptable government interventions in an era of hegemonic market fundamentalism (Block and Somers, 2014), the thrust of most health care policy has been to leverage market-based solutions. From the 1980s through the 2010s, managed care, diagnosis-related payment, and outcomes-based payment have all attempted to realign the distorted incentives of fee-for-service. Policy-makers and payers have viewed health information technology – chiefly through portable and mineable electronic medical records – as the linchpin of efforts to overcome endemic information, efficiency, and quality problems. Policy has also sought to promote informed action by the patient-as-consumer by making quality information public and creating tiered markets for choosing insurance coverage levels. Even direct-to-consumer advertising of prescription pharmaceuticals – which began to be allowed in the US in the 1980s and is now the most prominent type of health information encountered by the public (Ventola, 2011) – has been framed as a way to promote efficiency by allowing patients to act as informed consumers. The demand for health care services and the supply of high-technology interventions are mutually embedded in an ethically charged chain of payment rules, research and development processes, and doctor-patient encounters that combine to increase the cost of health care.

### **Health care costs and biomedical technology**

The US health care system's tendency toward cost inflation was first recognized as a public issue in the 1970s, during the height of Medicare's liberal fee-for-service reimbursement practices (Scott et al., 2000, 196). High and rising costs remain perhaps the largest problem facing the health care today, especially when combined with persistent gaps in accessibility and the lack of consistently high health outcomes. As a result, "bending the cost curve" has provided a rallying cry for systems-level approaches to health care reform.

According to statistics from the Organization for Economic Co-operation and Development (OECD), the United States remains an extreme outlier in health care spending (Organization for Economic Cooperation and Development (OECD), 2015a, 47). In 2015, the US spent 16.9 percent of its GDP (Organization for Economic Cooperation and Development (OECD), 2015b) on health care. The remaining OECD countries spent an average of 8.8 percent; and the second highest, the Netherlands, spent 11.5 percent. Per capita, the US spent \$9,451 on health care, nearly three thousand higher than the next highest spenders.<sup>11</sup> The US also plays a disproportionate role in

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<sup>11</sup> The next largest per capita spenders are Switzerland and Norway.

certain components of the global health care economy. For instance, the US accounts for at least 34 percent of the global market for pharmaceuticals (Daemmrigh, 2011). While Americans are twice as likely to face financial barriers to accessing medications than other OECD countries, the same medications cost far more in the US market than in other countries, where regulations and public insurance programs limit the bargaining power of pharmaceutical companies. The same goes for medical technology. The US has 38.1 Magnetic resonance imaging (MRI) machines per every million population, more than double the OECD average.<sup>12</sup> Because revenues and profits are higher, the US market drives investment in research and development of new health care technologies.

Comparative statistics beg an obvious question: why has health care remained so expensive in the US? Path dependence provides one answer. Decades of political turmoil and conflict culminating in World War II undermined the capacity of many OECD countries at roughly the moment of the US health care system's modernization. After the war, as many OECD countries were rebuilding the capacity of their health system from a relatively blank slate, the US continued in a piecemeal fashion shaped by wartime compromises, such as the standardization of employment-based private insurance coverage.<sup>13</sup>

Misconceptions persist regarding the underlying factors behind the drivers of health care cost. Chief among these misconceptions is the nearly ubiquitous but empirically inaccurate assumption that an aging population is the primary if not sole driver of cost expansion. While older, sicker populations certainly command a dramatically disproportionate share of health care resources, demographic aging itself only accounts for a small portion of growth. Joseph Newhouse's (1992) and (1993) analyses supported the argument that "if technology had been constant, demographic changes, income growth, and insurance growth would have accounted for well under half, perhaps under a quarter of the increase in medical care spending between 1940 and 1990." Studies in the meantime have supported the key role assigned to technology, although slightly de-emphasizing the effect of technology relative to income and emphasizing that the interaction between demand for technology and income is difficult to unpack (e.g., Smith et al., 2009). What remains consistent across studies is that demographic factors have contributed only a small portion of growth in spending.

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12 The variation in MRIs per capita is larger than in other expenses. Only Japan has more MRI machines per capita than the US, though both countries have considerably more than the next cluster of countries.

13 The heterogeneity of the US' geographic, racial and ethnic, and socio-economic status may also be a contributing factor, since health care costs vary considerably by each of these dimensions.

Nonetheless, this assumption often appears innocuously in a range of development scenarios, from a hospital's justification for building a new wing to a regional economic development expert's interpretation of employment demand forecasts. As a result, an innocent misinterpretation of the drivers of local economic change as passive generated by demography de-emphasizes the fact that institutional drivers of actively drive the expanding demand for care and cost inflation.

Numerous studies, including the Congressional Budget Office, have confirmed technology to be the dominant driver of the growth of health expenditures, possibly equaling the total of other contributing factors like demographic aging, payment and prices, administrative costs, and defensive medicine (Ginsburg 2008, Newhouse 1992).<sup>14</sup> This applies both to the extended past and to the projected future. Likewise, the Government Accountability Office (GAO) has projected the impending baby boomer-driven crunch to only account for a small portion of cost growth through 2082.<sup>15</sup> The misconception of declaring the aging population as the cause of cost growth is not limited to local economic analysis. Hospital and other industry leaders often justify expansions on the basis of "aging baby boomers," and not the systemic inefficiency that leaves portions of the health care system over-stressed while existing capacity lies underutilized.

The role of technology in health care contradicts conventional wisdom on the economic impact of technology (Gelijns and Rosenberg, 1994, 29). Economists typically interpret technological change in other sectors of the economy as a driver of improved productivity, making it possible to produce a given output with a smaller level of inputs, like labor.

For close to fifty years, scholars have recognized the influence of technology not only in shaping how care is delivered but also in driving demand for care. Fuchs (1968) describes the emphasis in medical tradition on providing the most advanced treatment possible as the "technological imperative". One effect of this imperative is a uniquely decoupled balance of cost and benefits in the rational allocation of scarce resources. In other words, technology drives up the cost of care by influencing choices over diagnostic and treatment interventions. Moreover,

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14 Increasingly, technology affects both the processes of care and the way that organizations work (Lis 2009). Technological change includes new medical and surgical procedures, drugs, medical devices, and support systems. They affect price by expanding the universe of treatable conditions and the options available for treatment. Technology has been and will continue to be central to the evolution of health care in the United States. For instance, the Accountable Care Act's promises for reducing cost depend on the expansion of health information technologies to realize value-based pricing, overcoming the endemic inefficiencies of health care markets (Arrow, 1963).

15 In a review, Ginsburg (2008) finds the dominance of technological change to be robust across different studies, regardless of the various ways in which cost, demand, and technology change are operationalized and measured.

this imperative is reinforced at every step of the chain, from the training and professional culture of physicians to the profit dynamics of the research enterprise and the conversion of scientific evidence into standards for insurance coverage (Kaufman, 2015). At one level, the distortion of health care is largely attributable to (1) information asymmetry between physicians and patients that allows physicians to determine the demand for medical services, and (2) the insulation by third-party payment from the financial implications of care decisions (Gelijns and Rosenberg, 1994).

In other words, the technological imperative stretches from the close connection between high-technology medicine and professional prestige and the general social value of high-tech interventions in life threatening illnesses. In the 1960s and 1970s, fee-for-service physician payment and retrospective hospital reimbursement insulated doctors and their patients from the financial consequences of care decisions and incentivized the adoption of technologies with only minor benefits compared with existing practices (Gelijns and Rosenberg, 1994). Even efforts to manage these incentives in Medicare beginning in the 1980s and the growth of managed care organizations in the 1990s has done little to stem the adoption of new technologies.

However, these demand distortions exist not only at the crucial moment of doctor-patient interactions but also in the process through which new medical procedures and products are developed and introduced. Like many studies of the innovation process, Gelijns and Rosenberg (1994) criticize the simplistic implications of the “linear model” of innovation in medicine, a skepticism shared by scholars of innovation in general, including those primarily concerned with agglomerative innovation from an urban and regional perspective (Massey et al., 1993). For example, many medical devices have origins in non-medical sectors of basic and applied research. MRI technology originated in basic atomic research and only later was adapted for diagnostic medical applications. Since many upstream pharmaceutical and device innovations are subsequently modified by the experiences of downstream clinical practice, the industry’s structure has maintained relatively close links between the laboratories where new technologies are developed and the users of technology in a clinical setting. Moreover, the potential for demand both influences upstream innovation and depends on the preferences and rules of hospital administrators, regulatory agencies, payers, and patients. The “technological imperative” does not narrowly imply that providers eagerly adopt any new technology that comes along (regardless of cost). Feedback signals from downstream providers also affect the intensity and direction of innovation efforts of upstream research enterprises.



## **“Ordinary” biomedicine**

The biomedical economy resists being conceptualized from a purely material perspective, since the experience of care and access to life saving technologies directly influence decisions over quality of life and the possibility of death. A diffuse “ethical field” – influenced by American cultural views of individualism, market-based approaches to health care services, and instrumental notions of medical progress – not only permeates biomedical research, medical treatment, and patient expectations but also shapes policy and regulation, the development and adoption of biomedical technologies, and the production and adaptation of evidence to clinical settings (Kaufman, 2015). In other words, the assumption that more health care and more innovation is both economically and socially valuable permeates the discourse of health care, where it intersects with that of economic development. For example, using resources to develop a biomedical district is routinely framed as both a place-based investment in the local economy and as a way to improve the availability and quality of health care. Viewing such a use of resources with skeptical realism risks the appearance of a dis-compassionate, anti-technology bias. How could one be against more technologically and scientifically advanced health care? A similar logic permeates the mundane management decisions of a non-profit hospital, constantly straddling its charitable and big business roles, and the marketing plans of pharmaceutical companies. However, innovation in health care occurs within a context that directs the majority of resources toward generating small improvements at greatly increased cost. At root, while these circumstances begin with the research enterprise and the companies that derive profits from high-cost diagnostic and therapeutic innovation, physician-patient interactions and payment policies by insurers also contribute to making high-cost, high-technology medicine “ordinary” (Kaufman, 2015).

The twin underlying causes of market failure in the health care system are information asymmetry and moral hazard. Since patients depend on physicians to overcome their own lack of knowledge and to act as gatekeepers to treatment, it is difficult for the patient to evaluate the physician’s performance in recommending optimal, cost-effective treatment. The difficulty of valuing decisions over quality of life and the literal possibility of death challenges the ability of the patient to act rationally, such as by opting out of a diagnosis or treatment procedure when the costs outweigh the benefits. In an influential paper, Kenneth Arrow (1963) used this example to explain how information asymmetry leads to market failure. Moral hazard also distorts the utilization of resources in health care. A century ago, moral hazard rendered hospitalization insurance impossible, since insurance would be prohibitively expensive for individuals likely

to use hospital resources while others would simply opt out of participating in the insurance pool. In the US, this market failure was first bridged with the advent of employer-based group hospitalization insurance in the 1920s, which spread risk across a pool of compulsory participants. However, moral hazard continues to dramatically distort health care costs. Even with high-deductible plans and co-pay schemes designed as counters, a relatively small subset of individuals use the most health care resources, for which they pay little of the cost.

A focus on the ethical field of health care motivates Kaufman's (2015) description of how politics, culture, and economic factors allow extra-ordinary, high-technology treatments to be taken for granted as "ordinary medicine".<sup>16</sup> She describes a chain of four drivers behind the contemporary dilemmas facing the high-cost health care system. The initial driver is the biomedical research industry. The pharmaceutical and device industries have aggressively pursued strategies of market expansion by continuously churning out more treatments. These industries largely determine which therapies to investigate and which consumer markets to exploit; and the portion of research funded by private pharmaceutical, medical device, and biotechnology firms has consistently increased from 32 percent in 1980 to over 65 percent today. During that same period, the "clinical trials engine" also exploded and moved from controlled laboratory studies to the routine discussions of treatment options among physicians, patients, and their families.

Next, the committees that determine Medicare and private insurance reimbursement evaluate clinical evidence to determine whether a therapy, device, or procedure should be reimbursable. Medicare continues to play an central role since private insurance boards generally follow Medicare guidelines. Once a treatment is approved for reimbursement, health care providers almost immediately adopt it as a standard. This occurs regardless of whether the provides a more efficient use of resources from a cost-benefit perspective. Clinical studies need only to demonstrate that a treatment is significantly better than alternatives, although new treatments routinely generate considerably higher costs in exchange for marginal benefits.

Finally, when a treatment becomes a standard eligible for reimbursement, it also becomes "ethically necessary" for the majority of physicians and patients. These drivers combine to bias decisions over health care treatments toward relatively extreme and technologically advanced treatments, regardless of whether these options yield a more cost-effective outcome or a better quality of life than alternatives. Through the web of personal and professional decisions,

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16 Kaufman's ethical field is broader than the disciplinary treatment of ethics among health care providers and biomedical research enterprises, which is often termed "bioethics". Bioethics concerns clinical choices over whether to accept or withhold treatment in light of its trade-offs.

economic incentives, and political priorities, advanced procedures become normalized and appear “ordinary”.

This chain of drivers also normalizes the tendency among local economic development practitioners and scholars to perceive biomedical research as an unmitigated good. The very principles of research design in social and economic sciences lionize the randomized double-blind study as the “gold standard” of research design. This concept reflects the influence of the biomedical research enterprise, and its success in developing treatments. Yet biomedical research also demonstrates the most profound shortcomings of even ideal conditions of research design. Since the 1990s, the evidence-based medicine movement has demonstrated how adherence to good principles of positivist science can have unintended consequences when filtered through the social context and industrial organization of the health care delivery system (Kushner, 2007).

Evidence based medicine is most frequently defined as “conscientious, explicit use of current best evidence in making decisions about the individual care of patients” based on the integration of individual clinical experience and systematic clinical research evidence (Sackett et al., 1996). In practice, this means a deliberate emphasis on the proactive, transparent application of research findings to clinical treatment standards through uniform reporting, meta-analysis, randomized trials, and critical self-evaluation by clinicians. However, evidence-based medicine has also provided legitimacy for pharmaceutical and medical device companies to increasingly infiltrate the research enterprise. By funding the constant generation of more and more evidence through clinical trials, the medical industrial complex of pharmaceutical and medical device companies ensures that new treatment standards are also constantly in development and rapidly disseminated as clinical standards. Moreover, research on risk factors has effectively transformed risk into a treatable condition requiring long-term, prophylactic interventions (Kushner, 2007; Kaufman, 2015; Clarke et al., 2010, 59). As Abramson (2008) notes, evidence-based medicine has provided a route for the pharmaceutical industry to insert itself into every aspect of medical practice, from training to basic research to clinical care. Evidence-based medicine, thus, limits the autonomy and power of physicians creating a void filled not by unbiased science but by an accumulation of evidence from a research system powerfully biased by the priorities of pharmaceutical and medical device companies.

Until the 1980s, almost all support for academic research came from the National Institutes of Health (NIH). In the 1990s, however, just as the NIH was starting to reject the majority of submissions, the industry dramatically increased its support for academic medical research.

The portion of clinical research funded by private pharmaceutical, medical device, and biotech companies has grown from 32 percent in 1980 to 65 percent in the 2010s (Kaufman, 2015). By 2002, private industry was funding about 80 percent of all clinical trials and supporting a niche industry of for-profit businesses established solely to conduct clinical trials, often hiring university faculty as consultants (Kushner, 2007, 59). Since its start in 2000, the NIH's database of clinical trials (clinicaltrials.gov) has grown from 4,000 interventional studies to over 180,000 at the time of this writing. While the growth of clinical trials tracks the proliferation of therapeutic evidence, clinical trials have themselves increasingly been seen as options for treatment, as doctors and patients often try to gain participation in promising studies. However, while clinical trial evidence creates therapeutic value in the form of expanded treatment options and increased treatment standards, medical necessity is cost-blind; and new treatment options do not necessarily offer therapeutic effectiveness in the form of better patient health (Kaufman, 2015). Evidence-based standards of therapeutic value are even further disconnected from therapeutic cost efficiency – in fact it is quite the opposite. Marginally better therapies, which almost immediately become standards, often cost far more than other options (Bagley and Frakt, 2015).

While some innovations can reduce costs and promote better outcomes, institutional forces work to de-emphasize their diffusion. Cost-effective care diffuses at a far slower rate than care with relative, often extremely marginal benefits. Although cost-effective care remains necessary to avoid financial crises in federal and state governments, the perceptions and behaviors of a number of system actors obstruct the diffusion of cost-effective care. Many physicians and health care organizations are able to provide high quality care at costs significantly below average; and according to Fuchs (2011), if all providers followed suit, health care spending would save \$640 billion annually and drop from 17 percent to 13 percent of GDP – still higher than in other high-income countries but less extremely disproportionate. More cost-effective care would imply the greatest costs for manufacturers of drugs, medical devices, and equipment, all of which benefit from the status quo. These firms derive monopoly profits from unique products and thus seek to create the perception that their products are unique by financing clinical trials, marketing to physicians and consumers, and lobbying the federal government to weaken regulatory incentives for cost-effective standards and value-based reimbursement negotiations.

## 2.4 Categories at the overlap of health care and economic development

Given their size and diversity, relatively little research in economic development and related fields has directly engaged health and biomedicine as objects of concern (Bartik and Erickcek, 2007; Nelson and Wolf-Powers, 2010; DeVol and Koepp, 2003), a fact that has only slowly changed as these portions of the economy have increased. Two examples are Eds and Meds and the life or biosciences. Both allow for flexibility in their application to local economic activity. In so far as operational aggregations like Eds and Meds or biosciences are applied in a fuzzy, flexible, and *ad hoc* manner for the purpose of quantifying local concentrations of economic activity, the resulting categories are “chaotic conceptions” – more or less arbitrary groupings of causally unrelated and differentiated phenomena on the basis of descriptive characteristics (Sayer, 2010). This vagueness allows political actors to deploy categories like life sciences and Eds and Meds in a manner that uncritically echoes the assumption that more and more technologically advanced health care is better, an implicitly normative and economically consequential judgment that actually depends on how health care is structured as an institutional, political-economic, and ethical field (Sayer, 1997; Kaufman, 2015). In many cases, this vagueness slips into an “ontologically local” mechanism of causality, where geographically external or institutional dynamics are either largely ignored or reduced to fixed exogenous factors (Jessop et al., 2008).

Categorization shapes the spread of ideas, including those about policies. As Strang and Meyer (1993, 490–491) argue, while other forms of direct linkages and proximity are important, socially constructed “abstract categories and the formation of patterned relationships, such as chains of cause and effect,” greatly accelerate and redirect diffusion. How biomedicine is categorized and understood by economic development analysts, by key stakeholders, and by policy-makers shapes the interaction between institutional contexts and the frameworks that guide action. The following two contextual characteristics are common to the policy environment of most cities. First, most cities pursue strategies with the intention of promoting economic growth and diversity. Second, regional health care organization and systems have grown while adapting to changes in the regulatory environment.

Such forms of isomorphism, as defined by DiMaggio and Powell (1983), do not favor simple convergence but rather conformity between a group of organizations and the field in which they are located (Peck, 2011). Whether the technologically driven models that define value

for biomedical science or the simple concepts used to quantify the biomedical economy (like the “Meds” of Eds and Meds), theorization lends legitimacy and applicability to diffusing ideas by framing the “adopters” as isomorphically similar to the cause-effect context of the model (Strang and Meyer, 1993). In other words, the context of causality and the terms for transferability are socially constructed and influenced by institutionally embedded forms of knowledge. The next two sections examines two such discourses, Eds and Meds and the life sciences, as they relate to public policy.

## **Eds and Meds and Academic Medical Centers**

Where it recognizes the health care economy at all, local economic development scholarship tends to accept this “ordinary” version of biomedicine. Ultimately, limitations exist in the causal weight of any engagement with health care that does not account for its institutional and ethical complexity and its pervasive state of market failure. While these problems have a long tradition in economics, anthropology, and sociology and in the health policy and management literature, they are notably absent from perspectives on health care’s economic impacts on the local level.

For instance, economic development practitioners and academics have relatively recently categorized the more traditional elements of the health and life sciences industries, such as hospitals, under the broad umbrella of “Eds and Meds” (Harkavy and Zuckerman, 1999). Eds and Meds may or may not include biotechnology or other health-related industries, but the term implies that the health and education sectors should be lumped together as “anchor institutions” for land development, human capital, research-driven innovation, and sustainable employment, especially for dis-invested neighborhoods and de-industrialized central cities.

While contributing useful and policy-relevant insights, the “discovery” tenor of the Eds and Meds concept reveals the limited terms of engagement. The implicit objective is to examine a novel alternative to the routine tendencies of urban and regional development policy by investing more strategically in entities that are multi-faceted in their impacts, relatively place-bound, and capable of employing very large numbers (Bartik and Erickcek, 2007). However, why these sectors are growing and to what effect remains unexamined. These questions are essentially left out at the level of categorization, with underlying causality limited to demographic or industry-specific sources of demand.<sup>17</sup>

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<sup>17</sup> For instance, Bartik and Erickcek (2007, 2) explain the new relevance of Eds and Meds on the basis that, “some services have been moved up from being considered unimportant, secondary, ‘non-export base’ activities, which are dependent on other activities to bring new monies into the area, to ‘export-base industry’ status as potential generators of new monies for the area. Education and medical institutions, by

In more general terms, the deployment of “Eds and Meds” as an operational category for analysis suggests that institutions of higher education and the rather fuzzier group of hospitals and other health activities hang together as a category. This certainly applies, albeit simplistically, to the academic medical center, an organizational hybrid that has varying types of university and health system affiliations, trains the skilled biomedical workforce, and conducts research, although the majority of its revenues is derived from patient care.

The Eds and Meds concept may be interpreted as the most important subset of the closely related concept of the anchor institution. During the 1990s and 2000s, the term anchor institution came into prominence, signaling the greater willingness of urban universities to contribute to the broader development interests of the communities in which they reside. While cities in an increasingly resource-poor environment turned to “fixed assets” like Eds and Meds, the institutions themselves embraced engagement, community and economic development, and demonstrating impact as a matter of not only civic responsibility but also self interest. While early formulations emerged from the tradition of university engagement (Perry and Wiewel, 2005a), the anchor institution label sought to broaden the term to encompass any institution with a significant infrastructure investment that is unlikely to move (Fulbright-Anderson et al., 2001; Taylor and Luter, 2013).

Much like Eds and Meds, the anchor institution also remains an imprecise concept. In general, the term applies to large, spatially immobile organizations that have a significant footprint in the local economy; the term also usually (but not always) implies a non-profit organization with at least a potential for mobilizing resources in a manner that prioritizes community-oriented social responsibility (Taylor and Luter, 2013, 8). Anchor institutions have multi-faceted impacts through investment in real estate, attracting funding from outside the region, training the workforce, generating new businesses, and procurement (Porter, 2010a;

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attracting students and patients from outside the region, or encouraging students and patients to stay in the region, can thereby attract new monies to an area.”

They go on to critique other studies’ tendency to equate additional capacity with additional local demand and failure to account for substitution effects when defining export-base activity: “We would not want to count, as additional local demand, any patients or health care dollars that would have otherwise taken place at some already existing facility in the community. In the case of meds, this may be more difficult to see due to *natural growth* of the industry. *With growing income and aging, the demand for medical services will continue to grow* In such a growth environment, the displacement impact may be difficult to see as the expansion at one hospital will not impact the current demand for services at the other existing hospitals but instead will curtail their growth plans [Emphasis added].”

In issuing a corrective dose of regional economic counter-factuality into the Eds and Meds causal chain, even Bartik and Erickcek’s exceptionally theoretically grounded account echoes the common assumption that growth is generally caused by “natural” demand-side factors, like aging, and not by organizational change on the supply side.

Bartik and Erickcek, 2008; Harkavy and Zuckerman, 1999). Across all definitions, spatial immobility provides the *sine qua non* of the anchor institution.

The concept of anchor institutions as “fixed assets” within otherwise restructuring urban economies contrasts with nearly any commentary on the state of the academic medical center,<sup>18</sup> where the reader is more likely to encounter terms like “turbulence,” “upheaval,” and “restructuring”. As a type of organization, academic medical centers are relatively young, only beginning to solidify as the dominant model for academic medicine in the 1910s. Community engagement was always the mission, as academic medical centers frequently treated patients without the ability or expectation of payment in exchange for training opportunities. As Ginzberg (2008, 14) notes of the identity shift of the 1960s, “With the implementation of Medicare and Medicaid, the leading [academic health centers] could set their sights almost exclusively on pushing back the frontiers of high-tech medicine.” The predominance of “supply-side thinking” driven by the need to generate patients to fit the workforce, technology, and services of the hospital – as opposed to demand-side thinking focused on community needs – divorced academic medical centers from their original role in the overall health of the public (Evans, 1992). While the roughly 135 academic medical centers serve a crucial role in the health care system that uniquely combines patient care, education, and research, these organizations have also contributed to the problems that threaten the viability of the health care system – charging high prices, poorly integrating care, lagging in attempts to measure and report on quality, and duplicating expensive infrastructure (Washington et al., 2013). Regulatory incentives to shift from managing disease to promoting health and value-conscious purchasing by employers and health plans forces academic medical centers to compete among themselves and other health care providers, while engaging in organizational realignments to promote integrated care (“follow the patient”), primary care, analytics and health information technology, and competing on value.

Arguably, the growth in “Meds” has contributed significantly to the stability of “Eds”. The growth of health care creates demand for new academic programs. More importantly, health care research funding far outweighs other sources of funding. In 1983, the NIH budget, which has been the largest portion of the total federal research budget since the early 1970s, was less than one quarter of total research expenditures. By the late 2000s, this portion had grown to

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18 The terms academic medical center and academic health center are interchangeable. Recently, the use of “health” has increasingly come into vogue to reflect broader institutional commitments to population health rather than treating individual illnesses and to outcomes-oriented metrics rather than providing more services.



half.<sup>19</sup> The NIH budget roughly doubled in a five year span in the late 1990s and 2000s, precisely when the Eds and Meds and anchor institution concepts gained steam. Though the research and education activities of academic medical centers remain heavily supported by patient care, by far the largest source of revenue, the slight downturn of NIH funding in the 2010s due to austerity and sequestration has driven AHCs to seek research funding through partnerships with private businesses, such as pharmaceutical and medical technology companies.

Academic medical centers have been perceived as slow to adopt cost-effective innovation due to potential conflict with the research and education mission, which has historically been cross-subsidized by higher reimbursement rates (Fuchs, 2011). Medical education insufficiently exposes physicians-in-training to cost-consciousness and cost-effective priorities in decision making. This is exacerbated by the leniency with which graduate medical accreditation audits the portion of the curriculum related to the relationship between clinical decision-making and the overall health system and reflexive practice-based improvement (Fuchs, 2011, 1986). In both education and services, academic medical centers have favored specialization over primary care. Given the threat of marginalization by more value-conscious payment arrangements and consolidation of regional health systems, the marching orders for these institutions have been to provide more integrative, lower-cost care while exploiting new revenue streams by developing destination specialty centers of research and deeper partnerships with private industry. As a whole, academic medical centers represent a key site of the contradictions between reducing cost while pushing the frontiers of scientific medicine.

## **Life sciences and biotechnology**

In contrast with the more traditional activities of Meds, many economic development studies tend to lump the most desirable, high-tech activities in the biomedical economy into potentially misleading categories like “bioscience” employment, which is itself overwhelmingly dominated by biomedical applications, with agricultural or environmental applications constituting only a small minority, despite their equal conceptual weight within the category (Batelle/BIO 2012)<sup>20</sup>.

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19 See American Association for the Advancement of Science, Trends in Total Research by Agency (basic + applied), FY 1976-2017, <https://www.aaas.org/page/historical-trends-federal-rd>

20 The Batelle report, commissioned by the Biotechnology Industry Organization, breaks down the bioscience industry into the following categories: “research, testing, and medical labs”; “bioscience-related distribution”; “medical devices and equipment”; “drugs and pharmaceuticals”; and “agricultural feedstock and chemicals”. The agricultural category accounts for 5 percent of total employment in the sector. Distribution is excluded from the analysis. The remaining categories are likely driven almost entirely by biomedical applications, except research, testing, and medical labs, which is likely still driven almost entirely by biomedical research. Thus assuming that biomedicine applications account for a majority, and likely an overwhelming one, of biosciences employment is reasonable.

Since the 1990s, scholars of regional innovation have frequently adopted life sciences fields like biotechnology and bio-pharmaceuticals as empirical case studies of cluster development, the geography of tacit and codified knowledge spillovers, and the networked organizational structure of innovative milieus. According to Storper (2011), despite significant progress, the accumulation of studies across the sub-fields of New Economic Geography, urban economics, regional science, and economic sociology have fallen far short of an adequate causal account of the dynamics of agglomeration. This also applies to explaining the high degree of regional concentration in biotechnology. To an extent, the shortcoming reflects both general challenges associated with local case study research and its specific application to the empirical context of biotechnology. For example, case selection is routinely biased toward successful cases and the reconstruction of plausible theoretical narratives *ex post* (Cooke et al., 2007; Powell et al., 2012).

While researchers have often focused on the empirical network properties of biotech clusters, this body of research is often framed, either implicitly or explicitly, as a route to a policy question of wider relevance to economic development. In *The New Geography of Jobs*, Moretti (2012, 178) introduces a wide-ranging chapter entitled “Poverty Traps and Sexy Cities” by establishing a basis for deriving lessons from the unlikely biotech success of San Diego and, to a lesser extent, Boston:

People can move from failing cities to more prosperous ones, but as we have seen, this is not a panacea. The question therefore is how to help communities that are stuck with the wrong mix of jobs and skills. Can we help cities like Flint, Mobile, and Visalia create a self-sustaining local ecosystem that creates good jobs in the community? This is a challenging question to answer, but one way is to look at how existing innovation clusters were created and see whether that process can be reproduced elsewhere. The history of the biotech industry is particularly enlightening (Moretti, 2012, 178).

Local economic development research on life sciences and biotechnology often downplays its connection to the pharmaceutical and medical device industries. The stereotype of a biotechnology firm suggests a lean, entrepreneurial knowledge-based firm working at the cutting edge of advanced biological science, such as genomics, and wading through complex and risky waters to find the high reward of successfully commercializing technology. In many ways, this is an accurate but incomplete representation of industries like biotechnology, which has grown mostly by operating as the research and development arm of pharmaceutical companies.

Modern biotechnology emerged slowly with the advent of genetic science from the 1950s to the 1970s. The first dedicated biotechnology companies, Cetus and Genentech, sprung up in Bay Area the 1970s. While early biotech companies also formed around cities on both coasts, early clusters formed in the Bay Area (anchored by Genentech) and Boston (anchored

by competitor Biogen). Also contributing to the emergence of biotechnology in the 1980s, the Supreme Court ruled that genetically modified cells that do not exist in nature can be patented; and the Bayh-Dole Act allowed scientists and universities to file for patents and grant licenses on discoveries from federally funded research such as NIH grants, simplifying agreements between universities and commercial firms and opening new revenue sources for universities following the budgetary malaise of the late 1970s. Meanwhile, NIH research funding expanded. These developments set the stage for two profound transformations of relevance to economic development policy focused on biotechnology and related industries: high levels of geographical clustering in few regions (Cortright and Mayer, 2002) and the re-organization of pharmaceutical research.

Though not alone in their consideration of negative cases at multiple time periods (e.g., Gertler and Vinodrai, 2009), the study of Powell et al. (2012) stands out for its systematic approach to comparing negative cases alongside well-established success stories and, simultaneously, for illustrating the limited scope of explanation in regional cluster literature. The latter include the Bay Area (anchored by Genentech), Boston (anchored by Biogen), and San Diego (anchored by Hybritech). Negative (“Emergent”) cases, in this instance, consist of nine regions where dense, local network ties failed to coalesce, despite the presence of one or more of the established key ingredients of cluster formation, such as an anchoring firm, strong research universities, and proximity to established industries (e.g., pharmaceutical companies on the east coast). It is noteworthy that, in all cases, the effect of local policy had been “remarkably light” and only after the foundational elements – and first-mover advantages – were in place (Cooke, 2013).

According to Powell et al. (2012), three developments distinguish the leading regions from their counterparts. First, a diversity of organizational forms enables cluster resilience to downturns, which in the case of biotechnology may stem from regulatory changes and the flagging patience and availability of venture capital. The organizational friction of diversity also allows for the construction of new rules and standards within a given region. Second, anchor tenants provide stability and scaffolding to assist in the formation of an organizational field. The self-interest of anchor tenants – whether major firms, government institutes, or financial organizations – generates “productive friction” that yields collective benefit for the cluster. Dominant organizations can have negative effects if their rules dictate collective problem-solving within the cluster, acting as “800-lb gorillas” that lock-in dependencies and close-off avenues for dy-

namic evolution.<sup>21</sup> Finally, cross-network “transposition” occurs when the activities of one domain invade another. Where 800-lb gorillas are absent and transposition occurs, successful clusters emerge, for example:

In the Bay Area, collegial lab culture leapt from academic institutions into private-sector biotechnology labs with the workforce.

In Boston, deep knowledge of basic science permeated into the management of commercial enterprises.

In San Diego, the ashes of Hybitech’s demise birthed a new round of startups with a redoubled commitment to collaboration.

From an exemplary application of variation-finding comparison within the biotech cluster literature (Tilly, 1984), Powell et al. (2012) illustrate the path-dependence and organizational complexity of cluster formation. However, for these authors, “institution” is equated with the limits of the region. Explanation is thus limited by the methodologically local scope of analysis. A similar observation applies to studies examining the different degrees to which tacit and codified forms of knowledge are confined to the regional milieu, that is, the cluster as a space of “local buzz” and “global pipelines” (Bathelt et al., 2004; Wolfe and Gertler, 2004).

The focus on local variation, while important for regional theory, can also circumscribe the scope of explanation. It does not address how the process of cluster formation causally depends on biomedicine – and to a large extent, its expression in the crisis-ridden US health care system – to make the market for biotechnology products through the complex, instituted processes of health care delivery, payment, and regulation. In other words, the focus on internal relations gives way to the “mistaken impression that a region’s economic dynamism is endogenously driven” (Markusen, 2003). While regional scholarship from several disciplines has focused on the variation of endogenous cluster dynamics, it has not positioned such local agglomerations within a variegated production system that de-emphasizes cost-effectiveness and outcomes in prioritizing biomedical interventions.<sup>22</sup>

Powell et al. (2012) track the transitional emergence of clusters at three time periods, 1990, 1996, and 2002, roughly coinciding with the maturation of the biotechnology industry under favorable conditions in the US. NIH funding was approaching its peak, pharmaceutical companies were aggressively expanding markets for high-technology interventions (including through

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21 Drucker (2011) also finds a negative effect of regional dominance for a more established industry sector, manufacturing.

22 These methodological issues also parallel the long-standing question of the scope of local economic development policy when many factors lie outside the control of local practitioners and policy-makers (Rubin, 1988; Reese and Ye, 2011).

advertising and lobbying), and the cost of drugs was inflating rapidly. The very process of regional network emergence observed by Powell et al., and the implied opening for local policy interventions, occurred during a window of an extremely supportive regulatory context for bio-pharmaceutical commercialization – a window that has since slowly begun to close.

Thus, ten years later, Cooke (2013) questioned whether biotechnology and its regional industry clusters of nimble, innovative enterprises was in crisis. Biotechnology's emergence was initially disruptive for the much larger corporations that make up the pharmaceutical industry. Beginning in the 1980s, pharmaceutical companies began to effectively outsource their research activities to the growing field of smaller, more entrepreneurial biotechnology firms, flexibly specialized organizations better designed to leverage the new genetic science to develop commercializable drugs. Pharmaceutical companies could then bring new therapies to market through licensing agreements or acquisitions of promising biotech companies while focusing on core competencies, like marketing and managing production and distribution networks.

Developing new therapies is an extraordinarily risky endeavor. From the seed of an idea to initial development, clinical trials, FDA approval, and marketing – “from bench to bed” – bringing a single molecular entity to market takes at least 10 years.<sup>23</sup> By shifting research activities to biotechnology companies, pharmaceutical manufacturers also could leverage expanding NIH funding for basic research and venture capital willing to fund high-risk, high-reward research and development through the long sequence of regulatory applications and clinical trials. By the mid-2000s, while small- and medium-sized dedicated biotechnology firms were outperforming “big pharma” in developing new chemical entities at lower costs, the control of traditional pharmaceutical companies over funding, marketing, and distribution prevented serious challenges to their hegemony over drug markets (Cooke, 2003; Cooke et al., 2007).

However, the “low-hanging” fruits of drug discovery through biotechnology have largely been reaped. As drug pipelines have dried up, austerity and sequestration at the federal level have leveled off NIH funding for basic research. With patents generally expiring after a period of twenty years, new drugs only enjoy monopoly rights for as little as seven years after the lengthy approval process. The biotechnology industry has entered the beginning of a “patent cliff,” as several blockbuster drugs will become eligible for generic production by 2020.<sup>24</sup> As

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23 Mary Jo Lamberti and Kennetz, Profiles of New Approaches to Improving the Efficiency and Performance of Pharmaceutical Drug Development, May 2015, Tufts Center for the Study of Drug Development, p.1.

24 Margaret Patrick, A Must Read Overview of the Biotechnology Industry, marketrealist.com, <http://marketrealist.com/2015/07/patents-biotechnology-sector/>

a result, existing biotech companies have been reorganizing through a process of mergers and acquisitions to gain access to promising technologies and to expand their competencies, e.g., into the growing field of medical and research services. As organizational emergence has given way to maturity, less distinction exists between nimble biotech firms and static pharmaceutical companies than during the 1990s. At the same time, health policy reformers have begun to push for regulatory changes based on the principle of “Correcting Signals for Innovation in Health Care” (Bagley and Frakt, 2015). Currently, medical technology developers do not necessarily pursue high-value innovations because legal rules and institutional forces dictate that nearly every innovation is covered by insurance. According to Ernst and Young, although the market capitalization for biotech companies eclipsed \$1 trillion in 2014, revenues decelerated markedly as payers have increasingly challenged pricing practices and biopharma adapts to new payment models.<sup>25</sup>

These developments raise questions regarding the impact of not just single-region cases but the ubiquity of life sciences and biotechnology in the sectoral strategies of state and local economic development organizations that arose during the 1990s and 2000s (Wallsten, 2004). A range of science parks and incubators with a life sciences focus are now features of the economic development landscape in the US. Yet studies have repeatedly shown that such interventions, on average, make little difference in promoting regional economic growth (for a review, see Rinaldi, 2006). In the way that Powell et al. (2012) illustrate a generally recognized principle, vibrant clusters involve the creation of sustainable and far more complex adaptive systems, and the leading biotech regions continue to derive the majority of growth and first-mover advantages.

The business plan for the majority of startup biotechnology firms involves developing a sufficiently promising therapy to attract venture funding or acquisition and licensing interest from a pharmaceutical company or a larger biotechnology firm. In this scenario, the moment of success is also when a company is most likely to abandon its location on the periphery of the economic geography of biotechnology and move to wherever suits the needs of the investor or corporate purchaser. Consequently, peripheral localities often miss out on the success of the small businesses that they nurture. The policy response, of course, is to attract venture capital, to build a critical mass of companies, and to subsidize space to attract external companies and retain homegrown start-ups. However, if health reform succeeds in the politically tenuous task of correcting signals for innovation, e.g., by tying reimbursement to cost-effectiveness, the

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25 Ernst and Young, *Beyond Borders: Biotechnology Report 2016*.

landscape of opportunity for biomedical innovation may contract in uneven ways that might disrupt the prevailing model for sectoral strategies.

On the other hand, life sciences innovation can comprise only one component of a broader diversification strategy, one that can benefit localities without necessarily making them into the next San Diego. For example, the Biotechnology Center in Research Triangle has integrated economic development with workforce development in its regional competitiveness strategy, creating the possibility for pursuing equity goals by providing accessible employment in biopharmaceutical and medical device manufacturing alongside high-skilled life sciences research employment (Lowe, 2007; Wolf-Powers and Lowe, 2015). Given the diversity of possible impacts of both life sciences and anchor institutions, it is reasonable to focus on examining the institutional conditions that shape the adoption of economic policy.

## **2.5 Biomedical institutional change and the parameters of economic development policy**

Despite the remarkable institutional strength gained in a relatively short time during the era of professionalization (Starr, 1982), a set of cost-cutting measures beginning in the 1980s has eroded the physician professional dominance “conception of control” in the field of biomedicine (Fligstein, 2002; Hammer, 2007). As reported in Table 2.2, Scott et al. (2000) and Scott’s (2004) analysis of the changing institutional context of medicine underscores the “destruction” of the organizational field of health care.

Taking its place are more market-based forms of governance (Conrad, 2005), as well as a range of more technological and scientific drivers that both passively reflect and actively transform the broader relations of capitalist political-economy (Rose, 2007; Rajan, 2006; Cooper, 2007). Before roughly the 1980s, health care was organized and paid for according to the wishes of its dominant profession. Since then, health care policy has sought to minimize cost escalation, to reduce duplication and variation in quality of services, and to promote access to integrated systems of care. This process, though far from complete, has created intense pressure to adapt among traditional organizations, like hospitals and academic medical centers. It has also created new opportunities, as seen in the rise of managed care during the 1990s and the rapid development of new markets for specialized supportive services like health information technology in the 2000s.

Changes within the organizational fields of health care have not affected organizations in an equitable manner (Scott 2004). Traditional clinical and professional influence remains

Table 2.2: Field dimensions and institutional change

	<b>1945–65</b> <b>Professional</b> <b>dominance</b>	<b>1966–82</b> <b>Federal</b> <b>involvement</b>	<b>1983–</b> <b>Market</b> <b>orientation</b>
Key episodes	Professional bodies, state support	Medicare/ Medicaid, regulation	Deregulation, market reliance, corporate governance
Central value of prevailing logic	quality	equity	efficiency
Structural coherence of logic, field boundary, and governance	high	intermediate	low
Organizational linkages	intermediate	intermediate	high

*Source:* Adapted from Scott et al. (2000: 362).

important; but markets, managerial approaches, and technological legitimacies like managed care, pharmaceuticals, and biotechnology now hold sway over the institutional development of biomedicine. In this environment, hospitals and AMCs face a dramatically different set of opportunities and constraints, such that these traditional organizations may emerge as place-based assets in the knowledge economy even as their continuing societal and financial viability is questioned. As clarity in organizational and field boundaries has eroded, the greater, more engaged role of AMCs in urban economies emerges not only from the putative role of anchor institutions in a restructured knowledge- and services-based economy but also from strategic adaptations to an organizational field in transition.

These historically variable organizational arrangements, when filtered through the lens of local and regional economic analysis, appear only as pre-given categories – empirical operationalizations like NAICS codes or theoretical abstractions like basic industries – that selectively dis-embed certain activities from their institutional context. Such partial definitions and “rationalized myths” (e.g., about the gaps and benefits of innovation or the demographic causes of growth in health care) only obtain a relative stability through the work of “skilled actors,” who



in this case translate between the causal frameworks of health and biomedicine and those of local economic development and planning (Fligstein, 2001; Strang and Meyer, 1993; Scott, 2013, 109)

This shifts attention to networks of actors who negotiate the boundaries of categories to describe the biomedical economy across the local settings where these categories are put into practice. Rather than a rational choice-oriented mechanism of policy “transfer” (e.g., Dolowitz and Marsh, 1996), recent research has fostered a critical perspective around policy “mobilities,” stressing the relational constitution of policy across territorial boundaries, the ascendance of key sites to model status, the agency of networked organizations actively making and spreading policy models, the mutation of policies in transit, and the persistent role of local context even in shaping apparently borderless policy movement (Peck and Theodore, 2010; McCann and Ward, 2011). The key insight of this literature is the constitutive role of space and place in policy transfer, not merely as receptacles for diffusing policies but as dynamically constructed, strategically activated arenas for broader institutional and political-economic restructuring processes (Peck, 2011). Policies do not simply travel across territorial boundaries but are in fact moved and “mutated” by the embodied networks along which ideas travel and by the unique contexts where they “touch down” in locally conditioned adaptations and experiments (Peck and Theodore, 2015).

Not just a “policy model” in the abstract, biomedical districts are real *places* that serve roles and embody changes in the broader organization of health care. Their built form reflects localization due to changing efficiencies of agglomeration. However, these place-based efficiencies exist in relation to broader networks of economic, political, and institutional relations (Amin and Thrift, 2002). In this sense, biomedical districts reflect a dense set of connections, simultaneously expressed internally via their multifaceted place-functions and externally in relation to broader trajectories of institutional change. A strategy for investigating this claim is proposed in the next chapter.

## Chapter 3

# Methodology

This chapter details a strategy for investigating the urban biomedical district as a phenomenon of geography and policy. The objective is to answer a simple research question: why do such districts exist? Doing so implies a fundamental tension. On one hand, explaining local policies depends, to an extent, on engaging at some depth with local context. On the other hand, the generalization of the urban biomedical district demands extending the analysis beyond the boundaries of specific localities. In other words, answering the question from evidence gleaned from one or two cases might bias the explanation toward shared local causes. The methodological approach adopted here seeks to explore how causality also depends on the transformation of the US health care system, which may be unevenly expressed across individual localities. In addition, single cases are not closed systems. Actors draw from existing cases, making their own comparisons and theoretical applications to construct logic and meaning for their actions. Sometimes, this model-making and emulation process draws widely, e.g., from the Eds and Meds experience in other cities, from urban science parks and innovation districts, or from a range of ideas about the dynamics of localized innovation. In some instances, other biomedical districts provide lessons.

Operationally, addressing this tension while mitigating its potential for bias provides the central methodological challenge. The case study approach detailed below attempts to balance the local specificity of individual cases with the extension outward to causal influences at distant sites and at other geographical scales. The individual biomedical districts are thus framed simultaneously as the result of local action within a regionally bounded field of constraints and opportunities and as a manifestation of broader – but uneven – institutional and political-economic shifts in the development of cities and the US health care system.

The chapter begins by specifying an operational definition for the urban biomedical district as a clearly identifiable object of study with some variation from case to case. Then, the research design is presented, first, by framing case studies and comparative analysis as methodological strategies and, second, with a discussion of how the case is constructed through key analytical categories and data collection procedures. The chapter closes with the issues of validity and generalizability with respect to the study's strengths and weaknesses.

### 3.1 Defining and situating the object of study

Since the object of study should be limited in space and time, defining an urban biomedical district is a necessary preliminary step. Agglomerative phenomena may be defined as loose geographic clusters of similar or interrelated activities, as built forms, or as territorial units with a clear cartographic-areal geometry. Moreover, each of these possible definitions may be applied to a range of scales. For the present research, the biomedical district is a "district" in the same sense as a central business district, a theater district, or a garment district. Each of these signifies a continuous area of related land uses, which may also have administrative characteristics like a public services "district" (e.g., a school district or a sewerage district) or traded and un-traded clustering dynamics like a Marshallian industrial "district" (also, e.g., a Porterian cluster, innovative milieu, or industrial complex).

The introduction offered examples to describe the urban biomedical district as a distinctive type of land use agglomeration, development policy, and organizational form. Urban biomedical districts are distinguished as concentrations of buildings and organizations related to biomedical health care, which perform some mix of care, research, and teaching activities. Increasingly, these traditional activities are paired with supports for innovation and technology commercialization. Still, considerable leeway for variety exists. This section elaborates on the original definition by clarifying three ways of defining urban biomedical districts: 1) as place-based agglomerations, 2) as development areas, and 3) as organizations.

#### Three non-exclusive definitions

**Urban biomedical districts as *place-based agglomerations*** Urban biomedical districts are demonstrably associated with land uses related to the health care system. In practice, these places are anchored by contiguous or nearly contiguous concentrations of hospitals, academic medical centers, and related land uses sufficient to create a place-identity that may be distinguished from that of other types of urban places (e.g., the place-identity of a biomedical district

is mutually exclusive with that of a central business district, a residential neighborhood, or a manufacturing corridor, although areal overlap is possible). Over time, these districts accumulate layers of investment of various types of capital, both material and intangible. These investments, in turn, produce positive (and possibly, negative) efficiencies of agglomeration, which facilitates the concentration of similar and related land uses, such as additional major institutions, other public service organizations, research institutes, technology companies, and other public and private entities. Thus, urban biomedical districts may be viewed as:

Territorialized webs of transactions within and among organizations involved in the “production” of health that are rendered durable through the urban process of land use sorting (Scott, 1988);

Concentrations of shared “use values” of land stemming from the improvement of, access to, and sustainability of certain organizational components of the health care system (Logan and Molotch, 1987);

Horizontally and areally differentiated sites of direct interactions among individuals and social forces closely tied to everyday life and collective memory that also structure connectivity to other places, spaces, and scales of practice. (Jessop, 2016, 136);

Dense, proximate bundles of near and far connections, never fixed but always in a process of “becoming,” and relationally structuring the position of actors within uneven power-geometries and scales of practice (Massey, 1993, 1994).

As places, urban biomedical districts have no hard boundaries but are only differentiated in a porous and gradual manner. Like any urban neighborhood or district, there is no exact point in space where an individual enters or leaves the district. Moreover a biomedical district as a place is different from a campus: a single hospital or academic medical center’s property is not sufficient to make a biomedical district but for its spatial influence on surrounding land uses.

In many cases, previous rounds of investment have left urban biomedical districts with a walled-off, unwelcoming, “institutional” character. They are often unpleasant in the same way that a hospital is unpleasant. These districts often serve as important places where individuals access both important public services, like safety-net hospitals and clinics, and the most specialized, high-technology medical procedures. The proximity of health care institutions brings extremely high-skilled workers – including the most-highly paid of all professions, specialist physicians and surgeons – into close proximity with the most marginalized segments of society, like individuals suffering from acute mental illness.

Since urban biomedical districts encompass important, specialized health care organizations like teaching hospitals, academic medical centers, and prestigious centers for specialized referral, they provide important spaces for various kinds of encounters: between individuals and

“ordinary” biomedicine (Kaufman, 2015), between research and treatment, and between health care institutions and biomedical technology industries.

**Urban biomedical districts as *development areas*** Urban biomedical districts are often officially designated for the purposes of promoting and managing development, although this may occur in a variety of ways.<sup>1</sup> A biomedical district (or a cognate) may be designated as such through property ownership, zoning policies of local governments, deed restrictions on private development, or in physical plans or neighborhood maps that may or may not contain the force of law. From this perspective, urban biomedical districts have discrete boundaries – a given point in space is either inside or outside of a district. As development areas, biomedical districts may include not just biomedical land uses but also other places and land uses, such as surrounding residential neighborhoods, portions of an adjacent CBD, or undeveloped land. In practice, development areas are often defined in conjunction with active mechanisms to facilitate development, such as a business improvement districts or tenant assessments; a non-profit development organization; or the presence of eminent domain or bonding authority. These boundaries are thus subject to political negotiation and conflict among development actors, key member organizations, and competing land uses.

**Urban biomedical districts as *organizational capacities*** Organizations may exist with the explicit responsibility for development within a biomedical district. These may be public sector agencies, private non-profits, major member organizations, or some other planning or economic development organization with a stake in promoting district development. Urban biomedical district organizations are *not* health care organizations like hospitals and academic medical centers, although it is likely that their interests overlap. For example, the urban biomedical district organization might seek to leverage spill-over effects from a hospital, or a hospital might use a district organization to subsidize activities like land acquisition, planning and coordination, research commercialization, or lobbying.

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1 To be clear, public-sector hospital districts, for instance those operated by a county (or a group of counties in rural areas) for the purpose of administering a hospital or health system, are not “urban biomedical districts,” though their hospitals may be located within one. For instance, Ben Taub Hospital is a member of Harris County Health System (formerly Harris County Hospital District) that is located within Texas Medical Center, an urban biomedical district.

## Combining the three definitions

As a distinctive type of place, some form of an identifiable biomedical district is present in many cities. Informally, the place-names may vary widely. Both Seattle and Oakland have a “Pill Hill”. Historically, Manhattan’s “Bedpan Alley” stretched from 23rd to 30th Street along 1st Street.<sup>2</sup> Colloquially, the term seems to have migrated north to 60th Street, particularly as Upper East Side residents complain about the perpetual expansion of their neighborhood’s concentration of nationally recognized medical institutions.<sup>3</sup> Many other cities – large and small, urban and suburban – have “miles,” “corridors,” and “centers” that are described as “health,” “life sciences,” or “(bio)medical”. Increasingly, the term medical is swapped for “health,” “life sciences,” or “bio”-something. In short, the urban biomedical district is not difficult to find.

Empirically, this dissertation focuses on a more narrow but still quite common subset of biomedical districts that meet all three definitional criteria. In other words, the main objects of research are urban biomedical districts that have been developed by multiple institutions to their point where they are identifiable as distinctive places, designated as development areas, and subjected to the planning and development activities of an organization that falls outside of the walls of a single district institution.

Organizational capacities for biomedical district development range widely in form. Some upstart organizations are the project of a single staff member at a separate economic development organization, working diligently to promote the district locally and externally, to bring institutions to the table, to marshal funding, or sometimes to spin off a separate dedicated organization. Some are created by state legislatures, granted special development powers, and governed by a board of political or institutional appointees. Some are nonprofit organizations that earn annual revenues in the tens of millions through leases, parking, and other facilities investments. In most cases, organizational boards include representation from member hospitals and academic medical centers, although this is not always the case.

The first advantage of this narrow but flexible definition is that it describes an actual place that can be positively identified in objective and relatively concrete terms; while allowing for some variation, one knows a biomedical district when one sees it and can probably identify it on a map. This limited and spatially oriented definition is intended to contrast with prevailing ways of defining and operationalizing phenomena related to the health care economy in economic development literature, such as Eds and Meds and life sciences clusters, terms

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2 Christopher Gray, “A stroll along bedpan alley,” *New York Times*, 4 June 2010.

3 Andrew J. Hawkins, “The Battle of Bedpan Alley,” *Crain’s New York Business*, 27 October 2013.

that may be applied flexibly and that map poorly onto available occupational and industrial classifications. The openness and variability over time and space of exactly what is and is not “Eds and Meds” or “Life Sciences” is actually an interesting empirical question. This question is difficult to address directly when the research selects from the outset a definition based on biased industry sources, limited quantitative data classifications, or local inductive observation in a single time and place. Here, the definition begins from a spatial phenomenon that is clearly identifiable but also displays sufficient variation over time and space to allow for meaningful comparative analysis. Flexibility also allows for operational variation in the assignment of analytical categories, both across sites and over time, while retaining an emphasis on functionally equivalent units where differences in local context might mislead comparisons on the basis of strict formal equivalence. The existence of alternative categories, their variable application by stakeholders, and their relationship to place-based development is thus rendered as *explanadum*, not as *explanans*.

The second advantage is that focusing on cases where a development area and organizational capacity is also observable simplifies and focuses the collection of qualitative data. Development areas and organizations leave paper trails, including studies, master plans, and strategic plans. Organizations also provide a focused target population for recruiting interview participation. The focus on development areas and organizations also more directly reflects the study’s concern with the overlap between health care and economic development as a matter of collective concern, urban policy, and political-economy.

In effect, the emergence and evolution of this model of development serves as the primary “case” of analysis, based on the intentions for transferring findings of the study to more general linkages between the institutional and policy contexts of economic development and biomedicine and to the geography of policy-making processes in contemporary urban political-economy. Individual examples of districts are framed as sub-cases. Before discussing the case study strategy in greater detail, I outline the orienting research questions and propositions.

### **3.2 Research questions and propositions**

The primary research question concerns the *causal factors* behind the designation and implementation of biomedical districts and the contexts that shape the action of key stakeholders in development. As argued above, given the nature of biomedical districts as concentrations of traditional organizational types that are (in some ways) on a relative downswing within the broader organizational field of health care (Scott et al., 2000; Conrad, 2005), public hospitals

and inpatient health care facilities in particular, these places *could* be witnessing a relative or even absolute decline in investment.

Q1. Why have urban biomedical districts emerged as an economic development strategy? At what point in time have these strategies been adopted?

Q1a. How do state, regional, and local actors arrive at the urban biomedical district as a policy alternative? What policy rationales do they use, and what are their motivations? How have the answers changed over time?

Q1b. What local conditions are necessary for biomedical districts to emerge as feasible targets for investment and strategic emphasis? How do these conditions interact with other changes in the local context of urban development? How have the answers changed over time?

Q1c. How do local actors develop frameworks for understanding opportunities in how the biomedical economy operates? Who shapes these ideas?

The second research question concerns the *implications* of transformation of urban biomedical districts as places and of the policy decisions that influence their development.

Q2. What function do urban biomedical districts perform in local and regional economies and in the health care system, and how does this form of agglomeration complement or interact with the function of its tenants?

Q2a. How do urban biomedical districts influence and/or reflect patterns of investment in economic development and the health care system? What kind of impacts and spillovers are associated with this form of development?

Q2b. How do urban biomedical districts influence and/or reflect the changing organizational field of health care and biomedicine? How does agglomeration interact with broader patterns of institutional change?

Q2c. How do urban biomedical district policies counteract threats to organizational sustainability and barriers to development? How do these particular local strategies create strategic opportunities in conjunction with related policies and initiatives at other scales?

These questions are both historical and geographical in nature. They engage with the histories of (bio)medicine and urban development and one particular kind of space at the overlap, the urban biomedical district. The work of planning these districts involves a specific type of organization, the urban biomedical district, which exists within a diverse and dynamic organizational field. This field has an established population of older and often larger, more established organizations like hospitals, academic medical centers, and local governments. It also has a range of new or transformed organizations, including life sciences technology firms. Further afield lie the range of organizations that comprise the health care system of a given region or state.



## Conceptual framework

The conceptual approach reflects the interaction between a set of health care and economic development organizations coping with institutional change that results in the establishment of a specialized “district” – a development area supported by a separate, dedicated organization capacity with the participation of other local economic development actors and key businesses, such as medical institutions and life sciences firms. The framework for explanation occurs at two levels. The first represents development episodes within a given case by differentiating field-level conditions from organization-level conditions in a manner that allows for variation across cases and across time. The second represents the establishment of a general “model” of the biomedical district. Together, they intend to explore the possibility of “mimetic isomorphism,” or the emulation of other organizations in an environment of uncertainty. Such institutional isomorphism facilitates the diffusion of a particular kind of planning strategy subject to interactions with locally specific and variegated contextual factors and mixes of actors (DiMaggio and Powell, 1983).

Organizations and the fields in which they are embedded change over time. Using an analysis of the hospital industry, Scott et al. (2000) and Meyer et al. (1990) offer a general schematic for distinguishing these two levels and their types of change over time into a typology of incremental and discontinuous change at the level of the organization (adaptation and metamorphosis) and the organizational field (evolution and revolution) (Scott et al., 2000, 68–69). Organization-level changes may be either incremental and adaptive or frame-breaking, reorienting metamorphosis, with different implications for organizational life-cycles and their resource dependence. Similarly, field-level changes may be incrementally evolutionary, often tied into the mechanism of institutional isomorphism, or discontinuous, path-breaking revolutions, marked by the emergence, decline, or partitioning of entire organizational fields.

Following Scott et al.’s (2000) argument that the field of health care continues to be in a process of “revolutionary” change, such change can be – and often is – paired with discontinuous changes at the organization level, such as strategic re-orientations and new types of organizations. The framework is also useful for suggesting the potential for “loose coupling” between organizational change and field change. Revolution in a field may prompt some organizations to undergo dramatic metamorphosis and others only to adapt to varying and incremental degrees. My propositions are geared toward the possibility that biomedical districts simultaneously interact with field-level changes in a non-determinative manner and shape the process of adaptive and transformative change for other local organizations.

To establish a structure for comparison, this schematic allows for the proposal of a limited set of outcomes and causal conditions in a manner that still allows for meaningful variability across sites and over time but in a manner that does not foreclose the possibility of complex explanation. The observable outcomes of interest for any given biomedical district are not unitary but encompass a range of changes in the biomedical district as either a general tendency or a locally specific phenomenon:

Growth, decline, and transformation of place-attributes, including the agglomeration process, the built environment, and the makeup of its tenants and land uses;

The proposal, adoption, durability over time, or ending of development area designations or biomedical district organizational entities;

Sweeping strategic re-orientations, incremental adaptations, or relative stasis within biomedical district organizations.

Like these outcomes, their causes are subject to the variability over time and across different sites. The potentiality for shaping change in biomedical districts may be sorted into two sets of causal conditions: organization-level factors and their field-level contexts.

**Organizational factors** include the capacity of the biomedical district, member organizations, economic development organizations and local governments, and competing uses of resources:

*Organizational capacity of the biomedical district:* What specific powers are in place to promote development? Does a funding mechanism exist for operations and activities? Does the organization have land, the ability to acquire it, or the ability to determine land use? Does adequate leadership exist with buy-in from key stakeholders?

*Member organizations, their priorities, and their support for the district:* What is the makeup of key member organizations? What type of connections exist between them? How do they rely on proximity and place-based investment?

*Economic development organizations and state and local governments:* What level of interest and support do other organizations with a stake in the local economy provide to the district? Do governmental actors support their activities? Is there conflict or competition over roles and resources?

*Competing or supportive land uses:* What other land uses exist within or near the biomedical district? Are they conflicting or supportive?

**Field-level, or institutional, contexts** include the health care system and urban political-economic context:

*Health care system:* How do biomedical districts relate to transformations in the organizational field of health care at the region, state, and national levels? How do changes in healthcare regulations and biomedical science and technology affect development opportunities and challenges?

*Urban political-economic context:* How do biomedical districts relate to politics and economic trends (cyclical or secular) affecting job growth and investment in surrounding neighborhoods, the city, the region, or the state?

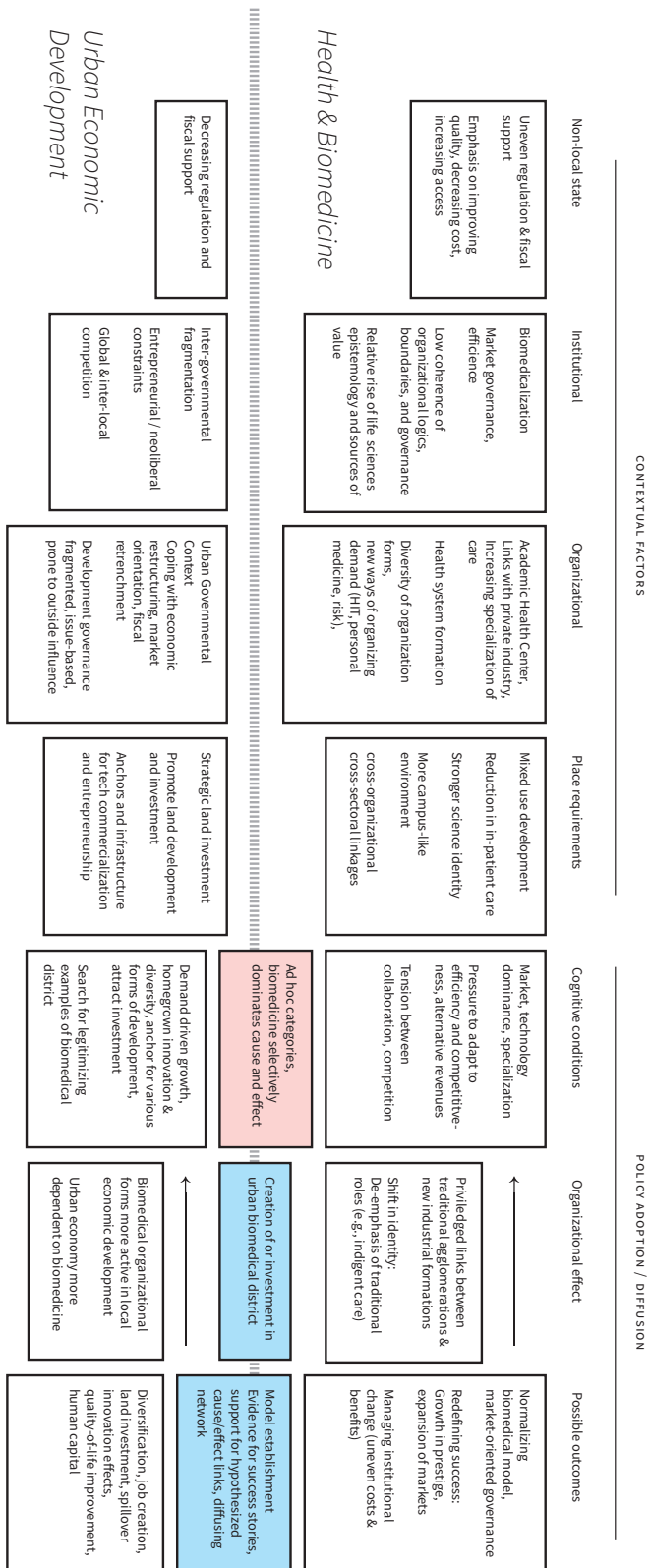
The mechanics of organizational, institutional, and policy change often depend on how reformers and other change agents view the costs and benefits of replacing existing institutions or converting them to fit different objectives (Pierson, 2004, 155–156).<sup>4</sup> With high conversion costs and high replacement costs, organizations will tend toward stability or the creation of new organizations layered on top of others. To an extent, this applies to academic medical centers, leaving them prone to more adaptive organizational change even in the face of discontinuous shifts in the field-level incentive structure. This inertia is attested to by numerous critics of the failure of academic medical centers to adopt an active role in reducing cost and integrating care (e.g., Washington et al., 2013) and by a large gray literature on change management in academic health centers. Though these are essentially field-level health systems planning problems, academic medical centers and other hospitals operate within a competitive market and resist threats to their autonomy, as seen most clearly in the layering of several largely ineffective attempts to foster regional capacity planning since the beginnings of postwar federal involvement in health care. At the most general level, biomedical districts exist to address one highly localized planning problem: leveraging the benefits of proximity while moderating its problems, like competition for land.

Figure 3.1 reflects an attempt to map the factors that drive biomedical district investment patterns in contemporary settings. The diagram segments the two fields established in the previous chapter: biomedicine and local economic development. From left to right, it moves through four levels of contextual factors, from governmental regulatory context, to institutional (or field-level) factors, to key organizations, and their place requirements. The right side depicts the process of adoption and the potential establishment of models that condition subsequent adoptions.

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4 Of course, over time, causal feedback can occur. For example, strategic re-orientation of a biomedical district might change its organizational capacity or result in a sequence of events that attracts new member organizations.

Figure 3.1: Conceptual model for the political-economy of biomedical district adoption during the current period, c. 1980s–present



**Propositions in response to question 1** Why have urban biomedical districts emerged as an economic development strategy?

**proposition 1** The perception of opportunity in the biomedical economy and the ubiquitous availability of local assets with unrealized potential facilitates support for biomedical district adoption among economic development actors, which is a necessary condition for biomedical district adoption or transformation.

**proposition 2** The possibility of alleviating pressure to adapt to change makes member organizations generally supportive of the biomedical district but deeply guarded against conflicts with their autonomy.

**proposition 3** Biomedical districts are relatively easy to establish but difficult to maintain. They depend on buy-in from economic development actors, qualified support from member organizations, and access to resources. In addition, older biomedical districts encounter inertia when faced with pressure to convert to a new landscape of priorities and challenges.

The first urban medical districts emerged from the confluence of the development objectives of supportive growth coalitions capable of effectively marshaling governmental resources and the expansion of modern health institutions in a context of increasing state support but weak capacity to “rationalize the numbers, locations, and types of medical facilities” (Stevens, 1999).<sup>5</sup> As a result, when empowered by cohesive civic support, early medical districts had more effective capacity to facilitate physical investment than to moderate competition or promote meaningful collaboration among their anchor institutions. For newer biomedical districts, the “common sense” nature of biomedical district strategies reflects an assemblage of ideas, many of which are drawn from comparisons with other cities, into locally specific rationales for action. These motivate necessary support from member organizations and external political and economic development actors. Like other organizations, biomedical districts that were effective at earlier periods may have high conversion costs and thus may struggle to adapt to changes in the opportunity structure of health care and urban development. Since the struggle is even more immediate for hospitals and academic medical centers, the need to manage the

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5 While Hill-Burton, 1955, marked the original federal intervention in funding and planning hospitals and was followed by other similarly minded efforts through the 1970s, planning has largely been voluntaristic. Thus, most scholars associate planning mostly with what Scott et al. (2000) describe as the “era of federal involvement” (1966–1982), although it extends on either side of that date.

tension between competition and collaboration may be the most important determinant of adoption and capacity – and ultimately, the survival – of biomedical district organizations.

**Propositions in response to question 2** What function do urban biomedical districts perform in local and regional economies and in the health care system, and how does this form of agglomeration complement or interact with the function of its tenants?

**proposition 4** The content of biomedical district strategies is growing more homogeneous over time. Meanwhile, the range of places and the land uses they contain is becoming more variegated.

**proposition 5** Institutional change has reworked the causes and effects of agglomeration. While re-organization of members has always prompted adoption, the possibilities of inter-organizational research collaboration, clinical integration, and commercial spin-offs and spill-overs have replaced supporting in-patient and safety-net care as primary place-making objectives of biomedical district strategies.

**proposition 6** The existence and possibility of biomedical districts provides legitimacy and buy-in from external actors at contingent moments of organizational change and competitive realignment by its members. Local economic development provides a political capacity and logic to support organizational adaptation to changes in the health care system.

**proposition 7** Contemporary biomedical district development strategies prioritize the speculative use of resources to subsidize pipelines between external biomedical technology industries and the traditional district activities of care, teaching, and research. These pipelines create a context for short-term policy success in absence of the capacity to achieve more difficult, long-term goals, like improving access and quality of care or generating a self-sustaining industry structure for local employment creation.

Priorities of local economic development actors, member organizations, and biomedical district organizations tend to elide the long-term, complex efforts to build an innovative cluster and improve the health care system with short-term objectives of building the district itself. These strategies are more likely to respond to immediate opportunities for bio-pharmaceutical and medical technology companies to tap into a pipeline of new discoveries. Absent a skilled workforce and thickly networked cluster of firms, the benefits – and potentially, costs – are just

as likely to occur outside of the district, the region, and the state. The pipelines, however, also provide access to funding at hospitals and academic medical centers struggling to adapt to an outcome-oriented, cost-restrictive regulatory transition. This implies that the greatest potential for economic and social impact of the biomedical district lies not in its number of commercially viable spin-offs, location and retention of successful technology activities, or even employment creation. Instead, thick place-based connections to organizational centers of care, treatment, and education *could* work to align the life sciences innovation process to support to prioritize outcomes and quality. This would prioritize organizational innovation over innovation for technology commercialization, although proximity has the potential to support both objectives. Unfortunately, the very limited capacity of organizations tasked with coordinating this kind of development in a context of limited resources and constrained collaboration face steep odds in disrupting the institutionalized bias toward slow improvement of the health care organizations and the rapid innovation of high-cost, low-impact interventions.

### **3.3 Research design**

This section outlines a strategy for exploring, verifying, modifying, or refuting the propositions. It begins by discussing the case study in general and then proposes a specific framework for comparative analysis.

#### **The case study as a design strategy and comparison as an analytic technique**

For the most part, contemporary case study research shares a rejection of the hierarchical view of the approach as either an exploratory or confirmatory adjunct to hypothetico-deductive research, a focus on *context* as a necessity (not a nuisance) in explanation, and a recognition that truth is socially constructed in ways that limit the validity of deductive and quantitative inferences and their applicability to some real-world situations. In practice, case study research is differentiated from experimental and survey research by its tendency to focus on a small number of cases (or a single case), to rely on qualitative evidence, and to seek different routes to transferring findings outside of the context of the study from that of quantitative, variable-oriented research.

For Stake (1978) and Flyvbjerg (2001), the case study is the *object* of research itself. Stake's "naturalistic generalization" depends on the cognitive process of the reader who uses "thick

description” to inform his or her own practice in the real, context-laden world.<sup>6</sup> The knowledge of particulars escapes deterministic, context-free forms of traditional generalization based on deductive logic or representativeness. “Transferability” of “working hypotheses,” via Lincoln and Guba’s (1979) attempt to hone Stake’s critique, is a “direct function of the degree of congruence between sending and receiving context,” which varies over time and space and to some degree depends on personal judgment.

In slightly different formulation, Yin’s (2009) version of the case study signals a distinct *method* suitable to descriptive and explanatory questions, relying on multiple sources of evidence (including quantitative), and generalizing to other contexts on the basis of “analytical” fit between theoretical implications of the study and similar empirical situations. While also distinguishing this generalization *to* theory from generalization based on statistical representativeness, in contrast with Stake, Yin relies on a quasi-experimental logic, where a “case” is a unit of analysis (not a cognitive-rhetorical product in its own right) that may be single or multiple, with additional embedded units of analysis.

Given the ranging concerns of the methodological literature, the intrinsic flexibility of the case study logic, and the variation in its historical and epistemological relationship to knowledge production within different disciplines (Platt, 2007), the application of case study research depends on a specific balance of strategies for bounding a case in space and time, transferring the findings to other contexts, and retaining sensitivity to the discovery of emergent theoretical concerns and empirical realities. Structurally, the study’s approach thus adapts Yin’s (2009, 47) single case, embedded type of design. The primary case consists of the phenomenon of the urban biomedical district as an economic development policy in cities in the US. Without completely excluding earlier events as necessary context, this choice limits the temporal frame to the events leading up to the formal creation of the first such districts in Chicago and Houston in the 1940s, and extends through the present.

Although the empirical scope bounds the primary case – the district as a policy model – to the US urban landscape in general, the strategy necessarily depends on an in-depth engagement with local specificity. Within the primary “case,” site-specific instances of individual biomedical

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6 Arguably, Stake’s view of naturalistic generalization holds greater weight for practical fields – including urban planning – where a goal of research is to inform critical, reflexive, and context-sensitive practice on the part of professionals and policy-makers. According to Flyvbjerg (2001), this form of knowledge has been systematically undervalued by social science. Also, as the institutional contexts of biomedicine and economic development are likely to continue to mingle in novel ways over the foreseeable future, the situational knowledge put forth by case-based research creates a basis for generalizing to possible or plausible future situations, the exact configurations of which might not be anticipated at the time of the original study (Flyvbjerg, 2001; Schofield, 1990).



districts serve as “embedded subcases,” again following the useful rubric of Yin (2009). This approach allows for leveraging the technique of comparison for causal interpretation. At the most basic level, the strength of the comparative approach lies in the process of reflexively and iteratively testing the influence of configurations of conditions in a given case in relation to those in other cases. This allows for a more direct engagement with configurational complexity than large-*N* quantitative statistical inference. The comparative approach also allays some of the concerns with generalizing interpretations on the basis of a locally bounded, single-*N* case study when causality occurs both within locally specific, case-bound contexts and non-local, general contexts.

These issues are of particular significance for urban research. Kantor and Savitch (2005, 135) note critically that “urban research has not been very comparative.” Moreover, the empirical necessity of bounding a case study in spatial terms (e.g., a city, a region, or a neighborhood) can easily slip into an overly simplified analytical distinction between internal and external factors. However, researchers have increasingly stressed that “local” urban policy actors increasingly operate within a “self-consciously comparative and asymmetrically relativized context” (Peck, 2002). Geographical scale, territorial boundaries, and the position of local research sites within broader networks of bidirectional influence are not determined *a priori* but are open analytical questions. For this reason, (Ward, 2010) calls for a “relational-comparative” approach to the study of cities that is attentive to both their territorial specificity and their network-position in relation to other sites and scales. This methodological framing situates the urban biomedical district as simultaneously a locally specific expression of general changes and a expression of local dynamics that are constitutive of those general changes.

For the present study, inferences to the broader policy phenomenon depend on a logic of “encompassing comparison,” which “places different instances at various locations within the same system, on the way to explaining their characteristics as a function of their varying relationships to the system as a whole” (Tilly, 1984, 83). As Ward (2010) argues, such encompassing comparison approaches, from a methodological perspective, provide an appropriate match with recent attempt to theorize cities as both territorial and relational geographies. In other words, since urban spatial production implies a causality that it both areally contained and inherently subject to porous boundaries and broader scale and network relations, comparative methodology should explicitly leverage comparison to position locally demarcated cases within the context of broader geographic, economic, and political systems.

Superficially, the research's concern with "how" and "why" questions match it to the case study approach (Yin, 2009) and to qualitative methods (Marshall and Rossman, 2006; Maxwell, 2007).<sup>7</sup> Further, Tilly (1984, 60) warns that "big structures" and "large processes" are not derived through universal statements and confirmed by large-*N* analysis across a variety of cases throughout the world, but through the careful framing of propositions and alternatives "attached to specific eras and parts of the world, specifying causes, involving variation from one instance to another within their time-place limits, and remaining consistent with the available evidence from the times and spaces claimed". In other words, when complex causation, context, and spatio-temporal variation occupy central roles in the analysis and not statistical nuisances, the prospects for generalizations based on conventional variable-oriented, hypothetico-deductive research designs are limited (Tilly, 1984; Flyvbjerg, 2006; Sayer, 2010; Ragin, 2007; Yin, 2009; Lincoln and Guba, 1985; Burawoy et al., 1991; Burawoy, 1998). Instead, case study approaches are in many ways more suited to "reflexive," "intensive" approaches to social science methodology (Sayer and Morgan, 1985; Burawoy, 1998; Bourdieu and Wacquant, 1992). Among other things, this implies rigorous self-examination of the research endeavor itself (including the researchers' role). Similarly, the proposed research is less concerned with statistical regularity and formally stable notions of causation than with variation over time and space of the causal potential of individuals and organizations in relation to their institutional contexts. Such intensive approaches to qualitative research are suited to examining the construction of "layered" reality in specific settings and the processes by which events take place, separating necessary from contingent relations in real, open-ended, theory-laden contexts (Sayer, 2010).

Understanding the influence of context and the meaning of events and activities are core strengths of qualitative methods (Maxwell, 2007, 232). In fact, the lack of clarity in the evident boundaries between a real-life phenomenon and its context is a defining feature of the case study approach (Yin, 2009, 18). The proposed study is centrally concerned with how context varies geographically (e.g., by scale or local specificity) and temporally (by institutional change). Additionally, the research's concern with the interpretive frameworks that actors bring to bear on particular events or phenomena dictates that methods capture how meanings are socially constructed and enacted (Sayer, 2010; Maxwell, 2007).

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<sup>7</sup> Again, Yin's clarity here is somewhat misleading, as another leading methodological text, Creswell (2009), suggests that "why" questions signal a linear view of causality that is more suited to positivist world-views and quantitative strategies for inquiry.

## Schematic for case comparisons

Figure 3.2 sketches a framework combining the embedded case comparisons in a manner that methodologically bridges the gap between local evidence and analytical generalization. In short, this is accomplished by balancing depth with breadth, an approach that implies strengths and weaknesses. First, a small-*N* set of in-depth “thick cases” (Chicago, Houston, and New Orleans) is developed to generate evidence from both early biomedical districts and their contemporary counterparts. The selection logic for these cases depends on the notion of *critical cases*, i.e., cases with strategic importance in relation to the general problem of the urban biomedical district (Flyvbjerg, 2006). By design, these cases are not strictly representative of the observable range of the biomedical districts. They include exceptional contexts and a strategic mix of old and recent, small and large, organizational success and failure. However, the depth of analysis allows for a meaningful interpretation of the contingencies of political and organization actions, their causes and consequences, and moments when the scope of local action either opened or closed.

Second, the research also engages with a larger set of medium-*N* set of “thin cases”. While lacking the depth of the “thick cases,” this wider scan allows for more general testing of variation and similarity among actual biomedical district strategies, to enable a more formal qualitative-comparative logic, and to inform exploratory and descriptive interpretation of the relationship between biomedical districts and institutional change. However, by sacrificing depth, the “thin cases” do not allow for a rigorous tracing of processes and cause-effect chains. Thus, in absence of analytical dialog across the thick and thin cases, inferences regarding the latter would be limited to description.

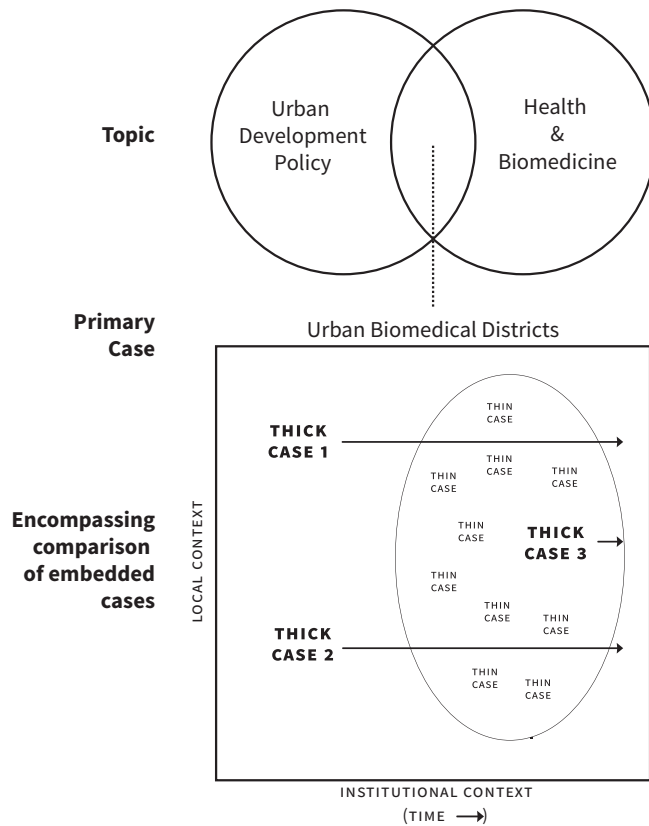
## Implementing a relational case study

A relational conception of space and place problematizes the common act of considering place as a statically bounded unit.<sup>8</sup> Clearly, local political economies have more permeable boundaries than their national counterparts (Peterson, 1981; Kantor and Savitch, 2005). Additionally, when applied to urban and regional research, relational concepts of place invite multi-scaled, multi-sited analysis and consider political-economic activity as a series of situated, context-specific

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8 This argument emerges from diverse influences: Lefebvre’s (1991) Marxist account of the production of space, and particularly its horizontal and vertical divisions into “space envelopes” (Harvey, 2006); the challenges levied by post-structuralist network ontologies in other areas of social science, such as actor-network theory (Latour, 2005); critical realism-influenced theorists within human geography who stress the necessarily simultaneous specificity and globality of place (Amin and Thrift, 2002; Massey, 1984); and post-colonial critiques of theoretical knowledge flows from the core to the periphery (Robinson, 2006).

Figure 3.2: Linking evidence through units of analysis to the topic



processes that cut across static territorial and scalar cartographies (MacLeod and Goodwin, 1999). Where territorial enclosures are apparent, they are contingent and permeable socio-spatial formations, products of strategies of territoriality either emergent from structural processes or performed by relatively durable networks of actors, neither of which suggest that local territorial enclosures grant a clean “unit of analysis” determined *a priori* (Jessop et al., 2008; Amin, 2007). On the whole, relational approaches complicate the practice of defining a city as the primary unit of analysis and comparing a particular policy or some other phenomenon on the basis of formal equivalence (Ward, 2010). Similarly, recent research on policy mobilities supports the notion of “following the policy,” considering a specific policy model and the embodied networks of knowledge that support its transfer across sites as primary objects of research – not the places that “send” or “receive” the policy *per se* (Peck and Theodore, 2010, 2012, 2015; McCann and Ward, 2011, 2012).

Briefly, the policy mobilities framework attempts to come to grips with the status of an enclosed “local” arena of policy-making in a world where the number of policies that cross

boarders – and the speed with which they do so – continues to increase. This approach is predicated on creative approaches to methodological reflexivity and, potentially, the daunting prospect of immersion in a geographically expansive “field”. Methodologically, this implies a tension between prioritizing the policy model itself as a field of practice and remaining attentive to the causal relevance of variegated local contexts of policy adoption, adaptation, and mutation. Peck and Theodore (2015) solve this problem with “low-flying” engagements and purposeful interview sampling rather than ethnographic saturation.

Likewise, this dissertation adopts the general approach of “following the policy” (Peck and Theodore, 2012) from its origins in the 1940s to its contemporary expressions as the primary criteria for selecting sub-cases for in-depth research. However, given the extended historical scope, it leans heavily on a more open-ended collection of archival evidence in addition to purposefully sampled interviews and contemporary documents with an emphasis on biomedical district organizations themselves. In addition, unlike the objects of some “policy mobilities” research, there is no single, clearly dominant network of actors elevating the biomedical district as a policy model. The more interesting process, in this instance, is how local actors draw from diverse set of ideas about the health care system, urban economic development policies, and the dynamics of innovation – and think comparatively in terms of specific places-as-models. Texas Medical Center, Cleveland Clinic, and Silicon Valley are all equally likely to serve this purpose. From document to document and interview to interview, the mix of ideas and models in play is often quite different. However, their mixing often leads to a similar place. For instance, nearly every one of my interviews with the staff of a biomedical district or a local biotechnology-oriented economic development organization used the metaphor “ecosystem” to describe the type of innovation that they were trying to nurture.

Taking cues from the “policy mobilities” literature, special attention in the approach to historical and contemporary evidence was paid to how actors:

- Incorporate different conceptual theories and trends in life sciences and health care to (re)construct a logical context for their actions;

- Draw comparisons with existing models as guidance for their actions;

- Participate in some of the phenomena most associated with the policy mobilities perspective, like industry conferences and policy tourism.

Indeed, archival evidence confirms that these activities were underway from the beginning. When I began reviewing archives for the Texas Medical Center, the first box that I pulled included records dating back to the first establishment of a medical district in Houston. Lying

neatly folded on top of the tightly packed folders was a poster-sized map entitled “Plan of the Illinois Medical District,” dated 1942.

### 3.4 Analysis

A central objective of the development of case-based evidence and comparative analysis is to map the evolution of the urban biomedical district as a policy model over time and across different local contexts.

#### **Within-case and between-case comparisons**

The comparative analysis operates in two dimensions: across multiple sub-cases and across different times within the same sub-case. The approach to within-case comparison is guided by “process-tracing,” which George and Bennett (2005, 66–7) define as an attempt:

To trace the links between possible causes and observed outcomes. In process-tracing, the researcher examines histories, archival documents, interview transcripts, and other sources to see whether the causal process a theory hypothesizes or implies in a case is in fact evident in the sequence and values of the intervening variables in that case. Process-tracing might be used to test whether the residual differences between two similar cases were causal or spurious in producing a difference in these cases’ outcomes.

Process tracing aims to identify the intervening causal process – the causal chain and causal mechanism – between a causal condition (or independent variable) and an outcome (or dependent variable) (George and Bennett, 2005, 206). Detailed historical narrative provides one route to this method of within-case comparison and demands that provisional explanations should either explain all intervening steps within a given case or be amended to do so.

Process tracing differs from purely historical analysis because its primary objective is not to establish the uniqueness of causal sequencing within a case. Rather, it seeks to leverage detailed narrative as a means to generate numerous observations within a case in order to test and develop causal inference and theoretical explanation. Technically, causal processes may consist of

Simple linear causality – a direct chain of events;  
Convergence of conditions or causal chains;  
Complex interactions among non-independent causal conditions; or  
Path-dependent processes that foreclose certain paths and steer toward others. (George and Bennett, 2005, 212)

The thick cases provide the weight of explanation by placing propositions under the stress of contextually rich evidence set within a historical sequence and sensitive to contextual complexity. For cross-case comparisons, the replication logic of comparative case studies also bolsters the validity of causal explanation, although the “thick” and “thin” cases operate differently in this respect. The comparative function of process-traced evidence derived from three “thick” cases is fairly straightforward: iteratively testing explanations of contingencies against intensive evidence derived from other local contexts. In this respect, the three cases identified below were purposefully selected to provide a particular mix of formative and extreme characteristics and sufficient surface contextual variation to enable meaningful comparison.

Another category of evidence, the more extensive, medium-*N* set of “thin” cases, is intended to serve three purposes. First, it creates a pool of evidence for the degree of similarity and difference across biomedical district strategies as they exist in a range of local contexts. In other words, the “thin” cases help to establish the purely descriptive claim that there is, in fact, a *model* to which many observations conform, while allowing for a measure of case-to-case variation. Second, it improves validity by addressing the problem of limited variation Ragin (2008). Quite simply, a wider collection of cases provides more opportunities to place under the stress of empirical observation iterative explanations whittled down from an initial set of open-ended categories. The “thin” cases are, necessarily, more oriented toward surface observation, but the repeated exercise of interpreting the “thick” cases renders the task of identifying important characteristics more efficient, even with less in-depth analysis. Forgoing the benefit of rigorously context-embedded and historicized explanation, the thin comparisons bolster claims of necessary and sufficient relations between causes and outcomes. Third, testing evidence derived from the relatively distinct contexts of the “thick” cases in more “ordinary” scenarios supports the aim of the explanation to extend toward a generalized model. The success of this effort should not be evaluated solely on its validity for unique or critical cases but for more regular adopters located somewhere on the middle of the S-curve of policy diffusion. The thin case evidence is presented in chapter 5.

### **Selecting sites for case studies**

Three sites provide “thick” cases for in-depth analysis: Houston, Chicago, and New Orleans. Each provides compelling episodes in the genealogy of the biomedical district but in different ways. Houston and Chicago are the oldest medical districts but have very recently experienced changes that reflect convergence toward the contemporary model of the biomedical district.

Table 3.1: Thick cases

	Chicago	Houston	New Orleans
Establishment	1940s	1940s	1960s,1980s,2000s
Organization type	State agency with redevelopment powers	Nonprofit with philanthropic resources	State agency, then state-created non-profit
Development area	legislative redevelopment district	private land grant	legislative redevelopment district
Powers	Eminent domain, land conveyance, land use	Deed restriction enforcement, land conveyance	Financing
Funding	state, then own revenues	philanthropic, then parking	grants
Key episodes	establishment, growth, decline, strategic transformation	establishment, continuous growth, strategic transformation	successive establishments and failures, hospital controversy

Because of its exceptional growth, the Houston case is more likely to be interpreted as a success than its Chicago counterpart, which slowly slid from near-dormancy to financial insolvency after two initial decades of expansion. New Orleans provides a compelling case for very different reasons. Given a sequence of largely ineffectual efforts to strengthen the medical district dating back to the late 1960s, New Orleans provides an example of a more durable *logic* of (bio)medical district development that has persisted through several episodes of organizational failure. Table 3.1 identifies additional characteristics of the three cases.

**Chicago** Designated in 1941 and since growing to encompass 560 acres, the Illinois Medical District (IMD) is the oldest official medical district in the United States. The district was first



designated by the state legislature around an existing cluster of medical institutions around Cook County Hospital. Its goal primarily was to facilitate massive redevelopment of the surrounding west side neighborhoods – a pre-Urban Renewal example of the city’s program of targeted displacement and redevelopment to shield the central area from decline. In the decades that followed, the district remained the largest concentration of medical institutions in the world, until its declining inner-city location and the restructuring of the health care system slowed the pace of expansion. Decline led to a slow fiscal deterioration of the district’s development organization. As leadership of the IMD has recently been overhauled due to financial difficulties and lagging development, the case also presents a convenient opportunity to observe the effect of path dependence in a time of change. As the first medical district in a city that motivated many of the original studies of the processes through which neighborhoods and districts are formed – the “ecological units” of the Chicago School’s theory of urban ecology (Burgess, 1925a) – the IMD may be framed as a prototypical case.

**Houston** Houston provides the other “original” case, roughly contemporary with Chicago. Designated in 1945, the Texas Medical Center (TMC) was created on a greenfield site at the (then) southern edge of Houston with the aid of philanthropic resources. The TMC was first conceived as a creative way to combine multiple institutions into one “center” and hasten the convergence of Houston’s medical educational capacity to match that of larger industrial cities and their prestigious academic medical centers. Keeping pace with Houston’s meteoric growth, the TMC has since expanded to a total of 1,300 acres (not including a new 160 acre adjunct campus in the far west of Houston), with over 106,000 employees – the world’s largest example of a biomedical district by nearly any measure. In comparison with the IMD’s flagging growth, the TMC has continued to expand even while its organizational scope remained largely limited its initial functions. Recently, this has changed, leading, e.g., to Brookings’ citing the TMC as a model “innovation district” (Katz and Wagner, 2014a).

**New Orleans** Structurally, New Orleans resembles Chicago in some respects by having an older medical district that grew up around a large public safety-net hospital. New Orleans’ recent forays into biomedical district development follow a series of efforts dating back to the 1960s. Designated in 2005 (shortly before Hurricane Katrina), the Greater New Orleans Biosciences Economic Development District (or, more commonly, the BioDistrict) spanned 1,500 acres, over twice the size of the adjacent CBD. In the aftermath of Hurricane Katrina, the

decision to close Charity Hospital and announce the construction of a 1.8 billion dollar replacement facility along with a replacement VA hospital emerged as the single largest economic development project in the city's history—and one of the most controversial.

In keeping with the commitments of relational comparison, it is important to stress that Houston and New Orleans are not functionally discrete cases. Historically, significant social and economic connections have existed between the two cities. Houston eclipsed New Orleans as the largest city in the Gulf Coast region during the period of the study, and emerged as the main challenger to New Orleans' historic dominance over the region's port traffic. The majority of the nation's oil refining capacity is on the Gulf Coast, and most of it lies within a few miles of the stretch of Interstate-10 that connects Houston and New Orleans. Both cities suffered a transformative oil recession in the mid-1980s, and the recovery unevenly diverted many of New Orleans' white collar oil industry jobs to Houston and set the stage for resumed interest in the possibilities of the biomedical district in both cities. Incidentally, the medical districts' member institutions have connections as well. One of the most important figures in advancing the Texas Medical Center, Dr. Michael DeBakey was trained in the New Orleans medical district by a physician who shaped its development trajectory and whose spin-off hospital is now the largest health system and private employer in the region. In addition, since the 1960s, the rationale for proposing a medical district in New Orleans been motivated by envious comparisons with Houston, which also has overtaken New Orleans in medical prestige.

**Other cases and research sites** Many other cities have had some form of medical district. Some are nearly as old as TMC and IMD. Many others have more recently adopted some version of a biomedical district. Other cases are incorporated in as "thin" cases, mostly presented in chapter 5. These cases were collected through a variety of means, including references drawn from interviews, media, and studies but also through open-ended web searching. To get a broader perspective beyond in the in-depth cases, interviews were conducted with district staff on-site at four other districts,<sup>9</sup> three of which were also in Texas, Illinois, and Louisiana, the same states as each of the "thick" cases. This choice was motivated by the possibility of controlling for state-level contextual and legal differences and ensuring that participants would have sufficient ability to compare their own case with one of the "thick" cases. A handful of additional site visits and guided tours were also conducted at different locations.

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9 These other sites are Memphis, San Antonio, Springfield (IL), and Baton Rouge

## **Balancing case narrative with analytical categories**

The method for converting raw evidence into case studies suitable for comparison across multiple dimensions – between local and non-local sources of causality, between different local sites in the same time period, and between different time periods at the same site – copes with a range of interpretive and logistical challenges, some common and others specific to the aims of the study. Since a major goal of the dissertation is to reconstruct an empirically grounded explanatory contribution to understanding the causes and effects of the growing intersection between the health care system and urban economic development policy, the case studies necessarily focus to a large extent on narrative. In addition, narrative supports the task of within-case comparison of development episodes at different times.

The starting points for case narratives are derived from interview subjects and materials produced by district entities. Given the historical nature of the “thick” case studies, the availability of sources is an issue. Without access to interview participants, reconstructing histories dating back to the 1940s relied heavily on book-length monographs published by the Texas Medical Center and regular reports of the Illinois Medical District to the state legislature, which chronicle the initial founding of the district and continue through the 1960s. Due to their origin and promotional nature, these sources of narrative facts may be considered generally accurate but subject to biased criteria of inclusion and exclusion. As such, these resources provide both source material to support the narrative assembly of facts and texts for analysis. To the extent that additional sources exist, these first-cut narratives were supplemented, fleshed out, or challenged with additional primary sources – archival and contemporary documents and interviews – and with reviews of local news archives. The integrated review of multiple types of sources also allowed for easier triangulation of facts and sequences in the construction of narratives.

The use of interview and archival sources present different versions of selection and interpretation biases, and the endemic challenges in dealing with socially mediated sampling processes and researcher-mediated interpretation are well documented. Even extensive archival reviews may yield only oblique and occasional intersections with the research themes; to a large extent, the quality depends on what is not only available but discoverable by retracing references. For example, the TMC archival evidence is far more comprehensive than parallel resources for the other research sites. Interviews also present problems of personal interaction, communication, and access. Interestingly, for interviews with district organization staff, the ease with which participants grasped the nature of the interview and demonstrated an eager-

ness to participate seemed inversely related to the size of the district organization, perhaps because smaller districts are largely limited to the kind of promotional activity that supports access.

Despite their individual challenges, both archival and interview data were examined with similar objectives. Once key timelines of events are established, the analytical contribution ultimately revolved around identifying moments of contingency in the district development trajectory, openings and closings of alternative possibilities, changing perceptions of challenges and opportunities, and the blending of local action and external structural factors in causal accounts of development successes and failures. Identifying episodes of contingency necessarily depends on interpretation, but I have tried to rely as much as possible on interpretations gleaned from archival and historical sources and interview participants.

While some level of extensive narrative detail is required, the objective of the narrative and the focus of primary source analysis is to identify, re-construct and interpret the following potential sources of cause-effect chains:

- Episodes of organizational change for district organizations, hospitals and academic medical centers, and life sciences assets;

- Power dynamics in interactions between organizations;

- Perceptions of important problems, opportunities, uncertainties, and risks relevant to the district development;

- Externally derived models and rationales for action;

- Contextual factors shaping development within the district and among its main actors;

- The relationship between the district and the broader context of urban development;

- The relationship between the district and the broader regional and state health care system;

- Contextual factors emerging from the broader institutional-level shifts in biomedical health care and urban economic development planning;

- Contextual factors emerging from the broader institutional-level shifts in urban economic development.

An early version of these categories motivated the initial open-ended coding schemes used to organize evidence.

## **Unpacking causality**

### **Equifinality**

Equifinality, the existence of multiple causal routes to the similar outcome, provides a logical-interpretive challenge, but one that is more than simply a methodological nuisance (Ragin,

2008). Equifinality is, in fact, an outcome of interest.<sup>10</sup> In other words, a fundamental issue is the question of why the same outcome, e.g., the creation of a biomedical district, might be observed in different contexts with different configurations of causes. The presence of equifinality can bias interpretation toward the explanation that similar outcomes, e.g., the creation of a biomedical district, must have a common cause or configuration of causes (George and Bennett, 2005, 168). In this instance, the task of comparative analysis is to remain sensitive to the possibility of discovering different causal routes that lead to the same outcome. In this respect, the wider group of “thin” cases provide access to additional diversity beyond the three main cases.

In the chapters that follow, sensitivity to equifinality is most immediately evident in Part II with the contrasting routes to the creation of the two oldest medical districts in Chicago and Houston. Both illustrate the importance of opportunistic action by stakeholders in medical institutions and the support of a relatively cohesive growth coalition, but the two cases differ on other important initial conditions. The examination of New Orleans in presents a basis of structural similarity to some of the conditions present in Chicago, with the exception that New Orleans lacked an effective growth coalition. This similarity appears to have been sufficient to initiate planning activities for the medical district but insufficient to root those activities in a durable organization capable of shaping development.

### **Local versus non-local, specific versus general**

The commonality of factors affecting biomedical district development is closely related to the issue of configurational causality. Medical institutions are common features of the American city that are facing common pressures to adapt to changing financial models, patterns of investment, and windows of opportunity, yet these general patterns unfold in locally specific ways. These are common challenges, further complicated by the potential for relational influence between different local cases. Again, retaining a reflexive sensitivity to these issues and exploiting the iterative dialog between in-depth historical narrative and a more extensive collection of comparison cases serves as a mitigation strategy.

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<sup>10</sup> According to Ragin (2008), embracing equifinality and general likelihood of multiple causal recipes provides a justification for comparative designs relative to quantitative “net effects” designs.

### 3.5 Data collection

Building out the historical components of the case studies is challenged by the fact that, to the author's knowledge, no historically rigorous previous scholarship has analyzed the existence of these districts by looking at multiple examples. Comparative analysis certainly exists in the notable set of contemporary physical and strategic planning studies commissioned on behalf of individual districts. Examples of specific districts also appear in planning studies, industry reports, and academic literature that engage with biotechnology, academic medical centers, the engaged university, Eds and Meds, or a range of other related phenomena. These sources offer important representations of the biomedical district and the priorities, opportunities, and challenges of planning them.

However, they can only partially support a historical approach to answering the main research question of why biomedical districts actually exist, both in individual cases and as a general feature observable in many cities in the US. Nor do they convey a sense of the urban biomedical district as a specific type of place, not only as a policy or a designated space for a particular set of activities. Biomedical districts are where professional cultures are reproduced; where advancements in health care are developed, translated to clinical practice, and celebrated; where a wide diversity of people go to work, get treatment, and learn; where older layers of investment in the built environment of health care contrast with new construction sites; and where the best and worst aspects of the US health care system are on full display.

As a result, archival research, site visits, and interviews provided crucial research activities and comprised the majority of fieldwork. Multiple visits over an extended time were also conducted for each of the three "thick" case sites.

#### **Archival resources**

With assistance of librarians and archivists, extensive document collection was conducted at the site of each of the three in-depth case studies, although the availability of relevant records varied considerably. The Houston case was, by far, the best documented district due to the Texas Medical Center McGovern Historical Center's maintenance of the TMC archives. In addition to a comprehensive set of studies, pamphlets, reports, and meeting minutes dating back to the 1940s, this collection includes personal records and correspondence from early leaders of the TMC that extend back to before its 1945 founding. An interview-heavy book-length monograph celebrating the TMC's history and an extensive memoir of TMC's founding by one of its early leaders aided in the reconstruction of timelines and interpretation of key events.

Though no similar single resource exists for the Chicago and New Orleans cases, archival sources are available. The Chicago IMD annual and biennial reports to the state legislature extensively narrate the district's founding through the 1960s. Surprisingly, the McGovern Collection at the TMC in Houston had the most complete archive of these older annual and biennial reports produced by the IMD. The librarians at the Special Collections and University Archives of UIC were helpful in identifying a sizable compendium of correspondence and studies pertinent to the early years of the Illinois Medical District. Published histories of Rush University and Cook County Hospital were also helpful.

Since the New Orleans BioDistrict was established in 2005, its historical records are understandably thinner. Still, numerous studies exist for previous iterations of the district from the 1960s to the 1990s. The special collections at the Louisiana State University library in Baton Rouge, the city archives at the New Orleans Public Library, and the Historic New Orleans Collection provided access to a number of additional resources. Numerous other documents were sourced from the internet and collected in person from participants, an effort that began well before the official commencement of the study.

## **Interviews and observations**

The key population for interview sampling consisted of biomedical district staff. The interviews were semi-structured and based on a similar template but one that evolved over time. In most instances, original contact was made through general information available on biomedical district websites. Additional interviews were conducted with members of other economic development organizations, community-members, and workers in biomedical districts; and in several cases, these contacts were made in a snowballing/referral style.

Interviews had several interrelated objectives that shaped the approach. One objective was to provide thick description in support the task of constructing case narratives. Interview subjects were useful for triangulating document-based interpretations of the sequence, significance, and relative importance of key events and, in many cases, highlighting or adding context to significant episodes that escaped the document review process. In other words, interviews were crucial for answering not only descriptive questions (*who, what, where, and when*) but also to derive participant's answers to the same *how* and *why* questions around which the case narratives are organized. Interviews thus provided a means to reflexively test tentative explanations, case narrative sequencing and interpretations, and emerging themes as they formed over the course of the project.

A second interview objective was to examine how the stakeholders assemble evidence, interpretive frameworks, and causal narratives to make sense of their own practices. Many of my questions focused on prompting participants to think causally, for example by making comparisons or by explicitly engaging with both local actions and wider contextual changes in the regional economy or the health care system. My goal was to be able to represent the participant's account of the strengths, weaknesses, opportunities, and threats of his or her own organization – as well as the way he or she synthesizes evidence and causal narratives to derive these conclusions.

To do so, stakeholders draw their own comparisons from available models, some of which were standardized, e.g., almost every participant was at least aware of the Texas Medical Center and referenced some combination of three regions – the Bay Area, San Diego, and Boston – in discussing local gaps in the biotechnology industry. Others drew lessons from more idiosyncratic mixes of academic medical centers, urban research parks and incubators, and biomedical districts. The economic development and innovation side of the thought process was fairly but not exclusively consistent. The perception of changes in the health care system were far more varied, though the tension between competition and collaboration among district organizations was a common theme. Leadership and funding (including venture capital, health care institutions, and for the organizations themselves) were also perceived as salient limitations.

A total of 23 interviews were conducted expressly for the purposes of this project. Of these, 16 included the staff of an organization with responsibility for planning a biomedical district: 12 from across the three thick cases and 4 drawn from 4 other locations: San Antonio, Memphis, Springfield (Illinois), and Baton Rouge. The remaining interviews were drawn from other economic development organizations and community-members who had experience with the district. The interviews lasted from 30 minutes to 2 hours. Three were conducted on the phone; the rest, in person and at the place of work of the participant. Almost all of the in-person interviews were recorded and partially transcribed.

For a variety of reasons, I have opted to keep the identities of interview participants confidential. Some of the individuals no longer work for their district organizations and have been represented in a poor light by media and by other interview participants. In addition, several interviewees shared interpretations that they expressly asked be kept “off the record”.



Circumstances outside of the strict boundaries of the research project have also provided ample opportunity for observing the thick cases.<sup>11</sup> Going back to 2006 in New Orleans, I attended several meetings of relevance to the New Orleans case in a professional capacity as a data expert who provided support to several non-profit programs to redesign the safety-net care after Katrina. I also attended many other public meetings as a resident and scholar interested in the post-Katrina recovery and Charity Hospital controversy. I attended one national health information technology industry conference in New Orleans, one national medical technology conference in Chicago, and a handful of evening industry meet-ups and presentations.

### **Additional data**

Additional data were acquired from the American Hospital Association, which conducts a long-running annual survey. The survey records a number of basic characteristics on hospitals, including their expenses and employment. Two data sets were acquired, the entire 1982 database and a small subset of variables for an extract of 1000 hospitals in 50 counties selected from the 2010 database, to explore trends in the variable potential of hospitals to create local economic impacts through expenditures and employment. The two years roughly bookend two major episodes of restructuring in the hospital sector, from prospective payments in Medicare to the Affordable Care Act.

Initially, one alternative was to conduct exploratory statistical analysis on the variability of hospital trends by location, including possible location within a medical district. Doing so required joining the 1982 data to the 2010 data. This effort ran into challenges that, in hindsight, were predictable. The hospital sector has undergone such considerable re-organization that the unique identifier codes in many cases failed to join successfully. These failures were also difficult to interpret meaningfully. Further investigation of specific hospitals revealed that a range of events could prompt a failed join: hospital closures, mergers, re-affiliations, re-organizations, simple name changes without other re-organizations, and other reasons that were not immediately apparent. In addition, other hospitals that had undergone major re-organizations or even moved address locations joined successfully. In a sense, the difficulty of developing reliable indicators of change in employment on a per hospital basis, when interpreted as an symptom of pervasive restructuring within a given industry sector, constitutes

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<sup>11</sup> I have held a job with a public health organization located within a biomedical district, taken classes at a public health program located within a biomedical district, and cared for family members receiving treatment at a biomedical district.

a general finding in its own right. Even after manual checking, only 440 records successfully joined data from both years.

In the end, the most important use of these indicators is to provide descriptive indicators of change in capacities within biomedical district and to create maps that illustrate the regional geographical variability in employment change at hospitals, which appear several times in this dissertation. Together, they are likely the most comprehensive representation of the geographical unevenness of employment change at hospitals across multiple regions.

### 3.6 Approaches to rigor

A key challenge for qualitative research is the balance between open-ended approaches to evidence while maintaining the “trustworthiness” of the representation, the plausibility of transferring findings outside of the context of the study (Guba et al., 1994), and the implausibility of alternative explanations (Maxwell, 2007). Like many qualitative and multi-method case studies, the proposed research relies on techniques of falsification, replication, and triangulation applied in an iterative manner. Table 3.2 maps how these techniques unfold across the four major research products. Additional tactics for addressing concerns for rigor are discussed below.

#### Construct validity

For case study research, construct validity deals with deploying the correct operational measures for the concepts being studied (Yin, 2009). In addition to exploratory pilot research, *ex ante* steps to ensure this form of validity include the definition of the biomedical district as the primary unit of analysis, and the nomination of academic health centers as a focal organizational terrain and embedded unit. Both of these constructs are easily recognizable as objects of study. Less so are the patterns of institutional change that work through these contexts and the causal logics in use by particular actors.

The main construct – the establishment and transformation of biomedical districts – was preliminarily established by reading secondary histories of the three main sites, by examining maps for clusters of hospitals and then searching the internet for documentation of district planning efforts,<sup>12</sup> by extensively searching out materials from media and economic development organizations in several cities, and by reading industry and policy literature on health care and the life sciences. To an extent, the accumulation of fieldwork and the iterative process

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<sup>12</sup> This included both looking at maps using the AHA data and scanning Google Maps.

Table 3.2: Interdependence of research products as validity and triangulation checks

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
	<b>Policy ideas about the bioeconomy</b>	<b>Thin case table</b>	<b>Thick case reports</b>	<b>Longitudinal hospital-level data analysis</b>
<i>...focuses on</i>				
<i>Target</i>	Shifts in analytical frameworks and their networks of diffusion	Key dimensions of variation and regularity of the model across sites	In-depth analysis of critical instances of the model, its contingencies, and context	Relationship between the model and institutional change
<i>Unit</i>	The model (case)	Individual biomedical districts (sub-case)	Individual biomedical districts (sub-case)	Hospitals
<i>...the outputs of which link back to</i>				
<i>Questions</i>	Q1a,b,c; Q2a,b,c	Q1b; Q2a,b,c	Q1a,b,c; Q2a,b,c	Q2b
<i>...and rely on other products for conditional inputs, validity checks, and triangulation</i>				
<b>A</b>	–	Distinguishing local from non-local ideas and networks	Contingent role of external ideas and networks in local development histories	Hypothesis construction
<b>B</b>	Translation from idea to local context and vice versa, shifts over time	–	Extensive check of conditional/replication logic (constructs and causal conditions)	Hypothesis construction and descriptive data
<b>C</b>	Contingent ways in which ideas are activated, gaps in prevailing frameworks	Intensive check of conditional/replication logic (constructs and causal conditions)	–	Hypothesis construction and descriptive data
<b>D</b>	Congruence between ideas and empirical changes in organizations	Descriptive supplementary data, dimension of variation	Descriptive supplementary data	–

of revising interview conduct provides an additional built-in check for such forms of construct validity. Multiple sources of evidence allow for triangulation of key facts and episodes, where converging themes or perspectives add credibility to the interpretation. The multiple data products allow for an extensive range of applications to hone constructs, which should be applicable to each individual product. Additionally, since the research engages categories and theories put into practice by differently positioned actors, opportunities for checking emergent evidence against accepted conceptual knowledge may be built into the design—to an extent—by iteratively reconstructing the conceptual models in use by actors, organizations, and my own interpretations. Each of these tactics speaks to the notion of “credibility” as a key criterion for interview-driven studies (Baxter and Eyles, 1997).

The “thick cases” provided an opportunity for intensive, prolonged engagement in the field and rich description (Maxwell, 2007). These tactics counter threats to validity for those specific cases, but the same constructs will be developed in conjunction with the “thin cases”. Again, unlike the “thick cases,” the “thin case” table should be judged as a single product. However, the mixed design allows a balance between the benefits of intensive, prolonged engagement and extensive claims to validity, since comparisons between thin and thick cases place different stresses on concept refinement. Aside from informing a map of district diffusion (Tilly, 1984), these sorts of tests are a major motivation behind examination of “thin cases”.

## **Internal validity**

Internal validity reflects the confidence in links between cause and effect within the context of the study, ruling out spurious relationships. Several checks are built into the logic of the study, particularly around two dimensions: time as a link to institutional change (Pierson, 2004) and functional comparison across different local contexts (Tilly, 1984). Building points of reference for both is a key function of the “thin case” table, which can then be used to support internal validity for the in-depth case studies with a stronger claim to diversity of falsification tests, i.e., with more variation in the set-relationships used to logically test conditional associations across a more complete “map” of temporal-institutional and locally specific contexts. Both general and case-specific chronologies provide a basis for testing cause-effect links with external conjunctural events in the process of institutional development. As the sequence of events cannot be inverted, such tactics can provide a simple but powerful way to falsify causal claims (Yin, 2009, 148). Existing chronologies of institutional change in health care and biomedicine are widely available as a point of reference (see chapter 4). Finally, existing case studies and

theories of urban political-economy provide a well of alternative causal explanations to draw on for the purposes of falsifying the proposed study's provisional claims on the unique influences of biomedical institutional change.

Perhaps the clearest threat to validity involved with the current design is the fact that all cases display the phenomenon of interest. In other words, they will have been selected on the dependent variable. The "thin cases" are intended to capture variation in the extent to which a particular case belongs to the biomedical district set, based on the definition criteria described above. Since the institutional drivers are largely national, it is unlikely that any major metropolitan area exists without at least some version of biomedical district formation; however, sufficient variation is expected to exist in the dependent variable to establish links between causes and consequences.

Two additional threats to validity in qualitative research are investigator bias in interpretations and reactivity of the participants to the researcher influence (Maxwell, 2007, 243). Ultimately, such threats are impossible to eliminate, though they may be mitigated or even productively re-purposed if consciously attended to.<sup>13</sup>

Reliability refers to the ability of an analysis to be replicated in a manner that will produce the same results. This is accomplished through good data management practices. Since qualitative studies have fuzzy boundaries around data collection and analysis, reliability remains a concern throughout the research process. In this instance, reliability may be variable by site due to the different degrees to which archival resources were discovered. In addition, for each of the three major field sites, some form of history exists for either the district or its major institutions, which provides an external benchmark for the task of reconstructing narratives.

## **External validity and significance**

External validity deals with the range of situations to which the findings of a study may be generalized, or "transferred" should one wish to avoid confusion with claims to external validity on the basis of statistical representativeness (Baxter and Eyles, 1997; Lincoln and Guba, 2000). While findings from individual case studies are generalized to the policy model via a modified replication logic, these inferences are still internal to the design of the study. The theoretical weight of the policy model itself is the primary source of transferable findings to theory (not to

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<sup>13</sup> My own bias is derived primarily from my experiences as a resident of New Orleans during the BioDistrict controversy. I was also working in public health at the time. These experiences shaped my interest in biomedical districts as an object of study, and the uneasy matches between conceptual tools associated with urban economies (my own background) and health (the background I became increasingly exposed to).

a population). External validity should thus be evaluated on the basis of theoretical “fit” with other situations. The study has been designed with the following theoretical targets in mind:

1. *Evaluating biomedical district policies and related investments.* This project adopts a reflexive approach to generalization, which “seeks generalization through reconstructing existing generalizations, that is, the reconstruction of existing theory” (Burawoy et al., 1991, 279). One target for reconstruction includes lower-level conceptualizations and categorical schemata for studying health and biomedicine from an urban economic perspective.
2. *Reconstructing the economic and urban geographies of important components of the health care system.* Reconstructed and institutionally nuanced frameworks for engaging with the biomedical economy would allow local actors to counter the uncritical extension of “rationalized myths” and causal narratives from institutionally entrenched and well-resourced elements of biomedicine that prioritize place-based links between property development and technology. Alternative narratives might allow for better leveraging of present investment opportunities to anchor place-based strategies that explicitly connect the improvement of community health with workforce development for a variety of skill-levels, a more human capital and occupation-driven approach (Nelson and Wolf-Powers, 2009).
3. *The spatiality of institutional factors in theories of urban development.* In a similar manner, I argue that theories of urban development, whether orthodox or heterodox, positivist or constructivist, have to-date directed disproportionately little attention to the institutional contexts underlying the emergence of health and biomedicine as major economic activities. Part of this gap likely follows from the unique aspects of the phenomenon in question; on the other hand, health research as a whole tends to have an impoverished view of space and place (Cummins et al., 2007; Kearns and Moon, 2002). Even in more critical accounts of the tendential impacts of historical transformations of biomedicine, space tends to fall out of the picture (e.g., Clarke et al., 2010). I have attempted to bridge back to theories of urban development by building several explicit engagements with space and place into the conceptualization and design of the proposed study and by targeting the limits of existing explanations on the basis of the co-production of socio-spatial relations (Jessop et al., 2008). These moves provide a framework for isolating what is (or is not) explained by existing explanatory frameworks and what is (or is not) gained by adding institutional-level factors of health and biomedicine to the equation.

4. *The existing stock of case-based knowledge of particular policies, patterns, and processes in urban planning and political economy.* Interdisciplinary urban studies and planning research has produced a wide range of case-based literature, leaving a substantial well of applied knowledge of typical and atypical development processes. In aggregate, these resources inform practical action. The proposed research is intended to gain additional meaning in dialog with existing case repertoires.
5. *The likelihood of similar situational mixes in the future.* As health gains a greater foothold in urban economies, individuals and organizations positioned in both contexts will become a more common phenomenon. The proposed research seeks to inform such situations. The objective is to produce a generalization parallel to Corburn's (2009) critical synthesis of environmental planning and public health, but for economic development policy and biomedicine.
6. *Institutional and organizational change in health and biomedicine.* As listed earlier, several important studies exist to document this rapidly changing institutional context that increasingly interacts with other parts of social and economic life. The proposed study adds to this work by focusing on a very specific set of historical, spatial, and organizational transformations around urban form, local economic development policy, and organizational restructuring. The socio-spatial focus implicitly responds to a particular type of question of relevance to institutional and organizational change: does urban space express institutional change or does the process of urban development feedback into the drivers of institutional change or stasis.
7. *Dynamics of policy transfer and mobility.* The proposed study stands alongside the growing body of case studies of policy transfer written from the mobilities perspective. The focus here is on a powerfully legitimizing and embodied body of ideas about biomedicine on smoothing the geographical spread of policy, in absence of nearly any direct form of coercive influence that nonetheless results in a portable "model" with relative consistency across local contexts on some indicators. Moreover, the phenomenon is limited to the US health care system in which the federal government plays a relatively strong role: the regulatory hollowing-out of the nation-state and its implicit relationship with enabling mobility has been, in many senses, more limited for health care than for other domains of social policy in which the mobility phenomenon has been investigated.

### 3.7 Summary

This chapter frames the urban biomedical district as a phenomenon that exists at the intersection of biomedical health care and urban development in the United States. The research design attempts to cope with the inherent limitations of qualitative case studies and the specific challenges of investigating a general policy phenomenon that necessarily depends on local actors and site-specific contextual factors. It does so by purposefully sampling three sites as sub-cases for in-depth research and supplementing this with cases drawn from a wider scan. The argument supporting the transferability of findings outside of the context of the study depends on the theoretical “fit” between causality in the case (the biomedical district as a policy phenomenon) and the local economic development theories and organizational transformations that shape the context of action in similar development scenarios. In the broadest sense, the research posits a theoretical contribution on the basis of reconstructing a place for health care as a motive force in urban development.



## Chapter 4

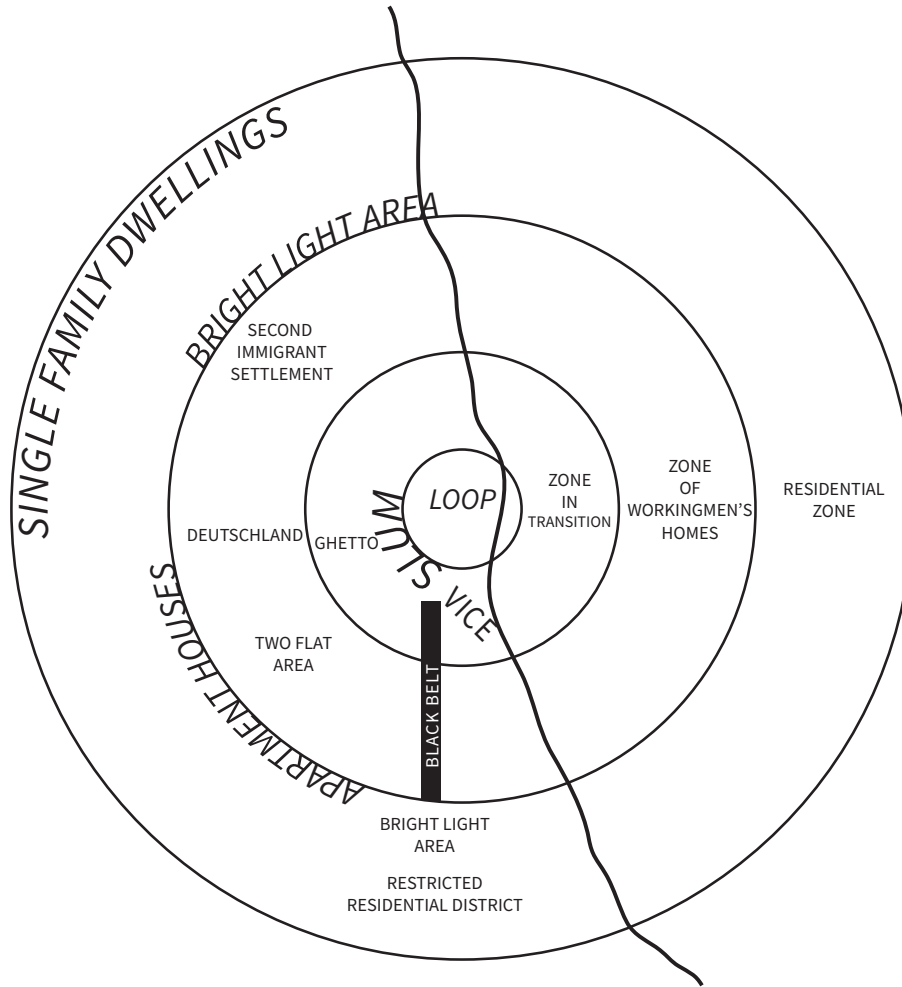
# Placing the biomedical district: A provisional explanation

### 4.1 Toward a stylized geography of the urban biomedical district

As defined in this dissertation, the urban biomedical district covers a range of urban forms. While some arose organically, others are creatures of state and local policies and officially demarcated as special land use and development jurisdictions. Some are anchored by a single institution and span only a few city blocks. Others have multiple anchors, span multiple square miles, and rival their CBD as centers of employment. Even so, enough commonalities exist to identify a general pattern. This chapter describes that pattern and speculates on why it has emerged over time, particularly by situating identifiable periods of biomedical district development within contemporaneous shifts in the broader evolution of urban development and health care institutions. There are two central observations. First, the social and economic functions of biomedical districts as a distinctive type of place have evolved. The old function of housing and making space for institutions of charitable care has been supplemented with a broader scope of economic activities in a changing and increasingly competitive health care system. Second, the contemporary health care system creates both push and pull factors for concentrating assets, which require management by development actors.

To explore these arguments, a stylized series of maps is presented as a graphical heuristic to illustrate changes over time. The hypothetical model applies to no city in particular but rather illustrates general patterns that render the history of health care's evolving footprint in cities and the potential for biomedical district formation in a geographic manner. Though the referent is a generic mid-to-large-sized American city, the model deliberately resembles Chicago. As has been the case for many other phenomena of urban development, Chicago also functions

Figure 4.1: Burgess' original "concentric zone" model of land use and urban development



adequately as an idealized model for the intra-regional differentiation of the city into a space of distinctive places – or the ecological sorting of land uses into “natural areas,” to borrow from an early lexicon (Burgess, 1925a).

Since the goal of this dissertation is to reveal biomedical health care through the lens of urban development, the models make aesthetic and conceptual references to the early models of urban development put forth by the Chicago School beginning in the 1920s, such as Burgess (1925b), Hoyt (1939), and Harris and Ullman (1945). See, for example, Burgess' concentric zone model, reproduced in figure 4.1. At the time, Chicago provided both the paradigmatic case of the modern city and the backyard laboratory for the city's influential concentration of urban social scientists. These models reflect attempts to articulate *general* patterns of urban development but do so as products of a specific place and time, and their Chicago-centric

imagination of the urban process continues to loom large in the comparative representations of urban development (Robinson, 2006). Despite the ideologically limited explanatory scope of the Chicago School's "spatial fetish" (Castells and Sheridan, 1977; Gottdiener and Feagin, 1988), the models' explanatory elegance persists (Sampson, 2012). Given the continued, if problematic, relevance of these models to the analytical tradition of urban development, they provide an appropriate visual reference point for the aims of this section, namely to posit the urban biomedical district as an empirical phenomenon and synthesize a provisional explanation for its existence. More pragmatically, the fact that Chicago provides the original prototype of the urban biomedical district nominates the city as a sensible starting point.

The chapter's secondary objective is to illustrate in broad strokes some of the paradigmatic shifts in the urban geography of health care, stretching back to the emergence of "modern" medicine in the late 1800s. Along the way, several overarching dimensions provide focus. First, at any given time, the landscape of health care is shaped by regulatory and market forces that are historically and geographically specific. While it would be reductive to interpret the urban biomedical district as a natural product of either free-market forces or the regulatory regime of governmental agencies and professional associations, these underlying contexts have experienced significant shifts over the course of the century. These shifts also affect the driving factors behind the location of various economic activities that depend on the health care system. At the risk of over-generalizing, the key acts in the story of health care in the 20th century are 1) the rise of modern medicine, 2) the era of federal involvement and 3) the contemporary period, which is distinguished by fragmentation of the organizational field of health care; a regulatory regime marked by uneven fiscal constraint and tweaks to market-based incentives to address the intractable tradeoffs of cost, access, and quality; and the salience of technoscientific institutional drivers – what Clarke et al. (2010) term "biomedicalization". The second but related dynamic is the function of agglomerative efficiencies in the locational viability of various components of the health care system. Below, particular attention is given to hospitals and academic medical centers, although other components of the health care system are also touched upon.

This chapter thus functions as a brief, selective, but requisite historical context of health care in the US. The narrative of modernization, postwar expansion, and on-going problems of access and cost since the 1970s, and the changing contexts of biomedical science and market-based regulatory interventions over recent decades, to varying extents, are canonical across health care policy, social sciences, and history literature; this chapter only aims to outline the main

dynamics across well-established periodizations of institutional evolution. This chapter draws heavily from Starr's (1982) history of medicine's first modern transformation, Stevens's (1999) history of the twentieth century hospital, Barr's (2011) introduction to the health care system and its policy tradeoffs, and Clarke et al.'s (2010) attempt to chart major institutional shifts, among others. The novel synthesis consists of mapping these broader shifts onto the spatial patterns of development within cities in a manner that comports with other generalized models for understanding urban development over time and explains the conditions of possibility for the adoption of the urban biomedical district as an economic development strategy.

## **4.2 Before World War 2**

### **From poorhouses to monuments of science: the modern urban hospital**

The industrial age profoundly changed nearly every aspect of the American city, both in the operation of its dominant political, economic, and social organizations and in their spatial expression. Health care was no exception. Starr's (1982) *The Social Transformation of American Medicine* documents the regularization of the medical institution and its rise to cultural authority. Physicians gained professional prestige by vigorously defending their autonomy and asserting a particular approach to scientific authority over competing claimants to control the health care system. Along the way, the emerging cultural expressions of medicine, and its most important built environment of the hospital, came to symbolize science's domination over nature, monumentalizing and celebrating the modern ideal of instrumental progress in a manner that parallels other, contemporaneous infrastructural and civic features of the industrial city (Clarke, 2010; Kaika and Swyngedouw, 2000).

Although the American Medical Association (AMA) was founded in 1847, the organization's project of achieving professional dominance through a characteristically scientific approach to care would continue through the latter half of the 19th century. During the "golden age of medicine," the AMA won on two fronts: first, by improving the performance of scientific medicine as a curative intervention and, second, by shaping professional standards and public policies into a favorable regulatory regime, dramatically improving professional status and suppressing alternative modes of healing as quackery. The key crossover point when the outcomes of clinical interventions, on average, were more likely to be positive than negative likely occurred around 1910 (Hanson, 1999). A number of significant advancements led up to this moment, including the septic revolution, several decades of rapid advancement in the

sophistication of surgical procedures, and the widespread adoption of the germ theory of disease and its incorporation into clinical settings.

These innovations and the mounting successes of regular medicine in clinical improvements and professional regulations had profound implications for the American hospital. Stevens's (1999, 17) description of hospitals in the early twentieth century suffices to summarize the extent of transformation:

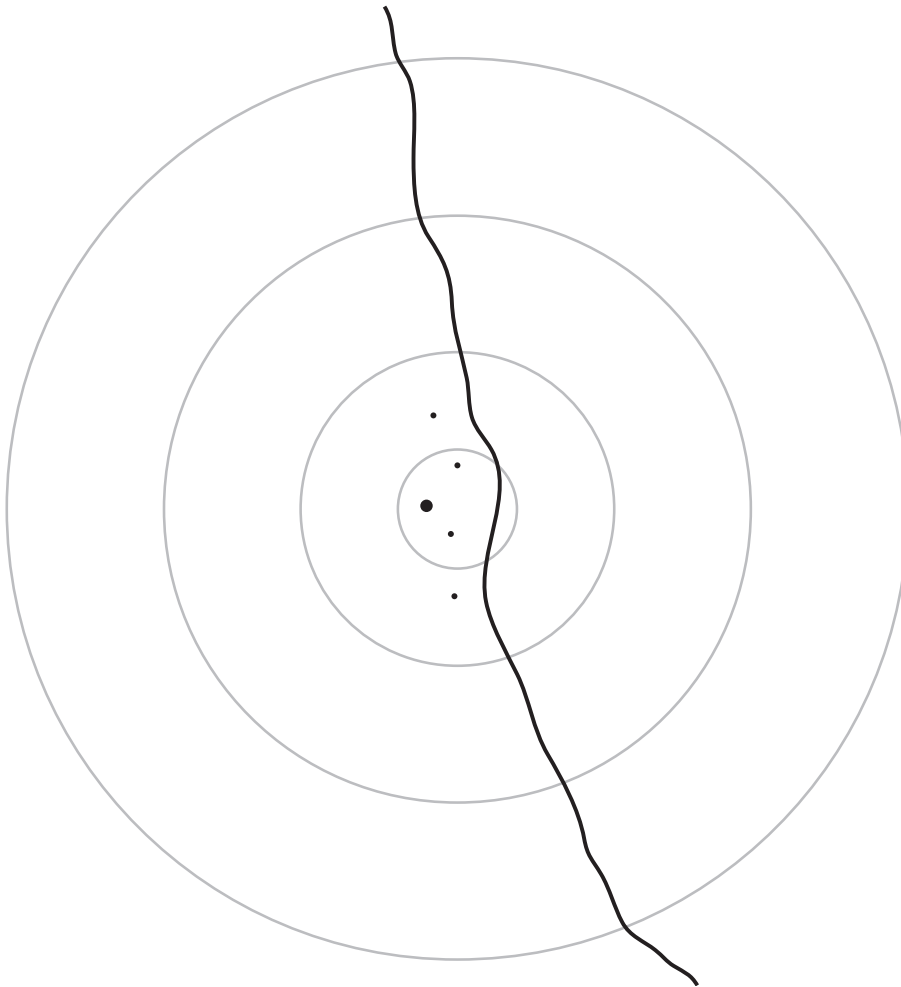
Between 1870 and 1917 the American hospital was transformed from an asylum for the indigent into a modern scientific institution. Hundreds of new hospitals sprang up under the aegis of religious orders, clerics, industrialists, woman's groups, ethnic associations, and committees of established and aspiring elites in communities across the United States: in small towns across New England, in trade and industrial centers in the West, in cities like Milwaukee and St. Louis that were expanding rapidly under an influx of immigration, in market centers for farmers in Georgia and Illinois and for lumber workers in Wisconsin and Washington, and in the railroad depots of great companies like the Santa Fe – joining the older, usually larger hospitals in the more settled, established cities. Even smaller hospitals boasted well-equipped, marble-walled operating rooms, disciplined nursing schools providing willing workers to staff the wards, and a cadre of private attending physicians. The American hospital movement, wrote a journalist in the early 1890s, "is a striking instance of our advanced civilization," The hospital, like the hotel, the factory, the club, and the symphony, was a manifestation of modern America.

Prior to this period, the American hospital conjured a very different impression. The dirty, crowded "poorhouse" hospital functioned primarily as a last resort for those who could not afford to hire a private physician for in-home care. These "sinks of human life,"<sup>1</sup> had little resemblance to their contemporary counterparts. Surgery was unsafe and often ineffective, and infections frequently swept the building. The funding and management of hospitals largely depended on appeals to the civic responsibility of wealthy citizens. In most cases, physicians did not serve on hospital management boards and were not paid staff. Architecturally, hospitals were non-specialized, often almost indistinguishable from large houses, and frequently located in built-up central areas and crowded immigrant quarters, far from the tony additions and suburbs where wealthier residents fled to escape the perceived ills of the industrial city. Hospitals did, however, play a role in the training of physicians, as both instructors and trainees volunteered their time in exchange for access to poor patients. Thus, the co-location of patient care, research, and education in one charitable and public service organization provides the common thread connecting the contemporary hospital to its not-yet-modernized antecedent.

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1 This quote is attributed to Benjamin Rush, a Philadelphia physician who signed the Declaration of Independence and served as surgeon general of the Continental Army during the Revolutionary War.

Figure 4.2: Small hospitals, interspersed through the early industrial city



Prior to the rise of modern medicine, as in figure 4.2, hospitals in most cities would have been interspersed with other land uses, perhaps within the core of the city's original development and oldest additions, near the immigrant neighborhoods from which most of their patients were drawn.

As scientific success increasingly shaped the professional conduct of medicine, the quality of care in hospitals improved. The first surgery with anesthesia was performed in 1846, allowing for rapid innovation in surgical procedures. Later, the septic movement and the germ theory of disease led to reductions in the likelihood of contracting infections in hospitals. Advances in bacterial identification and X-ray analysis improved diagnosis. By the 1890s, middle- and upper-class patients who could afford to pay began to use hospitals, undermining the nearly exclusive orientation of hospitals toward providing charity care for the poor.

Figure 4.3: Eakins' *The Gross Clinic* (left) and *The Agnew Clinic* (right)



Source: Wikimedia Commons

Thomas Eakins' 1889 painting *The Agnew Clinic* (figure 4.3, right) captures the heroic rise of medicine (e.g., the confident pose of the supervising surgeon). It marks the "the missionary rhetoric of medicine formulated then and still lively today... positioning medicine closer to religion than to capitalism" (Clarke, 2010, 115). In contrast, Eakins' darker *The Gross Clinic* (figure 4.3, left), painted 13 years earlier, casts a similar operating theater setting in a foreboding shade of color and desperation, just prior to the adoption of surgical hygiene (e.g., the surgeons do not have white coats). A parallel transformation occurred at the scale of the hospital itself. Chicago's Beaux Arts Cook County Hospital (1914) and New Orleans' Art Deco Charity Hospital (1939) (figure 4.4), the two largest hospitals constructed before World War 2, stand among the finest examples of the monumental architecture of the modern hospital – and both figure heavily in later chapters.

As quality improved and the urban population grew, the number of hospitals also proliferated. By 1910, there were over 4,000 hospitals in the United States. However, the hospital as an institution remained largely unregulated. Hospital administrators became increasingly professionalized and powerful. Given the AMA's fierce protection of professional autonomy, physician involvement remained essential but voluntary and unpaid, although doctors relied on hospitals for surgery, admitting privileges, and diagnostic testing. The tension between admin-

Figure 4.4: Charity Hospital in New Orleans (1939, top) and Cook County Hospital (1914, bottom)



Source: photo by author (top), Annual Report of the Medical Center Commission 1944 (bottom)



istrators (with their logic of management) and physicians (with their standards of professional practice) continues to this day: doctors scoff at medical decisions shaped by corporate and state bureaucrats, while managers and policy-makers struggle to incentivize clinical decisions that are efficient with respect to cost and outcomes.

### **Medical education, physician dominance, and the academic medical center**

Before the rise of medicine, the profession of medicine lacked consistency in training and suffered a reputation for quackery that was not unwarranted. Homeopaths, osteopaths, and allopaths (today, the dominant “sect”) vied for authority and competed for patients. The American Medical Association (AMA), which mostly closely aligned with the allopathic tradition, was the chief agent in improving the professional status of physicians, albeit with little impact for its first fifty years. Multiple factors combined to depress the earnings of physicians: modest and inconsistent training (often two-year programs in small, proprietary medical schools lacking any standard curriculum), an absence of state-sanctioned licensure or certification, and a large supply of doctors. However, in a remarkably rapid story of professional advancement, within a matter of decades, physicians would attain the highest status of all professions with respect to earnings and prestige.

In 1904, the AMA formed the Council on Medical Education to establish standards for physician training. The Carnegie Foundation took up the reformist cause, leading to a two-year study during which the author, Abraham Flexner, visited 155 medical schools in the US and Canada. The 1910 Flexner Report made several influential recommendations, including to sharply reduce the number of medical schools and to marginalize poorly trained physicians, to require four years of post-graduate training, to require two years of laboratory training grounded in the scientific method and two years of clinical instruction, and to strengthen state requirements for training and licensure examinations. The report also urged medical schools to mimic the programs of leading institutions, like Harvard and Johns Hopkins, and to seek university affiliations. The states adopted these recommendations and charged AMA-affiliates with certifying medical schools and establishing the criteria for licensure. Over the next two decades, the adoption of Flexner’s recommendations substantially reduced the number of medical schools. Many of the educational organizations that Flexner derided as “proprietary” medical schools closed or consolidated with other organizations, increasing the quality and consistency of training. In fact, the post-Flexner reformers viewed university consolidation as crucial to improving the quality of medical education (Ginzberg, 2008, 15).

Between 1910 and 1935, over half of all medical schools either merged or closed, and most that remained were consolidated into universities. The quantity of physicians also decreased; and the attendant reduction in labor supply, increase in training quality, and enforcement of professional standards quickly increased earnings for physicians and surgeons who provide a public service while operating as small entrepreneurs. Hospitals, on the other hand, ostensibly retained a focus on voluntarism, charity, and their broader role in social reproduction, while maintaining physician autonomy. Unlike private physician practices, hospital care was not yet a business; in fact, policy-makers viewed privatism as antithetical to effectively managing the community-oriented social role of hospitals (Stevens, 1999).

From the late 1890s, larger community hospitals were established throughout the city, serving both wealthier neighborhoods and inner-city immigrant areas. To widely varying extents, small-scale agglomeration processes resulted in clustered medical facilities. Doctor's offices and medical schools would have located in proximity to hospitals to facilitate referrals and especially to provide easy access for physicians with admitting privileges in hospitals, where general practitioners might conduct rounds with their patients. The largest of these concentrations would have centered around larger teaching hospitals, including government-run facilities, especially since medical schools relied on access to poor patients for training opportunities. The resulting co-location of facilities marks the emergence of medical districts as a distinctive kind of place marked by multiple, increasingly large-scale medical facilities. The concentration of medical schools and hospitals around Cook County Hospital in Chicago provides perhaps the clearest and most significant example of this process. With little state involvement aside from the possible operation of an indigent hospital by state or local government, these concentrations remained small, and the balance of medical infrastructure would have been well-distributed across various residential portions of the city.

The Flexner report shifted instruction away from private practitioners and toward a university-oriented full-time faculty model, favoring researchers and clinical specialists over generalists and primary care providers. Later, this reorganization of academic medicine combined with a variety of other factors – including the adoption of medical insurance for hospital-based surgery and specialty office-based care and, later, research funding from the VA and NIH – to skew the American health care workforce toward specialists (Emanuel, 2015). The shortage of generalists and extreme expense and inefficiency of specialty care in absence of coordination through a primary care provider remains a major issue; and the fact that specialist physicians earn more, on average, than any other occupation in the US economy despite the relative lack

of lower-earning primary care physicians reflects only one of the symptoms of the distorted incentives that were built into the health care system at the moment of professional dominance.

Between the 1910s and 1930s, universities opened, acquired, or otherwise formally affiliated with medical schools, codifying the academic medical center (AMC) as the foremost organizational locus of prestige in research, training, and advanced care. These new facilities and massive investments in public-sector hospitals during the first three decades of the twentieth century dramatically increased the involvement of large-scale government and university resources in the health care industry. In some cases, the smaller-scale, private sector-led concentrations of less regulated medical activities that arose over previous decades expanded in scale and formalized affiliations with universities and teaching hospitals. In other cases, concentrations may have persisted or developed around newer, more modern facilities, even without the presence of governmental or university actors.

This period of modernization and standardization, roughly from the end of the nineteenth century through the middle of the twentieth century, marks the original phenomenon of the urban medical district. In growing industrial cities, the proximity to patients, the availability of land, and the efficiencies of co-location created a capacity for increasingly complex and large institutions, physician offices, and other related public service activities to outbid competing land uses, resulting in distinctive land use districts molded to meet a particular function within the modernizing landscape of medicine. Figure 4.5 sketches out the pattern of hospitals around the time of the Flexner report. Patients without the ability to pay would have traveled from distant portions of the city to receive charity care in the emergent medical district. The districts filled two broad social reproduction functions: providing access to advanced care for those without the ability to pay, and training physicians who would then go on to work throughout the city, state, and beyond.

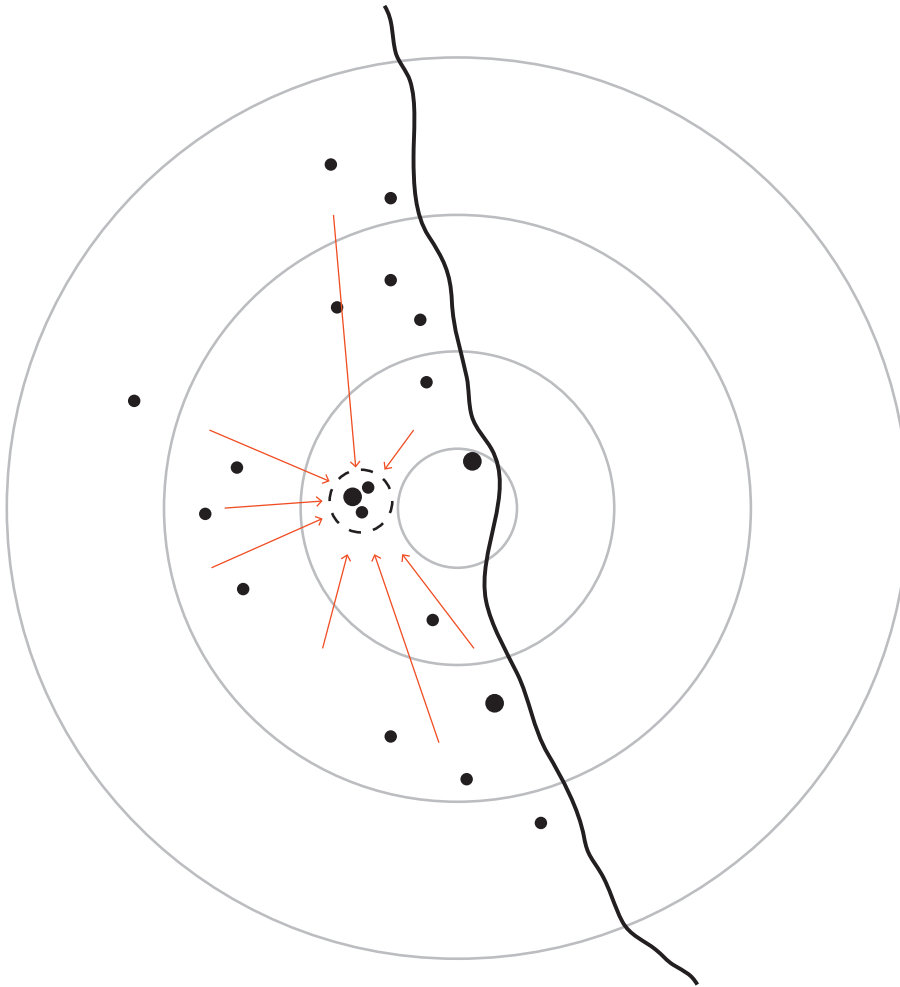
### **The birth of health insurance**

Until the 1930s, health insurance was almost non-existent. Most hospital visits were considered a charitable service, since the majority of patients lacked the ability to pay; even for paying patients, hospital and office visits were generally affordable.<sup>2</sup> Traditionally, the problem of adverse selection and the difficulty of risk assessment made providing insurance for the cost of care and hospitalization nearly impossible. The private, employment-based insurance system originated in Dallas, when Baylor University hospital struck a contract with public schoolteach-

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2 At the turn of the century, most forms of health insurance covered lost wages due to hospitalization.

Figure 4.5: Hospitals during the first half of the 20th century, with an emergent medical district (red arrows indicating the flow of indigent patients)



ers in 1929 to provide pre-paid care. Pooling risk across a group of workers compelled to participate as a form of non-wage compensation provided a viable mechanism for overcoming market failure. Propelled by declining hospital occupancy during the Great Depression, the model of employer-based insurance began to spread as a means to maintain hospital revenue. With support from the American Hospital Association (AHA), hospitalization insurance programs first diffused as tax exempt nonprofit charities, known as Blue Cross plans, that priced insurance based on community ratings rather than individual ratings, charging all residents the same rates regardless of their health status. By 1939, 25 states had permitted Blue Cross plans.

Payment for physician services arrived after hospital services. Historically, the AMA's hostility to any payment intermediary as a threat to physician autonomy had left the profession strongly opposed to the concept of insurance.<sup>3</sup> Opposition gradually softened, primarily in response to legitimate fears that the Roosevelt administration's social security legislation would include a public health insurance program. In 1934, the AMA formally set forth a set of principles to govern insurance for physician services in a manner that would preserve physician autonomy and control at both the organizational level and in transactions with patients. Upon passage in 1935, Social Security legislation did not include health insurance, largely to sidestep a threat from the AMA's lobby to sink the entire bill (Starr, 1982, 235–279). In 1939, state medical societies began to offer Blue Shield plans to cover office visits, house calls, and in-hospital physician services. Blue Shield plans partnered with Blue Cross plans to counter private competition by bundling. While coverage increased rapidly under the Blues and private insurers, only 15 percent of Americans had some form of health insurance by 1940 (Emanuel, 2015). Private competitors also began to enter the insurance market using the same employer-based model, and by the early 1950s, private for-profit plans had surpassed the Blues in coverage.

### 4.3 After World War 2

If the modernization of the medical institution occurred over a period beginning in the 1890s, the postwar period marked the federally sponsored emergence of the medical industrial complex. Propelled by the postwar boom, legitimized by increasing cultural authority and political influence, and with a growing share of its cost underwritten by federal and state governments, the institution of medicine entered a period of unprecedented expansion. Hospitals became big businesses with looser ties to charity care. This period both brought continued regulatory

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<sup>3</sup> Physicians often price discriminated by charging patients based on their ability to pay.

realignments and left a trail of physical facilities investment that again re-shaped the geography of modern medicine in cities and suburbs. However, the expansion of medicine occurred without disrupting the role of the hospital as both a charity and a competitive business set into place during the previous decades' establishment of professional dominance and organizational development. Thus, expansion had uneven effects on hospitals and academic medical centers. The emergent inequalities of "two-tiered" health care reinforced the intersection between the uneven postwar expansion of health care and the racially inflected geography of suburban investment and inner-city economic decline.

### **Federal involvement**

Several important changes occurred during or soon after the war. In response to wartime shortages, the 1942 Stabilization Act essentially fixed prices and wages to control inflation. Subsequent agency and court interpretations, however, carved out the provision of health insurance, which became a major point of collective bargaining over fringe benefits during the war. By 1950, nearly two thirds of Americans had hospitalization insurance coverage through employment (Emanuel, 2015). Further, in 1954, the Internal Revenue Service excluded the monetary value of health insurance coverage from income taxes. This indirectly subsidizes coverage, since one dollar of untaxed health insurance is worth more than one dollar in taxable wages. The initial market-making innovation of employer-based insurance expanded in a manner that yoked the provision of health insurance to employment, greatly expanding the base of paying patients. Broad health insurance coverage thus became one element of the postwar Fordist social contract, although some groups – low-wage workers, some small business owners, self-employed and non-standard workers, the unemployed, and retirees – remained structurally excluded.

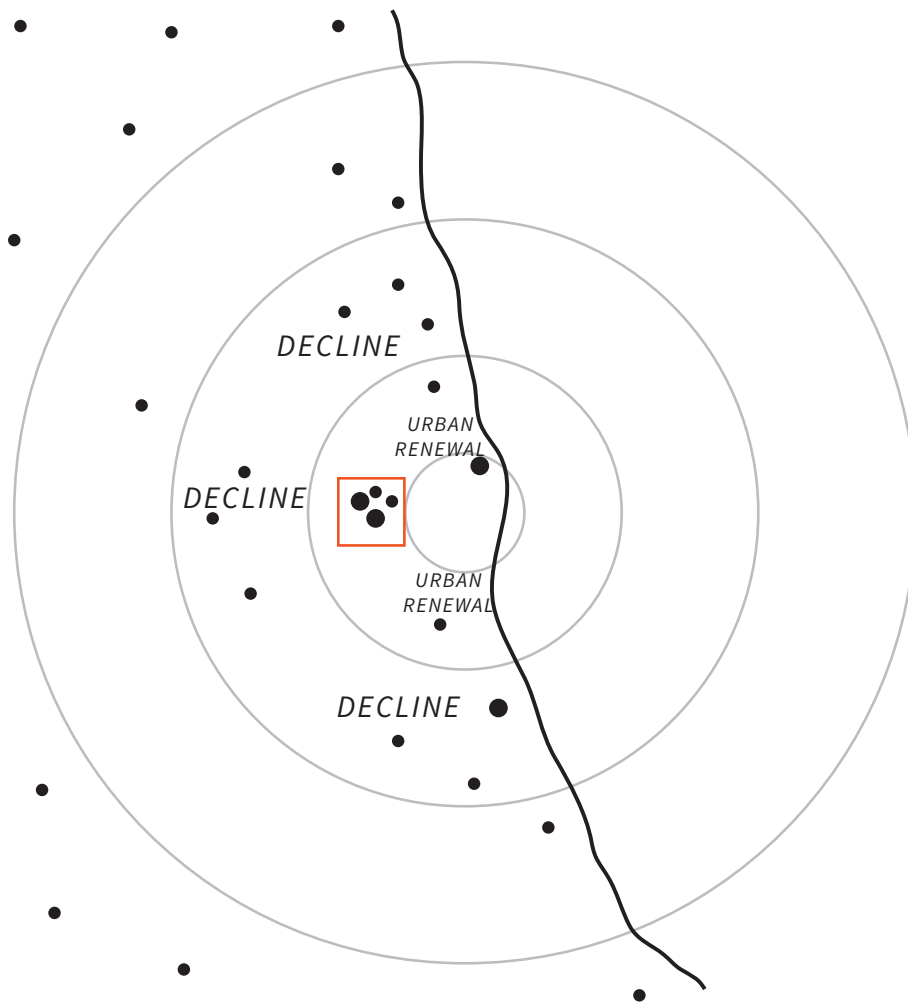
In addition to insurance regulations, the federal government began to directly subsidize hospital construction. After the war, the federal government consolidated several small-scale veterans programs into the Department of Veterans Affairs, which built urban hospitals as centers of research and teaching and to provide care to veterans in the region. In many cases, these facilities were sited in proximity to existing concentrations of teaching and research institutions; and VA hospitals became common features of medical districts. In 1946, the Hill-Burton Act provided the first federal funding for private hospital construction, subject to matching requirements. Hill-Burton also subjected participating hospitals to certain regulations, such as disallowing discrimination based on race or ethnicity (though separate but equal

treatment was permitted until 1963) and requiring a “reasonable volume” of uncompensated care. Hill-Burton was the first federal legislation that required some form of regional capacity planning, although like subsequent efforts, this requirement depended more on voluntary decisions by hospitals competing for patients and funding rather than directive intervention in the distribution of resources.

By this time, many hospitals were operating with very thin margins, and Hill-Burton probably served to keep many community hospitals open (Stevens, 1999). Just as postwar suburbanization remade the employment, residential, and political landscape of urban regions, demographic and economic shifts combined with the changing nature of payments fundamentally altered the flows of funding and patients into hospitals. With a larger base of paying patients, new hospitals in the growing suburbs and inner-city centers for research and referral experienced an expanding base of paying patients. In contrast, inner-city community hospitals and public hospitals retained the traditional charge of providing care but for patient bases drawn increasingly from portions of the city suffering disinvestment. The early stages of industrial decline and suburbanization combined with a financial mechanism stratified by employment status to create a two-tiered system of care that was itself geographically uneven. In this respect, Hill-Burton predicted the limits of a series of subsequent, often overlapping and diluted federal hospital planning initiatives through the 1970s, all of which lacked a sufficient carrot or stick to discipline hospital investment decisions. The problem of health systems planning left some areas with a shortage of capacity (especially rural and inner-city areas), while others had excess capacity and wasteful duplication of increasingly expensive technologies and specialty services.

The US health care system remained firmly under the domain of private industry but only with heavy and ultimately increasing federal support. The parameters of federal intervention were set by the AMA’s vigorous defense of professional autonomy and by legislative compromises between those who saw comprehensive coverage as a eventual necessity and others wary that federal involvement with medicine would mark a step toward socialism. The federal government mainly assumed the role of regulator and funder, while control over hospital systems remained with states, localities, regional industry organizations, and – most of all – the boards of individual, competitive hospital systems. In the wake of the wartime expansion of federal support for research, government-supported research extended to chronic diseases and other biomedical fields, an effort that would enhance the size and importance of the National

Figure 4.6: Medical district establishment (in red) and the pattern of decline and redevelopment in an industrial city



Institutes of Health (NIH), the federal government's main mechanism for supporting basic and applied biomedical and public health research (Ginzberg, 2008, 21).

In some cities, the process of medicine's postwar expansion combined with concurrent shifts in the capacity of urban political actors to bring attention to the urban medical district, not only as a site of intensifying development but as a policy intervention. For instance, figure 4.6 illustrates a scenario of neighborhood disinvestment in the same "ring" of development as the medical district. Indeed, public teaching hospitals and academic medical centers, with some degree of regularity, had been established in the transitional area between downtown and the same "inner city" neighborhoods that disproportionately tended to experience postwar



disinvestment. Local redevelopment strategies, including those funded by the federal Urban Renewal program, often focused on shielding the Central Business District (CBD) from “blight” in the encircling ring of residential neighborhoods and industrial corridors. This hypothetical scenario created the possibility for policy-makers and planners to convert growing medical institutions into agents of redevelopment, while providing land for medical institutions to grow in place rather than to follow the population to the suburbs, where most new hospitals were being built. These conditions existed in Chicago (see chapter 6), leading to the formal designation of the Illinois Medical Center District and the creation of a dedicated redevelopment authority in the 1940s. Over the next three decades, a similar sequence of events occurred in New Orleans (although with far less effect on development), Birmingham, and several other cities.<sup>4</sup>

In a second scenario, in some rapidly growing cities in the Sunbelt for instance, especially in Texas, medical districts were adopted as a policy to attract new hospitals and academic medical centers, essentially by providing free land on the undeveloped or agricultural periphery further afield from the built-up urban core. While not necessarily conceived as *redevelopment* policy, the medical district here operates as a mechanism to facilitate a convergence of medical capacity to match the prestigious teaching hospitals and academic medical centers in older, larger industrial cities. This scenario applies to events in the 1940s culminating in the creation of the Texas Medical Center in Houston (chapter 6) and, a few years later, the South Texas Medical Center in San Antonio. In both scenarios, the postwar emergence of the medical district – as not just a place but as a policy and as an organization – reflected the intersection between the local trajectory of urban development and the federally fueled expansion of medicine.

With the advent of federal funding for health insurance programs, the public sector threw massive resources into a field where decisions were being made in silos by organizations with thin margins trapped in an inherited cycle of competition for patients (Stevens, 1999). In the 1960s, Medicare and Medicaid dramatically sharpened the dynamics that emerged in the years after World War Two. Urban scholarship frames Johnson’s Great Society programs as a response to the urban crisis caused by suburbanization and inflected by the racial politics of the Civil Rights era. However, the most consequential legacy of the Great Society programs for national

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4 In New Orleans, the medical district formed the basis for the city’s most ambitious Urban Renewal redevelopment plan, though the Department of Housing and Urban Development (HUD) denied the application. In Birmingham, Urban Renewal provided lands for the expansion of the University of Alabama-Birmingham academic medical center, which has partly been credited with the city’s rebound from job losses in its traditional steel industry.

policy and, arguably, for urban economies was the 1965 Social Security amendments to create Medicare and Medicaid.

## **Medicare and Medicaid**

Prior to 1965, the employer-based health insurance model structurally excluded two major populations, the elderly and the poor. Health care costs contributed substantially to elderly poverty and became a campaign issue in the 1960 and 1964 presidential elections. As with earlier efforts to provide insurance, Medicare encountered resistance from hospitals and physicians, and the AMA argued that Medicare would constitute a step toward socialism (Ginzberg, 2008, 27). To preempt boycotts of Medicare, the administration compromised with “cost-plus” reimbursement, i.e., the full cost of whatever the hospital chose to bill plus additional funds to cover capital costs, such as those related to facility improvement and expansion and to new technologies. At the time, many hospital administrators who had been seeking donors to finance facility expansion programs suddenly had ample funding from the federal government and from private insurers that followed Medicare’s reimbursement decisions. Typically, reimbursement rates were also higher in academic medical centers to cross-subsidize the research and teaching missions. Until the 1980s, hospital Medicare reimbursements (part A) and physician payments (part B) were subject to relatively few checks on their appropriateness.

A third element of the sweeping Social Security amendment that created Medicare, Medicaid expanded means-tested coverage to low-income families but with very different financing mechanisms from those of Medicare. While the federal government directly reimburses providers through Medicare, Medicaid provides block grants to states, which then manage their own reimbursement and enrollment rules within federal guidelines.<sup>5</sup> Whereas Medicare is financed on a national basis through FICA payroll taxes in a manner similar to Social Security, Medicaid is funded through a combination of federal and state general revenues, structured more like welfare eligibility, and thus subject to similar morally charged debates over fiscal priorities. Moreover, since it depends on state funding partially reimbursed by federal grants, Medicaid eligibility rules and reimbursements vary across states and with the vicissitudes of state budgets. In effect, Medicaid stands on considerably less stable footing than Medicare, leading to less favorable reimbursement rates for providers. While the legislation greatly expanded insurance

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5 Medicaid’s design followed the earlier 1960 Kerr-Mills program for means-tested coverage of the elderly through matching state funds but removed the elderly restriction. By 1972, every state except Arizona participated in the Medicaid program.

coverage, it also had the effect of further institutionalizing two tiers of public finance for health care (Starr, 2015).

As Medicare and Medicaid grew during the 1970s, the federal government paid about 40 percent of the costs of a typical hospital (Barr, 2011, 90). The programs grew to eclipse spending on all other Johnson-era social programs by a wide margin. In addition, while the architects of the legislation originally intended Medicare as a first step on the road to a full-coverage health care system that would bring the US in line with other industrialized countries, it actually had the effect of entrenching opposition to a more comprehensive system. By the time of the federal government's next major expansion of coverage in 2010, Obama's Patient Protection and Affordable Care Act expanded coverage through Medicaid and private insurance, not Medicare. Medicare remains a unique program: no other country has created a separate health care financing system for its elderly. In effect, Medicare functions like the comprehensive national health insurance programs that exist in several OECD countries but only covers a certain demographic category.

The impact on hospitals and academic medical centers was profound. Previously scraping by on thin margins, academic medical centers found themselves awash in funds after Medicare (Ginzberg, 2008). Meanwhile, Medicare diminished the traditional dependence of teaching hospitals and medical education on admitting poor patients, an arrangement that had existed since the "poor house" era. Federal mandates also required hospitals to transition from the ward-style of in-patient care to semi-private rooms, an organization style more suited to paying patients. Free of the pressure to admit indigent patients, academic medical centers referred increasing numbers of Medicaid and uninsured patients to public hospitals and instead concentrated on pushing back the frontiers of high technology medicine. Meanwhile, urban medical districts retained their traditional function in providing safety-net care while academic medical centers evolved to fit a new set of incentives. As such, these places grew in a manner that encapsulated the emerging contradictions of the US health care system. Fiscally stressed and socially stratified safety-net care stood in proximity with the development and application of increasingly specialized, technological, and expensive procedures.

### **Federal support for health care and cities**

Fiscal retrenchment provides one of the most salient narratives in urban policy and analysis in the United States. As Great Society-era urban programs of the 1960s gave way to the devolution of federal responsibilities in the 1970s and 1980s and welfare reform of the 1990s, cities were

increasingly cut off from federal aid and programs. This shift has had profound implications for the urban policy process, increasingly exposing cities to inter-jurisdictional competition and undermining the fiscal position of central city governments (Eisinger, 1998).

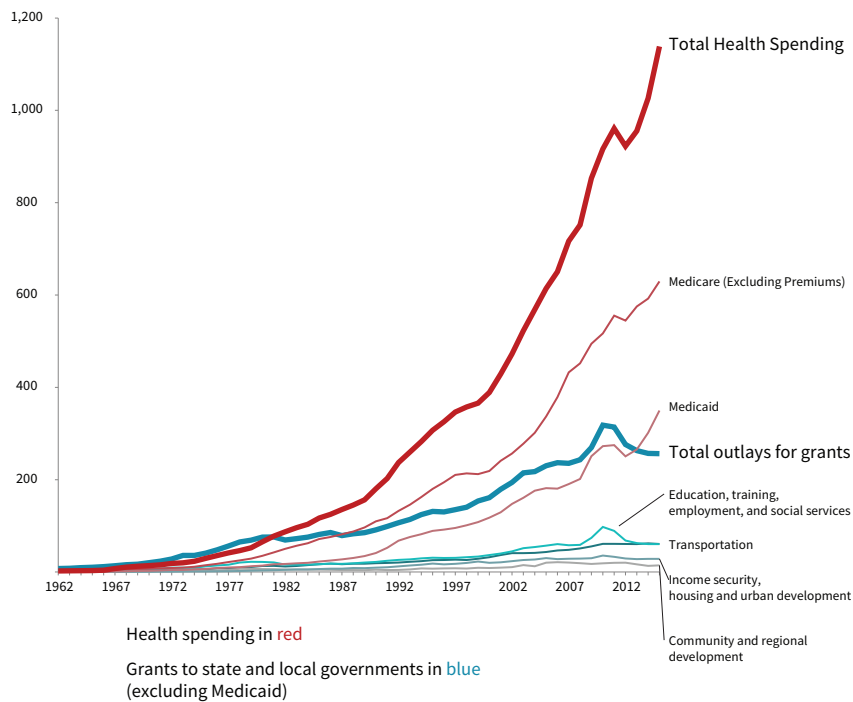
However, relaxing the conventional narrative of fiscal retrenchment, and its focus on a specific set of social and redevelopment programs, to incorporate the coinciding expansion of federal involvement in paying for health care modifies the interpretation of the role of the federal government in cities. While the primary outcome of federal health spending is to expand health insurance coverage, this spending also supports a sizable level of employment and investment, most of which occurs in metropolitan areas. Federal health care spending creates job openings when opportunities in other industries decline, and its resistance to economic downturns stabilizes employment levels during periodic local and national recessions.

Figure 4.7 charts changes in federal spending for health and for grants to states and localities. Medicaid, which provides insurance for low-income families, actually falls under both categories, as federal health spending in the form of a grant to finance the majority of programs administered by the states. After the Affordable Care Act's Medicaid expansion, the program now exceeds the total of all other federal grants to state and local governments. In the early 1980s, total health spending and total grants to states and localities were roughly equal; today, health spending is 4.5 times higher. In comparison, federal grant categories conventionally framed under the umbrella of urban policy have been flat or declining. Certainly, the rollback of federal programs and the de-regulation of industry have eroded the fiscal position and economic base of cities. However, incorporating the federal government's regulatory influence, direct spending, and state funding for health care adds a qualification to the conclusion that the federal government has completely hollowed out its support for city economies.

### **Medicalization: technology, specialization, and resources under conditions of professional dominance**

Several technological advances came to hospitals between the 1950s and 1970s. The 1950s and 60s brought improvements to monitoring of vital signs, intensive care units, cardiac catheterization procedures, and kidney dialysis. Chemotherapy revolutionized cancer treatment in the mid-1950s. By the 1970s, oncologists had made significant progress in curing or dramatically extending the survivability of several types of cancer. These advancements had diffused throughout elite medical institutions by the 1960s and to many other hospitals by the 1980s. Also, in 1951, congressional legislation began to require prescriptions for access to most new

Figure 4.7: Total federal outlays for health programs and grants to state and local governments, with selected health programs and grant functions, 1962–2015



Source: Office of Management and Budget, Historical Tables, tables 15.1 and 12.3, <https://www.whitehouse.gov/omb/budget/Historicals>.

Notes: All figures are in current year values, totals are the sum-totals of their respective tables (minus Medicaid for the state and local grants total), but important health programs and urban policy categories have been isolated for comparison.

medicines. The predominance of new miracle pills increasingly reinforced the American public's access to other forms of medical progress.

Alongside instrumental narratives of health care modernization, technology and financial resources drove a phenomenon that sociologists began to label “medicalization” in the early 1970s (Zola, 1972; Conrad, 2008). Medicalization signals the process through which the scope of medical jurisdiction, authority, and scientific practice extends into broader areas of individual and social human life. At roughly the same time, a HealthPAC-commissioned study *American Health Empire* coined the term “medical industrial complex” to draw an analogy to the defense industry in describing the mutually beneficial interaction between private pharmaceutical companies, hospitals, academic medicine, and the state (Ehrenreich and Ehrenreich, 1972). Where the period before World War Two had involved institutional consolidation and

the establishment of professional dominance, the postwar period greatly increased the medical institution's purview and added financial and technological momentum behind the drivers of its expansion.

Medicalization reflects the mutual reinforcement of high-technology medicine and the professional system that privileges physician specialists over generalists. Several factors combined to reinforce the bias toward specialist physicians that emerged in previous decades (Emanuel, 2015). The growth in full-time faculty gradually eased out generalists in favor of specialists who also performed research. NIH and VA funding for research and training further fueled the emphasis on specialized research in academic medical centers. Because insurance for hospital-based surgery and specialty care arrived earlier and paid higher reimbursements than office-based insurance, specialists had benefited from the development of the insurance system to a greater extent than generalists. The increasing prestige of academic medicine also favored specialists.

In 2013, only 32 percent of American doctors were primary care physicians; most other countries have close to a 50-50 primary-specialty split (Dall et al., 2015). Primary care physicians, who provide comprehensive, coordinated care that is not differentiated by disease or organ system, are often in a position to stress prevention and to detect chronic diseases early, which can result in better outcomes and save money for the entire health system. In theory, primary care physicians serve as the appropriate gatekeepers in an integrated cost-conscious, and prevention-oriented health care system. However, primary care physicians typically make considerably less than specialists, who are also viewed as having a more exciting, more prestigious professional experience. In practice, a higher share of specialists has translated to higher costs of care. Meanwhile, the shortage of medical students pursuing training to be primary care physicians remains a serious gap in reproducing the physician workforce, particularly since recent reforms have emphasized access to primary care as a route to cost reduction and quality improvement.

Also contributing to the high cost of health care, administrative costs in the US's exceptionally complex web of payment, billing, and financing far exceed costs in comparable countries (Cutler et al., 2012). Administrative costs account for 25 percent of total US hospital spending (Himmelstein et al., 2014).<sup>6</sup> Whereas contemporary policy prescribes the market as the solution to the lingering excesses of the postwar system, evidence routinely finds much lower adminis-

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<sup>6</sup> Administrative spending is actually higher in for-profit hospitals than in non-profit hospitals. Public hospitals have the lowest administrative costs (Himmelstein et al., 2014).

trative costs in the public sector. For example, hospital administrative costs for Medicare have remained less than two percent of overall program expenditures, a rate considerably lower than administrative costs for private sector insurance (even when profit is removed) (10–30 percent) and Health Maintenance Organization (HMO) plans (3–7 percent) (Potetz, 2011; Barr, 2011). Meanwhile, private insurers lack the ability to bargain for lower payments – an imbalance exacerbated by the consolidation of large hospital systems (Nichols et al., 2004).

The medical industrial complex critique was taken up again by Relman (1980, 966), then editor of the *New England Journal of Medicine*, who in criticizing the rise of for-profit health care services as the “new” medical industrial complex asked, “Can we really leave health care to the marketplace?” Relman singled out the political implications of blooming for-profit enterprises like private hospitals and corporate hospital chains, nursing homes, outpatient diagnostic labs, home care, and dialysis centers – roughly the same changing organizational population analyzed in Scott et al.’s (2000) analysis of the period of market orientation during the 1980s and 1990s. Relman’s prescient question of how the profit motive affects the distribution of resources within a system so deeply imbued with market failure has come to apply even more broadly. If improvements to cost, quality, and access have historically implied tradeoffs, so does the necessity of allocating resources to support the profit motive as a mechanism to promote efficiency in a market-based system. As Barr (2011, 319) concludes, “changing only market structures will not be sufficient to change the institutional structure of US health care”. Yet following the failure of postwar episodes of health care planning to distribute capacity in manner that is equitably accessible and cost-efficient, market-oriented reforms have driven efforts to control the Medicare-fueled cost spiral while increasing access and quality.

#### **4.4 The shifting drivers of the biomedical economy**

By the beginning of the 21st century, a series of landmark reports had begun to document the depth and complexity of the problems facing the US health care system. In 1999, *To Err is Human* estimated that between 44,000 and 98,000 deaths occur each year due to preventable medical errors (Kohn et al., 2000). A follow up report, *Crossing the Quality Chasm* (Committee on Quality of Health Care in America, 2001) provided a broader series of sweeping recommendations for reform that brought the problem of quality to the forefront of policy and management discourses in health care (Dentzer, 2011). The high cost and lagging quality of American health care became increasingly important state and national policy issues, and nearly every aspect of

the health care system has experienced pressure to adapt to a changing landscape of market competition, finance, and regulations.

The long process of replacing fee-for-service payments with various iterations of managed care represents perhaps the most significant shift toward the market (Scott et al., 2000). In the 1980s and 1990s, based on the success of Kaiser-Permanente and other HMOs, federal and state governments and large employers promoted managed care as an alternative to fee-for-service payments. The “carrier” HMO provided a model for bundling payments, bargaining with a set network of providers, and using primary care as a gatekeeper to expensive, specialized services – and, in many instances, egregious coverage denials and limits to consumer choice. While doing little to constrain long-term cost growth, managed care provoked a backlash among physicians and patients who suddenly encountered limits on their decisions. Yet, the principle of market-based incentives to limit care persists, albeit with a greater emphasis on empowering the patient as a consumer through more choices and better information – much of which hinges on the emerging infrastructure of health information technology and the ability of existing health care organizations to adapt their business models.

Market pressures have created a context for geographic differentiation and local experimentation in new organizational models. Several local experiments have shaped national reforms, e.g., California’s Kaiser-Permanente demonstrated the potential of the HMO to incentivize cost constraint while maintaining quality, state waivers have allowed for demonstration-oriented Medicaid reforms, and many of Obamacare’s most significant provisions grew out of Massachusetts’ 2006 reforms. Hospitals have also been subject to geographically uneven processes of reduction and closure, mergers, and competition on specializations. As a spatial and organizational phenomenon, the urban biomedical district exists within a sea of policy and economic changes in the health care system. These changes work both to promote integration across discrete organizations and to strengthen the pressure to compete.

## **The pharmaceutical industry and biotechnology**

Concerns about rising pharmaceutical costs stretch back at least to 1959, when a lengthy congressional anti-trust investigation established the terms of a debate that still continues (Daemmerich, 2011). As Tennessee Senator Estes Kefauver argued, patients, especially those without the ability to pay, were a captive market, subject to price collusion by oligopolistic drug producers. Pharmaceutical CEOs countered by arguing that high prices relative to the cost of manufacturing were necessary to promote innovation and recoup the cost of broad-based (basic)



and failed research, especially since pharmaceuticals had the potential for indirect cost savings by cutting down on hospital stays. The congressional episode ended with the 1962 Kefauver-Harris Amendments, which focused on patient protection. In the wake of the Thalidomide controversy, which caused thousands of births with congenital defects, the 1962 law required manufacturers to provide scientific proof of a new drug's safety and, for the first time, efficacy to gain FDA approval. At the time, few pharmaceuticals existed; for example, mass production of penicillin only began about 20 years earlier. The early establishment of FDA regulation over safety and efficacy not only shaped the burgeoning pharmaceutical research enterprise but also served to justify minimal interference with drug prices, even when drug prices began to rise precipitously in the 1980s (Tobbell, 2008).

Also in the early 1980s, the relatively new field of biotechnology began to have an appreciable impact on the drug development process. Instead of the small-molecule, or chemical, drugs developed by traditional pharmaceutical companies, small start-up biotech companies (or bio-pharmaceutical companies) began conducting research on large molecule drugs, or biologics. Biotechnology has since emerged as the most important frontier of drug development, ranging from creating new treatments for rare and common diseases that previously could only be treated symptomatically to tailoring interventions to the genetic profile of individual patients (e.g., personalized or precision medicine). While well-established pharma companies have converted to predominantly focus on biotech development pipelines, the number of biotech firms grew from a handful in the 1970s to over 4,600 worldwide (Evens and Kaitin, 2015).

In the past, pharma and bio-pharma have had different organizational cultures, structures, and geographies. Biotechnology companies, especially in the beginning, reflected the model of the entrepreneurial scientist, who would spin a company out of the university and into a decade-long development cycle funded by angel and venture capital investments. Their organizational cultures "tended to be more open, challenging, and science-focused, with team-oriented decision making and communications – all of which fostered a more action-oriented and entrepreneurial environment" (Evens and Kaitin, 2015). As a result, biotech firms depend on the embeddedness of hybrid but specialized forms of scientific and business knowledge, talent, and institutional resources in regionally territorialized networks of large and small biotech firms, as well as universities, academic medical centers, and other institutional anchors. In the US, these biotech regions formed earliest in the Bay Area, Boston, and San Diego; and those regions have continued to benefit from expansion. In contrast, pharmaceutical companies, many of which are located on the east coast between Philadelphia and New York and in other

large cities, retained a corporate hierarchical structure, although their activities shifted away from drug development and toward marketing, distribution, and management of portfolios of technologies developed in the smaller, more entrepreneurial population of post-Fordist biotechnology and device firms.

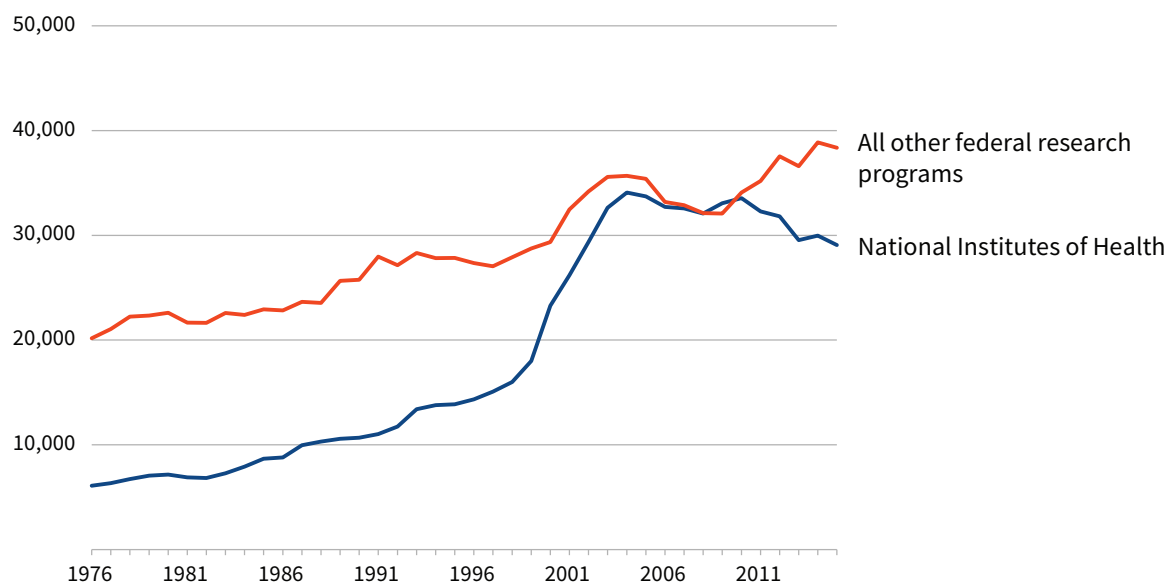
During the 1990s, the science and business of biotechnology matured. New drug and biologic applications grew, pipelines and patents multiplied. Sales and profits expanded, and companies proliferated. Alliances between biotech and pharma grew, with the former handling an increasing share of drug research and development and the latter focusing on bringing new drugs to market. By the 2000s, the divisions between the two types of organizations had blurred. As sales and profits propelled the growth of large biotech companies, these companies encountered stress from capital markets and from increasing regulatory requirements for clinical trials and for demonstrating effectiveness before granting reimbursement. As a result, many biotech firms have consolidated. Meanwhile, some large pharmaceutical companies have acquired biotechnology subsidiaries to increase their access to novel biotechnologies. The 2007–2009 recession interrupted the availability of capital for the long, risky biotech development process, hastening a convergence of biotech and pharma sectors:

As a result, the biotech company business model inexorably changed, becoming a hybrid between the previous independent and science-focused world of biotech and the more structured, hierarchical, and commercially oriented world of big pharma (Evens and Kaitin, 2015).

Publicly funded research also plays a major role in the commercialization of new biomedical technologies. Between 1965 and 1992, two thirds of the new drugs with the highest therapeutic impact on society grew out of discoveries funded by public sources (Cockburn and Henderson, 2001). Indeed, health has become, by far, the largest area of public support for research. Despite growing consistently since its establishment and long-comprising the largest single source of federal funding for research and development, the NIH comprised less than one quarter of the total until 1984. During Bill Clinton's second and George W. Bush's first terms, the NIH budget more than doubled to roughly half of total federal research and development (R&D) spending (see figure 4.8). The cresting of the NIH's budget roughly coincides with the period of interest in biotechnology and life sciences strategies in economic development.

The bio-pharmaceutical sector has exerted increasing influence over health care policy. For example, in 2003, due to rising pharmaceutical costs, Congress created Medicare Part D to expand coverage for prescription medications. To keep the expansion within Bush's 10-year, \$400 billion dollar target, the plan created a complex gap in coverage commonly referred to

Figure 4.8: Total federal research and development spending, FY 1976–2015 (in millions of dollars)



“All other federal research programs” includes National Science Foundation, Department of Energy, National Aeronautics and Space Administration, Department of Defense, Department of Agriculture, and all other programs. The original data set separated these out but this simplified version merely collapses all categories other than NIH.

Source: Author elaboration of AAAS R&D analyses of OMB and agency R&D budget data, includes conduct of R&D and R&D facilities (<https://www.aaas.org/page/historical-trends-federal-rd>).

Note: All amounts are in constant 2016 dollars (millions).

as the “donut hole”. Heavily shaped by the pharmaceutical industry, the bill did not allow Medicare to negotiate drug prices with manufacturers, as public payers in other countries with lower pharmaceutical prices do. This gap was cited by critics as a misuse of the vast bargaining power of the largest insurance plan in the country (Steinberg and Bailey, 2007).

The private biomedical research enterprise has also influenced state and local governments and health care organizations in ways that added technology commercialization to the traditional care, research, and education activities that occur within urban biomedical districts. Incubator/accelerator facilities focused on life sciences and biotechnology, often including wet labs, have proliferated as a focused way to build bridges for commercial opportunities from university-based research – in other words, stimulate the “bench-to-bed” innovation process and to capture a larger portion of it within the locality. Meanwhile, the revenue mix of academic medical centers has shifted toward grant-funded research, much of which relies on partnerships with private pharmaceutical and biotechnology industries, especially after sequestration curtailed growth in NIH funding. While such partnerships raise substantial and complex questions regarding the influence of conflicts of interest on biomedical research (Blumenthal et al., 1986; Bekelman et al., 2003), academic medical centers and hospitals have experienced pressure to exploit new revenue sources while adapting to more restrictive, outcomes-oriented reimbursements.

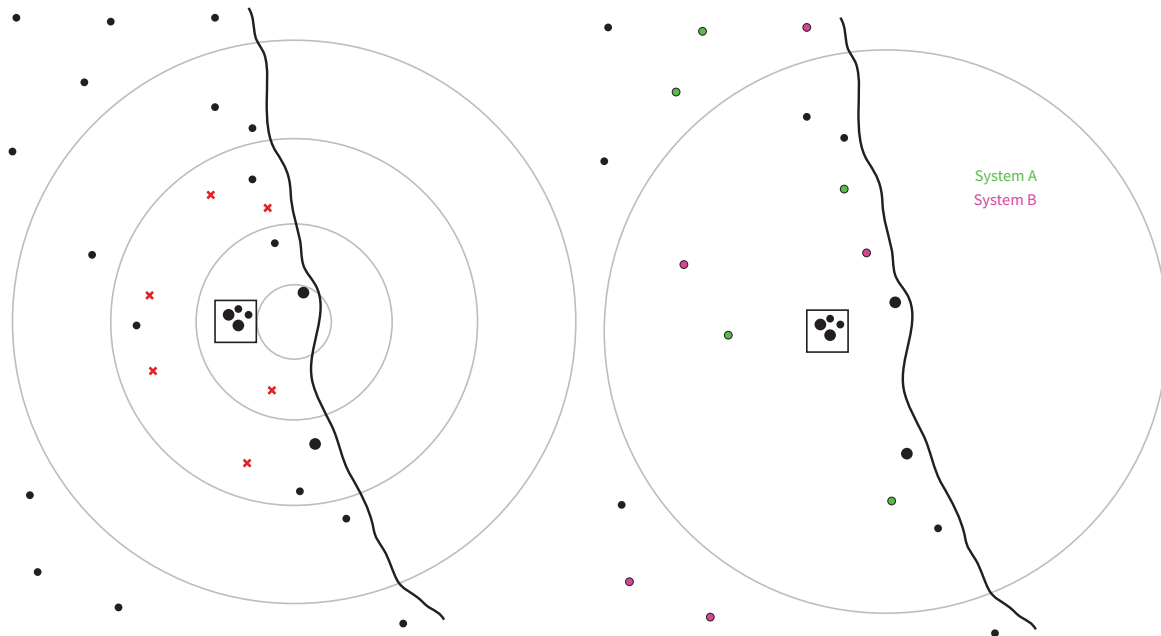
## **Reining in Medicare and Medicaid**

The federal government began to tighten Medicare’s loose purse strings in the 1980s, initiating four profound changes to the hospital sector: declining bed counts and occupancy rates, a shift toward outpatient procedures, facility closures and downsizing, and the rise of multi-hospital systems through mergers and acquisitions.<sup>7</sup> To rein in rapidly rising costs, the Centers for Medicare and Medicaid Services instituted the Prospective Payments System (PPS) in 1983. Rather than simply reimbursing the hospital for the costs of care, PPS paid a fixed amount for the type of patient admitted to the hospital based on how much it should cost, on average, to treat the patient’s diagnosis-related group (DRG). The hospital would have to absorb any excess cost beyond what the federal government paid. Previously, Medicare served as an incentive for hospitals to keep a patient as long as possible. Under PPS, in-patient hospital stays shortened substantially and occupancy rates fell (Barr, 2011, 91). At the same time, the PPS and private insurers began to encourage diagnosis and treatment, including surgery, in outpatient settings.

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<sup>7</sup> Interview with AHA senior trends analysis staff, 11 July 2014.

Figure 4.9: Hospital closures and the emergence of multi-hospital systems



As a result, many hospitals incurred losses, as lower occupancy equates to less income and lower efficiency. Over the 1980s and continuing through today, Medicare's belt-tightening initiated a wave of closures and mergers that has shaken the entire hospital sector. Urban hospitals in particular experience higher costs due to their links to graduate medical education, treatment of poor patients, and the admission of patients through the emergency room (Thorpe, 1988).

Figure 4.9 depicts how hospital closures and mergers have redrawn the map of hospitals within many regions. While many hospitals have closed, many others have altered their functions, e.g., by closing emergency departments; consolidating services with other facilities; or converting into outpatient, specialty, or primary care facilities. Perhaps the most significant change has been the rise of large multi-hospital systems through acquisitions of hospitals and physician group practices. These systems range from smaller consolidations, to major regional players, to non-profit and for-profit systems that operate dozens of facilities in multiple states. Today, according to the American Hospital Association (AHA), three of every five community hospitals belong to a system.<sup>8</sup>

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<sup>8</sup> <http://www.aha.org/research/rc/stat-studies/fast-facts.shtml>

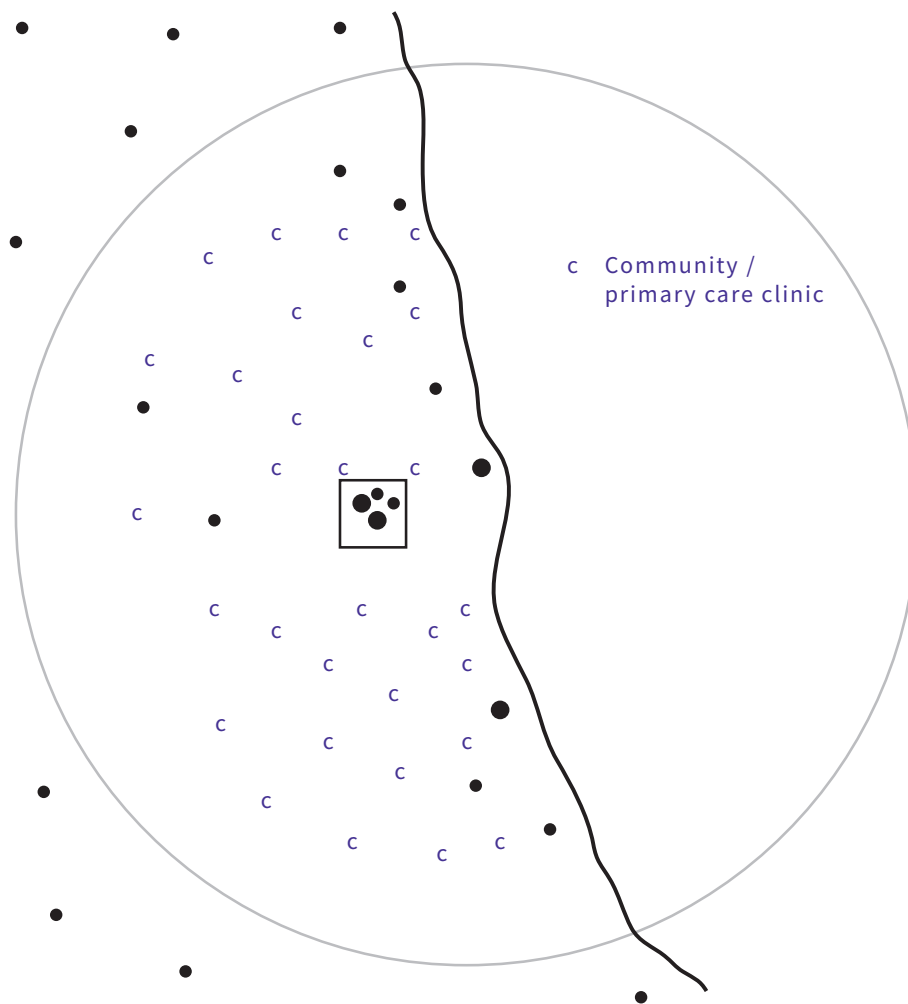
Medicaid programs also experienced changes during this period. After a failed attempt by the Reagan administration to convert Medicaid into a block grant program, legislation in 1981 reduced federal matching payments but created disproportionate share hospital (DSH) funds to help hospitals serving a large portion of indigent patients (Foundation, 2015). In practice, these funds are highly concentrated among a relatively small number of large safety-net hospitals. The DSH program ballooned in the early 1990s when states exploited a loophole that allowed for DSH funds to be “recycled” for matching funds used to cover other items in the state budget while alleviating stresses on safety-net hospitals. While legislative and administrative tweaks had phased out the practice by the mid-2000s, a large portion of state budgets is tied to low income health care coverage.

Also in the 1980s and 1990s, the federal government created various Medicaid waiver programs, relaxing rules for states to engage in demonstration projects, privatized managed care contracts, and reimbursement for home care services. As demonstrated by high-profile examples in Oregon and Tennessee in the late 1980s and early 1990s, waivers may be used to expand or reduce coverage, often through transitioning from a fee-for-service to a managed care model. By 2004, all fifty states had either applied for or been granted waivers (Barr, 2011, 176). The Personal Responsibility and Work Opportunity Act of 1996, which reformed a range of welfare assistance programs, also decoupled income assistance from Medicaid eligibility, further limiting coverage. However, in 1997, the State Children’s Health Insurance Program (SCHIP) expanded Medicaid coverage for uninsured children in families earning less than 200 percent of the federal poverty level.

The different routes states have taken to shift Medicaid to managed care have not substantially reduced costs (Barr, 2011, 182–183). Despite achieving modest one-time cost savings, e.g., by reducing the incentive toward using hospital emergency rooms in lieu of primary care, managed care plans are subject to the same pressures toward newer and more costly treatments as fee-for-service plans. In addition, while low-income children and adults make up roughly three quarters of Medicaid beneficiaries, low-income elderly and disabled individuals who are also eligible for Medicaid account for two thirds of the total cost but make up only a small portion of those covered by managed care plans. As a result, Medicaid represents a growing, mandated stress on state budgets while only covering a portion of the low-income uninsured and inadequately offsetting the cost to providers.

As prospective payments and managed care became the norm, private insurance, Medicaid and Medicare transitioned from “payers” to “purchasers” of services (Stevens, 1999). Operating

Figure 4.10: Shifting care out of hospitals and into networks of community clinics



margins narrowed or turned negative for many hospitals (Aaron, 2000). At the same time, the portion of people covered by private insurance declined as cost increased and middle-class jobs disappeared, chipping away at coverage norms. More patients without the ability to pay sought care in increasingly expensive emergency room visits, further exacerbating the finances of urban hospitals in low-income areas.

These changes have had implications not only for the finances, size, and practices of hospitals but for their employment levels. Figure 9.2 maps changes of employment at hospitals, and

potential<sup>9</sup> openings and closings, across three large, diverse metropolitan areas: Los Angeles, Houston, and Chicago. Generally, while many community hospitals in inner cities and inner-ring suburbs have lost employment or closed, many academic medical centers and prestigious hospitals have gained substantial employment. Figure 4.12 shows similar maps for three other cities that are both classic victims of economic restructuring and site of prestigious Eds and Meds academic medical centers: Penn in Philadelphia, Johns Hopkins in Baltimore, and the Cleveland Clinic in Cleveland.

To alleviate the high cost of hospital care and to improve outcomes, the location of care has increasingly shifted toward a decentralized model, where patients take the role of more active consumers through a network of more integrated, more prevention-focused “medical homes” (Office of Disease Prevention and Health Promotion, 2010; Rosenthal, 2008). Treating the urban poor through massive public-sector hospitals and academic medical centers has become antithetical to the best-practice setting of care – community clinics integrated into the neighborhood fabric of everyday life (see figure 4.10). Safety-net care, in particular, depends on accessibility at the neighborhood scale to divert patients from the emergency room and to facilitate the management and prevention of chronic diseases. The current model thus decreases the reliance on large, centralized public hospitals as care is shifted toward dispersed provider networks comprised of a mix of traditional public-sector and non-profit organizations. Consequently, many state and local governments have closed or reduced the capacity of large public hospitals, while the federal government has facilitated the decentralization of care through reimbursement rules and subsidies (e.g., the Federally Qualified Health Centers and “look-alikes” in 1991, boosted again by the ACA in 2010). Taken together with funding challenges to public-sector and inner-city hospitals, the multi-pronged effort to relocate care for the uninsured and Medicaid enrollees to locations outside of hospital walls further chipped away at the traditional safety-net role of large teaching hospitals – and at the biomedical districts in which they were located.

### **Obamacare: Expanding access and deepening market-oriented reforms**

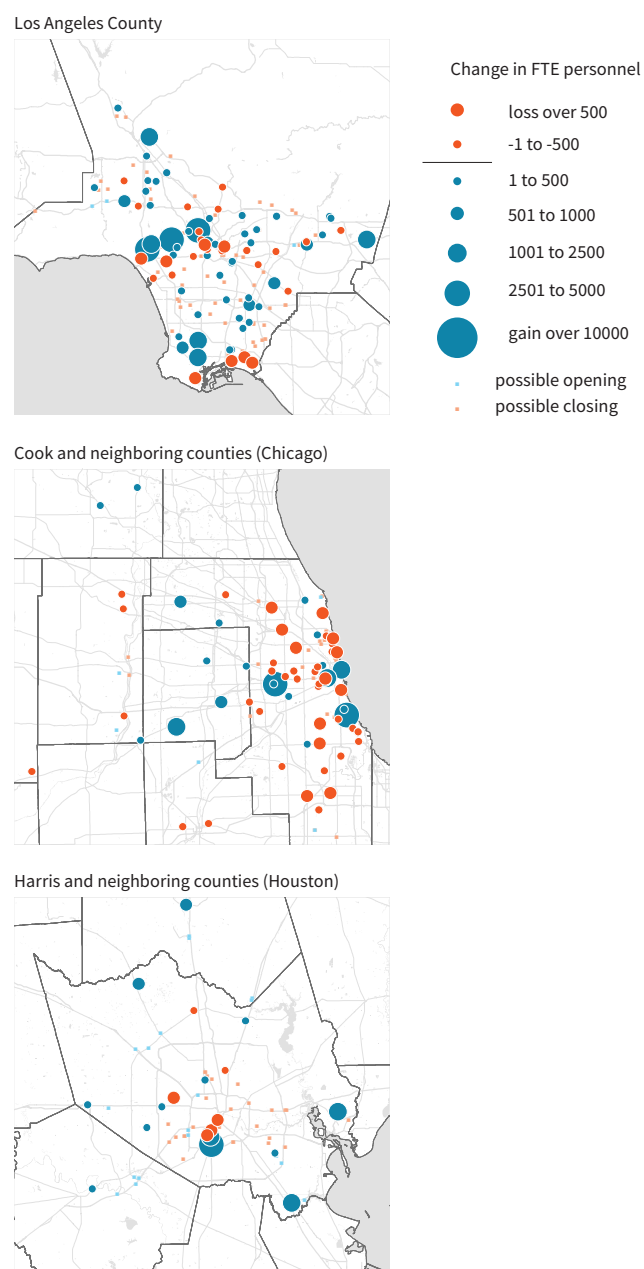
The 2010 Patient Protection and Affordable Care Act (ACA) represents the most significant federal reform since the creation of Medicare and Medicaid in 1965. In many ways (e.g., by stopping short of creating a “public option” for insurance), Obamacare did not disrupt the

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9 The are “potential” because of problems joining the data across two time periods. Many hospitals have restructured in ways that have altered their unique identifiers in the data. In some cases, these may indicate reorganizations rather than closings. More details are provided in chapter 3.

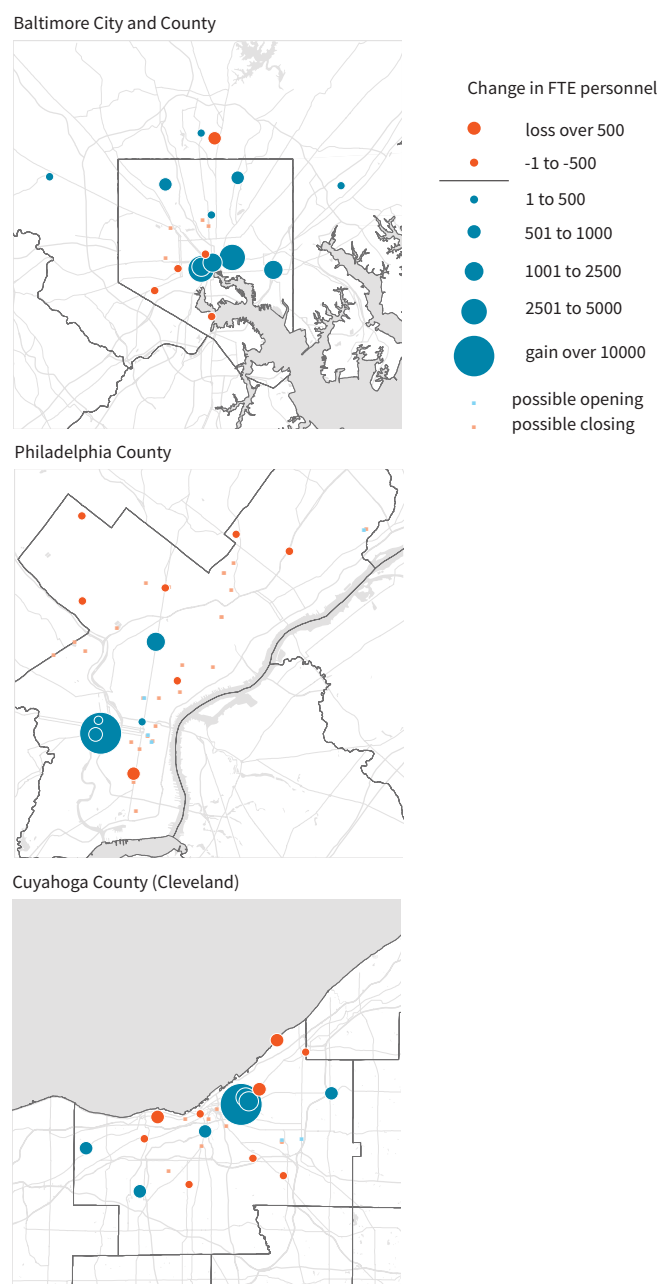


Figure 4.11: Changes in hospital employment in Houston, Chicago, and Los Angeles, 1982–2010



Source: American Hospital Association Annual Survey.

Figure 4.12: Changes in hospital employment in Philadelphia, Baltimore, and Cleveland, 1982–2010



Source: American Hospital Association Annual Survey.

health care system so much as extend and shore up several piecemeal efforts to address its problems. The most well-publicized and likely most significant aspects of the ACA began in 2014 with extension of health insurance coverage to an estimated 32 million uninsured people. The most direct mechanisms to achieve this expansion include the most publicized – and controversial – aspects of the ACA:

The expansion of eligibility for state Medicaid programs to millions of additional people living near the poverty line (as of this writing 19 states have not adopted the expansion);

The creation of “insurance exchanges” – new markets for private insurance outside of employment-based and public program coverage established through a combination of federal and state-level regulations and income tax subsidies;

Mandated coverage, either purchased by individuals or provided by businesses employing 50 or more people.

The ACA included a wide range of other regulatory tweaks, such as closing the Medicare Part D “donut hole” and converting Medicare reimbursements from fee-for-service to bundled payments, addressing the imbalance of incentives for educating primary care and specialist physicians, and promoting – but not requiring – comparative effectiveness research to ensure the efficiency of new innovations. The ACA also either funded or enabled new organizational models that seek to evolve the managed care model while addressing the sources of its backlash, mainly denials for pre-existing conditions and regulating the medical loss ratio to limit rent-seeking. For example, supported with Medicare incentives, the ACA-created Accountable Care Organization combines groups of physicians, hospitals, and other providers into a system for providing coordinated, outcomes-based care through bundled payments. The ACA also provides targeted incentives to evaluate and expand the Patient-Centered Medical Home model, an approach to coordinated, team-based primary care founded on the principle of long-term, holistic collaboration between patient and provider and supported by comprehensive medical records. Like earlier attempts to roll back fee-for-service payments, these organizational models replace inpatient hospital care with integrated encounters across a broader range of outpatient settings.

As a whole, the ACA has potentially conflicting effects on health care organizations. It essentially increases demand by increasing insurance coverage while promoting efficiency by rolling back fee-for-service payments through a variety of mechanisms to discipline health care organizations to outcomes. To facilitate adaptation, the ACA also directs resources to new organizational models (e.g., the Accountable Care Organization) and even explicitly to local organizational experiments. As the most complex health care organizations, academic medical centers have been particularly exposed to these changes.

## Anchor institutions on shifting terrain

Academic medical centers (AMCs) have been described as the “nucleus of the health system” (pwc Health, 2012). Their tripartite mission – educating and training the workforce, conducting clinical research, and providing patient care – places AMCs at the center of improving and reproducing the US health care system. AMCs are massive, often extremely complex and varied organizations that combine a hospital, a medical practice plan, a research enterprise, and a medical school and related health programs under a mix of shared and separate governance structures. Though the business model is fundamentally different, AMCs often belong to university systems. They also may have formal affiliations with other health organizations and in some cases are operated by separate multi-hospital systems.

During the first decade of the 21st century, calls for the reform of medical education mounted to the point of echoing those of the first decade of the previous century. Then, the Flexner report converted the evolution of academic medicine into a revolution, and led to the diffusion of the modern academic medical center (Cooke et al., 2006). Today, the force of change is not only in the structure of medical education institutions but at the systems level (Frenk et al., 2010). Although Skochelak (2010), in reviewing 15 reports calling for change in medical education since 2000, found a remarkable congruency of recommendations, the actual organizational transformation toward cost-conscious and outcomes-oriented management remains a slow, uneven, and uncertain process.<sup>10</sup>

Health care reform is threatening revenues, as AMCs increasingly face pressures of financial distress and managerial restructuring due to twinned threats to research and education revenues and to the much larger pool of revenues from clinical operations. Historically, AMCs received higher rates of reimbursement, partly to cross-subsidize the research and teaching missions and partly due to the complexity of advanced care. AMCs were among the greatest beneficiaries of the postwar expansion of medicine, especially after Medicare facilitated a transition of the patient mix away from indigent care toward paying patients (Ginsburg, 2008). Yet AMCs, which tend to locate in inner-city areas and provide special emergency services (like Level I trauma and psychiatric crises centers), still face a disproportionate share of government-supported payment for Medicaid, Medicare, and uncompensated care. The current ethos of accountability, pay for

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<sup>10</sup> Skochelak (2010) found eight major themes that serve as a decent summary of the various challenges facing AMCs: Integrating the educational curriculum; Needs for evaluation and research; New Methods of financing; Importance of leadership; Emphasis on social accountability; Use of new technology in education and medical practice; Alignment with changes in the health care delivery system; and Future directions in the health care workforce.

performance, pricing transparency, and medical consumerism places intense demands on AMC to demonstrate their stance as sites of superior care, not just as cost centers. As insurance plans and patients shift routine care to other settings and threaten the ability of AMCs to negotiate premium pricing, individual organizations exploit new markets and differentiate themselves within certain niches, e.g., centers of excellence for specific specialties for which they can draw patients from beyond the region.

AMCs have traditionally operated with 3–5 percent operating margins, but these margins are threatened by forces affecting all providers and by specific characteristics of AMCs (Garg et al., 2013). Since AMCs are more reliant than other providers on government subsidies, the recent flattening of NIH grants has acutely affected their research subsidies and shifted the AMC research portfolio to greater reflect partnerships with private industry, especially pharmaceutical companies. Private insurance plans attempting to reduce costs have increasingly explored directing only the most complex, most specialized cases to AMCs or removing AMCs from their networks entirely. AMCs are also encountering greater competition among providers. Multi-hospital systems often provide more cost-effective care across most of the acuity spectrum; meanwhile, patients requiring the most specialized care are increasingly willing to travel beyond the region to seek the highest quality centers of care.

While academic medical centers receive funding from research contracts and grants, tuition, their affiliations with universities, and other sources, the largest and fastest growing source of revenue (about 42 percent) is derived from medical practice plans.<sup>11</sup> Academic medical centers remain the site of innovative clinical treatment, an increasingly widening span of research, and filling shortages in the physician workforce. Yet they also face threats related to persistently high costs in the age of “bending the cost curve,” transparency in the shift from fee-for-service to value-based payment, increasingly arms-length relationships with parent universities, and marginalization in increasingly consolidated markets driven by increasingly large health systems.<sup>12</sup>

As a result, a large body of management literature stresses the need for a transformative organizational overhaul of AMCs to restructure governance, to reduce costs, to increase revenue sources, and to develop additional partnerships with community providers (e.g, Garg et al.,

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11 Association of Academic Medical Centers, 2015.

12 Public academic medical centers have also experienced cuts due to state budget reductions for higher education, though these are generally less than 0.5 percent of total revenues, since the vast majority of revenues are derived from health care services. For example, cuts to Medicaid reimbursement and DSH funds are expected to have a larger impact (pwc Health, 2012).

2013; pwc Health, 2012; Commonwealth Fund Task Force on Academic Health Centers, 2000; Deloitte, 2009; Healthcare, 2013). The mindset of AMCs has shifted from “justifying the cost” to “earning the business” in a more consumer-driven, value-based context (Healthcare, 2013, 2).

## **4.5 Why a biomedical district? Why not?**

This chapter’s selective narrative of the last century’s major shifts in health care has attempted to lay groundwork for explaining the drivers of development in urban biomedical districts. These drivers support simultaneous processes of centralization and decentralization. When informal medical districts began to form during the early twentieth century, the increasing scale of medicine’s built environment generated an agglomerative sorting of educational institutions and teaching hospitals into proximate locations. The innovation of designating formal districts began at the moment of the postwar expansion of medicine, when increasing technology and federal resources required more land for development (a pull factor), and when suburbanization pushed patients and available land to the suburbs (a push factor). Medical districts grew around large public sector hospitals and academic medical centers and served the core functions of providing treatment to uninsured residents of the city, educating the medical workforce, and conducting research. After World War 2, the policy of medical district designation might have been adopted to manage the push-pull tension, retain major medical institutions in the city, and leverage the federally supported wave of investment in health care for other urban development policy objectives.

The contemporary biomedical district exists within a different set of centralizing and decentralizing forces. Urban hospitals have had dramatically uneven experiences: many have closed or reduced services, others have merged into major systems that have continued to open locations, and still others have grown by offering competitive specialties. Cost and quality concerns have pushed a large share of clinical encounters out of in-patient hospitals, especially for low-income and uninsured people who comprised a large portion of the traditional patient base of many medical districts. Hospitals and academic medical centers located within biomedical districts face increasing pressure from competition from major regional systems and from shifting payment mechanisms that specifically undermine the fee-for-service payment model that historically cross-subsidized teaching and research. Major district organizations thus seek to ensure their sustainability by differentiating themselves on specific specialties or by integrating into more coordinated health systems in various ways. Meanwhile, commercial opportunities

in bio-pharmaceuticals and other markets for biomedical technologies that depend on linkages with university research create new drivers of agglomeration in biomedical districts.

These factors make it possible to speculate that biomedical districts might be shrinking rather than growing – if not for the work of academic medical center administrators, policy-makers, and other invested actors. Their traditional functions of safety-net care and research have in many ways been distributed to a more diffuse, less centralized locational pattern. The payment policies of federal and state governments and private insurers have been rolling back the fee-for-service excesses of academic medical centers for over thirty years. However, new opportunities also exist in inter-organizational integration, clinical trials, and commercial development. These field level transformations have created a context conducive to a variety of organizational adaptations, only one of which involves leveraging the advantages and moderating the disadvantages of proximity through the establishment of biomedical districts. The form, function, and causes of biomedical districts have changed since the 1940s. But this transformation does not happen automatically. It requires strategic action of health care organizations, and economic development organizations, and biomedical district organizations, all of which operate within constraints that vary from place to place.

## Chapter 5

# Variations of the biomedical district in US cities

The chapters on Chicago and Houston provide two examples in which a unique confluence of local conditions, economic development interests, and medical institutional leadership resulted in the original emergence of a new type of organization, the urban biomedical district, in the 1940s. Today, variations on this sequence of events have occurred in a wide range of other communities. In the seven decades since the establishment of the Illinois Medical District and the Texas Medical Center, health care and urban political-economy have undergone dramatic changes. So has the biomedical district.

Moreover, the intersection of restructuring processes in urban political-economy and the health care systems has prompted a replication of aspects of this model across many more cities, albeit with a broadened, more active role for district development organizations and blended with a set of approaches to life sciences sectoral strategies that began to proliferate widely in the 1990s. Accordingly, medical districts have evolved into *biomedical* districts, and the scope has expanded beyond land and facilities to encompass more meaningful research collaboration, life sciences technology commercialization, and a wider range of land uses beyond care, education, and research. Once limited to providing facilities and infrastructure to support care, education, and research, the agenda of planning now also seeks to replicate the conditions in leading biotechnology clusters, like the Bay Area, Boston, and San Diego. Postwar medical districts originally provided a terrain for the federally funded but uneven expansion of medical institutions. Today's biomedical districts also seek to accommodate the upended landscape of challenges and opportunities facing hospitals and academic medical centers while providing a nurturing environment for early-stage life sciences spin-offs from research institutions.



This chapter compares several extant examples of the urban biomedical district (as defined in chapter 3) in order to examine whether and to what extent a “model” exists. It seeks to answer the following questions:

What features define the contemporary urban biomedical district as a phenomenon of place and policy?

What conditions are conducive to the formation of a biomedical district and its adoption by other government, planning and economic development organizations and by the institutions that collectively make up the district?

What types of organizations are responsible for biomedical district development, what are their priorities, and how do they influence development?

To answer these questions implies embracing a range of cases, sacrificing depth for breadth of analysis. Comparative tables and episodic vignettes substitute for thick narrative.

The sum of the examples presented here supports two arguments. First, versions of the urban biomedical district are observable in many cities; and despite variation in local conditions and the sequence of events leading to establishment, many structural similarities apply to biomedical districts. In particular, these strategies reflect efforts to capitalize on research, while accommodating the adjustment of major health care organizations to a changing set of opportunities and challenges. The barriers remain the tension between inter-organizational competition and collaboration and the difficulty of building the “ecosystem” of innovation. Second, the references presented below substantiate the claim that isomorphism has fostered the diffusion of the medical district model.

Historically, medical districts have been defined by collaboration, but within limits, and focused primarily on tasks like site planning and collective goods, like shared services and infrastructure. Today’s biomedical districts have broadened the scope of collaboration to focus more on research and developing in-roads with private industry. However, this collaboration has inherited the old barriers of tense affiliations and competition.

### **Contextual factors in the diffusion and transformation of biomedical districts**

Changes in the health care delivery system have altered the value proposition of proximity. While Medicare drove the expansion of the industry in the 1970s and tipped health care into a cost spiral that continues to this day, its inevitable contraction began in the 1980s. As a direct result, the hospital system has undergone massive restructuring. Three elements of this restructuring have had significant implications within urban biomedical districts. First, Medicare’s contraction has had a crippling effect on many inner-city hospitals that serve a

primarily an un- and under-insured patient base. This also applies to large public hospitals, which serve as historical anchors for many biomedical districts. Compounded by the falling tide of fiscal support for public services at the state and local levels, cost pressures have pushed care out of in-patient settings and driven public hospitals to roll-back services, to privatize, or to close outright. As a result, the traditional responsibility of biomedical districts as sites of care for low-income, inner-city residents has continued to migrate to more diffuse networks of community-based, outpatient clinics.

Second, the rise of the multi-hospital system has altered the place-rootedness of district institutions. The primary incentive for mergers and acquisitions in the hospital sector is the ability of large networks to bargain for more favorable reimbursement rates. These deals have had uneven effects on district hospitals and academic medical centers. Moreover, other marginal economies of scale are partially substitutable with the cross-institutional economies of agglomeration found (or potentially found) in an urban biomedical district. Reform and competition have refocused attention on promoting network arrangements, including referral, facility and infrastructure sharing, research collaboration, technology transfer, and health information technology implementation programs.

Third, technological changes, approaches to improve the quality and coordination of care, and financial incentives have motivated a new wave of construction. Whereas emerging standards and generous Medicare payments shaped the development of early medical district, today's biomedical districts juxtapose these (in many cases obsolete) facilities with new investments tailored to exploit evolving market niches.

At the same time, the growth of the pharmaceutical and device industries has also reshaped biomedical districts and their institutions. Changing demands from the health care workforce and from the private and federal research apparatus have reshaped the teaching and research programs of academic medical centers, even as these institutions cope with changes on the payment side. By the 1990s, the emergence of life sciences and biotechnology had trained the attention of economic development agencies and policy-makers on health care institutions and urban biomedical districts as not only sources of job creation but also potential forges in the next technology revolution.

Local policy-makers and economic development organizations have discovered, or have sought to create, these concentrations of anchor institutions and good, knowledge-intensive jobs as untapped opportunities to achieve broader economic and community development policy priorities, such as downtown and residential neighborhood revitalization or cluster de-

velopment. New challenges of promoting cooperative, responsive collaboration on research and commercialization have joined old challenges of rationally coordinating services – and created new roles for biomedical district governance entities. The mindset of district development interests appears to have advanced from the reductively linear logic of the 1990s (“build incubator, allow biotech cluster to flourish”) to more nuanced and realistic approaches, such as targeted inter-institutional research collaborations and local purchasing initiatives. The objective has been to support and shape the deepening integration of the private sector with traditionally service-oriented, but large and economically important, hospitals and academic medical centers. Where earlier medical district actors rallied around building a campus, their contemporary counterparts rally around converting the districts into an “ecosystem” of innovation.

In many cases, concerted efforts to reimagine the identities of biomedical districts appear to have been marked by the discovery of existing or potential districts as economic development assets in tandem with a mix of declining in-patient capacities, including the downsizing of the safety-net hospitals that in many cases had dominated the public perception of the district, and new hospital construction. This mix may occur at a regional level, though it often occurs within the boundaries of the biomedical district itself, as these areas often combine the obsolete relics of early- and mid-20th century medical modernity with a built environment migrating toward the needs of the contemporary biomedical economy. It is no surprise then that the recent initiatives and public relations campaigns of urban biomedical districts balance the 1990s and 2000s-era biotechnology hype with the ongoing and far more tangible upheaval of opportunities and challenges of health care system reform. The desired effect is to provide sufficient geographical assets to facilitate change management strategies of health care institutions while leveraging their strengths as community anchors and seedbeds of technology commercialization.

Another common aspect of these districts is the consciously comparative nature of borrowing ideas and drawing models from elsewhere. However, the source of these models varies widely. Examples include promoting community-based purchasing programs by major institutions, avoiding the stagnation of older comparable entities (including Houston and Chicago), replicating the legislative or governance mechanisms of other examples within the state, or drawing principles from successful regional models (i.e., Silicon Valley, Boston, San Diego).

## 5.1 Variations on a theme

Table 5.1 presents a list of example biomedical districts, drawn from a range of contexts, spanning from the core cities of large metropolitan areas to mid-sized cities. It is not intended to be

Table 5.1: Examples of biomedical districts that meet all three criteria

City	Name	Type	Size (acres)	Employment
Chicago	Illinois Medical District (1941)	State agency	560	29,000
Houston	Texas Medical Center (1945)	Nonprofit	1,345	106,000
New Orleans	BioDistrict (2005)	State-created nonprofit	1,500	
San Antonio	South Texas Medical Center (Foundation established 1947, district formed early 1960s)	Nonprofit	900	27884
Springfield	Mid-Illinois Medical District (2003)	State agency	640	
Milwaukee	Milwaukee Regional Medical Center (1972)	Nonprofit	300	15,000
Miami	Miami Health District (2010)	City overlay district with state designation	415	39,384
Dallas	Southwestern Medical District (Foundation formed 1939, first institutions 1954)	Nonprofit	over 1000	29,000
Memphis	Memphis Medical District (district during 2000s, spun off as Medical District Collaborative 2016)	Zoning overlay and nonprofit	1,305	16,000
El Paso	Medical Center of the Americas (Foundation formed 2006, district expanded 2011)	Nonprofit	440	
Las Vegas	Las Vegas Medical District (1997)	674	9,595	
Baton Rouge	Baton Rouge Health District (2011, spun off as separate organization 2015)	Nonprofit		
Boston	Longwood Medical Area / MASCO (1972)	Nonprofit	213	45,200
Buffalo	Buffalo Niagara Medical Campus (2001)	Nonprofit	120	8,500
El Paso	Medical Center of the Americas (2006)	City legislation	330	
Rochester, MN	Rochester Destination Medical Center (2013)	Legislative district and nonprofit	550	

Employment numbers and size are based on information advertised by the district organizations.

an exhaustive account of existing districts but more indicative of the characteristics and timing of establishment. All of these examples have either an official area designated as a biomedical district or a dedicated organization with primary responsibility for planning the district. Each of these organizations has a similar mission, encompassing a mix of efforts to improve health education, research, and care; to capture the benefits of proximity for surrounding neighborhoods or supportive services; and to anchor life sciences-based business activity.<sup>1</sup> Some examples of a clearly identifiable, multi-institutional biomedical district with a significant regional economic impact are not included because it was not possible to identify a current official master plan, designation, or organizational entity other than the major anchor institutions, e.g., in Birmingham, Alabama or in Nashville, Tennessee. In other cases, similar dynamics are observable around one or more academic medical centers, but these cases do not meet the criteria of a multi-institutional district defined primarily as an initiative to support biomedical land uses, e.g., Cleveland Clinic and University Hospitals in Cleveland or Johns Hopkins' East Baltimore Development Incorporated.

Table 5.2 gives another set of examples. These districts do not necessarily conform the strict definition – they are either just beginning or have faded away (Jackson, Peoria), do not include a major acute care hospital (Phoenix, St. Louis), or have no formal designation (Sandy Springs, Seattle, Birmingham, Nashville).

Using the AHA data, it is possible to explore how these kinds of districts have adapted to restructuring of the hospital sector since between the Medicare reforms of the early 1980s and the Affordable Care Act.<sup>2</sup> Figure 5.1 shows changes in employment within a set of formal biomedical districts and similar, informal districts, in comparison with changes in hospitals located in the rest of the county. Despite mostly inner-city locations, most have gained employment since 1982, with two exceptions. New Orleans lost employment due to Katrina-related

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1 Exceptions to the life sciences business focus could include MASCO, the steward organization of Boston's Longwood Medical Area, or South Texas Medical Center. Neither of these organizations focus on commercialization per se.

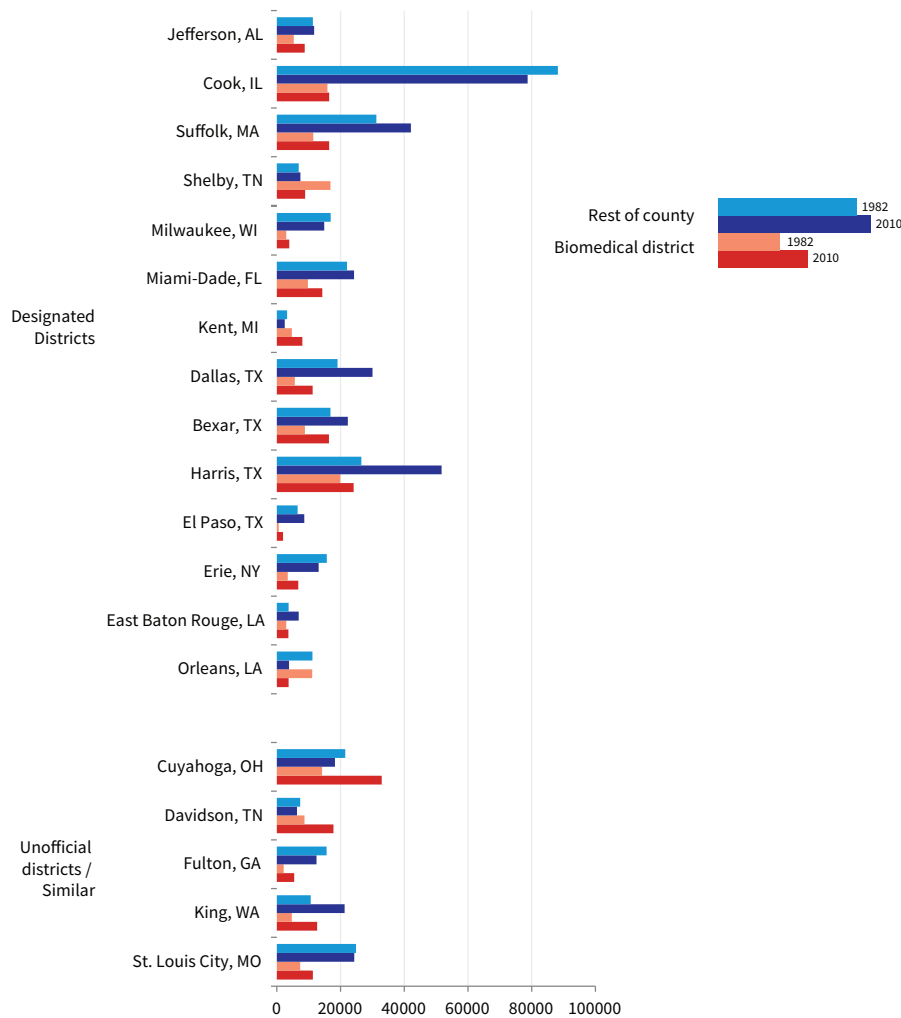
2 While the AHA data are not necessarily designed for economic analysis, hospital expenditures and employment are related to the ability of a set of hospitals to serve as economic anchors. The AHA data is limited by potential inconsistencies: they are self-reported, and numbers might vary according to the structure of the organization. For example, an academic medical center that runs a hospital might only list some of its hospital and medical practice plan employees and would probably not list its educational employees; a medical center that includes a hospital and separate clinics on the same campus might not list the clinic employees as hospital employees, etc. It also only captures hospital employment; no other biomedical or other types of employment within the district are captured. Still, they provide a relatively consistent starting point to observe characteristics of biomedical district hospitals. The hospitals were assigned to biomedical districts based on manually mapping the AHA data, and comparing them with formal plans or designations of biomedical districts. For the unofficial districts, I began with the map and then reviewed media stories on the districts to verify that they have a shared identity and proximity.

Table 5.2: Examples of nascent, unofficial, or closely related districts

City	Name	Description
Jackson, MS	Mississippi Health Care Corridor (2015)	Commission established to develop 5 mile health care corridor anchored by existing institutions
Peoria	Renaissance Park (2003, formerly Peoria Medical and Technology District)	District established in 2003 but now dormant
Phoenix	Phoenix Biomedical Campus	30 acre campus in downtown for biomedical-related research, academic, and clinical facilities.
St. Louis	Cortex	Innovation campus near Barnes-Jewish Hospital and other medical institutions.
Shreveport, LA	Biomedical Research Foundation (2006)	InterTech Science Park (1994), takeover of LSU-Shreveport (2013).
Grand Rapids	Medical Mile (dated to 1996)	Recent construction of research institutes, expansion of medical school, new hospitals, and the Michigan Street Corridor Plan (2015).
Sandy Springs, GA	“Pill Hill”	Beginning in the late 1960s, a cluster of hospitals in the northern part of the Atlanta metropolitan area became the main regional concentration.
Seattle, WA	“Pill Hill”	The First Hill neighborhood of Seattle is a concentration of four major hospitals just outside of downtown.
Birmingham, AL	“Medical District”	Established when existing hospitals consolidated into University of Alabama, Birmingham, expanded with Urban Renewal, now includes a VA and childrens’ hospital.
Nashville	“Medical District”	Informal district within a mile of Vanderbilt University, its School of Medicine, and VA.

facility closures; in Memphis (Shelby, Tennessee), the largest hospital in Memphis Medical District actually closed and decamped to a suburban location in 2000, roughly coinciding with the district’s creation. In some counties, particularly counties with population growth, growth outside of the district has outpaced growth inside of it. For example, in Harris, Texas (Houston), the concentration of employment within the Texas Medical Center has decreased. In others, employment outside of the district has declined relative to employment within the district (e.g., Erie (Buffalo), Cook (Chicago), Davidson (Nashville). Cuyahoga, OH (Cleveland) and Davidson, Tennessee (Nashville) are unique among the group, since these two informal biomedical districts have more hospital employment than the entire rest of the county. Together, the data shows mixed experiences with the phenomenon of centralization and decentralization with respect to employment. Using county totals as a benchmark for comparison with district hospi-

Figure 5.1: Changes in peronnel, 1982–2010



Source: AHA Annual Survey, 1982, 2010.

tals, the districts and the rest of the county may be expected to grow or decline in tandem, all else equal. The decentralizing trend has, in some cases, reduced concentration within medical district, whereas other medical districts have added hospital jobs faster than their surrounding areas.

Figure 5.2 shows expenses per admission derived from the same source. Expenses includes all payroll and non-payroll expenses as well as any nonoperating losses. For both groups of hospitals, expenses have increased by 5 to 10 times since 1982, even after adjusting for inflation, an outcome of the dramatic rise in health care costs since the early 1980s. The charts show that

biomedical district hospitals typically have more expenses relative to the amount of care that they provide – only three of the identified districts conflict with this pattern. This supports the claim that urban biomedical districts, like academic medical centers, are spaces of high-cost health care. Of course, another way to interpret this is that high expenses means the potential for high spending within the community, both through payroll and through local purchasing.

The next section describes the process through which biomedical districts have been created. Through short vignettes, it presents episodes in the establishment and transformation of medical districts. These examples were chosen to illustrate variety and similarities with the three main case studies.

## **Brief vignettes**

### **San Antonio and the Texas variant**

The Texas variant of medical districts reveals a similar process beginning in the 1940s in Houston, Dallas, and San Antonio. At the time, Texas had only two medical schools, and its cities were growing rapidly. In each case, local business leaders initiated an effort to create or to induce the creation of a medical school, a process that often required partnership with a teaching hospital. The necessity of hospital-university partnerships at an early stage, like in the Houston case, prompted the establishment of a district as a way to combine institutions, both organizationally and spatially, to create a capacity for medical education.

The story of the South Texas Medical Center (STMC) in San Antonio begins much like that of its Houston sibling (discussed in detail in Chapter 7).<sup>3</sup> In 1945, San Antonio was the largest city in the US without a medical school and had the fewest beds per capita. The Chamber of Commerce formed a Committee to Relocate the Medical School in Galveston to San Antonio, which spun off as the San Antonio Medical Foundation, a non-profit organization, in 1947. The Foundation secured a promise from four landowners to donate a 200-acre dairy farm about 10 miles northwest of downtown as the site of the South Texas Medical Center (STMC), to lure a medical school. Development stalled over the next ten-years. The mayor preferred a downtown location. Meanwhile, Galveston lobbied the state legislature to prohibit the establishment of new academic medical centers without an affiliated teaching hospital.<sup>4</sup>

The solution was to construct a county hospital. By referendum, San Antonians passed a bond for the capital but not a separate measure to increase taxes to pay the debt. The Bexar

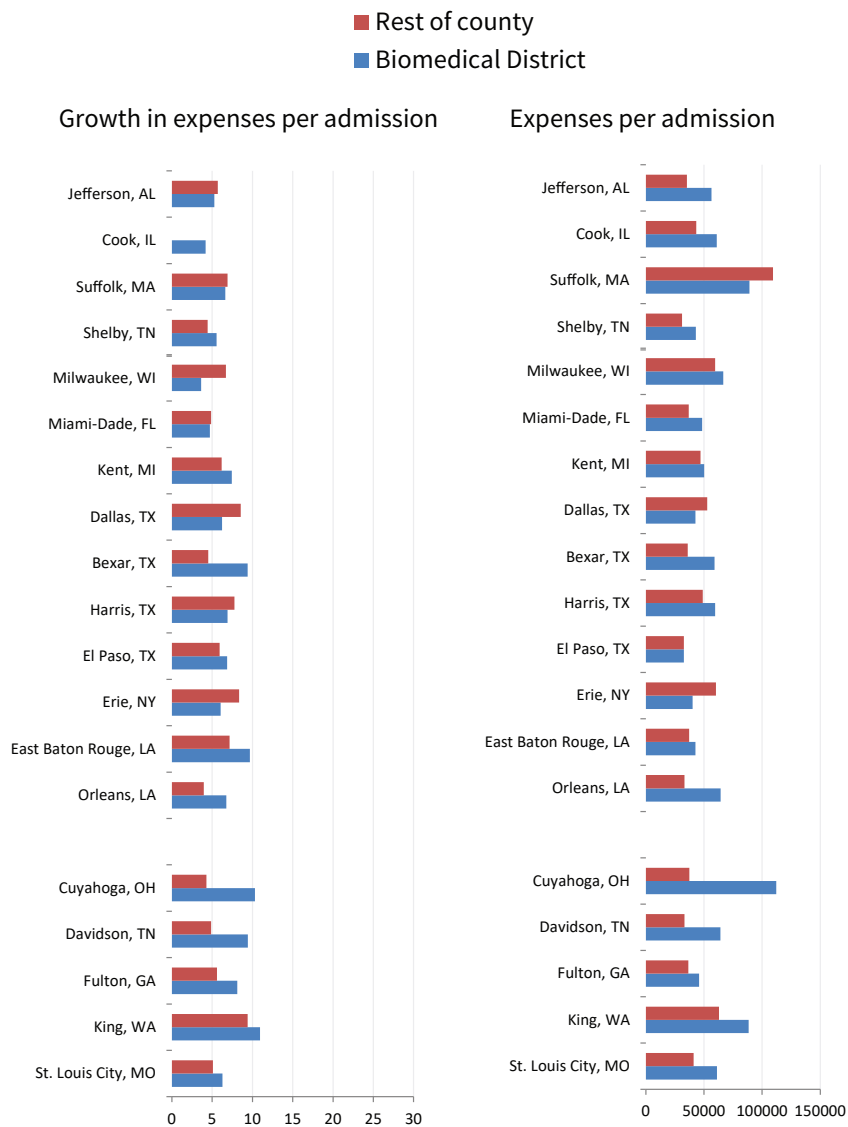
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3 This story is based on an interview with an executive of South Texas Medical Center, 20 March 2013.

4 Recall that Baylor hospital had moved to Houston without a teaching affiliation.



Figure 5.2: Changes in expenses per admission, 1982–2010



Source: AHA Annual Survey, 1982, 2010.

Note: Expenses are adjusted for inflation, and growth is as a percentage of 1982 levels. Cook, Illinois is missing data for 1982.

Table 5.3: Expansion of the South Texas Medical Center, 1970–2013

	Facilities	Employment	Inpatients	Outpatients	Grants
1970	\$56	3,219	-	-	\$5.6
1980	311	11,297	-	-	14.6
1990	795	20,320	86,345	840,302	70.8
2000	1,880	25,761	94,932	3,468,605	124.6
2010	2,679	27,386	104,276	5,380,834	211
2013	3,351	29,019	106,728	5,643,891	151.1

Source: <http://www.samedfoundation.org/>

Note: Facilities and Grants are in millions. Facilities includes plant and equipment investment (less cost of depreciation). Employment is for medical institutions only, and does not include all employment in the district.

county commissioners passed the tax increase themselves in a controversial 2-2 split that the county judge broke in favor of the STMC location. In the meantime, a planned Methodist hospital had asked for a 25-acre carve out of the original 200 acres for a new hospital. By the late 1950s, with funding for the county hospital in place, the University of Texas Board of Regents increased their requirements for a full-fledged medical center, demanding that the foundation provide another 300–400 acres. The Foundation acquired an additional 425 acres, and the STMC finally became a reality. The county hospital became University Health System, the primary teaching hospital for the University of Texas Health Science Center at San Antonio.

Over the years, the STMC grew to a total of 900 acres and 58,000 employees, about half of whom are directly employed by the medical institutions.<sup>5</sup> Forty-five medically related institutions reside in the STMC, including three major acute care hospitals, a VA, and several other specialty hospitals and centers. Like its Houston counterpart, the STMC has grown consistently. Table 5.3 shows summary indicators for the district by decade, showing a pronounced shift toward outpatient care while inpatient admissions have leveled off.

A similar process led to the creation of the Southwestern Medical Center in Dallas, where the Southwestern Medical Foundation, established in 1939, sought to create a modern academic medical center by establishing the Southwestern Medical Center, later affiliated with the Uni-

<sup>5</sup> San Antonio Medical Foundation, 2014 Progress Report, <http://www.samedfoundation.org/wp-content/uploads/2015/11/2014-Prog-Rpt-w-Ltr-Basic-Data.pdf>

versity of Texas, by partnering with Baylor. After Baylor balked at a joint ownership structure, Dallas' only medical school relocated to Houston. A 1945 land donation doubled the size of the medical center, and when the relocated Parkland Hospital had opened on the site, the district was born.<sup>6</sup> In the 2000s, a similar process led to the creation of a Texas Tech-affiliated academic medical center in El Paso and the umbrella organization and campus of the Medical Center of the Americas. If Austin realizes plans to build a "Medical District" and "Innovation Zone" between the University of Texas main campus and downtown to house the new University of Texas Dell Medical School, each of the five largest regions in Texas will boast a biomedical district.<sup>7</sup>

### **Miami Health District**

Anchored by the public hospital, the University of Miami hospital and health education campus, and a number of other public services and organizations, growth in the Miami Health District has been remarkable. A 2004 economic impact analysis found a total of 26,388 employees. By 2008, employment had increased to nearly 40,000.<sup>8</sup> Recently, the area's name was changed from Civic Center to Health District to reflect the dominance of health care in the identity of the district. In 2010, the city amended its neighborhood and land use plans to replace the Jackson Memorial Hospital Medical Center Overlay District with the Health District Regional Activity Center, thereby freeing some leeway for denser development within growth management restrictions.

### **Springfield and the Illinois variant**

As described in Chapter 6, the Illinois state legislature established the medical district in Chicago in 1911. In the 2000s, similar state legislation established biomedical districts as similarly structured quasi-state agencies in other Illinois communities. Springfield established the Mid-Illinois Medical District (2003), a one square-mile, mostly residential area that includes the Southern Illinois University School of Medicine, and two other hospitals that together employ around 9,000. The district received some grants for planning and to serve as fiscal agent on a health information exchange project, but struggled to establish a recurrent funding

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6 75 Years of Vision, *Southwestern Medical Perspectives*, spring 2014.

7 Sasaki Associates, Inc., *The University of Texas at Austin Medical District Master Plan*, Spring 2013.

8 City of Miami, Health District Regional Activity Center Justification Report, January 2010, Kimpey-Horn and Associated, Inc.

stream as the state's fiscal situation deteriorated in the mid 2000s.<sup>9</sup> As a result, the project has remained housed at the Chamber of Commerce.

In 2007, East St. Louis formed the Mid-America Medical District to help prevent Kenneth Hall Regional Hospital from closing, which ultimately occurred in 2011. In Chicago, the small, 100-acre Roseland Community Medical District (2011) around Roseland Community Hospital, which was in danger of closing before a state bailout of \$350,000 in 2013.<sup>10</sup> Like their peer in Springfield, both districts have had little operating revenue and difficulty gaining traction. These districts were modeled on the Illinois Medical District but at a moment when the state was in the process of backing away from its long-standing operational support for the original organization.

### **Baton Rouge and Shreveport, Louisiana**

Baton Rouge and Shreveport share an intersection with Louisiana's recent privatization of its network of state-owned safety-net and teaching hospitals, a process described in more detail in chapter 9 with respect to its intersections with the New Orleans case. These two short introductions, however, show how the restructuring of safety-net health care can influence the development of a biomedical district not as a general trend but in a direct manner.

Shreveport's economy suffered from the same mid-1980s downturn in the oil and gas industries that motivated resurgent interest in the biomedical districts in Houston and New Orleans (see Chapters 8 and 9). In response, area Chambers of Commerce commissioned a series of studies on how to diversify the economy, leading to the creation of the Biomedical Research Foundation of Northwest Louisiana in 1997. The Foundation has promoted a sectoral strategy by facilitating research and commercialization anchored by Louisiana State University medical school in Shreveport. In 1997, the Foundation created InterTech Science Park, an 800-acre campus in downtown Shreveport. Several facilities have since been built, and InterTech houses pharmaceutical manufacturing, biomedical research, and media production companies. The most notable aspect of the Shreveport case occurred in 2013, during the privatization of the statewide Charity system of public safety-net hospitals. Willis-Knighton Health System, the region's largest provider, removed itself from contention to take over operations due to anti-trust concerns.

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9 Interview with Mid-Illinois Medical District executive, 18 August 2014; Deal Olsen, Almost broke, Springfield medical district asked to return donation, *State Journal-Register*, 21 November 2014.

10 *Crain's Chicago Business*, 27 September 2014

Since no other operator stepped in, the Biomedical Research Foundation stepped in to take control as operator by forming a wholly owned subsidiary, University Health, borrowing against properties to fund start-up costs, and agreeing to a hastily drafted no-bid contract with LSU to operate the hospital. The motivation was to prevent job loss and service reduction due to the diversion of Medicaid away from the LSU system. While the state still owns the facilities and LSU largely provides clinical staff through its affiliation, the agreement resulted in an unusual scenario wherein an economic development organization operates a major, publicly owned hospital. Over the next two years, LSU sought to remove University Health for breaching the public purpose clause of the cooperative endeavor agreement. Meanwhile, University Health brought an anti-trust lawsuit against regional competitor Willis-Knighton, which the lawsuit claims had poached paying patients and doctors through its growing network. Today, University Health and Willis-Knighton Health System are the region's two largest non-governmental employers.

In Baton Rouge, a 2011 Parish land use planning process identified a loosely clustered group of three hospitals and LSU's Pennington Biomedical Research Center as the "Southeast Baton Rouge Medical Corridor". Situated along the Parish's most congested stretch of road, interspersed with strip malls and single family housing subdivisions, and disconnected by the street layout, the corridor lacks a cohesive sense of connection. The Baton Rouge Area Foundation adopted the project, and a consultant suggested a name change from "medical district" to "health district" to reflect a focus on population health and an environment that focuses on physical, healthy activities in addition to medical care and research.

As in Shreveport, the state-owned Earl K. Long Hospital, located in the predominantly African-American population of north Baton Rouge and serving a mostly uninsured and Medicaid patient base, had been privatized in 2013, and Our Lady of the Lake, the largest hospital in the nascent health district won the contract and promptly closed Earl K. Long. Under the privatization deal, Our Lady of the Lake's uncompensated costs are covered. Another health district hospital, Baton Rouge General, also ran an separate emergency room at another location in Mid-City, where many of the Earl K Long patients went after the public hospital's closure. The disparate fallout of the privatization was happening while planning for the Baton Rouge Health District began with area hospital executives.<sup>11</sup> In 2015, Baton Rouge General closed their mid-city emergency room due to the influx of uninsured patients after Earl K Long's

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11 Interview with Baton Rouge Area Foundation Staff, 1 July 2015.

closure.<sup>12</sup> Without a third party, it is unlikely that talk about possible collaborations would have even started, such as rebuilding the street network or establishing a diabetes and obesity center. Baton Rouge Area Foundation has also pushed the idea of establishing a new medical school for Baton Rouge, although these talks are in a very early stage.

## **Boston**

MASCO was created in 1972 to operate shared transportation services and infrastructure facilities in Boston's Longwood Medical Area. With roughly \$30 million in annual revenues, MASCO focuses more on improving transit, sustainability, and livability for those who live, work, and receive treatment in the area than on life science-based economic development per se, which may be related to the exceptional level of prestige housed within its borders. The district is anchored by Harvard's medical, dental, and public health campuses and nationally ranked hospitals, including Beth Israel Deaconess Medical Center and Brigham and Women's Hospital. With the exception of Massachusetts General Hospital, most of Harvard's largest teaching affiliates are located within the district. The economic impact of the Longwood Medical Area is vast and growing. The district employs over 45,000 (not including students), having added an average of over 1,000 per year during the 1990s and 2000s. In 2011, Massachusetts ranked second among states in NIH funding, and over 40 percent of its NIH grants went to institutions located in Longwood. Totalling over \$1 billion, Longwood receives more NIH funding than 43 states.

## **Unofficial biomedical districts: examples from deindustrialized cities**

### **Anchors of the "Medical Capital": Cleveland Clinic and University Hospital**

A number of other prominent districts focused more broadly on Eds and Meds and anchor institutions have taken on characteristics of biomedical districts. For example, Cleveland's University Circle was established in 1957 to plan and develop a district around Case Western Reserve University, the affiliated University Hospitals, and a number of other educational institutions and museums. Nearby but outside of the district was Cleveland Clinic, one of the nation's highest ranking hospitals. Since then, Cleveland Clinic and University Hospitals have grown into Cleveland's first and second largest employers, respectively, by a large margin.<sup>13</sup>

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12 Quincy Hodges, Baton Rouge General Mid City ER is now closed, OLOL prepares for new patients, *The Times Picayune*, 31 March 2015.

13 List of Cuyahoga County's largest employers proves Cleveland is a health care town, *Crain's Cleveland Business*, 25 August 2014.

These institutions also provide the bedrock for BioEnterprise, a local economic development organization, and its partners to engage in other related initiatives, including 1) designating a 1600-acre stretch of Euclid Avenue from downtown to University Circle as the “Cleveland Health-Tech Corridor;” and 2) rebranding the region as “The Medical Capital,” e.g., with a website that lists startup activity and investment information.<sup>14</sup>

Largely on the strength of Cleveland Clinic, the city has become a destination for medical care, but medical education and research have been shaped by competition between Cleveland Clinic and University Hospital. Their systems compete for patients across the region and have come into conflict over affiliations with Case Western, for which University hospital has long been the main teaching affiliate. Cleveland Clinic had in the 1990s established an affiliation with the Ohio State University that failed to materialize into an academic medical center. The Clinic, however, began establishing a medical school in the early 2000s and shopping for university affiliations, at one point considering Penn (Philadelphia) and Columbia (New York). In 2013, Case Western and the Clinic struck an agreement for a joint medical education building on the main campus of Cleveland Clinic.<sup>15</sup>

The greater University Circle area has also given birth to the “Cleveland Model” of community re-investment (Zuckerman, 2013). Since 2005, the “Greater University Circle Initiative” focused on leveraging anchor growth to support surrounding neighborhoods by facilitating collaboration and promoting local hiring and buying, including through the Evergreen Cooperatives, a model network of employee-owned cooperatives that focus on the procurement needs of anchor institutions and other large businesses. In 2009, the first cooperative was the Evergreen Cooperative Laundry, which was designed to secure contracts to serve the laundry needs of the large institutions. In theory, the opportunity is clear: take a marginal ongoing source of cost from hospitals with lots of laundry needs. However, Cleveland Clinic had recently constructed its own laundry facility, and University Hospital only began to contract with the laundry in 2013, through a sub-contract when its main industrial laundry provider struggled to keep up with demand after University Hospital acquired two other health systems.<sup>16</sup> The deal has helped Evergreen Laundry remain solvent, though the facility capacity remains underutilized. Still, the “Cleveland Model” presents an interesting concept for an anchor institution strategy.

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14 <http://www.themedicalcapital.com/>; The Medical Capital, Cleveland Officially Stakes Claim as “The Medical Capital” With Expanded Branding Initiative (Press release), 5 July 2016.

15 Brie Zeltner, New CWRU medical education building on Cleveland Clinic campus: How it came together (timeline), *The Plain Dealer*, 2 June 2013.

16 Steve Freiss, Can the Co-Op Save Us? *Take Part*, 30 May 2014, <http://www.takepart.com/feature/2014/05/30/co-op-businesses-in-the-us-evergreen-cooperatives>

It is based on converting a natural opportunity for collaboration of clustered anchor institutions like laundry, a service that has been made into a shared service in some biomedical districts, into a source of community wealth creation.

### **Birmingham: Transforming the Pittsburgh of the South**

Like Cleveland, Birmingham has sought to rebrand itself as a center for the life sciences. The historical steel town – "Pittsburgh of the South" – has lost over 30 percent of its population since 1960. During that time, Birmingham's population shifted from majority white to over 75 percent black. A 2007 series of articles, described the juxtaposition of the downtown medical district – "the heartbeat of the region's economy" – with the sea of residential and industrial abandonment just miles away:

One hails the best hopes for the future of Alabama's largest urban region – a robust economic center build around a cutting-edge medical center and university. The other exposes the poverty and abandonment that is the Rust Belt of the South.<sup>17</sup>

While no formal organization exists to support Birmingham's medical district, the portion of the city just outside of downtown and dominated by the University of Alabama Birmingham (UAB) is labeled on maps and generally recognized as the medical district, and the university and its health system are the largest employers in the state. The district, which also includes a VA and children's hospital, began in the 1940s, when the state appropriated funds for its first medical school since the 1920s. With an eye toward transforming the aging steel town, early university leaders sought to emulate the University of Chicago-affiliated Rush Medical Center.<sup>18</sup> Growth was propelled first by Hill-Burton and NIH construction funds and by Urban Renewal-funded expansions in 1957 and 1968.

## **5.2 Common patterns**

### **Marketing and place-making**

One reason that urban biomedical districts have become an observable phenomenon is the level of physical investment of biomedical organizations and their tendency to cluster and dominate land uses in certain sections of the city. Another reason is that city governments and economic

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17 Jeff Hansen, Joseph D. Bryant and Thomas Spencer, Which Way Forward? *The Birmingham News*, 11 March 2007.

18 Ibid.; Catherine Conner, University of Alabama at Birmingham (UAB), *Encyclopedia of Alabama*, <http://www.encyclopediaofalabama.org/article/h-1846>



development organizations have marketed this type of development externally and used a variety of visible place-making and way-finding techniques to identify them internally.

Marketing can take many forms. For example, in Grand Rapids, Cleveland, and Birmingham, clusters of hospitals and academic medical centers are often collectively framed as an island of vital economic activity in a central city otherwise suffering decline. The image of biomedicine as a clean, high-skilled, research- and knowledge-based, and morally compelling activity provides a natural contrast for cities that otherwise have an economic image associated with dirty, declining industry. Biomedical districts also routinely provide big numbers that are conducive to marketing. Grouping multiple institutions together into one district is an easy way to identify an economic engine with jobs that number in the tens of thousands and planned construction in the hundreds of millions or even billions of dollars. Whether the target is attracting non-local patients or life sciences investment, place-marketing is a major driver of district designation.

While most biomedical districts are characterized by some form of inter-organizational affiliation (most commonly, between a medical school and a hospital), they are often equally marked by inter-organizational competition. In fact, some organizations may resist relatively innocuous efforts to collectively brand the district, as this might help competing organizations. For example, one health system with a regional flagship hospital within a district may be more favorable to collective branding than another organization with a presence but with its flagship located elsewhere.<sup>19</sup>

Way-finding and transportation improvements also take many forms and comprise a relatively easy space for collaboration. Way-finding can be as simple as road signs and maps to ease navigation to and within the district. Dallas provides one example where a portion of Motor Drive was renamed to Medical District Drive in 2008. The broader concern for transportation planning has also affected biomedical districts. The continuous growth of the Texas Medical Center in Houston has made traffic a consistent concern. When Houston's METRORail light rail system began construction in the early 2000s, the first line connected downtown Houston with the Texas Medical Center. In San Antonio, intersection and circulation improvements through an assessment-based fund (known as Medical Center Alliance) have been one of the most significant spaces of collaboration. In Baton Rouge, the original germ for the Health District emerged from FuturEBR, a land use plan that identified the hospital area as the Parish's most congested corridor and proposed it as a demonstration site for street connectivity and transit

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19 Interview with executive of South Texas Medical Center, 20 March 2013

improvements. The subsequent Health District planning process has focused on improving street connectivity and establishing a more campus-like, pedestrian friendly environment.

More established districts have also focused on mixed use “gateway” and “hub” developments. In both Houston and Chicago, for instance, the districts are mostly made up of discrete but tightly packed individual campuses and parking facilities. They lack a cohesive sense of pedestrian connectivity or the type of common spaces that not only improve the attractiveness of the district but also provide a platform for the kind of everyday cross-institutional interactions that facilitate collaboration. As a result, many biomedical districts have promoted some combination of public space, mixed-use (e.g., offices, hotels, retail, residential) and/or research and technology-oriented (e.g., research centers and incubators) developments at key physical points of the district, such as transitional spaces between campuses or at key entry-points into the district. As a whole, these developments represent a broadening of biomedical district development beyond the strict research, education, and teaching function and often try to reinforce the dynamics of collaboration and innovation spillovers – for research, education, *and* commercialization – through design.

### **Broadening from care, research, and education to neighborhood development and commercialization**

The earliest medical districts adopted a relatively strict approach to converting land use into space for clinical activity, research, and education or for their support. With the designation of the Illinois Medical District in Chicago, the purpose of the district transitioned from a mechanism to coordinate expansion of medical institutions into a wholesale redevelopment strategy of the surrounding neighborhoods; in Houston, deed restrictions enforced a similar conformity of uses. Today’s biomedical districts more commonly include surrounding neighborhoods and a wider range of targeted land uses. Some of these are directly integrated with the function medical institutions. For example, hotels and short-term stay facilities are intended to serve patients and their families from outside the region, and a variety of spaces for research and commercialization are intended to be within easy proximity.

Some districts have been reframed as mechanisms to stabilize surrounding neighborhoods. While a variety of neighborhood tensions remain, many biomedical districts explicitly focus on establishing community partnerships for residential improvement, hiring, and procurement, and even operating schools. These relationships create the potential for influential normative models of anchor institution-based redevelopment: e.g., the University of Maryland Democracy

Collaborative's anchor institution-based model of community wealth-building, inclusive hiring and procurement, and democratic governance; and Brookings' "innovation district" pattern of development that overlays "creative class"-oriented live-work neighborhoods with a thickly interwoven, place-based innovation system of anchor institutions, established businesses, and start-ups. These approaches differ, for example, from the initial redevelopment objective of the Illinois Medical District.

While the traditional function in delivering care retains a role, the focus has shifted toward developing specialties that are capable of drawing patients in from outside of the region. Such specialties respond to the competitive pressures for academic medical centers: they generate more revenues, capitalize on brand-name recognition and ties to research, and carve out a niche for insurers where regional markets for general hospitals have increasingly consolidated. Destination care also provides opportunities for capturing spending, as the families of inpatients might stay in hotels and spend money that circulates through the local economy for extended periods.

The most significant version of the destination health care approach is in Rochester, Minnesota, home of the Mayo Clinic. In 2013, the legislature created the Rochester Destination Medical Center, a district covering the Mayo Clinic and most of downtown Rochester, and the city, county, and state governments allocated a total of \$585 million to the project.<sup>20</sup> In addition to general investments in livability, the objective is to promote the hospitality industry to capture spending from the large volume of patients who travel to Mayo for care and foster commercial research and technology – essentially to maximize the spillovers of the Mayo Clinic's remarkable prestige and revenues as a destination medical center.

These principles were echoed by a staff-member at an economic development organization trying to cultivate the health and life sciences sectors in another city:

When you think about it through an economic development lens, there are really only two ways, when it comes to health care and bio, that you're really going to grow the economy. It's going to be destination health care, so bringing in people outside of the market because serving people inside of the market is really important from a public policy perspective but it's not really growing the economy. And then, new venture creation. Commercializing research, bringing in med-tech devices or pharma or whatever to come in. There's definitely research and anecdotal evidence that people like to be co-located with others who are doing similar work. Kind of like this innovation ecosystem. There are very deliberate things we can do to invest in that and encourage it to grow.

These "deliberate things" often derive from ideas that emerge elsewhere.

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20 Rochester Destination Medical Center Website, <http://dmc.mn/plan-priorities/>

### 5.3 Flexible application of models: Learning, legitimacy, and uncertainty

Collaborative projects emerge from discussion between biomedical district member institutions. However, collaboration can often be frictive, and borrowing ideas from other places can help to generate interest and options that do not conflict with organizational parochialism. In some cases, the rationale for establishing a district stems directly from comparisons with other places. To give a recent example, a Jackson, Mississippi, councilman, shortly after passing an agreement to establish a commission for the five-mile Mississippi Health Care Corridor in 2015, said:

We're already behind the eight ball on a healthcare corridor here in the city of Jackson, when you look at Houston (TX) and their health care corridor. It's fantastic and is an economic driver. When you go to Pittsburgh, you see what their corridor has done.<sup>21</sup>

Plans and media coverage often draw comparisons to a range of other cases, including what have been defined here as biomedical districts, Eds and Meds projects, urban science parks and incubators, and innovative regions – most commonly, the Bay Area, Boston, and San Diego. The main staff member responsible for coordinating the Memphis Medical District described a process of drawing from existing cases, including Cleveland, Houston, Milwaukee, St. Louis, and Fort Collins, while noting the inherent variation of the applicability of different areas: “There’s no model that’s exactly the same, you kind of pick what you can.”<sup>22</sup> Mission Bay, a large rail-yard and warehouse area redevelopment that includes a new University of California – San Francisco Medical Center and a strong biotech presence, provided a frequent point of reference for other interviewees, who also recognized that San Francisco’s advantages of proximity to a strong biotech cluster and an extremely strong property market might not apply to their local context.

Site visits and advice from executives of similar districts in other cities often plays a role. For instance, Baton Rouge Area Foundation brought in a representative from the comparably sized Buffalo-Niagara Medical Campus, who recommended that they form a separate 501c3 nonprofit, operate parking for revenue, and create an incubator.<sup>23</sup> Interviewees from different cities discussed trips to Cortex in St. Louis in the early stages of laying the groundwork for district establishment, and others mentioned trips to Cleveland and Houston.

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21 Jimmie E. Gates, Jackson pushes health care corridor, *The Clarion-Ledger*, 28 September 2015.

22 Interview with Memphis Medical District staff, 21 July 2014.

23 Interview with Baton Rouge Area Foundation staff, 1 July 2015.

On the other side of borrowing ideas from elsewhere was the knowledge of how commonly life sciences comprise the focus of local economic development strategies:

Everybody has bio as a targeted cluster. Not everyone can do this, so set realistic goals.<sup>24</sup>

Every city wants to be a bioscience hub... Pascagoula [Mississippi] wants to be one because they have a hospital. The difference is university research. When the hospital becomes a place where you are doing health care and research and testing connected with the universities and then connect that to a pharmaceutical company that is interested in the research and seeing how its reacting in patients, that's when you get the full cluster model. And that's how we're approaching this.<sup>25</sup>

But what is necessary to expand from a hospital or university to a cluster? The effort to build cluster infrastructure within the boundaries of biomedical districts has reconfigured places historically limited to public service-oriented treatment, education, and research.

### **Building the “Ecosystem”**

Upon the opening of one Dallas incubator, a university administrator commented:

We anticipate that BioCenter will become an engine for development of innovative treatments and medical device technologies that will fill unmet patient needs. At the same time, it will be a dynamic catalyst for the creation of new industries in the Metroplex, employing highly skilled workers.<sup>26</sup>

The sentiment effectively summarizes the logic of comparable developments in other cities. Across interviews, media coverage, and plans and studies, a remarkable consistency exists in the way that key actors perceive strengths and weaknesses of development in the life sciences and biomedical industries. It is likely that any place that houses an academic medical center can also boast a strong portfolio of grant-funded research, a set of educational programs that churn-out high-skilled, high-earning workers, and visible investment in new construction. With few exceptions, however, local economic development proponents tend to view their locality as lagging in commercialization of life sciences and biomedical technologies. This perspective frames urban biomedical districts both as existing strengths and as dramatically under-realized opportunities.

Perception of the barriers to realizing this potential also tend to conform to a common set of gaps. First, local scientists and universities lack the mindset, incentives, or resources to act

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24 Interview, 18 July 2013.

25 Interview with BioDistrict executive, 17 July 2013.

26 UT Southwestern's BioCenter driving biotech, medical innovation in North Texas, UT Southwestern Newsroom, 2 April 2010, <http://www.utsouthwestern.edu/newsroom/news-releases/year-2010/ut-southwesterns-biocenter-driving-biotech-medical-innovation-in-north-texas.html>

entrepreneurially and convert their research into commercial business – to move “off the bench”. Second, the necessary seed capital in the form of angel and venture funds is lacking locally and concentrated within other regions. Third, the region lacks the knowledge – whether housed within successful firms or talented, experienced managers – with relevant expertise that blends the business-side and the scientific side of biomedical innovations. Fourth, gaps exist in the ability of firms at different stages of the life cycle to have their needs for specialized lab facilities met by the local market, to access potential opportunities for collaboration and support, and to develop ties with industry outside of the region.

In my interviews, efforts to address these gaps frequently referenced a metaphor: “ecosystem”. In nature, an ecosystem signals the complex, adaptive dynamics of energy transfer among flora and fauna present within a defined physical environment. In regional economies, the innovation ecosystem refers to the flow of projects and resources – knowledge, human and financial capital – through a complex, adaptive, and territorialized system of organizations – prestigious educational and clinical settings, research institutes, new and established businesses, venture and angel funders, economic development and business assistance organizations, governmental agencies and policy-makers, etc. Building the ecosystem implies collective initiatives to bridge what is colloquially known as the “valley of death” between research and successful innovation. A commercializable idea begins its life nurtured by the resources of academic institutions and transitions to private resources from investors and industry on its way to the market. Start-ups often falter in the valley between these two resource environments, especially in biotech applications where the proof-of-concept and development phase may be very prolonged. In many cases, substantial portions of nascent regional life sciences ecosystems have been constructed within the boundaries of the biomedical district, particularly as district anchors increasingly perceive their long-term growth opportunities not in terms of building more clinical beds but in research facilities that will attract star researchers and research funding (including from industry).

In 2004, an FDA report brought attention to the need to build translational research through collaboration between industry and academia (Food et al., 2004). Over the following decade, the linkages between the bio-pharma industries and academic institutions have deepened, at least as measured by research funding, patents and citations, and more anecdotally through changing norms for academic promotion and tenure (Practice, 2015; Woodcock and Woosley, 2008). Cross-organizational collaborations represent an important mechanism of this effort,

including partnerships between industry and academic medical centers, despite the possibility of ethical conflicts of interest if industry funds and dictates the focus of research.

These normative shifts in the process of research translation have shaped the focus of physical development of biomedical districts and their association with life sciences-oriented economic development strategies. For example, one mode of opening up the innovation process involves facilitating cross-institutional collaborations in conjunction with industry partners. This is a major focus of the research centers, incubator/accelerator programs, and other “hubs” for commercial innovation that make up a large part of the building programs of contemporary biomedical districts. A second part of the ecosystem involves leveraging patient encounters to establish regional clinical trials consortia, multi-institutional patient registries, and other means to facilitate the clinical trials process. The proximity and density of affiliations within biomedical districts fosters the conclusion that collectivizing the institutions’ attractiveness for clinical trials offers a sensible, relatively easy mode of collaboration. As a result, many biomedical districts have focused on attracting clinical trials as a component of the ecosystem, one that establishes deeper links with pharma and biotech, even if most of the research and development does not occur locally.

Innovation systems depend on building a networks of different types of local organizations. Focusing these projects on the biomedical district can generate momentum and buy-in from universities and academic medical centers, who want their facilities in close proximity and gain access to new revenue streams through translational research. These conditions facilitate the process through which urban biomedical districts have converged toward a version of the “innovation district” in many cases that has become standardized through its propagation as a model for development (Katz and Wagner, 2014a), despite having been influenced to some extent by the historical legacy of biomedical districts and similar urban spaces.

### **Strong research, weak commercialization**

The mere presence of an academic medical center is often sufficient to demonstrate a strong research presence. However, the missed opportunity of commercialization is equally as common. For example, a recent study of biosciences in Los Angeles County found that the region does not “measure up” in the biosciences despite its building block of “world class” academic research, with just over one percent employment lagging the three percent or more “among leading

regions with vibrant bioscience industry clusters”.<sup>27</sup> Los Angeles notably pales in comparison with California’s second and third largest regions, the Bay Area and San Diego. In addition to developing talent, a marketing presence, and translational research, the report recommended developing 3 to 5 “signature biosciences innovation hubs,” including around the LAC+USC complex at the site of the old LA County Hospital.<sup>28</sup> Even Johns Hopkins has been criticized for failing to convert its research into commercial businesses.<sup>29</sup> A similar logic has driven recent efforts to reinvigorate the Texas Medical Center.

Economic development organizations and academic medical centers read the causal connection between strong research and the gaps that fail to launch commercialization in a manner that often focuses on biomedical district investments. Districts routinely offer a density of research in proximity with underutilized land or obsolete facilities that can be converted to new uses. They also create opportunities for new routes to collaboration beyond affiliations, shared services, and infrastructure. In fact, the mission statements of many such districts reflect this priority, e.g.:

To promote a knowledge-based transformation of Western New York through the biomedical research, education, clinical practice, and entrepreneurship of its member institutions (Buffalo Niagara Medical Campus).

Devoted to the development and creation of health and bioscience / biotechnology opportunities within the City of Temple (Temple Medical and Education District, Temple, TX)

### **Collaboration, incubators/accelerators, venture capital**

Building the ecosystem depends on regional proximity, not necessarily the immediate proximity that exists in a biomedical district. The close locational proximity of institutions does not necessarily equate to the same kind of proximity that facilitates innovation. Intervening in the research process has to contend with organizational silos, even when formal affiliations exist. A staff member of the Memphis Medical District described the impact of simply:

Sitting down with our own researchers and pulling them into a room. We knew that we had the research here, but nobody had gotten [together]. We really consciously put St. Jude and UT Health Sciences Center and Le Bonheur Childrens’ Hospital [together].

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27 Batelle Technology Partnership Alliance, Feasibility Assessment and Master Plan for Advancing the Bioscience Industry Cluster in Los Angeles County, 2014, p.2, adapted from BIO, Laboratories of Innovation: State Biosciences Initiatives, 2006.

28 Ibid.

29 Arthur Hirsch, Hopkins opens second business incubator, *The Baltimore Sun*, 6 February 2015.



There are relationships between them all, but I can't say that they had been put in the same room.<sup>30,31</sup>

To varying degrees, this sentiment was shared by other interviewees:

When we started in spring, maybe Summer, of 2014, I don't know that any of those people had all been in the same room at the same time before. Maybe they had, but it was certainly a tense environment.<sup>32</sup>

Efforts to plan a biomedical district often result in the simple yet substantial event of putting people in the same room. In turn, these conversations often reinforce the importance of closeness. Biomedical district organizations, their member organizations, and their researchers perceive proximity as crucial to the ability of physicians, postdocs, and other researchers to hold dual positions. Residents and postdocs might have clinical responsibilities while overseeing a study at a research center, a researcher faculty might want to establish a start-up, or a physician might advise or contract with a technology company. These types of scenarios support the notion that the research facilities should all be located in close proximity to clinical and education institutions.

Research parks, incubator and accelerator programs for start-ups, and/or space for growing companies have become a major focus for biomedical district development. Again, the Memphis interview described how the need was derived from a scan of other models:

We realized early on that we needed a facility for people to do research in, and we looked at other places to see what that would mean, and that that needs to be a research park. You have to build a research park. And in order to make that research park, and this huge investment that we're making, competitive in the US, you've got to consider the entire medical center.<sup>33</sup>

These types of facilities have become a regular feature of the biomedical district landscape (see table 5.4).

Incubators usually provide subsidized access to space and technical assistance, for instance, for negotiating patent law, raising money, or simply running a business – all of which can be a challenge for scientist entrepreneurs. They often fill up quickly. The challenge then becomes retention. Both the start-up phase and incubator graduates need two kinds of continuous support. First, they need access to appropriately flexible space, which the market often fails

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30 Interview with Memphis Medical District staff, 21 July 2014.

31 This also explains the Memphis Medical Center Collaborative's mission statement: "Working Together to Make a District a Community".

32 Interview with staff of Baton Rouge Area Foundation, 1 July 2015.

33 Interview with Memphis Medical District staff, 21 July 2014.

Table 5.4: Incubators, tech parks, and related facilities in biomedical districts

City	District	Facility
Dallas	Southwestern Medical District	Biocenter (2010)
New Orleans	BioDistrict	BioInnovation Center (2011)
El Paso	Medical Center of the Americas	Cardwell Collaborative (2016)
Baltimore	East Baltimore Development Initiative	Fast Forward (2013)
Grand Rapids	Medical Mile	GR Current (restructured 2013), part of designated Smart Zone
Birmingham		Innovation Depot (2007)
Memphis	Memphis Medical District	Memphis BioWorks (2001)
Baton Rouge	Baton Rouge Health District	Penninton Biomedical Research Center (1988)
Buffalo	Buffalo Niagara Medical Campus	The Innovation Center
Houston	Texas Medical Center	TMCx, TMCx+, JLABS, Biodesign, Biotechnology Commercialization Center (UT)
Milwaukee	Milwaukee Regional Medical Center	UMW Innovation Campus (2014)
New Orleans		Bioinnovation Center
Chicago	Illinois Medical District	Chicago Technology Park
Miami	Miami Health District	University of Miami Life Science and Technology Park

to provide for start-up and small firms that have not and may never achieve sufficient profit. In the life sciences, wet lab space is a component of many incubators and tech parks. Second, they need appropriate funding, from angel and seed funds through different rounds of venture capital raising.

Successful business growth and capital raising, however, implies risk for the locality. The business plan for many biomedical technology companies involves licensing or being acquired by a larger company that might be located outside of the area. Likewise, venture capitalists often demand proximity. As one incubator manager explains:

A company raises a pre-seed fund, then you go through several clinical trial stages, but what happens is you raise money at each stage but then you need more and more money. Initially you may need 2-5 million, but then 10-15 to get to the next level. But you will probably need different groups at different levels. You can't find 10-15 in New Orleans. They will be in Boston, San Francisco, Research Triangle, but those investors don't wanna get on a plane. So they will try to pull you to their home area. Also, companies don't expect to bring a technology to market, they know they will sell it. The further they bring the technology the more they can get for it, but when they sell, it will belong to another region's company or even internationally, so the challenge is to make the local attractive enough for that buyer to keep the companies here, and that's going to be a huge challenge.<sup>34</sup>

Steps can be taken to build the ecosystem, but until it develops sufficient traction, its successful businesses with anchor potential remain at risk of leaving. While these kinds of problems are expected for a competitive, export-oriented biotech enterprise, the ecosystem also hinges on the potential for hospitals to move and restructure.

### **Proximity and hospital reorganization**

Biomedical district establishment may occur as a gradual adaptation. As health care and the life sciences become strategic targets for local development, and as the market and regulatory context of health care evolves, so do the requirements of major institutions for their surroundings. With an expanding set of comparative cases from which to draw, policy-makers, economic development organizations, and hospitals might gradually settle on establishing a formal process for planning a biomedical district. However, this decision also often occurs as a response to more discontinuous local changes.

For example, in Grand Rapids, Austin, and El Paso, a biomedical district emerged as a logical means to maximize the planning, economic development, and health system opportunities during the creation of a new academic medical center. In Memphis, the Chamber of Commerce

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<sup>34</sup> Interview with Bioinnovation Center executive, 19 July 2013.

had identified the medical district as a strength that the region was failing to leverage, leading to planning efforts housed at Memphis BioWorks that later yielded an overlay district and the creation of a separate organization, the Memphis Medical District Collaborative. However, the process was hastened and shaped by its coinciding with the closure of Baptist Memorial Healthcare's historic flagship in the medical district, at one time a 2,200-bed facility that was the largest private hospital in the nation.<sup>35</sup> A major task during the first years of the medical district involved evaluating a retrofit of the massive building for research and, ultimately, raising money for its implosion.

In some cases, the district organization has stepped in to prevent hospital closures and shore up their stability. The staff of the Memphis Medical District lobbied to put a bed tax on private hospitals in order to fund Regional One Health Center ("The Med") the district's chronically strapped public safety-net hospital which has undergone significant restructuring. In Shreveport in 2013, during the privatization of the statewide Charity system of public safety-net hospitals (see chapter 9), the Biomedical Research Foundation of Northwest Louisiana actually took over the operation of the safety-net and teaching hospital of LSU-Shreveport.

In addition, proximity can facilitate the mergers that have affected hospitals since the 1980s. In many cases, two neighboring hospitals have merged, sometimes as an alternative to joining a major hospital system. In others, district hospitals affiliated with regional health systems, altering the competitive dynamic within the district. In these ways, the simple proximity of institutions can shape the outcomes of hospital restructuring.

### **Workforce and procurement**

Biomedical district strategies do not only engage with research, technology commercialization, and specialty services. Some also anchor place-based community revitalization strategies. In a report for the Democracy Collaborative, a leading proponent of such strategies for anchor institutions, Zuckerman (2013) identifies the following emerging trends and best practices for hospitals wishing to demonstrate meaningful community impact and embrace the anchor mission: sustainability, local minority- and women-owned business purchasing, housing development, capacity building for community organizations, local hiring (often in neighborhoods immediately adjacent to institutional campuses), community investment, and multi-institution partnerships. Clearly, anchor institutions can benefit – and benefit from – the community around them.

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<sup>35</sup> Interview with Memphis Medical District staff, 2 July 2014.

The relationship with health care institutions can lead to some original solutions in tying workforce development problems to the health care. For instance, according to the staff of one medical district, which had several public housing developments nearby:

When we interviewed the people who came out of this housing development originally... We had 486 families that we had to move out of here with vouchers and so on, and a lot of the women wouldn't go to job interviews because they had no teeth. Well, here we are as an executive committee looking at this HOPE VI project and said, let's talk to the dental school and get them in.<sup>36</sup>

More commonly, districts efforts involve acute staffing problems, like the chronic shortage of nurses. Thus, the economic opportunity implied by biomedical districts is two fold. On one hand, they tend to focus on job creation in life sciences and biotechnology, sectors that employ high skilled workers and often actually depend on bringing in talent from out of town. On the other hand, biomedical districts, in theory, create broad-based opportunities for low-skilled workers – opportunities that account for a high portion of good, accessible jobs (Nelson and Wolf-Powers, 2009). This possibility is especially powerful when the district is located in close proximity to low-income neighborhoods suffering from joblessness. As biomedical districts have transformed into economic engines, their economic impacts extend outward in two directions. One is toward the biomedical economy. The other is toward the surrounding community.

## 5.4 Proximate and deep challenges

Both formal and informal biomedical districts have the potential to induce anchor institutions to generate community-oriented impacts. This can occur through direct interventions or indirectly by creating concentration efficiencies or facilitating partnerships. In fact, the Affordable Care Act now allows for hospitals to use anchor building strategies to satisfy its requirements for community needs assessments and nonprofit status (Zuckerman, 2013, 29). As Zuckerman (2013) argues in a paper for the Democracy Collaborative, hospitals can be catalysts for community revitalization if they choose to do so. Biomedical districts, in theory, can help hospitals to make the choice. Their capacity to do so depends on their ability to generate legitimacy, to mobilize resources, and to foster meaningful partnerships.

Funding is an obvious challenge. The most durable district organizations have stable sources of funding, e.g., from renting land or operating parking. Some who described their relationship

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<sup>36</sup> Interview, 2 July 2014.

with city government as productive candidly lamented frustration with the lack of financial resources and other forms of direct support from the city. Mayors, it seems, are often strong proponents of biomedical districts; they provide visible forms of investment, create jobs, and address quality of life. That support does not necessarily materialize into funding and policy.

Nearly every participant I interviewed, and many of the plans reviewed, listed leadership as a – if not the – major ingredient to success. Likewise, participants often attributed in hindsight missed opportunities and failed initiatives to inadequate leadership. Essentially, relationships matter – for health care organizations, for biotechnology companies, and for public policy. This is, in some ways, an obvious finding, but it has special significance for biomedical districts. The discourse of leadership permeates the entire health care system for the same reason: increasing the integration of care is viewed as necessary and, to an extent, increasingly required by regulation and payment; but restraining fee-for-service health care has been a painful mechanism for improving the health care system. The deeper challenge remains, like the cases in the previous section, the tension between collaboration and competition among medical institutions. These tensions depend on past experiences and vary from place to place. Some described collaboration as very productive, even referencing other examples: “I am very unique in that I’m not like Cleveland where the CEOs fight with each other.”<sup>37</sup> District efforts can be a low priority for academic medical centers and other large health care organizations scrambling to keep up with changes to the payment system.

Contemporary biomedical districts have always been spatial expressions of the US health care system. Today, the biomedical economy presents a different set of opportunities and challenges. As a result, biomedical district planning efforts seek to wedge themselves between two difficult objectives: building a self-sustaining innovation “ecosystem” and negotiating projects of collective benefit with large health care organizations. Competing on biomedical technology has emerged as a common goal because this objective does not impinge on the anchor tenants and speaks to the appetite of local and state governments for visible signs of investment and economic diversification. As a policy intervention, biomedical districts are relatively easy to establish. Starting a non-profit or drawing a boundary on a map is an inexpensive proposition. Their durability depends on gaining funding for an organization with an unclear role, creating a good business climate for biomedical technology, and demonstrating value to health care organizations undergoing change. Their legitimacy frequently depends on

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<sup>37</sup> Interview, 2 July 2014

the episodic whims of health care organizations and the process of assembling ecosystems for biomedical technology.

## **Part II**

# **In-depth case studies**



Part II presents in-depth case studies spanning from the roots of the urban medical district as an economic development strategy to their contemporary transformations.

Drawing mainly from archival research; secondary histories; contemporary interpretations; documents, plans, and news media; and interviews, the case studies seek to answer the following questions:

Why did the urban biomedical district become an economic development strategy?

How were these districts originally established?

How was development shaped by the broader process of urban development in the surrounding city and region and by the postwar expansionary modernization of medicine?

How have the broader contexts of urban economic development policy, health care policy reform, and changing markets for therapeutic interventions and health care providers shaped policy and reorganization initiatives within biomedical districts?

The cases, although sharing many similarities, differ in ways that have consequences both for how development unfolded during their first decades of existence and for the contemporary status of each district.

### **The first official medical districts: Houston and Chicago**

The next two chapters are devoted to two case studies focusing on the 1940s establishment and growth through roughly the 1970s of the original two districts: Chicago's Illinois Medical District (IMD) and Houston's Texas Medical Center (TMC). While the phenomenon of spatial clustering certainly existed previously among medical institutions, the 1940s marked the inception of a particular policy mechanism to nurture such clusters for the dual purposes of promoting economic development and improving health care. The mechanism includes two basic components: the formal designation of a development area and the creation of a separate entity charged and empowered to facilitate development through planning and land acquisition.

The 1941 designation of the IMD (originally, the Medical Center District) added a special territorial and administrative structure in the form of a dedicated state agency, and state funding support to an existing cluster of hospitals and medical schools centered around Cook County Hospital on the west side of Chicago. Cook County Hospital originally moved to the then-sparsely populated site after the Great Chicago Fire destroyed a previous facility in 1871. Gradually, available land and a rapidly expanding population facilitated the emergence of a cluster of health-related uses, without concerted or intentional planning. In brief, as a handful of other hospitals and medical schools (some new, some forced into relocation after the fire)

found proximity to training opportunities at Cook County Hospital and available land, an embryonic medical district emerged at a location close to the center of Cook County's growing population.

Three events combined to generate serious interest in establishing a medical district as a matter of policy by the end of the 1930s. First, local and state governments increased their stake in the site. Built during the 1910s as a striking Progressive-Era monument to the emergence of modern medical science, the site's second Cook County Hospital would remain the nation's largest for most of the twentieth century. Shortly thereafter, during the post-Flexner Report realignment of graduate medical education, the University of Illinois purchased and combined existing proprietary medical schools into a modern academic medical center adjacent to Cook County Hospital. Mainly in response to emerging accreditation standards, the university proceeded to construct its own campus and hospital over the 1920s. Second, the decidedly working-class surrounding area of the Near West Side began to show early signs of the inner-city decline. By the 1940s, citywide studies began to designate the medical district area as "blighted". A slowly gestating concept that only moved forward upon receipt of support from the city's growth coalition, the version of the medical center district that gained traction was one modeled on the then-emerging "district re-planning" approach to redevelopment and slum clearance, pre-figuring aspects of the redevelopment mechanism taken to scale by federal Urban Renewal legislation in the 1950s.

Though not unique to Chicago, the third event was that the newly modernized hospital and the health care system as a whole were on the cusp of unprecedented growth. For the hospitals, these changes included administrative realignment, increased state and federal involvement in the form of fiscal support and regulation, and – importantly – aggressive programs of physical plant investments. The IMD provided a mechanism to convert a neighborhood into a developmental terrain, moderating competition over land among tightly located existing tenants and attracting new institutions to the district. While hospitals and medical schools are considered immobile anchor institutions today, the threat of de-camping to suburban locations was just as real in the postwar years as the opportunity to capture new waves of investment.

The IMD's boundaries also greatly expanded the existing medical district. Within its jurisdiction, the IMD Commission had unique authority over land acquisition and land use, including eminent domain authority. Institutional land uses swelled consistently over the late 1940s and 1950s, as the district's creeping frontiers pushed back the surrounding neighborhoods.

Despite the scale of development, the project's success was uneven at best. By 1950, the state's budget for IMD operations in the IMD budget was cut dramatically. Partly as a result, the Medical Center Commission, which had been well empowered through eminent domain to acquire and package land for allocation to the institutions, never performed as well as a planning entity. Original ambitions to fill out the entire district with a master-planned "garden of health" quickly fell by the wayside as the Commission settled into a role as a relatively passive conveyor of land and a political entity relatively isolated from the broader field of economic development and health care in Chicago. As a result, development occurred in a disorderly fashion. By 1970, the Commission and its institutions generally agreed on the disappointing duplication of facilities and service missions and the frustrating lack of coordination among the facilities planning programs of various organizations, both inside and outside of the district. At the same time, the dire situation of Cook County Hospital, perhaps the nation's single largest symbol mid-20th century health care inequality, began to reach crisis proportions. Discussion around either disbanding the Commission or expanding its role as a planning body (partially, to fill the broader vacuum of regional health system planning) had little effect, as the Commission mostly continued its usual business of coordinating mundane land issues with ever-diminishing support from the state. Ultimately, the IMD became a microcosm of the contradictions of the postwar expansion of health care, pairing the successes of advanced medical treatment and with a legacy of uncoordinated and inequitable investments in the built environment.

Aside from the crumbling remnants of Cook County Hospital, still equally impressive as a relic of medical modernity and of the intractable inequalities on the road to today's health care system, the district houses a mostly unremarkable assortment of parking lots, old and new medical institutions, historic residential areas, and retail. A sea of vacant lots testify to the IMD Commission's ability to assemble land far more effectively than to coordinate its development. Its legacy, however, is vast. Locally, the district shifted the pattern of development in a large portion of Chicago's west side, where it pre-dated a slate of other Urban Renewal projects, including private and public housing developments and the University of Illinois at Chicago Circle campus. Beyond Chicago, elements of the IMD have been replicated across dozens of other cities in the US. The district also belongs in the genealogy of some of the most significant place-based district development instruments of the twentieth century, including Urban Renewal and special purpose authorities. The IMD also may be considered as a candidate for the first deliberate implementation of an "innovation district," a Brookings-endorsed redevelopment model currently enjoying a moment of popularity (Katz and Bradley, 2013).

Established in 1945 and today equaling the grandeur of Houston's two other office district skylines, the Texas Medical Center (TMC) ultimately eclipsed its Chicago counterpart. Like IMD, TMC's existence hinges on the adoption of the project by the city's growth coalition and the aid of external state and philanthropic resources. Unlike Chicago, Houston in the 1930s and 1940s was still a mid-sized city, just coming into its own as the center of the oil and gas industries. City leaders viewed the apparent fact that Houston was the nation's largest city without an accredited medical school as an obstacle to climbing the urban hierarchy.<sup>38</sup> As such, the TMC's genesis resembles a second major idiom of postwar economic development: Sunbelt-style industrial attraction. Demonstrating the pressure of inter-jurisdictional competition, two politically savvy successes of the TMC's founders include enticing Baylor's medical school to relocate from Dallas and pulling a legislative appropriation for a University of Texas cancer research center from the grasp of the original front-runner, Austin. In its formative years, TMC established itself as a hybrid organization, a "medical center" that did not actually provide patient care but that enabled a combination multiple institutions sufficient to concentrate activities to an extent that rivaled leading academic medical centers of the Northeast and Midwest. This organizational model expedited the modernization of health care in Houston while internalizing the dynamics of competition and constrained collaboration within the medical district.

Also unlike IMD, which originated as an inner-city redevelopment project, TMC grew on undeveloped lands to the south of Houston's six original wards, just beyond where Hermann Hospital opened in 1925 on land annexed by the City and near the Rice Institute (today, Rice University). The true catalyst for the TMC, however, was the private charitable foundation of M.D. Anderson. His estate created funds for the University of Texas-affiliated M.D. Anderson Cancer Center and seeded the Texas Medical Center. Operating as a non-profit foundation chartered in 1945, TMC provided matching funds for construction to attract a range of public and non-profit hospitals, institutions both newly established and relocating from other parts of Houston (and beyond) to construct modern facilities. TMC also assembled land and maintained infrastructure and shared services, such as parking. While the IMD Commission was chartered as a state agency with rare land use powers, TMC was established as a non-profit foundation albeit with a similar charge. In many ways, TMC also acts like IMD as a special purpose government, though the entity itself has no eminent domain power. TMC enforces land use

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<sup>38</sup> An apt comparison is when small-market cities retain major league sports franchises, often at great public cost, to signal status as a major city.

conformity through a deed restriction, the main mechanism of land use regulation in the largest city without a conventional municipal zoning ordinance.

TMC's institutions transformed Houston from a backwater in the health care system to an international destination for specialized medical care. The remarkable growth of TMC resulted, at least partially, from fortuitous regional conditions and institutional specializations. Initially a mid-sized city with under-developed medical capacity, Houston since the TMC's establishment has consistently ranked among the fastest growing regions. During this period, despite Houston's notoriously sprawling development pattern, the TMC fostered an unusual degree of geographical concentration of regional medical assets (arguably leaving other portions of the city underserved). The city's immense oil wealth also created a large pool of eager donors to charitable hospitals. Meanwhile, TMC institutions developed unrivaled specializations in cancer treatment and cardiovascular surgery, both of which evolved from minor, poorly understood fields at the district's founding into lucrative high-technology specialties. Both of these specializations functioned as revenue generators and drew in patients from outside of the region, establishing TMC as an "exporter" of health care services. In particular, the decades of antagonism between the TMC's two star cardiovascular surgeons, Edward DeBakey and his former protege Denton Cooley, conjures, on one hand, close analogies to the agglomerative dynamics of beneficial spillovers, productive competition, and export specialization and, on the other, an indictment of wasteful duplication of capacity and cost-inflating technology in the health care system. Either way, the result is that the TMC encompasses every one of the city's nationally recognized centers of medical prestige.<sup>39</sup>

Notwithstanding substantive differences with respect to each district's organizational form and surrounding urban context, the two cases illustrate several similarities, the first and foremost of which is their coincidence with the postwar expansion of medicine. Having been established and funded in the 1940s, both IMD and TMC were well poised for intensive development, as the nationwide expansion of medical facilities construction coincided with their first decades of existence. During this period, both entities facilitated expansion and moderated inter-institutional competition over scarce land. The IMD and TMC grew separately into, without question, the two largest concentrations of medical facilities in the US (and, likely, the world) prior to the 1980s. Unfortunately, this expansion lacked effective planning, and the

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<sup>39</sup> Another contrast with the IMD is that Chicago's two most prestigious medical schools (Northwestern and University of Chicago) and highest ranked hospital (Northwestern Memorial Hospital) lie outside of the district.

symptoms of rapid but uncoordinated growth – from the duplication of services to disjointed street and pedestrian access – remain evident today.

By the 1980s, institutional lock-in and political siloing, a second similarity, had stalled organizational dynamism in both districts at a moment when the health care landscape would undergo another sea change. Perfectly positioned to capitalize on the Medicare-fueled expansion of medicine in the 1960s and 1970s, both organizations were less well-poised to adapt to the fiscal contractions and competitive expansions of the 1980s. The IMD's expansion stalled while TMC's function narrowed to focus on parking management. Yet it was at approximately this point when city leaders again began to see both districts as possible solutions to more general urban development crises: the erosion of Chicago's manufacturing economic base and Houston's deep local recession after the mid-1980s oil bust. Chapter 8 returns to the two cases, discussing the resumption of entrepreneurial activism in the governance of both districts around a program of facilitating biomedical innovation and strengthening inter-institutional linkages.

Third, in their own manner, each district reflects the general political tendencies of economic development policy during the postwar period. The IMD emerged from the same policy milieu as Urban Renewal, and many aspects of the TMC's establishment draw from the playbook of aggressive industrial attraction typical of many Sunbelt cities. Both cases illustrate the creation of an apparatus for large-scale development that depends on the necessary condition of coordination with a cohesive, sympathetic growth coalition. These innovative and (initially) effective district governance structures subsequently ossified into relatively static and isolated political entities.

Finally, the cases point to the limits of viewing hospitals and academic medical centers from an anchor institution perspective. Certainly, some aspects of the anchor institution narrative of urban universities and academic medical centers apply here. Like many "Eds and Meds" examples prior to the era of the engaged university, both districts grew into geographically and politically isolated entities, openly hostile to surrounding neighborhoods in IMD's case. However, as houses of the major medical providers for the region's low-income and uninsured residents, neither district conformed exactly to the model of a secluded ivory tower. The IMD and TMC functioned, from the beginning, as places where wealthy and poor alike encountered the "ordinary" heroism of life-saving scientific and technological advancement, filtered through the institutional context of modern medicine (Kaufman, 2015).

Both cases also illustrate very early examples of competitive, somewhat footloose medical institutions. TMC lured institutions from other parts of Houston and from other Texas cities, while IMD's institutions used the threat of suburban flight to exert leverage in land disputes – one medical school actually left. On the other hand, in both cases, proximity has served a function in facilitating the restructuring and re-affiliation process in times when hospitals have faced regulatory uncertainty and a changing competitive environment.<sup>40</sup>

### **Uneven, incomplete contemporary transformations in Chicago, Houston, and New Orleans**

While contemporary biomedical district organizations experience old challenges (e.g., flagging leadership and myopic priorities, lack of funding, structural barriers to cooperation), the underlying drivers of the current wave of investment in biomedical districts reflects a new terrain of pressures and incentives. Chapter 8 examines these general patterns by revisiting the two original cases, Chicago's IMD and Houston's TMC, with developments since roughly the 1980s. While the two districts entered the decade on very different footing, both re-emerged as economic development concerns in response to contextually specific crises in the broader regional economy.

By the 1980s, Chicago was reeling from industrial job loss. Following the first successful biotech IPO and spurred by the potential of retaining a promising start-up in Chicago, the city initiated planning for the Chicago Technology Park, notable primarily as an early example of the "science park" model in an inner-city setting. Chicago thus far has failed to develop a strong biotechnology cluster. Meanwhile, the IMD Commission continued to clear land through the 1990s. Against the backdrop of Illinois' deteriorating fiscal situation and the general lack of enthusiasm or clarity for the district's mission, the state gradually reduced the Commission's budget. By the 2010s, a bond default and lack of confidence in the leadership prompted a turnover of the Commission and its administrative staff.

Houston's catalyzing crisis event was the mid-1980s oil recession. Acute job loss coupled with a bursting real estate bubble prompted city leadership and economic development agencies to reduce the region's mono-sectoral dependence on the price of oil. One outcome was the transition of the TMC from a quality-of-life selling point to a pillar of the Houston economy, along with oil and gas, transportation, and aerospace. Enthusiasm for these grand ambitions was limited mainly by a TMC organization largely viewed as a parking management company.

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<sup>40</sup> Many examples of shifting affiliations within the district exist in the TMC case, and the IMD's current Rush University resulted from the combination of three hospitals from the 1950s through 1970s.

Among the TMC institutions, the constant tension between competition and cooperation has dominated priorities. The TMC's three major private acute care hospitals emerged as flagships in separate multi-campus regional hospital networks, each competing for market share. On the other hand, the logistics of proximity and a history of shifting affiliations among TMC hospitals and medical schools have created stabilizing options for adaptive reorganizations but little intrinsic incentive to embrace a larger role in the economy.

By the 1980s, TMC was already a behemoth, and unlike Chicago, the district's growth has never slowed. Today, the 1,500 acre, 106,000 employee district comprises the third of Houston's major business districts, along with Downtown and the Uptown/Galleria area. By the 2010s, the TMC was advertising itself as containing more office square footage than any CBD in Texas, with sufficient construction in the works to surpass all but a handful of downtowns in the country. Again, a 2010s turnover of leadership has brought a renewed approach to research and translation. Currently, TMC's exceptional aspirations fall closer to Silicon Valley than an inner-city Eds and Meds program.

Unlike the IMD, the TMC maintains a healthy recurring revenue stream through its parking facilities and has aggressively invested in improvements and planning initiatives. For example, its headquarters and a large incubator/accelerator facility are housed in a massive former Nabisco factory complex, and the TMC has even more ambitious plans as developer for mixed-use high-rise properties in the district. The TMC has also invested heavily in embracing its role as a neutral partner for competitive institutions that may derive benefit from cooperation. A 2014 strategic planning effort led to the creation of five "institutes" under the TMC umbrella to promote multi-institutional collaboration in innovation, health policy, clinical research, regenerative medicine, and genomics. While this selection of themes might double as a representative sample of the most prominent buzzwords in biomedicine, it also signals the expansion of the TMC's agenda as a development corporation beyond the management of physical planning, parking, and infrastructure into an active player in health systems and economic development.

The final in-depth case in Chapter 9, New Orleans, builds on shared themes across the previous cases, to illustrate that the new logic of district development can out-pace the capacity to plan in a dramatic fashion. As with Houston and Chicago, the catalyzing event for New Orleans was a crisis: Hurricane Katrina. Established in 2005, mere weeks before Katrina made landfall, the Greater New Orleans Biosciences Economic Development District, later renamed the BioDistrict, was the latest of three failed attempts to create a thriving medical district organization dating back to the early 1970s. In fact, the first was informed by a study of both



Houston and Chicago. After being listed in the city's Urban Renewal plans for several years, the Health Education Authority of Louisiana failed to acquire funding and eventually faded into obscurity. In the 1990s, the Louisiana Biomedical Research and Development Park met a similar fate. Unlike Houston, New Orleans never quite recovered from the mid-1980s oil recession, and the unsuccessful biomedical district initiatives failed to divert the city economy from its growing dependence on tourism.

Each of these initiatives was plotted around an existing concentration of medical institutions on the edge of downtown, centered around Charity Hospital, the oldest continuously operating public hospital in the country, and the academic medical centers of Louisiana State University (LSU) and Tulane. As much an art-deco monument to Huey P. Long's brand of populism as to modern medicine, Charity Hospital ranked second only to Cook County among the nation's largest hospitals. While Cook County was finally reconstructed in 2002, Charity Hospital remained, until its controversial closure in the aftermath of Katrina, one of the most glaring symbols of the city's "scoured landscape of social reproduction" in a disproportionately poor, black, and uninsured city (Katz, 2008). The closure allowed its operator, LSU, to secure the political will and federal resources for a massive new facility on a nearby site that would require the removal of a large residential neighborhood in the BioDistrict. Envisioned as a complex combining a replacement VA facility and a new flagship hospital to replace – but not recreate – Charity, the \$1.2 billion result was the largest economic development project in the city's history.

The new medical center was also the most controversial development since the halt of a French Quarter highway in the 1960s, an event that demonstrated a precedent-setting failure of the city's fractured growth coalition. This time, the contemporary political logic of medical district expansion proved to be more impervious. First, the LSU/VA project was serially excluded from the series of citywide post-Katrina planning processes. After the first VA-mandated public review meetings, a coalition of preservationists, community residents, and health care advocates mounted strong community opposition but ultimately failed to disrupt the project's momentum, propelled by the weight of federal and state agencies, the city government, and the twinned promise of economic diversification and modernizing the city and state's health care system. In the decade between Katrina and the opening of the new complex, Governor Jindal privatized the statewide LSU-run Charity System and the new University Medical Center by selling operations to hospital network operators. The transformation of state and local safety-net health care was complete. Like Cook County Hospital, Charity Hospital remains vacant, though several ambitious plans to reuse the facility have been proposed.

While the twists and turns of Charity's fate offer many interpretations, one fact is clear. The promise of prestige keystone health care projects provided a powerful economic development justification for organizational modernization strategies, with massive implications for the target neighborhood and for the local health care system. The irresistible spatial logic of biomedical district expansion prevailed. As an organization, however, the BioDistrict ultimately followed its predecessors into obscurity. After an initial planing process marred by leftover hostility from residents, many of whom were surprised to find that they lived inside of the massive BioDistrict, the organization's funding was cut. A political conflict over a failed revenue-generating arrangement combined with a general lack of confidence in leadership or clarity in the purpose of the organization led to the BioDistrict's effective end, although "Bioinnovation and health services" remains a priority industry cluster anchored by the massive investment since Katrina.

Like its postwar variant, the contemporary urban biomedical district parallels the pattern of change in the national health care system but at an urban scale. As more cities have looked to biomedicine for economic diversification, hospitals and academic medical centers have struggled to adapt to restructuring in a context driven by a mix of reforms; competition; and payment incentives for quality and value over quantity. Part I argued that local opportunities for life sciences innovation and related biomedical agglomerations are, to a significant extent, driven by the same forces that undermine the efficiency, effectiveness, and equity of the US health care system. Contemporary biomedical districts reflect a compelling but deceptively difficult opportunity to leverage partnerships between city and state governments, major medical institutions, and technology industries all hoping to carve out a local "ecosystem" from the growth and transformation of the health care system. However, the influence goes both ways. The partial replication of the biomedical district can also empower local actors to shape episodes in the transformation of health care. The result is a new kind of biomedical urbanism, less unitary than the districts that emerged in the postwar period but equally tailored to the organizational complexities and contradictions of the contemporary health care system. In aggregate, the replication of these local activities – normalized by mainstream local economic development approaches – arguably caters to a biomedical innovation process where incentives often fail to align with efficient or equitable social outcomes. The deeper question is whether the dominant playbook of biomedical district development may in some cases foreclose other ways to leverage geographical proximity.

## Chapter 6

# Chicago: The “Garden of Health”

In ancient Greece, about the year 300 B.C., there was to be found at Epidauros a cluster of buildings set in a grove of trees, and dedicated to the practice and study of the healing arts by an inspired group of men whose leader was the renowned Aesculapius, later to be deified as the god of medicine of the Greeks. It seems to have been the purpose of that small group, now seen dimly through the record of history, to establish a Garden of Health... Our goal is as elevated, our opportunity even greater, and our faith in the possibilities of the Medical Center District as firm as was that of the founders of a Garden of Health in ancient Greece.

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Annual Report of the Medical  
Center Commission to the  
Illinois Legislature, 25 November  
1943.

The colloquialism “out of left field,” indicating something strange or unexpected, owes its most likely origin to a part of Chicago that looks very different today. Over a century ago, baseball fans at the Chicago Cubs’ west side ballpark would occasionally hear strange outbursts from over the left field wall. The sounds came from the Cook County Hospital psychiatric ward, roughly adjacent to the field. Two decades after the team’s move to Wrigley Field, and the demolished ballpark made way for a new University of Illinois medical campus, this same

area gave birth to another idea from “out of left field”: the urban biomedical district. Created to facilitate land assembly, the district’s development authority proved successful in transforming a neighborhood into a terrain for the rapid expansion of large hospitals, academic medical centers, and related organizations. The district was less effective in creating a framework for cohesive development, both as a built environment and as a set of public service institutions with overlapping, shifting missions. The development of the Illinois Medical District encapsulates the postwar contradictions of planning both for inner-city redevelopment in an increasingly decentralized region and for health care capacity in an increasingly competitive and inequitable system.

Today, the boundaries of the Illinois Medical District (IMD) officially cover 560 acres on the Near West Side of Chicago. The district currently houses four teaching hospitals (Rush University Medical Center, John H. Stroger, Jr., Hospital of Cook County, Jesse Brown VA Medical Center, and University of Illinois Medical Center), two medical schools (the University of Illinois College of Medicine (UIC West Campus) and Rush University), the offices for a handful of other county and state agencies, the Chicago Technology Park research and business incubator, one historic residential district, and a high concentration of vacant lots in its southern portion. Established in 1941, the IMD represents the oldest example of an officially demarcated urban biomedical district, with a dedicated entity authorized and empowered to foster development within its boundaries: The IMD Commission (formerly, the Medical Center District Commission), a state agency with special powers of eminent domain and land assembly. While the early decades of the IMD offer the prototypical case of the urban biomedical district as a feature of US cities, the episode also overlaps with the history of other, more general manifestations of place-based redevelopment, such as the “district re-planning” approach most closely associated with Urban Renewal and more recent efforts to build environments supportive of innovative cluster formation within central city areas – including through science parks, technology incubators, and “innovation districts”. Thus, while the IMD has dramatically shaped one part of Chicago, its policy legacy also extends much more broadly.

By recounting the IMD’s establishment and the first four decades of its existence, this chapter seeks to answer the following questions:

- Why was the IMD established? Which actors played a critical role, and how did their actions reflect the more general context of the health care system and of urban development in Chicago in the 1930s and 1940s?

- How was the IMD built? What function did the district apparatus serve in conjunction with the aggressive expansion of hospitals and academic medical centers?
- What organizational form did redevelopment take, and how did this form have consequences for subsequent development? Which of these traits have other cities inherited from their forerunner in Chicago?

During the time frame covered by this chapter, the IMD experienced sufficient growth to credibly claim the title of the largest medical center in the country by number of beds and institutions in close proximity. Today, although IMD remains relatively large in comparison with similar formations in other cities, Houston easily surpasses its size. The IMD may not even be the second largest by any reasonable measure, such as area devoted to clinical space, total institutional capacity, or employment. That the IMD still claimed to be the largest well into the 2000s hints at another conclusion of this chapter. Within a relatively short span after the start of operations, the IMD grew inert to the changing context of health care and the Chicago economy and insulated itself from important developments outside of its immediate (and static) priorities. The case study thus tells two stories: the shaping of a particular place to the needs of a concentration of expanding biomedical institutions and the organizational development of an initially unique development and planning agency. Ultimately, the IMD organization may be evaluated as far more effective in acquiring and clearing land – and eradicating a neighborhood – than in achieving cohesively planned district or ensuring the sustainability of its planning function or fiscal resources.

The case establishes tensions that are also observable in the districts of other cities that succeeded the IMD in form and function. The first is the dual nature of policy objectives. The district supports, on the one hand, population health and regional capacity for training the health workforce and providing health care and, on the other hand, economic development and spatial planning. The latter, in this case, focused on promoting medical institutions as the highest and best use of land by attracting and expanding these assets. The target for expansion was a largely residential neighborhood perceived as “blight” and transformed into a developmental territory. Ironically, the metaphor of “blight” as applied to devalued and undesirable land uses is itself drawn from a biological term for a pathogenic infection of crops. Early documents from the IMD illustrate the use of similar metaphors in relating not only to the health effect of the IMD’s institutions via their role in the regional health care system but

to the district's impact on promoting the "health" of the city itself by eradicating blighted land uses.

Second, the case illustrates the simultaneous importance of relations inside the district – among its institutions or between the institutions and neighborhoods inside the district – and relations between the district and the city and regional health care system outside. In fact, the actual boundary of the district is crucial in this respect. Institutional land conflicts quickly brought the district up against its initially very generous boundary, far before uncoordinated development had actually used up its original allotment. The district thus resembles the postwar growth of hospitals: building occurs in an uncoordinated fashion and within a context of financial constraint, and some resources (whether land or beds) remain empty while others are overcrowded.

The chapter begins with the process of agglomeration prior to the district's official designation. The next sections describes its establishment and the decades when expansion peaked. The conclusion summarizes the key findings.

## **6.1 The District before the "District"**

In 1874, Cook County purchased a Near West Side tract at the expanding edge of Chicago. The land was intended for a new hospital to replace the a north side facility that had met its demise in the Great Fire of 1871. The 1870s version of Cook County Hospital, as the area's first medical institution, seeded the current medical district. Soon, propelled by the fire and Chicago's continued meteoric growth, several other institutions relocated or established nearby, including among others:

- Rush Medical College (Chicago's first medical school) in 1877,
- The College of Physicians and Surgeons in 1882 (later affiliated with the University of Illinois),
- Presbyterian Hospital in 1883 (later merged with Rush),
- Columbia College of Dentistry in 1891 (later affiliated with the University of Illinois),
- The Chicago Medical School in 1912, and
- Loyola University Medical School in 1917.

These small-scale institutions evolved through affiliations, incorporations, and reorganizations, which continued at a slower pace throughout the 1900s.<sup>1</sup> At this early stage, institutional co-location was facilitated by two features of the site: the availability of land on the growing West Side following the fire and benefits and efficiencies derived from locating close to the West-Side Cook County Hospital and other institutions. Chiefly, the later applied to doctors who might be on faculty at multiple institutions and to students who might attend both clinical training in Cook County Hospital and classroom education in one of the various medical schools. Additionally, the nascent district was situated roughly at the population center of Cook County, a relatively accessible hub for drawing a predominantly poor and working-class patient base from a wide area. Between 1870 and 1920, the population of Chicago grew from under 300,000 to around 2.7 million.

Two events of significance to the increasing scale and consolidation of the nascent medical district occurred in the 1910s and 1920s. Both marked an expanded investment on the part of state actors. First, in 1910 Cook County responded to overcrowding at the hospital with plans to build a replacement facility.<sup>2</sup> The main building of Cook County Hospital, which stands vacant to this day, was constructed in 1914, expanded in 1917 to a total capacity of over 2,000 beds, and again in 1928 to a height of 3,400 beds. Cook County would remain the largest hospital in the US for the majority of the twentieth century and immediately solidified its position as the preeminent teaching hospital in the Midwest.

The new facility's design reflected a grand expression of Taylorist design principles applied to health care, combining virtually all forms of care into unprecedentedly massive complex, and in intent, as the hospital served as the primary point of care for all of working-class and poor Chicago. Today, although much of the building has been demolished, its vacant Beaux Arts facade remains one of the nation's finest architectural monuments to the science of medicine at the moment of its modern emergence. Cook County's "poor house" model had transformed into an linearly organized, comprehensive site of care, a crucial node in the social reproduction landscape of industrial Chicago, serving the medical needs of immigrants, the urban poor – "indigent" in health care terms – and the working-class, as well as the educational needs of an expanding medical workforce. By 1942, an astounding one in every four doctors in

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1 For instance, Rush University was affiliated with University of Chicago and University of Illinois throughout the 1900s, until reactivating its charter in 1969 and merging with Presbyterian and St. Luke's Hospitals into its current form. Rush University website, <https://www.rush.edu/about-us/about-rush-university-medical-center/history>.

2 Cook County Department of Medicine, n.d.. The History of Cook County Hospital. Retrieved 17 April 2010 from <http://www.cchil.org/dom/cchhistory.html>.

practice throughout the US received part of his or her training at Cook County Hospital.<sup>3</sup> Of course, the “new” Cook County Hospital also enshrines the dramatic inequalities of the health care system that would crystallize over subsequent decades. Its legacy conjures, alternately, a nostalgia for the Progressive Era willingness to contribute massive state resources to caring for the disadvantaged or a foreboding stop on the route to a deeply entrenched bifurcation of access to care – one chronically stressed system for the poor and uninsured, another far more lucrative system for those with insurance and employment stability.

The second marker of governmental investment in the district was the incorporation of the College of Physicians and Surgeons of Chicago, Columbia College of Dentistry, and Chicago College of Pharmacy into the University of Illinois Professional Colleges of Medicine, Dentistry, and Pharmacy. This reorganization occurred in 1913, a mere three years after the Flexner Report began to prompt similar moves across the nation, and consolidated a formal affiliation dating back to 1897. With the consolidation, the state of Illinois not only created a modern academic medical center but also became a major stakeholder (and landowner) in the maturing concentration of medical facilities on the west side.

Although variants of these local moments of health system modernization were underway in most cities, they set the stage in Chicago for medical facilities questions to be re-framed as an urban planning and land use problem. The creative moment has been attributed to Charles H. Thorne, Montgomery Ward Executive and member of the Commercial Club of Chicago, who had also helped to fund the famous 1909 Burnham Plan.<sup>4</sup> In 1917, Thorne, newly appointed as Director of the Illinois Department of Public Welfare, first suggested the idea in a letter to the Chicago Plan Commission, marking the first documented mention of a “civic plan” for a “great medical center”.<sup>5,6</sup> Thorne’s main concern lay in the University of Illinois’ ability to maintain accreditation under emerging education standards without owning a hospital. The Chicago Plan Commission approved the concept, and the relationship led to designations in future land use plans, technical assistance, and support for the district. The state legislature appropriated funds in 1919 for the purchase of the West Side Park, which the Chicago Cubs had

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3 Medical Center Commission, 1948, *Annual Report*, Chicago, Illinois.

4 Carl Smith, The Plan of Chicago, 2005, Encyclopedia of Chicago, <http://www.encyclopedia.chicagohistory.org/pages/300004.html>510006.

5 Quoted in Medical Center Commission, Annual Report, 1942, Chicago; Medical Center Commission, Fact Book, 1948, Chicago; Walter H. Theobald, The Medical Center District: Its Civic Significance, Address delivered before the Institute of Medicine of Chicago, 4 December 1951.

6 Unfortunately, the best available narrative of development prior to the 1941 legislation is contained in a 1948 “Fact Book” produced by the district Commission.



vacated in 1916, on the adjacent block to the south of Cook County Hospital.<sup>7</sup> The construction of the University of Illinois hospitals and medical school facilities on that site in 1924 – still, the heart of UIC’s west campus – marked the first step toward Thorne’s plan. The University of Illinois medical campus and Cook County Hospital together began to move from a mostly organic localization of small-scale Progressive-Era relics of a rapidly modernizing health care field into large, complex institutions that cut across a tapestry of governmental authorities and of geographies of public responsibility: from their inner-city patient bases, to their respective embeddedness in state and county political and bureaucratic structures, and to their function as the primary sites of advanced training for the medical workforce across the state and beyond. The district, however, would not formalize until 1941, and only as an instrument that resembled the emerging model of large-scale post-war redevelopment.

Figure 6.1 shows the area that would later become the District in 1917 on the eve of Cook County Hospital’s opening. Only Cook County Hospital and the West Side Park (soon to be acquired by the University of Illinois) deviate from a rather typical Chicago neighborhood landscape: an admixture of two- and three-story apartment buildings, schools, parks, light industry, and commercial establishments. Within twenty-four years, however, this mostly typical landscape would be repurposed as a terrain for medical-institutional expansion.

## **6.2 The overlapping logics of redevelopment and health care expansion**

### **Early efforts to formalize planning for the district**

The gestating concept for a medical district fell to the back-burner until 1929, when construction projects in Presbyterian Hospital, Rush University, and University of Illinois led to appeals by institutional leadership, Chicago bureaucrats, and West Side development interests to the state legislature to underwrite planning activities. The legislature responded in 1931 with a \$25,000 grant predicated on matching funds from Cook County; however, the coalition of supporters was unable to gain support from the county and the grant expired.<sup>8</sup> In 1933, another group lobbied in vain for a \$15 million federal “condemnation fund” to eliminate non-institutional uses.<sup>9</sup> At one point, the County declined to contribute funds to match a small grant from the Department of Public Welfare to the Chicago Plan Commission to support the effort. Over the

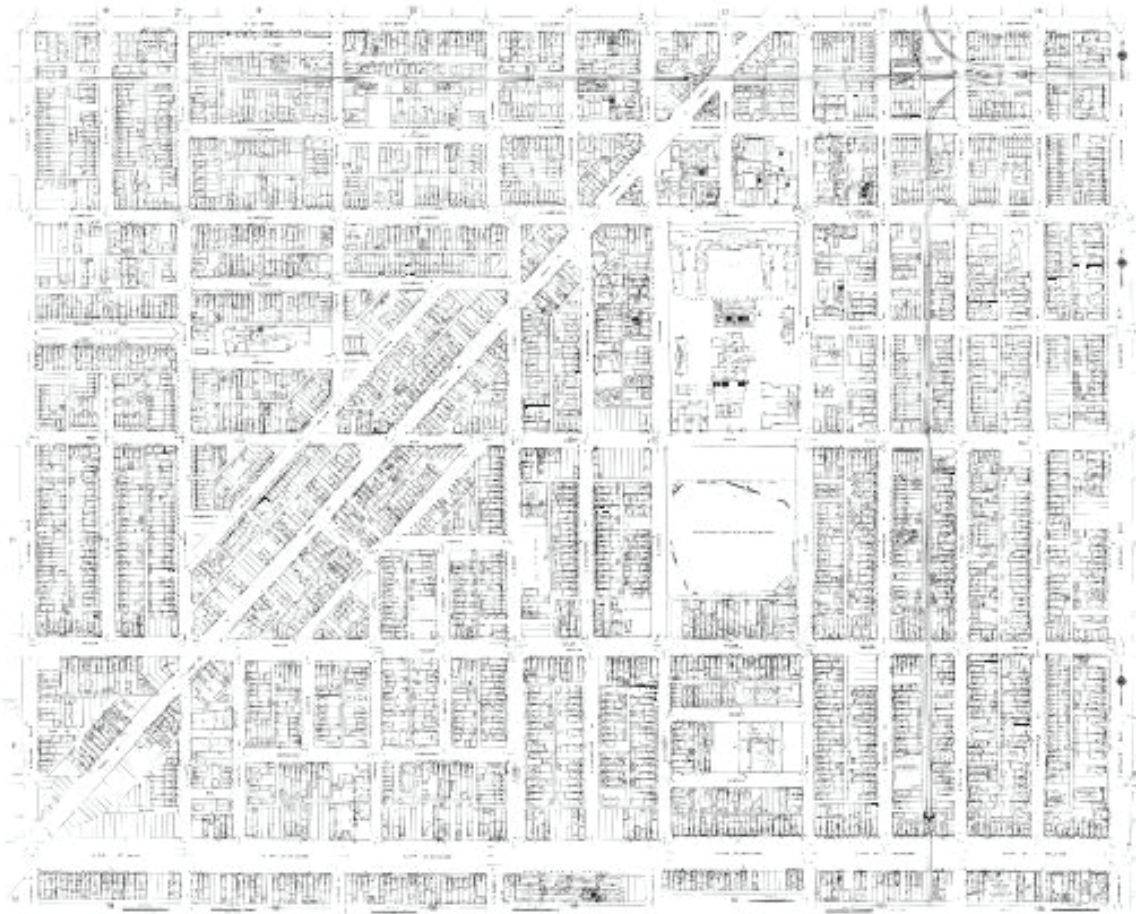
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<sup>7</sup> Medical Center Commission, 1948.

<sup>8</sup> *ibid.*, p.2

<sup>9</sup> Chicago Daily Tribune, 1 December 1933.

Figure 6.1: The area that would become the Illinois Medical District, 1917



Source: Compiled from Sanborn maps, 1917.

next few years, the coalition re-formed under the banners of the “Medical Park in Chicago” and the “Medical Square commission” appointed by the mayor, but a series of increasingly modest proposals for funding failed to pass the legislature, partly due to ongoing legal questions and partly due to the lack of participation from the county. The initial objective was to surround the institutions with park land through a limited program of vacating minor streets and alleys, but the deeper concern was to accommodate expansion after a slew of district construction projects broke ground in 1930.

As romanticized by the Commission itself, Philip R. Clark, while an in-patient at Presbyterian Hospital (where he was also a board member),

looked out the window at a dismal, depressing site of grimy, dilapidated buildings. The view gave him a pain no doctor could cure. "It's enough to make a man sick just to be in such an environment," he said.<sup>10</sup>

Soon after his hospital stay, Clark became president of the Commercial Club of Chicago, a collection of civically minded elites who had famously financed and shepherded Burnham's 1909 Plan of Chicago. Newly adopted by the Commercial Club, the fortunes of the medical district concept quickly improved. With support of the Commercial Club, the Medical Square Commission successfully undertook its keystone project: assembling and clearing the tract of land immediately north of Cook County Hospital as a "convalescent park" intended to increase open space and showcase the building facade. Complicating the effort, several outmoded institutional structures occupied the site, while the city held plans to locate a school on the tract. The Commission, however, succeeded in assembling the land and arranging landscape improvements for the park, demonstrating a capacity to bend competing uses to the priorities of the institutions. The success apparently signaled to the legislature that the Commission could function effectively through collaboration.<sup>11</sup> Without an existing model for a state-supported medical district, the form of the medical district as a policy intervention would reflect an emerging paradigm of inner-city redevelopment, codified over the following decade into the federal Urban Renewal program.

### **Emerging policy mechanisms for urban redevelopment in the United States and Chicago**

Urban Renewal's reshaping of inner city Chicago has been well documented (see, e.g., Hirsch, 1998). However, Urban Renewal did not arrive as a fully formed national redevelopment program with the Housing Act of 1949 and its 1954 amendment that actually named the program. The "write-down" subsidy formula; the technical intersection of slum clearance, commercial redevelopment, and public housing construction; and the "district re-planning" approach to administration emerged from a series of negotiations and local experiments. The Medical Center District, and by extension, the urban medical district itself, emerged out of the same lineage of policy ideas that produced Urban Renewal.

Efforts to combat slum conditions through investment in civic architecture and even housing extend back to the late 19th century.<sup>12</sup> Widespread interest in government-subsidized redevel-

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10 Annual Report, 1948, Medical Center Commission.

11 *ibid.*, p.3.

12 The dumbbell tenement program in New York is a well-cited example of early housing reform.

opment began in earnest in the early 1930s, bolstered by the bursting of the 1920s construction bubble, the rising tide of federal programs (including New Deal programs for housing and economic development), and the emerging science of “blight” in urban land and housing markets. The Urban Land Institute and local chambers of commerce facilitated the passage of a variety of state and local laws in the 1940s. The Housing Acts of 1949 and 1954 would reflect a new mosaic of principles constructed from earlier state and local tests of large-scale redevelopment.

Narratives of Urban Renewal vary on the local program’s exact genealogy, though several early cases influenced the principles included – and excluded – in federal legislation. What is clear is that Urban Renewal’s legislative face as a slum clearance program intended to improve slum conditions for urban residents grossly oversimplifies the compromise of intentions among proponents of public housing and supporters of redevelopment, many of whom staunchly opposed public housing (Weiss, 1980).

A 1932 conference on Home Building and Homeownership floated an economic definition of “blight” and a social definition of “slum”. The proximate and overlapping nature of these conditions (often near otherwise valuable inner-city land) and relative cost efficiency of assembling large tracts of land yielded the schematic of a solution: empower local governments with eminent domain to acquire land and then resell it to developers at an effectively subsidized price (Weiss, 1980, 256). Eminent domain had already been used in New York City in the 1920s, but the concept of district re-planning as a mechanism to bridge the prohibitively capital-intensive nature of land assembly was established in the early 1930s. Eventually, federal legislation incorporated these principles, albeit with a greater role for the federal government. In the meantime, the Urban Land Institute (ULI) published a series of studies promoting the model in CBD-adjacent areas of several cities, while the closely allied National Association of Real Estate Boards (NAREB) promoted federal funding based on the Federal Housing Administration’s (FHA) precedent. In 1941, the same year as the IMD’s legislation, the FHA published *A Handbook on Urban Redevelopment for Cities in the United States*. Two separate pieces of legislation were proposed by ULI and planners’ lobbying groups, each with different levels of public-sector control over private development; but Congress shelved both (Weiss, 1980, 259).

During the 1940s, several state and local laws pre-dated federal Urban Renewal, resulting in some prominent development projects. Examples include New York City’s housing-focused Stuyvesant Town and Pittsburgh’s multi-use and civically oriented “Renaissance” plan. The latter was highly touted as a model for downtown business interests across the country, although its legacy has downplayed the central role of the city’s medical institutions (Simpson, 2015).

Starting in the mid-1940s, major institutions on Chicago's south side – such as Illinois Institute of Technology, Michael Reese Hospital, and Mercy Hospital – helped to construct Prairie Shores, Lake Meadows, and other redevelopment projects (Hirsch, 1998). Illinois was also very active in state legislation during this period, passing the Neighborhood Redevelopment Corporation Act of 1941, the Blighted Areas Redevelopment Act of 1947, the Relocation Act of 1947, and the Urban Community Conservation Act of 1953. The federal Housing Acts of 1949 and 1954 essentially mirrored the “write-down” formula of the Illinois legislation (Hirsch, 1998).

Histories of urban renewal understandably focus on the political compromise between the desires of housing and social reformers for slum upgrading and those of downtown businesses for publicly subsidized but privately controlled development. Although it appears nowhere in the established genealogy of Urban Renewal, the IMD emerged out of the same primordial soup of Depression-era ideas about slum clearance, blight, and redevelopment. The medical district's 1941 legislation offers an early approximation of the eminent domain and district re-planning mechanisms of Urban Renewal. Thus, the west side medical district may be interpreted as a precursor to the more prominent episodes in Chicago's Urban Renewal history: private housing developments on the south and north side, public housing, and the University of Illinois at Chicago Circle campus.

The Medical Center District does, however, have important differences from Urban Renewal. First and most obviously, housing plays a far less prominent role than medical institutions. Blight would not be replaced with upgraded slums or downtown redevelopment programs but with hospitals and, as described below, a ambitious vision for a massive area defined not as a neighborhood, civic, or commercial space but as a “Garden of Health” in the city. Second, the IMD commission would function as a separate state agency, with funds from the state legislature and broad powers to assemble land within its boundaries.

Many researchers have pointed to the emergence of a powerful Chicago growth coalition in the decades following World War 2 (e.g., Hirsh 1983, Ferman 1996). The central area of Chicago emerged as a key site of economic development and civic projects to counteract early-onset symptoms of suburbanization and economic restructuring, in particular the flight of industrial jobs and the middle-class and the resultant property value stagnation within the central area. The 1958 Development Plan for the Central Area and its 1973 successor Chicago 21 document the desire among civic elites for strategic reinvestment in downtown and its periphery as a housing and shopping district explicitly designed to attract middle-class residents from the lure of the suburbs. Through Urban Renewal, public housing, and highway

construction, state interventions between the 1950s and early 1970s had the dual effect of institutionalizing polarization in the city's racial and ethnic residential geographies and selective growth within certain areas, mainly downtown and the Near North Side neighborhoods (Berry et al. 1976). Contrary to other accounts that consider economic restructuring as a backdrop to political accounts of, alternately, a Chicago "growth machine" (Logan and Molotch 1987) or "urban regime" (Stone 1989) constrained by extra-local structural factors, Rast (2002) argues that economic restructuring presented opportunities as well as challenges, essentially condensing political decisions down to a choice between neighborhood-oriented industrial retention or downtown-oriented commercial and residential development. In most cases, Chicago's regime opted for the latter. The Medical Center Commission, despite falling outside of the "central area," acted primarily within the context of anchoring the downtown periphery from creeping "blight" in tandem with a variety of other large-scale projects on the Near West Side. To an extent left to their own devices and limited only by fluctuating state appropriations, the Commission had tools to exert near total territorial control over the District, serving similar goals but spatially isolated from other civic projects.

By the time Mayor Daley took office in 1955, the Chicago economy had turned to decline as homeowners fled to the suburbs and industry began to move outside the city or to the sunbelt (Berry et al. 1976). A coalition of downtown business interests and the Daley machine responded with the 1958 Central Area Plan, intended to protect the viability of downtown amid the throes of industrial restructuring and suburbanization. The Near West Side – though mostly falling outside of the boundaries of the Central Area Plan – became a strategic target during this period because of its proximity to downtown and its history as dense working-class point-of-entry neighborhood, first for Irish and Germans and later for Italians, Jews, African-Americans, and Mexicans. In the elite view of "growth machine" actors, these two factors conspired to pose a threat to downtown. Accordingly, the 1958 Central Area Plan study identified the area surrounding the medical district as blight, while the land-use plan itself accepted the fully developed District in its re-envisioning of the city (Chicago Plan Commission 1958, Berry et al. 1976). Between the 1940s and 1960s, large portions of the Near West Side were either sacrificed to transportation projects designed to retain the CBD's vitality (i.e., the Eisenhower Expressway) or were converted to institutional uses, both to prevent the institutions themselves from fleeing and to stimulate development in their vicinity. With the Near North Side's existing density, entertainment districts, and proximity to lake-side amenities, it received the bulk of investment in residential and commercial redevelopment (Berry et al. 1976), while the Near West Side's

“blight” left it a target for large-scale institutional redevelopment projects. The medical district was only the first such project.

### **Formal establishment of the medical center district**

Following the initial success of the convalescent park, the district concept finally found legislative traction from an unlikely source: the neighborhood political machine. Then-State Representative Vito Marzullo, who would later as alderman enjoy 30 years of almost unchallenged control of the medical district’s 25th Ward, introduced the bill to officially designate the medical district with enthusiastic backing from the University of Illinois. This marked the start of area legislative representatives’ support for the University.

The 1941 Medical Center District Act of the Illinois legislature officially created the District, its commission structure, and the land assembly powers legally granted to the entity. The legislature, however, failed to appropriate funding for the commission until 1943, forcing the district to operate on institutional contributions at first.<sup>13</sup> The goals of the 1941 legislation were manifold and largely framed from the perspective of improving health by promoting health care and public service land uses. Also, in many ways, aspects of the act conformed to the “district re-planning” model of redevelopment that would go on to shape the form and function of Urban Renewal legislation. These include the key link between blight designations and the use of eminent domain, the conveyance of land to separate developers on a subsidized basis, and the principle of large-scale land assembly to facilitate orderly and cost-effective development. The preamble emphasizes the district’s role in social reproduction but firmly within the context of expanding the existing institutional territory that had arisen in an uncoordinated fashion:

WHEREAS, there exists in the Near West Side of Chicago a center of medical activity which has grown up over a long period of time without any definite plan; and due to the general deterioration of the surrounding district, this center is now an area of so-called blight; and in order to maintain the proper surroundings for a medical center and to stabilize and retain therein large private interests in hospitals, clinical, and research facilities, it will be necessary to improve the condition of the surrounding territory, and there is need for the additional services for the ill and infirm of Chicago and the surrounding communities; and this need can be met by providing for the expansion of medical and allied activity in the area surrounding

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13 Medical Center Commission, 1942 and 1948

the existing center of medical institutions, if the character of such area is protected from further deterioration, therefore it be enacted...<sup>14</sup>

According to the Commission's first annual report to the legislature, "[in] no place in Chicago can such close juxtaposition of monumental public and private institution construction be found next to obsolete property".<sup>15</sup> The implication is that the desirability of replacing obsolete, deteriorated, blighted property and the need for the orderly expansion of medical services are mutually supportive, both as policy objectives and as actual development mechanisms. The potentiality of blight designation allows for institutions to expand in place; the institutional demand for land renders blight eligible for redevelopment. To place this relationship in the broader imagination of redevelopment in Chicago, Figure 6.2 shows a 1942 status map produced by the Chicago Plan Commission. The medical district area falls within a ring around the loop designated as "blighted and near blighted," with its future status as "rebuilt". The map and the act exemplify the same logic of postwar redevelopment.

Several additional aspects of the initial 1941 legislation bear mention in context of the early years of the commission's activity, including its first master plan. First, the official demarcation lines of the district – from Ashland (East) to Oakley (West) and from Congress (North) to Roosevelt (South) – extended well beyond the significant but patch of institutions that initially grew around Cook County Hospital. While the area of the district actually occupied by institutional uses occupied 40 acres in 1944,<sup>16</sup> the official District encompasses a 305-acre rectangle, an area roughly the size of the downtown Loop office district. This aggressive expansion program reflected concurrent efforts of the Chicago Plan Commission, which provided technical assistance in drawing up an elaborate future site plan for the District (see figure 6.4). Key features of this plan include not only various new facilities but also ample surface parking, an outer ring of green space, and an encircling "wall" of modernist housing blocks lining the perimeter of the district. In other words, the plan for a concentrated but low-density medical district that balanced perceptions of institutional needs with a park-like character was one of complete discontinuity with the surrounding, largely residential neighborhood. Parking and housing were two early planning priorities.<sup>17</sup> The plan sought to develop 46 acres of new housing and light commercial on the perimeter of the district to reinforce the its character as a self-contained unit

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14 Annual Report, 1942, Medical Center District Commission.

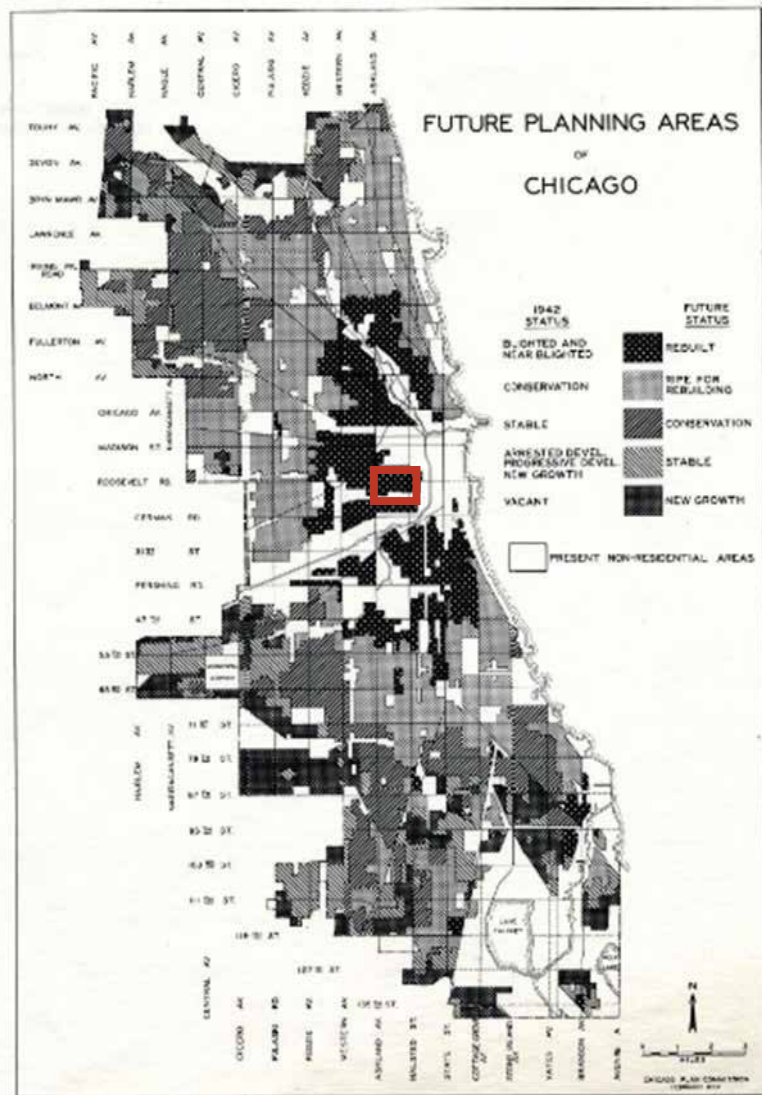
15 *ibid.*, p.5

16 Annual Report, 1944, Medical Center Commission

17 Medical Center District Commission 1942, 1944



Figure 6.2: Future planning areas, showing the westside medical district area as “blighted and near blighted” and designated for “rebuild,” 1942



Source: Future Planning Areas of Chicago, Chicago Plan Commission, 1942.

and to end the typical practice of medical residents and interns' seeking low-cost housing in the blighted areas surrounding the academic medical centers. In the preferred design, perimeter housing would encircle the core institutions with a buffer of open park space (see figure 6.4). The rebuilt "park-like" district would decrease the footprint of structures by almost half and eliminate the majority of streets and alleys.<sup>18</sup> Only five acres were allotted to non-medical institutional uses.

Second, the act charged the district commission with the task of assembling land through purchasing and reselling or leasing the assembled parcels to a medical or related institution. Toward this goal, the commission was empowered not only to buy land and demolish structures but also to do so through the use of eminent domain and authority over land-use decisions. Once the legislature appropriated operating funds in 1943, the Commission began to acquire land in 1944 and received its first appropriation from the legislature (\$1.1 million) in 1945.<sup>19</sup> Eminent domain served a crucial function, since the large proportion of tax-delinquent and/or murkily titled properties within the district complicated the assembly of large tracts by private purchasers, such as the individual institutions. The Commission's eminent domain powers could dramatically ease the land assembly tasks of its constituent institutions, while allowing for maintenance of the desired park-like character of the district by negotiating design stipulations as a condition for land transfer. The Commission would also maintain information on available parcels, and provide a structure for cross-institutional collaboration as an antidote to expansion conflicts over tight space. As a result, few obstacles stood in the way of expanding medical institutions as the highest and best use within the assigned territory, particularly with other uses in the primarily residential neighborhood under the specter of condemnation proceedings and development restrictions.

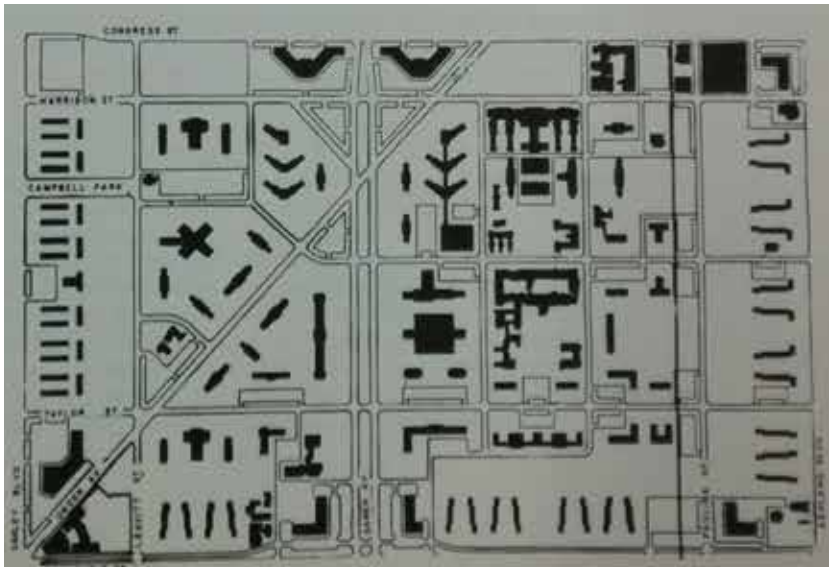
Third, the commission's seven-member composition reflected participation from various levels of government: four members would be appointed by the governor, one by the mayor, one by the President of the Board of Cook County, and one by the President of the Chicago Park District. Importantly, the Commission was a political creature of the state in conjunction with local governments, without the requirement of direct representation by district institutions or regional health system and professional associations. The first president was also on the board of the Chicago Plan Commission, and only three of the initial seven commissioners also had direct ties to district institutions.

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18 Medical Center District Commission 1944

19 Medical Center District Commission 1944, p. 45; Theobald, p.409.

Figure 6.3: The first master plan for the Medical Center District, showing dramatically reduced density 1942



Source: Medical Center District Commission, 1942, 1950.

In short, the District Commission adopted a vision for development based on similar principles and pursued through similar tools to the thinking behind the federal “Urban Renewal” acts of 1949 and 1954. The Medical Center District provides an archetypal example of a local redevelopment authority-based renewal project, a model later brought to scale by the federal Urban Renewal program. However, the Medical Center District was the first designated medical district in the nation, and the dual functions of the district, as both a key node in the health care system and an active pole in a citywide program of redevelopment and anti-blight measures, ring throughout its early biennial reports, at times with a strongly metaphorical language. The Commission’s goal was to create a “Garden of Health,” thereby “healing that dread urban disease called blight, affecting all cities”.<sup>20</sup>

Amid reports of the Commission’s activities, incomes, and expenditures lie vivid, statistically driven descriptions of the surrounding blight. For instance, the 1944 report describes the district’s population of 18,000: “In total there are 3,000 Negroes and 7,000 Italian born”.<sup>21</sup> The report goes on to point out that 38 percent of properties were tax delinquent, 90 percent were built before 1895, and 80 percent were in need of minor or major repairs. The proposed ultimate development design (also incorporating the proposed Congress Expressway) reflects a starkly modernist aesthetic, replacing dense “blight” with a landscape resembling a college campus or park. The existing small-lot, mixed-use neighborhood was framed as an obstacle to be overcome. Notably absent from this vision were the District’s inhabitants, as well as existing non-medical, non-state, neighborhood-oriented institutions: several schools, ethnic community centers, playgrounds, and mid-sized businesses had no role in the envisioned district and thus were subject to displacement.

By 1950, the brief period of generous funding from the Illinois legislature ended, apparently as a result of political conflicts with Springfield.<sup>22</sup> The Commission’s operations budget was slashed by three-quarters, resulting in an effective cessation of planning activities and the reduction of staff with these competencies.<sup>23</sup> The Commission’s effective scope narrowed to

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20 Annual Report, 1948, Medical Center Commission

21 p.12

22 The exact cause of the decline is difficult to reconstruct reliably. Decades later, meeting minutes document Commission staff responding to questions regarding why the Commission had been ineffective as a planning organization with the following oblique response: “some political difficulty which occurred between various individuals,” i.e., legislators in Springfield, around 1948. Presumably, Democrat Adlai Stevenson’s defeat of Republican Dwight Green, who had appointed members of the commission played, a role. Proceedings of Meeting, 29 July 1971, Medical Center District Commission, Office of the Chancellor Records 1936–1983, University of Illinois at Chicago Library.

23 *ibid.*

land acquisition; and while the planning question remained, it would soon be taken up by the federal government.<sup>24</sup> In 1953, the Commission describes its function “basically as a land acquisition agency... All of these organizations, prior to the advent of the Commission, found land acquisition question [SIC] a difficult, tedious and often lengthy process.”<sup>25</sup> A 1955 study found that, despite an initially far-reaching vision and substantial inventories conducted prior to 1948, no effective “medical development policy” had been implemented as a means to control new development.<sup>26</sup>

The promotional materials and annual reports shifted in focus during this period. In the 1940s, extensive documentation of present blight status was paired with the vision for a planned and orderly “garden of health”. By the 1950s and 1960s, these documents largely consisted of accounting of present and planned construction, peppered with collages of dozens of new and planned buildings, but with little attention to articulating a specific vision for the district as a cohesive but multi-institutional space. The effect was to document the impressive scale of ongoing construction and physical transformation of the district. In hindsight, the shift also signals the ineffectiveness of the Commission as a planning entity during a time when its institutions were engaged in aggressive building programs with a high potential for conflicting land requirements and services.

## **6.3 From peak expansion to stagnation**

### **Growth pressures**

Within the district itself, the Medical Center District Commission’s establishment and empowerment to assemble land greatly sped the expansion of institutional uses. The difference between figure 6.4 and figure 6.5 shows the pace of change. Early sources hint at fading tensions with private housing owners, lessened no doubt by the fact that the majority of the district was owned either by the Commission or by the institutions.<sup>27</sup> By 1966, the majority of the district had either been developed, or the land had been transferred or allocated to one of the member organizations. Non-medical-institutional spaces had also undergone changes: land had been

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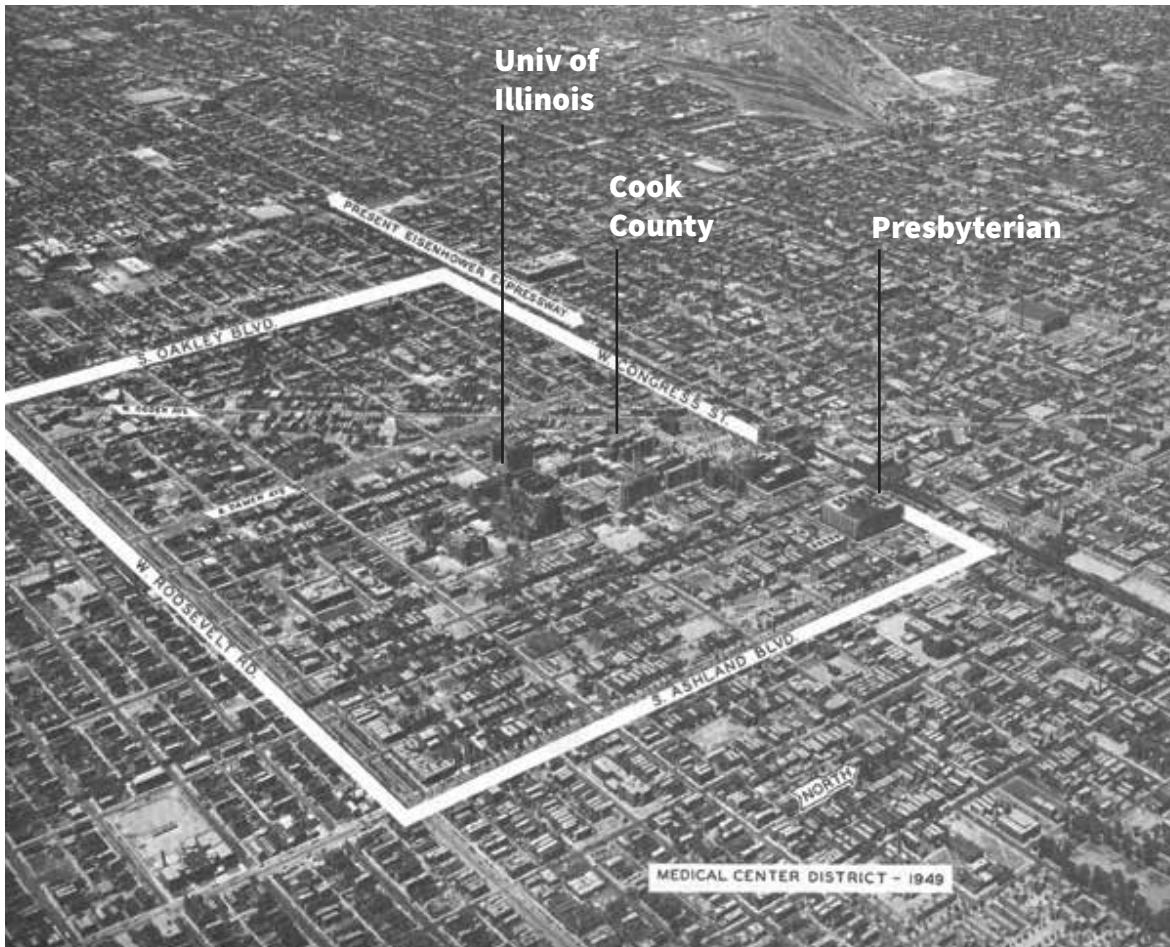
24 I.e., with Hill-Burton and subsequent planning legislation.

25 Medical Center District Commission, Biennial Report, 1953, Chicago.

26 Chicago Plan Commission et al., Report of a Study of the Medical Center District, 1955, Chicago. The study also urged the maintenance of early principles concerning new housing development, low floor area ratios, and green space – priorities that already appeared to be marginalized.

27 Medical Center District Commission, Biennial Report, 1957, Chicago.

Figure 6.4: The district in 1949



Source: Medical Center District Commission Annual Reports.

cleared, roads eliminated, new buildings constructed, and parking requirements seen to. The Commission celebrated its success in transforming its surroundings:

The District is in one of Chicago's oldest and most heavily deteriorated neighborhoods, many of whose houses and stores have fallen into decay. Scores of such outworn and decrepit buildings have been razed and are being replaced by towering structures whose fine institutions are dedicated to the betterment of humanity.<sup>28</sup>

Institutional uses had more than quadrupled, although large tracts of cleared land remained vacant, awaiting expansion. By the 1960s, the remaining residential portions of the district had nearly been reduced to their present day configuration on the western edge of the district, later

<sup>28</sup> Medical Center Commission, Report for 1961–1962 to the General Assembly of Illinois, 1963, Chicago.



renamed Tri-Taylor. In just 25 years of existence, the Commission had dramatically altered the District's land-use composition in favor of its institutions.

With the notable exceptions of Loyola's Strich School of Medicine, which opened a suburban campus in 1969, and the Chicago Medical School, which moved to North Chicago in 1980, the district retained all of its major institutions and added expanded its roster of tenants. Slated for the District as early as 1944,<sup>29</sup> the VA Hospital opened in 1953, and several state and county agencies, mostly related to health and social services, opened offices or headquarters in the District. Meanwhile, the existing institutions continued expanding facilities and/or creating new ones, reaching an expansionary peak in mid-1960s. By this point, the Commission began lobbying the legislature for a 58 acre expansion of the district's boundaries to prevent "locking-in" existing institutions – citing the institutional benefits of proximity and facility sharing:

Although land within the present boundaries of the District is still available for assignment, it is insufficient to meet expansion needs and some extension of boundaries should therefore be explored. The prime area...consists of some 140 acres and is urgently in need of renewal of some type. It has a high proportion of unsound residential buildings and is badly deteriorated. The Plan Commission reported that there is a pressing need now to plan for the expanding requirements of the district since it is evident that at some point in the foreseeable future it will become locked in by surrounding improvements.<sup>30</sup>

This marks the origin of the "District Development Area" south of the original District and the first indication that the District's expansionary tendencies would rub against its original 305-acre designation, most of which was still undeveloped at the time. According to longtime commissioner Walter Theobald, "We are breaking out at the seams...If a new medical school or large institution wished to build in the center, there would be no room for it".<sup>31</sup> By this time, approximately 75 percent of the 305-acre demarcation had been acquired by the Commission or an institution. Despite the District's nightly desertion and persistent nuisances like overgrown vacant lots and abandoned houses, Theobald also asserted that "with the exception of an area to the south, I would say that all of the areas surrounding the medical center have profited from

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29 Medical Center District Commission 1944

30 Biennial Report, 1966, Medical Center Commission, p.5

31 Chicago Tribune [26 December 1965]

Figure 6.5: The district in 1952 and 1964



Source: Medical Center District Commission Annual Reports.



its presence”.<sup>32</sup> The state legislature first expanded the District two blocks beyond Roosevelt Boulevard, its southern edge, in a 1967 amendment to the district legislation.<sup>33</sup>

Figure 6.6 shows the change in land ownership by the Commission or by its member institutions between 1944 and 1957 – while providing a limited allocation for operation, the state continued to channel a considerable investment in land acquisition through the Commission. Coordinating the competition over land, however, remained an issue. As illustrated by a set of correspondence with the University of Illinois, expansion pressures had become an issue of contention with the City of Chicago.<sup>34</sup> Prior to 1965, letters formally requesting the transfer of land read as strictly procedural accounts of parcels, boundaries, and parking requirements. Other communications addressed occasional issues on an ad hoc basis, such as contractors dumping waste on vacant lots cleared for development,<sup>35</sup> closing an alley, or changing access to a transit stop. Over the course of 1965, the university administration sent a series of letters requesting acquisition and transfer of the land, including a “Study of Land Requirements,” to the Commission.<sup>36</sup> The Study projected a roughly 50 percent increase of total building area between 1965 and 1975 and eventually an over 100 percent increase after 1975.

By this time weary of the aggressive assignment and clearance of land in advance of building, the Chicago’s Department of Development and Planning had adopted the policy that the university should seek to expand elsewhere or develop on the large amount of land previously assigned to the university.<sup>37</sup> The university responded by clarifying the intensity of land required for expansion past 1975, the date for which facility plans required by the state had been shared with the City and the district Commission.<sup>38</sup>

Intended for a psychiatric unit, the land request comprised almost all of the neighborhood referred to today as Tri-Taylor, a historic district that is the only remaining residential portion of the District, which happens to be located on the opposite end of the District from the university

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32 Ibid.

33 Illinois General Assembly SB 1597 (31 July 1967) in Office of the Chancellor Records 1936–1983, University of Illinois Library.

34 Medical Center Commission 1964–1966, University of Illinois at the Medical Center, Office of the Chancellor Records 1936–1983, University of Illinois at Chicago Library.

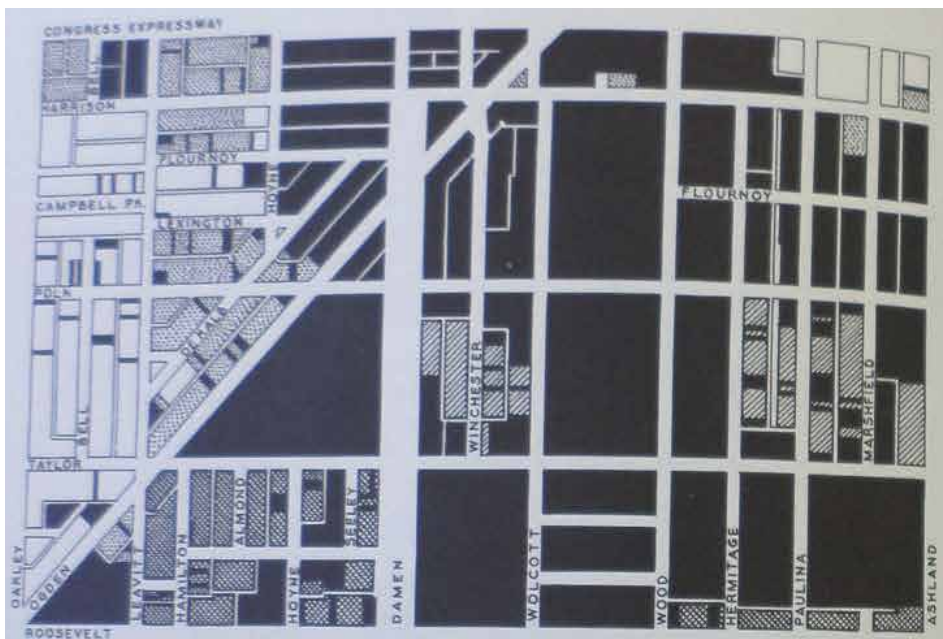
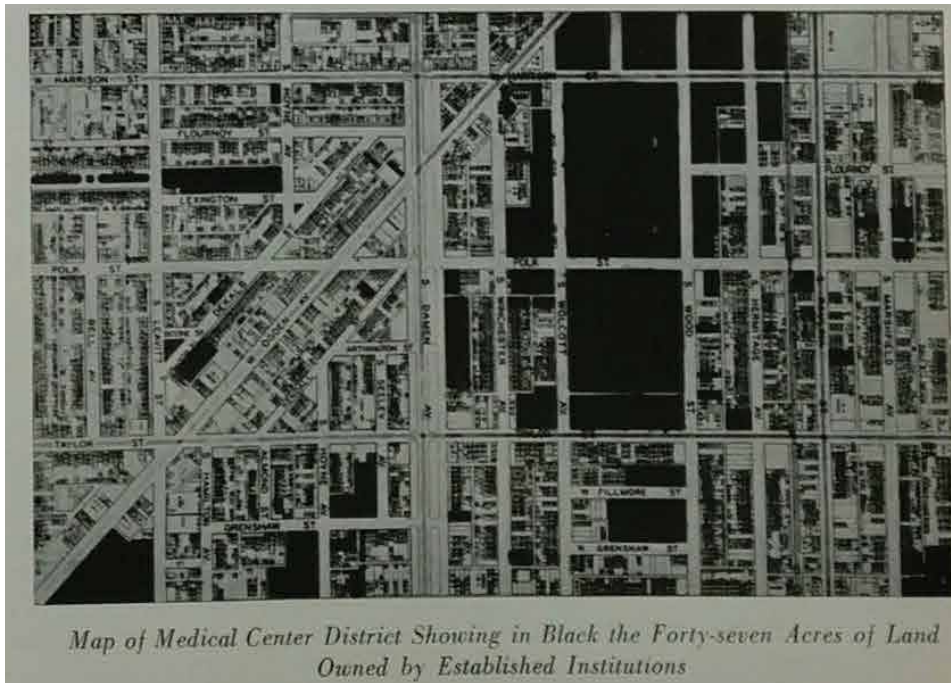
35 FE Hostettler to Dr. JS Bagando, “Land – Medical Center District,” 23 September 1965, Office of the Chancellor Records 1936–1983, University of Illinois at Chicago Library.

36 University of Illinois at the Medical Center, *Study of Land Requirements May 1965*, Office of the Chancellor Records 1936–1983, University of Illinois at Chicago Library.

37 “When needs for space exceed the District area, then the development of addition facilities on sites in other parts of the city or metropolitan area should be studied”. John G. Duba to Dr. Walter Theobald, 20 January 1966, Office of the Chancellor Records 1936–1983, University of Illinois Library.

38 C.S. Havens to John G. Duba, 30 December 1965, Office of the Chancellor Records 1936–1983, University of Illinois Library.

Figure 6.6: Land ownership in 1944 and 1957



Land owned by the medical center or the institutions is in black  
Land to be acquired is shaded.

Source: Medical Center District Commission Annual Reports.

campus. The Commission ultimately allocated (but did not sell) the land to the university on March 8, 1966.<sup>39</sup> The university's perception was that the transfer may have been delayed by a lack of Commission funds and "in part due to the objections raised by the local alderman to the displacement of local residents".<sup>40</sup> The City ultimately urged additional study "because space in the Medical Center District will be exhausted in the near future".<sup>41</sup> The study would consider both the need for new medical schools in light of the University of Illinois' inability to expand and the "analysis of the experience of the Medical Center" to determine whether enlarging other existing medical centers in other parts of Chicago through a similar model would be an advisable reaction to the expansion pressures.

### **The planning deficit as a district problem and as a regional problem**

Notably, the concern for acquiring land and demonstrating the extent of blight that marked the 1940s reports is largely absent from the 1960s documentation: "Once largely a blighted area, the near west side is beginning to take on a new look".<sup>42</sup> Greater concern is given to quantifying the extent of building activity within the district and lionizing the public benefit of each individual organization, linking new services and higher volumes of clinical encounters with the visible impact of new construction. According to the 1966 report, the Commission had received \$16 million from the state legislature since its first appropriation in 1945 for land acquisition, demolition, and clearance for transfer at token rates to medical schools, hospitals, research institutions, and related services. Buildings costing a total of \$185 million had since been placed on acquired land, which led the Commission to estimate the "net value" of the District as \$300 million, including the estimated value of institutional facilities prior to 1941. Looking forward, District institutions held a 5-year outlay of \$110 million in improvements and a 10 to 15-year outlay of \$250 million. Despite the obvious inflationary bias of the source, these numbers reveal the dramatic scale of previous investment within the district and ambitious plans for the future, especially for hospitals on the cusp of the Medicare boom. By 1970, the district boasted a total capacity of 7,000 beds across seven hospitals and a workforce of 20,000.<sup>43</sup>

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39 Resolution of the Illinois Medical Center Commission, 8 March 1966, (facsimile), Office of the Chancellor Records 1936–1983, University of Illinois Library.

40 C.S. Havens to J.S. Bergando, "Memorandum Concerning Land Allocation For the Medical Center Campus," 12 May 1966, Office of the Chancellor Records 1936–1983, University of Illinois Library.

41 John G. Duba to Dr. Walter Theobald, 20 January 1966, Office of the Chancellor Records 1936–1983, University of Illinois Library.

42 Biennial Report, 1966, Medical Center District Commission, p. 3

43 Fact Sheet, 1970, Medical Center District, Office of the Chancellor Records 1936–1983, University of Illinois at Chicago Library.

However, the public-facing chronicle of achievement reflected in annual reports and brochures hides mounting behind-the-scenes disappointment with the effectiveness of the Commission. By 1968, the University of Illinois was again sounding the alarm about projected land needs by 1980, the exhaustion of traffic and parking capacity, and the “only slightly less compelling” requirements of other district institutions.<sup>44</sup> Responding to discussions around a 1967 study of the district, university administrators showed a lack of confidence in the Commission:

The report is further proof of the inadequacy of the staff of the Medical Center Commission and poor planning as a result of this plus personnel on the Commission. I seriously doubt that major changes in the quality of planning can be realized without a complete change in the personnel on the Commission, and this in turn will probably require firm action by the Governor and the Mayor... The report is not complimentary on the planning to date by the Medical Center Commission, but there are several comments which are favorable to the University's planning.”<sup>45</sup>

A 1970 letter from newly appointed state health coordinator Al Snoke to the governor voiced similar concerns:

The role and responsibility of the Medical Center Commission in relation to the many health components making up the west side medical center needs to be redefined, with particular reference to a coordination of their programs and their planning. Virtually all of them are currently busily engaged, each in his own separate planning efforts, with little or no coordination or direction coming from the Medical Center Commission, except in land acquisitions or in planning for streets, sewers and parking.<sup>46</sup>

Partly in response to concern over the availability of land and the over-concentration of health care assets, the Loyola University medical school actually left the district and relocated to a suburban site in 1969. In some ways, the unrealized efficiencies of proximity were giving way to the perceived costs of congestion. The formation of Rush University demonstrates a counter-example where proximity was as asset in aiding institutional reorganization. In 1956, St. Luke's and Presbyterian merged, partly due to St. Luke's inability to expand downtown and a sense that the two institutions were competing for the same charitable donations.<sup>47</sup> St. Luke's moved from downtown to the newly christened Presbyterian-St. Luke's campus in the medical district, gaining access to land for development and an affiliation with the University of Illinois. Meanwhile, Rush Medical College, which had closed operations in 1942, remained a

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44 Memorandum: Land Use, Land Availability, and Potential Developments, 1 April 1968, Office of the Chancellor Records 1936–1983, University of Illinois at Chicago Library.

45 CS Havens to JS Begando, 10 April 1967, Office of the Chancellor Records 1936–1983, University of Illinois at Chicago Library.

46 Al Snoke to Governor Richard B. Ogilvie, 2 March 1970, Office of the Chancellor Records 1936–1983, University of Illinois at Chicago Library.

47 Jim Bowman, *Good Medicine: The First 150 Years of Rush-Presbyterian-St. Luke's Medical Center*, 1987, Rush-Presbyterian-St. Luke's Medical Center, p.138–139

legal entity with a small endowment and property holdings rented to Presbyterian-St. Luke's. In 1969, Rush Medical College reactivated its charter to merge into Rush-Presbyterian-St. Luke's Medical Center. The move created a new academic medical center with access to new funding, independence from the University of Illinois, and with another enhanced building program.<sup>48</sup>

Health care executives began to view the lack of coordination in the district as intersecting with a deeper set of systemic issues that had arisen over the previous decades. The document links a discussion of the Medical Center District's future to a number of developments in the broader health care system. First, the "imponderable ... ultimate destiny of Cook County Hospital" provided a source of increasing uncertainty.<sup>49</sup> Given the suburbanization of physician offices and the "increasing doubt about the viability of a number of smaller hospitals in the inner city," responsibility fell to Cook County and University of Illinois Hospitals to provide medical training and safety-net health care. In light of the perceived "fantasy" that the private sector would be willing to undertake greater responsibility for the care of inner city residents, the "renovation, restructuring, or even replacement" of Cook County Hospital was viewed as a priority for scarce land and a possibility for multi-institutional partnerships.<sup>50</sup> Cook County Hospital was reaching a crisis point regarding its future, potential renovation, and relationship to other institutions. In addition to its morale and operating problems, the hospital's main issues included the "perennial concern over accreditation" and the threat of closing beds and reducing services.<sup>51</sup> The complexity of these issues are compounded by the fact that the hospital serves a primarily low-income population drawn from Chicago, operates under the jurisdiction of the county, and receives funding primarily from the state. A lack of coordination between the district and hospital construction proposals through the federal Model Cities program were also perceived as issues.<sup>52</sup>

A series of studies in the late-1960s through 1970s combined sharp criticism of the Commission with recommendations that the situation at Cook County be addressed and that the University of Illinois should take a larger role as a health care provider and expand its academic programs (e.g., to include public health). The Commission blamed inadequate funding:

It is our understanding that some criticisms have been leveled against the Commission to the effect that we have not taken an active role in the management of District institutions

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48 Ibid., p.161–172.

49 Memorandum: Land Use, Land Availability, and Potential Developments, 1 April 1968, Office of the Chancellor Records 1936–1983, University of Illinois at Chicago Library.

50 Ibid.

51 Al Snoko to Richard B. Ogilvie, 2 March 1970.

52 Ibid., Proceedings of Meeting, 29 July 1971, Medical Center District Commission.

and organizations, allowing them to go off in all directions without concern for the underlying purposes of the District as spelled out in the original enactment. To meet these criticisms, we have recommended that our statute be amended to allow stricter control of the participants in the area, also that rental and land sale funds now returned to the State Treasury be retained here to improve the facility area... If we have failed to live up to expectations of late, it is also because we are understaffed and lack personnel competent in certain vital areas such as urban health planning.<sup>53</sup>

Commission leadership had also inquired about securing land acquisition and clearance funding through federal programs like Urban Renewal and Model Cities, also to no avail, and proposed making participation in new federally funded health care insurance conditional on conforming with physical and systems planning priorities. The scope of the issues and Snoke's idea to use the existing Medical Center governance apparatus as a means "to get things done" prompted a collective rethinking of the potential for existing governance of the Medical Center. The Commission resolved to improve their planning efforts within the district ("to bring all organizations under one umbrella") and to coordinate more actively with external agencies, such as the Chicago Plan Commission and various regional hospital planning councils.<sup>54</sup>

This led to a workgroup comprised of hospital administrators and other key stakeholders. At the first wide-ranging meeting, Snoke floated his idea of using the Commission's ability to control land as a *de facto* to promote better coordination among the district and the region's major players in health care:

How do we make the best use of the facilities, the land, when I raised the question in the past, why don't we use the Medical Center Commission, the criticism has been that all they are is a land conveyor, a real estate agency, with physical planning of streets and sewers, and I think this would be of value for this group to discuss. Can we, whether or not there is authority or not and there is a certain amount of fundamental authority, can we use this as a group by which we are planning together for facilities and planning for progress is this area? ... It seems to me that we have a mechanism, a coordinating mechanism in the medical center Commission. We have a number of semi-independent or really independent outfits... we are facing at the present time some major decisions. What happens to Cook County? A judgment has to be made as to the size of Cook County hospital.<sup>55</sup>

As a county property, Cook County Hospital was actually excluded from the Medical Center Commission's control, but the committee agreed in principle to the need for better coordination and planning and pivoted to a range of issues and opportunities, including:

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53 Walter Theobald to Albert Snoke, 6 May 1971, Office of the Chancellor Records 1936–1983, University of Illinois at Chicago Library.

54 Walter Theobald to Albert Snoke, 6 May 1971; Casely to Begando, 7 February 1971

55 Ibid.

The possibilities for either expanding or eliminating the role of the district and its commission ("If we want to be individualized, particularly in our planning, then ... maybe we don't even need a medical center;" "The Medical Center as an entity may either assume greater roles than ever before, may disappear entirely, or something in between."),

The possibilities for using the statutory powers of the Commission to ensure conformity to a master plan,

The impact of federal dollars (by implication, Medicare) on alleviating financial constraints ("In the next, say, five years, the funding is going to be eliminated as a hurdle, with patients getting their care with dollars"),

The continued viability of Cook County Hospital ("Does a poor person's hospital deserve to exist against the funding mechanism on the horizon?"),

The duplication of support facilities that would be efficient to combine (e.g., laundry),

The duplication of missions and over-concentration of specialized services within the district,

The possibility of using the Commission's revenue-bonding power to finance institutional improvements,<sup>56</sup>

The causes of Loyola's 1969 decision to leave the medical district, against the best efforts of the Commission ("In their opinion, too many health institutions, medical schools, dental schools, and hospitals were being concentrated in one spot. If an atomic bomb would hit Chicago that it would destroy the majority ... of our health facilities, and so forth.")

By 1970, the complex problems of the health care system had emerged as a federal, state, and local policy issue. In addition to driving the need to plan for hospital construction within the district, the 1965 social security legislation that created Medicare and Medicaid had the almost immediate impact of throwing in-patient hospitalization costs into a spiral. Despite a series of hospital planning legislation from Hill-Burton in 1946 through state "certificate of need" requirements and federal health systems agencies in the 1970s, regulation did little to stymie the fiscal incentives driving cost inflation and the uneven excess and shortage capacity across institutions and geography. Stevens (1999, 306–307) describes the failed episode of rational hospital planning in a manner that also applies to Chicago and to its medical district:

There was the intractable difficulty in expecting local hospitals and other health agencies to plan their services cooperatively, for the good of the community, while the fiscal incentives for capital pushed hospitals, the dominant health-care institution, in the opposite direction... The health planning agencies were primarily important for testing consensus in the 1970s. They brought together various local constituencies, and they proved that there was no effective consensus for a voluntary program of hospital regionalism. Actual planning decisions were being made through financial markets.

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56 Revenue bonds had not yet been issued by the Commission and were later determined as ineligible for lands owned by the institutions and not by the Commission.

Finding that the price for hospital daily service charges had more than doubled between 1966 and 1969, a 1970 state report lamented that “the State of Illinois can no longer tolerate the unrestricted, uncontrolled expansion of health facilities” and urged that the state take a larger regulatory role. The report attributed the cost issue to the diffusion of management responsibility in hospitals, physicians’ ignorance of economic responsibility, and the fragmented result of federal health services planning legislation – complaints still common in today’s health care system.<sup>57</sup> The report also projected state Medicaid expenditure increases for inpatient care at 36 percent for the year.<sup>58</sup> Recommendations included:

Promoting prospective rate negotiations, predicting a principle of national Medicare reform a decade later; Requiring greater cost control measures and public service commitments in exchange for the continued non-profit status of hospital corporations and Blue Cross; Requiring permits from the Department of Public Health for hospital additions.

The lack of planning was particularly acute in Chicago. A 1966 study for the Hospital Planning Council noted the inefficiency of Cook County Hospital as the only indigent care facility, forcing its clients to travel from predominantly poor, African-American areas to the hospital, even over large distances.<sup>59</sup> Again, the recommendation was to divert hospital care to outpatient settings and to render planning more effective. The early rumblings of issues that continue to challenge the health care system nominated the development powers of the medical district commission as part of a solution to a systemic planning gap. Meanwhile, these same issues problematized the very processes that the district was created to support: the concentration of hospital capacity and the expansion of facilities.

Despite leading to little consequence, the early-1970s window for re-envisioning the Commission’s role is notable for coinciding with a far more widely reaching and profound set of changes in the health care system. Medicare and Medicaid were beginning to pump federal resources into hospitals but in a manner that bifurcated the sector and altered the incentive structure of academic medical centers, changes that played out nationally and within the confines of the west side medical district. During this era, scholars first contributed concepts like the “technological imperative” (Fuchs, 1968), the “medical industrial complex” (Ehrenreich and Ehrenreich, 1972; Relman, 1980), and “medicalization” (Zola, 1972; Conrad, 1992) as salient criticisms of the underlying institutional mechanisms of medical expansion. On the urban scale,

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57 Advisory Committee on Medical Costs and Utilization of Services, *Steps Toward Controlling Health Care Costs in Illinois*, April 1970.

58 *Ibid.*, p. 25.

59 Pierre deVise, *Hospital Study Districts for Metropolitan Chicago: A Geographic Analysis and Methodology*, Technical Report No. 2, April 1966, Hospital Planning Council of Metropolitan Chicago.



the institutionalization of health system inequalities was further contoured by the emerging legacies of suburbanization and white flight, geographical segregation and racialized inequality, and the decentralization of manufacturing – in Chicago as in cities across the nation. Structural urban development issues and the uneven expansion of the health care system intersected with the most mundane of facility planning issues to position the district for a potentially expanded role while simultaneously overwhelming its capacity to plan effectively. Ultimately, the US health care system as a whole fared little better during the planning moment of the late 1960s and 1970s. With public and private payers filling the de facto planning role through incentive manipulation, the pressure to compete continued to eclipse the pressure to cooperate.

By 1974, the administration of a new governor had further reduced the budget, hampering the possibility of planning. A request for information from the state head of health institutional programs was direct about the status of the Commission:

Given the problems that have been recognized in the current relationship between the state and the Medical Center District, we would like you to consider and discuss a number of alternative means of dealing with the situation.<sup>60</sup>

The alternatives on offer were to turn over the eminent domain and acquisition functions to the City, transform into an independent development corporation drawing on the credit of district institutions, or proceeding with an absolutely minimal approach: “what acquisitions are most important to ‘round off’ the structure of medical institutions in the district?”<sup>61</sup> Ultimately, faced with the possibility of either dissolving or expanding its role, the Commission essentially continued business as usual, albeit with ever-shrinking appropriations from the state. The Chicago Commission generated revenue from a handful of leased properties but never enough to cover its operations costs – unlike its Houston counterpart. By the 2000s, fiscal issues would prompt another round of discussions over the future of the Commission and its viability as an organization.

In the interim, the issues facing Cook County Hospital became part of the national discussion around the endemic inequalities of the rapidly growing health care system. Local analysts criticized the “criminal concentration” of medical care for people unable to access the private health care system.<sup>62</sup> County’s patient base drew almost exclusively from Chicago’s segregated black and Latino neighborhoods. For Chicago’s black population during the 1960s, 80 percent of

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60 Thomas Perry Storer to Park Livingstone, 22 December 1973, Office of the Chancellor Records 1936–1983, University of Illinois at Chicago Library.

61 Ibid.

62 Pierre deVise, Hospital Study Districts for Metropolitan Chicago: A Geographic Analysis and Methodology, Technical Report No. 2, April 1966, Hospital Planning Council of Metropolitan Chicago.

all births and half of all deaths occurred at County (Ansell, 2012, 16). By then, County had fallen off its prestigious pedestal as a competitive placement for medical residents. Although federal laws like Hill-Burton and Medicare ended segregation in hospital admission, Cook County's experience was not unique, as de facto segregation, underfunding, and mismanagement plagued public safety-net hospitals across the country.

By the 1970s, Cook County Hospital was in disarray (Ansell, 2012). In 1969, the legislature had wrestled control away from the Cook County Democratic Party machine and created a new independent Governing Commission, although the County Board of Commissioners retained control over the budget. Following cutbacks in 1975, the residents went on strike over the patient conditions. Tensions came to boil for County's activist physicians and patients in 1978 with a land purchase for a new wing of Presbyterian-St. Luke's hospital that led to an immediate closure of the main ambulance lane into County:

The juxtaposition of these two hospitals on Chicago's Harrison Street represented everything we thought was wrong with the two-tiered health care system in the US. Presbyterian was a private academic medical center that served an insured and largely white population while, across the street and a world away, County served the down-trodden, the uninsured and a mostly black population. Presbyterian was planning a new hospital while we were fighting to keep our eighty-year old building open (Ansell, 2012, 92).

Notably, the same administrator of Presbyterian who had questioned the viability of Cook County in discussions over the future of the medical district years earlier had authored a report recommending the closure of Cook County and the distribution of indigent care across other hospitals, a course of action also recommended by the Metropolitan Chicago Hospital Council, a regional industry group. Meanwhile, the Cook County Board of Commissioners retook control of County in 1979, as residents left and conditions continued to deteriorate.

In 1986, physicians at Cook County contributed to a *New England Journal of Medicine* study of patient transfers from other hospitals to Cook County due to economic reasons, like the lack of medical insurance – a practice labeled “patient dumping” (Schiff et al., 1986). The transferred patients were overwhelmingly black and low-income and the practice contributed to higher rates of death. This study helped to bring renewed attention to an old practice, and the US Congress passed the Emergency Medical Treatment and Labor Act (EMTALA) in the same year. This law requires emergency departments to treat and stabilize patients regardless of their ability to pay. EMTALA, however, is an unfunded mandate, and patient dumping continues, albeit in more subtle ways.

## 6.4 The district and its surroundings

Since its creation, IMD has had a profound impact on the Near West Side (the official “community area” where the District resides) both directly through the Commission’s actions within the 560-acre District boundaries and indirectly by influencing uses and property values in surrounding areas. The medical district is only the first among a slate of large-scale redevelopment projects in the Near West Side. These include 4,082 public housing units constructed between 1943 and 1961, a designated “Conservation Area” for Urban Renewal rehabilitation, and the Congress Expressway – along with more recent projects like the United Center, redevelopment in the West Loop, and public housing redevelopments. Most famous is the story of the University of Illinois at Chicago Circle campus, an Urban Renewal project at the site of Hull House, one of Chicago’s other emblematic Progressive Era organizations. Mayor Daley’s intervention in the university’s ultimate location provides perhaps the most commonly cited episode of not only Chicago-style clout politics but also of the contradictions between a political machine built on neighborhood-level organizations but still pliable to downtown-oriented agenda of Mayor Daley (Rosen, 1980; Ferman, 1996). The neighborhood political organization, based on the Italian-American ethnic concentration spanning from the Chicago Circle campus to the medical district, had at first gone along with the 1941 medical district and 1961 Chicago Circle campus before mounting resistance. Ultimately, both campuses decimated the Italian neighborhood, as well as the concentrations of residents of Italian, Jewish, African-American, and Mexican descent at the site of the Chicago Circle campus. Historically, this area was a point-of-entry neighborhood for new migrants to the city, figuring into Burgess’ famous concentric zone map of Chicago as the archetypical “slum” (Berry, 1976, 53). Eventually, the University of Illinois College of Medicine with the University of Illinois at Chicago Circle merged, greatly increasing the school’s total research portfolio and allowing the new University of Illinois at Chicago (UIC) to attain the “Research-I” Carnegie classification on the strength of its medical and life sciences research portfolio.

Table 6.1 summarizes demographic changes in the neighborhood. The dramatic fluctuations evident in these numbers reflect both gradual processes of neighborhood succession and wholesale redevelopment projects that dramatically altered the residential composition of large areas. In particular, the decline in total population by almost two thirds between 1960 and 1990 reflects the height of the medical district’s expansion, the Chicago Circle campus construction, and the more general wave of suburbanization.

Table 6.1: Demographic change in the Near West Side, 1930–1990

year	total residents	Race/ethnicity	
1930	152,457	78.5%	White
		16.6	Negro
		4.9	Other
1960	126,610	0.6	White
		53.8	Negro
		45.6	Other races
1990	46,197	22.4	White
		67.2	Black
		5.1	Asian/PI
		5.2	Other race
		9.6	Hispanic Origin

Source: US Census (Compiled by the Encyclopedia of Chicago:  
<http://www.encyclopedia.chicagohistory.org/pages/878.html>.)

Note: Race and ethnicity definitions change between Census years

### Tri-Taylor: The exception within the medical district

Within the original boundaries of the medical district, the remaining residential portions had nearly been reduced to their present day confines on the western edge of the district, later renamed Tri-Taylor, by the late 1960s. Tri-Taylor Historic District residential area received National Register of Historic Places designation in 1983.<sup>63</sup> Listing resulted from preservation advocacy, mainly by the Tri-Taylor Conservation Association and Landmarks Illinois, which financed improvement projects in the district (its first project focusing on an entire area rather than single structures) and from Tri-Taylor’s unique position as an “island surrounded by change”.<sup>64</sup> Tri-Taylor had escaped the slow creep of the land acquisition seemingly by virtue of its outlying position on the western edge of the District, its inconvenient triangular shape and disconnection by Ogden Avenue, and by the state’s declining support and willingness to halt the western expansion of the district.<sup>65</sup> Over the years, the threat of eminent domain had discouraged both new residential improvements and competing non-institutional development.

<sup>63</sup> Chicago Tribune [25 Mar 1983]

<sup>64</sup> *Chicago Tribune*, 18 Oct 1981

<sup>65</sup> Thomas Perry Storer to Park Livingstone, 22 December 1973.

Historic designation immediately improved property values within the five block neighborhood. By the mid-1980s, designation and overtures from preservationists led Commission planning documents to pivot its esteem for the Tri-Taylor from a blank development area to celebration of the sort of 1880s architecture that would have attracted the “blight” label in previous years. Already, the Commission was the neighborhood’s biggest landlord, owning 50 rental units and a handful of vacant properties. Noting the shift from decline to renovation within the small area, development goals now included the conservation and renovation of adjacent residential areas to provide attractive housing for employees as an asset to the District.<sup>66</sup> The Commission responded to Tri-Taylor’s 1983 designation by auctioning some of its properties, with preference for owners with resources to improve the properties and with intentions to actually reside in the homes.<sup>67</sup> In a sense, Tri-Taylor’s preservation by accident had effectively replaced the “Garden of Health” plan’s vision for the outer ring of modernist housing blocks that never materialized within the District.

## **6.5 Conclusion: The incomplete “Garden of Health”**

The IMD began as an original idea with a grand vision for refashioning a collection of Chicago neighborhoods into a “Garden of Health” and an emerging concept of a multi-institutional “medical center”. It represented a quantum leap in scale, from the monumental architecture epitomized by Cook County Hospital to an urban landscape equally representational of the scientific progress of modern medicine and of society’s commitment to public service through state and charitable organizations. The concept of the district emerged from the overlap of goals between a Chicago planning process fomented by emerging approaches to district redevelopment and a group of medical institutions coping with changing national health care regulations conducive to expansion and facilities investment.

The idea for the medical district began with its original hospitals and medical schools but faltered until the proposal was adopted by the Commercial Club and the city department of planning. The version of the district that gained traction adopted redevelopment as a wide-reaching anti-blight program, not simply as a mechanism to facilitate cooperation. Redevelopment, in other words, became the primary organizational function of the district – the means and the end of the initial policy innovation of creating a medical district and assigning an organizational capacity to plan it. The set of forces affecting health care, however, soon became

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<sup>66</sup> Department of Planning 1984, p. 15.

<sup>67</sup> Chicago Tribune [7 Oct 1983]

more complex, both in terms of the uneven impacts of funding and regulations on health care organizations and in terms of governmental involvement at the state and federal levels. In this sense, the parameters of the coordination problem that the district was intended to solve began to change shortly after its establishment. The district began as a cluster of affiliations with Cook County Hospital; but in the decades after the district's establishment, every level of the health system conspired to undermine the centrality of the original anchor tenant. Rather than a multi-institutional but cohesive medical center, the Illinois Medical District splintered into multiple distinct campuses competing for space, often tensely re-negotiating their relationships and responsibilities, and consistently experiencing different levels of support from the changing dynamics of regulation and payment. The local tool of redevelopment became an extension of external forces that re-shaped health care without mitigating their tendencies to allocate resources in an inefficient and inequitable manner.

During its first decades, the expansion of land uses, the volume of construction, and the wholesale redevelopment of hundreds of acres of the inner city were fundamentally shaped by the district's establishment. Stakeholders, however, soon became dissatisfied with the inability of the Commission to mitigate coordination problems, both of land and services within the district and of the role of the district's important health care organizations to address systemic fragmentation and inequality at the level of the district, regional and state. An inability to manage political conflicts with other governmental agencies and legislative bodies, powerful incentives for hospitals to expand without cooperation, and declining operations funding relegated the Commission to a passive role. Instead, the organization settled into the role as a land acquisition agency. Certainly, this function moderated expansion conflicts, but the Commission was far more successful in acquiring land than in ensuring its timely and orderly development.

Hindsight allows for speculation over alternative possibilities. It is possible that, if the commission had been designed with the capacity not only to redevelop land but also to enforce coordination in the decisions of its anchor tenants, the district might have emerged as a model mechanism for inter-organizational adaptations to the chaotic postwar growth of the health care system, thus demonstrating an alternative to atomized decision-making. Instead, the result was the largest medical district in the country. While still impressive, the district's main outcome was to convert a neighborhood into a territory for uncoordinated medical expansion and, ultimately, a microcosm of the unsustainable contradictions of the postwar US health care system.

## Chapter 7

# Houston: From a forest to the largest medical center in the world

I think Mr. Anderson, if he saw this medical center today, would say, "I see it out there, but I don't believe it." He'd say something like that, perhaps, even though it's all there, and you can reach out and touch it. It's real.

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John H. Freeman, founding trustee of the M.D. Anderson Foundation.<sup>a</sup>

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<sup>a</sup> Quoted in N. Don Macon, *Monroe Dunaway Anderson, His Legacy*, Texas Medical Center, 1994, p.112

Everything's bigger in Texas. Among existing urban biomedical districts, Houston's Texas Medical Center (TMC) occupies its own class. In aggregate, the TMC employs well over 100,000 workers, rivals a large four-year state university in its total campus size and number of students, and sees 8 million patient visits per year. TMC has 59 member institutions, including 21 hospitals and 4 medical schools. Only Boston's Harvard-anchored medical district attracts more NIH funding. As a built environment, the TMC's scale approaches that of a major CBD; in fact, the TMC advertises itself as the eighth largest business district in the country. Seventy-five years ago, the area that comprises the core TMC campus was an undeveloped, mosquito-infested forest on the edge of a growing city that lacked a medical school.

The TMC's creation almost immediately concentrated the growing city's medical capacity over a short span during the 1940s. As Houston grew into a major center in the global petroleum economy and its development sprawled outward, a large portion of its medical services con-

tinued to concentrate in the TMC. Propelled both by dramatic regional population growth and the broader growth of the health care economy during the second half of the twentieth century, TMC's size and rapid growth trajectory is unlikely to be replicated by any other biomedical district in the future.

The differences between Houston and Chicago in the 1940s allow for examining why both landed on a similar and novel objective – planning a multi-institutional medical campus – but through a different organizational model. Unlike the Illinois Medical District, the TMC was not grafted onto existing institutions and an existing neighborhood. Yet the TMC organization suffered from a similar pattern of limited capacity and lock-in as its Chicago counterpart, even while avoiding funding issues. While its organizational form was still in the nebulous early stages, notions of a medical center as a multi-institutional but clinically integrated model of care and education gave way to a medical center actually focused on land conveyance, infrastructure, and parking. Organizational inertia has only very recently yielded to an ongoing process of strategic re-orientation. This chapter focuses on the establishment and first forty years of the TMC, up to the mid-1980s, when a local recession led economic development actors to re-frame the TMC as not just as center for health care, research, and education but as a pillar of the Houston economy capable of shielding the region's growth from the volatility of the oil industry.

Houston provides a very different local political-economic context than Chicago, and the implications of this difference with respect to the Chicago comparison break down in two ways. First, the perceived problems and opportunities that led to the establishment of the medical district were very different. The TMC provided an expedient for a growing city to acquire a medical school and its associated prestige, thereby facilitating convergence to cities like Chicago that had a more established health care system prior to the 1940s and signaling Houston's climb up the urban hierarchy. Second, the "free enterprise" ideology permeates Houston's business and political communities (Fleischmann and Feagin, 1987; Feagin, 1988). Nowhere is this more conspicuous than in the absence of zoning. In addition, unlike Chicago, Houston never participated in Urban Renewal (Fleischmann and Feagin, 1987, 218). However, the city's reductive private-led folklore overshadows the fact that Houston's growth benefited from federal support in different ways, e.g., from the high price and demand for oil and NASA. Likewise, the TMC was founded on private philanthropy, but its original shape and ultimate growth depended on state investments and early specialties that proved to be lucrative as health care evolved. On the surface, however, the "free enterprise" aspects of the case – its



nonprofit status and lack of dependence on state funding – might lead to the conclusion that these differences account for the relative success of Houston in comparison with Chicago.

## **7.1 The idea of a medical center**

The first medical district in Chicago formed slowly between the 1870s and 1920s, keeping pace with the city's growth into a major industrial metropolis with a population of about three million. The second medical district has more modest origins. In 1910, Houston was still a relatively small but growing city. Propelled by Houston's transformation from a regional cotton trading hub into the major center of the oil industry and by the 1914 opening of the Houston Ship Channel, the population of Harris County more than tripled between 1910 and 1930, setting the stage for a series of events that gave traction to a previously vague concept of a medical center. Its creation reflects the intersection of state and charitable resources, the adoption of Houston's lagging capacity for medical education as a major issue by economic development actors, and the opportunities provided by the growing hospital sector.

The first tenant of what would later become the TMC was Hermann Hospital, establishing the philanthropic origins of the district at an early stage. When George H. Hermann died at Johns Hopkins in Baltimore in 1914, his oil wealth funded a charitable foundation that financed the creation of Hermann hospital, which opened in 1925 on the Hermann estate, an undeveloped, recently annexed tract of land to the southwest of Houston's downtown and original wards along the Main Street axis, not far from the Rice Institute or a large park that Hermann had previously donated to the city. Hermann's desire was to create a hospital "for the benefit of the poor, indigent and infirm residents of the City of Houston" – a public mission under private ownership. The hospital opened in 1925, Houston's first modern hospital on the scale of major hospitals constructed in larger cities. Behind it lay a forest that would later house the TMC.

### **Private money in search of a cause: the M.D. Anderson Foundation**

While the Illinois Medical District began with an idea searching for money, the TMC began with money searching for an idea: the foundation of cotton magnate Monroe Dunaway Anderson. With his health failing, lacking heirs, and fearing that taxation on his estate would force his partners to liquidate his company upon his death, M.D. Anderson and his lawyers created the M.D. Anderson Foundation in 1936 to receive transfer of his interest in the company. Upon his death in 1939, the two remaining trustees, Anderson's lawyers, oversaw the nearly \$20 million

foundation. Anderson and the trustee's direction for the fund had been broad: the improvement of working conditions, the establishment and support of institutions of care; the improvement of living conditions; and "the promotion of health, science, education and advancement and diffusion of knowledge and understanding among people".<sup>1</sup>

The foundation soon named the president of a local bank as a third trustee, and sought advice from a number of individuals, including Dr. Ernst W. Bertner, a leading Houston physician who would be primarily responsible for the medical direction of the foundation. The idea of a medical center had already been circulating in Houston, mainly in conjunction with the University of Texas Medical Branch in Galveston and sputtering attempts to either secure some sort of affiliated campus or to induce its relocation to Houston. The Medical Branch in Galveston had been established as the state's first medical school in the late 19th century, before hurricanes and the Ship Channel propelled Houston past its coastal neighbor.

During this early period, the question of what exactly a "medical center" would entail remained open, and the answer reflected a gradual adaptation of models from existing prestigious academic medical centers to locally specific opportunities. Impressed by a 1938 visit to the University of Pittsburgh, prominent dentist Frederick Elliott – the head of the Texas Dental College (the only existing medical education institution in Houston before the 1940s); Chairman of the Chamber of Commerce's Health Committee; an important proponent of the TMC in inter-governmental and inter-institutional negotiations; and later, the first full-time Executive Director of the TMC – had been circulating the concept of a "Memorial Center for Health Education," which combined many disciplines into one modern building.<sup>2</sup> The idea was meant as a means to gain an affiliation for the Texas Dental College, while attracting other institutions to fill Houston's gap in medical education. He even commissioned a plaster model. The migration in concept of a medical center in the mold of a single prestigious institution, like the leading academic medical centers on the East Coast, to the novel multi-institutional form of the Texas Medical Center probably reflects the interaction of two factors: the perceived necessity of combining multiple institutional players in the context of a changing, but less-developed Texas health care system; and the rapid succession of opportunities to leverage the Anderson Foundation money. In other words, opportunism favored the multi-institutional approach.

The catalyzing event occurred at the state level. One of the original trustees described the specific shift from general interests to specific objectives:

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1 N. Don Macon, *Monroe Dunaway Anderson, His Legacy*, Texas Medical Center, 1994, p.71

2 Frederick C. Elliott, *The Birth of the Texas Medical Center*, Texas A&M University Press, 2004, p.61

We had discussed health and hospitals, ... had even talked about a medical center. Nothing like it turned out to be, of course, but we had given some thought to the idea. Then, one day in 1941, there was a news article in the Houston papers. The legislature had appropriated \$500,000 and turned it over to the University of Texas Board of Regents for the establishment of a cancer research hospital for Texas. The bill also authorized the regents to accept gifts from others. We felt this was a real opportunity.<sup>3</sup>

At the time, the medical society and the chamber of commerce voiced a shared concern that Houston was the largest city in the country without a graduate medical school for the training of physicians. The cancer hospital provided an impetus, but the goal of a medical center was broader.

The M.D. Anderson foundation offered a grant to match the state's \$500,000 with two stipulations: the cancer research hospital would be located in Houston and would be named for M.D. Anderson. The University administrators agreed. Dr. Bertner, who was appointed as acting director of the new cancer hospital, had previously spent a year at Johns Hopkins. Working with cancer specialists, Bertner acquired expertise in a disease transforming from "a shameful thing, unmentionable, even in family circles" into a treatable condition; he also gained an appreciation for a combined center of teaching, research, and care in the mold of Johns Hopkins.<sup>4</sup>

As the cancer hospital moved into temporary quarters, the foundation turned to acquiring a permanent site. The undeveloped forest behind Hermann Hospital had been purchased in the 1920s by a University of Texas administrator who had tried unsuccessfully to move the Medical Branch from Galveston but had been donated back to the city at cost.<sup>5</sup> The Foundation negotiated an agreement with the city for purchase of the 134-acre plot but encountered resistance from community members who had anticipated the land as an annex to Hermann Park. The sale was placed on a ballot and approved by popular vote late in 1943.<sup>6</sup> The Anderson trustees placed a newspaper ad: "Cure through research. Vote for the Texas Medical Center Tuesday".<sup>7</sup>

With land and publicity from the cancer hospital, interest in the center gained momentum quickly. Baylor College of Medicine had been exploring opportunities to relocate from Dallas, and approached the Foundation. In interview records, the Anderson trustees involved in early discussions with Baylor repeatedly emphasize that they did not actively lure the school or

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3 Ibid., p.84

4 Macon, p.87.

5 Elliott, p.81

6 Ibid., p.90.

7 Houston Post, 13 December 1943.

initiate its relocation.<sup>8</sup> Resolved to leave Dallas, the Baylor administration had been frustrated with the inability to secure a research endowment from Dallas foundations or adequate financial support from the main campus in Waco. In 1943, the Anderson Foundation gave Baylor a site in the medical center plot, a million dollars for facility construction, and another million dollars to fund a ten-year research endowment. The Houston Chamber of Commerce raised another \$500,000 for the effort. Baylor moved into an old Sears-Roebuck building before the new location opened in 1947, the first building completed in the new TMC.

The status of the University of Texas remained an open question through 1943 and 1944, and the university initially viewed itself as the primary tenant of the medical center.<sup>9</sup> At one point, the University seemed likely to relocate or establish an affiliate of the Galveston Medical Branch in Houston, but this would require a determination by the legislature, adding uncertainty and delay to the project of building the Houston medical center. At another point, the President of the University of Texas pushed for concentrating the Medical Branch and the cancer hospital along with all other units of the University at the main campus in Austin. The uncertainty factored into the Anderson Foundation's agreement with Baylor and its ultimate decision to spin-off a separate TMC corporation.<sup>10</sup> Swayed by Bertner's influence, the Anderson trustees were "of the opinion that an independent organization would facilitate the inclusion of other health education and research institutions in the medical center".<sup>11</sup>

Also in 1943, after several stalled attempts, the momentum of the emerging medical center allowed administrators of the financially strapped Texas Dental College to donate the school to the University of Texas.<sup>12</sup> The Texas Dental Branch, the first educational program of the university in the TMC, also garnered a \$500,000 grant from the M.D. Anderson Foundation for a new building. Ultimately, the medical center became an umbrella entity free from the hegemony of any single institution, although the rivalry between Baylor and the University of Texas would continue to provide challenges during the peak development of the TMC.<sup>13</sup>

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8 For example, "We told them we wouldn't do anything to induce them to leave Dallas" (Col. William Bates, quoted in Macon, 1994, p. 92); "Baylor Medical School came to us... We did not go to Baylor" (John H. Freeman, quoted in Memorandum of an interview with John H. Freeman, 8 April 1971, Berner Papers, McGovern Historical Collections.).

9 Elliott, p.80-85

10 Ibid., p.85.

11 Ibid., p.82.

12 W.B. Bates, History and Development of the Texas Medical Center, Address to the Gulf Coast Historical Association's First Annual Meeting, 20 November 1956.

13 Memorandum to Doctor Berner, 7 July 1950, Bertner Papers, McGover Historical Collections.

## 7.2 Taking shape as a district and as an organization

Dr. Ernest Bertner had been generally recognized as the “father of the Texas Medical Center,” and his early involvement probably explains the M.D. Anderson Foundation’s adoption of the medical center concept.<sup>14</sup> Bertner initially was appointed acting director of M.D. Anderson Cancer Center but soon transitioned to the first Director of the TMC, a position he served in until his death in 1950. He was also on the Board of Directors of the Houston Chamber of Commerce, a source of significant political and financial support for the early TMC.

Secondary histories and Bertner’s records attest to his zeal in fund-raising, seizing opportunities, dealing with conflicts between institutions, and reinforcing the principles of cooperation and physical planning. One of the founding trustees of the M.D. Anderson Foundation described Bertner as follows:

He had a real economic sense, a business sense. He had done well in practice and in investments; and, perhaps, at this time in his life was sort of looking forward in a few years to retirement, and this would be an endeavor for his retirement. Consciously or unconsciously, he led us to into the concept of the medical center. This was largely Dr. Bertner’s concept.<sup>15</sup>

During the short gestation of the TMC, Bertner had traveled to major medical centers around the country. Although he was a physician, Bertner stressed the medical center as not only improving the institutions of charitable care but also generating economic impact, drawing an apt analogy to the Houston Ship Channel, the city’s largest collective economic development project to that point:

The great vision that prompted the dream and the realization ... of the Houston Ship Channel is paralleled in the vision of the Texas Medical Center. One made Houston’s place as a trade center; the other will make Houston’s place as a health center. One brought great commerce; the other will bring great blessings to mankind, and perhaps, who knows, bring the answer to the cause, treatment, and cure of cancer. The Ship Channel brought and is bringing economic benefits and captains of industry to our people; the Texas Medical Center will attract the great scientists of the world, will benefit suffering humanity, avert much illness because of great preventive work, and will contribute to the economic development of this section. Construction of many millions of dollars of fine buildings is such an obvious asset to the city that it needs no build-up from me, but I invite consideration of this point and my comparison of the Center to the development of our great port as an economic stride of major importance.<sup>16</sup>

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14 This is referenced across many secondary histories by the TMC and its member institutions and in various primary records in the Bertner Papers of the McGovern Historical Collections.

15 W.D. Seybold, Memorandum of an interview with John H. Freeman, 8 April 1971, Bertner Papers, McGovern Historical Collections.

16 E.W. Bertner, The Future of the Texas Medical Center, Texas State Journal of Medicine, April 1946, Vol.41 p. 625–628.

The decision to spin-off the TMC as a separate organization from the M.D. Anderson Foundation followed from Bertner's broader vision for the medical center as a large-scale development requiring "community" involvement of multiple medical institutions, local governments, the business community, and local medical professional associations.<sup>17</sup> Bertner stressed the benefits of proximity:

A medical center affords a three-way approach to the solving of health problems: first, because it is a union of different institutions and therefore offers the advantage of size and breadth of opportunity, it attracts the superior students to its schools of medicine and dentistry and nursing. Second, again because it is a concentration of allied institutions, it affords the mutual stimulation necessary to give the best possible patient care. Third, through working agreement between several diverse institutions, opportunity for investigative work and research is multiplied to the advantage of the individual research men.<sup>18</sup>

Only by assembling smaller, growing institutions in a state with lagging capacity and exploiting the hypothesized benefits of concentration, the TMC could grow to match the prestigious medical centers in the Northeast and Midwest. On the other hand, this tightly concentrated, multi-institutional model also created physical and organizational planning challenges.

Separating the organization from the Anderson Foundation allowed for extending board representation beyond the Foundation Trustees to include member institutions and prominent donors and businessmen. The TMC corporation also created an organizational capacity to deal with issues of land allocation, site planning, and services coordination. TMC Inc. was chartered in 1945, and the Anderson Foundation transferred the original 134 acres to the new entity, which then granted sections to additional institutions.

The mechanism for control by the TMC was the deed restriction. This instrument has particular significance in Houston, the only major American city without a conventional zoning ordinance, as the primary legal mechanism of land use control.<sup>19</sup> According to the deed restriction, TMC property would be used "only for the promotion of health, education, and research, and for hospital, medical, and educational purposes," and "No part of such property or any building thereon shall ever be used for private gain or private profit, or for commercial uses or purposes, as distinguished from the educational and medical purposes to which the property is devoted." The deed restriction also generally required collaboration in planning.

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<sup>17</sup> Ibid.; Macon, p.102

<sup>18</sup> Talk by Ernst Bertner at dinner for Gov. Shivers, 12 September 1949, Bertner Papers, McGovern Historical Collections.

<sup>19</sup> In contrast, the land use control mechanism of the Illinois Medical District resembled a crude version of an urban renewal district.

More concretely, it prevented the institutions from monetizing the value of their land provided freely but through long-term ground leases. While ensuring homogeneity of land uses,<sup>20</sup> this acted as an incentive for the tenants to stay, as they could not sell their TMC land to finance new construction elsewhere.<sup>21</sup>

The TMC also began master planning the development area in 1947, which established a campus-like, low-density vision for a multi-institutional district peppered with ample green space – and no parking (see Figure 7.1). Though the plan resembles the spirit of the Illinois Medical District’s plans from the same time, TMC was able to more closely approach the initial vision due to the truncated time frame of development, the initially undeveloped status of the area, and the immediate availability of the entire 134 acres for assignment rather than piecemeal assembly. Working with undeveloped land and a range of new tenants, the TMC was able to approach the allocation of land according to basic land use principles from the start:

First, the location of the various institutions to provide the most efficient and workable plan for overall intercommunication between certain institutions; Second, the assignment of tracts to fit the needs of the different types of institutions; and Third, the type of site planning that would be the most economical as to land use and as to the provision of streets and utilities... The strongest factor in the rearrangement of sites was the recommendation of medical center engineers that the general hospitals be arranged in a close ring around the teaching institutions, with other hospitals in a secondary loop. We believe this to be a most important factor in the accomplishment of our aim to make the Texas Medical Center a successful cooperative movement.<sup>22</sup>

While the legal mechanism of the TMC built on local land use regulation, the organizational mechanism for planning also posed challenges. As the early leaders of the medical vision of the TMC, Bertner and Elliott pushed for innovative organizational approaches at a time when the TMC’s exact role and the structure of cross-institutional relationships had not yet hardened into shape. Mainly, Bertner pushed for a facility – called at different points the “Medical Center Clinic and Pathologic Institute” or “Central Medical and Diagnostic Clinic”. This facility would be run by the TMC and act as a central clearing house for the TMC members by “covering the admission, examination, diagnosis, and distribution of all indigent patients who are admitted to the Center” as well as housing medical records and providing placements for teaching activities. Bertner championed this role to solidify the TMC’s influence over clinical operations within the district, while easing the responsibility of providing indigent care for the individual hospitals.

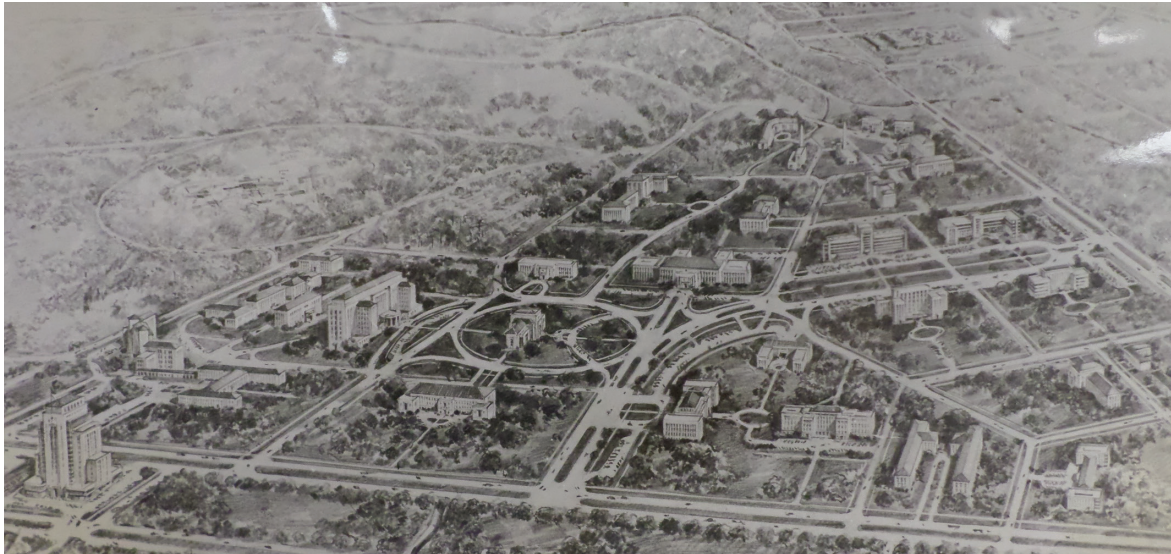
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20 For example, Bertner denied an early request by the YMCA to use TMC land, citing the restrictions of its charter to serve medical institutions. Elliott, p.106.

21 Interview with TMC executive, 2014.

22 E.W. Bertner to D.K. Woodward Jr., 16 October 1947, Bertner Papers, McGovern Historical Collections.

Figure 7.1: Mid-1940s vision for the Texas Medical Center, with land assigned to major institutions and with a notable lack of parking



Source: Texas Medical Center Archives, McGovern Historical Collection.

At one point, Bertner had received a written agreement from wealthy oilman and prominent Houston philanthropist Hugh Roy Cullen to fund architectural fees and, provisionally, to fund construction of the clinic at \$1.5–2 million. Echoing Bertner’s influence, Cullen described the clinic as the “tie-rod” for TMC.<sup>23</sup> Cullen, a noted conservative, eventually wavered due to concerns over the operating deficits at every other hospital in the fledgling TMC.<sup>24</sup> Ultimately, as Bertner’s health deteriorated in the late 1940s, the central clinic concept faded away, and the TMC has never operated a clinical facility since.

Even as the largest and most effective medical district organization, TMC came to epitomize a hybrid and somewhat vague organizational identity with tenuous authority to actualize the idea of collaboration among competing institutions. These vagaries also affect comparable entities, as seen in the Illinois Medical District and to varying extents in other cases. Tensions over duplication of missions and services arose from the start, and the tensions over space followed as the district filled. For example, as the University of Texas’s plans for the district grew, conflict emerged with Baylor over the exclusive right as the teaching institution of the TMC. Baylor had agreed to move to Houston when the offer for the University of Texas to move

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<sup>23</sup> Elliott, p.106

<sup>24</sup> E.W. Bertner to H.R. Cullen, 28 January 1948; H.R. Cullen to E.W. Bertner, 16 February 1948, 22 July 1948, 13 July 1949; Bertner Papers, McGovern Historical Collections; Elliott, p.106.



its Galveston Medical Branch to Houston or to open other teaching programs was still in play. Originally, the TMC had been conceived as being anchored by a single teaching institution. The TMC countered by stressing the ethic of collaboration and citing the deed restriction:

From the start the Texas Medical Center has been planned as a cooperative association of more than one school and more than one hospital. It was realized fully that operations would be simpler if all facilities were owned by a single entity, but this was not and is not the way things are, and in fact there are many advantages to a cooperative association of several independent institutions, even though some of them perform similar functions. The hospitals may be said to compete with one another, but they have come into the Medical Center with the idea of complementing one another. We think a Medical Center has the best possibilities for growth and service if several autonomous units cooperate fully toward making it great. Such is the general plan of the Texas Medical Center – subscribed to by every unit in accepting its deed to land, of which “Restrictions Governing the Texas Medical Center” is made a part.<sup>25</sup>

Several years later, studies of a proposed city-county hospital in TMC combined a discussion of the benefits of concentration with an eloquent family-children metaphor to describe the challenge:

The TEXAS medical center concept has been brought to the first plateau of success – institutional children having been adopted and permitted to build their homes in the family center. Some are growing. Some are underfinanced and therefore unstable and insecure. Their efforts to lift themselves by their own bootstraps has caused the basic TEXAS medical center concept to be inadvertently sidetracked for the one which makes hospitals adjuncts of medical schools. As a result the entire future of the TEXAS medical center concept hangs in the balance.<sup>26</sup>

A 1981 survey of Houston medical, business, and community leaders commissioned by TMC Inc. found that, while high regard for the TMC was universal, about half of participants had little knowledge of the TMC Inc. organization.<sup>27</sup> As in Chicago, the Houston medical district organization had settled into a role that excluded direct influence over patient care, creating vagueness about the precise role of the organization.<sup>28</sup>

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25 Recommendation of executive committee to the board of trustees of the Texas Medical Center Inc., 3 April 1951, Bertner Papers, McGovern Historical Collections; Memorandum on Proposed Houston Medical Center, 23 September 1943, Bertner Papers, McGovern Historical Collections.

26 The Foundation for Research and Development in Health Activities, *For a Dynamic Texas Medical Center*, 1956.

27 Most who were familiar with the organization only vaguely described its role as a planning and coordinating entity, while responses on the TMC as a whole offered considerably more sophisticated critical takes on the duplication of services and the feasibility of further growth in a decentralizing region. Rice Center, Three Management Briefs Supporting Forward Planning for Texas Medical Center, Inc., 20 April 1981.

28 This dynamic factored into my interviews as well. The task of explaining the role of the TMC appears to have been a habitual point of clarification.

## Location incentives and growth

As the vague but well-funded medical center concept formalized into a new type of organization, potential tenants filled out the TMC quickly. In 1944, the federal government approved a purchase of a portion of the Hermann estate for the construction of a naval hospital, which would later become a VA hospital. By 1946, several research and education institutions and five hospitals were slated for the TMC. These included Methodist hospital, which relocated from another part of Houston, and the new St. Luke's Episcopal Hospital. Hermann Hospital, which had opened in 1925 on an adjacent site, also joined the TMC. The building funds of each of the five hospitals received a large grant from the M.D. Anderson Foundation; the three major hospitals each received \$500,000. The Houston Chamber of Commerce also vigorously lobbied the University of Texas regents and raised money from the business community to finance the expansion of the University of Texas medical programs in the TMC.<sup>29</sup> The University of Texas gradually added educational programs until its various health-related units eventually consolidated into the University of Texas Health Science Center at Houston in 1972.

In 1947, Hugh Roy Cullen established the Cullen Foundation. For the nascent TMC, the timing was fortuitous. The Cullen Foundation gave separate \$1 million grants to Methodist, St. Luke's Episcopal, and Hermann Hospital and, by 1954, had donated \$2.5 million to Baylor College of Medicine. Other Houston philanthropic foundations, such as the Houston Endowment, also grew with the city and gave generously to the building efforts of TMC institutions. It is important to consider that these grants, which could not afford a single MRI machine today, were sizable for a hospital in the 1940s, e.g., the combined \$1.5 million from Anderson and Cullen would still have been 30 percent of St. Luke's Hospital's total assets in 1959.<sup>30</sup>

Unlike in Chicago, where non-profit institutions gravitated toward Cook County Hospital, the public-sector hospital was the last of the major institutions to set up shop in the district. In 1949, Cullen gave \$1.5 million for a city-county hospital that would eventually support the construction of the Harris County Ben Taub Hospital in 1963. The project bogged down as projected total costs escalated from \$5 million to \$16 million, and the city and Harris county reached an impasse over the rate of cost sharing. Meanwhile, the Harris County Medical Society objected to Baylor's control over the existing Jefferson Davis public hospital located across town from the medical district and the proposed new public hospital to be housed in the medical

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29 George A. Hill to Paul Neff, George A. Hill to Dr. E.W. Bertner et al.; 11 March 1946 through 22 October 1946; Bertner Papers, McGovern Historical Collections.

30 Annual Report, 1959, Texas Medical Center, McGovern Historical Collections.

district. In a referendum, the public decided on the medical center location (McComb, 1981, 179–180).

By the end of the 1940s, enough tenants were in place to begin transforming a forest into a dense cluster of medical institutions sufficient to rival any existing concentrations of medical activities in larger cities. Due to the TMC's presence, Houston's major health care institutions grew very concentrated, very quickly. Today, sprawling Houston has the unusual distinction of having both of the region's level-1 trauma centers located, literally, next door to one another in the TMC.<sup>31</sup> Since each major tenant located in the TMC around the same time and to take advantage of the same funding, a relatively dense network of inter-organizational linkages characterized the TMC from the start. In other words, the medical district became more than a physical agglomeration of medical institutions, although the TMC's activities would continue to be defined by the tension between cooperative efforts like physical planning and shared infrastructure and competitive inter-organizational competition over the following decades. However, since neither the University of Texas nor Baylor actually operates a general hospital within the TMC, neither of the district's academic medical centers competes directly with its three major non-profit acute care general hospitals. Rather, a relatively dense web of affiliations necessarily joins the two academic medical centers and the general and specialty hospitals located nearby. The proximity of affiliation opportunities allows hospitals to access external sites of prestige (e.g., via affiliations with M.D. Anderson Cancer Center) and to enjoy the option to shift affiliation when necessary (e.g., due to conflict or reorganization, which has happened several times).

However, concentration also has costs. The TMC managed criticisms at various points in the University of Texas decision chain and political challenges from Dallas and Galveston regarding the concentration of investment in Houston.<sup>32</sup> Perhaps due to the concentration of assets, the TMC always stressed its status as not only a Houston project but a Texas project, leveraging the one tightly knit district to improve the teaching, research, and care capacities of the entire state.<sup>33</sup>

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31 Level 1 trauma centers specialize in the triaging and treatment of major trauma, such as motor vehicle collision injuries and gunshot wounds. Time and distance are crucially important in trauma situations. Level 1 trauma centers are typically housed in the emergency departments of large public hospitals.

32 Telephone conversation between Frederick C. Elliott and Judge Woodward, 31 October 1952, Bertner Papers, McGovern Historical Collections.

33 The Foundation for Research and Development in Health Activities, *For a Dynamic Texas Medical Center*, (1956).

Before long, growth quickly left the TMC bursting at the seams. The TMC annual reports from the 1960s and 1970s repeatedly cite the lack of space for research and training and the need for more beds at Methodist and St. Luke's as major problems, along with the more general issues of the unsustainable finances at certain institutions and chronic shortages of nurses. The TMC purchased its first major additions in 1966 and 1970.

The annual reports also document escalating calls for collaboration and sharing resources within the district. Shared facilities had been somewhat successful under the TMC model. A unique consortium library was established in 1954, the first direct facility collaboration among institutions in the TMC. By 1970 shared heating and cooling and shared laundry facilities were in place. The institutions also secured a \$500,000 NIH grant to construct a Common Research Computer Facility. While these facility arrangements represent natural efficiencies of co-location, they also do not intrude on the core missions of the institutions. The coordination issue extends to far more complex problems related to avoiding duplication of services, technological capacities, and missions within the district. Since issues are directly related to the ability of institutions to not only compete for patients but to maintain prestige and accreditation status, little incentive exists to voluntarily cooperate. Thus, in enumerating the focus of long-range planning efforts, the annual reports routinely combine localized planning problems of district traffic and congestion with wide-ranging systemic problems, such as:

The need to make real progress on voluntary cost containment. If this is not done, the Government will place unilateral cost controls on health care delivery. A number of factors would be helpful including more outpatient or vertical care, greater emphasis on disease and accident prevention, ... the *duplication* of highly expensive equipment, and more extensive sharing and cooperative utilization of such facilities. [Emphasis in original].<sup>34</sup>

The TMC organization provides a mechanism to deal with physical planning and facility sharing opportunities as challenges in response to growth. However, the initial establishment of TMC Inc. left outside of its purview initiatives to address the thornier systemic problems, such as moderating the complex drivers of rising costs, facilities expansion, duplication of technology, and workforce shortages. Both represent problems for collective intervention by the district, and both require work to negotiate the inherent tensions of coordination in a competitive environment.<sup>35</sup>

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<sup>34</sup> Texas Medical Center Inc., 77 Annual Report Summary, 1977.

<sup>35</sup> Duplication of services and equipment, however, remains a problem, and more recent efforts to promote collaboration on research and commercialization have also been seen as missed opportunities.

In this respect, TMC's growth reflected the growth of the health care system as a whole. Figure 7.2 presents changes in major indicators of TMC capacity from the early 1960s through the early 1980s. Annual operating expenditures outpaced all other indicators, increasing more than six-fold in inflation adjusted dollars. The number of employees, as well as students and faculty, also more than tripled. Outpatient admissions outpaced inpatient admissions. Hospital beds increased markedly from 2,641 to 4,520 but not nearly enough to track with expenditures. Finally, research grants only grew modestly. These indicators substantiate the shift of the TMC's identity and impact. The TMC's economic impact through capital investment and employing and training large numbers of workers far outpaced its growth as a center for inpatient hospital care. However, the TMC's increase in employment and characteristic early-70s upswing in expenditures and physical capital investment coincides with the impact of Medicare.

The TMC also established itself as a mechanism for bringing new dollars into the Houston economy. By 1981, 40 percent of TMC inpatient admissions originated from outside of Harris County and 12 percent from outside of Texas.<sup>36</sup> Many of these visits were for expensive procedures in oncology and cardiology, specialties for which the TMC emerged as a destination across Texas, the South and Southwest, and the nation. Given Houston's ties to the global oil economy, the TMC also became a major destination for wealthy international patients, often the only type of encounters where the byzantine hospital billing process results in a "full freight" payment. In fact, travel restrictions after the September 11 attacks caused a temporary but painful hit to TMC hospital margins, as 40,000 annual international patient visits declined to 8,000 in one year.<sup>37</sup>

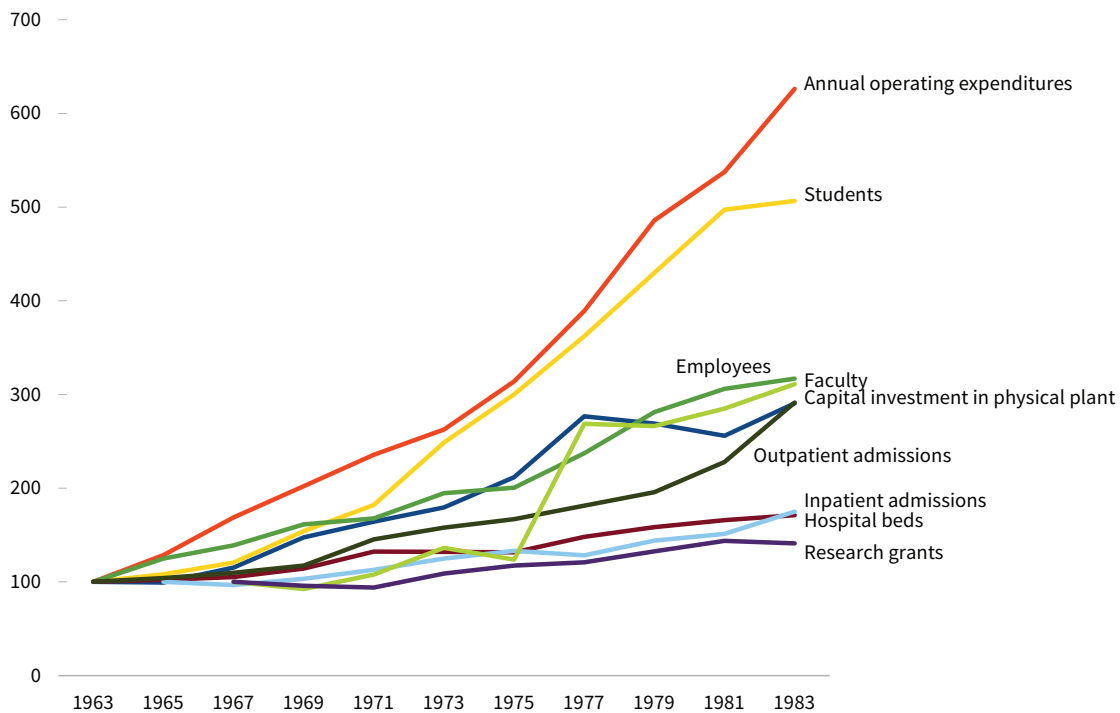
Figure 7.3 compares the core campus of the TMC at roughly the time of Baylor's opening as the lone building within the medical district and at a time after initial development 30 years later. The growth is dramatic, as is the predominance of surface parking. Over the next 30 years, the TMC would continue to fill in the original campus with highrise medical, education, and research facilities and extend outward well beyond the original 134-acre campus.

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<sup>36</sup> Texas Medical Center, 1981 Annual Report, 1981.

<sup>37</sup> Interview with TMC executive, 14 August 2013.

Figure 7.2: Indicators of growth at TMC institutions indexed to base year, 1963–1983.



Source: TMC Annual Reports 1978, 1980, 1982, Texas Medical Center Archives, McGovern Collection.

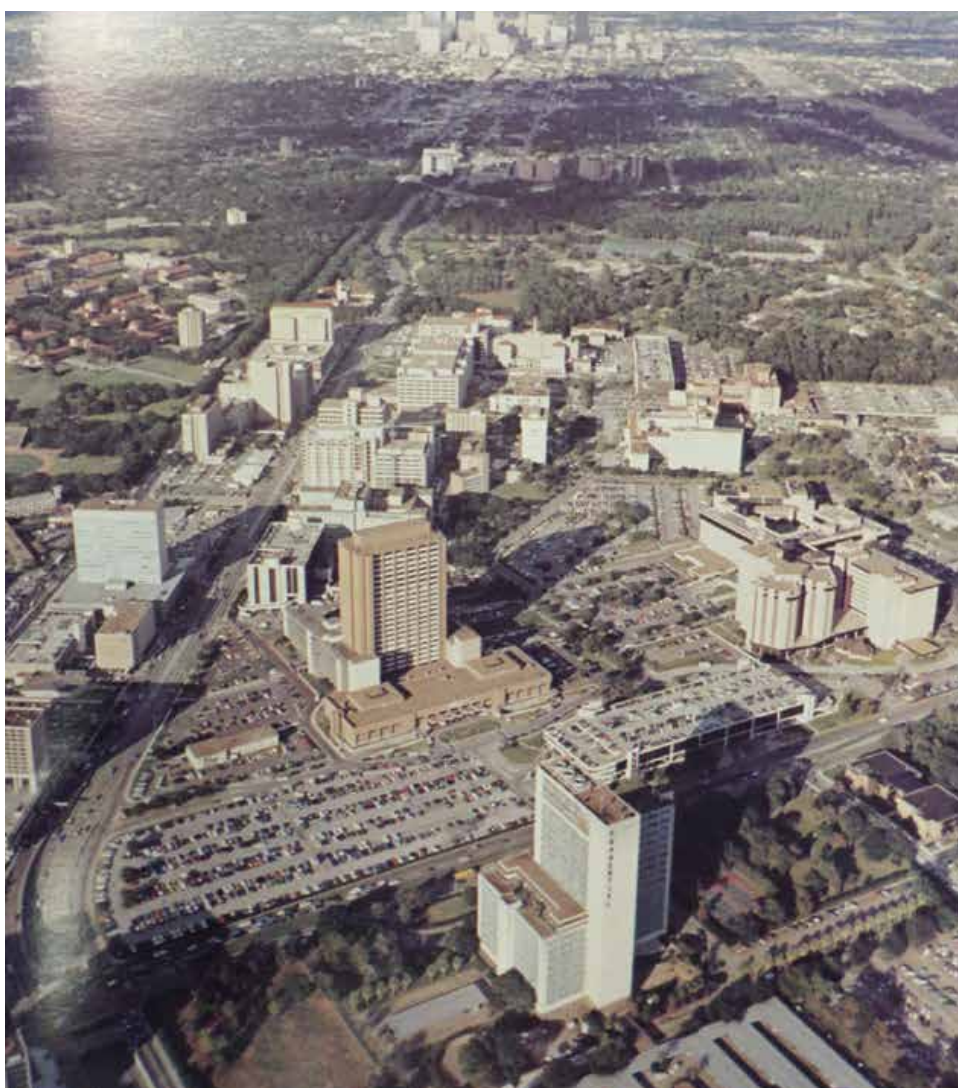
Note: All dollar indicators (expenditures, capital investment, research grants) are in constant 1983 dollars.

### 7.3 Explaining the success of the TMC

#### Organizational effectiveness or luck? Geography, timing, and the evolving market for medical procedures

The TMC's growth can be explained as the interaction between internal and external factors, particularly when compared with the Illinois Medical District (IMD). Unlike the IMD in Chicago, the TMC was positioned in the 1940s to accommodate new institutions in a growing region with lagging medical capacity. The population of Greater Houston increased ten-fold between the 1940 and 2010 census, and both the City of Houston and the region have consistently ranked among the fastest growing in the country. As this growth expanded the patient base, the local

Figure 7.3: TMC in 1947 and 1977



Source: TMC Annual Reports 1975, 1978, Texas Medical Center Archives, McGovern Collection.

accrual of oil and gas wealth created a large supply of philanthropic resources. In this respect, TMC reflects the context of Houston's progrowth coalition: a private-led process benefiting from supportive conditions at higher levels of government and the deed restriction as de facto land use regulation in absence of zoning.

The timing of its creation positioned the TMC and its early member institutions to grow with Houston, while the region's rapid catch-up in health care capacity combined with the availability of land through the TMC to position the district to benefit from regional growth. Despite Houston's notoriously sprawling development pattern, the TMC fostered an unusual degree of geographical concentration of regional medical assets (arguably leaving other portions of the city and even the state underserved). Even as capacity grew outside of the district, the centers for specialized referral remained within the TMC.<sup>38</sup>

The initial organizational characteristics of the district also ensured that TMC's growth paralleled the region's growth. The initial deed restrictions prevented institutions from relocating to the growing suburbs, since they could not sell their land to finance new construction. Although traffic, parking, and space problems have persisted, periodic TMC master plans also helped to ensure relatively orderly development and adequate infrastructure in comparison with the IMD. Whereas Chicago's IMD institutions only share a steam plant owned by the University of Illinois, the TMC institutions established an early sharing of energy and laundry facilities and a consortium library. The IMD is also a creature of state legislation: any change to its boundaries or powers requires an act of the state legislature, and its politically appointed Commission representation depends on the executive branches of state and local governments. Expanding its board as a means to ensure participation from the business and philanthropic communities, the TMC remained a project of Houston's boosters. Without explicit borders and free to operate beyond its original 134-acre land grant from the MD Anderson Foundation, the TMC also was able to gradually expand its borders, either by speculatively buying land or by accepting neighboring institutions as members (e.g., Hermann Hospital and the VA Hospital).

Fixed and declining funding from the Illinois legislature limited the capacity of the IMD Commission to a passive mechanism of land acquisition and site clearance. In contrast, the TMC organization operates about half of the parking within the district, providing the majority of its revenue. While this gradually narrowed perceptions of the TMC organization as a parking management entity, it also allowed the organization to meaningfully engage in infrastructure,

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<sup>38</sup> Rice Center, Three Management Briefs Supporting Forward Planning for Texas Medical Center, Inc., 20 April 1981.



services, and transportation planning projects and to conduct ongoing executive councils, bringing the district's institutions to the same table. Although neither the TMC nor its members have ever held a satisfactory view of cooperation within the district, funding at least provided a forum and a capacity to address issues of shared concern.

In addition to place-luck and organizational characteristics solidifying at early stages, the TMC developed fortuitous capacities in two lucrative fields: cancer and cardiovascular surgery. Both treatment specialties underwent transformative scientific advancement during the first three decades of the TMC's existence, partially propelled by TMC member institutions. The M.D. Anderson Cancer Center was one of three comprehensive cancer centers recognized with the signing of the National Cancer Act in 1971, the first declaration of "War on Cancer". A pioneer in the model of comprehensive, patient-center cancer care and in the treatment of several specific diseases, M.D. Anderson has consistently ranked near the top of national rankings for cancer treatment, and has a research budget of over \$700 million.<sup>39</sup> TMC's equally impressive route to the top of cardiovascular surgery provides an essential component of the folklore of the TMC.

### **A stolen heart and a demilitarized zone: The DeBakey-Cooley rivalry and the spatial dynamics of high-tech medicine**

While cancer was built into the identity of the TMC by the state legislature at the time of its inception, the cardiovascular surgery specialty stemmed from a single star physician. Baylor appointed Dr. Michael E. DeBakey as chair of surgery in 1948 from Tulane University in New Orleans.<sup>40</sup> There, he collaborated on early studies linking cancer to smoking and helped to develop pumping technologies for blood transfusions.<sup>41</sup> During his residency at New Orleans' Charity Hospital, he took military leave to advise the military during the war, helping to invent the Mobile Army Surgical Hospital (MASH units) and establish the Veterans Affairs research program.

While on the faculty at Tulane, DeBakey received job offers from prestigious schools, including Harvard. With the promise that he could always return to Tulane, his mentor Alton Ochsner – who was himself encountering conflict with Charity Hospital and Tulane – urged him to take an offer from Baylor, a little-known medical school in the TMC, where the land was

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39 M.D. Anderson Cancer Center, Quick Facts, 2005, <https://www.mdanderson.org/about-us/facts-and-history/quick-facts/qf2015.pdf>.

40 DeBakey trained under Alton Ochsner, who appears in the New Orleans case study.

41 The Michael E. DeBakey papers: Tulane University of School of Medicine to the US Army, National Library of Medicine Profiles, <https://profiles.nlm.nih.gov/ps/retrieve/Narrative/FJ/p-nid/329>

still mostly undeveloped and the streets unpaved.<sup>42</sup> Having recently opened in the TMC, Baylor had no formal residency program, no university hospital, and no formal hospital affiliations. DeBakey quickly stirred up controversy with the local medical community when he noted that a proposed teaching affiliation with Hermann Hospital would not meet accreditation requirements.<sup>43</sup> DeBakey had resolved to return to Tulane until another opportunity opened up at the VA hospital, and DeBakey's VA and Washington connections helped him to arrange a residency program. DeBakey would go on to broker residency programs at other hospitals (eventually Methodist, Baylor's main affiliation in the TMC), rapidly build up Baylor's department of surgery and surgical residency programs, and raise money from Houston's philanthropists.

In the early years, DeBakey clashed with local physicians over his high standards for hospital accreditation, board certification of physicians, and academic program control over hospital teaching and residency programs.<sup>44</sup> While the TMC and its state and private underwriters provided for the construction of modern facilities, DeBakey's disruptive influence accelerated the process of the convergence of the regional system of physicians and hospitals to emerging standards. By carrying over his research and surgical experience at Tulane, DeBakey also positioned Baylor and its affiliate hospitals on the forefront of cardiovascular surgery, which had only begun to be established as a specialty right before the war. In the early 1950s, DeBakey's adaptations of emerging procedures for vascular surgery (such as using Dacron for prosthetic arteries) and open-heart surgery quickly became standard procedures. By the 1960s and early 1970s, DeBakey had performed the first successful coronary bypass, the first successful implant of a left ventricular assist device (partial artificial heart), and one of the first heart transplants. He also helped to develop the total artificial heart and was a major proponent of the NIH's artificial heart program.<sup>45</sup>

As one of the best known surgeons in the world, DeBakey is responsible to a large extent for putting TMC on the map. He also raised money for both Baylor and the TMC while helping to attract students, residents, and other faculty. His innovations and legacy also demonstrate a cluster-like process of anchoring, competition, and collaboration. In 1951, DeBakey hired Dr. Denton Cooley, a Houston native and Johns Hopkins surgical resident. For the next 18 years, the two surgeons collaborated on many of DeBakey's innovations and transformed Methodist Hospital into a destination for advanced heart surgery. While still on faculty at Baylor, Cooley

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42 Ibid.

43 Ibid.

44 Ibid.

45 Ibid.

branched out into his own practice at St. Luke's in 1960 and founded the Texas Heart Institute in 1962, a research center affiliated with St. Luke's and Texas Children's Hospital. At Texas Heart Institute, Cooley performed the first successful heart transplant in 1968.

In 1969, while exact details are murky, Cooley apparently commandeered an experimental device from DeBakey's lab to perform the first implant of a mechanical heart in a human, intended as a bridge while a dying man awaited a heart transplant. Three days later, the patient was dead, but a conflict between the two surgeons lasted nearly until DeBakey's death in 2008.<sup>46</sup> Cooley received a censure from the American College of Surgeons and an investigation by Baylor and the NIH (which had funded DeBakey's development of the device), and ultimately left Baylor. The controversy covered an issue of *Life* magazine in 1970.<sup>47</sup>

Having achieved a degree of folkloric status in the history of medicine in Houston, DeBakey and Cooley's saga serves to illustrate TMC as a space of innovation in medical procedures, where both collaboration and competition play a role. Despite what Cooley described as a "demilitarized zone" in the few hundred feet separating The Methodist DeBakey Heart and Vascular Center and Cooley's Texas Heart Institute,<sup>48</sup> TMC became one of the nation's preeminent destinations for sophisticated heart procedures. Conversely, the proximity of two world-class heart institutes likely diluted prestige and donor pools for either organization and arguably generated a wasteful surplus of capacity and duplication of expensive equipment.

In an interview, this was the evaluation of a TMC executive in response to a general prompt to discuss the benefit of proximity in the TMC. After answering, "Proximity *can* help. It doesn't always help, but it can help," he offered the DeBakey-Cooley anecdote to illustrate the problem of duplication. This led immediately into a comment about MRIs:

There are more MRIs in the city of Houston than there are in the entire province of Ontario, Canada.<sup>49</sup> Think about what that means when it comes to intense competition. Think about Canada, and they probably have certificates of need and may have under-capacity, but how many MRIs do you need?

Of course, the duplication has also brought a high volume of revenue sources to the TMC. Since opening, the Texas Heart Institute has performed over 260,000 cardiac catheterizations, over 120,000 open heart operations, and 1,270 heart transplants.<sup>50</sup> Considering that the second

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46 Lawrence K. Altman, *The Feud*, *The New York Times*, Nov 26, 2007.

47 *A Bitter Fued: Two Great Surgeons at War over the Human Heart*, *Life Magazine*, 1970.

48 *Ibid.*

49 Ontario has about five times the population of the city of Houston, although the size of the Toronto and Houston regions are comparable.

50 Texas Heart Institute website, <http://www.texasheart.org/>; Denton Cooley, *A Brief History of the Texas Heart Institute*, *Tex Heart Inst Journal*, 2008, 35(3): 235â239.

and third of these procedures can easily cost several hundred thousand dollars, destination specialty centers like the Texas Heart Institute are also revenue generators.

DeBakey and Cooley also illustrate two different ideals for the role of the physician: the instrument of scientific advancement and the rightful arbiter of health care decision-making versus the entrepreneurial agent promoting cost-effectiveness in an increasingly market-driven system. The rivalry thus has had relevance to a key moment of change in the broader national health care system: the shift from professional dominance to market reforms and managed care.

Pushing the frontiers of surgical procedures and implantable devices, leading a specialty center for advanced surgeries, active in institutional administration and the local donor community, and championing scientific medicine in Washington at a time when the future of health care hung in the balance, DeBakey exemplifies the surgeon as social actor under conditions of professional dominance. DeBakey advised President Kennedy on an early version of what would become Medicare and in 1964 and 1965 chaired Johnson's Presidential Commission on Heart Disease, Cancer, and Stroke. Propelled by recent successes in cardiology and cardiovascular surgery and a space-age optimism that scientific medicine would soon crack the cancer and stroke problems in a similar fashion, the DeBakey Commission evangelized university-based biomedical research and specialized, high-technology treatment (Stevens, 1999, 277–278). The most significant recommendation was the creation of a network of university-based Regional Medical Programs linked with diagnostic treatment stations.

While the Association of American Medical Colleges supported the proposal, the American Hospital Association's majority of smaller, non-university affiliated hospitals and the AMA did not want a federally organized, university-dominated hospital system. With Medicare in process of becoming law, the administration needed cooperation from physicians and hospitals. The final legislation reflected a compromise that, as with other federal initiatives for community health system planning since Hill-Burton, placed the federal government in a role of encouraging and funding planning, not directing or enforcing it (Stevens, 1999, 277–278). The ideal of regional health care planning, whether by centers of scientific advancement or by regionally representative boards, remained voluntary, as planning agencies had little actual control over their regional health system. By the mid-1970s, the Nixon administration had de-funded the Regional Medical Centers program. While DeBakey's advocacy for centralizing authority in the forging houses of scientific medicine opened another "tentative window of organization cohesion," the market again won out over planning:

Federal legislative proposals through 1965 were unqualified endorsements of private initiative. Hospital planning was to be achieved through spontaneous, locally organized altruism; hospital services would be provided, for the most part, through the market for insurance; and inequality in provision would be addressed through federal programs for the elderly and poor. An enormous onus was placed on largely inchoate organizational structures at the local level. Yet experience of the past suggested, only too convincingly, that voluntary participation in hospital affairs among leading citizens, while encouraging social stability, community cohesion, and public virtue, only rarely resulted in community-wide services (Stevens, 1999, 280).

Medicare and Medicaid, which went into effect in 1966, infused dollars for reimbursement into regional health care systems without a capacity to plan, resulting in more resources for growth without disrupting the rules that distribute growth and, eventually, increasing federal regulation to contain costs.

As a stickler for standards, DeBakey found Cooley's theft of the heart to be either "a little childish," or dangerously entrepreneurial: "He wanted to be able to say he was the first one to use an artificial heart in a patient... I never quite understood it other than his ambition was almost uncontrolled." Thus, DeBakey, the champion of scientific advancement, quality, and standards, contrasts with Cooley, the surgeon-as-businessman. Cooley takes pride in having been called the "Sam Walton of heart surgery," primarily for offering in 1984 the first single, bundled-price payment plan for heart surgery, a model which has been adopted by other specialty centers (Miller, 2009).<sup>51</sup> In contrast with the figurative abstractions that comprise the list of individual charges on a conventional hospital bill, bundled payment fixes a flat price for surgeries, making cost more affordable and more predictable for the payer while providing incentives for the provider to reduce unnecessary services to earn more revenue. During the Clinton-era medical reform debates and the managed care movement, DeBakey criticized the shift of pricing and practice standards from doctors to insurance payer analysts and federal bureaucrats. Cooley's influential model, however, demonstrated how to make money under managed care through cost-saving contracts with self-insured corporations, prepaid health plans, union trusts, and foreign governments. In spite of his many surgical exploits, Cooley has described the bundled payment plan as his greatest innovation in health care.<sup>52</sup>

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51 Cooley, 2008

52 Cooley, 2008.

## 7.4 Evaluating the TMC as a model medical district

From one perspective, TMC had been a wild success. By the 1980s, the TMC had not only facilitated a convergence of Houston's status in health care to rival that of older academic medical centers in the Northeast and Midwest, but it had also created the largest concentration of medical research, teaching, and care activities in the world. As a telling illustration of the success of the TMC, Dr. Bertner, the source of the early vision in establishing the TMC, traveled to New Orleans in the last year of his life to undergo surgery at the hospital established by DeBakey's mentor, Alton Ochsner.<sup>53</sup> At the time, New Orleans was the largest center of medical prestige in the deep South. New Orleans' medical district institutions had trained Dr. DeBakey, who would go on to embrace the role of a star physician during the postwar expansion of medicine and to anchor the TMC's strength in cardio-vascular surgery. Today, it is commonplace for people in New Orleans, and beyond, to travel to TMC for major operations.

There is at least some perception that the TMC helped to prevent collapse during the transformative mid-1980s oil recession in Houston, when the region lost over 200,000 jobs.<sup>54</sup> Since that transformative event, whenever the price of oil falls and regional optimism for growth becomes, commentators on the Houston economy routinely reference the TMC as a source of diversification, non-cyclical employment, and economic resilience. In Harris County, while total employment has increased by 24 percent since 2001, health care employment has increased by 63 percent – and unlike total employment has never experienced an annual decline, even during recession.<sup>55</sup>

For this reason, TMC provides a partial model for some newer biomedical districts – less as a realistic goal to be emulated than as a visible demonstration of the scale of investment in health care and its possibility to anchor a variety of economic development strategies. Within Texas alone, the South Texas Medical Center in San Antonio, the Southwest Medical Center in Dallas, and the Medical Center of the Americas in El Paso have all replicated aspects of the TMC, namely a multi-institutional cluster organized and supported by a non-profit foundation. As this chapter has shown, the circumstances leading to the TMC depended on a unique coincidence of funding opportunities and institutional re-organizations, the convergence of medical capacity in a mid-sized city on the cusp of emergence into a major metropolitan area,

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53 Letter addressed to E.W. Bertner, 1949 October 4, Bertner Papers, McGovern Historical Collections

54 Interview with Greater Houston Partnership, 7 August 2013; interview with TMC executive, 14 August 2013.

55 Author analysis of Quarterly Census of Employment and Wages.

and a set of national health care reforms that supported massive investment. Recreating the TMC is just as unlikely as recreating Silicon Valley or Cleveland Clinic, but each of these models provide building blocks for the assemblage of biomedical district strategies in other cities.

TMC's success, however, has not been absolute. Even with a massive physical and employment presence, the role of TMC as primarily a planning, management, and development organization remained vaguely understood, especially since its most publicly visible function is to manage parking. This is also true in less successful districts. Additionally, TMC illustrates that proximity implies a tension between cooperation and competition. At its best, this dynamic promotes network formation, competitive efficiencies, and access to and development of talent. At its worst, duplication of effort in the realm of health care is an expensive proposition. Organizations like TMC have a role to play in forging inter-institutional networks and guiding efficient coordination of land and infrastructure development in a way that balances the interest of competitive organizations.

Recently there has been particularly widespread disappointment with the inability of the TMC to anchor the type of entrepreneurial collaboration among industry and researchers that supports technology commercialization. A recent article adequately echoes a remarkably common theme in Houston-area business press, i.e., lamenting the region's lack of a biotech industry and hyping the TMC-achored possibility of emerging as the "third coast" in the life sciences:

The Texas Medical Center is famous for many things, not the least of which is its staggering size: The world's largest center of its kind, the 21 hospitals that comprise much of the 50-million-square-foot TMC campus serve 8 million patients per year. Nearly \$3 billion worth of additional buildings are under construction here, while over \$2 billion worth of research takes place annually. What the TMC is not known for, however, is turning that research into new drugs and devices ... that can change patients' lives. In this area, our city and its massive Med Center have long lagged far behind places like San Francisco and Boston. The situation is, in many respects, baffling. All the major building blocks for a thriving biotech industry exist here, including huge clinical and research institutions, world-renowned physicians and researchers, highly skilled engineers, and a bustling business community. So what's missing?<sup>56</sup>

The answer to what's missing has been the same answer in other cities that lack Houston's assets: catalyzing organizational leadership, access to venture capital, connecting researchers to industry pipelines and entrepreneurial talent, and bridging supports like life sciences-focused incubator/accelerator programs for early-stage companies. Aside from these gaps, the only

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56 Roxanna Asgarian, In the City with the World's Largest Medical Center, There's Still No Biotech—Yet, 1 May 2016, Houstonia, <http://www.houstoniamag.com/articles/2016/5/1/texas-medical-center-is-the-worlds-largest-center-of-its-kind-so-whats-missing-may-2016>

obstacle standing in the way of a thriving innovation “ecosystem” remains the historic competition and insularity among health care organizations. The same barriers to integrated health care delivery and cost-efficient use of resources hinder the translational research process. What is standing in the way is that the TMC’s potential as a network anchor is so bound up in its 70 years of history in structuring the role of organizations in the regional health care system that its internal dynamics dominate the potential for life sciences network formation – what Powell et al. (2012) describes as an 800-lb gorilla.

Since a leadership change in 2012, TMC has changed tracks by embracing the mantle of the organizational catalyst through collaboration programs and new facilities investments. Chapter 8 examines this ongoing metamorphosis of the TMC organization, including its recent recognition as an “innovation district” in an agenda-setting Brookings paper (Katz and Wagner, 2014a).

However, the problems of collaboration and innovation in proximity are not limited to the interactions between the US health care system and the lofty imagination of a regional biotechnology ecosystem. They also affect the more commonplace, but also far larger type of economic activity that happens in clinical settings. In TMC, proximity has helped to facilitate organizational realignments, to attract patients, and to generate spillovers of prestige that have lured and retained talent within the TMC. Competition has also hindered research collaboration while promoting duplication of services and, arguably, an over-concentration of regional medical capacity in one relatively small section of a now very large American city. As demonstrated by the DeBakey and Cooley story, profound innovation has existed in TMC, but in the realm of cutting-edge clinical procedures and organizational realignments that have implications far beyond the boundaries of the TMC. Ultimately, for local economic development practitioners, the TMC itself is also one such innovation. As both a place and an organization, TMC thus exemplifies the possibilities and pitfalls of the biomedical district to other cities pursuing similar strategies.



## Chapter 8

# The Illinois Medical District and the Texas Medical Center: Continuity and change

By the 1980s, the Illinois Medical District and Texas Medical Center had a mixed track record. Looking strictly at the built environment of the district, the existence of the Medical Center District Commission in Chicago and TMC Inc. in Houston had helped to divert postwar facilities investment into the development area, facilitating a dramatic – and dramatically concentrated – expansion of health care-related land uses. At the time, the two oldest medical districts were probably the two largest concentrations of medical capacity in the country, if not the world. Whether these concentrations equate to better health care and economic development outcomes than might otherwise have occurred depends on the hypothesized benefits of concentration. Even in Houston, where the TMC clearly accelerated the city's transition into a leading site of prestigious health care, the organization has only recently gained recognition for taking steps to realize its potential as an anchor for commercial innovation in the life sciences.

In addition, the expansion of facilities and services in both legacy districts had unfolded in a largely uncoordinated fashion. Both district organizations also faced a perception problem in the general lack of clarity over their role and function. However, starting in the 1980s, city leaders and economic development organizations in both Houston and Chicago began to see an expanded set of possibilities in re-framing a large but narrowly focused medical district as an economic asset with expanded purposes. At the same time, high-costs and regulatory and payment incentives began to shift health care outside of in-patient settings, potentially undermining one of the major reasons for the district's existence. Thus, internal and external pressures began to favor an evolution of the identity of the district.

Originally, the districts were created to support the core mission of health care services, education, and research through place-based development. The transformation of health care-related industries since the 1980s has created the potential for biomedical districts to function more broadly as economic engines, employing large numbers of relatively well-paid workers while creating and attracting commercial technological enterprises. New opportunities for policy focus less on patient care, research, and education than on re-purposing these traditional functions to compete on the basis of advanced specialty care and relationships with commercial technology ventures.

However, over three decades of physical investment in both legacy districts has occurred in conjunction with investment in a specific organizational model with a narrower scope. In many ways, the capacities of both district organizations in the 1980s resembled the set of powers and limits granted in the 1940s and settled during the first years of development. While both district organizations had considerable authority and experience in acquiring and conveying land, neither had significant capacity to influence the decisions of individual member institutions. Historically, the pressures of inter-institutional competition had trumped the possibilities of meaningful collaboration. Fully embracing the responsibility for capitalizing on the districts' potential as economic engines would require overcoming path-dependence, both in the district organization itself and in entrenched inter-organizational relationships that might stand in the way of new opportunities for collective action.

As a result, organizational conversion has been a slow process with mixed results for both districts, arguably only gaining steam in the 2010s after leadership changes. The TMC's transition has been far easier, due to revenues from its sizable parking management operation, the momentum of continuous growth in the district, and a more flexible and cohesive structure from the outset. Despite having a greater degree of legal authority, the IMD faced leveled-off growth and declining state financial support. Both districts were actually legally prohibited from promoting private-sector commercialization within their boundaries – IMD by legislation and TMC by deed restriction. In contrast, newer districts often develop in conjunction with a keystone tech park or incubator.

This chapter describes the still-incomplete metamorphosis of the first medical district organizations into entrepreneurial economic development actors focused on a form of place-making tailored to the needs of the contemporary biomedical economy, where the strong but uneven federal support of the postwar decades has been replaced by fiscal constraint, market-oriented regulatory reforms, and privatization of the research enterprise. While the emergence of the

biotech industry has created the potential for new sources of growth, this growth remains highly concentrated in a few regions, and a strong medical district has not been sufficient to enable Houston and Chicago to join the ranks of successful biotech regions.

## 8.1 Resurrecting the Illinois Medical District

In 1995, the state legislature changed the district's official name from Illinois Medical Center to Illinois Medical District (IMD) to reflect the presence of multiple independent "centers" within the district.<sup>1</sup> Over the years, gradual amendments to the Commission's enabling legislation expanded the legal purpose of the district to embrace a range of activities beyond the initial 1941 language of "hospitals, clinical and research facilities":

To attract and retain academic centers of excellence, viable health care facilities, medical research facilities, emerging high technology enterprises, and other facilities and uses permitted by this act.<sup>2</sup>

This expansion of allowable uses brought IMD's mission in line with more recent addition to its roster, including non-medically related institutions (e.g., Cook County Juvenile Detention Center, Illinois State Police Forensic Science Laboratory, Federal Bureau of Investigation), research and technology parks designed to attract private tenants (e.g., the Chicago Technology Park), and commercial retail. The 1995 amendment also greatly expanded the first District Development Area annex to the railroad property line, a natural barrier south of the original boundaries.<sup>3</sup> The district's boundaries now spanned 560 acres, 84 percent larger than the original 1941 outlay. Intermittent amendments to the act offered the commission a greater range of funding mechanisms, including revenue bonds, fees and assessments, grants and contracts, and the sale or lease of commission-owned property according to an increasingly liberal calculation of "use-value" determined in context of the charge to "orderly" maintain "proper surroundings for a medical center and a related technology center".<sup>4</sup>

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1 It has been very common for hospital organizations to adopt some variant of the name "medical center," partly due to the increased complexity of the organizations and partly to signal the expansion of the organizational identities beyond in-patient care.

2 Illinois Medical District Act, 70 ILCS 915.

3 The law also granted the Commission "quick-take" eminent domain powers for a period of six years, ostensibly to accelerate property acquisition within the newly opened area. Via similar amendments, the legislature had periodically granted "quick-take" or boosted appropriations for land acquisition to support specific projects, such as the Illinois State Police Forensic Laboratory.

4 This land-use authority had occasionally caused friction with the city, e.g., over whether continued transfer of property to tax-exempt institutions benefited tax rolls (Chicago Tribune [26 December 1965]) or over a building permit granted by the City to a Popeye's Fried Chicken restaurant but over-ruled by the District Commission (Chicago Tribune [30 December 1986]); the commission continues to exercise land use discretion within the district.

By the 1980s, the continuing re-orientation of the academic medical centers away from their conventional role as providers of centralized charity care touched IMD's anchor institutions in a profound manner. Given its status as an epitome of the massive public hospital, Cook County Hospital's recent history is illustrative. Cost containment policies, limited access to outpatient and preventive care, and pressures on public budgets combined with continuing health disparities across income groups and geographic location to inform dire evaluations of the effectiveness and sustainability of Cook County Hospital, its aging facilities, outdated organizations, and overcrowded outpatient clinic. Since the 1960s, studies had recommended decentralizing outpatient care, re-directing the flow of patients to community clinics, and rebuilding Cook County Hospital at its present location, but in a reduced size of 400–425 beds.<sup>5</sup> At that time, the venerable hospital's bed capacity had fallen from its height of 3,400 to 800 beds. Eventually, Cook County Hospital's replacement, John H. Stroger, Jr., Hospital of Cook County, opened in 2002 at a size of 464 beds.

Cook County Hospital's struggles aside, the district putatively reinvented itself as an “economic engine” for the life sciences and technology industries, giving rise to new land uses and activities further removed from the traditional function of providing direct care and training the medical workforce for Chicagoland residents. While the biennial reports to the state legislature have always been boosterish, their tenor notably changed from presenting photo-collages of new buildings, heroic clinical vignettes, and new program expansions to emphasizing the role of the district as a generator of jobs and innovation. For example, the 2006 report's “impact statement” summarizes the changing value proposition for the district:

50,000 direct and indirect jobs, nation's largest college of medicine (University of Illinois), state's largest “biotechnology/medical” complex, 56-acre technology park and business incubator, 30 growth-stage companies provide growth for Illinois' economy, \$230 million in research annually.<sup>6</sup>

This also downplays the district's postwar preoccupation with demonstrating its impact on revitalizing depressed urban land, a topic notably absent from this abbreviated list of “impacts”. These new uses suggest that economic restructuring has created new developmental opportunities for the district, just as health care financing changes and fiscal retrenchment began to

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5 Task Force of Health Care for the Poor, *Poverty, Illness and the Future of Cook County Hospital*, Center for Urban Research and Policy Studies (University of Chicago) and Metropolitan Planning Council, 1986.

6 IMD Commission, Annual Report, 2006.

slow the pace of expansion by Rush University, the University of Illinois at Chicago, and Cook County.<sup>7</sup>

One of the first examples of a now common life sciences incubator/research park model, the Chicago Technology Park (CTP) opened in the northwestern quadrant of the district in 1984. Along with the offices of a few technology companies and public agencies, the CTP hosts an incubator that houses around 30 “growth-stage” companies and has graduated over 25 firms. Advertising a wealth of links to the facilities and skilled workforce associated with other IMD institutions, CTP draws directly on the hypothesized benefits of proximity. According to the promotional material in 2010, CTP “is a place where inspiration happens; where knowledge and community are shared. It’s vital ground for the cultivation of ingenuity”.<sup>8</sup> Since its inception, CTP has expanded to provide a range of facilities designed to service the space needs of companies throughout the innovation process.<sup>9</sup> In seeking to grow and to attract high-tech firms within the Chicago region and Illinois in general, these initiatives extend the economic mission of the district and its geographic scope of impact well beyond the scale of the immediate development area, focusing instead on bridging gaps in the innovation process and facilitating technology transfer opportunities. Under a non-profit partnership between Rush and UIC, the IMD Commission’s role originally was limited to land acquisition, but a 1991 amendment of the IMD Act eventually granted the Commission broader governance powers over the Park.<sup>10</sup>

However, CTP’s inauspicious beginning provides a cautionary tale of the slipperiness of place-based innovation policy. CTP’s first tenant Amgen emerged from a patentable research

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7 The University of Illinois responded to the special growth opportunities available to life sciences institutions in 1982 by merging the IMD campus of the University of Illinois College of Medicine with the University of Illinois at Chicago Circle, which had yet to climb out of second-tier status, to form the University of Illinois at Chicago (UIC), greatly increasing the school’s total research portfolio. For similar reasons, in 2003, Rush-Presbyterian-St. Luke’s Medical Center simplified its name to Rush University Medical Center “to reflect the important role education and research play in its patient care mission” (Rush History, Rush University website.)

8 Chicago Technology Park, website, retrieved 17 April 2010.

9 The Research Center incubator facility (1985) provides small-office space, business support services, and wet-lab facilities for start-ups attempting to commercialize technology spun out of University of Chicago, University of Illinois, Northwestern, Argonne National Labs, and other institutions. Tech 2000 (owned by UIC) and Enterprise Suites provide start-up phase or overflow office space for non-wet lab needs. Enterprise Center I (1998) and II (2003) provide wet-lab and office space targeted to expanding “graduates” of the Research Center. CTP is now part of a state network of eight technology park/incubator facilities, four of which are in the Chicago area. Additionally, the District Commission has acted as a founding member of the Illinois Technology Consortium for Health Care (I-TeCH), a collaborative of research institutions intended to advocate for technology transfer policies and to support cross-institutional collaboration. See Illinois Medical District Commission, Biennial Report 1997–98, 1998).

10 Department of Planning, Chicago Technology Park: Development Plan and Program, City of Chicago, Illinois, 1984, p. 7.

and start-up endeavor by part-time collaborators from the Bay Area and the University of Chicago that successfully attracted California-based venture capital after the first successful biotech IPOs in 1980. During its start-up phase from 1986–1988, Amgen leased a portion of land within the District to construct a biotechnology facility and thereby signaled a new source of health industry-related demand that would eventually lead to the concept of creating a technology park within the District. Amgen never fully occupied the space and instead moved the main portion of its operations to California – its site is now occupied by the American Society of Clinical Pathology.<sup>11</sup> Amgen’s financial backers also balked at the lack of clear jurisdiction over CTP.<sup>12</sup> In 1989, Amgen received FDA approval for EPO, a significant biotech product with applications to the treatment of anemia and kidney disease. Amgen, now one of the largest independent biotech firms in the world with annual revenue of over \$14 billion, is headquartered in Thousand Oaks, California, with facilities and subsidiaries in 12 U.S. cities and 34 other countries – none in Illinois.<sup>13</sup> Through CTP, Illinois apparently could not provide sufficient traction of place to retain Amgen; if it had, the IMD would likely have had a strong commercial anchor firm. Still, even with Amgen’s presence in nearby Thousand Oaks, Los Angeles distantly trails California’s two leading biotech regions. The mere presence of anchor companies, facilities like technology parks and incubators, and strong university-based research is not sufficient to achieve regional success (Feldman et al., 1994; Massey et al., 1993).

CTP did not reach full occupancy until the late 1990s.<sup>14</sup> Since then, the Research Center has “graduated” more companies, establishing a basis for success of the Park.<sup>15</sup> The Chicago region, however, is not considered a top biotechnology center, above average in research but below average in commercialization, despite the presence of one of the largest concentrations of pharmaceutical employment (Powell et al., 2012; DeVol et al., 2009; Cortright and Mayer, 2002).<sup>16</sup> The northern suburbs of Chicago house the headquarters of the global, diversified healthcare

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11 Amgen’s leadership openly questioned their own commitment to CTP after Illinois’ “blue-sky” laws, which regulate the sale of securities to prevent fraud, prevented the firm from issuing stock in the state. *Chicago Tribune*, 17 June 1983.

12 *Ibid.*

13 Amgen, Fact Sheet: About Amgen, 11 August 2009.

14 Illinois Medical District Commission. 1998. *Illinois Medical District Biennial Report*, 97-98. Chicago, Illinois.

15 *Ibid.*

16 Of course, no consensus ranking exists over biotechnology and life sciences industries – or even consensus over what these activities entail and how they might be measured. For instance, some of the Milken Institutes’s various life sciences rankings place Chicago nearer to the top, based on its strengths in health services employment and the medical devices sub-industry; other rankings produced by the same organization, but with different emphases and different indicators, do not include Chicago. Perhaps reflective of the whatever intangible qualities of innovation the developmental state of the Chicago region lacks, the “creativity index” in Florida (2002) ranks the Chicago region 39th among US metros.

technology firm Abbott Labs and its bio-pharmaceutical research-oriented sibling AbbVie, spun-off in 2013 to create one of the largest independent biotechnology companies. Together, the global operations of AbbVie and Abbott Labs generate about \$40 billion in annual revenue and employ over 100 thousand workers; AbbVie's Humira, the leading drug for rheumatoid arthritis, alone generated global sales of \$11 billion in 2014.<sup>17</sup> However, Chicago lacks the venture capital and dense network linkages among small firms that characterize leading biotech regions like the Bay Area, Boston, and San Diego and has failed to keep pace with the gains of other clusters like the Research Triangle area and Seattle.

### **Fiscal discipline, ongoing expansion**

Since 2001, the biennial reports of the IMD have stressed under the heading "fiscal discipline, strong performance" that "local" revenue has increased as General Revenue Funds Appropriations from the state legislature have declined dramatically from \$1,118,800 in fiscal year 2003 to \$184,000 in 2007. Fiscal year 2008 marked the end of operational funding support from the state. In other words, the state has gradually backed away from underwriting the activities of the District, a process initiated within ten years of the district's initial legislation and only concluding in the 2000s. In fact, the state's practice of underwriting the Commission's operations had been a source of contention since 1977, when Governor Walker refused to sign its appropriation bill on the grounds that more generalized state agencies could more efficiently manage the specialized Commission's tasks. At that time, the Commission voted to pay its staff with revenue generated from some 70 Commission-owned apartment properties within the District instead of depositing the majority of that revenue within the state's general fund.<sup>18</sup> As state support declined, the Commission adapted by embracing new investment strategies, partly in response to changing opportunities to monetize its land and partly to support the organization's existence. As a result, the Commission increasingly engaged in development that only loosely intersected with the original care, research, and teaching and the later technology commercialization mission of the district.

By the 1980s the Commission or its institutions owned the vast majority of land targeted for development within the 1941 boundaries. The noteworthy exception is the Tri-Taylor Historic District, a residential area within the larger medical district which received National Register

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<sup>17</sup> Margaret Patrick, A Must-Read Overview of the US Biotechnology Industry, Market Realist, 2 July 2015, <http://marketrealist.com/2015/07/must-read-overview-us-biotechnology-industry/>

<sup>18</sup> Chicago Tribune [3 July 1976]

of Historic Places designation in 1983.<sup>19</sup> Tri-Taylor had escaped the slow but steady creep of land acquisition by virtue of its outlying position on the western edge of the IMD. Already, the Commission was the Tri-Taylor's biggest landlord with 50 rental units as well as vacant properties. Noting the shift from decline to renovation within the small area, development goals began to include the conservation and renovation of adjacent residential areas to provide attractive housing for district employees.<sup>20</sup> The Commission immediately followed the 1983 historic designation by auctioning some of its own Tri-Taylor properties, with preference for owners with resources to improve the properties and with intentions to actually reside in the homes.<sup>21</sup>

Housing within the District Development Area to the south, however, was not as fortunate. By the 2000s, most of the expanded District Development Area had been evicted and acquired by the Commission. The proximate justification for the purchases was a planned state campus complex at Damen and Roosevelt, today occupied by a large FBI building and a state forensic crime lab.<sup>22</sup> More generally, the District Master Plan called for the replacement of remaining housing with new facilities in the District Development Area. Here, actual development has proceeded piecemeal and lagged behind land acquisition. All but four residential structures within the district development area have been demolished: one vacant and a cluster of three occupied adjacent buildings. In absence of life sciences industry or institutional tenants, the Commission turned to other possibilities, including a nine-acre strip retail center completed in 2002 with Enterprise Zone incentives<sup>23</sup> and, more recently, big-box development.<sup>24</sup>

In 1998, the entire District Development Area and much of the CTP were included in the Western/Ogden Tax Increment Financing (TIF) district.<sup>25</sup> The Master Plan envisions the District Development Area as a potential location for "graduates" of the CTP incubator facilities, in theory passing growing companies from the incubator's nurturing entrepreneurship supports to TIF and Enterprise Zone incentives for freestanding development. In practice, the District

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19 Listing resulted from preservation advocacy, mainly by the Tri-Taylor Conservation Association and Landmarks Illinois, which financed improvement projects in the district and from Tri-Taylor's unique position as an "island surrounded by change". See Chicago Tribune [18 Oct 1981 and 25 Mar 1983].

20 Department of Planning, p.15.

21 Chicago Tribune [7 Oct 1983]

22 IMD Commission 1998, 2006.

23 Illinois Medical District, Biennial Report, 2002.

24 A 2009 special "use-value" hearing of the Commission determined that a proposed Costco on a site next to the retail center would fall within the purview of the Medical District Act. The Commission approved the project.

25 Portions of Rush University and the original Cook County property lie within a separate TIF district.



Development Area has failed to emerge as a location for growing companies. Whether framed with reference to a hub-and-spoke model or a linear model of innovation, this arrangement is logically predicated on territorializing the innovation process within the boundaries of a single district; and similar approaches to developing innovation facilities in advance (and often in absence) of the more nebulous dynamics of innovative clusters is observable in other districts without a strong biotech presence.

As state appropriations declined, the Commission increasingly shifted its revenue mix to local sources, i.e., leasing income from CTP and retail center tenants. In 2006, the IMD Commission took out a \$40 million moral obligation bond to construct additional laboratory space in the CTP and became an instrumentality of the Illinois Municipal Retirement Fund, which according to the Commission “demonstrates the IMDC’s successful departure from state appropriations and legislative intent regarding IMDC’s non-state agency standing”.<sup>26</sup> While the state of Illinois remains the IMD’s largest tenant (including UIC and several other state facilities), in the aftermath of the 1940s-1970s expansionary heyday, the Commission has responded to fiscal tightening by renting to a wider range of tenants that are both locally serving (the retail center) and putatively export-oriented (biotech start-ups). While District institutions remain providers of care, the District’s primary purpose has shifted from providing top notch care to serving as a node at various points in a regional system of innovation. Though its economic development discourse has moved away from anti-blight goals and toward high-tech regional and statewide development, neither the 1940s grand campus scheme for development nor the 1980s vision for an innovation hub has fully materialized. Over much of IMD’s expanse, surface parking and empty lots have replaced residential neighborhood spaces – marking the incomplete aspiration for conforming the “highest and best” land uses to the postwar health care system and, later, for an expanded biomedical economy.

### **Change of leadership, change of direction**

While plans for the 2006 bond collapsed during the recession, the Commission used the funding to purchase a long-vacant plot of land that used to house the Chicago Medical School.<sup>27</sup> To cover the bond payments, the IMD Commission sought leases for non-health and life sciences projects for the District Development Area, notably a Costco and a “vertiport” helicopter landing pad to service Loop businesses and district hospitals. The commission was on the verge of missing

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<sup>26</sup> Illinois Medical District Commission, Illinois Medical District Biennial Report, 2007-2008. Chicago, Illinois.

<sup>27</sup> Andrew L. Wang, Illinois Medical District on a debt march, *Crain’s Chicago Business*, 22 February 2012.

payments on the bond and technically defaulted by failing to meet debt coverage reserve ratios in 2010, although an accounting error masked the default until an audit released two years later.<sup>28</sup> In 2012, to prevent default, the state gave the IMD a one-time \$4.5 million cash infusion.<sup>29</sup>

Shortly after the rescue, the governor stepped in to replace the board. In total, six new members were appointed to the seven-member Commission, and the new board hired Warren Ribley, former director of the Illinois Department of Commerce and Economic Opportunity, as the executive director charged with reviving the organization's mission and stabilizing its financial woes. The Illinois legislature also amended the IMD legislation to designate the IMD Commission as a unit of local government, freeing it from state procurement rules, expanding financing options, and allowing for the retention of funds from the sale of land – essentially emancipating the IMD from its historical existence as a state agency. Since previous commissions were viewed alternately as largely dormant, or even an impediment to meaningful collaboration, changing perception and fostering collaboration has been an initial success of the new leadership. According to a post-change staff member, the organization's priorities has moved from land to collaboration:

Perception in the past was that we were a really big agency. We own land, we lease land, and that was it. In some cases, I heard that previous commissions were an impediment to making progress with the institutions. So really at the core of it, this commission is really focused on enabling that core mission and really focused on any type of collaboration we can help convene or facilitate. We can help that with some of the land that we own. That's also a part of it. But really, the focus of this commission is really on fostering the collaboration.<sup>30</sup>

A large part of this effort boils down to marketing and relationships with both district institutions and other regional life sciences economic development organizations. Externally, the Commission has actively marketed the IMD to the life sciences industry, e.g., by partnering to host four BIO conferences since 2008 and participating in site selection inquiries. Internally, the Commission has also made headway on developing new collaboration projects and transformative place-based investments.

As a first move, the new leadership engaged Boston Consulting Group to develop a strategic plan with participation from 50 district stakeholders. According to the Commission president:

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28 Claire Bushey, Medical District says accounting error masked 2010 bond default, *Crain's Chicago Business*, 6 February 2012.

29 Tim Novak, Medical district may fall \$15 million short on repaying debt, *Chicago Sun Times*, 14 March 2015.

30 Interview with IMD Commission executive, 20 June 2014.

For reasons which we may as well leave to history, because negative discussion is not why we are here today, the IMD never achieved [its] legislative objectives... there has never been a strategic planning process with the engagement of its stakeholders.<sup>31</sup>

The strategic plan has largely set the stage for new Commission's activities.

The process identified four priorities for evaluating the alignment of potential projects: infrastructure and development, community health, translational research, and clinical data. This formulation explicitly envisions the old focus on real estate as the means, not the end, of the mission of the IMD Commission.<sup>32</sup> The new organization emphasizes improving collaboration on research projects, as the consultants:

learned 500 principal investigators in the District received National Institutes of Health (NIH) funding between 2009 and 2012, and more than 700 clinical trials took place within the District. However, only 20 percent of research collaborations occurred between District partners, indicating a clear opportunity for more collaboration and pooling of resources.<sup>33</sup>

Exemplifying this new collaborative emphasis, the IMD Commission played a key role in convening a clinical data sharing consortium of 17 regional health care organizations to submit a successful application to participate as one of eleven national nodes in the Patient Centered Outcomes Research Initiative (PCORI), a \$7 million award. The Affordable Care Act established PCORI to expand the reach and impact of comparative effectiveness research – essentially, to constrain the adoption of expensive high-tech care modalities and organizational delivery models that yield little comparative benefit with regard to access and quality over alternatives (Barr, 2011, 68).<sup>34</sup>

Requiring at least two health care institutions and one million enrolled patients, the grant's goals stretch from supporting comparative effectiveness research to reducing disparities. It also provides a regional demonstration project for overcoming barriers to clinical data integration.<sup>35</sup> This project represents a first step toward a broader role for the district organization to act as a neutral third party convener where meaningful inter-organizational partnerships, while incentivized, face obstructions due to the complexity of data sharing and the inertia of organizational silos. For large and small health care organizations, health information technology provides one of the greatest fields of opportunity as policy-makers stress its potential for

31 Illinois Medical District reveals first-ever "strategic plan", *Daily Whale*, 20 March 2013.

32 Interviews with senior IMD staff, 20 June 2014

33 Illinois Medical District Commission, Illinois Medical District – District of Opportunity, 2013.

34 While the ACA gives the most significant regulatory weight to-date to the principle of comparative effectiveness research, the law is explicit in limiting the research finding from mandating insurance coverage or payment on the basis of cost-effectiveness (Barr, 2011, 69).

35 IMD Commission, Biennial Report 2013–2014, p.19.

overcoming information barriers to market efficiency, generating cost-savings and improved outcomes from coordinated care. Data sharing also faces deeply entrenched organizational challenges, ranging from technical barriers and clinical work-flow integration to the reticence of organizations to share information with their market competitors. A large number and variety of similarly pitched regional consortium programs are underway nationally, and neutral third party organizations play a critical role in convening various stakeholders and acting as fiscal agents.

Initially, the IMD Commission was approached by a University of Illinois researcher to be a neutral convener for the hospitals in the district. The Commission soon found that Rush had already been invited to participate in a competing application by University of Chicago, and that Northwestern was also planning to submit its own application. Rather than submitting three Chicagoland applications for the same award, the Commission staff recognized the overlap and helped to consolidate the applications and improve the region's chance for success. When other organizations recognized the potential for favoritism toward district institutions, the Commission stepped back and allowed Chicago Community Trust to assume the neutral role as a fiscal agent, though IMD Commission continues to provide administrative support and to demonstrate its capacity to serve as a neutral convener to institutions both inside and outside of the district boundaries. Meaningful collaboration is, at the same time, widely perceived as the major condition for success – almost to the point of being forced by national funding agencies – but one of the most difficult conditions to achieve:

From the leadership down, most people are very bought in to collaboration. When you get down into the details, then yes, some people can be territorial. At the core of it, these are competitive institutions.<sup>36</sup>

Just as the clinical data sharing project seeks to leverage the large patient base of the IMD for research, the Commission is seeking to position the district for building on the roughly 700 clinical trials underway by district institutions. The main selling point is the large, diverse patient base of the district, which in theory provides an asset to attracting clinical studies. For instance, promotional materials and interviews repeatedly stressed the finding of the Boston Consulting Group that the IMD processes a more diverse patient population than any of the six benchmark “health districts” included in the study.<sup>37</sup> None of the comparison cases – Research Triangle Park in Raleigh-Durham, Indiana BioCrossroads, Mission Bay Development Area in San Francisco, Science Center at University Park in Philadelphia, Lake Nona Medical

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<sup>36</sup> Interview with IMD Commission executive, 20 June 2014.

<sup>37</sup> Interviews with senior IMD staff, 20 June 2014 and 3 July 2014.

City in Orlando, and New York City Bioscience Initiative – are conventional medical districts historically oriented toward in-patient care in general hospitals; only Mission Bay and Lake Nona include health care facilities. While the perceived diversity of the patient base may be driven by arbitrary comparisons, it is best explained by the presence of Cook County Hospital and the historical role of the IMD as the site of safety-net care in Chicago. The notion of diversity as a resource also demonstrates the emphasis on not only raw technologies sketched out within the walls of research institutions but also patients and their medical records as a resource for participating in the commercial economy of life sciences innovation. Another example is the proposed concept of a “patient advocacy hub,” which would bring patient advocacy groups into contact with academic medical centers and commercial research and technology organizations.<sup>38</sup>

While these activities demonstrate that the current IMD Commission is more concretely embracing a broader scope than in previous decades, developing the large amount of available land in the district has also continued to be a priority. The Commission currently owns 90 acres, with 50 available for development. An updated Master Plan adopted in 2016 also demonstrates a redoubled commitment to promoting cohesive development in the district, for example, by targeting investment at its gateway entry points. Exemplifying this principle, the Gateway Project broke ground in 2016 on a central ten-acre tract that had formerly housed the Chicago Medical School. The Commission’s purchase of the long-troubled property had largely contributed to its debt crisis in the late 2000s. Since 2002, a surface parking lot had occupied the site, separating the CTP from the main hospital and university portions of the district. The \$300 million mixed-use development includes 1.16 million square feet of hotels, retail, office space, laboratory space, a residential tower, and parking. All of this is intended not only to develop a centrally located, underutilized portion of the district but also as a high-visibility investment in place-making at a key entry point of the district. While the Gateway project is, by far, the most significant new Commission-led investment, staff have continued to pursue opportunities for attracting new tenants through site-selection referrals and inquiries by potential companies, facilitating interactions with district institutions, and actually providing land for development.

The previous commission turned over management of the CTP incubator to UIC, which renamed the facility EnterpriseWorks Chicago. In 2013, a second incubator facility, named “Health, Technology, and Innovation,” broke ground with state funding. This incubator focuses on nurturing very early proof-of-concept companies by providing access to wet and dry lab

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38 Interview with senior IMD staff, 20 June 2014; IMD Commission, Biennial Report 2013–2014, p.19.

space and technical support in exchange for a membership fee. The new commission has also stressed the need to conduct additional strategic planning for the underutilized CTP.

The IMD Commission's accounts have returned to the black with new funding streams through leasing office space to the VA and to Cook County Stroger Hospital, which needed new space to process expanded Medicaid enrollments due to the Affordable Care Act. While the financial outlook has improved, the concern over defaulting on bond payments has not been completely assuaged. Without question, the IMD Commission is on far better standing than it was five years ago. The organization's strategic transformation is also reflected in new, more focused place-making investments in the district and related efforts to improve perceptions.

## **Evaluating the Illinois Medical District**

The IMD began through an agglomerative process of locational sorting anchored by Cook County Hospital, the seed that would later create the possibility for postwar district redevelopment planning and, more recently, an only partially successful program of promoting life-sciences commercialization through land availability and institutional linkages. Originally a monument of society's attempt to deliver care through large institutions, the 1914 hospital's boarded-up windows and entrances today symbolize the slow decline of the public-sector's central role as a provider of care. One block to the east, Rush University's new 14-story hospital starkly juxtaposes artifacts of different phases of institutional investment in the built form of the district, and Cook County Hospitals's atrophy has been suffered to varying extents by many other public hospitals. In the Summer of 2016, the Cook County Board approved plans to redevelop the long-shuttered hospital into apartments, a hotel, retail facilities, restaurants, and parking. While preserving the original facade, the \$600 million mixed-use development would join the IMD Commission-led Gateway Development immediately to the west as a potentially transformational swath of investment in the built environment of the IMD, not through hospitals but through supportive uses, including residences.

Potentially, a more contemporary mode of place-making for residents, workers, and institutions could transform the district's current landscape: disconnected, simultaneously under- and over-developed, and littered with the physical legacy of previous layers of investment in the health care system. Efforts to transform the IMD into an upgraded built environment, a more focused platform for technology commercialization, and an a springboard to meaningful institutional collaboration are well underway. After the debt march and missed opportunities of the 2000s, the pattern of development in the 2010s have converged toward the characteristics

of an innovation district, which the original Brookings paper defines as “geographic areas where leading-edge anchor institutions and companies cluster and connect with start-ups, business incubators and accelerators,” that are also “physically compact, transit-accessible, and technically-wired and offer mixed-use housing, office, and retail” (Katz and Wagner, 2014a). Of course, as Katz et al. (2014) clarify, the concept of the innovation district remains flexible, difficult to evaluate, and susceptible to adoption as a marketing slogan more than as a meaningful model for prioritizing resources. The same is true for previous paradigms of development in the IMD.

Table 8.1 roughly relates these layers of investment and their associated development foci to summary impact indicators of the district’s contribution as presented by the IMD Commission itself through its biennial reports to the state legislature. While inpatient beds do not necessarily serve as perfect indicators of capacity, especially when comparing across different years with highly different organizations of care processes, the decline from a 1960s height of 7,000 to its current total of 2,200 speaks to the relative transition of district as a *place* away from traditional markers of its institutional public service functions. This shift has certainly not resulted solely from the district’s creation, but the Commission has served to balance the opportunities and pressures of restructuring in its urban medical institutions with those of the city as a whole. On the economic development side, the Commission’s primary quantification of impact has shifted from estimated institutional land value (1944, 1966), which places a magnitude on the blight-clearance and development activities of the Commission, toward standard contemporary economic development measures – fiscal impacts, jobs, and economic impact (direct and indirect), and volume of research funding. The realignment of priorities occurred well in advance of the 2010s strategic re-direction of the IMD Commission.

The IMD has broadened its medical institutional focus to accept a range of other institutions and a life sciences-focused high-tech business incubator. This entrepreneurial flexibility has allowed the district to continue development through phases of fiscal retrenchment after its 1960s heyday of expansion. The evolution of the district’s medical-institutional anchors has produced qualitatively and quantitatively different phases of investment, which are in turn traced out in the built environment and its expanding borders. By extension, this spatial form and its expansionary tendencies have developed in tandem with the restructuring of the health care safety-net and the shifting mission of academic medical centers away from their traditional role in caring for the poor. These overlapping historical-institutional and geographic perspectives provide a basis for recasting the seemingly innocuous blending of policy priorities

Table 8.1: Changing indicators of “impact” by the IMD Commission

		1944	1966	2008
Capacity	Inpatient beds	4,900	7,000	2,200
	Annual inpatient visits	89,000	130,000	NL
	Annual clinic visits	426,000	130,000	NL
	Doctors	800	2760	NL
	Students	3,382	4,403	NL
	Employees	NL	20,471	20,000 (+30,000 indirect)
Impact	Property value	Existing: 80M Planned: \$250M	Existing: 300M Planned: \$550M	NL
	Fiscal	NL	NL	State taxes: \$80M Local taxes: \$34M
	Regional economy	NL	NL	Total compensation:\$2 Bn Research: \$220M
				Total econ impact: \$3.3 Bn

“NL” means “not listed”. Total compensation includes indirect and direct.

Source: Biennial Reports.

– e.g., “vital ground for health and technology” – that are driving the creation, promotion, and theory of action within biomedical districts.

The definition and enforcement of boundaries occupies a crucial moment of the process of medical district development. This territorial approach to place-based development strategies subjects space to special governance and regulation and plays a key role in marketing medical districts as new “economic engines” capable of re-industrializing local economies and anchoring property revitalization. In the IMD case, these boundaries also technically facilitated the shift of the district from ethnic neighborhood to medical-institutional complex. Eviction and displacement outran the development of the district. While the IMD’s association with displacement is a product of its historical intersection with Urban Renewal-era spatial politics and Chicago’s powerful downtown development coalition, the function of borders as both constitutive and technical certainly has been one of the hallmarks of the recent proliferation in medical district development strategies in other localities.

Any attempt to harshly evaluate previous rounds of development in the IMD must be tempered by the fact that nearly 30,000 jobs exist within its boundaries. It is plausible that many of these jobs might have fled to the suburbs without the district’s establishment. In short, evaluating medical districts is not simply a matter of quantifying jobs or displacement or patents or quality and quantity of care but of tracing the causal relationships between each of these outcomes. While the case highlights some of the pitfalls associated with territorial development strategies, these strategies certainly can play an effective role in development, and



Eds and Meds institutions are hardly the instruments of displacement and renewal of decades past (Perry and Wiewel, 2005b).

After the heyday of 1960s-1970s expansion, recent place-based discourses of life-sciences innovation have justified new rounds of development with uneven results. The case suggests that the simple matter of tapping existing assets through strategic development projects, such as biotech incubators, will not solve more complex, historically entrenched barriers to innovation. For medical districts, the ubiquitous innovation discourse behind recent rounds of place-marketing and land development lies on shaky footing highly dependent on local context. Dominated by allusions to Silicon Valley and other regional success stories of innovation, the contemporary framework for development policy tends to locate causality with a lack of access to venture capital and difficult to measure notions of knowledge transfer, inter-organizational networks, and leadership. In this context, success is difficult to evaluate but easy to claim.

The IMD case shows that, for biomedical districts, local contextual factors stemming from the regulatory-driven priorities of anchor institutions and the path-dependence of previous development strategies can carry greater causal influence in addition to the objects of cluster-focused policy and study. For the IMD, the innovation district paradigm has provided a ready-made strategy for the re-invigoration of an antiquated redevelopment agency on shaky financial footing. While this paradigm legitimizes a renewed focus on place-making and collaboration, it also foregrounds the “ecosystem” of start-ups without providing meaningful insight on the complex institutions which still overwhelmingly dominate the economic impacts of the IMD. The leadership change in the 2010s has largely been seen as effective, first, by addressing the Commission’s financial problems and, second, by demonstrating measurable progress toward the ideal of the innovation district. However, leadership – even better leadership – has limited causal capacity to shape development when action is also doubly constrained by the restructuring of urban economies and the health care system. Ultimately, even if the IMD successfully transforms into a platform for start-up and maturing technology companies, its economic contribution will still largely be defined by the job creation and investment of large institutions. Some of the fruits of meaningful inter-organizational collaboration, such as the clinical data sharing network, are more difficult to see, but also more organizationally complex and potentially more impactful for the economy and the health care system than a development program of housing technology companies and place-making through hotels, residences, and retail.

## 8.2 The TMC's path to "innovation district"

Over the 1970s and 1980s, TMC's growth eclipsed that of its closest peer, Chicago's IMD to become the largest urban medical district. Today the TMC counts 1,345 acres – over two square miles – among its own and its institutions' land holdings. Collectively, TMC employs 106,000 people. Table 8.2 further illustrates the staggering pace of TMC's growth and its economic footprint. While beds have nearly tripled since the early 60s, employment has increased ten-fold. By comparison, IMD contains under 30,000 employees and 4 hospitals within its 560 acres, a large portion of which is either occupied by residential and light commercial uses or remains undeveloped.

Over its first few decades of growth, the TMC organization consolidated its primary role around parking and infrastructure management. Ostensibly in response to an understandable lack of clarity about what a medical center "does" if it does not provide care, TMC's public relations materials by the 1990s were representing the organization as analogous to a municipal government, possibly as an artifact of its position as an island of strong land use controls in the weakly regulated urban geography of Houston.<sup>39</sup> Recent years have seen a continued refinement of these more conventional aspects of planning with updates to the parking system, signage, branding, and a 50-year master plan. However, the TMC's current leadership has also assumed a more entrepreneurial approach to ensure that continued development adapts both to salient changes in the configuration of opportunities in biomedical economy and to widespread regional interest in elevating Houston's lagging status in the biotechnology industry. In the original Brookings paper on the innovation district, Katz and Wagner (2014a, 3,30) recognize the leadership change in conjunction with labeling the TMC an example of the "anchor plus" variant – but only an "emerging" example, despite dwarfing the geographical scope, level of prior and ongoing physical investment, and employment numbers of all other innovation districts cited in the report. The TMC's ambitious slate of projects are currently "almost exclusively focused on innovation" and bringing research "from bench to bed".<sup>40</sup> Put differently, despite its many successes, TMC has historically not done innovation and commercialization very well.

Since the early 1980s oil recession brought massive job loss to Houston, economic development actors have stressed the diversity of the region's economy. The life sciences are now recognized as a major pillar of the Houston economy (along with oil and gas, aerospace, and trade and logistics), and the TMC provides an imposing symbol of this ongoing makeover of

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<sup>39</sup> This perspective was repeated in interviews with staff.

<sup>40</sup> Presentation by TMC executive, 23 October 2015.

Table 8.2: TMC growth

	1963	1973	1983	1993	2000	2010
Patient visits	806,656	1,252,268	2,200,000	3,087,664	5,446,000	7,200,000
Licensed beds	2,641	3,486	4,520	6,694	6,014	7,000
Employees	9,031	17,586	28,633	54,774	61,041	106,000

Source: Elliott 2004, McGovern Collection archives, TMC website.

Houston as more than a petroleum-based regional economy. The 1980s identity crisis of the Houston economy also coincided with a profound reorganization of the driving forces in the biomedical economy.

The shift of care away from inpatient settings, especially after Medicare prospective payments in 1982, began to undermine the very identity of the TMC as a place dominated by inpatient care. Some of its hospitals have reduced capacity and merged, while others have established regional networks. Proximity has certainly aided in the transition of TMC's institutions through re-organization strategies during the wave of hospital mergers, acquisitions, and closures since the 1980s. As early as 1970, BCM and Methodist merged clinical facilities. In 1997, Hermann Hospital merged with Memorial Healthcare System, which had five hospitals at the time. Today, Memorial-Hermann-TMC is the flagship of a twelve hospital system. Likewise, Houston Methodist now encompasses several regional hospitals. In 2014, Catholic Health Initiatives (CHI), one of the nation's largest health care systems, and BCM jointly acquired St. Lukes hospital, now Baylor St. Luke's Medical Center, shortly after CHI acquired St. Luke's health system. As these multi-hospital systems undergo reorganizations, jockey for market position, and construct facilities closer to suburban patients, their flagship hospitals and regional referral centers remain in TMC. To a degree, locational proximity in the district mediates the dynamics of competition and cooperation among hospital systems in Greater Houston. Since neither the University of Texas nor Baylor College of Medicine run their own hospitals, inter-institutional dependencies for teaching opportunities, staffing, and patient care are less hindered by competition than they might otherwise be.

As table 8.3 shows, the concentration of biomedical capacity in Harris County (as measured by beds) has dissipated somewhat with growth in outlying areas. As the total count of beds has fallen (not an uncommon observation due to the shift away from in-patient care), the share of beds contained within TMC has fallen also. By comparison, the employment split has actually

Table 8.3: Growth inside and outside of TMC. Note that 2010 expenses do not include M.D. Anderson Cancer Center

		1982	2010
Beds	TMC	5,513	4,715
	Rest of county	10,341	9,811
Personnel	TMC	22,723	39,482
	Rest of county	23,764	36,241
Expenses	TMC	\$772,918,915	\$3,582,860,759
	Rest of county	\$970,269,063	\$5,181,467,051

Source: American Hospital Association Annual Survey.

Note that this only includes 10 “general medical and surgical” hospitals, whereas the TMC claims 14 total hospitals, and 7000 beds. Dollars are not adjusted for inflation. MD Anderson did not report expenses, which is probably why TMC is equal to rest of Harris County in 2010.

shifted toward TMC, and TMC hospitals now employ more people than the rest of the hospitals in Harris county.<sup>41</sup> However, the tenor of health care reform has broadly de-emphasized in-patient care. In response, hospitals have shifted to focus on advanced procedures and research. TMC and its institutions are well aware that the district’s economic future, though still tied to Greater Houston’s continued growth, lies increasingly in building from existing clinical capacity to transform into an “ecosystem” that links research to life sciences industries. According to a TMC executive, growth will continue but in research facilities, not in the 45 million square feet devoted to in-patient care, while in-patient facilities will increasingly compete on the basis of outcomes and quality of care:

As long as Houston continues to grow as it has, we will continue to grow. We may not see more patient beds, but we will see the influence in education and research... If you look at the way health care is being financed, and if you look at the changes under the ACA, the impetus to get “butts in bed” will no longer be advantageous. Having an appropriate primary and preventive care strategy, which is where a lot of the impetus in health care is going to be moving towards under these different financing vehicles, the inpatient piece will not be as important. But making sure that they get their treatment quickly, high quality, lower re-admission rate, lower mortality and morbidity rates, that’s where they’re going to spend their time.<sup>42</sup>

<sup>41</sup> This is likely also true for total expenditures. However, M.D. Anderson did not report 2010 expenditures in the AHA survey.

<sup>42</sup> Interview with TMC executive, 14 August 2013.

Yet as of late 2015, 3.5 million square feet of clinical space were currently under development, which a TMC executive admitted was curious in the context of the shift from fee-for-service to quality- and outcome-based payment metrics. The explanation depended on, first, catching up on building programs delayed by the bond market's hit during the recession and, second, the expansion of high-level tertiary care and outpatient facilities.<sup>43</sup>

While TMC has been an economic success on the hospital and teaching side, its portfolio of biomedical technology commercialization has lagged. Despite widespread industry targeting programs since the 1990s, biotechnology remains overwhelmingly concentrated in three regions: the Bay Area, Boston, and San Diego. As Powell et al. (2012) have shown, these regions are characterized by markedly different network structures than other notable but lagging "emergent" clusters, a group which includes Houston. In addition to larger volumes of angel and venture capital investment, successful regions reveal deeper, more localized, more complex inter-firm networks that have transitioned away from dependency on research and government institutions (Saxenian, 1996). In this sense, Houston remains underdeveloped as a life science cluster. Even among successful spin-offs of TMC research, the threat always exists that venture capital or acquisitions will come with the condition that the firm relocate to the east or west coast. In fact, this was the experience of Tanox, Houston's most successful bio-pharmaceutical start-up to date.

BioHouston was championed by new leadership at MD Anderson, who had come from San Diego over decade ago.<sup>44</sup> Unlike BioCom in San Diego or MassBio in Boston, the academic institutions comprised the founding members, not industry. BioHouston is focused on retaining intellectual capital from the TMC in Houston and leveraging state support for life sciences, such as the 2007 Cancer Prevention Research Institute of Texas (\$300 million per year over ten years, passed under support of MD Anderson and Lance Armstrong).

In addition to the research and prestige of the TMC, Houston offers a potentially attractive mix of characteristics relative to leading biotech centers: big-city amenities, affordable housing, a lightly regulated business climate, and no state income tax. From BioHouston's reading, the perception in Houston is that the raw research and assets exist, but the commercial development has not been forthcoming:

We have a great "R," top notch research in Houston. It's the development part, the "D," – and yes, we conduct a whole bunch of clinical trials... – but "D" really means a whole heck of a lot more. Ultimately, getting across the goal line at the FDA, marketing a

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43 Presentation by TMC executive, 23 October 2015.

44 Interview with BioHouston, 13 August 2013

product, and getting it to patients, there's a long path there; and part of what Houston and Texas have lacked is that piece of the pie.<sup>45</sup>

Houston lacks the kind of human capital to “understand the market” sufficiently to support drug development that exists in La Jolla and Boston. As a result, Houston has been perceived as being in a success trap that sees successful companies relocate to the leading regions, where management talent prefers to live and where venture capital is located. The main example is Tanox, a biotech company located near the TMC that recruited workers from the TMC and is best known for developing asthma drug Xolair. Tanox became the first major acquisition by South San Francisco's Genentech in a \$919 million deal in 2007, which had previously shunned its rival Amgen's strategy of acquiring other promising research companies. Genentech was in turn acquired by pharma giant Roche in 2009.

Meanwhile, the TMC has continued to deepen collaboration aside from research and translation. The TMC hosts a number of leadership councils for member institutions. In the 1990s and 2000s, the topics of the policy council meetings ranged widely, for example:

Sorting out uncertain federal reforms (e.g., anticipating Medicare payment reductions, organizing a TMC policy commentary on Hillary Clinton's proposed 1990s managed care reforms, along with the nation's leading academic medical centers, holding presentations on the impact of the ACA and changes to Medicaid),

Legislative tracking,

Awareness of how the “Justice for Janitors” campaign might affect institutions,

Addressing how post-9/11 travel restrictions might impact the hospitals,

Updating on infrastructure and transportation improvements in the TMC (including the light rail line),

A variety of workforce issues (especially, the chronic shortage of nurses),

Organizing the designation of the TMC as an expanded Major Activities Center in advance of an ultimately failed push to adopt zoning during the 1990s.

In the early 2000s, the TMC also organized a pooled fund based on tiered assessments to collectively finance improvements with shared benefit. In other districts examined for this project, this possibility has often been ruled out due to the financial constraints of the member institutions.<sup>46</sup> To be sure, the scope of the TMC extended beyond parking. However, the background concern for life sciences and research collaboration would come to the foreground in the 2010s.

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<sup>45</sup> Ibid.

<sup>46</sup> An exception is South Texas Medical Center in San Antonio, which also has an assessment program for traffic and signage improvements.

## Leadership change

As with IMD, new leadership has brought an expanded focus to economic development efforts at the TMC. Former chair of Cardiothoracic Surgery at Stanford University School of Medicine, Dr. Robert C. Robbins joined the TMC as president and CEO in 2012, following roughly two decades under the previous leadership. Coming from industry linkages with Silicon Valley companies, Robbins has prioritized the principle of “bench to bed” research, connecting TMC’s unrivaled concentration of clinical providers with its strong research base, and engaging in more “outward-looking” projects than infrastructure, services, and parking.<sup>47</sup> Kendall Square in Boston and Mission Bay in San Francisco have provided the inspiration for new development.

TMC and its institutions, along with Rice University and other economic development organizations, have only recently followed the model of other cities in building incubator/accelerator facilities to house start-ups and to support university tech-transfer efforts in the TMC. TMC Inc. also assumed a greater stake in fostering collaboration through a range of mechanisms, including new facilities. The recent leadership change and expansion of organizational scope is primarily responsible for the nomination of the TMC in Brookings’ recent “innovation district” manifesto as a leading example of the “anchor-plus” variant (Katz and Wagner, 2014b). This new entrepreneurial stance is reflected in the 2014 strategic plan, the outcome of a participatory process among TMC stakeholders from across the institutions in setting priorities that occurred shortly after Robbins’ arrival. The plan’s centerpiece is the creation of “institutes” on the topic of Clinical Research, Genomics, Health Policy, Regenerative Medicine and Innovation, all of which would combine participation from TMC institutions under the umbrella of TMC Inc.

The Genomics Institute, for example, forges connections between Baylor College of Medicine, which housed one of the major sequencing centers in the Human Genome Project, and diagnostic and clinical specialists at MD Anderson and other specialty hospitals in an effort to approach the capacity housed at leading multi-institutional genomics collaborations in Boston. The Clinical Research Institute relies on the large pool of TMC patients and Houston’s status as one of the nation’s most ethnically and racially diverse metropolitan area as the basis for TMC’s potential as a leading site of clinical trials. Since TMC hospitals have traditionally contracted individually through separate institutional review boards (IRB), the Institute’s main strategy involves establishing a common IRB to facilitate the pooling of patients to attract more clinical trials and to provide more leverage in contracting negotiations.

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47 Interview with BioHouston, 13 August 2013; Interview with TMC executive, 14 August 2013; Presentation by TMC executive, 23 October 2015; Interview with Greater Houston Partnership executive, 7 August 2013.

Most significantly, the TMC Innovation Institute has also included investment in the built environment of the district. One of the major motivations for the institutions to support the innovation mission is for recruiting top research faculty, as resources and support for spin-offs can be helpful in luring top talent; another is to better leverage existing research for commercialization. TMC recently opened the TMCx accelerator in an old Nabisco factory that also houses the TMC offices, providing the first major tech accelerator space in Houston (although without wet lab space). Unlike many other accelerators, TMCx provides free space and does not take equity in the start-up companies, although TMC is also establishing a venture fund that will take an equity stake in companies. TMCx+ also provides subsidized space to growing companies. The third franchise of Johnson and Johnson's JLABs has also opened on the property, joining two other facilities in San Diego and South San Francisco and bringing a pharmaceutical presence to Houston. On a TMC-owned property, JLABs operates a co-working and wet lab space for leasing to other small technology firms, which includes technical assistance.

These commercial activities required amending TMC's restrictive covenants, which actually prevented for-profit research and translation activity. The original rules actually limited land use to health care, research, and education, and only allowed for supportive commercial activity, like restaurants and retail. Over the last two years, TMC amended the covenants at the Nabisco building, making the facility into a research translation park, and at another TMC-owned parcel with even more ambitious plans for development.

The next major TMC-led building project is TMC3 Innovation Campus, a mixed-use research campus announced in late 2015 and expected to cost over \$1.5 billion. The number three refers to positioning Houston as the "third coast" of biotech.<sup>48</sup> Given several large research-oriented building programs by TMC member institutions, the TMC proposed clustering research space on one 30-acre site, transforming a surface parking lot to resemble the UCSF-anchored Mission Bay model in San Francisco and creating a "honey pot" of concentrated research activity and invite industry to participate.<sup>49</sup> The TMC3 design visually references a double-helix, with institutional research space arrayed around a central common public space and common laboratory facilities. The common facilities are intended, on one hand, to reduce construction costs and, on the other, to architecturally reinforce cross-institutional interactions and collaboration among the TMC3 anchor tenants – The University of Texas, Texas A&M, Baylor College of Medicine

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48 Nancy Sarnoff, Texas Medical Center moves forward with ambitious research project, *Houston Chronicle*, 24 September 2015.

49 Presentation by TMC executive, 23 October 2015.



and the University of Texas M.D. Anderson Cancer Center. The TMC3 project is intended to leverage collaboration to create a hub for biotech in Houston, an welcome objective among the economic development community of Houston but that also faces significant barriers:

On the one hand, a lot of people say that these institutions are incredibly competitive. You're right. They compete for faculty, they compete for research dollars. But the reality is researchers are in a resource-limited environment, and ... they will collaborate because they want to have access to resources... What we're doing is designing around that and enabling them to collaborate in a meaningful way.<sup>50</sup>

However, getting board approval from the three universities on an agreement has been the sticking point in moving forward with TMC3, as the universities would be required to contribute capital to the project. Additional space for leasing to industry lines the edges, reinforcing the link between private enterprise and the foundation of inter-institutional collaboration. The site will also include a conference center, hotel, retail and residential space; and it is possible that these peripheral developments will move forward before the main shared facilities.

To an extent, Houston remains an oil town, even if city leaders have tried to decouple the local economy from the price of petroleum. The focus on economic development lies on creating a diverse, liveable regional economy with global city aspirations. Similarly, TMC remains an unparalleled concentration of patient care facilities, an outlier benefiting from the prolonged coincidence of the institutional expansion of biomedicine and regional economic and population growth in Greater Houston. However, economic development interests in Houston, institutional leadership, and the TMC organization has increasingly embraced the position that the district's competition should not be Johns Hopkins and Cleveland Clinic but Silicon Valley and San Diego.<sup>51</sup>

### 8.3 Inertia and transformation in legacy medical districts

A 1987 *Chicago Tribune* editorial eloquently captures the sense of unrealized potential of the Illinois Medical District:

Those who propose a new Cook County Hospital offering high-level specialty care in a new hi-tech setting may be thinking too small. Chicago needs a bigger vision, a more comprehensive plan, a longer-range strategy for developing a West Side medical center that will integrate and capitalize on this city's enormous medical facilities and make Chicago a mecca for medical care... Tote up the assets Chicago already has to make it a vast, world-famous healing complex, with a West Side medical center at its hub... Then plan carefully to fill in the gaps in care that remain, building judiciously at the

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<sup>50</sup> Ibid.

<sup>51</sup> Interview with TMC executive, 14 August 2013.

rejuvenated West Side complex... Economic benefits to the city would be enormous, as evidenced by the experience of other cities. Houston's growing Texas Medical Center, for example, ... is now the city's largest employer with an indirect impact of \$6.5 billion on the Houston economy. In Chicago, a booming, growing health care industry could help replace lost manufacturing jobs. Making an expanding West Side medical center the nucleus of a world-class medical network would help rejuvenate a deteriorated section of the city and help encourage other development west of the Loop....

What it would take now is leadership to develop the vision, energy to make the vision reality and political skill to pull together all the diverse institutions into a world-class whole without losing their individual strengths and traditional support groups. Unfortunately, political leadership has been obviously and sadly lacking... That leaves a leadership vacuum waiting to be filled from the political or business or health care sector. Given Chicago's tradition of making no small plans that fail to stir the mind, it might be easier to attract a leader to put together a world-class medical network in Chicago than to find one willing just to replace a worn-out County Hospital building. What a historic accomplishment it could be.<sup>52</sup>

This author was not alone in using the TMC to illustrate the shortcomings of the IMD as a life sciences anchor.<sup>53</sup> Yet the view from Houston also saw disappointment in TMC's failure to create a supportive environment for biotechnology, notwithstanding the dramatic extent to which TMC has outshined its peer with seven decades of unabated growth. The two organizations also entered the 2000s in very different financial situations. TMC maintains annual revenues of about \$90 million, mostly from operating half of the district's parking capacity.<sup>54</sup> It also levies an assessment on its members for shared facilities and services. The IMD, on the other hand, has long provoked ire from its state underwriters, and the gradual removal of funding had been completed by 2008. This resulted in a bond default as the Commission scrambled to generate revenue without much of a clear vision for contributing to a strategic program of development. Even after the IMD's turnaround, the commission was earning about \$5 million in revenues and still must pay off the 2008 bond.

Thus, the experience of both districts from the 1980s through the 2000s may be interpreted as a time of piecemeal adaptation, as inertia prevented adaptation to a changing landscape of fiscal constraints and development opportunities. The TMC presented an picture of success; and the IMD, a narrative of creeping failure. Despite the divergence, the 2010s appear to have finally brought metamorphosis both to the district organizations and to the pattern of major investments in economic development and collective benefit of member institutions. Organizationally, both the TMC and IMD have adopted new strategic plans oriented not only

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<sup>52</sup> "Chicago as a world-class medical center," Chicago Tribune, 6 July 1987.

<sup>53</sup> Chicago Enterprise article

<sup>54</sup> Interview; IRS-990 forms, 2012, 2013, and 2014.

to institutional land requirements and vaguely aspirational attempts to promote innovation but also to more focused forays into the life sciences economy that privileges cross-organizational collaboration. The historical objective to provide space for care, research, and education has been replaced by the contemporary model of building a self-sustaining innovative “ecosystem” simultaneously anchored by and seeking to overcome the earlier layers of investment. Along the way, the legacy medical districts have converged toward a model of development put forth by more recent adopters of the biomedical district as an approach to development.

The strategic reorientation of the TMC and the IMD – as organizations and as districts – remains an ongoing process. The temptation to look favorably on recent transitions supports the interpretation that “leadership matters” (Birch et al. 2013). Indeed, the case studies show that leadership has provided a crucial component of the change in the direction, and both district organizations are enjoying more support from other governmental actors and indications of more meaningful collaboration from member organizations. Part of the apparent success of new leadership stems from the mounting pressure on institutions to collaborate and obtain buy-in from political supporters eager to see catalyzing investments in the built environment as visible signs of progress toward addressing regional lags in the life sciences economy. However, it is impossible at this stage to distinguish long-term outcomes from short-term momentum. Houston and Chicago have more of the necessary (but insufficient) assets for cluster formation than most cities pursuing similar strategies, but TMC and IMD ultimately can accomplish little without their member institutions.

But who would stand to benefit if these transformations are successful? The biomedical district organizations would gain stability, influence over development, and advance their position as intermediaries of collaboration. The member hospitals would gain access to new revenues and improve their surroundings in ways that can help with recruitment. Technology companies would gain access to new research pipelines and opportunities for subsidized lab space. Certainly, any holders of new jobs would also benefit. Neither the IMD nor the TMC has overtly leveraged partnerships to promote a community-based approach to hiring and development in the style of the “Cleveland model”.<sup>55</sup> The tech-driven model of development essentially depends on large-scale job creation to extend broad-based benefits beyond very skilled workers.<sup>56</sup>

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55 Community members successfully mobilized the support of several aldermen to require a community benefits agreement for the developer of the Gateway project, but the original agreement included only discretionary minority hiring.

56 An exception is pharmaceutical and device manufacturing (Lowe, 2007).

In closing, these two districts began as monuments to previous expansions of medicine. Both have historically played a large role in way medicine is encountered by a diverse group of residents of their respective regions. For better or for worse, these two cases represent iconic landscapes of twentieth century medicine: Cook County Hospital and the skyline of the Texas Medical Center main campus. They began in a manner that normalized society's commitment to expanding charitable health care and exposing a wider social and geographic swath of people to advanced medical science and technology. This role is changing along with the type of development projects pursued by the district organizations. The next chapter explores the transformation of another iconic, troubled twentieth century medical institution, Charity Hospital in New Orleans, in a process shaped more by the *idea* of a biomedical district than an actual organizational planning capacity.

## Chapter 9

# New Orleans: The impossible, irresistible vision of a biomedical district around Charity Hospital

As a case study of the biomedical district, New Orleans presents a different challenge. Rather than stability as in the Houston and Chicago cases, New Orleans has had a series of stalled efforts to establish a biomedical district that evolved into different organizational entities over time. Partly inspired by the experiences in Houston and Chicago, New Orleans in the 1960s began to plan around the cluster of medical institutions anchored by Charity Hospital, one of the oldest continuously operating hospitals in the US and, at one time, one of the largest. The latest iteration of these efforts, under the rubric of the New Orleans BioDistrict, emerged as a strategy of economic diversification in the wake of Hurricane Katrina, riding the momentum of a new \$1.8 billion hospital complex framed as the largest economic development project in the city's history. In a manner that parallels the Chicago and Houston experiences, crisis had driven local leaders to seize upon biomedical opportunity. The result was a controversial mega-project in a city that largely escaped massive redevelopment during the great mega-project era of highway construction and Urban Renewal. The new hospitals fundamentally reshaped the city and state safety-net healthcare system, a large area of the downtown periphery, and ongoing negotiations over a structural state budget crisis. As an organization, the BioDistrict, however, faded away with little direct impact, meeting the same fate as previous organizations with a similar charge. The *idea* of a biomedical district has proven to be far more durable.

As a result, New Orleans may be framed as a negative case of the biomedical district as an organization. While the outcome of establishment has occurred in episodes dating back to the 1960s, the outcome of durability and path dependence has not. Rather, New Orleans' experience

demonstrates how district organizations are relatively easy to establish but not necessarily durable without sufficient external supports and an internal commitment to collaboration. The New Orleans iterations have only experienced fleeting support from government and from their member institutions. However, the persistence of the biomedical district as a goal legitimized a complex, uncertain moment of creative destruction: closing and rebuilding Charity Hospital after Katrina, with transformative implications for the city's safety-net health care system and, possibly, its economic future. Shortly thereafter, the BioDistrict as an organization faded away, leaving the main responsibility for planning with another, more broadly focused economic development organization.

This chapter ranges widely to give adequate context to a complex development scenario that overlaps with the unique context of recovery and planning after Hurricane Katrina. It begins with Charity Hospital: the origin of both New Orleans' medical district and of the state-run safety-net health care system that existed in Louisiana until 2013. Charity has long been a state agency, which affects the intergovernmental context of the case study. Next, I review the faltering attempts to plan for a Charity-anchored medical district on the edge of downtown New Orleans, from Urban Renewal through the cluster hype of the 1990s. After framing the impact of Hurricane Katrina on the economic development and health care landscape in New Orleans, the chapter examines the development controversy around a new hospital complex to replace the damaged Charity facility. The last section examines the fate of the BioDistrict as an organization and the persistence of the idea of the biomedical district.

## **9.1 Background**

### **Charity Hospital and the roots of the medical district**

Unsurprisingly for a port city, Charity Hospital owes its earliest origins in 1736 to the will of a shipbuilder who left funds for establishing a hospital for the poor (Salvaggio, 1992). The hospital moved several times along the backswamp edge of the development during the city's time as a French and Spanish colony and, after 1803, a fast-growing American port. The Louisiana state government took control with the fourth Charity Hospital. In 1833, the fifth location, which handed administration exclusively to the Catholic nursing order of the Daughters of Charity (the name is a coincidence), fell roughly at the present day Charity Hospital site, marking the birth of the medical district (Campanella, 2006, 7). One year later, a group of physicians established the Medical College of Louisiana, the city's first medical school and the predecessor to Tulane University School of Medicine, around the clinics of Charity Hospital.

Trained at reputable institutions on the east coast, these physicians were motivated primarily by the largest public health problem in New Orleans: recurring cholera and, especially, yellow fever epidemics. After joining the United States in 1803, New Orleans grew rapidly as the Mississippi River became the primary means for accessing the west. From an 1800 population of about 10,000, New Orleans eclipsed 100,000 by 1940, essentially tying Baltimore as the second largest city in the US. Since the immigrants who accounted for most of this growth had not developed immunity to yellow fever like the natives had by contracting mild cases in childhood, yellow fever acquired the reputation of a “stranger’s disease”. In bad summers, such as a series of epidemics during the 1850s, yellow fever routinely claimed tens of thousands of lives, as Charity Hospital swelled past capacity to accommodate the sick and poor of the “Necropolis of the South”. In 1852, the records of Charity Hospital confirm cholera and yellow fever as the two top causes of death, while over 90 percent of patients were born in foreign countries (and over half from Ireland). Two-thirds of Charity Hospital’s 90 thousand dollar budget came from a hospital tax on passenger arrivals at the port.<sup>1</sup>

Without an understanding of the role of mosquitoes in transmitting yellow fever, social reformers often blamed “miasmas” emanating from immigrant neighborhoods, which tended to be located in the lower-lying, swampy, occasionally flooded sections of the city far from the natural levee of the Mississippi River. Many of the reformer physicians who established Tulane University were the most prominent leaders of the local sanitation movement and drainage committees (Colten, 2006). These late 19th century reform efforts by the 1910s had evolved into the technological solution of pumping infrastructure, gradually beating back the swamp and rendering more land in the growing city fit for development. Ironically, these transformations of the landscape created the bowl-shaped geography of New Orleans, which filled with water when the levees breached after Hurricane Katrina in 2005, leading to the first closure of Charity Hospital since 1736.

The populism of famed Louisiana political boss Huey P. Long provided the major stimulus to the formation of the medical district. From his term as governor in 1928 until his assassination as senator in 1935, Long’s state Democratic machine frequently clashed with New Orleans’ democratic machine. Long immediately conflicted with Tulane University, an expensive and elite private institution and the only medical school in the state, over his choice of an appointee to run Charity Hospital (Ott, 2012, 22). Apparently, Dr. Alton Ochsner (DeBakey’s mentor) had

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1 Report of the Board of Administrators of the Charity Hospital for 1852, True Delta Book and Job Office: New Orleans, 1853.

blocked the appointment at Tulane of Long's choice to run Charity for fear of the effects of a politicized Charity staff on Tulane's medical program; Ochsner ended up losing his status at Charity. Meanwhile, Long sought to establish a second medical school under the Louisiana State University that would also have a teaching affiliation with Charity Hospital, a move that Tulane leadership viewed with hostility. The LSU medical school (later, the LSU Health Sciences Center) opened in 1931 adjacent to Charity Hospital.

Meanwhile, due to overcrowding and to support a promise of state responsibility for health care, Long tried to secure federal grants for the construction of a new Charity Hospital. Conflicts with private hospitals in New Orleans and with the Roosevelt administration delayed the proposal. After helping to elect FDR in 1932, Long began to push a more radical "share our wealth" program in advance of challenging FDR in the 1936 election. After Long's death, the state and federal governments reached agreement on a grant to finance construction, which began in 1937. The sixth Charity Hospital was completed in 1939 with a capacity of 2,680 beds, second only to Cook County Hospital in size. Moreover, mostly under Long's brother, Governor Earl K. Long, the state gradually constructed or took ownership of hospitals throughout the state, resulting in a 10-hospital "Charity system" by the 1970s. Louisiana thus established an unusual system where safety-net public hospitals are operated as part of the state bureaucracy rather than through county and municipal governments. One result of this arrangement is that federal resources for uncompensated care, mainly through the Medicaid and Disproportionate Share Hospital funding programs, became unusually concentrated in the Charity system. Federal funding mechanisms designed to reimburse hospitals for treating individuals without the ability to pay were essentially re-purposed as a funding stream for a state-owned safety-net health care provider. As much as \$2 billion of Disproportionate Share Hospital funds flowing to the Charity system were then funneled to the state treasury, funding other items in the budget (Roberts and Durant Jr, 2010). While private insurance and federal programs institutionalized the two-tiered system of care across the US, the bureaucratic mechanisms for administering that care in Louisiana created an even sharper division in a state that has consistently ranked among the highest in poverty and uninsured rates.

On the edge of downtown, Charity Hospital anchored a fledgling medical district (see figure 9.1), along with the medical campuses of Tulane and LSU, Tulane University Hospital and Hotel Dieu (later acquired by LSU and renamed University Hospital), a VA hospital, and a handful of other allied health educational programs. "Big Charity" maintained its status a prestigious destination for medical residents and a dubious distinction as a trauma center



Figure 9.1: Existing New Orleans Medical District and HEAL planning area, 1970



Source: Health Education Authority of Louisiana and Community Improvement Agency, 1970.

specializing in gunshot wounds in the murder capital of the US. Meanwhile, postwar white flight transformed New Orleans into a majority black city; and by the last decades of the twentieth century, Charity's patient base was overwhelmingly poor and black.<sup>2</sup> Charity also did not escape Medicare and Medicaid's effects on public hospitals across the country. Chronic problems with funding, deferred maintenance, mismanagement, and accreditation forced the state Department of Health and Hospitals to take control of the Charity System in 1970.

Management transferred again to the Louisiana Health Authority in 1991, an independent authority intended to chart a future for the troubled system. State level task forces had been floating the question of whether Louisiana needed the Charity Hospital system, and the Authority's initial report described the system it would soon take over as "essential," but:

In extremely critical condition. The loss of accreditation at Charity Hospital in New Orleans, and its threatened loss elsewhere – the erosion of our system's vital teaching programs – the crumbling of its physical infrastructure – the inability to attract and retain medical and administrative staff – the failure, due to state fiscal crises, to keep pace with medical technology – each of these symptoms by itself would present major

2 Private hospitals were essentially free to practice segregation until the Civil Rights Era, even though Hill-Burton technically disallowed the practice in 1946.

complications in any hospital system. Taken together, they spell out a diagnosis as grim and foreboding as any cancer or cardiac condition.<sup>3</sup>

The same report called for “a new delivery system” to replace Charity Hospital at New Orleans, which was “not an acceptable facility to deliver the scope of healthcare services needed in the 21st century,” but prohibitively costly to renovate.<sup>4</sup> Specifically citing technological advances for allowing care to be delivered in ambulatory settings, the report recommended that the new facility have a smaller inpatient capacity and that care should be shifted to a satellite clinic network.

During the late 1980s and 1990s, Charity Hospital had begun to lose its accreditation. Partly to reduce its reliance on Charity, LSU purchased nearby Hotel Dieu hospital in 1993 and renamed the facility to University Hospital. Around the same time, LSU-HSC left its building adjacent to Charity and constructed a new campus across Claiborne Avenue and the I-10 overpass, effectively expanding the footprint of medical institutional land uses from the original core of the Charity and Tulane campuses along Tulane Avenue to University Hospital.

A significant push for Medicaid reforms occurred under future-governor Bobby Jindal’s tenure as Secretary of the Department of Health and Hospitals, beginning in 1995. Among a slew of piecemeal reforms to reign in the safety-net system and its finances, negotiations commenced to transfer each of the nine hospitals in the Charity system to LSU, a process completed in 1998.<sup>5</sup> Together, Charity Hospital and University Hospital became the Medical Center of Louisiana at New Orleans (MCLNO), a division of LSU Health Care Services Division. Meanwhile, in Congress, Louisiana negotiated a bail-out of the state’s Medicaid program. Derided by other state representatives as pork, the deal merely reduced \$1.5 billion in cuts to \$400 million, and the Charity system remained stressed.<sup>6</sup> The Charity system continued to endure cuts and service reductions even as Louisiana, like many states during the 1990s and early 2000s, “recycled” ballooning federal DSH payments to plug holes elsewhere in the state budget. Jindal’s short term as the state’s top health bureaucrat provided a stepping stone to staff positions leading Medicare reform committees in Washington as Assistant Secretary of Health and Human Services for Planning and Evaluation and, later, the Louisiana governor’s office, where he would effectively privatize the Charity system.

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3 Louisiana Health Care Authority, Comprehensive Plan for the Charity Hospital System: Report to the Joint Committee on Health and Welfare, 1 March 1990.

4 Ibid., p.E-12.

5 The tenth state hospital, LSU-HSC in Shreveport was already run by LSU.

6 *The Advocate*, 1996

The future of the Charity system became a major campaign issue for the 2003 election, and new Democratic Governor Kathleen Blanco and her DHH secretary Fred Cerise were qualified supporters while recognizing the need for reform. By that point, LSU had long-desired a new hospital that would replace the outmoded Charity Hospital, where years of deferred maintenance, structural deficiencies, outdated open wards, and serious management and quality issues constantly threatened accreditation. These conditions, together with Charity's association as a site of care for the poor and uninsured, prevented LSU from attracting a mix of paying patients. In May 2005, the LSU facilities master plan called for a new hospital to replace Charity and University Hospitals, either next to University Hospital or in the surface parking across Tulane Avenue.<sup>7</sup>

Three months later, Hurricane Katrina flooded Charity's basement, as 600 patients and doctors – who continued to provide care – awaited evacuation without electricity and air conditioning for four days. Over the weeks that followed, military disaster relief units and Charity medical staff worked to drain the basement, restore the first three floors, and arrange for a temporary generator and reconnection to the power grid, all to restore a baseline level of access to medical care as floodwaters receded from the decimated city. However, LSU officials fenced off the site and threatened workers with criminal trespassing charges, as Blanco ordered the military away. When asked about reopening Charity temporarily, LSU hospital CEO Donald Smithburg replied, "If we do, we will never get a new one."<sup>8</sup> In order to qualify for full Federal Emergency Management Agency (FEMA) compensation, damage to the facility would have to exceed 50 percent of the cost of rebuilding.

Charity's long-term closure was less a result of Katrina than a tactical maneuver by LSU in advance of negotiations with FEMA, one that ultimately proved effective and initiated the largest economic development project in the city's history. However, the decision prolonged the systemic disruption of regional health care. With the safety-net hospital shuttered, LSU laid off or furloughed most of Charity's workers. A makeshift trauma center called "Spirit of Charity" operated, first, in tents outside and, later, on the ground-floor of a downtown department store. In late 2006, University Hospital reopened under the moniker LSU Interim Hospital and soon resumed status as the region's Level 1 trauma center. Perhaps even more significantly, the closure of Charity Hospital's Crisis Intervention Unit ruptured the city's mental health

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7 Adams Project Management, Site and Facility Master Plan Consolidation of Charity and University Hospitals, 2005, Medical Center of Louisiana at New Orleans.

8 Roberta Brandes Gratz, Why Was New Orleans's Charity Hospital Allowed to Die?, *The Nation*, 27 April 2011.

capacity, since police typically brought individuals suffering from acute mental health crisis to the Charity emergency room. The closure diverted many individuals from Charity to Orleans Parish Prison, contributing directly to the “criminalization of mental illness” (Ott, 2015).<sup>9</sup> After Katrina, the opportunity to rebuild – but not recreate – Charity Hospital was shaped and legitimized by another long-gestating goal given new life amid disaster: building a biomedical district.

## 9.2 Stalled medical districts

### The Health Education Authority of Louisiana

The effort to formally plan the medical district began as an attempt to leverage Urban Renewal resources to solve the health system’s problems, chiefly Charity Hospital. In a sense, New Orleans inverts the experience with the IMD in Chicago, where growing medical institutions provided a capacity and justification for wholesale redevelopment. In New Orleans, redevelopment resources would allow for the construction of the new facility, which would solve the persistent accreditation problems and stabilize Tulane and LSU’s teaching programs. The impetus to collaboration appears to have been to shoe-horn these issues into a funding source that required neighborhood rehabilitation and redevelopment.

Attempts to create a formal organizational and planning capacity around the development of the Charity Hospital medical district extend back to the 1960s. In 1968, the Louisiana legislature created the Health Education Authority of Louisiana (HEAL) based on the recommendations of a long-range planning committee of Charity Hospital and the Tulane and LSU medical schools. The committee grew out of an unprecedented meeting spurred by a 1965 appropriation of \$20 million for capital improvements at Charity Hospital, and a shared recognition of the need for cooperation in the face of “inevitable” change at the state and federal levels.<sup>10</sup> Citing the land requirements for the medical schools and effects of funding gaps on Charity’s deteriorating prestige, the first plan recommending the creation of HEAL announced that “medical education, patient care, and medical research face[d] a bleak, declining future unless a coordinated plan involving these three major medical institutions is developed immediately.”<sup>11</sup> The solution was to establish a multi-institutional medical complex contiguous to

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9 American Civil Liberties Union, *Broken Promises: 2 Years after Katrina*, 2007

10 Gulf South Research Institute, *Development Program for the Health Education Authority of Louisiana*, 15 July 1968, p.8.

11 Gulf South Research Institute, *Development Program for the Health Education Authority of Louisiana*, 15 July 1968.

Charity Hospital with a new state-agency, HEAL, as the administrative mechanism for organizing, financing, and managing the complex. As recommended in the study, the legislative charge of HEAL included the power to develop master plans, to acquire and dispose of property, to issue revenue bonds, to construct facilities, and to operate central services. HEAL's main function was to "acquire land needed to by the primary institutions for expansion of their facilities," though without control over those institutions.<sup>12</sup>

In this respect, HEAL roughly conformed to the model of the Illinois Medical District, i.e., a state agency with broad powers as a mechanism for site and facility development but with little authority over medical capacity other than through the voluntary participation of competing institutions. The resemblance is not surprising given that HEAL's design was informed by a study of "comparable medical complexes," including the Illinois Medical Center Commission and the Texas Medical Center.<sup>13</sup> These comparisons appear to have informed the organizational structure of HEAL. The study criticized the TMC's lack of a master plan ("Consequently, the Center's growth appears chaotic and haphazard"), while praising its extensive concentration for achieving an "international reputation in medical treatment and education".<sup>14</sup> Without a similar qualification, the report highlighted the land use authority power of the Illinois Medical Center Commission as a means to enforce master planning. While the report recognized the autonomy of member institutions in both medical centers, it also highlighted the distinction between a non-profit (TMC) model and a state agency (IMD) model, deciding on the latter due to expediency, the "impracticality" of bringing two existing state agencies (LSU and Charity) under the umbrella of a local agency or nonprofit corporation, and the ability to issue tax-exempt revenue bonds.<sup>15</sup> Another concern was to seek state appropriations as an alternative to private fund-raising. The HEAL legislation was crafted specifically to allay concerns that the new development organization would impinge on the autonomy of the three primary institutions. Although development activities could be performed for other beneficiaries, major developments could only be undertaken at the request of one of the primary institutions.<sup>16</sup> Unlike the Illinois Medical Center Commission, HEAL's board of trustees was comprised of only a minority of political appointees and designed to leave policy in the hand of the three primary institutions. Also unlike its Chicago counterpart, HEAL's legislation assigned no

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<sup>12</sup> Ibid, p.2.

<sup>13</sup> Oklahoma Health Center was also reviewed as a third comparable case, although it was only in planning stages.

<sup>14</sup> Ibid., p.23.

<sup>15</sup> Ibid., p.75.

<sup>16</sup> Ibid., p.30; Jefferson Bennet to Stuart Brehm, 15 January 1970, City Archives, New Orleans Public Library.

boundaries with the exception of its bonding powers, which apply within a ten-mile radius around Charity Hospital. Presumably, the large radius preserved flexibility, since the actual boundaries of the medical district had not been settled.

The original HEAL report lamented Louisiana's loss of its position as leading state for medical education and care, bolstered by the extensive state-supported Charity system and the "concentrated physical resources and human talent" on the edge of downtown New Orleans.<sup>17</sup> However, Louisiana had been "surpassed" by "Texas, Alabama, and Tennessee" in providing "adequate, modern facilities for medical education and state and locally supported health facilities". While the report noted that the compounding and unevenly distributed threats of federal insurance legislation, the rising cost of care, and limited state appropriations on public hospitals in other states, Louisiana officials were chastised for the exceptional failure to recognize and address the situation.

HEAL may be understood as an outgrowth of learning from existing medical districts, locally specific institutional legacies and relationships, and the opportunities of federally funded redevelopment. Being an agency of the state legislature, like its Chicago counterpart, provided strategic benefits in land assembly and funding, especially given its intersection with Urban Renewal programs. Houston's experience showed the difficulty of implementing orderly master plans, although the TMC's remarkable two decades of growth also provided inspiration. Unlike either existing case, HEAL included strict checks to preserve institutional autonomy. Indeed, the institutions were the primary motivators behind HEAL's creation. At the time, both Tulane and LSU had issued plans to construct their own teaching hospitals. Combined with the constant creep of facility requirements, new hospitals implied the likelihood of relocating to other parts of the region, even at the risk of losing the efficiency of concentrating on an existing campus. HEAL's function, at the most basic level, was to provide a mechanism for land and facility development, master planning, and funding. The immediate intention was to prevent costly geographical dispersion and to facilitate a transition of Charity from an institution exclusively oriented toward its safety-net function to a modern teaching hospital capable of meeting intensifying standards and freeing itself from dependence on inadequate state funding. Ultimately, HEAL's objective was to shore up the intense challenges facing the region's safety-net health care system and the state's system of medical education – all while expressly prohibited from exerting any effective authority over the institutions themselves or their investments in programs and facilities.

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<sup>17</sup> Ibid., p.6.

Figure 9.2: The initial HEAL vision, 1968



Source: Gulf South Research Institute, Development Program for the Health Education Authority of Louisiana, 15 July 1968.

Rather than a health system planning entity, HEAL provided a physical development mechanism designed opportunistically to unlock federal funding for urban development, through the Urban Renewal program in particular, as a resource for enabling Charity to meet its underfunded mission of care and education. After disallowing the seizure of private property for reselling to private interests in 1954, the Louisiana legislature finally passed Urban Renewal enabling legislation in 1968, the same year as HEAL (Germany, 2007, 184). HEAL was, in fact, purposefully designed to take advantage of Urban Renewal funding and land assembly mechanisms, to coordinate with New Orleans' anticipated Urban Renewal planning and administration process, and to take advantage of "district replanning" as a means to avoid piecemeal land assembly.

As a reflection of its Urban Renewal origins, the year-2000 vision for the medical complex proposed a major expansion of the land occupied by existing major institutions: Charity, LSU, Tulane, the VA, and Hotel Dieu (see figure 9.2). Projections required accommodating a new state Hospital, two new university hospitals, and two additional general hospitals, several other specialty hospitals, city and state health departments, and enough parking for an anticipated workforce of 26,000.<sup>18</sup> At the time, the size of the medical district was about 28 acres (about 15

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<sup>18</sup> Ibid., p.50–54

blocks), with under 7,000 employees. The plans extended from the downtown-adjacent district all the way to Broad Street, covering a total of 160 acres (about 75 additional blocks), most of which was occupied by residential, commercial, and light industrial uses. A large portion of the area was set aside for redeveloped housing and commercial property.

The proposed vision for development fluctuated during its initial planning stages. Initially, the HEAL project was the first and most ambitious of New Orleans' Urban Renewal plans, as documented by the Community Improvement Agency – the new local Urban Renewal authority – in its General Neighborhood Renewal Plans of the late 1960s and early 1970s.<sup>19</sup> Three of the four other renewal areas were more conventional low-income, primarily residential neighborhoods; the fourth was a small residential area near the expanding Orleans Parish Prison, not far from the HEAL area. In 1970, the Community Improvement Agency began working with HEAL to obtain funds. Later that year, the federal government issued guidelines prioritizing the improvement of predominantly residential areas. To respond to the new requirements and following direction from HUD, the first application for the HEAL project generally reflected the initial study but also embraced a broader program of residential neighborhood rehabilitation over an expanded 289-acre area, over half of which was residential.<sup>20</sup> In support of the expanded concept, the City Council and Planning Commission issued resolutions designating the site as a “Slum and blighted area”.

To stress the neighborhood improvement goals, the first application gave substantial weight to the improvement of residential areas and to extensive programs to train the existing residents for staff openings at the expanded medical complex.<sup>21</sup> The application described the dual goals of the proposal as:

A nearly unique example of coordinated planning for residential renewal and the expansion of Louisiana's major center for health education and health services together with a program for recruiting and training people for the thousands of new jobs that will be created in the expanding Medical Center... This is not a typical urban renewal proposal designed solely to rejuvenate an urban area and to improve the quality of life in a city. It is, in addition to that, a proposal of regional and national significance directly related to the increase of medically related manpower, the creation of a new

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19 H.E.A.L. Project General Neighborhood Renewal Plan Application, Community Improvement Agency, 1970, City of New Orleans.

20 Jefferson Bennett to Community Improvement Agency, 27 February 1970; Stuart Brehm to Jack D. Herrington, 23 January 1970, City Archives, New Orleans Public Library.

21 For instance, these initial plans included salary ranges, job titles, and employment projections from the major institutions, as well as concrete suggestions for training programs and letters of support from Delgado Community College.



pool of health related job opportunities and the creation of a Major Medical Referral Center of significance to this entire part of the United States.<sup>22</sup>

The application requested over \$30 million in federal Urban Renewal funds and proposed meeting the required one-third local match with credits from existing capital expenditures by the primary institutions. In essence, the HEAL program embraced Urban Renewal as an opportunity for free money to finance the modernization of the most important medical institutions in New Orleans and Louisiana. To do so, all that was necessary was to add a broader agenda of neighborhood redevelopment.

The tactical decision to expand the development area soon encountered strong opposition from local businesses, residents, and property owners.<sup>23</sup> Following a compromise on a reduced redevelopment area, the citizens group, the mayor and city council members, HEAL, and the Community Improvement Agency met in with HUD in Washington in 1971 to discuss withdrawing and resubmitting the application. The second application greatly reduced the development area to the immediate surroundings of the existing institutions. The boundaries roughly correspond with the actual built-up medical district prior to Hurricane Katrina. HUD, however, declined to fund the HEAL project. The Community Improvement Agency continued to work with HEAL in conjunction with the two separate planning areas focusing on the CBD but overlapping with the HEAL site: the Growth Management Program and the 1975 Core Area Development District.<sup>24</sup> The latter was renamed the Downtown Development District (DDD), generally considered to be the nation's first assessment-based Business Improvement District (BID), and is still an active organization today. By 1976, HEAL had disappeared from the Community Improvement Agency's annual reports.

After the early failure to secure Urban Renewal funding, the shift of attention by the Community Improvement Agency to prioritize downtown and to adopt a more historic preservation-minded approach to community improvement, not redevelopment, along with the federal demise of Urban Renewal curtailed the initial ambitions for the HEAL project. When LSU began expanding its campus across Claiborne Avenue, HEAL was not centrally involved in

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22 H.E.A.L. Project General Neighborhood Renewal Plan Application, Community Improvement Agency, 1970, City of New Orleans, City Archives, New Orleans Public Library.

23 Community Improvement Agency in and for the City of New Orleans, Annual Report 1970, New Orleans City Archives.

24 Community Improvement Agency in and for the City of New Orleans, City Archives, New Orleans Public Library

land acquisition.<sup>25</sup> To date, HEAL has issued nine bonds.<sup>26</sup> In 1973, the first bond was issued for the HEAL parking garage, nestled between Charity Hospital and City Hall. In 1975 and 1985, HEAL bonds helped to finance the construction of Tulane University Hospital facilities in the immediate vicinity of Charity. The remaining bonds went to facilities miles away from the medical district, including a 1976 expansion of suburban Ochsner Medical Center, now the flagship of the largest hospital network in Greater New Orleans and the largest private employer in Louisiana.<sup>27</sup> Urban Renewal ultimately proved to be a dead end for financing the transformation of the medical district and the modernization of Charity. A few years later, the collaboration eventually reformed under a different banner. As the focus shifted to shared facilities and eventually to life sciences, the connection between the district and rebuilding Charity faded until Hurricane Katrina presented a new opportunity.

### **From Medical Complex to Biomedical Park**

In 1978, the New Orleans Regional Medical Center combined the Medical Center of Louisiana New Orleans (Charity Hospital), LSU-HSC, Tulane, Hotel Dieu, the VA, and the Downtown Development District into one governance structure to conduct planning and develop shared infrastructure. Funded with fee assessments on its members, NORMC's major successes were a heating and cooling facility and a pedestrian walkway across Claiborne Avenue. NORMC also evolved into the creation of the Louisiana Biomedical Research and Development Park (BRDP) by the state legislature, which motivated further planning efforts in the 1990s and early 2000s. While the BRDP extended the purview of biomedical district planning five blocks out to Galvez, this version of the district was only charged with the responsibility to plan, not with any special land assembly and development powers. The BDRP also marked the extension of the objective of life sciences commercialization.

In 1992, to fulfill the requirements of the park's legislation, the Louisiana Biomedical Research and Development Park Comprehensive Plan focused on needs for research and clinical facilities, organizational structure and governance, and economic development impacts and strategies. In 1993, the Master Plan for the New Orleans Regional Medical Center focused on physical planning in the core of the district, such as transportation and connectivity, signage

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25 Fredrick W. Wagner, A Study of the Lower Mid-City Neighborhood, 1 September 1978, City Archives, New Orleans Public Library.

26 Health Education Authority of Louisiana, Project History, website

27 Other HEAL-funded facilities include the American Cancer Society, a nursing facility, and a senior living facility.

and design, and cost estimates. This plan also designated the area between Claiborne and Galvez as a site for the expansion of future medically related land uses.

In 1999, with the release of *Louisiana 2020*, a statewide economic development plan, the Governor prioritized the health care and life sciences industries as one of six technology “clusters” to diversify the state’s economy.<sup>28</sup> The plan highlighted opportunities for the state to attract clinical trials research and to promote commercialization through wet lab business incubators. In 2002, plans were set in motion to construct wet lab incubators in New Orleans, Baton Rouge, and Shreveport. In keeping with the *Louisiana 2020* framework, the objective of the incubators was to diversify the economy and to use physical investment to remedy the perception that “the state is considerably behind the curve on technology transfer and commercialization”.<sup>29</sup> Hammering home the point, a feasibility study analyzed a comparison group of 21 existing wet lab incubators in other states. As a result of these efforts at the state level, the 2002 update for the Comprehensive Plan for the BRDP stressed the New Orleans wet lab incubator as a the centerpiece of the district strategy.<sup>30</sup> In its first ten years, the BDRP had stalled due to a general lack of funding, citing specifically the state’s Medicaid crisis as a cause of diverted attention and resources by the key institutions.<sup>31</sup>

The BRDP episode was notable for stressing a broader “learning enterprise” beyond health care, embracing entrepreneurial technology commercialization, the training of knowledge workers necessary for competition, and improving the standard of living through economic diversification.<sup>32</sup> Given the largely dormant organizational activity, the plans reflected the opinion of stakeholders from institutions and economic development organizations that the incubator would provide a catalyst. The mere presence of university-based research is insufficient to promote a thriving environment of technology commercialization and cluster formation (Malecki, 1997; Feldman et al., 1994). In theory, publicly funded incubators use brick-and-mortar investment to address a market failure. They intervene by supplying small office space with lab facilities that require a large fixed capital investment, effectively subsidizing the rent and facilities costs of early-stage firms. Incubators also provide technical assistance to university faculty and small entrepreneurs who often lack sufficient experience with raising capital, nav-

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28 Louisiana Economic Development Council, Louisiana: Vision 2020, 31 March 1999.

29 Louisiana Department of Economic Development, Feasibility Characteristics and Probably Impact: Louisiana Wet-lab Sciences Business Incubator Program, 17 January 2002.

30 Louisiana Biomedical Research and Development Park Commission, The Louisiana Biomedical Research and Development Park Comprehensive Plan 10-year Update, 2002, p.8

31 Ibid., p.10.

32 BRDP, 2002, p. 13.

igating intellectual property laws, and running a small business. While potentially bridging difficult links in the chain of innovation, they also often serve primarily as high-profile real estate investments. As described by an LSU tech-transfer executive, this was the case in New Orleans:

Unlike the facility in Baton Rouge, the BioInnovation Center is really part of an urban renewal strategy; because the center will be located downtown, the BioInnovation Center will help attract researchers and redevelop a part of the city.<sup>33</sup>

Also in 2002, using a \$40 million bond financed by a new cigarette tax in 2002 and funded on an ongoing basis with the tobacco master settlement funds, the state legislature created another partnership between LSUHSC-New Orleans, Tulane University HSC, Ochsner Health System, and Xavier University in the Louisiana Cancer Research Consortium (LCRC). The LCRC began construction on a \$102 million facility with the eventual goal of pursuing the state's only National Cancer Institute (NCI)-Designated Cancer Center. Although the organizational development of the biomedical district and its related cluster strategy remained elusive, physical investments gave the concept considerable momentum prior to Katrina.

The New Orleans Bioinnovation Center had a slower start than its Baton Rouge and Shreveport counterparts, only hiring staff in 2004, two years after the initial funding approval. As suggested in the BRDP plan, a long-abandoned LSU-owned building on lower Canal Street was purchased as the site. After structural problems led to the determination that the structure was not suitable for the heavy equipment and space required for the laboratory, the building was in the process of demolition at the time of Katrina. Citing statistics that claim the existence of 7,000 unfilled medical jobs in the city, Mayor Nagin's comments at the building's demolition ceremony summarize this position:

What we are doing today is what I'm calling our Nissan plant. If we do what we are talking about today, we can double those [7,000] openings (Biz New Orleans, 11 April 2005).<sup>34</sup>

Here, Nagin demonstrates the flexibility of the biomedical sector. The 7,000 openings refer to health care providers; but the BioInnovation Center focuses on the far fewer number of jobs in the biotechnology and life sciences industry, nationally and especially in New Orleans. While assets like incubators do not engage with the problem of unfilled health care employment in any direct way, they do serve to attract researchers and to potentially provide revenue sources for universities through licensing fees. As traded, high-technology industries, they also appeal

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33 Abby Kral, BioInnovation Center is Under Microscope, *New Orleans City Business*, 20 September 2006.

34 *Biz New Orleans*, 11 April 2005.

to economic development organizations and politicians. According to the BioInnovation Center, its first ten years of operation created 205 new jobs.<sup>35</sup>

The new \$38 million building finally opened in 2011 – seven years after and at more than double the cost of original projections.<sup>36</sup> Since then, the Center has become a significant player in the tech start-up scene that arrived in New Orleans after Katrina as the life sciences-focused counterpart to other entrepreneurship-supportive programs and facilities. In this capacity, it has enjoyed the praise and support of city and state politicians and the business community as one of the main symbols of progress in matching New Orleans' life sciences economy to that of other regions. According to the BioInnovation Center President, the still-small sector has had to be built from the ground up:

When we started the whole idea was the facility. Ok, build a building. Suddenly, these companies will come in and – boom – everyone wins. The problem is there is no culture of entrepreneurship in the life sciences down here. You look at some of the other organizations and you look at other models around the country, they're able to rely on pieces of support that create the companies, and then they do just get housed in the facility, whereas we had to build that from scratch... We couldn't rely on pent-up demand for the facility, we had to create it. And that's unique, you don't find that in very many places.<sup>37</sup>

Toward “creating” demand, the supportive environment and technical assistance resources inside the Bioinnovation Center's walls explain part of the early success; relationships outside also matter. The BioInnovation center's early planning meetings after Katrina functioned as a “support group” of administrators dealing with similar problems, helping to break down institutional “fiefdoms”: “Post-Katrina, all the kids are playing together”.<sup>38</sup> The shared benefit of the incubator has promoted inter-organizational collaboration and the participation of university tech-transfer offices, for whom the Bioinnovation Center provides not only a destination for new companies but also works with the universities to examine the commercial feasibility of their research portfolios. Ultimately, the esteem for the BioInnovation Center would continue to elude the ongoing series of biomedical district development organizations, entities without clear mission, a brick-and-mortar presence, or an incentive for inter-organizational collaboration.

Attention returned to the district concept between 2002 and 2004, when the Greater New Orleans Inc. (the regional Chamber of Commerce) and Mayor's Office of Economic Development began working with institutional representatives to create a new economic development orga-

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35 New Orleans BioInnovation Center, Annual Report FY2014, website.

36 BRDP, 2002, Appendix A, p. 2,7.

37 Interview with Bioinnovation Center executive, 19 July 2013.

38 Ibid.

nization, ultimately leading to new legislation. The desire of Xavier University, a historically black university with a thriving pharmacy program about 2 miles from the district core, to be included in the new plan was the primary motivation behind greatly expanding the boundaries 24 blocks toward the lake from the historic institutional core, encompassing a large portion of the Mid City neighborhood.

The boundaries also expanded further toward the river into downtown to capture the proposed site of the New Orleans BioInnovation Center. In late 2004, the NORMC board voted to become dormant in anticipation of reforming the governance structure under a new entity. In Summer 2005, the legislature created the Greater New Orleans Biosciences Economic Development District (GNOBEDD) as the successor of NORMC and BRDP. The awkwardly named GNOBEDD would later be renamed the BioDistrict.

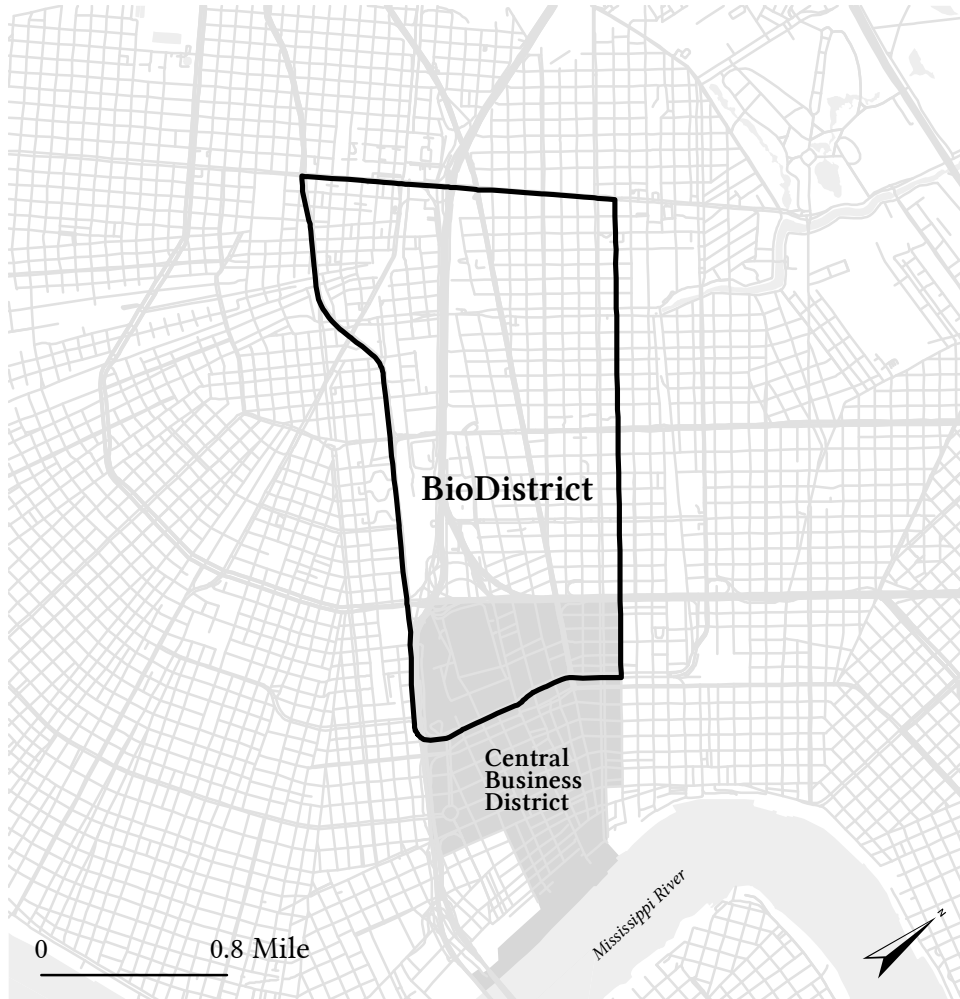
GNOBEDD expanded both the geography and the powers of the biomedical district organization (figure 9.3). The District would also introduce a stronger commitment to real estate development with an expanded board and participation from area business leaders through their involvement. Only weeks after the GNOBEDD's establishment, Hurricane Katrina upended conditions in the district and the possibilities for transformative investment.

### **9.3 Katrina as an “opportunity for change”**

#### **Creative destruction**

The levee failures in the immediate wake of Hurricane Katrina brought social and environmental disaster of an unprecedentedly extensive proportion to an American city. Katrina took a human toll, as residents endured loss of life, uncertainty, and displacement amid a painfully slow response at all levels of government. As a city undergoing economic struggle well before 2005, New Orleans and some of its suburbs suffered nearly complete de-population; widespread physical damage to homes, businesses, and infrastructure; and interruption of basic public services. With little disagreement on the extensiveness of the challenges facing New Orleans, the post-Katrina discourse quickly shifted to focus on the “opportunity for change”. The argument – essentially, that New Orleans was a deeply challenged city before August, 2005, and that Katrina wiped the slate clean for structurally diverting the city toward a better path – pervaded the entire policy debate as government agencies, institutions, and residents returned and external federal and philanthropic resources flowed into the city. The ubiquitous “opportunity for change” narrative applied both to general debates over urban policy – such as the merits of people- versus place-based subsidy in a weak-market city and the need to “reduce the footprint”

Figure 9.3: The BioDistrict



Source: Author elaboration from various BioDistrict maps.

to a smaller and more manageable city – and to very specific institutional and organizational transformation initiatives. Legitimized by the biomedical district, the post-Katrina story of Charity Hospital became framed as an opportunity to change the city's economic fortune, its safety-net health care system, and its largest academic medical center, all at once.

As soon as the immediate chaos subsided, several questions rose to prominence in both specific projects of policy and organizational design and in academic commentaries. How much of the city should be rebuilt? Should it be rebuilt at all? How should resources be spent to promote an economically, socially, and environmentally resilient city? Prominent urban economist Edward Glaeser criticized federal funding for a place-based recovery effort on the

Gulf Coast. Rather than block grants to finance infrastructure reconstruction, Glaeser promoted cash payments to evacuees, allowing the market to dictate recovery plans – whether or not that recovery occurred in New Orleans or in Baton Rouge, Houston, Atlanta, or another site of the Katrina diaspora (Glaeser, 2005). In a similar vein, Vigdor (2008) questioned the soundness of geographically targeted tax expenditures in a weak-market city, where the most likely “post-Katrina equilibrium” did not justify rebuilding. These market-oriented prescriptions for targeting individuals over places, of course, largely ignored the question of how New Orleans’ market position became so dire in the first place.

Comparing commentary from the right after Katrina with the 1975 New York fiscal crisis, Peck (2006) interpreted the “opportunity for change” discourse as an acute episode of the market-oriented “shock treatment” of neoliberal urban policy. Indeed, just as some critics placed immediate blame on government bureaucracy, ranging from FEMA’s slow response to New Orleans and Louisiana officials (Molotch, 2006), reform focused on the city’s failed social and political institutions as deeper causes of the long-term poverty and political-economic pathology that contributed to the disaster. Thus, Burns and Thomas (2006) interpret Katrina as the failure of a rudderless “non-regime” city, dependent on issue-based coalitions rather than long-term agendas and incapable of effectively targeting resources. Whether Katrina “laid bare” the bureaucratic failure of government, local political coalition failure, or the recursive inequities of American neoliberalism (Peck, 2006), the city’s most important social institutions – disinvested relics of Keynesian urban policy – were designated as not only targets for necessary reform but for transformative policy experiments. The city’s public school system transformed into the school district with the highest rate of charter schools in the nation. The “big four” public housing developments, most of which never re-opened after evacuation, were eventually demolished and rebuilt as HOPE VI-style low-density projects, preventing the return and prolonging the displacement of residents. And Charity Hospital also remained shuttered, as the federal government poured well over \$100 million into building up a network of safety-net neighborhood clinics. As Katz (2008) writes, Katrina “scoured the political-economic landscape,” revealing decades of disinvestment and “hostile privatism” toward social reproduction in a disproportionately black and poor city. The discourse of opportunity, and its specific expression through the cases of Charity Hospital and its medical district, are inseparable from the history of social institutions in New Orleans.

Nearly five years later, Mayor Landrieu’s inauguration speech continued to voice the sentiment of change in what would become a slogan of his administration: “Let’s stop thinking



about rebuilding the city we were and start dreaming about the city we want to become.”<sup>39</sup> In delivering a “state of the city” address year later, he applied the theme to the biomedical district:

The groundwork is being laid for a knowledge-based economy driven by reemerging health and technology sectors. As a major first step, we started turning dirt at the Veterans Administration hospital, and last week, we broke ground on the University Medical Center in Mid-City. I will play a leading role in ensuring that we don’t rebuild what we had, but create a world-class 21st century research and academic health care center that will provide excellent care and thousands of quality jobs. I want you to imagine what it will be like. Soon a mother who lives in Faubourg Lafitte, what used to be the old Lafitte Housing Development, will leave her beautiful new home on Orleans Avenue and Galvez and walk to her job as a med-tech – only six blocks away on Canal and Galvez. Her son will attend New Orleans Charter Science and Math School and take classes at the same hospital where his mother works. He will go to college at Xavier, then medical school to become an oncologist and raise his family and work in the same, transformed neighborhood. And they will have dinner down the street at Dooky Chase or Willie Mae’s Scotch House. This is a sustainable community. This is real place-based development.<sup>40</sup>

The new hospitals marked, by far, the most significant sign of progress toward realizing the opportunity of the the biomedical district. The route from Katrina to the groundbreaking referenced by Landrieu, however, was fraught with controversy. The vision for a thriving biomedical district, one that could compete with Houston or Birmingham, became implicated with the transformation of safety-net health care in New Orleans.

### **“The goose that lays the golden egg”**

The first two years after Katrina brought to New Orleans an unprecedented sequence of citywide planning efforts. While the numerous starts and stumbles are far too complex to narrate here (For details, see Olshansky and Johnson, 2010; Nelson et al., 2007; Ford, 2010), it is important to clarify how these initial planning efforts engaged – or did not engage – with the biomedical sector from an economic perspective and with the biomedical district from a land use perspective. Within the first two years after Katrina, the sheer quantity of large-scale planning efforts was immense, spanning a mayoral commission that pushed the concept of a reduced footprint, a city council-led process that assumed the right to return, the Rockefeller Foundation-funded Unified New Orleans Plan (UNOP) with massive input from returned and displaced citizens but little prioritization, and the new Office of Recovery and Development Administration within the city government to coordinate targeted recovery efforts. These

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39 Quoted in *Times Picayune*, 3 May 2010.

40 Quoted in *New Orleans City Business*, 28 April 2011.

recovery plans were followed by a new land use plan and comprehensive zoning ordinance. Meanwhile, the Louisiana Recovery Authority coordinated statewide efforts and federal aid.

The first major citywide planning effort was the Mayor's Bring New Orleans Back Commission (BNOB), which drew heavily from Urban Land Institute experts and began study in November, 2005, about two and a half months after the storm. The BNOB Commission is most notable for producing the infamous "green dot" map, reprinted on the front page of the *Times Picayune* on the day of the report's release in January, 2006. The map used large green circles to illustrate a general concept of "potential areas for future parkland" – areas of high flood-risk that could be re-purposed for a city with a smaller footprint. With the future of the city and the ability of its residents to return hanging in the balance, the image arrived with little citizen input and provoked such a harsh reaction that the entire BNOB plan and its proposal for more clustered development was essentially rendered moot, while residents began organizing their neighborhoods to protect their right to live.

This aspect of the elite-led BNOB plan colored the entire post-Katrina planning process. During the BNOB process, the Biosciences Workgroup produced a far less controversial study of what it termed the "Bio-Med" sector, an amalgamation of five NAICS categories (health care services, health care insurance, life sciences R&D, medical devices and pharmaceuticals) that accounted for the largest share of revenue and payroll and 12 percent of the city's employment in 2004, second only to tourism.<sup>41</sup> The term Bio-Med combined the actually decimated health care system – at one point, every hospital within the city of New Orleans had ceased operations – with the more aspirational life sciences and biotechnology activities that had been picking up steam in the early 2000s. In fact, health care services accounted for 19 out of every 20 jobs in the Bio-Med sector before Katrina. The BNOB plan authors were unequivocal about the importance of this sector: "The devastation of the Bio-Med base in the New Orleans metro area threatens to kill the goose that lays the golden egg".<sup>42</sup> The plan also stressed the downtown "medical complex" or "life sciences district".

Ed Blakely arrived in January, 2007, with an initially vague appointment by the mayor as the city's recovery czar. His role became to head the Office of Recovery and Development Administration, a new division that combined the Office of Recovery Management with the existing housing and economic development departments, and to essentially set development priorities and hold the purse strings on the city's Community Development Block Grant funds

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<sup>41</sup> BNOB, 2006, p.31

<sup>42</sup> Ibid., p.45.

– in his own words, “getting a recovery done” (Blakely, 2012, 122). A former UC-Berkeley planning professor with extensive disaster recovery experience as an outside expert in Oakland and New York, Blakely literally wrote the textbook on economic development planning and had published early research on state biotech incubator strategies (Blakely and Nishikawa, 1992; Leigh and Blakely, 2013). His appointment brought credibility and clarity to the increasingly muddled planning process. His first public step was to issue a Target Area Plan identifying 16 nodes for reinvestment, based on decisions informed by the long list of UNOP projects. Blakely promised “cranes in the sky” by September, an off-hand comment that took off in local media to the collective reassurance of residents suffering “planning fatigue” in a way that Blakely would later regret. In Summer, 2009, Blakely quietly left, a target of media and public scorn at least partly by virtue of his association with Mayor Nagin and partly due to the stalled promises of systematic recovery.

In one of his first actions behind the scenes, Blakely seized on the Bio-Med cluster and the GNOBEDD development program as an obvious and tangible answer to the question of how the city could rebuild its economy without merely reproducing the previous two decades’ dependence on tourism as the driver of investment (Blakely, 2012, 92). The Regional Planning Commission (RPC, the Metropolitan Planning Organization for Greater New Orleans) had been shepherding the GNOBEDD since its creation and shared studies with Blakely upon his arrival.<sup>43</sup> Around the same time, the RPC won a grant from the Economic Development Administration to commission a study and master plan for the GNOBEDD and organized a trip for district stakeholders to Cortex, a 200-acre innovation district near Barnes Jewish Hospital and several other medical institutions in St. Louis. The tour served as a catalyzing event for interest in GNOBEDD.<sup>44</sup> Whereas previous district development efforts ran into chronic funding gaps and endemic institutional competition over research, land, and patients, the chaos of Katrina allowed a “mind-shift,” and the use of outside planning consultants that understood the tension between LSU and Tulane was crucial to building momentum.<sup>45</sup>

That momentum, however, continued to face threats. The VA hospital located adjacent to Charity had also suffered catastrophic damage after Katrina. Shortly after the St. Louis trip, VA administrators intimated in a meeting with city officials that the region’s reconstructed VA facility would not have to be *in* New Orleans (Blakely, 2012, 92).<sup>46</sup> At that point, Blakely

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43 Interview with former RPC staff.

44 (Blakely, 2012, 92) Interview with former RPC staff, Interview with former BioDistrict staff.

45 Interview with former RPC staff.

46 This implicit threat was also communicated to the RPC via a phone call. (Interview with former RPC staff).

proposed a joint LSU-VA complex, with the state handling initial land assembly because it held greater eminent domain authority than the city. Blakely then overcame opposition within the administration over the lack of funding, and hammered out the details with the VA and the state office of facilities management. At one point he made a case to Mayor Nagin:

Based on my knowledge, research, and writing on economic development, I also put to Nagin and his team an argument for using the VA as the anchor for the city's economic recovery. Hospitals import new capital from other places in the state and nation. The VA hospitals serves seven states, bring in patients for days, weeks, or months. These patients come with families who occupy hotels and buy local goods and services. In addition, the hospital both buys and sells services across the nation as it develops medical specialties, such as burn therapy. Moreover, with LSU and Tulane's teaching and research hospitals, the new complex planned to specialize in tropical diseases and health, which would bring in millions of dollars in new research funds and attract patients from Latin America and Africa. The mayor, warming to the idea, reminded me that until the 1980s the LSU-Tulane complex was the prime health care venue for well-to-do Latin American and Caribbean patients. When the deal was finally reached, the mayor picked up on the research angle and repeatedly cited the fact that the VA system had spawned three Nobel prizes in medicine. He said that he intended to have the next few prize winners in New Orleans (Blakely, 2012, 94).

If Blakely's account of the path-setting early negotiations of the LSU-VA project is accurate, it demonstrates a profoundly creative application of economic development theories and an aspirational concept of the biomedical district to justify a politically complex problem: rebuilding a federally funded facility at a difficult site that would necessitate partnership with another even larger LSU facility enmeshed in an even more complex web of political decision-making at the state level. This provided Blakely's first (and probably most significant) "win" as recovery czar. The RPC, city, and state then moved forward with the formal proposal for siting the new complex in the biomedical district. Meanwhile, Ochsner Medical Center was also proposing a VA location next to its flagship hospital in suburban Jefferson Parish. Blakely also helped to shut down that alternative: "Although that sounded good to my colleagues, I took a contrary view. Siting the new facility at the downtown location proposed by the city would have the highest direct economic impact on the people of New Orleans, and was therefore preferable to what [Ochsner] was offering" (Blakely, 2012, 95). A week later, Blakely hashed out the details of land assembly responsibilities with the VA. Eventually, the city would promise \$75 million in CDBG funds to offset the VA's land assembly costs.

What Blakely's account did not describe was that the LSU-VA project would more than double the size of the existing medical district. Its site expanded to 67 acres, including 27 blocks of the Lower Mid City neighborhood, most of which was occupied by residences. Many residents in the neighborhood were already in the process of returning and rebuilding. The

2006 Unified New Orleans Plan (UNOP) had envisioned a joint complex with shared facilities, combining LSU and VA replacement hospitals into one 37-acre site, essentially the same area proposed for expansion in the earlier BRDP plans. In the newer, expanded site, LSU would occupy the original 37 acres, and the VA would take the remainder. These decisions involved massive public investment from multiple agencies on the federal, state, and local level, each operating in conditions of considerable risk and uncertainty. The very future of safety-net health care after Katrina hung in the balance. Meanwhile, in a city where every neighborhood was facing existential threats, a decision made outside of concurrent planning processes placed Lower Mid City into the most precarious position. On the surface, Blakely's logic represents the classic conflict between use and exchange values (Logan and Molotch, 1987). But how does a safety-net hospital, a classically locally serving institution, motivate such a powerful economic argument?

## **9.4 A hospital, a neighborhood, and a safety-net care system: The biomedical district as a site of struggle**

### **Redesigning Safety-net Health Care**

After Katrina, the closure of Charity Hospital created two separate opportunities. First, LSU could bargain with the federal government for funds to finally replace the facility with a contemporary teaching hospital that could attract paying patients, an effort bolstered by its potential to anchor an expanded biomedical district. Second, stakeholders in the health care system could exploit the chaos to de-centralize the safety-net role that had traditionally belonged to Charity. These two opportunities could work at cross-purposes, however, since a de-centralized clinic network might take both funding and justification from the effort to rebuild – but not recreate – Charity.

Former US Health and Human Services Secretary Michael Leavitt prominently advocated for reforming a regional healthcare system that was “fraught with inefficiency” long before Katrina decimated its physical infrastructure and workforce.<sup>47</sup> Critics and reformers pointed first to the starkly “two-tiered” system of health care in Louisiana, where low-income patients direct the vast majority of Medicaid and federal indigent care dollars to the antiquated state-run Charity system while middle- and upper-income patients direct private insurance and Medicare

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<sup>47</sup> *Times Picayune*, 18 July 2006.

dollars to private hospitals and clinics.<sup>48</sup> Low-income New Orleanians traditionally relied on Charity's over-crowded emergency rooms as de facto primary care, while private-sector beds have remained underutilized. An early draft of the Louisiana Recovery Authority (LRA)-sponsored Pricewaterhouse Coopers report claimed an "overbuilt" health care infrastructure in the New Orleans region and proposed scaling back LSU's involvement, casting doubt over the revitalization of the downtown medical cluster.<sup>49</sup> Initially, LSU Medical System, which runs the statewide public hospital system, was targeted for reform.<sup>50</sup> At the same time, LSU-run Charity Hospital's closure scattered medical services to private clinics and hospitals where uncompensated care rose by 86 percent, even as many health care practitioners have left the city.<sup>51</sup>

In 2006, Leavitt and the Louisiana Department of Health and Hospitals (DHH) spearheaded a pilot "redesign" project with high hopes that the future New Orleans health care system would serve as a model for the state and the nation. In spelling out a reform agenda (eventually intended to expand statewide) the Louisiana Healthcare Redesign Collaborative concept paper generally echoes the earlier LRA-sponsored Pricewaterhouse Coopers report, which criticizes the existing "two-tiered" system. The "redesign" favors a more patient-centric system, in which the large institution model historically epitomized by Charity Hospital is replaced by more decentralized, community-based primary and preventive care centers, which the Redesign Collaborative calls "medical homes".<sup>52</sup>

To that end, a \$100 million federal Primary Care Access and Stabilization Grant,<sup>53</sup> spanning 2007 to 2010, greatly expanded the network of neighborhood clinics, including some run by LSU, enhancing their capacity to cover the traditional Charity safety-net patient population. The redesign goal, then, is to move patients out of the emergency room and into distributed,

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48 Pricewaterhouse Coopers, Report on Louisiana Health Care Delivery and Financing System, Prepared for the Louisiana Recovery Authority Support Foundation, 2006.

49 *Times Picayune*, 25 April 2006

50 Public Affairs Research Council, Realigning Charity Health Care and Medical Education in Louisiana, 15 May 2007.

51 *Times Picayune*, 5 June 2006.

52 Louisiana Health Care Redesign Collaborative, Concept Paper for Redesigned Health Care System in Region I, Louisiana: Department of Health and Hospitals, 2006. In the proposed system, the high cost of expanding insurance to low-income individuals who do not qualify for Medicaid (generally, those earning less than 200 percent of the Federal poverty level) is balanced by cost savings from access to a managed-care network of public and private "medical homes" and hospitals with more flexible applications of Medicare and Medicaid coverage. As Obama's administration has thrust a similar health care reform debate onto the national stage, the redesign's slated payment flexibilities have fallen by the wayside.

53 The United States Government Accountability Office, Federal Grants Have Helped Health Care Organizations Provide Primary Care, but Challenges Remain (GAO-09-588), 2009.

neighborhood-based “medical homes,” a distinct break from the centralized Charity model. After the grant ended, the a Medicaid Demonstration and Research Waiver funded the Greater New Orleans Community Health Connection to continue the community clinic model by expanding the eligibility for Medicaid funding in the region. In short, while LSU was rebuilding a replacement for Charity Hospital, the core function of the previous facility had been largely displaced to a more organizationally and geographically distributed network of clinics. Along with the economic development strategy of fostering a biosciences/biotech landscape around the existing medical corridor, the health care redesign strategy of decentralizing safety-net care set the stage for LSU to seize of the opportunity for change presented by Katrina. The new facility would be freed of a nearly exclusive safety-net base, and LSU could focus on developing a specialty referral hospital in the mold of leading academic medical centers – rebuilding but not replacing Charity. As Clark (2010) argues, although the multi-stakeholder Redesign Collaborative favored an agenda that would involve distributing the DSH funds from Charity to support a network of medical homes, status quo interests effectively took the question of whether to rebuild Charity Hospital off the table, which essentially left the decision to the LSU and VA on a parallel track with less community input.

### **A hospital mega-project**

In February 2006, LSU initially announced the proposal to construct a new teaching hospital complex in partnership with the Department of Veterans Affairs (VA) to replace Charity Hospital and VA Medical Center, both flooded in the aftermath of Katrina. In addition to the jobs created for the massive construction effort, the joint facility would create 6,000 permanent jobs and an estimated economic impact of \$1.25 billion.<sup>54</sup> The proposal implied decisively vacating the outdated Charity facilities, which previously had presented accreditation problems for LSU, and acquiring – potentially through eminent domain – a 70-acre, 27-block section of the adjacent neighborhood. The modern, state-of-the-art LSU/VA complex would require demolishing 249 buildings, 165 of which lie within a National Register Historic District. The proposal effectively extended the city’s corridor of medical and life sciences institutions into an economically struggling residential and low-density commercial neighborhood of Lower Mid City, while leaving the existing Charity and VA structures to an uncertain fate.

LSU’s proposal received mixed support at the state level. Several actors originally opposed the project on the grounds that such a large public hospital, originally slated for around 300

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<sup>54</sup> *Times Picayune*, 2 November 2006.

beds at a cost ranging from \$650 to \$900 million,<sup>55</sup> was unnecessary in light of the region's smaller post-Katrina population. Over a few objections from both state and federal legislators who questioned rebuilding the VA in a flood-prone area, Congress appropriated the VA share of financing, about \$650 million for a 200-bed facility. Private hospitals, mainly Ochsner Health System, by far the largest private system in the region its purchase of several independent hospitals after Katrina, voiced concerns over competing with the new hospital. These hospitals had been left to pick up the slack of emergency and mental services for low-income patients, much of which is either uncompensated or funded by stop-gap federal grants.<sup>56</sup>

Former Democratic Governor Kathleen Blanco supported the project, but new Republican Governor Bobby Jindal initially echoed opponents of "Big Charity" and the private hospitals' concerns. Given the flagging political support, Louisiana Recovery Authority ordered LSU to produce a business plan to inform any substantive discussion on the use of CDBG funds. The resultant study increased LSU's size and cost estimates to 484 beds and \$1.2 billion dollars, respectively.<sup>57</sup> This size, according to the study, was necessary to ensure that the new hospital could compete for private patients, not just indigent and Medicaid patients, a necessary component of long-term sustainability. Eventually, Governor Jindal voiced support for the project, after an additional review reduced its size to 424 beds.<sup>58</sup>

Funding the massive project was contentious. Originally, LSUHSC proposed a combination of FEMA reimbursements for Charity damages and the Community Development Block Grants provided to the state as the main mechanism for recovery funding, administered by the Louisiana Recovery Authority, with any gaps covered by bond issues. In 2007, the state shifted CDBG funds set aside for the hospital to cover a massive shortfall in the state's Hurricane Katrina and Rita homeowner rebuilding grant program and instead promised support for bond-market financing to cover the majority of funding. The state treasurer, head of the office that controls the state's bonds, voiced skepticism for the project's ability to gain financing and to repay the debt.<sup>59</sup> At the same time, LSU has been in dispute with FEMA over the level of compensation for Charity. FEMA estimators originally pegged damages at \$27 million, far below LSUHSC's request for a "full replacement value" of \$492 million on the disputed basis

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<sup>55</sup> *Times Picayune*, 23 March 2007.

<sup>56</sup> Republican Senator David Vitter also criticized the ostensible reconstruction of another "Big" Charity.

<sup>57</sup> *Times Picayune*, 20 April 2007.

<sup>58</sup> *Times Picayune*, 18 January 2008.

<sup>59</sup> *New Orleans City Business*, 5 October 2009



that Charity suffered over 50 percent damage.<sup>60</sup> In 2008, FEMA increased its offer to \$150 million, but the dispute dragged on for years. In 2010, well after land assembly had begun, an arbitration panel finally set FEMA's replacement payment at \$475 million.<sup>61</sup>

With delays from planning and funding the massive project, the target opening date for a replacement hospital slid back from 2010 to 2012. LSU issued veiled threats that further delays could lead them to reconsider Baton Rouge as the future location of LSU's teaching hospital and medical school, implying that the move would deal a major blow to the New Orleans economy. LSU even produced a number of ads warning that further delays could destabilize its and the VA's resolution to reinvest in New Orleans.<sup>62</sup> Proponents of the project consistently called the VA's patience for state and local delays into question, such that President Obama himself explicitly reiterated the VA's commitment to the partnership at an October 2009 town hall meeting in New Orleans.<sup>63</sup> The project finally broke ground in 2010.

Local government and regional economic development interests remained resolutely in support of the project. Tulane University, the region's other medical school, stood to benefit from medical district enhancements and the opportunity to place residents at the proposed teaching hospital. Tulane, however, had a brief but heated dispute with LSUHSC over their participation on the board governing the expanded medical district, which required Governor Jindal's intervention.<sup>64</sup> Consistent supporters included: the local medical community, the Downtown Development District (*Times Picayune*, 14 August 2009), the regional news paper and business news, the regional planning commission, and Blakely's Office of Recovery and Development Administration.<sup>65</sup> For the most part, local physicians viewed the investment as the key to solving the state's issues with attracting and retaining medical residents. For the business community, the hospitals constituted both the largest non-infrastructure construction project and the largest economic development project in the city's history, and by far the most transformative building program since the mid-1980s oil recession. The investment would not only enhance the biomedical district and provide new jobs but also attract investment to

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<sup>60</sup> *Times Picayune*, 2 October 2009.

<sup>61</sup> Roberts, Deon and Richard A. Webster, Arbitration panel sets Charity replacement at \$475M, *New Orleans City Business*, 27 January 2010.

<sup>62</sup> *Times Picayune*, 6 June 2009

<sup>63</sup> *Times Picayune*, 16 October 2009

<sup>64</sup> *Times Picayune*, 27 August 2009

<sup>65</sup> Editorial: Don't Delay New Hospital, *Times Picayune*, 21 November 2009; LSU/VA set for Mid City – End of Story, *New Orleans City Business*, 23 February 2009; *Times Picayune*, 2 May 2007

the declining periphery of downtown with a visible symbol of New Orleans' rebirth into the knowledge-economy.

### **Opposition to the project**

Made up of health care advocates, preservationists, and Mid City residents, the originally quiet and fragmented local opposition gained a louder voice as the project has unfolded. The project site in Mid City also flooded during Katrina, but many residents had returned, often aided by federal grants, and remained in limbo during the protracted period of uncertainty. Health care advocates (e.g., Doctors for Charity Hospital) saw LSU's actions as an attempt to remove itself from the business of caring for the city's large uninsured population, especially since their proposal did little to address immediate gaps. Preservationists sought to mitigate the impact on the historic district within the development footprint and the uncertain fate of the iconic art-deco Charity structure.

Early arguments by the opposition focused on pleas to LSU's responsibility to restore care and its apparent workings behind closed doors. These arguments framed LSU's actions as a pernicious, irresponsible land grab, leveraging funds through procedural slight-of-hand and back-room politics.

For almost two years after the announcement of the project, no public meetings occurred in New Orleans regarding the proposed site, as LSU appeared to push the project behind closed doors.<sup>66</sup> A series of contentious public meetings proceeded with the VA and/or LSU presenting the project's current phase, consultants presenting site or design alternatives, all of which point to the inevitability of the proposed site and the inviability of alternatives. With financing in question, the LSU plans focused on "phase-one" designs, leaving ample surface parking as room for potential future expansion, provoking further ire from potentially displaced residents and preservationists.

Meanwhile, preservationist and neighborhood-interest foundations funded both informal community organization efforts (Save Charity Hospital) and more formal strategies of marketing campaigns and competing studies (Foundation for Historical Louisiana), along with legal challenges to the project governance and land assembly processes. Organizers invoked the

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<sup>66</sup> Most of the public meetings have resulted from federal requirements attached to the project's funding, much of which stems from FEMA and the VA. Based on the National Environmental Policy Act and National Historic Preservation Act, both VA and FEMA must follow a protocol for site selection (Tier I) and design (Tier II) processes in historic districts, and the kick-off meeting for these processes provided the first local public forum on the project in June 2008 (Gambit [New Orleans], 22 December 2008).

prolonged health care capacity crisis, historic preservation of the neighborhood and the Charity structure, fiscal responsibility, participatory governance, and property rights, while proposing alternatives that touched on the economic development priorities for the project. The Foundation for Historical Louisiana (FHL) funded a \$600,000 feasibility study to examine gutting the existing Charity structure and rebuilding a modern teaching hospital for LSU within its shell. The report concluded that renovating Charity would be cheaper and faster than acquiring, tearing down, and rebuilding on the preferred site (see Figure 4).<sup>67</sup> The VA hospital then would move closer to the medical district, causing significantly fewer impacts on the surrounding neighborhood. Under this proposal, the preservationists repurposed the economic development spatial “clustering” argument to support their alternative, claiming that the “suburban” style LSU-preferred design would undermine the benefits of spatial proximity by de-densifying the medical corridor, while leaving the existing emptied Charity and VA structures as blight in the CBD. The Foundation for Historical Louisiana even purchased a billboard along I-10 next to the medical district and produced a video to promote this alternative, which drew a direct comparison between the hospital and the 1960s anti-highway movement:

Imagine this: an elevated highway right through the heart of the French Quarter. In 1960 it was considered the biggest economic boon to the city ever. They said it was a “done deal” but today we’re grateful that it didn’t happen. The right decision was made. Now, history repeats itself. Another “done deal” is in the works. It includes abandoning the landmark Charity Hospital, along with its historic medical district, and clearing 27 city blocks. This includes demolition of up to 165 historic buildings. The neighborhood will vanish...but it doesn’t have to be this way. The alternative? A rehabilitation of Charity Hospital that not only will revitalize downtown and preserve an historic neighborhood, but it also will become the anchor of a visionary biosciences district.<sup>68</sup>

The neighborhood and the contingent of health care advocates who favored reopening Charity rallied behind the FHL alternative proposal, consolidating previously fragmented complaints under the umbrella of a unified solution. However, LSU has firmly denied the assumptions and feasibility of the FHL proposal, which undermined its position in the dispute with FEMA, and criticized the opposition for forcing further delays.

The opposition recast the controversy as a site debate between the proposed LSU/VA 70-acre site and a renewal of Charity Hospital with the VA relegated to a significantly smaller footprint. However, despite winning lawsuits and prompting further review, the rebuild-Charity effort only succeeded in delaying construction.

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67 RMJM/Hillier, Medical Center of New Orleans Charity Hospital Feasibility Study, 20 August 2008, Foundation for Historical Louisiana.

68 Foundation for Historical Louisiana, 2008.

## Privatizing the Charity System

Largely in an effort to position himself for a failed run for the Republican 2016 presidential nomination, Governor Jindal adhered to a strategy of avoiding any semblance of a tax increase (including cutting the state's generous business tax credits) while privatizing large portions of the government. The most significant deal was, beginning in 2013, the privatization of nine of the state's ten Charity Hospitals, including the Charity replacement hospital in New Orleans. This occurred as Jindal declined Louisiana's participation in the Affordable Care Act's Medicaid expansion. In Louisiana, Medicaid makes up more than one-third of the \$24 billion state budget.<sup>69</sup> The privatization deals have failed to materialize the Jindal administration's claimed budgetary savings of \$125 million annually but have led to a realignment of services and, in some cases, job cuts. The deals also impacted the new hospital in New Orleans and the state's current budget crisis.

While LSU remains responsible for teaching programs and technically owns the hospitals, a management company – in most cases, another regional hospital operator – assumes operational control and leases the facility through hastily assembled no-bid contracts, three of which resulted in closure of the former Charity System facilities. The state received “advance lease payments,” partially to divert Medicaid matching funds to plug other holes in the state's budget, while the operators would receive the Medicaid funding that had previously gone to the LSU-run Charity system. In reviewing the contracts, Center for Medicare and Medicaid Services (CMS) ordered the state to repay \$190 million in Medicaid funds that it says were improperly tied to the lease payments. Meanwhile, as former state employees became private hospital system employees, the LSU system remained saddled with legacy employment costs running into the tens of millions.

LCMC, which operated the Childrens' Hospital and Touro Infirmary in uptown New Orleans, assumed control over University Medical Center, the Charity replacement hospital shorn of its LSU branding. In the deal, LCMC paid LSU an up-front lease of \$110 million to be repaid over the next twenty years, and \$143 million to pay for ongoing construction of facilities on the University Medical Center campus.

Ultimately, Jindal's budget maneuvers at the end of his administration were widely acknowledged as a fiction, “borrowing from the future” to plug immediate holes with non-recurring

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<sup>69</sup> Marsha Shuler, Why Jindal administration's attempt to privatize Louisiana's charity hospitals is running into financial trouble, *The Advocate*, 6 April 2015.

sources.<sup>70</sup> Propped up by recovery dollars and oil royalties, Louisiana largely escaped the wave of state budget crises during the late 2000s recession. The falling price of oil and revenue declines have forced the balanced-budget state to plug a structural deficit estimated at \$1.6 billion (about 18 percent of the general fund) for 2016, an effort that dominated the end of Jindal's term and the first year under his successor, Democrat John Bel Edwards. After months of negotiations in the state legislature, Edwards reached a compromise plan with the Republican-controlled legislature based on increasing taxes, including the state sales tax – a move Jindal had avoided. With higher education and health care already experiencing cuts, Edwards floated the worst case scenario of life-and-death cuts to hospital services and suspending university classes, noting that the latter would essentially sink LSU's football season to emphasize the point.<sup>71</sup>

Ultimately, the turning point for the entire state budget negotiations came not from draconian cuts to higher education but from threats by the (formerly) Charity hospital operators to exercise a clause that would allow them to walk away from their state contracts if faced with nearly \$140 million in proposed cuts, presumably resulting in a chaotic reversion of the hospital system to the state's control. In New Orleans, LCMC ultimately avoided a \$44 million cut, and LSU-HSC avoided its own cuts from the budget and the possible loss of the \$91 million lease payment from LCMC, all of which would have led to the reduction of 877 medical students and 100 resident slots.<sup>72</sup> The credible threat that the state might walk away from the new \$1.1 billion UMC hospital ultimately provided the impetus for compromise. The privatization process complicated the mix of public responsibilities and independent operators in the state hospital system, adding significant risk without addressing the underlying problem of an institutionalized two-tiered system of health care. As a result, a proposal for marginal cuts to the state Department of Health and Hospitals to chip away at the general fund deficit would have had catastrophic consequences: flooding private hospitals with Medicaid and uninsured patients, crippling reproduction of the state's physician workforce, and placing massive federal, state, and local investments in the flagship University Medical Center at risk. This threat helped to prompt legislators to break the budget impasse.

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70 Public Affairs Research Council of Louisiana, Research Brief: PAR Guide to the State Budget Crisis, 10 April 2015.

71 Julia O'Donoghue, John Bel Edwards says budget crisis threatens all of Louisiana – even LSU football, *Times Picayune*, 11 February 2016.

72 Kevin Litten, LSU medical schools, University Medical Center lease payments at risk under budget cuts, *Times Picayune*, 24 February 2016.

Edwards has also initiated the state's delayed participation in the ACA Medicaid expansion, and the Republican-controlled legislature has acceded, as the infusion of federal dollars will help to address the structural deficit, at least in the medium term.<sup>73</sup> The state's safety-net hospitals and LSU's education program also welcomed the infusion of funding.

While the overhaul of the biomedical district and its institutions was shaping – and being shaped by – a range of issues at the neighborhood, regional, and state-level, the BioDistrict was establishing a capacity to leverage the transformative hospital investments for a place-based life sciences strategy. Would this version of the district finally receive external support? Would the institutions work together? How would the neighborhood react to another biomedical entity making plans for their homes and businesses after the LSU-VA experience?

## 9.5 BioDistrict rising and fading

With the Charity controversy in full swing, the GNOBEDD board hired executive staff in 2007 and began full operations in 2009. Initially, the board, which mostly represented major medical institutions and the business community, did not include any community members. The mission statement of the BioDistrict was much broader than merely site development:

To lead in building a 21st century globally competitive New Orleans economy based on the biosciences by actively supporting and facilitating public and private research partnerships, encouraging entrepreneurship and recruiting outside investment and biopharmaceutical companies within a sustainable built environment.<sup>74</sup>

The BioDistrict organization, in principle, focused on coordinating economic development activities (attraction, marketing, and targeted cluster-building); sector-specific workforce development and training, master planning for a cohesive, mixed-use district; and collaboration with the institutions, local and state government, and other economic development organization. Within its 1,500-acre boundary, the GNOBEDD had uncommon powers for an economic development organization in New Orleans, including: to acquire and develop real estate, to impose taxes and fees on development, to issue bonds for development, and complete tax exemption status.

According to the BioDistrict president, the name change from GNOBEDD to BioDistrict was not only convenient but also intended to reflect the identity of the district, for instance in choosing “bioscience” over “biomedical”:

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<sup>73</sup> Harris Meyer, Facing Budget Ax, Louisiana Hospitals welcome looming Medicaid expansion, *Modern Healthcare*, 2 June 2016.

<sup>74</sup> BioDistrict New Orleans, Business Plan 2012–2017, 2012.

What we were looking for was a word that could tie things together. District because of the boundaries and the scale of it. Bio taking off of the Bio industry and technology organizations as the largest [component]. When we looked at the level of science at the universities, if we dealt with biomedical it was really small. If we looked at bioscience, it was large enough that we could actually say this is a space that we can compete in.<sup>75</sup>

In early stages, the emphasis was to develop a combined place-based strategy with a realistic industry focus, and thus to avoid the shortcomings of previous iterations of the organization.<sup>76</sup> As such, the BioDistrict's efforts ranged widely, encompassing neighborhood planning, master planning of the institutional core of the BioDistrict, and cluster development through business attraction and workforce development. The lack of a holistic approach incorporating livability and housing focus was perceived as a shortcoming of other comparable districts, such as Texas Medical Center and Research Triangle Park.<sup>77</sup>

With the explosion of neighborhood clinics after Katrina and general trend of de-emphasizing in-patient hospital care, economic development efforts in theory focused not on health care services but on developing tie-ins with pharmaceutical and other bioscience applications, on enhancing the efforts of the district academic medical centers to develop niches as specialty referral centers, and on leveraging ongoing regional health information technology programs for clinical research.

However, given the barriers to cross-institutional collaboration, meaningful participation in the BioDistrict remained elusive. As with previous versions of the biomedical district, the organization held no authority over the key anchor institutions. Though its charge was to leverage the combined strengths of the institutions to promote collaboration and move commercializable technologies out of the lab, the BioDistrict's role and funding powers failed to attract "enthusiastic" participation from the anchors. According to the BioDistrict president:

Collaboration is not necessarily ingrained into the process, in fact it's the opposite: Don't collaborate, don't share. And not just at Tulane, LSU, and Xavier, but across the board.<sup>78</sup>

Thus, when asked to name the main strengths of the district, the president named, first, the massive investment in the new hospitals and, second, the 700,000 electronic medical records drawn from a nonprofit health information exchange program focused on neighborhood clinics, with data infrastructure housed within the district. Neither of these projects reflected collab-

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<sup>75</sup> Interview with BioDistrict executive, 17 July 2013.

<sup>76</sup> Ibid.

<sup>77</sup> Ibid.

<sup>78</sup> Ibid.

oration from the major district institutions per se, nor between these institutions and private businesses. Likewise, medical records have obvious implications for health system coordination and could have tie-ins with clinical research, but it is a long leap from data to a development program for a district.

In 2010, the GNOBEDD received \$2.4 million from the Louisiana Recovery Authority to conduct strategic and master planning activities that would cover the entire district, not only the existing institutional core and LSU/VA sites. During a 2010 planning process led by AECOM, the BioDistrict encountered resistance from neighborhood organizations and residents. Much of the hostility directly carried over from the LSU/VA site controversy, which had been essentially settled by that point and had little to do with the issue of developing a master plan for the BioDistrict. Given the original lack of publicity about the boundaries of the district and the overall lack of clarity regarding the purpose and powers of the BioDistrict, resident groups viewed the possibility of a continuing creep of the biomedical district as a direct threat to their neighborhood. For example, the Mid City Neighborhood Organization organized to attend planning meetings, partly to advocate for explicit exclusion of residential areas from development and partly to focus planning on resident priorities, such as redevelopment on the long-depressed Tulane Avenue corridor.<sup>79</sup> While the neighborhood organization encountered early criticism for obstructing economic development efforts, residents supported the general concept of economic diversity and, more specifically, the potential impact on property values of doctors and nurses moving into the district.<sup>80</sup> However, reflecting the concern that the biomedical district would impinge on existing residences, public comments documented in the AECOM planning process included statements like:

New development is shown where people's houses are; we're concerned that people will be moved against their will.

We would like to see community representatives on the BioDistrict board.

Why was the BioDistrict identified as 1,500 acres; isn't that a lot?

Nothing that's a house now should be anything else, ever.<sup>81</sup>

In 2013, the BioDistrict reduced the boundaries, partly to designate a zone for a proposed construction impact fee proposal and partly in response to concerns voiced by residents.<sup>82</sup>

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79 Interview with board member of Mid City Neighborhood Association, 28 March 2014.

80 Ibid.

81 AECOM, Working Paper 7: BioDistrict New Orleans Refined Alternative Plans, p.29, 33

82 Interview with BioDistrict executive, 17 July 2013; BioDistrict New Orleans, Board of Commissioners Meeting Minutes, 20 March 2013.



By 2012, the BioDistrict had no funding from the state or the city, prompting financial auditors to “raise substantial doubt to allow it to continue as a going concern”.<sup>83</sup> The BioDistrict explored cooperative agreements with the city and other economic development organizations and alternative financing mechanisms, such as TIF. The organization also reviewed comparable entities in other cities, noting that most receive funding from TIFs, from states (e.g., IMD), or through ground leases and parking garages on land deeded to the district organization.<sup>84</sup> None of these alternatives were in place in the BioDistrict.

As an alternative source of funding, the BioDistrict considered activating its taxation powers to impose an impact fee within certain sub-districts within the BioDistrict of 1.5 percent of new commercial construction. The impact fee would require city approval, but even the board harbored disagreement over whether an impact fee would deter development or would merit approval from the city or state. Noting the general aversion to impact fees, the BioDistrict president made a case for the fee:

The advantage is that we have a magnet of 2 Billion dollars of hospitals, 2 class A health science centers and that this industry ties itself to those magnets, they will not look at alternative locations because of this magnet... Industry is going to come here regardless of the cost, our bonding authority is a way for us to take the property and make it tax exempt and structure tax payments over the life of the mortgage, most developers will not object. [I would not suggest the impact fee in] a perfect world, but the state has no money and the city has no money, and the universities have no money.<sup>85</sup>

Ultimately, the impact fee proposal failed to gain board approval, leading leadership to explore a project-by-project model, where the BioDistrict would issue a bond in partnership with a developer, hold the deed to the property, and thereby exempt it from taxes for the life of the bond.<sup>86</sup> Ultimately, the BioDistrict failed to lure any new businesses into a development partnership.

Later in 2013, the completely unfunded BioDistrict began pursuing a partnership with the Orleans Civil District Court judges to use the BioDistrict’s bonding authority finance a new courthouse near City Hall. The mayor, however, had announced plans to convert the Charity Hospital structure into a new City Hall and civic complex, including the courthouse, which drew ire from the judges. The BioDistrict moved forward with the judges’ plan as a way to generate operating revenue, effectively pitting itself against the mayor, although BioDistrict board attendance had flagged to the point where no quorum was achieved to even discuss

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83 BioDistrict New Orleans, Board of Commissioners Meeting Minutes, 23 May 2013.

84 Interview with BioDistrict executive, 17 July 2013.

85 BioDistrict New Orleans, Board of Commissioners Meeting Minutes, 23 May 2013.

86 Interview with BioDistrict executive, 17 July 2013.

the issue. Citing the implications for conflict with the administration over a plan that would stretch the district's mission, the board ultimately declined to support the last-ditch effort. The president of the BioDistrict, who had not been compensated due to funding issues since late 2011, resigned in December, 2013. He sued the BioDistrict for back pay and eventually won on appeal.<sup>87</sup>

About the BioDistrict, Mayor Landrieu stated:

I didn't create that entity... I don't know what they're doing. It doesn't sound like they have any money. I don't know what their vision is. I do know what the entity is that we created. ... At this time, all of our effort related to this is housed at the New Orleans Business Alliance.<sup>88</sup>

A statement from the Mayor's office elaborated on the poor performance of the BioDistrict and the duplication of efforts with the major regional Chamber of Commerce organization (GNO Inc.) and Landrieu's recent reorganization of the city's economic development department into a public-private partnership, the New Orleans Business Alliance:

We have two strong economic development organizations in GNO, Inc. and the New Orleans Business Alliance that are funded, staffed and delivering results... These high-performing organizations each have a focus on creating a thriving regional biosciences and health care industry in New Orleans, most recently laid out in the NOLABA ProsperityNOLA plan launched earlier this year. In contrast, the BioDistrict New Orleans organization, created by the state in 2005 without sustainable funding from the state, is struggling with its mission, its funding and in delivering results.<sup>89</sup>

Indeed, both organizations had adopted health care and the life sciences as a sectoral focus, particularly with the opening of the BioInnovation Center and the new hospital complex nearing completion.

The New Orleans Business Alliance (NOLABA) grew out of a recommendation from Mayor Landrieu's transition team to establish a public-private partnership, a non-profit organization that would function as the official economic development agency of the city. Since its founding in 2010, NOLABA has focused on retail attraction, though its scope is broader. Between 2012 and 2013, while the BioDistrict was languishing, NOLABA went through a planning process, described as the first comprehensive economic development plan in the city's history, to identify and develop action steps on clusters. In the first phase, NOLABA commissioned the Initiative for a Competitive Inner City (ICIC) – a Harvard spin-off associated with Michael Porter, the

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87 James P. McNamara versus Greater New Orleans Biosciences Economic Development District, NO.2015-CA-0748, Court of Appeal Fourth Circuit, State of Louisiana.

88 Rebecca Catalanello, "Future of BioDistrict New Orleans could be in doubt, leader says" *Times Picayune*, 19 November 2013.

89 Ibid.

economist most prominently associated with popularizing the cluster concept in the 1990s and 2000s – to provide a baseline of data. The first cut identified 13 industry clusters in the city. In the second phase, 75 local leaders participated in a prioritization process. This advisory group pared down the clusters to five priorities, three “emerging” (BioInnovation and health services; sustainable industries; and creative digital media) and two “foundational” (advanced manufacturing; transportation, trade and logistics). Notably, the BioDistrict was not represented on the subcommittee for the BioInnovation and health services cluster.<sup>90</sup> NOLABA framed the plan, released as *ProsperityNOLA* in 2013, as a five-year comprehensive plan, linking cluster identification through to action steps.

Employment in BioInnovation and health services nearly equaled that of the other four clusters combined. Initially, BioInnovation and health services were identified as separate clusters by the ICIC, but the advisory committee opted to combine the two clusters “because of the natural synergies in research commercialization and academic medical centers”.<sup>91</sup> Since the initial planning process, stakeholders on the BioInnovation side participated with NOLABA on a more ongoing basis through the cluster-based industry councils. With Tulane and LSU in-fighting and the future of the new University Medical Center up in the air, the health services side of the “cluster” remained a peripheral participant, although LCMC has been more engaged since taking over the University Medical Center from LSU.<sup>92</sup> In fact, NOLABA had more contact with Ochsner System through the New Orleans Works, which began as a pilot program for providing medical assistant training to funnel low-skilled workers into positions at Ochsner.<sup>93</sup> The specific term “BioInnovation” directly referenced the BioInnovation Center’s momentum and perceived success in achieving full occupancy ahead of schedule. The minor naming issue reflects the ad hoc nature in which flexible, imprecise analytic categories for identifying health care and life sciences activities and describing their cluster-like interrelations are subject to tactical negotiation by political actors. In this instance, the adoption of the brand name of an incubator facility signaled the replacement of a single successful physical investment with a broader concept of a biomedical district as a place-making and sector-developing strategy.

After the BioDistrict lost its only staff, the BioDistrict board approached NOLABA to explore the possibility of combining efforts, leading eventually to a cooperative endeavor agreement for NOLABA to essentially provide staff for administering the day-to-day tasks of the BioDistrict

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90 New Orleans Business Alliance, *ProsperityNOLA*, 2013; interview with NOLABA staff, 18 July 2013.

91 New Orleans Business Alliance, *ProsperityNOLA*, 2013

92 Interview with NOLABA staff, 5 August 2014.

93 Interview with NOLABA staff, 5 August 2014.

as an addendum to its organizing around the BioInnovation and health services cluster.<sup>94</sup> NOLABA cautiously embraced responsibility for the BioDistrict, since the sectoral coordination, physical planning, and blight remediation remained an unfunded responsibility.

Yet, NOLABA is also taking a different approach from the previous BioDistrict organization. In fact, NOLABA initially began informally replacing the term BioDistrict with “biomedical corridor” as a reference to the actual biomedical district. Partly, this was due to the uneasy relationship with the neighborhood, but mostly because of the conflict between the BioDistrict and the mayor that proved to be its final straw.<sup>95</sup> However, the BioDistrict still refers to an actual entity, with a board and with special powers like bonding authority, which could facilitate new cluster development projects. One example is a second phase of the at-capacity BioInnovation Center, which is viewed as crucial to retaining successful incubator graduates. More facilities provides a necessary but insufficient counter to the strong pull of proximity to venture capital and other companies, especially when corporate acquisitions or venture investors require companies to move to Boston, the Bay Area, or San Diego.

As of late 2014, NOLABA had also explored a version of the “Cleveland Model,” focusing on local hiring and procurement, and had even taken a trip to Cleveland and contracted with anchor proponent the Democracy Collaborative to create a procurement strategy.<sup>96</sup> NOLABA has broadened the economic strategy to more of an anchor-focused approach carving out a role alongside Bioinnovation. Collaboration with hospitals has been more difficult than with the life sciences players, although LCMC (the new Charity operator) has apparently been more willing to collaborate and has provided an antidote to the historical infighting between Tulane and LSU. The goal has also broadened beyond the “biomedical corridor”.

## 9.6 Conclusion: Organizations fade, ideas persist

A 2010 impact study of the BioDistrict found that health care accounted for over 11 percent of jobs in New Orleans.<sup>97</sup> Another 2015 study by Brookings and the local nonprofit Data Center to mark the tenth anniversary of Katrina, identified health care as the largest source of employment and of “good jobs,” accounting for about one out of every seven “good jobs” in

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94 Mark Waller, New Orleans Business Alliance is taking over efforts to promote the health sciences industry in the city, *Times Picayune*, 18 September 2014; NOLABA, Development in New Orleans: Investing in the Future, 2014.

95 Interview with NOLABA staff, 5 August 2014.

96 Ibid.; Jessica Bonanno, Steve Dobb, and Ted Howard, Healthcare Small Business Gap Analysis, The Democracy Collaborative, 31 March 2015.

97 BioDistrict New Orleans, Economic Impact Study, 29 October 2010, p.26

the region.<sup>98</sup> According to an analysis of Dun and Bradstreet data, the total employment of the BioDistrict was 34,034 in 2009, although the cumulative total of all major institutions was 14,500 – growing to 17,500 with the completion of the UMC and VA hospitals.<sup>99</sup> Since Katrina, New Orleans has seen well over \$2 billion in health care facilities construction, creating thousands of jobs, transforming neighborhoods, and effectively shuttering a nearly three-century-old institution of safety-net care.

These investments are at least as, and possibly far more, significant for most cities than their efforts to build a biotechnology-based “ecosystem” of innovation. In New Orleans, biotech employment – though more difficult to define and count and, thus, subject to considerable variation from study to study – accounted for under 2,000 workers.<sup>100</sup> Meanwhile, due to Katrina, NIH grants in New Orleans decreased by nearly half between 2004 and 2009, when the city ranked 55th among regions receiving NIH funding.<sup>101</sup> However, courting opportunities for the commercialization of biomedical technology creates a context for visible signs of investment and motivates the logic of biomedical district strategies. The compelling but flexible discourse of biomedical possibilities also legitimizes the actions of political and institutional stakeholders who determine policy and allocate resources within environments littered with risks and trade-offs. In New Orleans, the concept of a biomedical district rallied support that was necessary to bridge a complex, expensive, and risky hospital project involving local, state, and federal actors that encountered additional opposition regarding its implications for the health care system, the neighborhood that it would displace, and for the original Charity structure that it would abandon. With its potential to anchor a life sciences sector and with Katrina’s impact on generating an opportunity for federal funding and de-centralizing the responsibility for safety-net care, the long-stalled process of transforming Charity Hospital finally came to pass.

The relationship between health care and the economy is subject to negotiation in how both are funded, governed by policy and regulation, and conceptualized by policy and development actors faced with complexity and uncertainty. The health care system itself is a significant source of complexity and uncertainty in development, compounded in this case by the context of post-Katrina recovery and planning. In Louisiana, the restructuring of Medicaid and state hospitals have major consequences for the entire state budget. In New Orleans, bold plans to remake

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98 Richard Shearer, Amy Liu, Natalie Holmes, and John Ng, *Opportunity Clusters: Identifying pathways to good jobs in metro New Orleans*, 2015.

99 BioDistrict New Orleans, *Demographic and Economic Baseline Report*, 30 September 2010, p.74.

100 Research Edge, *Health Care and Biotech Workforce in the Greater New Orleans Area*, New Orleans BioInnovation Center, 2009.

101 BioDistrict New Orleans, *Economic Impact Study*, 29 October 2010, p.7.

the health care system and to catalyze a life sciences cluster have often overlapped. While the life sciences side remains aspirational, it has consequences for the very real restructuring and very massive amounts of money and numbers of jobs involved in the health care system. The development of the biomedical district depended on the opportunism of city recovery authorities and a large academic medical center, which was in turn embedded within a state bureaucracy and threatened by a state-level privatization and budgetary crisis.

While the actual BioDistrict was scrambling for operations funding, master planning the integration of new biomedical spaces and existing neighborhoods within its boundaries, and aspiring to build an innovative “eco-system” – ultimately, all to little effect, the long-standing idea of a biomedical district in New Orleans affected decisions over the future of the regional safety-net health care system and the state budget. The economic potential of the biomedical district worked in tandem with LSU’s priorities for re-fashioning its responsibility for Charity Hospital to exert more influence over the Charity saga than competing stakeholders in the decision. These decisions, which were among the most significant for the city’s recovery, occurred in isolation from the concurrent re-design of the health care system, several public processes of sketching out a recovery plan, and patients and neighborhood residents affected by the transformation of Charity. When the Charity/VA project encountered threats, the economic implications of anchoring a biomedical district with a visible sign of investment on the edge of downtown motivated support from other actors.

Thus, the compelling logic of New Orleans’ biomedical district and its promise of anchoring of a life sciences cluster is traced through the actions and arguments of recovery czars, institutions negotiating extraordinarily complex development projects, community opposition to those same projects, mayoral platforms, economic development organizations, and state legislators coping with structural budgetary challenges. Meanwhile, the organizational capacity to plan for a biomedical district in New Orleans has only existed in fits and starts since the early 1970s. Although these efforts have had little direct influence on the regional economy or even on development within the existing biomedical district, their possibilities have justified significant investments, from rebuilding Charity Hospital to the BioInnovation Center. New Orleans’ biomedical district is thus made up of a tapestry of major health care institutions and economic development assets all created, to varying ways, on the hypothesis of clustering in proximity, but with little ongoing organizational structure to manage that proximity.

This contrasts with Chicago and Houston, where durable organizations arose at transformative moments when the district and enjoyed broad support from a more cohesive pro-growth

coalition than has existed in New Orleans. The original cases also had considerable control over land, which has not existed in New Orleans' iterative attempts to plan for the district. Even with land, the ability of Chicago and Houston to shape decisions by their tenants has been limited; without it, generating funding for operations and ensuring ongoing participation by the anchor institutions has been difficult in New Orleans, and often shaped by competition and tensions over the contentious relationships between the two academic medical centers and Charity/UMC. Yet even in three very different contexts, the types of projects pursued recently and the immediate goals show a great degree of consistency: repositioning hospitals to compete in a changing environment and building out the ecosystem of life sciences commercialization. While the local context, organizational capacities, and impacts vary, recent realignments of the TMC and IMD organizations and the landmark but piecemeal transformations in New Orleans' biomedical district have had similar rationales and variations of the same underlying causes. All three biomedical district efforts have shifted from stabilizing the ability of health care institutions to meet local needs to converting these institutions into assets for improving the diversity and competitiveness of the local economy.

# Chapter 10

## Conclusion

### 10.1 Introduction

Over the last decade, health care expenditures have accounted for over one quarter of the growth of the entire US economy (Emanuel, 2015, Ch.4). What this means is a matter of perspective. For the federal government, which pays 28 percent of health care expenditures, the continued growth of national health care expenditures, projected at a rate of 5.8 percent through 2025,<sup>1</sup> represents a clear fiscal threat as long as it outpaces gross domestic product (GDP). After nearly a century of stalled efforts in Congress, the Affordable Care Act (ACA) finally delivered comprehensive health care reform legislation, and its still-uncertain long-term implications will be the most significant policy legacy of the Obama presidency. While the ACA expands access to care, it is unlikely to contain excess cost growth without additional reform. The incremental reorganization of the health care system marches on.

For states, reimbursing providers for Medicaid and uncompensated care competes directly with other discretionary items in the budget. In many cases, higher education pays the price when these budgets tighten.<sup>2</sup> For businesses, which pay 20 percent of national health care costs, health insurance is the largest cost of employee compensation after wages and salaries. For every dollar paid in wages and salaries, 12 cents is paid for health insurance.<sup>3</sup> The increasing cost of insurance has siphoned off the wage growth of America's working class and has threatened the normal range of benefits associated with standard, full-time employment. While the ACA

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1 National Health Expenditures Fact Sheet 2014, Centers for Medicare and Medicaid Services, <https://www.cms.gov/research-statistics-data-and-systems/statistics-trends-and-reports/nationalhealthexpenddata/nhe-fact-sheet.html>

2 This cost ultimately trickles down to students in the form of tuition increases.

3 This is an average for all employees. For some occupations, workers compensation insurance can be higher than health insurance. See Bureau of Labor Statistics, Employer Costs for Employee Compensation – June 2016, Press Release, 8 September 2016.



expands access to insurance through an employer mandate, its cost may contribute to undermining employment norms, e.g., as employers' opt instead to subsidize workers' purchase of insurance through the state exchanges or adopt contingent and alternative work arrangements to save on non-wage costs. For individuals and families, medical bills are the leading source of personal bankruptcies, and eroding insurance benefits relative to costs are one of the most significant frontiers of economic insecurity in American society (Hacker, 2006).

Cities also feel the increase of health care costs, e.g., in the increasing cost of benefits to municipal employees and some public services. However, health care also provides new economic opportunities for employment, investment, and diversification. For many cities, attempts to realize these opportunities have hinged on the presence of academic medical centers, large hospitals, and related organizations and their tendency to co-locate. By examining this phenomenon through the lens of a single research object – the urban biomedical district – this dissertation has examined how the production of space and place has paralleled the changing organizational makeup of the biomedical economy. But this parallel has not merely resulted naturally from change at the national level reflected on the urban scale. Rather, these tendencies are refracted by regionally embedded health care organizations, industries that engage in biomedical research and development, and local organizations that bring the policies, processes, and toolsets of urban planning and economic development to bear on the growth of the health care system.

The research has excavated the origins of the urban biomedical district as a formally designated development area and dedicated development organization, a policy adaptation at the intersection of concurrent transformations of the health care system and urban economies and shaped by mimetic isomorphism. Though these districts vary, their development tends to reflect a narrow set of understandings about the problems, opportunities, and scope of collective action. When development actors straddle multiple institutional arenas, those actors select from among a set of existing causal narratives germane to the grounded, institutionally mixed contexts in which they operate. Rather than generating original chains of cause and effect, the consequential work of these actors consists of identifying, evaluating, and synthesizing existing chains and, just as importantly, ignoring the potential of others. In the case of both urban development and biomedical health care as distinct institutional arenas, the availability of cause and effect narratives is socially constructed by the industry organizations representing the biotechnology and device industries; the managers of hospitals, academic medical centers, and health systems; the anchor institution literature; the field of local economic development;

and the lessons of existing models. Even with this diversity, the policy discourse around urban biomedical districts assembles multiple development logics into locally specific rationales for action that still manage to show significant signs of convergence.

The next section reviews the findings. The remainder of the chapter considers the implications for policy, practice, and additional research.

## 10.2 Summary of findings

This dissertation has sought to explain why biomedical districts exist. It began with two research questions:

Why have urban biomedical districts emerged as an economic development strategy?

What function do urban biomedical districts perform in local and regional economies and in the health care system?

The answers to both have changed over time. Chapters 6 and 7 examined the medical district as a new type of organization that emerged in the 1940s in Chicago and Houston. While the two legacy medical districts had different governance structures, different initial conditions, and different powers and resources, both established a planning and development apparatus to collectively strengthen their tenants' missions to provide treatment, conduct research, and educate the medical workforce, specifically through their capacity to acquire, convey, and control the use of urban land. Chapters 5, 8, and 9 examined how this basic organizational template has both proliferated and transformed in a manner that intersects with multiple concurrent processes of restructuring in the health care system, in the biomedical economy, and in the employment and industrial base of cities and regions. As a result, the putative role of the biomedical district as a policy strategy has grown more diverse and more ambitious, even (eventually) in Chicago and Houston. This ambition also served to legitimize a far more sweeping and controversial set of transformations in New Orleans after Hurricane Katrina.

The conditions that give rise to (bio)medical districts have always been the relationships between medical institutions, but these relationships have changed considerably. Before the twentieth century, the oldest medical districts emerged from competitive sorting of land uses, as medical schools located near teaching opportunities in charitable hospitals and public hospitals. The main function of these nascent districts was to provide care to the urban poor, a function on which medical education also depended. In the first decades of the twentieth century, improving medical technology, the consolidation of the modern academic medical center, and public investments in hospitals increased the scale and specialization in the process of district

formation. The teaching affiliation was – and still is – the dominant driver of proximity. Another wave of development came with federal intervention in health care, beginning after World War II and peaking with Medicare and Medicaid in 1965. These policies supported construction in a manner that favored specialization and technology, with only weak regulations on how these capacities should be distributed across space and across care organizations. They also increased the cost of care and de-coupled the relationship between hospitals and their historic responsibility for providing charitable care. Hospitals have always been both businesses and charities (Stevens, 1999); in the postwar period, they became big business.

In some cities, resources for construction allowed hospitals to flee congestion and follow the population to the suburbs. During this time, medical districts first became explicit objects of political action. In some cases, medical districts were created in conjunction with federal and state powers of redevelopment (e.g., Chicago in the 1940s, Birmingham in the 1950s, New Orleans in the 1970s), allowing existing institutions to expand in place while achieving urban development objectives. In others, districts were created to attract a medical school (e.g., Houston, San Antonio, and Dallas in the 1940s).

These interventions require the support of economic development interests (proposition 1)<sup>4</sup>. In the emergence of medical districts in Houston and Chicago in the 1940s, the earliest notions of establishing a collection of institutions dedicated to medical treatment, research, and education appears to have emerged within the medical community. The conversion of these notions into a formal district and durable development organization hinged on the support of external actors who responded to the potential of the medical district to address perceived economic problems. In Chicago, the Chicago Plan Commission and the Commercial Club viewed the medical district like an urban renewal project, a redevelopment mechanism to remediate inner-city “blight”. In Houston, wealthy philanthropists provided inducements in the form of land and funding, and the chamber of commerce raised money and brokered governmental support. The district provided a creative means to assemble a concentration of several institutions that collectively matched the prestige of more established academic medical centers in industrial cities.

More recently, an isomorphic process matching a set of economic development problems to the restructuring and growth of certain health care organizations has conditioned a more widespread application of this organizational model. A similar policy logic, with close parallels to the linear model of innovation, is observable in many communities where a biomedical

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4 proposition 1: The perception of opportunity in the biomedical economy and the ubiquitous availability of local assets with unrealized potential facilitates support for biomedical district adoption among economic development actors, which is a necessary condition for biomedical district adoption or transformation.

district has been formally established or has otherwise intersected with economic development policy (as hinted in proposition 4)<sup>5</sup>:

An academic medical center or a concentration of employment and research activities around one or more hospitals;

A lack of technology commercialization traceable to discrete gaps (e.g., access to appropriate capital, a self-contained system of innovation embedded in a local network, organizations that anchor entrepreneurship);

The perceived need for industrial diversification and innovation in order to promote growth and maintain competitiveness.

These characteristics, however, do not precisely capture the breadth of biomedical district strategies. The establishment of some districts, even recent ones, is tied to attempts to lure academic medical centers. Other districts focus less on anchoring clusters for technology commercialization than on the relationship between the district and its surrounding neighborhoods – more an anchor institution-oriented than cluster-oriented model. As a result, the biomedical district as a phenomenon exhibits both homogenizing and differentiating tendencies (proposition 5)<sup>6</sup>. Perhaps the most salient finding in this respect is the breadth of development objectives pursued through the mechanism of merely establishing a biomedical district. Similarly, the initial germ of district formalization may emerge as a collective project by existing health care organizations or as an outcome of broader land use and economic development planning processes. In any case, the more consequential work involves how such districts are converted into durable organizations and how they intersect with the transformation of health care institutions.

The New Orleans case exemplifies the organizational durability problem. A shared purpose with economic development organizations was not sufficient to ensure a durable organization though the interest never quite faded, resulting in the layering of successive district entities. From its beginnings as an urban renewal project to the BioDistrict's fading away, the New Orleans case offers moments of formal adoption and establishment but without the organizational capacity to shape development in the district. However, the biomedical district had its moment as a compelling legitimacy for the post-Katrina controversy over Charity Hospital. The economic potential of the district organized support across several local, state, and federal government agencies and local economic development actors in an extraordinarily complex

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5 proposition 4 The content of biomedical district strategies is growing more homogeneous over time. Meanwhile, the range of places and the land uses they contain is becoming more variegated.

6 proposition 5: Institutional change has reworked the causes and effects of agglomeration. While reorganization of members has always prompted adoption, the possibilities of inter-organizational research collaboration, clinical integration, and commercial spin-offs and spill-overs have replaced supporting in-patient and safety-net care as primary place-making objectives of biomedical district strategies.

development process – even by mega-project standards – that marginalized opposition from the neighborhood, preservationists, and some health advocates. The decision to close and rebuild Charity Hospital became not only a struggle over the state’s responsibility for providing safety-net care and medical education but also over the economic future of post-Katrina New Orleans. Along the way, the obsolescence of Charity Hospital and the opportunity to catch up to the strong biomedical districts in Houston and Birmingham framed much of the public debate. Frictions over the physical and organizational form of post-Katrina health care in New Orleans contrasted with the agreement on both sides of the desirability of a strong, innovative concentration of life sciences research and commercialization on the fringes of downtown.

Biomedical districts are indeed relatively easy to establish but difficult to maintain (proposition 3)<sup>7</sup>. The control over land has extended the durability of the oldest medical districts, like the Illinois Medical District and the Texas Medical Center. Even without its control by a dedicated district organization, the use of eminent domain to convert a neighborhood into a hospital complex occupies the most pivotal moment in the New Orleans case. But biomedical districts are about more than land. The study has also identified several practical conditions of organizational durability and the capacity to influence development among younger district organizations. First, biomedical district organizations often face a lack of clarity regarding their specific role. These organizations are not patient care organizations; and although the biomedical district itself is often easily identified as a place, their development organizations may struggle to establish a niche among a range of other economic development and governmental organizations, especially since health care organizations largely dictate district development. Notably, this role vagueness also applies in various ways to the most established district organizations (i.e., the Texas Medical Center). The Chicago and New Orleans cases provide numerous illustrations of the constant threat of role clarity. Second, and partly due to the same role clarity issue, recurring sources of operational funding are a necessity. Government support is prone to wane, grants are typically project-based, and instances where member organizations pool resources are rare and often limited to joint construction projects and specific services or infrastructures – especially for newer district organizations. For many districts, parking and leases answer this question but can also contribute to a narrowing of scope over time. Such lock-in proved to be a source of disappointment in both Houston and Chicago. Third, and most

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<sup>7</sup> proposition 3: Biomedical districts are relatively easy to establish but difficult to maintain. They depend on buy-in from economic development actors, qualified support from member organizations, and access to resources. In addition, older biomedical districts encounter inertia when faced with pressure to convert to a new landscape of priorities and challenges.

importantly, the organization's success and relevancy hinges on its ability to muster meaningful collaboration among its major organizations.

Collaboration, however, encounters many difficult impediments (proposition 2)<sup>8</sup>. As hospitals and academic medical centers face many uncertainties, meaningful participation in district planning is unlikely to rank highly on the list of priorities in absence of a specific issue, which could range from traffic congestion or special land use designations to addressing systemic problems with teaching affiliations at struggling public hospitals (e.g., Chicago and New Orleans in the 1970s). Participation is also mediated by the frequently tense nature of inter-organizational affiliations and the endemic competition among health care organizations – tensions that also hinder change in the health care system more generally. At its best, the tension between competition and collaboration promotes network formation, efficiency, access to shared resources, and collective learning and adaptation. At its worst, zero-sum competition for patients and duplication of services in health care is a major driver of cost.

Promoting collaboration is, simultaneously, the most essential and most difficult role for biomedical district organizations. As the scope of health care organizations extends beyond hospital walls, as payment and research funding incentivizes systems integration and collaboration, and as providers jockey for market position by reorganizing their services and constructing new facilities, biomedical district organizations can provide a neutral third party for collectively organizing around collective goals like research and clinical partnerships, planning and building out the district itself, and prioritizing projects that also support economic and community development goals.

The potential impact of such collaboration, however, raises deeper questions regarding who benefits from the transformation of biomedical districts and the related subset of strategies to establish life sciences “ecosystems” (proposition 7)<sup>9</sup>. Many of the recent building programs in biomedical districts essentially produce space for increasingly high-technology, highly specialized research and treatment. The explosion of wet lab incubator facilities in cities across the US over the past two decades and the recent attempts to package district patient bases for clinical trials essentially subsidizes portions of discovery, early-stage development, and late-stage

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8 proposition 2: The possibility of alleviating pressure to adapt to change makes member organizations generally supportive of the biomedical district but deeply guarded against conflicts with their autonomy.

9 proposition 7: Contemporary biomedical district development strategies prioritize the speculative use of resources to subsidize pipelines between external biomedical technology industries and the traditional district activities of care, teaching, and research. These pipelines create a context for short-term policy success in absence of the capacity to achieve more difficult, long-term goals, like improving access and quality of care or generating a self-sustaining industry structure for local employment creation.

testing for the profit centers of the biomedical economy. They reflect the deepening integration between academic health care and commercial biomedicine. Such integration can be a necessary building block of a thick local innovation system or a route to more value-based innovation. It can also be a source of ethical dilemmas, conflicts of interest, and misalignment of innovation resources. Despite the dominant policy rhetoric of the biomedical economy, promoting more technology commercialization is not necessarily the most cost-efficient or effective type of innovation in health care. Nor does it necessarily maximize the local economic or community impacts of health care's transformation. It does, however, appeal to local policy-makers and economic development organizations and provide new potential revenue sources for academic medical centers, universities, and hospitals.

As a policy phenomenon, the biomedical district thus demonstrates the limited ways in which the transformation of health care has intersected with local economic development policy (proposition 6)<sup>10</sup>. Eds and Meds and life sciences clusters have, over the past three decades, been discovered as logical approaches to leveraging local assets to support a wide range of economic development objectives. These opportunities, however, stem primarily from a set of institutional transformations with uneven impacts across urban space and health care organizations. Some "Meds" have grown while others have declined or closed. Safety-net care continues to disperse from hospital settings, reducing cost but diverting responsibility for providing care for those marginalized by the US health care system to smaller-scale, less "institutional" non-profit organizations. These organizational adaptations are the driving forces behind the transformation of biomedical districts. The next section considers the scope for economic development policy beyond merely celebrating, legitimizing, and subsidizing certain aspects of the transformation of health care.

### **10.3 Implications**

#### **Entanglements of health care and economic development policy and their possibilities**

The 2016 contest for the Democratic nomination rehashed an old debate. Bernie Sanders' support for single-payer health care – "Medicare for all" – contrasted with Hillary Clinton's pragmatic acceptance of the interest group politics that have, since the Great Depression, limited

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<sup>10</sup> proposition 6: The existence and possibility of biomedical districts motivates buy-in from external actors at contingent moments of organizational change and competitive realignment by its members. Local economic development provides a political capacity and logic to support organizational adaptation to changes in the health care system.

the scope of comprehensive health care reform. Single-payer health care enjoys a strong following (e.g., Physicians for a National Health Program, National Nurses United), and Canada and other countries show that, all else equal, such a system would reduce administrative costs and complexity, reduce and rationalize prices, and restrain excess cost growth with relatively few side effects. Just as importantly, a single-payer system would increase regulatory incentives for quality and ensure accessibility regardless of health status, age, income, or employment. All health systems struggle to balance cost, quality, and access, but these trade-offs are greater in the US than in any single-payer (e.g., Canada), regulated full-coverage (e.g., Germany), or state-run system (e.g., UK). In the US, national change would require replacing insurance premiums with tax increases, would face opposition from the insurance industry and health care providers, and would require a complete overhaul of each of the multiple, overlapping systems that exist. In short, there is no realistic path to single payer in the foreseeable future (Oberlander, 2016).

In absence of such a revolutionary national intervention to reduce cost growth, reform and adaptation will continue in a piecemeal fashion, with presumably only minor disruptions to the geographic and organizational dimensions of inequality in the cost, quality, and economic spoils of the US health care industry. There remains a considerable role to play from economic development interventions in health care, including those that focus on concentrated districts.

### **Cluster strategies in the age of “bending the cost curve”**

Beginning in the 1990s, the salience of Michael Porter’s cluster model significantly shaped the diffusion of biotechnology as a focus of local economic development strategies. In the 2000s, Porter became a leading critic of “zero-sum competition” in the health care system (Porter and Teisberg, 2006, 2004; Porter, 2010b). My argument is that biomedical district strategies should take on the latter of Porter’s contributions as aggressively as they have taken on the former.

Urban biomedical districts raise many of the same questions associated with regional cluster investment strategies more broadly (Christopherson and Clark, 2007, 143–145). Investments in institutional capacity, facilitating translational research, creating built environments conducive to collaboration, and investing in the workforce all reflect the attempt of policy-makers and economic development actors to avoid economic decline and to distinguish their regions in the global economy. Like other cluster strategies, these policies imply risk in the spatial disjuncture between different components of the production process and the potential for broad-based job creation for lower-skilled residents. Much of the discourse around biomedical districts engages with their potential to support the creation of life sciences firms that will attract high-skilled



workers. The related strategies first and most directly benefit relatively mobile start-ups and high-skilled workers before blossoming into more accessible job creation. These opportunities, of course, provide significant leeway to anchor a broader program of accessible employment, e.g., through pharmaceutical or device manufacturing (Lowe, 2007). However, as is so often the case, workforce development and accessible employment has lagged far behind entrepreneurial business development and physical investment in many cases.

Urban biomedical districts, however, raise additional questions regarding the potentially uneven impacts of innovation across geographic scales. In many other industries, innovation implies cost reduction and potentially job loss as fewer workers are needed to produce the same unit output. In biomedicine, technology innovation is the largest contributor to the increased cost of health care. The reasons for this are complex and rooted in the organization of the bio-pharmaceutical and device sectors, the way that insurance reimburses providers, the way that competition drives diffusion, and the ethically charged interactions between doctor and patient – all of which institutionally reinforce high-cost medical interventions as “ordinary” (Kaufman, 2015). In other words, while biomedical research certainly produces life-saving therapies and has the potential to unlock new technologies that would dramatically reduce cost, the health care system is not currently structured in a manner that necessarily provides incentives for high-value innovation (Bagley and Frakt, 2015), i.e., innovation that significantly improves outcomes and reduces cost. Short of national reforms, even successful biomedical cluster strategies have real potential to create innovations with social costs in excess of their economic benefits. From this perspective, new partnerships with bio-pharma, new patents, and even new life sciences employment should be viewed skeptically as primary indicators of policy success. The diffusion of innovations further implies that many of the benefits and costs of new technologies are likely to fall outside of an territorially bounded local cluster, creating the potential for a coordination problems. The potential of biomedical technology ecosystems is limited both by what regional economies can support and by the amount of innovation that the US economy can support.

For this reason, regulatory modifications to restrict the tendency toward low-value, high-technology innovations comprise a necessary but difficult agenda for national policy reform even while local economic development agencies uncritically laud any metric of innovative activity. Should the cost-containment effort succeed, the upper limit of job creation from life sciences innovation might be limited for nascent clusters. In fact, efforts to “bend the cost curve” more generally could threaten the ability of health care to continue to provide job creation for

cities, including those where the counter-cyclical growth of the health care system has blunted the impact of previous rounds of restructuring and job loss. These risks underscore the need for more direct research on the role of health care in the local economy, including the type and quality of jobs it creates and its sensitivity to state and federal rules.

### **Innovation districts, but not necessarily for life sciences**

Recently, the framework for planning biomedical districts has converged toward the model of innovation districts. Generally, the notion of the innovation district blends regional innovation, localized place-making for mixed uses and live-work activities, and reinforced connections between innovation anchors and start-ups. The flavor of innovation district pursued by most biomedical districts, however, emphasizes life sciences technology. The goal is to nurture start-ups and connect them to industry and funding pipelines.

Innovation can mean multiple things in health care. The innovation most firmly entrenched as a focus of economic development is in biotechnology, medical devices, and other high-technology research and development efforts. These innovations diffuse quickly and may not yield value to localities and to society sufficient to justify their immense cost. Another form of innovation, more organizational than technological, reduces cost and improves outcomes at the point of care. While this innovation generates fewer immediate profits and less ready-made appeal through the lens of economic development, cost-effective innovations are exactly the type of innovations that diffuse slowly (Fuchs, 2011). Here, the key organizations are not biotech, pharma, device companies, and start-ups but physicians, health systems, academic medical centers, payers, and new organizational models like accountable care organizations. Indeed, some leading health care organizations, like the Mayo Clinic, differentiate themselves on the basis of quality-oriented clinical innovations.

As currently constructed, biomedical districts could provide a platform for a different set of innovations with far more potential to improve health and decrease costs both locally and nationally within the short- and medium-term. Rather than technological innovation, biomedical districts could focus on facilitating organizational innovations to reduce cost, raise quality, and increase access. Such innovations represent a pressing need for academic medical centers, which often shore up revenue threats with system affiliation, development of referral specialties, and deeper integration with private industry. In many ways, these alternatives reflect the paths of least resistance toward competition over market position rather than value (Porter and Teisberg, 2004). Compounding the increasing threat of marginalization within

consolidated regional health care markets, the ACA reforms will increasingly place pressure on academic medical centers to reduce cost and to reorient their educational programs. Arguably, academic medicine has not undergone a wholesale metamorphosis in the century since the Flexner report prompted reorganization, but such a transformation is increasingly necessary both for the sustainability of these crucial, multi-faceted organizations and for the health care system itself.

Biomedical district organizations have always existed to coordinate projects of collective benefit. Many have demonstrated the ability to serve as neutral parties for organizations where competition and silos prevent collaboration. Rather than developing high-technology interventions and demonstrating their effectiveness through clinical trials, biomedical districts might function as testbeds for organizational transformation and comparative effectiveness research and as entrepôts for the diffusion of cost-effective innovations that occur elsewhere and their dispersal through the regional health care system. This implies a reconceptualization of innovation. Innovation need not be measured in incubator start-up graduates, companies attracted, or patents approved. Innovation could also be measured in cost reduction and value-based improvement on clinical outcomes. Biomedical districts could grow into not just incubators for new technology and testbeds for clinical trials but also into nurturing environments for new but risky coordinated care delivery systems and testbeds for comparative effectiveness research. As for technological innovation, bridging supports and cross-organizational collaboration could leverage the proximity of biomedical districts into a springboard for experimentation. Such an approach would require expanding beyond the now well-worn playbook of the contemporary biomedical district by building bridges between the established but somewhat discrete frameworks for generating private benefits through the innovation ecosystem and public benefits through the anchor institution.

### **Hospitals and academic medical centers as anchor institutions**

This dissertation has provided some evidence to complicate the notion that health care institutions are place-bound – at least to the same extent as universities. In some instances, medical institutions have de-camped to the suburbs (or at least threatened to do so).<sup>11</sup> Various forms of more restrictive capitation payment rules beginning in the 1980s (e.g., prospective payments,

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11 This threat certainly affected the Illinois Medical District. The Memphis Medical District's largest hospital and the flagship of the region's largest health care system closed in the late 1990s. In New Orleans, the reconstruction of the VA and public teaching hospital after Katrina was at risk and required intervention in order to secure the massive, controversial investment for the city.

managed care) have unevenly reduced bed sizes and employment, both within and across cities. Many hospitals have closed or downsized, while others (e.g., within the Texas Medical Center) draw huge volumes of patients from outside the region, supporting local economies through traded services. Many hospitals have joined large corporate health systems. These systems have inherently less co-dependence with their surrounding neighborhoods but are often among the largest private employers in regional economies. Despite these deep economic contributions, although the nation's 135 academic medical centers and 400 or so teaching hospitals exist to promote innovation and educate a responsive workforce,<sup>12</sup> they have contributed to the "intractable problems" threatening the viability and sustainability of the US health care system (Washington et al., 2013).

Under the ACA, the Internal Revenue Service (IRS) requires hospitals to complete periodic community health needs assessments to demonstrate their contribution to communities in order to retain their tax-exempt status. Current interpretations of these requirements provide leeway for hospitals to use strategies typically associated with anchor and community-building to meet these requirements, provided that such strategies can be justified (Zuckerman, 2013). In the past, community benefits requirements were met through widely varying accounting procedures, ranging from counting employee salaries to bad debt to unreimbursed Medicare, Medicaid, and charity care expenses. Now, the more stringent but still flexible requirements of community health needs assessments may provide a wedge to generate more responsive community benefits programs at hospitals and academic medical centers.

As Zuckerman (2013, 1) argues, "it is one thing to be, *de facto*, an anchor institution, and it is quite another for organizational leaders to *consciously* recognize and adapt to that role," a charge that has been taken up more slowly by hospitals than among universities. This dissertation has framed the extent of restructuring in the hospital sector as an explanation for why this is the case. Notably, none of the three main cases have prominently pursued anchor institution strategies, although such strategies are evident in other cases.<sup>13</sup> To date, leading hospital-based anchor strategies build community partnerships around local procurement from local businesses with diverse ownership, workforce development and local hiring, and coordinated investment in surrounding estate, housing, and supportive services. These opportunities deserve a larger standing in biomedical district strategies. For the most part, however, each of these targets stems from peripheral expenditures by hospitals, e.g., laundry, grounds-keeping and maintenance

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12 <https://www.aamc.org/about/>; <http://www.aahcdc.org/About/Members.aspx>

13 Following the decline of the BioDistrict, the New Orleans Business Alliance has investigated procurement strategies, including by commissioning a study from the Democracy Collaborative.

services, support staff, and investment in the surrounding community. My proposition is that anchor strategies should also bring community, workforce, and organizational development goals into the core business of hospitals. However, moving from the periphery to the center of the business of health care organizations introduces additional complexity to the practice of planning.

### **Planning between biomedicine and economic development**

This project set out to foreground two distinct fields of policy and practice, the health care system and local economic development, based on the assumption that their practical transactions are multiplying and their boundaries are becoming fuzzier. Health care organizations operate in a context of competition and collaboration at the regional scale and under changing regulatory conditions at the state and, especially, federal levels. Local economic developers and planners, however, primarily act *locally*, where they have little ability to shape the actions of large health care organizations. This raises an obvious but important question: how should planners – or more generally, those who wish to shape the pattern and process of development – approach the problem of identifying, crafting, and implementing policy?

In light of the tendencies revealed by the history of biomedical districts, economic development planners and policy-makers should acknowledge the fact that their learning and decision-making processes are mediated by a range of institutional forces that limit the scope of action even as they create new opportunities. While the institutional constraints of health care organizations may not necessarily align with the priorities of planners, the extent of upheaval in the health care system creates, at least, the *potential* for economic development actors to protect and expand health care's contribution to local economies. As a whole, better recognition of the size, complexity, and pervasiveness of health care as a major function of urban economies within the field of economic development would support more creative, more nuanced approaches to planning practice that go beyond merely responding to the needs of the hospital and biotechnology industries.

At present, the selective engagement of economic development with health care illustrates the tendency of practitioners and researchers to privilege industries that generate innovation and exports, categories that only incompletely and problematically describe the full economic and social impacts of hospitals, academic medical centers, and commercial therapeutic industries. As the prolonged era of premium pricing for incremental improvements expires, the potential exists for a new era of innovation driven by a higher level of social value, where

products meet the needs of payers and patients, at prices that reflect the relative value of their performance (Robinson, 2015b). These pressures to realign innovation occur in tandem with the emergence of larger, more complex health care organizations, which function as the major adopters of innovation. Thus, the type of large health care organizations that populate biomedical districts do not merely serve as a foundry for potential innovations. They also adopt innovations and play a normative function in reproducing the institutional biases in biomedicine. Local economic development as a field, by often equating innovation with commercializable technologies rather than process improvements, has lionized the startup ecosystem. Even as stakeholders that may originate from outside the institutional domain of biomedicine, planners mimic the pattern of actors embedded more directly within the US health care system by accepting “ordinary” biomedicine as an unmitigated good and a worthwhile bet for localities.

In many transactions between the domains of health care and economic development, planners tend to prioritize homegrown, generative, anchored possibilities of academic medical centers and biotechnology; but these local opportunities exist within the context of a deeply troubled national health care system that will continue to face regulatory restructuring. By relaxing the narrow dichotomy between locally serving and traded industries, at least when applied to health care, planners and policy-makers could approach the improvement of population health and the health care system, including through progressive interventions to reduce cost and increase access, as an economic development issue. This, in turn, highlights linkages between health care-driven economic development and other local economic policy issues that have the potential to improve the population health, such as improving the standards of low-wage work.<sup>14</sup> While local actors have limited scope to operate in a system where the regulatory environment is determined at the federal level, there is a rich history of local and state-level experimentation in the annals of the US health policy. Building opportunities for such organizational experimentation and collaboration should gain as central a priority as technology in biomedical district planning initiatives.

In this vein, perhaps the lowest hanging fruit lies in workforce development opportunities. The common disconnect between workforce development and economic development also has special relevance to the case of health care. Some evidence exists to support the notion that growth in hospital employment sets off more equitable welfare gains than in other industries (Nelson and Wolf-Powers, 2009). In particular, the nursing and allied health occupations provide broad opportunities for lower-skilled workers to access good jobs with established

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14 For example, local paid sick time policies have direct implications for worker health.

career ladders. These provide a natural overlap between workforce development and anchor institutions. Moreover, the proximity of biomedical districts implies efficiencies in program development to serve multiple employers and access to lateral moves across organizations to facilitate career advancement.

The nursing question, of course, is more than a question of occupational targeting and workforce development. The nursing profession faces a chronic shortage of new entrants, a problem felt most acutely by hospitals. The shortage's implications have been compounded recently by the increasing potential of nurses to serve as physician extenders, lowering the cost of clinical encounters. In addition, the ACA's accountable care organization model stresses team-based approaches to care. Some academic medical centers have even begun to integrate classrooms, in which nurses and allied health trainees work directly with medical students.

However, the nursing profession also faces many challenges, chiefly burnout and persistent marginalization in clinical decision-making, despite the intensification of nurse training since the 1960s. Nurses at the top of the hierarchy (e.g., registered nurses, nurse practitioners, and nursing informaticists) have high skill levels and earn excellent salaries, but the profession as a whole still endures the same low-road practices that characterize low-earning, gendered "care sector" jobs in general (Folbre, 2006). As nurses become more important but as hospitals attempt to save cost, the symptoms have included protracted labor disputes with hospitals over staffing ratios and new employment models, like so-called "travel nurses" who float around the country on short-term contracts to fill shortages.

In the first transformation of medicine, physicians rapidly ascended the professional hierarchy and institutionalized professional dominance in a manner that shaped the subsequent development of the health care system. Today, more than three decades of restrictive payments have undermined that dominance. The current pressure toward cost-containment creates a wedge for nurses to move closer to the center of the health care system. At the local level, facilitating this transition would benefit hospitals, generate wider employment impacts, and promote organizational innovation. In addition to diverting marginal hiring and procurement activities to support community objectives, anchor-oriented biomedical district strategies could achieve broad-based employment impacts by innovating intermediary models that focus on nurses and other accessible professions at the core rather than the periphery of hospital business activities.

## Development processes that are both mobile and local: methodological and empirical tensions

This dissertation situates economic development agendas focusing on biomedicine in two contexts of relevance to contemporary urban political economy: the local politics of development and the influence of ideas from outside. More specifically, the biomedical district reveals the process through which conflict and consensus is managed *after* the durable organizational structure of the postwar growth coalition. The case of the biomedical district presents a situation where the very nature of the policy in question may significantly mitigate potential conflict. Goals like better health care, locally driven industry, high technology, high paying jobs and training in growing sectors, large tenants willing to invest in places, and rebranding underutilized districts as economic engines all tend to play well politically. By contrast, reducing services and closing facilities tends to stoke outrage. Even in the most contentious post-Katrina phases of New Orleans' story, few stakeholders challenged the notion of the biomedical district as a desirable objective. Of course, the case also demonstrates considerable conflict over the location and organization of the district and its most important tenants.

Within the organizational structure of the biomedical district, conflict and consensus depends on the complex, often competitive relationships among major health care organizations. While conventional coalitions comprised of a range of civil society and governmental actors typically play a crucial role at key moments of development, the internal dynamics of the biomedical district determine development in the long-run, often resulting in functional isolation from the urban political system over time, as in the Chicago, Houston, and New Orleans examples. Whether this results primarily from the general erosion of growth coalitions as durable arenas for conflict resolution and consensus building or from specific characteristics of health care as a separate organizational field is difficult to determine. The biomedical district proliferated at roughly the same time as postwar managerial-Keynesian urban regimes splintered and governance, unevenly, took a neoliberal turn toward market discipline (Harvey, 1989; Brenner et al., 2010; Hackworth, 2007). In this environment, although biomedical districts provide potential opportunities for progressive policy (Imbroscio, 2011), the institutional context has also been shaped by what Vallas and Kleinman (2008) describe as "asymmetric convergence," where the boundaries between academic and commercial biotechnology have dissolved, leaving two formerly distinct institutional arenas with inherently conflicting logics to commingle and co-evolve but in a manner that privileges the commercial ethos. In this respect, both the health care and economic development aspects of the biomedical district compound



the pressures conducive to “fast policy” and to the elevation of the market as the underlying logic of health care (Peck and Theodore, 2010).

As an empirical contribution to the policy mobilities research, this dissertation has made compromises by focusing less on the networks through which policy ideas are “mobilized” than on explaining how a family of policies is “made up” or “arrived at” *locally*, where expert networks criss-crossing jurisdictional domains form only one among many factors (McCann and Ward, 2010; Temenos and Baker, 2015; Robinson, 2015a). This process is marked by the same historical and spatial specificity as the globalized circuits of transfer that originally motivated the policy mobilities project (McCann and Ward, 2010; Peck and Theodore, 2012), albeit largely confined to domestic circuits of ideas due to the health care system’s regulatory connection to the national scale. In following the emergent properties of case study fieldwork, the analysis failed to reveal a network of actors with a vested interest and a sufficient position of influence to *cause* the diffusion of the “model” of the biomedical district. In other words, the research has not indicated a group that operates across local jurisdictions and whose influence provides a necessary condition for policy adoption, although the absence of evidence does not fully rule out the possibility that such a network exists and significantly conditions the diffusion of policy ideas.

In general, policy mobilities as a methodology displays conflicting tendencies in recognizing the importance of local context while potentially over-emphasizing the causal work of trans-local actors embedded in their own technocratic contexts. To further unpack this tension for the present topic, future research could dial down the historical specificity of individual cases and refocus on consultants, the process of learning from the experiences of other cities and planning and design firms, and the professional organizations that advocate – if not exclusively – for the kind of development that takes place in biomedical districts and contribute to the admixture of ideas on the table, themes that did in fact emerge in interviews and archival evidence. The tension between local and non-local causality remains a methodological challenge of policy mobilities but one that can, perhaps, be somewhat mitigated through cases of domestic policy circulation, like the biomedical district, controlling the potential for institutional difference at the national or even state level (e.g., the Texas and Illinois variants of the biomedical district).

Attaching relative casual weight to what DiMaggio and Powell (1983) differentiate as “normative” isomorphism (i.e., established by networks of skilled actors) and “mimetic” isomorphism (i.e., peer emulation in response to uncertainty) extends beyond this project’s methodological grasp. Even so, conformity to an increasingly ambitious but regimented approach to

biomedical district development has occurred even without immediately apparent rule-setting agents of policy transfer. As proliferation has brought increased visibility, the playbook has narrowed in a way that is evident in recent events in Chicago, Houston, and New Orleans. The result is a diffuse, flexible, loosely curated set of rules regarding what a biomedical district should be and how it should be built. Tentatively, the study favors the conclusion that the contemporary biomedical district primarily emerges from an interlocking set of contextual conditions, organizational change processes, and portable but flexible frameworks for postindustrial economic development. In hospitals and academic medical centers dealing with uncertain regulatory environments, in biomedical technology industries fevering for new innovations, and in local development circles casting wide nets and cultivating existing assets, regulatory restructuring prompts a range of organizational adaptations. While these responses often mesh to produce a similar end, both in the strategies adopted and the kind of built environments and organizational relationships produced by district organizations, local path dependence significantly shapes the adoption and expression of the biomedical district as a model.

Chicago and Houston first arrived at the medical district concept from notably different starting points. New Orleans' first attempt in the late 1960s stemmed, at least partly, from awareness of the two original cases but was primarily motivated by the potential availability of federal redevelopment resources to address the Charity Hospital situation. Regardless of their position on the spectrum of successful policy interventions, all three eventually yielded unmet potential in the evaluations of their respective local stakeholders, less for lagging behind late adopters than for failing to adapt to changing rules of success in the field of health care and for their expanded roles in regional development. Yet a sense of lagging opportunity has made room for mimetic isomorphism, as local actors pragmatically adapt perceptions of highly malleable models for success elsewhere to problems that are locally defined but structurally similar to those found in other cities and regions.

The biomedical district's tentative emergence as a model thus depends on a combination of contextual factors that have changed over time. One feature of the postwar expansion of medicine involved physical investment by health care organizations. In some instances, this resulted in the production of larger, more formalized inner-city medical districts, sometimes in conjunction with large-scale urban redevelopment programs where hospitals and academic medical centers served as natural anchors. It would be difficult to interpret this as more than a circumstantial overlap at the fringes of the postwar urban redevelopment policy and the expansion of health care organizations. However, by the 1980s, the health care cost inflation

intensified, biotechnology had created new market opportunities, and regulatory constraints had impacted the hospital sector, all of which initiated a period of uneven restructuring, altering the spatial and organizational composition of the health care economy. In the 1990s, the wave of biotechnology hype crested just in time to fill a disproportionate number of cluster-based economic development strategies in search of a sectoral focus. In the 2000s, the enticement of an inner-city biotech beachhead was joined by the community-oriented promise of the anchor institution. In sum, since the 1980s, both health care and economic development changed in ways that created the possibility of diffusion, further facilitated by the competitive logic stoked by incremental replication of late adopters. Explaining the model cannot disconnect the role of the changing health care system from that of the shifting rules of urban political economy.

Indeed, the clearest signal that the model had arrived is found in its recursive influence on the original cases. In the 1960s, Houston and Chicago had shipped the medical district concept to New Orleans; by the 1980s, it was coming back to them as a signal of poor performance. Local inertia had fixed the organization of the legacy medical districts, narrowing their scope as the broader institutional landscape of health care shifted. Newer districts have been constrained by a parallel narrowing effect originating, however, in the model's replication across sites. In this sense, equifinality is both an outcome and a cause. The biomedical district functions less as a fixed, portable, proscriptive format than as a flexible, well-demonstrated rebranding strategy that addresses the uncertainty of local actors, legitimizes potential conflicts over the use of space and resources, and exploits existing place-based assets. The process through which the model emerges creates platforms for collaboration across organizations and domains of policy and practice while arguably limiting the scope for innovation and providing little concrete guidance on overcoming the barriers to effective collaboration.

## **10.4 Conclusion**

This research began with modest objectives. I wanted to use comparable experiences to better understand a sequence of important policy decisions in New Orleans after Hurricane Katrina, decisions largely justified as economic development. At its root, this dissertation has sought to carve out a place for health care as a motive force in urban political-economy. To do so, I have foregrounded a set of connections that are often de-emphasized in scholarship on urban economic change. The objective has not been to falsify existing frameworks for action but to articulate the institutional rules that shape the actions of policy-makers, planners,

and organizations and to examine how these rules are often hidden by the lens of economic development.

As the focus of the research, the urban biomedical district reflects a process of combining a set of other, more common policy phenomena, like anchor institutions, Eds and Meds, and life sciences clusters in locally specific ways. However, each of these frameworks does not engage with merely local phenomena. The transformation of hospitals and the growth of biomedical technology industries depend on the national regulatory context of health care, where controlling cost and improving outcomes remain the most necessary, most difficult task. In following opportunities, localities could become complicit in facilitating the ability of the biomedical technology industries and health care providers to avoid pressures to reduce their contributions to cost growth. As more and more localities adopt similar strategies, the aggregate effect of local policy could work at cross purposes with efforts at national-level reform and foster a local economic dependence on the continued growth of health care that would turn risky in the event that cost-containment should succeed. On the other hand, local policy could work to facilitate experiments in organizational models to reduce cost and diffuse successful models. Experience has suggested that, in many cases, cost-conscious organizational innovation falls by the wayside next to the compelling pull of biomedical hype.

The dissertation thus illustrates the interaction between two fragmented governance arenas. On one hand, inter-urban competition disciplines cities to pursue growth through a constrained set of alternatives. On the other, the restructuring of health care has left health care providers and technology companies to scramble for market position in ways that alter the possibility for tie-ins with local economic and community development. While neither of these processes tends to result in efficient outcomes, their interplay is not determinative. Still, the research has shown how the national-level regulatory context and a set of congruent local conditions have facilitated the conformity in a similar pattern of development. The cases show that biomedical districts have, since the 1940s, reflected the dominant trajectory of institutional change in health care and the process through which local actors selectively assemble different models for development: e.g., urban renewal, leading academic medical centers, cluster-based innovation, Eds and Meds, and other biomedical districts. These policy-making processes also imply risk when they nurture the production of places that render durable the high costs, technology-centrism, inequality, and zero-sum competition that define contemporary health care and limit the scope of regulatory reform.

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# Robert A. Habans

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*Current Position* Postdoctoral researcher with the Project for Middle Class Renewal at University of Illinois, Urbana-Champaign.

## Education

2009–2016 **University of Illinois Chicago, PhD in Urban Planning & Policy**  
2004–2006 **University of New Orleans, MS in Urban Studies**  
Concentration in Community and Economic Development  
2000–2004 **University of California, Berkeley, BA in Economics**  
High honors in economics; minor in city and regional planning

## Research Experience

### UNIVERSITY OF ILLINOIS, URBANA-CHAMPAIGN

2016– **Project for Middle Class Renewal, Postdoctoral Research Associate**  
Research on employment and local economic issues (supervisor: Robert Bruno).

### UNIVERSITY OF CALIFORNIA, LOS ANGELES

2015–2016 **Institute for Research on Labor and Employment, Research Associate**  
Research on minimum wage (funded by Arnold Foundation), incarceration (funded by Hayes Foundation), labor regulation and policy, low-wage work, and other employment issues (supervisor: Chris Tilly).

### UNIVERSITY OF ILLINOIS AT CHICAGO

2014 **Center for Urban Economic Development, Graduate Research Assistant**  
Economic impact modeling (supervisor: Howard Wial).

2014 **Great Cities Institute, Graduate Research Assistant**  
Examining the impact of immigration enforcement by local police on Latino attitudes about police (supervisor: Nik Theodore).

2011–2012 **Center for Urban Economic Development, Graduate Research Assistant**  
A MacArthur Foundation-funded comparative case study of the differential impact of the Great Recession on neighborhood labor markets in Chicago (principle investigator: Nik Theodore).

Spring 2010 **Great Cities Institute, Graduate Research Assistant**

#### OTHER RESEARCH POSITIONS

- 2006–2009 **Louisiana Public Health Institute, *Health Geography / GIS Analyst***  
Community indicators analysis and GIS for non-profit organization  
focusing on public health.
- 2004–2006 **University of New Orleans, *Graduate Research Assistant, Department of  
Urban & Regional Planning***

#### Teaching Experience

##### UNIVERSITY OF ILLINOIS AT CHICAGO

- Fall 2012, 2013, 2014 **Urban & Public Affairs, *Instructor***  
Political Economy of Urban Development (UPA 301)
- 2011–2012 **Urban Planning & Policy, *Teaching Assistant***  
Cinema & the City (UPP 205)
- Spring 2014 **Urban Planning & Policy, *Guest Lecture***  
Planning for Innovation (UPP 535): Academic medical centers and  
innovation districts

#### Selected Publications

##### REFEREED JOURNAL ARTICLES

- 2016 Theodore, Nik and Robert Habans. Policing Immigrant Communities:  
Latino Responses to Local Police Involvement with Immigration  
Enforcement. *Journal of Ethnic and Migration Studies* 42(6): 970–988.
- 2014 Pattison, Andrew, Robert Habans, and Matthew Thomas Clement.  
Ecological Modernization or Aristocratic Conservation? Exploring the  
Impact of Affluence on Carbon Emissions at the Local Level. *Society and  
Natural Resources* 27: 850–866.

##### SELECTED RESEARCH REPORTS AND WORKING PAPERS

- 2016 Habans, Robert. “Is California’s Gig Economy Growing: Exploring  
Trends in Independent Contracting,” UCLA Institute for Research on  
Labor and Employment.
- 2015 Habans, Robert. “Exploring the Costs of Classifying Workers as  
Independent Contractors: Four Illustrative Sectors,” UCLA Institute for  
Research on Labor and Employment.
- 2015 Roberts, Anthony and Robert Habans. “Exploring the Effects of  
Right-to-Work Laws on Private Wages,” Working Paper 2015-16, UCLA  
Institute for Research on Labor and Employment.

- 2015 Habans, Robert. "The Travels of Runaway Production: Film and Television Tax Credits from Louisiana to California," Policy and Research Brief, UCLA Institute for Research on Labor and Employment.
- 2015 Flaming, Daniel, Halil Toros, Yvone Yen Liu, Patrick Burns, Lucero Herrera, Tia Koonse, Saba Waheed, and Robert Habans. "Los Angeles Rising: A City that Works for Everyone," Report by Economic Roundtable, UCLA Labor Center, and UCLA Institute for Research on Labor and Employment, underwritten by the Los Angeles County Federation of Labor, AFL-CIO.
- 2012 Theodore, Nik, Robert Habans, and Sara O'Neill Kohl. "Labor Markets and Neighborhood Change after the Great Recession," MacArthur Foundation, Center for Urban Economic Development, UIC.

#### SELECTED CONFERENCE PRESENTATIONS

- 2016 "Carbon Emission Stress and Climate Commitment: A Qualitative Comparative Analysis of Local Policy Adoption in California," Urban Affairs Association Annual Conference, San Diego, California.
- 2015 "The Texas Medical Center: Monuments and Myths in the Biomedical Economy," Association of Collegiate Schools of Planning Annual Conference, Houston, Texas.
- 2015 "Job Loss Avoidance and Exogenous Shocks: A Qualitative Comparative Analysis of BRAC Actions," with Lauren Nolan, Association of Collegiate Schools of Planning Annual Conference, Houston, Texas.
- 2015 "The Changing Geography of Biotechnology: Comparing Network Evolution in Leading and Lagging Regions," with Zafer Sonmez, Association of American Geographers Annual Conference, Chicago.
- 2014 "The Differing Experiences of Urban Hospitals in Times of Restructuring and Local Economic Development Policy," Association of Collegiate Schools of Planning Annual Conference, Philadelphia.
- 2013 "The Urban Biomedical District: Where the Bioeconomy, Health Care Policy, and Urban Entrepreneurialism Meet," Association of American Geographers Annual Conference, Los Angeles.
- 2013 "Neighborhoods and Labor Markets: Can We Use Neighborhood Effects to Analyze Workforce Development?" with Sara O'Neill Kohl, Urban Affairs Association Annual Conference, San Francisco.
- 2012 "Combining Neighborhood Effects and Labor Market Segmentation Theory to Explain the Recession's Differential Impact on Chicago Neighborhoods and Workforce Intermediaries," with Sara O'Neill Kohl, Association of Collegiate Schools of Planning Annual Conference, Cincinnati.
- 2012 "Affluence and Economic Growth as Drivers of Consumption- and Production-based Carbon Emissions at the County Level," with

- Matthew Clement and Andrew Pattison, Midwest Political Science Association Annual Conference, Chicago.
- 2010 “The Origins of the Urban Medical District as an Economic Development Strategy,” Association of Collegiate Schools of Planning Annual Conference, Minneapolis.
- 2007 “Reviving New Orleans’ Health Care System: Service Delivery, Economic Development, and Downtown Revitalization,” with Marla K. Nelson, Urban Affairs Association Annual Conference, Seattle.

#### INFORMATION DESIGN FOR SCHOLARLY PRESS

- 2014 Figures and cartography for Weber, Rachel. *Why We Overbuild*. Chicago: University of Chicago Press (under review).
- 2013 Habans, Robby. Spaces in Migration: A Map. *Spaces in Migration*. Glenda Garelli, Federica Sossi, and Martina Tazzioli (Eds.). London: Pavement Books.
- 2012 Habans, Robby. Mappa Spazi in Migrazione. *Spazi in Migrazione: Cartoline di una Rivoluzione*. Federica Sossi (Ed.). Verona, Italy: Ombre Corte, p.173.

## Awards and Affiliations

#### INVITED SEMINARS

- 2014 Summer Institute in Economic Geography, Frankfurt Am Main.
- 2012 ACSP Dissertation Workshop, Los Angeles.

#### COMPETITIVE FELLOWSHIPS

- 2014–2015 Chancellor’s Graduate Research Fellowship, University of Illinois at Chicago.
- 2009–2013 University Fellowship, University of Illinois at Chicago.

#### CURRENT PROFESSIONAL AFFILIATIONS

Association of American Geographers, Associations of Collegiate Schools of Planning, Urban Affairs Association.

## Software

ArcGIS, R, SPSS, IMPLAN, GeoDa, fsQCA, Adobe CS, LaTeX.