

**Using Evaluation Data and Findings:
Exemplar Cases from the Centers for Disease Control and Prevention**

BY

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DISSERTATION

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DISCLAIMER

The information in this report are those of the author and do not necessarily represent the official position of the U.S. Centers for Disease Control and Prevention.

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LIST OF ABBREVIATIONS

ASPE Assistant Secretary for Planning and Evaluation

CDC Centers for Disease Control and Prevention

DrPH Doctorate in Public Health

HHS Department of Health and Human Services

NOFO Notice of Funding Opportunity

PPEO CDC Program Planning and Evaluation Office

UIC University of Illinois at Chicago

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SUMMARY

Achieving use of evaluation findings, the sixth step in the Framework for Program Evaluation (CDC, 1999), remains an elusive but desired goal for many programs at the Centers for Disease Control and Prevention. Little is known about how CDC units use their evaluation data and findings. The objective of this study was to explore the factors that influence the use of program evaluation data and findings among units at CDC. A retrospective exploratory case study design was used to examine three exemplar CDC units.

This research undertook a strengths-based approach to examine how three exemplar CDC units that self-report success at regularly and visibly using program evaluation data and findings to inform decisions and make changes to the program. These case studies assessed the presence of factors in the exemplar cases' contexts that have been previously found to influence use of evaluation data. The literature outlines four categories of factors that influence use of evaluation data and findings: organizational/social context, user, evaluator, and evaluation factors. The research also documented the ways that the exemplar units' use of evaluation data aligns with the four common types of use: instrumental, conceptual, enlightenment, and persuasive/symbolic.

This research provided insights into the use of evaluation CDC. In this first foray into three CDC units' inner workings, the facilitators of their success and the ways they are using their evaluation data were uncovered, along with several challenges. Ideally, the results from the case studies stimulated thinking and encouraged new and invigorated use of evaluation findings across CDC. The findings may also add to federal government conversations about increasing the use of evaluation data to inform evidence-based decision making. The case studies may also spark renewed interest in how organizations of all kinds can increase their use of evaluation data and findings to improve their efforts.

I. Chapter 1: Introduction and Background

A. Study Objectives

The objective of this study was to explore the factors, facilitators, and barriers that influence the use of program evaluation data and findings among units at the Centers for Disease Control and Prevention (CDC). A retrospective exploratory case study design was used to examine three exemplar CDC units. A CDC unit is the organizational department, often designated in the agency's hierarchical structure as a topic-based center, department, division, or branch, which operates as a functional administrative entity, overseeing funding, topical expertise, and human resources. Each CDC unit selected has demonstrated success at regularly and visibly using program evaluation data and findings to inform decisions and make changes to the program. Understanding the factors that contributed to the units' ability and success at using program evaluation data and findings add to the knowledge base within CDC and advance the national conversation on evaluation use across federal agencies.

The aim of this research was to better understand how three CDC units were able to use program evaluation data and findings. This was achieved by analyzing qualitative data from three exemplar programs at CDC using previously gathered by the researcher. This data was collected via semi-structured interviews and document review to identify themes and patterns within and between the units.

B. Background

i. Increasing emphasis on evaluation in at the federal level

The US government imparts millions of dollars annually to grantees to conduct public health research and undertake programmatic activities. The federal government provided \$607 billion in grants to state and local governments in 2011 (Congressional Budget Office, n.d.). In 2018, CDC, as the nation's health protection agency, allocated over \$5.4 billion to US health

departments, universities, and other public and private agencies via over 4,500 grants and cooperative agreements (CDC, 2018; Carman, 2009). These funding recipients are required to report program and performance data. There is growing pressure for grantees of all kinds to conduct more impact-focused evaluation and demonstrate substantial progress towards outcomes in reporting processes (Carman, 2009; Heinrich, 2002; De Lancer Julnes, 2006; Newcomer, 1997; Newcomer, Hatry, & Wholey, 2004; Plantz, Greenway, & Hendricks, 1997).

In 2009 the Office of Management and Budget (OMB), the federal department that executes the President's vision and statutory requirements on policy, budget, management and regulatory matters, issued a memorandum titled, "Increased Emphasis on Program Evaluations" that noted a paucity of rigorous evaluation and a failure to use of findings from those evaluations that were conducted to influence federal budgets and practices. The department launched an initiative to increase outcome-focused evaluations, initially voluntarily (Orszag, 2009). Also in that year, the Administration launched the High-Priority Performance Goal initiative to drive federal agencies to commit to "ambitious, but realistic, targets to achieve within 18 to 24 months without need for new resources or legislation, and well-defined, outcomes-based measures of progress" (OMB, 2009, para. 3). Yet, the Government Accountability Office (GAO) suggested in its evaluation of a diagnostic tool to assess program performance and evaluation information to inform program improvement that more evaluation simply for the sake of conducting it does not always result in good or useful data: "Because agency evaluation resources tend to be limited, they are most usefully focused on important areas of uncertainty. Regular performance reporting is key to good management but requiring all federal programs to conduct frequent evaluation studies is likely to result in superficial reviews of little utility and to overwhelm agency evaluation capacity" (GAO, 2005, para 4). The emphasis on using evaluation at federal level to inform decision making and justify programs will likely continue in the coming years. Federal

agencies, including CDC, will need to continue to engage and evolve their evaluation efforts to meet Congressional and Executive Branch demands for data and evidence-based decision making.

Public health under pressure to increase evaluation. Public health has been swept into the ongoing push for more and better evaluation. Numerous initiatives, departments, and mandates have been established in the past decades to encourage, and sometimes mandate, evaluation in federally funded public health programs. In 1965, the Department of Health and Human Services (HHS) established the Office of the Assistant Secretary for Planning and Evaluation, the lead advisory group for setting the direction of evaluation, among other topics, at HHS. Part of their mission includes driving an agenda to use assessment and analysis to determine what public health programs work and why. Five years after the establishment of ASPE, the Public Health Service Act was amended to permit the HHS to use up to 1 percent of appropriated funds to evaluate programs; this set-aside was increased to 2.5 percent in the Appropriations Acts for 2012 and 2013 (ASPE, 2014).

Legislative actions to increase evaluation and accountability touch public health as well. The 1993 enactment of the Government Performance and Results Act (GPRA), and subsequent GPRA Modernization Act of 2010 (GPRAMA), was intended to improve the effectiveness of federal programs and have driven agencies to implement highly results-oriented performance management approaches. A challenge to the implementation of the Act's aim has been a strong emphasis on reporting but a lack of direction on translating the reported data into meaningful action. Agencies have been left with little guidance on how to ensure robust and meaningful data, make sense of the data, and select areas for improvement (Radin, 1998).

CDC challenged by data demands. CDC has been subject to the same pressures to demonstrate outcomes and to use that data to inform decision making as sister federal agencies. There is little literature documenting the effects of these pressures at CDC, but anecdotal evidence gathered during an environmental scan within the agency confirms the challenges in meeting those demands. Informational interviews with several CDC programs that provide funding to public health organizations, and funding recipients themselves, revealed that there is awareness that the source of the emphasis on outcomes is Congressional and the Executive Branch of the government. These requirements seem disconnected from the reality and needs of state and local public health agencies that carry out the interventions and respective evaluations (Massuda Barnett, 2016; Brooks, 2016; Smith, 2016; Downing, 2016). The recipient interviewees acknowledged the reasoning behind the need to report highly specific outcome data to demonstrate that the programs were having an effect, but they were exasperated by the seeming lack of use of the data they provided. CDC interviewees shared the converse view of the same issues: pressures to deliver outcome data without allowing for the recognition of the recipients' context or the inability to show progress toward incremental but critical intermediate outcomes left CDC staff feeling frustrated and thwarted in their attempts to collect and use meaningful recipient data.

Wealth of data does not translate to use of data. This has led to an abundance of data but little in the way of learning from the information or making changes to public health programs. Though there is a wealth of information, federal funders, including public health, are not as successful as they could be at using their evaluation data to inform decision-making (Bickel, Millet, and Nelson, 2003; Snibbe, 2006). A 2016 study found that "Public sector data analysts report that they spend 47 percent of their time collecting and organizing data but less than one-third of their time actually gleaning actionable insights from it" (Latham, 2016, para. 4). In 2018,

the Government Accountability Office (GAO) noted “despite various efforts aimed at increasing managers’ use of data in decision making, our work has found little change over the past 20 years.” (GAO, 2018, para 2) This was confirmed by a 2018 survey of government managers in which only 21% reported that the performance of the programs they oversaw was improving (Myers, as cited in Clark, 2019). Efforts to improve utilization of government data began in the 1990’s through the National Partnership for Reinventing Government initiative (GAO, 2000), sparking a shift toward better performance management (Kidder and Chapel, 2018). In the last decade, the government’s General Services Administration (GSA) and the Office of Management and Budget (OMB) have adopted a results-focused agenda to push federal agencies to require and track results from grant recipients, driven by their finding that “Managers report spending only 40% of their time using antiquated process to monitor compliance instead of analyzing data to improve results” (George Washington University et al, 2017, para 3). This increasing emphasis on using data across the government includes CDC – and by extension, the public health system that CDC funds help support.

This effort was solidified in the 2018 development of the President’s Management Agenda. The aim of the Agenda was to modernize and improve the efficiency and effectiveness of government programs, driving agencies and funding recipients to produce more data and demonstrate results from the programs. However, it does not require agencies to plan for learning from or using the data. Government efforts have historically not explicitly required planning on for learning from the data or improving programs based on the data. Often the leap from collecting data to improving programs or making evidence-based decisions is implicit; the planning and actions required to span that gap is missing from these government efforts. There is an assumption that use of data to inform program improvement or decision-making will take place. Improving progress toward outcomes in federal programs should include learning from

and using recipient data. This step is not acknowledged or explicitly required of government agencies in the Agenda, leaving a gap in the guidance around learning and using the data in decision making processes.

ii. Evidence-based decision making in public health

Definitions of evidence-based decision making (EBDM) vary but share a common focus that it is an intentional effort to use the best available research evidence to inform decisions about a program or policy. CDC adds the inclusion of experiential evidence from the field and relevant contextual evidence to the components that should inform EBDM (CDC, n.d.-a). The effort to make decisions based on the best evidence is rooted in evidence-based medicine (Brownson, Gurney, and Land, 1999; Mowat, 2017; Pettman et al, 2012) and is a common approach to program development and improvement in public health.

EBDM is built on a foundation of actionable evidence, that is, evaluation findings that are sufficient and useful for decisions (Julnes & Rog, 2015). Within CDC, there are limited examples of published efforts to use evidence in decision-making in specific disease areas, including in the field of violence prevention (CDC, 2017), chronic disease prevention (Brownson, Allen, Jacob, deRuyter, Lakshman, Reis, 2017; Allen, O'Connor, Best, Lakshman, Jacob, Brownson, 2018) and public health genomics (Dotson, n.d.).

During the Obama administration, funding was funneled to increase the use of evaluation data in decision-making. A recent effort by the government may lead to better use of evaluation findings, especially as they may present actionable evidence for decision-making. Relevant to this research is the first-ever governmental requirement that evaluation be a pillar of programs in federal agencies, including at CDC. The Foundations for Evidence-Based Policymaking Act, passed in 2017, is beginning to take shape in federal agencies. In time, the Act will impact public health evaluation strategy at CDC. CDC cites this Act as a notable move by the US government

toward more evaluation and better use of the information stemming from them (Kidder and Chapel, 2018). The Act has been years in the making, beginning with the 2003 and 2013 Government Accountability Office publications on program evaluation (GAO, 2003, 2013), and the precursor to the legislation, the 2017 Report of the Commission on Evidence-Based Policymaking (2017), The Foundations for Evidence-Based Policymaking Act charts new territory for the Department of Health and Human Services (HHS), in which CDC sits, by requiring and planning for learning from data. The Act aims to improve data accessibility and privacy but also has major implications for federal evaluation including institutionalizing evaluation and evaluators in government agencies. Notable in the Act's mandates is the establishment of a temporary advisory committee to provide insights on effectively promoting the use of federal data for evidence building. The Act will also require agencies to have evaluation officers with experience in evaluation including use of evaluation data. The potential exists for this Act to further push a culture of evaluation data-driven decision making in HHS and CDC. The potential for learning from evaluation within CDC and other organizations is discussed below.

A wider exploration of EBDM is outside the scope of this research but may be a useful avenue for future research. A valuable next step would be an examination of the extent to which successful use of evaluation findings results in evidence-based decision making. This critical topic underscores the need to explore how evidence, including evaluation findings, are used. The findings from this research set the stage for an investigation of the processes by which CDC units use evidence to inform decisions.

Evaluation and learning organizations. Evaluation data, including quantitative measurements and qualitative observations, can inform decision-making at every level of the organization and serve to instruct improved program development. Program evaluation findings

can be used to ask deeper questions and foster reflective and strategic thinking about programs (Patton and Blandin Foundation, 2014). Using evaluation data to improve programs has been a long-sought goal, first raised in the literature by Alkin, Daillak, and White (1979, 1980). In the mid-1990's, evaluators began to look at organization's capability and capacity to learn as an important lever in moving toward better use of evaluation data (Torres and Preskill, 2001). Torres and Preskill (2001) summarize organizational learning as a process for continued improvement and growth using information with three essential elements: "(a) uses information or feedback about both processes and outcomes (i.e., evaluation findings) to make changes; (b) is integrated with work activities, and within the organization's infrastructure (e.g., its culture, systems and structures, leadership, and communication mechanisms); and (c) invokes the alignment of values, attitudes, and perceptions among organizational members" (Cousins, Goh, Clark, and Lee, 2004, p. 388).

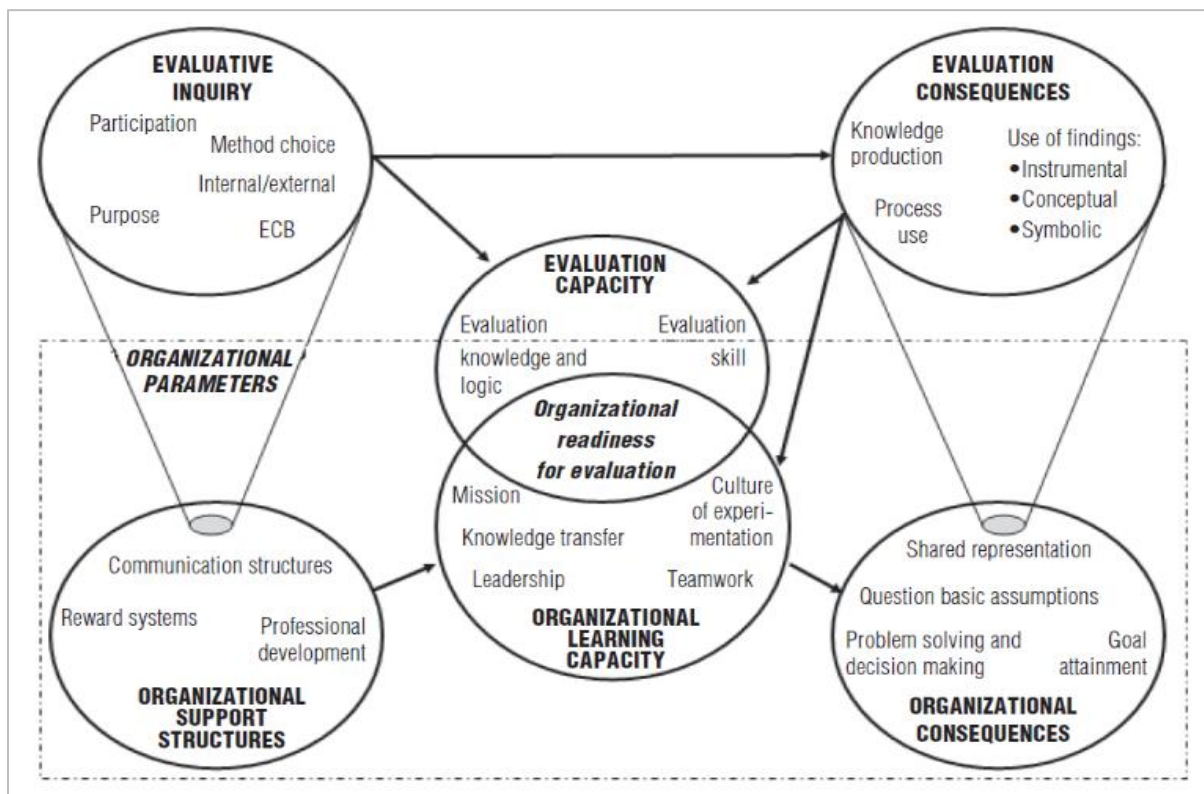
Many definitions exist to describe a learning organization, but most have several common elements: an organization that has processes for knowledge acquisition, performance improvement, and evolves in its capacity to learn over time (Garvin, 1993). Senge's scholarly perspective is that of a learning organization "where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how to learn together."(1990, p1) Building from Senge's theory of learning organizations, an organization that fosters a culture that promotes and expects learning from its experiences is well-positioned to extract the most value from program evaluation efforts. Increased evaluation capacity can foster learning (Hoole, 2007) within government agencies and the organizations they fund, but "too often funders uphold standards of accountability without enabling nonprofits to develop a learning culture in service of the mission" (Hoole and Patterson, 2008, p. 94).

Cousins, Goh, Clark, and Lee (2004) developed a conceptual framework to illustrate the relationships between evaluation and organizational learning. (See figure 1.) In this framework, they posit evaluative inquiry is a pillar of the organization, similar to communication or professional development, and can encourage learning from evaluation. The concept of evaluation as central to the design of the organization is echoed in the government efforts to institutionalize the practice in federal agencies.

There is little understood about the connection between evaluation use and organizational learning at CDC. As a larger topic this merits further investigation. This study attempted to explore a facet of the topic by focusing on the ways that evaluation data is used and what factors influence successful use. This research can be seen as a precursor to additional study on the larger topic of how learning from evaluation occurs at CDC.

Figure 1. Evaluative Inquiry as an Organizational Learning System (Cousins, Goh, Clark, and Lee, 2004)

Evaluation at CDC. CDC is a decentralized agency organized into 13 overarching units with



many sub-units of divisions, branches, and teams managing work; evaluation follows this

decentralized structure. Evaluation activities can be seated in any level of the organization. A strength of this structure is that many evaluations can happen simultaneously and independently and are highly tailored to the needs of the program. A drawback of this disparate approach is that there is little visibility of or consistency in evaluations across the agency. The effort to institutionalize evaluation and the use of evaluation data to improve programs have been decades-long goals at CDC. Limited study has been done to examine the extent to which CDC has achieved these goals; however, milestones in the last two decades indicate significant progress. Two of the most influential developments were creating the Framework for program evaluation in public health (CDC, 1999) and establishing an office of evaluation at the highest level of the organization staffed with a chief and senior-level evaluation officers (Kidder and Chapel, 2018). The Framework and the office are described in greater detail in the following sections.

iii. The Framework for Program Evaluation in Public Health

In 1999, CDC released the framework for program evaluation in public health. It features two complementary components: the steps that thorough evaluation practice should undertake, and a set of standards that define an effective evaluation in public health. This guidance document was intended to drive a systematic approach to evaluation within CDC, to the recipients of CDC funding, and to the wider field of public health. Prior to the development of the Framework, a practical and methodical process for evaluation in public health did not exist. In the ensuing decades, the Framework has become the “backbone” of evaluation at CDC and “has caused them to become more situation-specific, participatory, aptly designed, and appropriately implemented” (Kidder and Chapel, 2018, p. 356). The Framework guides evaluators across public health settings, and as anecdotal evidence suggests, informs evaluators working in other fields as well (e.g., education). In addition to the research proposed in this

study, CDC is also several other lanes of inquiry to understand the reach and impact of the Framework, including a scan of the scientific and gray literature to estimate the reach and impact of the Framework within and beyond public health in the US and internationally.

CDC developed the framework to serve as a guide for evaluators and to ensure the field of public health “remain accountable and committed to achieving measurable health outcomes.” (CDC, 1999, p. ii) The steps (figure 2) describe the essential elements of evaluation as a cycle of six interconnected phases that comprise a process for assessing public health practice. The steps may be carried out in a linear fashion or iteratively, but each must be included in an effective evaluation as they build upon one another (CDC, 1999). Thorough planning is necessary to ensure that programs progress through each step, culminating in sharing and using the findings from the evaluation.

Figure 2. Framework for program evaluation in public health (CDC, 1999)

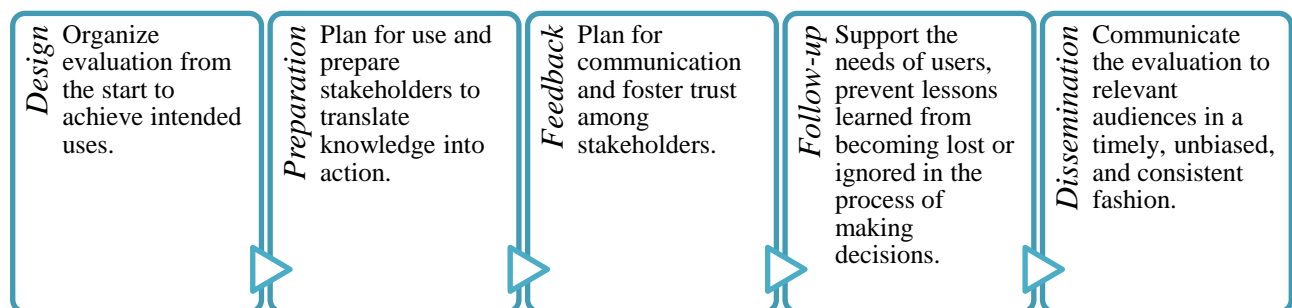


The framework is designed as a cycle in which data informs each step, and from which learning and action is the result. The first step begins with engaging stakeholders, those who are involved in the evaluand (the object of the evaluation) and who can learn from the findings of the

evaluation. By including their perspectives, this helps to stave off criticism or dismissal of the evaluation and can support increased use of the findings. The second step paves the way for the evaluation to begin by describing the program’s aims, activities, populations, and expected outcomes, often captured in a logic model. The third step lays the foundation for the evaluation through determining the approach to the assessment. Notably, this step considers the impetus for the evaluation and the potential uses for the information, increasing the likelihood that the evaluation findings will be used. The fourth and fifth steps involve carrying out the evaluation itself, collecting and analyzing data and reaching findings and recommendations. An important facet of the fifth step is ensuring stakeholders “agree that conclusions are justified before they will use the evaluation results with confidence” (CDC, 1999, p. 6).

The final step of the Framework aims to ensure the use and sharing of findings, conclusions, and lessons learned and is the focus of this research. The framework describes five elements to effective use: design, preparation, feedback, follow-up, and dissemination. CDC notes that deliberate effort is required to ensure that evaluation findings are used.

Figure 3. Summary of five elements critical for ensuring use (Adapted from CDC, 1999)



Milstein and Wetterhall (2000) reaffirm the role of use in the public health context, echoing the evaluation field’s pursuit of utility, “The last step is perhaps most important of all—to ensure use of the evaluation and share its lessons learned...Fortunately, the likelihood of use can be increased through deliberate planning, preparation, and follow-up” (p. 223). Step six of the framework can lead to organizational learning, if the CDC unit has structures in place to

transform findings into program knowledge and actionable evidence for decision making. CDC programs have made strides in achieving step six of the framework, in part through the supportive efforts of the Program Planning and Evaluation Office (PPEO).

The Program Planning and Evaluation Office. As captured in Kidder and Chapel's retrospective of evaluation at CDC (2018), it was a decade after the release of the Framework that CDC moved to create a single body in a high-level office of the organization that would focus on program evaluation, performance measurement and planning. In 2010, the agency created the position of Chief Evaluation Officer and established the Program Planning and Evaluation Office (PPEO) in the Office of the Director. The purpose of PPEO is to offer programs guidance and to champion evaluation continuous program improvement principles across the agency (Kidder and Chapel, 2018). The Office evolved from a single position to a small contingent of staff and provides evaluation and performance measurement expertise to programs across the agency. These services range from evaluation development support to CDC programs by senior evaluators; the competitive appointment of master- and doctoral-trained evaluation fellows to programs; free trainings with evaluation experts outside of the agency; issuing guidance, tools, and resources; and consultation on the development of CDC non-research funding opportunity announcements (Notice of Funding Opportunity, NOFO).

The Program Planning and Evaluation Office promotes and assists with the use of the Framework within CDC and, in some cases, has offered consultation with non-CDC entities on its use. As CDC approaches the 20th anniversary of the inception of the Framework, PPEO has undertaken several lanes of research to study the reach, value, and impact of work. These projects include the aforementioned scan of the scientific and gray literature; a survey of the structures and operational characteristics of evaluation at CDC done in concert with the US government's Assistant Secretary for Planning and Evaluation (ASPE); profiles of use of the

Framework in CDC programs; and the research proposed in this dissertation, case studies of programs excelling at step six of the Framework: the use of evaluation data and findings.

Current Evaluation Use Practices at CDC. An environmental scan was conducted by the researcher from late 2015 through early 2016 to investigate issues around using evaluation findings at CDC. Information was gathered from eight formal interviews and then analyzed thematically by the researcher. Informal discussions with several additional individuals confirmed the findings. Detail is available in Appendix A.

Themes emerged from the interviews that provided insights on the challenges to effectively using evaluation data and findings. As previously discussed, there is growing pressure to demonstrate in the reporting substantial progress toward outcomes. Recipients and funders in this environmental scan corroborated this from their experience. They expressed the feeling that evaluations are driven by the requirements of the funder rather than by the needs of the program or research agenda. They noted that the rigidity in evaluation requirements and the intense focus on showing improvement in outcome metrics to the detriment of foundation-building steps in program development and implementation. This can lead to curtailed and narrow evaluations that collect limited data, often weighted toward demonstrating outcome successes.

Several individuals indicated frustration and bewilderment at how CDC uses the data they collect with one funding recipient noting, “What does CDC *do* with all the data we send in? It’s a mystery to us.” Furthermore, evaluation findings are not shared in ways that are useful to recipients or not disseminated at all. In addition, interviewees from CDC acknowledged that their units strived to achieve the use of evaluation findings but remained far from their goals. They welcomed insights from other programs who have been able to put evaluation results to use, with one interviewee noting, “We know what is *not* working [in using evaluation findings], I don’t need to hear more on that. What I would like to know is what *is* working here. How are they

doing it?” The findings from this environmental scan supported the aim of this research to uncover the factors that have led some units at CDC to success in using their evaluation findings regularly and visibly to inform decisions and make changes to their program.

The scan also confirmed that some CDC programs had reservations about the close examination that research would entail. Interviewees voiced concern at being studied, even if framed by an appreciative inquiry or strengths-based approach. Some reasons for this reticence stemmed from fears of exposing dysfunction within the CDC unit and flawed processes for making decisions, or uncomfortableness at the vulnerability that such inquiries can elicit. This was further reinforced during the process for selecting case study programs as several units noted they had had some success in using evaluation findings but were uncomfortable with the label of “exemplar” and demurred being considered for the study. (A discussion of case study selection follows in chapter 3.) Taken together, the desire for this information and the challenge of finding cases underscored the importance of this research to explore an understudied aspect of evaluation at CDC.

C. Problem Statement and Research Questions

i. Problem Statement

Achieving use of evaluation findings – step six of the Framework – remains an elusive, but desired, goal for many programs at CDC. In a survey of a subset of evaluators at CDC, participants noted the “goal is to make [evaluation] useful and real-world,” and “data use is a big focus now.” (Schooley, 2018) In the ensuing years since the publication of the Framework, there is a gap in understanding who, how, and to what effect CDC units are able to successfully achieve step six of the framework. For the purposes of this research, success in using evaluation data and findings is characterized by a CDC unit’s ability to “regularly and visibly use evaluation

findings to inform decisions” (Patton, 2017, slide 29) in a systematic and comprehensive way across the program.

As we approached the 20th anniversary of the Framework, we had the opportunity to investigate the ways that some units at the agency are succeeding in using their evaluation findings. This research undertook a strengths-based approach to examine how programs that self-report using evaluation data successfully to inform decisions and make changes to their programs. This study focused on the Framework’s sixth step to uncover the factors, facilitators, and barriers that have led to their success and identify opportunities for further improvement.

ii. Gap in Understanding

Little is known about how CDC units use their evaluation data and findings. This research explores one aspect of the larger issues around evaluation use that exist at CDC, that is, the factors that facilitate three exemplars ability to use their evaluation data and findings. This study was an initial examination of evaluation use at CDC; it documented some of the ways evaluation data is used and what elements are at play in ensuring use. First, the research documented the ways that the exemplar units’ use of evaluation data aligns with the four common types: instrumental, conceptual, enlightenment, and persuasive/symbolic. Second, these case studies assessed the presence of factors in the exemplar cases’ contexts that have been previously found to influence use of evaluation data. The literature outlines four categories of factors that influence use of evaluation data and findings: organizational/social context, user, evaluator, and evaluation factors. (The four types of uses and the four categories of factors are detailed in chapter 2.). Additional research to explore other aspects of evaluation use, such as the process by which evaluation findings are used in evidence-based decision making, are warranted for future studies.

This research complemented the aforementioned efforts by PPEO to examine and reflect on progress made since the inception of the Framework. An advisory committee of senior evaluators at CDC, along with evaluation officers from PPEO, provided consultation and guidance on the study. This research avoided duplication among these additional lanes of research and augmented the retrospective efforts by focusing on the single aspect of use of evaluation findings.

iii. Study Conceptualization

Evolving focus for this research. It was through this environmental scan, discussions with the Chief Evaluation Officer, and reading of the literature that this research came to focus on the issue of use of evaluation findings. The original research interest had been on the lack of documentation and use of lessons learned or failure in program improvement. As issues were identified by interviewees, the researcher recognized that more fundamental concerns exist about the value, relevance, and use of the evaluation data that CDC collects. In the field of evaluation more broadly, the challenges to using evaluation findings has been documented in the literature (Alkin, 1985; Preskill and Torres, 2000; Taut and Alkin, 2003), and conversely, the factors necessary for effective use of evaluation findings has arguably been the “most studied area of evaluation” (Fleischer and Christie, 2010, p. 171). (A discussion of literature on evaluation use follows in chapter 2.) In the CDC setting, little is known about how these factors influence evaluation use within the agency. This research attempted to illuminate the factors, facilitators, and barriers several CDC units have experienced, put in place, or overcome to effectively use the findings from their evaluations.

The evolution of this research was informed by additional conversations with colleagues at CDC and the agency’s Chief Evaluation Officer that opened an avenue of inquiry into evaluation use at the agency. It was evident from these conversations that there is a general

understanding of the reasons why evaluation use is minimal or nonexistent, including but not limited to lack of leadership and organizational will, limited time and resources, irrelevant or limited data, and ineffective dissemination and translation of evaluation findings that discourage or inhibit use. Individual units' environments pose unique challenges to use of evaluation findings, both overt and hidden. The challenges to use in any program merit exploration. However, those the researcher spoke with did not express a need to learn about what barriers exist in evaluation use at CDC; many individuals wanted to learn about how others at the agency were using their evaluation findings. This common sentiment, coupled with the gap in knowledge at CDC about how some units are finding success in using evaluation findings, led to the research described here. Further, during the assessment to determine the case studies for this research, an unanticipated finding emerged: there is wide variability among CDC units in their use of evaluation data to improve programs.

Many units at CDC are using their evaluation findings in small, piecemeal ways. However, there are few units that are using their evaluation findings regularly and visibly to inform decisions (Patton, 2017). Several of these units are the focus of this research. (Case selection is discussed in chapter 3.)

Contextual considerations. CDC is a large and complex organization, and like other federal agencies, is subject to political forces that can exert pressures on funding, organization direction, and ability to operate independently. Similar to that of other federal agencies, fear may exist around scrutiny and the vulnerability inherent in close examination. Regardless, it is important to understand issues around evaluation in this complex environment. Following the guidance of the Framework, these real or perceived risks must be taken into account in the engagement of stakeholders and in the design of the research in order to increase the likelihood

of use of the findings from this study. The specific focus of this study at CDC was a novel investigation and additional research questions exist and were revealed from this inquiry.

Because the gap in understanding use of evaluation findings at CDC is substantial, this strengths-based approach allowed for a lower-risk introduction into research in this area yet yielded important and meaningful information. This study highlighted strengths and shared challenges (surmounted and remaining), but notably begins from a perspective of bringing forth the factors that are leading programs to success. Reminiscent of themes found in the environmental scan, the evaluation advisory committee confirmed that a study seeking to identify why evaluation findings were not being used would not be particularly useful and would likely be met with resistance by CDC units. The converse approach to identify what is working for several CDC units not only begins to meet the need expressed by agency evaluators but has been positively received by the case study sites that were selected for this study. The findings from this study can inform future research and open a pathway for exploration that probes strengths and weaknesses in more depth.

Finally, the complex environment of CDC may limit the transferability of the findings from this research. However, the researcher sought to increase the likelihood that the results can be transferred to other settings by selecting diverse cases that represent different contexts and providing thick descriptions of the case study units.

iv. Research Questions

This research provided snapshot of the ways that several units at the CDC are succeeding in using their evaluation findings. Using an appreciative inquiry/strengths-based approach, a series of three case studies examined the factors present in units that self-report using evaluation findings to regularly and visibly inform decisions and make changes to their programs. The information yielded from the research informed at least three audiences: the CDC unit of study,

other CDC units, and CDC leadership. Within the CDC unit of study, the research identified the ways the program had success using evaluation data and findings to inform the program further and potentially spur on greater use. This research answered these research questions:

1. What are the ways that program evaluation data and findings are used in the exemplar CDC unit?
 - a. How do the CDC unit's uses align with the four types of evaluation data use, instrumental, conceptual, enlightenment, and persuasive/symbolic?
2. What factors enable and hinder the use of program evaluation data and findings in the exemplar CDC unit?
 - a. How are the four categories of factors, organizational/social context, user, evaluator, and evaluation, exhibited in the unit?

These questions began to address the gap in understanding how CDC units are using evaluation data and findings.

D. Leadership Implications

i. Utility for audiences

This research provided a profile of several programs successfully using evaluation findings at CDC that can inform increased use of evaluation and provide recommendations for undertaking these efforts. For the units that are the focus of the case studies, the findings from this effort provided a holistic and in-depth picture of the program's functioning around evaluation. The CDC units that are studies may glean insights and new understanding of their program operations. For example, they may recognize the beneficial ways that their programmatic and evaluation teams interact such as around communication, information-sharing, and collaboration. This may lead to reinforcing positive processes and altering ineffective ones. The research may also shed new light on elements of the evaluation and their use of the findings

that were impactful and should be repeated. The CDC unit may also be encouraged to adapt and replicate their practices in other programs within the department. Ideally, the results from the case studies spurred on deeper and wider use of evaluation findings in the CDC unit.

Another purpose of this research was to elevate across CDC effective practices that are leading to the use of evaluation data and findings. Other CDC units may learn about the ways that the case study sites are having success and may have seen parallels in their programs. The potential for other units to adapt and apply the case study sites' approaches influenced the selection of the sites. The researcher and the evaluation advisory committee sought diversity in the case study sites so that others at CDC might have "seen themselves" in characteristics of those profiled in this study and be more inclined to adopt the successful practices. Other CDC units may find a *de facto* community of practice and connections around using evaluation findings through dissemination of this research. Ideally, the results from the case studies stimulated thinking and encouraged new and invigorated use of evaluation findings across CDC.

Leaders in PPEO and the Office of the Director may gain awareness of the factors and approaches the case study sites used. Ideally, this study promotes the use of evaluation findings and established the issue as a priority for advancing evaluation use and performance measurement at the agency, especially in light of the new legislation mandating increased use of evidence in decision-making. Leaders may use the results of this research to adapt and applying similar efforts in the programs. For example, PPEO may coach a program to adopt a tailored approach described in the case studies during their consultation on evaluation design and implementation. In addition, this research may lead PPEO and other leaders at the agency to prioritize to additional research and initiatives to further evaluation at CDC and throughout public health.

The primary audience for this research was leadership within CDC; this is partly due to restrictions on federal research stemming from OMB Paperwork Reduction Act which, for this study, limits the generalizability of knowledge. However, there were potential benefits from the findings from these case studies that extend beyond CDC. The results from this research may reach to other public health organizations in two ways. First, other CDC programs may implement some of the promising practices identified in this study and require funding recipients to participate in new approaches to using evaluation data. In turn, recipients may find value in the approaches and adopt them for use in other, non-CDC funded programs within their organization. Second, public health organizations may be exposed to the findings from this research through dissemination efforts (e.g., conference presentations, publications), potentially leading to tailoring and adoptions of the lessons learned and promising practices revealed in the results. In addition, insights from this research may contribute to the federal conversation around institutionalizing evaluation, particularly as the Foundations for Evidence-Based Policymaking Act is implemented. Lessons learned and promising practices from the experience of these three CDC units may inform programs at other federal agencies. The factors identified may add to models aiming to increase evidence-based decision making in public health. These findings may also contribute to larger conversations about building a culture of evidence-based decision making throughout the field of evaluation.

ii. Unique focus

This effort provided a unique focus on use that complemented the other PPEO efforts to examine and reflect on progress made since the inception of the Framework. This research began to fill a gap in CDC's understanding of how CDC units are using their evaluation findings as there is currently little visibility on successful practices used in individual programs. Additional research is needed to close the knowledge gap; this initial investigation allows for a snapshot of

three units' approaches as an introduction to a challenging and potentially fraught area of nonuse and use of evaluation findings. These case studies opened a pathway to further study. Beyond the context of CDC, this research may also contribute to national federal and evaluation-field conversations on use of evaluation for decision-making and program improvement and provide insights on how federal agencies and other complex organizations can promote and facilitate the use of data, through dissemination of the case studies' practices.

II. Chapter 2: Theoretical and Conceptual Frameworks

A. Literature Review

A literature review was conducted using the CDC library search engines to search the Scopus, ERIC, Web of Science, and PubMed databases and Google Scholar. These searches aimed to provide 1) context on the problem, 2) research previously explored in the literature, and 3) shape the research questions for this study. The timeframe for the search ranged from 1980 to the present. These boundaries spanned nearly 40 years of research on the topic to capture the evolution of discourse on evaluation use. Variations and combinations of the following terms were used to guide the search: program evaluation, evaluation data, data use, data for change, program improvement, organizational learning, and learning from evaluation. The results were grouped into categories to streamline themes and complementary and contrasting schools of thought. The results primarily fell into two categories: advancements in understanding and conceptualization of evaluation use and factors contributing to use.

i. Evaluation and Use of Data and Findings

The field of evaluation is broad and has been studied for decades. Many definitions of evaluation are used with consideration to the intent of the evaluation, perspective of evaluator and stakeholders, and factors relating to the evaluand. Shadish and Luellen (2005) note that civilizations have employed evaluation throughout our history, “Humans identify a problem, generate and implement alternatives to reduce its symptoms, evaluate those alternatives, and then adopt those that results suggest will reduce the problem satisfactorily” (p. 183; cited in Alkin and King, 2016). They conclude that use is the end goal of evaluation and achieving use has been a concern of the field for decades.

Though varying definitions of evaluation exist, some common elements are included in this in this simple description: “a systematic investigation of the merit, worth, or significance of

an object.” (Scriven, 1998; Shadish, Cook, Leviton, 1991). The inclusion of the use of the evaluation is important for this research as it is focused on the factors that contribute to using evaluation findings. Indeed, Alkin and King (2016) assert that “Evaluation’s *raison d’être* is the contribution it makes to better program operations. It is intended to be a practical craft” (p. 569).

Because this research focuses on *program evaluation* at CDC and across several public health topics, a decision was made to include a broad definition of program evaluation as well as the CDC definition that guides evaluation efforts at the agency. The Framework defines program evaluation as collecting, analyzing, and using data to examine the effectiveness and efficiency of programs and to contribute to continuous program improvement (CDC Evaluation Working Group, 1999). Other sources broaden the definition. Patton (2008) defines program evaluation can be defined as “the systematic collection of information about the activities, characteristics, and outcomes of programs, for use by people to reduce uncertainties, improve effectiveness, and make decisions” (p. 39). Yarbrough, Shulha, Hopson, and Caruthers (2010) and Newcomer, Hatry, and Wholey (2015) add to this definition by calling out the need to address stakeholders concerns in the evaluation, an emerging area of inclusion in program evaluation. This research may confirm the importance of accounting for stakeholders’ needs in the use of evaluation at CDC, particularly for the staff involved in shaping the design and implementation of programs. Yarbrough et al (2010) asserts that evaluation can serve a program learning or accountability purpose; the former’s purpose aiming to improve the program. This conceptualization aligns with CDC’s definition and lends itself well to this research as a focus on use of and learning from evaluation.

Evaluation use is a term has many definitions and researchers have not yet reached consensus. Alkin and King assert that “the use continuum extends from nonuse to use and reflects the extent to which someone does something with an evaluation” (2017, p.436). In the

Framework, ensuring use and sharing lessons learned means that “stakeholders are aware of the evaluation procedures and findings; the findings are considered in decisions or actions that affect the program; and those who participated in the evaluation process have had a beneficial experience.” (CDC, 1999, box 8) A summative working definition for this research is the ways and extent to which evaluation data and findings affect operations, decisions, and outcomes. (Kirkhart, 2000; Patton, 1985; Weiss, 1981 as cited in Peck, 2009).

A primary goal of evaluation to provide meaningful information that inform decision making (Fleischer and Christie, 2009). Alkin and King (2016) explored the history of evaluation use, noting the rise in federally funded social science programs in the 1960s and 1970s yet a lack of knowledge transfer from these programs to policy makers. Weiss (1989) attributed a surge of evaluation research from this recognition that policy makers were not learning from existing programs and making uninformed decisions despite the existence of meaningful data. In the midst of the uptick of evaluations and a push to use findings to inform policy decisions, Caplan, Morrison, and Stambaugh (1975), traced federal use of evaluation findings via two forms of knowledge: “hard,” quantitative and described in scientific language, and “soft,” qualitative, often not stemming from research and stated in lay language. They note “our data suggest that there is widespread use of soft information and that its impact on policy, although often indirect, may be great or even greater than the impact of hard information” (p. 47, as cited in Alkin and King, 2016).

There are four commonly recognized types of evaluation use: *instrumental*, *conceptual*, *enlightenment*, and *persuasive or symbolic* (Weiss, 1980; Patton, 1994; Kirkhart, 2000). These definitions, summarized by Fleischer and Christie (2009), reflect general consensus in the evaluation field on each type of use. Examples of each use in the CDC context follow each definition.

Instrumental use describes a use that modifies the object of the evaluation, the evaluand (Rich, 1977; Shulha and Cousins, 1997; Greene, 1998). This is often the most direct and visible outcome of evaluation use. This form of evaluation use can inform evidence-based decision making. An example of instrumental use in a CDC unit is an evaluation finding that reveals a critical missing step in an intervention, resulting in the CDC unit altering the logic model and adding additional technical guidance for funding recipients conducting the intervention.

Conceptual use leads to new understanding of the program (Rich, 1977; Weiss, 1979). It often includes process use, knowledge gained during the practice of the evaluation (Kirkhart, 2000). An example of conceptual use in the CDC setting is evaluation findings that help shed new light on the interplay of primary prevention factors for a particular behavior. Process use can often be an unanticipated but beneficial consequence of stakeholder involvement in evaluation by growing evaluative thinking among users (Patton 1997, 2003). For example, process use may be demonstrated by CDC funding recipients who apply newly obtained evaluation skills to a non-CDC funded project.

Enlightenment use characterizes utilizations that adds knowledge to the field, allowing for use by anyone not just those engaged in the original evaluation (Weiss, 1979). In the CDC context, enlightenment use often results in publications in the literature so that others may learn from the CDC unit's experience.

Persuasive or symbolic use has debated meanings, often negative in connotation, including demonstrating that program values accountability or legitimizing foregone decisions with no sincere intention of using the evaluation findings (Leviton and Hughes, 1981; Greene, 1998; Weiss, 1998; Henry, 2000; Alkin and Taut, 2003; American Evaluation Association, 2008). An example of persuasive use is evaluation data being manipulated to produce positive

findings that support a pre-determined course of action such as funding a program for another cycle without a close examination of the evaluation results.

Of note, Alkin and Taut (2003) make a distinction between evaluation use and evaluation influence. Evaluation use “refers to the way in which an evaluation and information from the evaluation impacts the program that is being evaluated,” with the evaluator’s awareness of these impacts (p. 1). They also note that evaluation influence “adds to the concept of use in instances in which an evaluation has unaware/unintended impacts” (Alkin and Taut, 2003, p. 9). In the course of this research, any of these uses may be revealed in the ways that the CDC units have used evaluation findings to influence and/or change their programs.

ii. Factors influencing evaluation use

History of research on use factors. Research on the factors that contribute to the use of evaluation can be traced back to the mid-1980s with reviews of studies by Patton, Grimes, Guthrie, Brennan, French, and Blyth (1977), Alkin (1985) and Cousins and Leithwood (1986), summarized in Alkin and King’s (2017) historical review of evaluation use. In each effort, the researchers reviewed empirical studies on evaluation use; they identified common factors and grouped these into categories. Alkin developed more broad buckets accounting for human factors (partitioned by users and the evaluator), evaluation activities, and organizational/social/political factors. Cousins and Leithwood generated 12 factors in two categories: evaluation implementation factors and decision/policy-setting factors. These two compendiums provided the basis for considering the factors associated with evaluation use until Shulha and Cousins’ review of the literature in 1997, in which they documented new directions in evaluation, including the emergence of process use and the changing role of the evaluator to facilitator and teacher. A decade later, additional research built upon the prior studies to surface confirmatory and new factors. Johnson, Greenesid, Toal, King, Lawrence, and Volkov (2009) added the

growing influence of stakeholder engagement to the mix of factors associated with evaluation use. Many of the factors identified in these studies overlap or seem to describe similar phenomena. Alkin and King attempt to synthesize and summarize the factors into unifying categories; these provide the foundation for this research.

Four groupings of factors. Alkin and King (2017) assemble the factors uncovered in the last 30 years of research into four categories: user factors, evaluator factors, evaluation factors, and organizational/social context. They emphasize the interrelationships of the factors; a constellation of factors may need to be present to assure successful use of evaluation findings. An *a priori* assessment of influences driving evaluation use at CDC aligns well with this evidence-based compilation of factors. Their categorization serves as the structure of the conceptual framework guiding these case studies, described in chapter 3.

Organizational/social context factors refer to the environment in which the program operates that impacts the use of evaluation findings – and includes the sway of the larger organization which houses the program (Johnson et al, 2009) as well as the influence of other agencies (Alkin, Daillak, and White, 1979). In the CDC setting, these factors must account for the complexity of the organization and the external, largely political, pressures and sister agencies' agendas that influence its programs' operations. The organization must also have functional knowledge exchange processes that allow for information to be managed and flow to and from the relevant stakeholders (Patton, 2001). An additional element that aids in use of evaluation findings include the maturity of the program, not only measured by the age of the program but by the extent of its development (Alkin and King, 2017). I posit that several other factors affect the organizational ability to use evaluation findings at CDC; these are informed by anecdotal information from the environmental scan, input from evaluation experts at CDC, and my experience. These additional factors include the presence of leadership buy-in, a culture of

organizational learning and support for program improvement, and a co-located structure of program & evaluation teams within the CDC unit.

User factors refers to the factors affecting those who use the evaluation findings. In the CDC context, this can include funding recipients who tailor and implement programs at the local level and are responsible for meeting evaluation milestones and performance measures, and internal programmatic staff who design and guide programs, and leaders who decide funding allocations and are accountable for progress toward outcomes. Patton's early research (1977) identified the "personal factor" as a key factor in how and whether evaluations were used; this factor encompasses attitudes toward evaluation and previous experiences with evaluation. User factors that can be influenced by the evaluator also play a role; trust in the evaluator and users' involvement in the evaluation also affect their engagement in and commitment to use evaluation findings (Johnson et al, 2009; Alkin, Daillak, and White, 1979). The information needs of the user, as well as competing demands on their time and attention, must also be considered when examining use of the evaluation findings (Cousins and Leithwood, 1986).

Evaluator factors describes the characteristics and actions of the individual planning, conducting, analyzing, and sharing the results of the evaluation. Alkin and King (2017) summarize relevant factors present in the evaluator including her or his skills and credibility, and savvy in navigating political issues that surround the evaluation and its uses. King and Stevahn (2013) note the evaluator's interpersonal factor as a complement to Patton's user's personal factor, building on the factor identified by Alkin, Daillak, and White in 1979. It is demonstrated by "a dedication and commitment to facilitating and stimulating use" by the users (Alkin and King, 2017, p 38). The ability to build rapport and good working relationships is also essential to encouraging use of the evaluation data and findings (Johnson et al, 2009).

Evaluation factors focus on the evaluation itself. Use of evaluation findings is associated with quality and credible evaluations (Cousins and Leithwood, 1986), requiring not only technical excellence but high value to the user. The information provided by the evaluation must be seen as relevant, legitimate, and accessible by the user (Contandriopoulos, Lemire, Denis, and Tremblay, 2010), delivered in a timely fashion (Alkin, Kosecoff, Fitzgibbon, and Seligman, 1974) and via clear, comprehensible communication (Cousins and Leithwood, 1986; Shulha and Cousins, 1997). Alkin and King (2017) also note the complex interplay of competing information streams vying for the attention of the user, underscoring the importance of good communication of the findings to facilitate use. Cousins and Leithwood (1986) also assert that the evaluation findings must be congruent with decision-maker expectations and provide value to decision-making. An additional factor that may be particularly relevant in the CDC context is adequate funding to support an appropriate evaluation as well as resources (human and programmatic) to share and learn from evaluation findings.

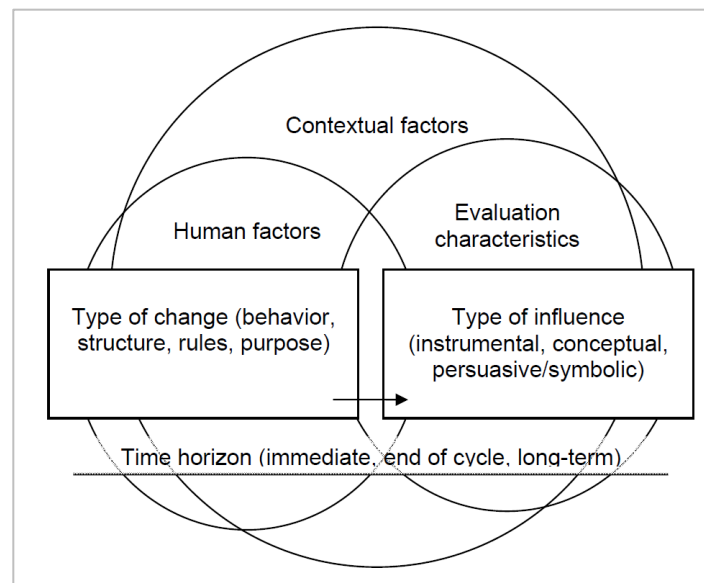
The preceding four categories of factors serve as a basis for the conceptual model that guides the proposed research. The next section describes the theoretical supports and introduces the conceptual framework.

B. Conceptual Framework

i. Theoretical model of evaluation use

This research uses the Integrated Framework for Evaluation Use developed by Peck and Gorzalski (2009) as a framework to illustrate the linkages and relationships between the factors at play in successful use of evaluation data and findings. The researchers sought to synthesize decades of research on the factors associated with evaluation use into a unified model that might predict successful use.

Figure 4. Integrated Framework for Evaluation Use (Peck and Gorzalski, 2009)



In this model, the contextual factors are depicted as the landscape in which human and evaluation factors are expressed. The type of change and influence take place against the “backdrop” of these factors (Peck and Gorzalski, 2009). Though the processes leading to evaluation use are not linear, time plays a role in the ways that evaluation findings are used. The researchers cite Smith’s (1998) application of time on evaluation use processes in three stages: immediate, end-of-cycle, and long-term. Immediate refers to influence or use of evaluation findings in real-time, often as a result of process use or early learning from the evaluation. End-of-cycle denotes use of findings at the conclusion of the evaluation, while long-term influence has longer range effects over time.

This model was developed in 2009. Alkin and King endeavored to summarize and order the literature’s factors on evaluation use into four categories in 2017. A hybrid conceptual model has been built from these two sources. They serve as the evidence base for figure 6 below, placing Alkin and King’s four categories of constructs into the Peck and Gorzalski model. In this

environment, the factors may be seen to interact, and it shows how they may influence the likelihood and success of a CDC unit's ability to use their evaluation data and findings.

ii. Conceptual models

The conceptual models I have developed reflect an assessment of the process by which CDC units embark on evaluation from data collection and analysis, processing and sense-making, and ultimately using the findings to inform decision and making change within a program. Figure 5 is an *a priori* process map depicting the route that CDC units undertake to design, fund, and evaluate programs including developing evaluation and reporting requirements, as well as (optionally) establishing evaluation plans that are internal to CDC. The process map also illustrates the Framework steps that accompany the process.

As recipients conduct activities, they collect and periodically provide evaluation and performance data to CDC via formal submissions to electronic systems and templates, communications with CDC project officers, verbally in project meetings, and other forms. Simultaneously or subsequently, CDC units may collect internal evaluation data. This data is analyzed, and findings show progress (or lack thereof) toward outcomes. Programs may also mine and extract findings from the data on strengths and weaknesses, and opportunities for improvement, from the data. CDC units use these findings to make modifications to the program. The research questions and construct categories overlay the final step of the Framework, the focus of this research, for ease of reference.

Figure 6 details the evidence-based and *a priori* constructs described in chapter 2 that may be at play in these units. The largest circle depicts the organizational factors and the environment in which the other factors operate. The other three circles illustrate the additional human and evaluation factors; they overlap to indicate how the factors may intersect and interact. For example, the quality and credibility of the evaluation is influenced by the user's perception

of the expertise and credibility of the evaluator. Another example of factors that may influence one another is the user's receptiveness to the evaluation and the relevance and accessibility of the evaluation. The user may be unlikely to engage with the evaluation if the content of the effort will not yield information that is understandable or meaningful to their work. This research focused on exploring the accuracy, completeness, and influence of the constructs while allowing for emergent constructs to surface and be explored.

Figure 5. Process map of CDC unit's use of evaluation data and findings with research questions and constructs overlaid in the highlighted box. The factors influencing step six are the focus of this study.

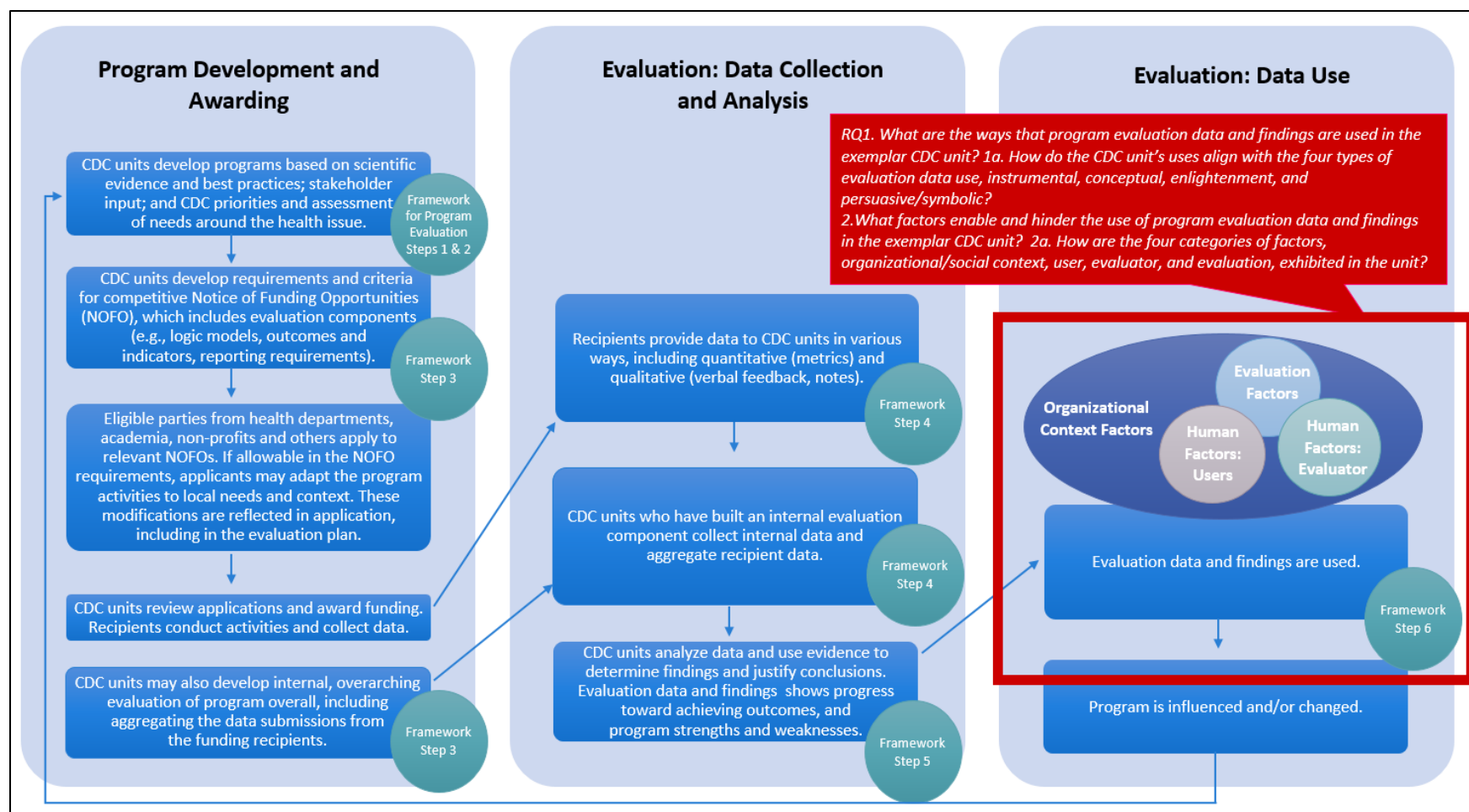
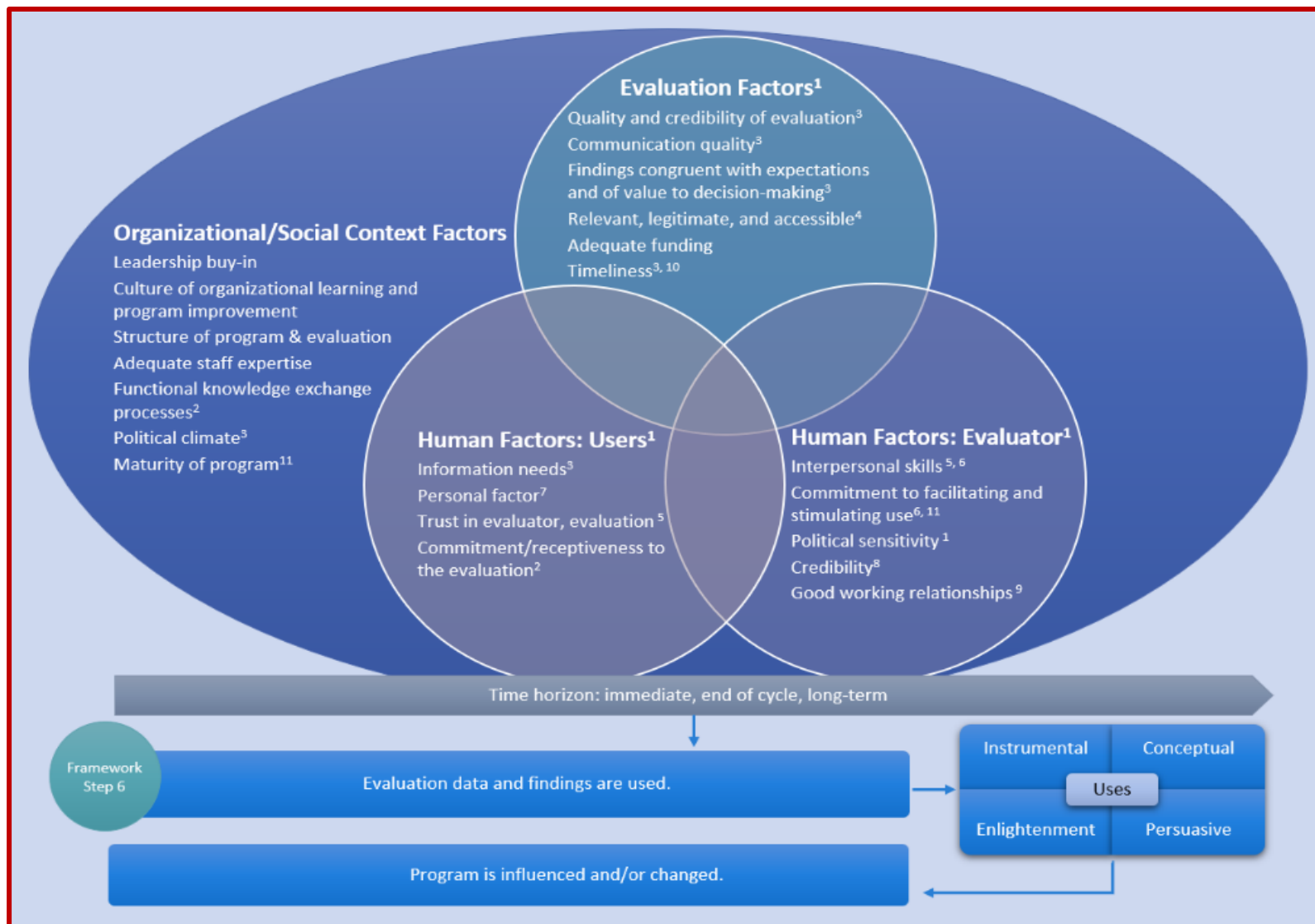


Figure 6. Conceptual model construct detail: Four dimensions of factors influencing CDC unit's ability to use evaluation data and findings. See appendix F for references cited in the conceptual framework.



III. Chapter 3: Study Design, Data, and Methods

A. Research Design and Analytical Approach

This retrospective exploratory research of three case studies used qualitative methods to analyze previously gathered data to identify the factors that contributed to the success of three exemplar CDC units in using their evaluation findings to inform decisions and make changes to their public health programs. This study was influenced by principles of developmental evaluation, notably in regard to stakeholder engagement. The case study points of contact and the evaluation advisory committee provided substantial input and close collaboration throughout the research; their engagement deepened over the course of the study and continues as the researcher focuses on making the findings actionable. In spring 2019, the researcher used two methods to gather qualitative data at CDC: 1) document reviews of relevant program and literature reviews to crosswalk the data and 2) semi-structured key informant interviews with CDC staff who were integrally involved in the case study programs. This data collection occurred as part of the CDC project and was approved through the CDC Institutional Review Board.

Of note are the extenuating factors that preceded the study. This research was conceived and evolved between fall and winter of 2018, with an emphasis on coinciding with the marking of 20th anniversary of the CDC Framework for program evaluation in public health in fall of 2019. The outcomes from this study have particular relevance to the anniversary as it complements other streams of research happening around the Framework's reach and value. The peak timing for the release of these findings is on Evaluation Day, the annual event showcasing evaluation work at CDC and bringing together hundreds of evaluators and interested parties across the agency and beyond. There is also an opportunity for the research to receive significant additional attention by some of the key audiences (CDC evaluators and those from other federal agencies, CDC leadership, and other evaluation leaders outside of public health) of the findings

because of the anniversary-focused events – exposure may not otherwise be possible and would likely increase uptake of the study’s findings. Given the timing constraints and the opportunities, the researcher and dissertation committee agreed to proceed with the research on a modified timeline. It was agreed that the researcher would organize and execute data collection for the research prior to the defense of the dissertation proposal, acknowledging the work of the project as a research package. This allowed for the data collection to be completed in a timely manner while the preparations of the first chapters were underway. The researcher consulted with members of the committee on approach, case selection, and data collection methods and tools. A non-research determination was obtained by CDC’s Institutional Review Board prior to data collection. Data was collected (via document reviews and interviews) in spring 2019. As a result, this dissertation research was comprised of secondary data analysis, identifying themes and resulting findings and producing actionable recommendations.

i. Essential terms used this research

CDC, like many other agencies, has its own nomenclature and jargon, and several terms can have different meanings depending on the context, speaker, and level of the organization. To minimize misinterpretation, the following definitions describe common CDC terms. In addition, it is important to clarify and bound the evaluation terminology to ensure a common understanding of the concepts used in this research.

- a. *CDC unit* – the organizational department, often designated in the hierarchical structure as a topic-based center, department, division, or branch, which operates as a functional administrative entity, overseeing funding, topical expertise, and human resources. It is important to distinguish the operational structure from the intervention or activity of the program. An example of a CDC unit is the *division*. It is the administrative body that

administers and oversees the operation of several programs, including that of interest in this study.

- b. *CDC program* – while often used to reference to several concepts within CDC, in this research, the term “program” refers to the public health intervention or activities undertaken by the CDC unit and its funded recipients, and as defined in the Framework (CDC, 1999), a program is the object of evaluation. Funding is primarily provided through a competitive application process via a Notice of Funding Opportunity (NOFO). For example, one of the CDC units of focus in this study, Case A, releases a NOFO that exclusively funds this program every three years.
- c. *CDC unit programmatic staff* – in this context, CDC employees (and other human resources paid in a variety of mechanisms) whose work focuses on the intervention or activities. This can include topical subject matter experts, project officers, team leads, and others who serve to develop and execute the program itself. For example, this study will gather the perspectives of CDC unit staff that work to administer and give technical assistance to recipients of the Case A’s NOFO. The two key informants for Case A are a project officer and a team lead.
- d. *CDC unit evaluation staff* – in this context, CDC employees (and other human resources who are employed at the agency via a variety of mechanisms) whose work focuses on the assessment or monitoring of measures, indicators, metrics and data collection, analysis, and interpretation. This can include evaluation subject matter experts, team leads, and others who serve to develop and execute the evaluation of the program (and often other areas of the CDC unit’s work). For example, this study will gather the perspectives of CDC unit staff that work to develop and execute the evaluation of the Case A program.

The two key informants for Case A's program evaluation are the evaluation lead and an evaluation fellow.

- e. *CDC unit leadership* – in this context, CDC employees whose work centers on leading an organizational department. These individuals are often responsible for setting the vision, establishing priorities, and making decisions about the direction of key aspects of the CDC unit. They also manage staff and oversee operations of the unit. These staff may use evaluation data to inform decision-making and shifts in program approaches. In this study, leadership staff include division directors, branch chiefs, and team leads.
- f. *Data*. With input from CDC's Chief Evaluation Officer, the decision was made to use an expansive definition of *data* to encourage respondents to think broadly about the inputs and information they may receive about the program, through the evaluation processes, communication with recipients, and interactions with CDC colleagues. In this context, data refers to any information that is used to measure or understand the program. Some examples include the numbers of activities or people reached by the intervention, comments by recipients, information recipients submit in annual progress reports, notes from project officers' calls, notes from internal meetings, anecdotes, and observations.
- g. *Findings*. In this research, the term findings refers to the conclusions drawn from the analysis of data collected in the course of the evaluation. For practical purposes, this term may also encompass generalizations and recommendations made in the course of the evaluation. For example, an evaluation might report that a practice or program has been working well (finding), therefore it is likely to work well in the future (generalization), and therefore we should continue to do it (recommendation)" (BetterEvaluation, n.d., para.3).

ii. Practice-based Input

The researcher sought input and expertise from three groups that have evaluation experience at CDC and could lend insights and provide guidance on shaping and conducting the case studies.

Evaluation leaders. The researcher conducted this study in conjunction with CDC's Program Performance and Evaluation Office (PPEO), and with the support and expert guidance of leaders within this office. Tom Chapel, CDC's Chief Evaluation Officer seated within PPEO, provided subject matter expertise on the dissertation committee. The researcher worked with Mr. Chapel regularly to get input and guidance throughout the research, including to vet the soundness of the research approach, aid in making connections to units within CDC, and obtain feedback on efforts to translate the findings to practical recommendations.

Evaluation advisory committee. As part of the examination of the Framework leading up to the 20th anniversary of its release, Mr. Chapel gathered evaluation leaders from across the agency to form a 10-member advisory committee. The researcher had periodic access to the collective expertise of the committee through Mr. Chapel. The researcher consulted with the evaluation advisory committee to aid in purposeful sampling of exemplars, provide a peer debriefing platform, and provide input on ways to present the case study data in formats that encourage evaluators at CDC to engage with the findings.

Case study stakeholders. The lead evaluators from the case study sites, one from each unit, formed a trio of stakeholders for which the researcher relied heavily for insights and collaboration. Initially, the three stakeholders provided entrée into the case study units along with information about the programs and access to key staff. They also served as respondents to the case study interviews. As the research process continued, their role evolved into one of essential collaborators. The researcher convened the stakeholders on a variety of issues, ranging

from verifying the early themes, discussing nuances of the data, making meaning of the findings and identifying gaps and missed elements during the data analysis, and considering options for transforming the findings into practice-focused, actionable steps. Since the completion of the research, the case study stakeholders and the researcher have co-presented the findings and featured examples of their successful efforts to increase the use of evaluation data in their units. They and the researcher continue to partner on dissemination and translation efforts to change practice around evaluation use at CDC and beyond.

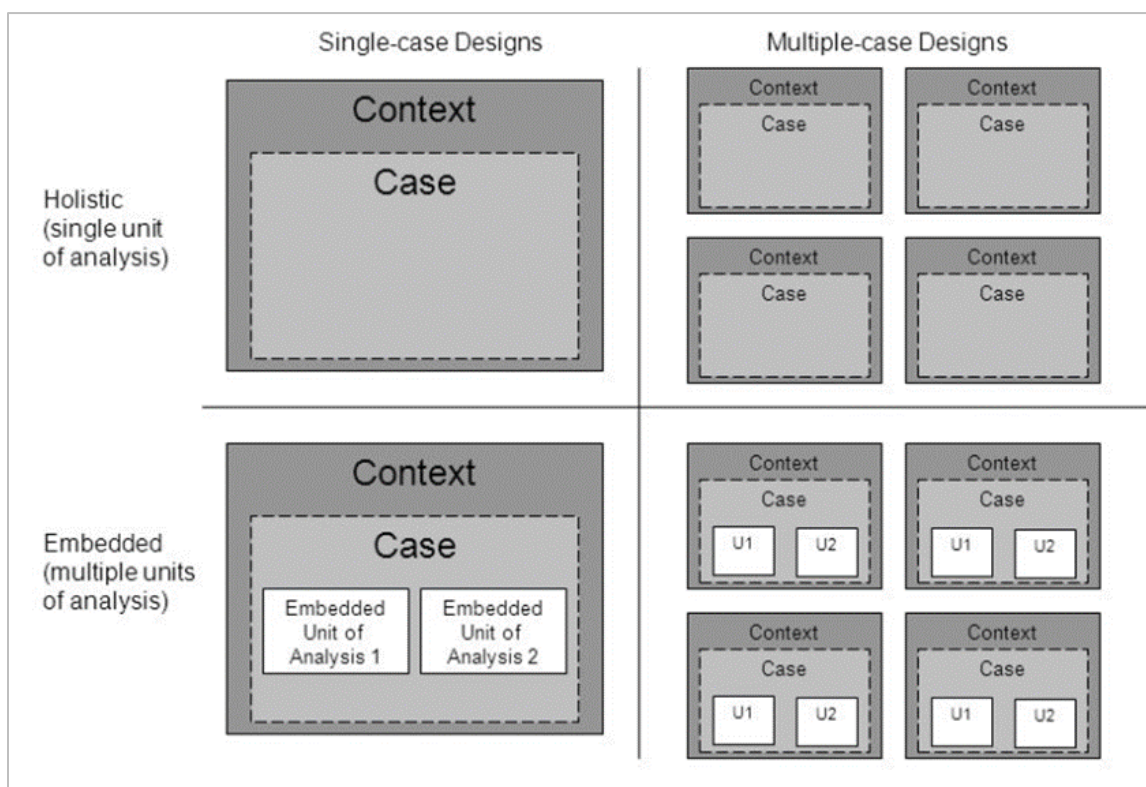
iii. Case study description and methods

Multiple Case Study. The researcher examined CDC program units via a multiple case study approach. This methodology allowed for presenting multiple perspectives on the issues and relies on data of several kinds (e.g., interviews, reports, observations). This examination was well-suited to an instrumental case study approach because it lent itself to an in-depth review and comparison of data, and to answer “how” and “why” questions while understanding contextual factors at play, particularly because “the boundaries between phenomenon and context are not clearly evident” (Yin, 2017; Yin, 2009, p. 18) in the complex environment of each CDC unit and across the agency. Guided by Merriman’s (2002) conception of case study characteristics, the research questions lent themselves to a descriptive approach that provided a rich narrative describing the phenomenon of evaluation data use by the CDC unit under study. The case studies also set the stage for future quantitative research across CDC’s units and programs.

A multiple (or “collective” in Stake’s 1995 terminology) case study was an appropriate type for these research questions as this approach served to study several cases in depth simultaneously to gain a better understanding of an issue than a single case examination (Crowe et al, 2011). Figure 7 illustrates Yin’s conceptualization of case study designs; the multiple case

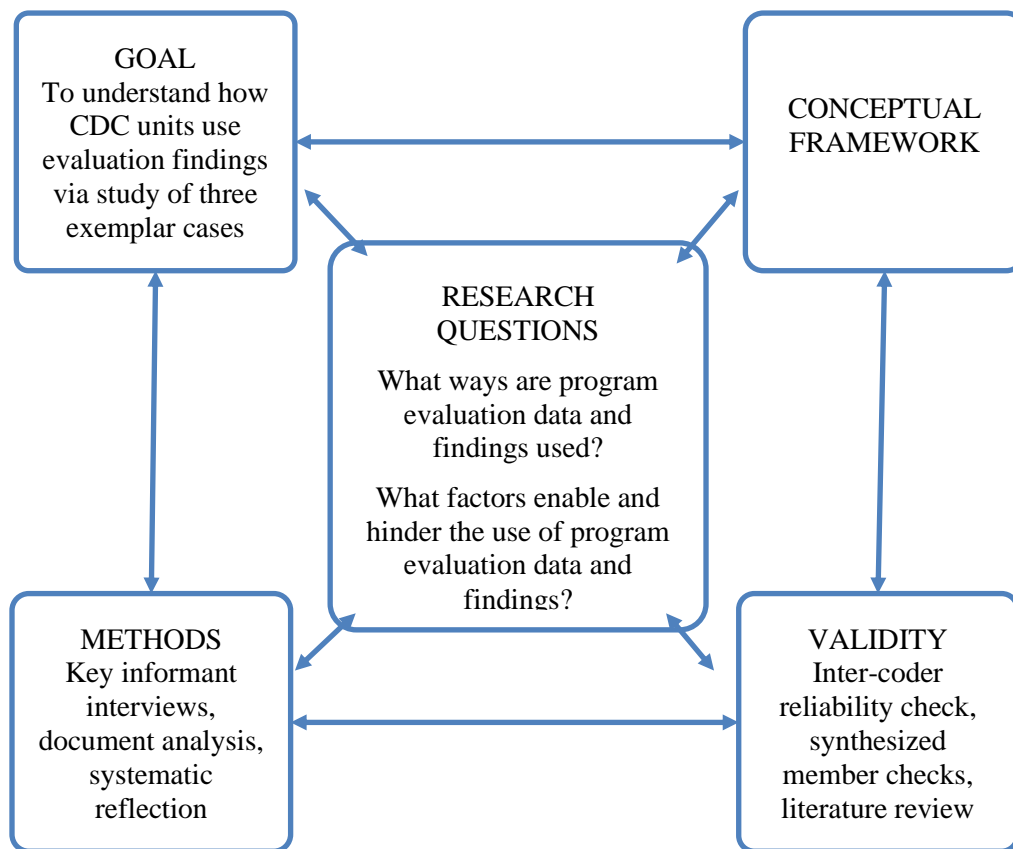
study design was well-matched for this research as it allows the relationship of the three units' data to create a holistic picture of evaluation use yet also explore each case's story in detail.

Figure 7. Case Study Research and Applications (Yin, 2009)



Adapting Maxwell's (2005) interactive model for research design, figure 8 depicts the interplay of the conceptual framework, methods, and validation strategies in relation to the research questions for this case study research. Given the size and complexity of CDC, this approach served to deeply understand three units' successes and challenges in using evaluation data. The nature of this retrospective research was exploratory and descriptive, seeking to understand and describe the phenomenon of and conditions present for evaluation use in several programs.

Figure 8. Interactive Model for Research Design (Maxwell, 2005): Retrospective Study of Evaluation Use for Program Change at CDC.



Qualitative Methods. The proposed analyses relied on two previously collected qualitative data sources: key informant interviews and document review, coupled with ongoing systematic reflection. A final data validation opportunity occurred post-analysis, after the presentation of findings at CDC’s Evaluation Day event. A detailed description of the data follows in sub-section B, in the second phase of data analysis. During data collection and throughout the analysis, the researcher used systematic reflection to process her thinking and strategically plan for next steps, emergent issues, and shifts in approach as needed.

As a final step, the researcher facilitated a discussion with key stakeholders from the research to confirm the findings and work with the group to further interpret and make meaning of the findings. This discussion was built upon the methodology of the Synthesize Member Check to “validate results by seeking disconfirming voices (objectivism), yet it also provides

opportunity for reflection on personal experiences and creates opportunities to add data (constructivism)” (Birt, Scott, Cavers, Campbell, Walter, 2017, pg. 1805). The researcher used a modified ORID facilitation framework to guide the conversation along four streams of questioning: Objective, Reflective, Interpretive, and Decisional (Stanfield, 2008). Using the topline findings, the researcher gathered the key individuals from the case studies to confirm the trustworthiness of the findings and contribute additional interpretations to the findings.

iv. Case study selection

A multi-prong search strategy was used to identify three exemplar cases from November 2018 – March 2019. The following section describes the selection rationale and process. In this study, the researcher used purposive sampling to identify outlier cases that diverge from the patterns of most CDC units by self-reporting effective use of evaluation data to make changes to their programs. Purposeful sampling can be an effective strategy to capture rich information and insights on exceptional cases, especially with (time and resource) constraints (Patton, 2002). In addition to being outliers in their notable use of evaluation data, the researcher sought diversity in the topic area, structure, size, and maturity of the CDC units, as was feasible and practical. The unit of analysis is a single program within a CDC unit. This bounded the study by a common delineation at CDC by the *program*, defined as a public health intervention or activities undertaken by the CDC unit and its funded recipients, and, in this research, the object of an evaluation. While a CDC unit may oversee multiple programs, the funding recipients and at least some portion of the CDC unit’s evaluation is segmented by program topic, making it a suitable and practical entity for study. To allow for diversity in CDC unit selection, a case could occur at any level of the organization (e.g., center, division, branch, or team). The cases emerged from a multi-prong identification process followed by confirmation with the evaluation advisory committee.

First, Mr. Chapel solicited the advisory committee of evaluation leaders to suggest programs of which they had first-hand or anecdotal knowledge of successful or extensive use of program evaluation data, or well-established program evaluation efforts. This approach was intended to cast a wide net to identify many programs for consideration. Next, these were combined with number of CDC units that emerged as advanced in their evaluation efforts during a prior agency-wide environmental scan of evaluation (Schooley, 2018). Then, the Notice of Funding Opportunity (NOFO) program strategy team in CDC's Program Planning and Evaluation Office (PPEO) searched their database of all CDC NOFOs to identify programs for which their NOFO underwent "significant change" since the last iteration of the funding announcement, flagging possible influence of evaluation on program activities. In addition, expert input from Mr. Chapel and other leaders in PPEO was sought. A total of 22 programs were generated by these strategies. To further narrow the list of units under consideration, units that suggested from more than one strategy were contacted for a short discussion to explore the extent of their evaluation use.

Criteria for case study selection. These criteria were considered in the final selections:

1. Repetition of a proposed program from various identification strategies (i.e., more than one source suggested a CDC unit as notable in evaluation data use, meaning the CDC unit was "nominated" by more than one person on the advisory committee).
2. Self-reported indications of use: evaluation data and findings regularly and visibly informed decision making and/or resulted in influence or changes to the program (e.g., self-report that evaluation data influenced staff training on providing technical assistance, or NOFO was changed as a result of evaluation data).
3. Diversity among the cases in regard to size/resource levels, maturity, disease/topic area, organizational level, operational structure, etc. to provide richness in the case studies

and allow for comparisons of factors, facilitators, and barriers among the distinct examples. This may also aid in the transferability of the study results as the different contexts may resonate with audiences who seek to apply the findings in their programs.

4. Willingness and ability to participate in the case study, including ensuring access to subject matter experts and documentation during the study timeframe.

Those that self-reported systematic, comprehensive use of their evaluation data and willingness to be engaged in the study, a total of six units, were progressively put forward to the evaluation advisory committee for feedback. An iterative process of seeking input and negotiating with potential units followed. Challenges were encountered in case selection including the influence of political pressures, conflicting perspectives on the extent and quality of evaluation data use, concerns about negative effects stemming from participation, and lack of time to participate.

Ultimately three programs were selected, identified as Cases A, B, and C throughout this document. Within each case, respondents were identified by the lead evaluator who provided access to staff in the CDC unit. Respondents from three levels of the unit were asked to participate in order to provide a variety of perspectives: team members directly involved in the evaluation, team members directly involved in the programmatic elements of the work, and those leading or overseeing the evaluation and programmatic teams. Though these roles were sought specifically, the data was not analyzed by role. Definitions for these roles are described earlier in this chapter. In addition, the evaluations highlighted in these cases were primarily conducted internally to CDC, as opposed to the use of an external evaluation entity to assess the unit's program. Descriptions of each program are presented in chapter 4.

Design Influences: Developmental Evaluation and Appreciative Inquiry. The design for these case studies aligned well with the principles of developmental evaluation (DE), particularly

as it is an evaluation of evaluation; the object of this evaluation is the use of evaluation data and findings. Tracking with Patton's characterization of DE, this research sought to explore the cases' innovative approaches to achieving evaluation use, ultimately to "guide adaptation to emergent and dynamic realities in complex environments" (2010, p.1). The adaptation facet of DE in this study presented as program improvement and learning from evaluation data and findings. In addition, the DE approach fit well with this research because of its utilization focus (Patton, 2006). The researcher, case study stakeholders and the evaluation advisory committee were committed to putting the findings of this research to use across CDC and beyond. From the outset, those involved were focused on how the findings from these case studies would be used to inform CDC recommendations on how to increase the use of evaluation data and improve evaluation practice across the agency.

The researcher employed an appreciative inquiry (AI) focus in the data collection, exploring assets and promotive factors that the CDC units have relied upon, adopted, or created to facilitate the use of evaluation data. The rationale for this focus is two-fold. First, an environmental scan suggested that within CDC, the federal government, and to a lesser extent in the field of evaluation, the inability to reach *use* of evaluation data is well-known. There is value to the agency, government, and field of evaluation to generate a better understanding of the few units that have been successful in using their evaluation data to inform decisions and make changes to their programs. The AI approach allows for discovering new ideas and is less reliant on problem-solving from a deficit-focused standpoint (Cooperrider and Srivastva, 1987).

Figure 9. The 5-D Cycle of Appreciative Inquiry (Cooperrider and Whitney, 2005)



Second, the AI methodology of asking questions that capture positive characteristics and potential (Cooperrider and Whitney, 2005) aligns with the research aims to profile exemplar cases and will fulfill anecdotal calls, heard during the environmental scan, for elucidating successes of CDC units so that others may learn from these units' experiences and tailor to their context.

In addition, the AI approach aligned well with the researcher's practice developed in the DrPH program. Using elements of the appreciative inquiry 5-D cycle (Cooperrider and Whitney, 2005), particularly *define*, *discover*, and *dream*, the researcher shaped interview questions to delve initially into strengths of the CDC unit and their programmatic and evaluation interplay. (See figure 9.) During the interview, the researcher defined the scope of the research as seeking to uncover what is working well for the CDC unit, framing the conversation in the appreciative inquiry space. Then, the participant was asked to explore the facilitators that aided the CDC unit's success, and later, imagine what could be next for the program and where opportunities for

growth and further use of evaluation exist. However, the researcher also allowed for discussion of and inquired about barriers, challenges, failures, and lessons learned that emerged during data collection.

B. Data Sources, Collection, and Management

In this study, the researcher analyzed the data that was previously collected. Data was obtained from three units selected for these case studies via document review and key informant interviews. A research team of four individuals contributed to elements of data collection and analysis. The team consisted of the researcher as principle investigator who conducted data collection and analysis and provided oversight and guidance to three graduate students who contributed as part-time, unpaid researchers. They were not affiliated with CDC prior to this work. The students were MPH-level and trained in qualitative research methods. They assisted with document review and analysis of interview data. Below is a description of the data sources, how the data was collected, and how the data was managed.

i. Data Sources and Collection

To develop a detail-rich narrative on each case, the researcher sought sources that offer unique perspectives that confirm or counter the constructs employed in this research.

Instruments. For each data collection method, the researcher developed instruments to guide questioning, documentation, and reflection. For the hour-long interviews, the researcher created a discussion guide that is semi-structured but allowed for emergent questioning. The question items aligned with the four categories of constructs: organizational context, users, evaluator, and evaluation. For example, to gather interviewee's perspective on the organizational culture, questions were asked on attitudes toward learning within the CDC unit and facilitators and barriers to learning. See detail in the measurement table (appendix B). The researcher received input on the instrument from members of the dissertation committee and colleagues,

and then conducted a pilot test with a colleague. Revisions were made at each stage. The final instrument can be found in Appendix C.

For the document review, the research team used Microsoft Excel to document the review of the materials. The reviewing worksheets tracked each document in rows and featured the constructs and topics of interest in columns. Themes from the documents were recorded in Microsoft Word. The themes were used to inform the key informant interview guide generally as well as raising issues specific to each case study for further exploration.

While semi-structured instruments guided data collection, the team remained open to emergent and divergent lines of inquiry. Progressive focusing is a fieldwork methodology described by Stake that allows new directions for inquiry to emerge as the researcher collects data and learns about the specific issue under study (1981). In conjunction with a well-developed plan of study, the team allowed for progressive focusing as they listened, documented, and reflected so as to remain open to additional areas of questioning and exploration.

Data collection: Document review. The primary purpose of the document review was to inform the researcher about each case prior to the interviews and highlight additional areas for questioning during the interviews. The research team began the document review by creating a protocol to guide the activity. The protocol included the research questions, the four categories of factors that are relevant to the study, and the key steps to completing the reviews. Every document was in electronic form and organized into a roster that catalogued the material name, type of document, program description (e.g., goals, interventions, evaluation characteristics) and evidence of use of evaluation data and findings. This roster served to track the materials and the document reviewing progress, and also as a summary of the key points from each material for quick reference. As each was reviewed, relevant excerpts were extracted into Microsoft Excel and coded into general themes. For each case, the team examined four to six programmatic and

evaluation-related documents that were identified in three ways: by key informants through pre-interview outreach and via discovery, primarily through online searches. A total of 16 documents were reviewed; these documents included program description materials, evaluation plans and reports, manuscripts, presentations, and NOFOs. The reviews focused on four elements: comparing characterizations of the program in each material, identifying themes, surfacing inconsistencies or conflicting information, and finding gaps that can be explored through the key informant interviews. The documents were examined with two aims: 1) to gain an understanding of the program, the evaluation, and the changes over time if evident, and 2) to identify references to or evidence of use of evaluation findings. This could include phrases that hinted at evaluation use (e.g., between years four and five of the program, we learned...) or direct mentions of the use of evaluation findings (e.g., data from the first cycle of the program showed that..."). Throughout the document review activity, the research team spoke weekly to check on progress, ensure continuity between reviewers, compare notes and discuss any puzzling or interesting issues discovered during the review.

After all of the documents were reviewed, the team then produced a one-two page Microsoft Word summary of each case, describing the basics of each and summarizing the themes. The final step of the document review involved a discussion between the research team on the themes and any potentially fruitful avenues to explore in the interviews with each cases' respondents.

Data collection: Key Informant Interviews. For each case, the CDC unit was asked to provide the names of interviewees who had first-hand knowledge of the program and were directly involved in the use of the evaluation data. It was decided to intentionally keep the parameters broad to allow for capturing a variety of uses of evaluation findings. For example, an individual in a leadership role may have been a key stakeholder for the evaluation team if she or

he was a champion for the use of the evaluation's findings. A programmatic individual may have received the evaluation findings and served as a gatekeeper to reaching other programmatic staff to facilitate use. The units were also asked to provide interviewees across in three operational roles: evaluation staff, programmatic staff, and leadership staff. These varied roles provided differing perspectives, uses, and needs of the evaluation data. The researcher interviewed six individuals within each case's CDC unit, yielding a total of 17 interviews that varied in length from 45-60 minutes. Participant consent was obtained prior to each interview, including to be recorded for notetaking and analysis purposes among those who consented. Two secure, password-protected services were used in the interviewing process: Otter Voice Notes was used to record the interviews, and Temi was used to transcribe and clean the conversations.

Table I. Data source, rationale, and research questions

<i>Data collection method: Document review</i>		
DATA SOURCE	RATIONALE FOR INCLUSION	RELEVANT RESEARCH QUESTIONS
Evaluation-related documents	<p>Sought materials that illustrate different aspects of the evaluation elements of the CDC unit.</p> <p><i>External facing:</i> NOFO guidance and requirements for recipients, annual progress reports, publications, etc.</p> <p><i>Internal facing:</i> guidance, meeting notes, presentations, decision memos, etc.</p>	<p>1. What are the ways that program evaluation data and findings are used in the exemplar CDC unit?</p> <p>1a. How do the CDC unit's uses align with the four types of evaluation data use, instrumental, conceptual, enlightenment, and persuasive/symbolic?</p>
Program-related documents	<p>Sought materials that illustrate different aspects of the programmatic elements of the CDC unit.</p> <p><i>External facing:</i> NOFO, program description, strategic plan, guidance, publications etc.</p> <p><i>Internal facing:</i> guidance, project officer notes, meeting notes, presentations, decision memos, etc.</p>	<p>2. What factors enable and hinder the use of program evaluation data and findings in the exemplar CDC unit?</p> <p>2 a. How are the four categories of factors, organizational/social context, user, evaluator,</p>

		and evaluation, exhibited in the unit?
<i>Data collection method: Key informant interviews</i>		
DATA SOURCE	RATIONALE FOR INCLUSION	RELEVANT RESEARCH QUESTIONS
CDC unit program staff	Sought programmatic staff who work on day-to-day issues and can offer one, ground-truth perspective on the inner workings of the CDC unit. They provided insights on what data was provided to the CDC unit (by recipients and themselves) and why, how it was used (or not used), and what changes resulted.	1. What are the ways that program evaluation data and findings are used in the exemplar CDC unit? 1a. How do the CDC unit's uses align with the four types of evaluation data use, instrumental, conceptual, enlightenment, and persuasive/symbolic? 2. What factors enable and hinder the use of program evaluation data and findings in the exemplar CDC unit? 2 a. How are the four categories of factors, organizational/social context, user, evaluator, and evaluation, exhibited in the unit?
CDC unit program leader	Sought the lead of the programmatic staff who directs how data gathering was enforced, influences use (or lack of use), and had insights into organizational issues affected data uptake, acceptance, and use.	
CDC unit evaluation staff	Sought evaluation staff who were instrumental in developing evaluation plans, gathering data, giving technical assistance to recipients, and can offer one, ground-truth perspective on the inner workings of the CDC unit. They provided insights on what data was provided to the CDC unit (by recipients and themselves) and why, how it was used (or not used), and what changes resulted.	
CDC unit evaluation leader	Sought the lead of the evaluation staff who directs what and how data was gathered, presented, and used (or not used), and had insights into organizational issues affecting data uptake, acceptance, and use.	
CDC unit senior leader	Sought a next-level lead of the CDC unit who is instrumental in making decisions on future directions of the program and had insights into organizational issues affecting data uptake, acceptance, and use.	

ii. Data Management

Data was managed on a secure, password protected UIC Box account. The documents, audio, and transcripts were organized by CDC unit, along with collateral materials (analysis

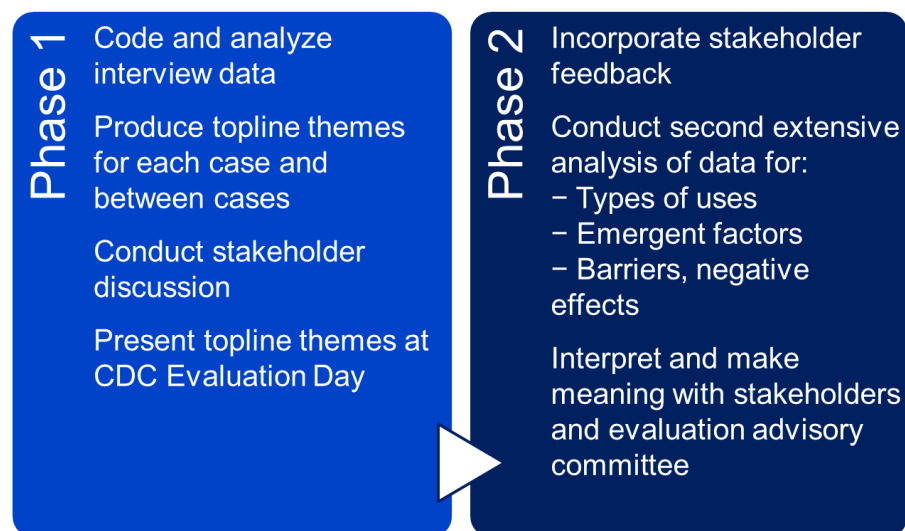
protocols, tools, codebooks, etc.) and stored securely in UIC Box cloud. Only essential research personnel had password-protected access to data and materials.

C. Secondary Analysis

This study undertook a secondary analysis of previously collected interview data. Two phases of data analysis occurred. In the first phase, the complete data set of interviews was analyzed at a cursory level. The research team conducted a preliminary analysis to gather initial themes for presentation at CDC's Evaluation Day and 20th anniversary of the Framework for Program Evaluation, the latter being part of the impetus for this research.

In the second phase, the researcher conducted a deeper exploration of the data, identifying the type of uses, challenges and barriers, and additional analysis on the factors associated with use. The figure below summarizes the actions taken in each phase. A summary of the codes and sub-codes identified in both phases of analysis is summarized below.

Figure 10. Summary of steps in two phases of data analysis



i. Phase One: Preliminary Analysis

In phase one, the researcher and a graduate student researcher analyzed and made meaning from the previously gathered data in three steps: 1) categorize themes, 2) interpret

meanings and draw verifiable conclusions; and 3) explore the leadership implications. The data was analyzed using a holistic and inductive approach that looked across the data to see themes and patterns, make comparisons, and draw inferences. First, the research team cleaned the interview data. Then, using the constructs as a guide, the team looked for consistencies and divergence between the cases. A codebook was created using *a priori* codes. These initial codes were developed from the constructs identified in the literature and from professional judgement. Throughout the analysis, emergent codes were identified. The researchers conferred to discuss possible additional codes. The team shared examples that illustrated the proposed code, deliberated different meanings and interpretations, and discussed until a common understanding was agreed upon. When the team reached consensus and agreed to add a new code, the new code was added to the codebook. The final codebook can be found in Appendix E. In this first phase, the research team used Microsoft Excel to organize, manually code, and manage data.

For this first phase of analysis, the researcher used a process similar to that described in Saldana's *Coding Manual for Qualitative Researchers* (2013), which describes a cyclical process of provisional code assignment to categorization to theme identification. Using a hybrid approach to coding, the researcher developed an *a priori* code list built from the constructs in the conceptual model (informed by the literature) yet allowed emergent codes to rise from the data. During this first phase, the research team focused on identifying the factors associated with using evaluation findings in the three cases. The constructs formed the basis of the four *a priori* codes and the 20 sub-codes that focused on the factors only. (Additional analysis in phase two is described below.)

Development of Emergent Codes in Phase One. As noted earlier, the research team identified emergent codes during the analysis. The group discussed potential additional codes and came to consensus on those to add to the codebook. In one example, an *a priori* code that

was drawn from the literature was that of a “culture of program improvement and organizational learning,” which captured evidence of an organizational environment that encouraged and expected learning and change to their programs, especially from learning informed by evaluation data and findings. As the research team identified instances of this kind of learning culture in the cases, a nuance of the cultural aspect emerged, that of the organization’s focus on data. After noting this distinction in several interviews, the research team conferred and agreed that this merited a new sub-code of the “culture” code termed “data-driven culture”. This emergent sub-code reflected the particular focus of the case study units’ attention to and necessity for data to be an essential input in decision-making and program improvement.

After coding, an initial review resulted in preliminary themes by case and across the three cases. A subset of these were presented at CDC Evaluation Day, co-delivered with the three individuals who were the primary points of contact for the cases, along with rich stories and examples of the factors that were highlighted in the presentation.

Facilitated Stakeholder Discussion. At the conclusion of phase one, the research team facilitated a discussion with four stakeholders in this study: the three individuals from the cases along with an evaluation leader from CDC’s Program Planning and Evaluation Office (PPEO, Tom Chapel’s designee). The researcher used the Birt et al (2016) methodology to conduct a Synthesized Member Check (SMC), structured through the ORID (Objective, Reflective, Interpretive, and Decisional) facilitation framework (Stanfield, 2008). The SMC approach allowed participants to engage with the analyzed data and confirm or question the themes, while the ORID framework lent an organization to the discussion, particularly aiding the sense-making portion of the conversation. The goals of the discussion were two-fold. First, the researcher sought to share the initial findings as a member check to confirm the facts and validate the preliminary findings. Second, the researcher aimed to explore the group’s reactions to the data

and how they could be meaningful and useful to their units, throughout CDC, and across the field of evaluation.

During the discussion, the three case study stakeholders expressed a sense of affirmation and validation from the results. They confirmed that there were no significant errors in the data or puzzling or contradicting themes in the preliminary findings. Two of the stakeholders recommended additional emphasis on two themes; these changes were incorporated in the results in chapter 4. When looking at one case's summary, one stakeholder noted, *"It's nice to see what we are working so hard to do is actually making a difference."* They agreed that it was especially profound to see the same elements appear in all three cases; it was further validation that these factors were contributing to the success they each were having in using their evaluation data and findings.

When the conversation shifted to the interpretive and decisional portions of the ORID framework, the group had several suggestions for how to make the best use of findings from the case studies. Namely, the case study stakeholders and the PPEO leader emphasized the value and importance of the findings to other units at CDC and more widely to the field of evaluation. The group reinforced that, when disseminating these findings to the field, it is important to communicate the practicality, feasibility, and utility of the Framework for Program Evaluation.

Ideas for dissemination were discussed including writing a manuscript, producing short video clips for the CDC website, and guides to help nascent programs establish some of the essential factors. The group emphasized the need to keep in mind that others at CDC may not have the fundamental building blocks in place to begin to increase use of their evaluation findings (e.g., strong evaluators, culture of program improvement, supportive leaders). This underscores the recommendation to transform the findings from this research into a variety of

tools including some that are more step-by-step in nature to aid units in creating the right environment to promote the use of evaluation findings.

ii. Phase Two: In-depth Analysis

In the second phase of the data analysis, the researcher took a deeper look at the data in four steps. This examination aimed to confirm and add richness to the preliminary findings, understand the ways in which the cases used the evaluation findings, identify additional emergent factors, and capture the challenges and barriers mentioned by respondents. See chapter 4 for a discussion of the examples noted in this section. First, the interview data was uploaded into the qualitative analysis software MaxQDA. This software allowed for a rigorous examination of the data through the ease of reviewing, toggling between interviews, and comparing coded sections. For example, the researcher coded and compared the cases responses to the interview question on the negative effects of using their unit's evaluation data. Examining this data led to the sub-code of "risks to the program" and the recognition of the different nature of the risks that the respondents raised.

Second, each interview was re-reviewed. The types of uses of evaluation data and findings were examined, confirming four *a priori* codes and 11 *a priori* sub-codes. A total of seven emergent codes were added to three of the four types of uses.

Development of Emergent Codes in Phase Two. Similar to phase one, new facets of the data emerged in the process of re-reviewing the codes and themes in this phase. One example is the evolution of the Instrumental Use code "make changes to existing program activities", denoting examples of changes to the interventions or operations of a program as a result of using the evaluation findings. In some ways, this code served as a catch-all for any mentions of program activity changes. As instances of this code appeared in the data, nuance to the meaning began to appear. Respondents repeatedly mentioned two kinds of changes, altering the evaluation

strategies or performance measures, and improving the technical assistance they provided to funded recipients. The researcher recognized the need to reflect the multifaceted meanings buried in the code. The repetition of these concepts warranted elevating them to two emergent codes to capture these unique uses of evaluation data and findings. Once these emergent codes were identified, instances of each appeared in all three cases, suggesting strength in the finding as a common use of evaluation findings.

In the third step of this phase, additional evidence and supporting quotes were also mined, resulting in four new codes and three additional sub-codes. As mentioned above, this second review uncovered themes around the barriers and negative effects that respondents mentioned; four sub-codes emerged from this analysis. Three additional sub-codes were also identified around the factors related to use of evaluation findings. Refinements to the list of factors were also made, such as clarifying manifest and latent findings. For example, the *a priori* sub-code “adequate funding,” referring to the sufficient funding for the evaluation, did not bear out in the actual words of the respondents (meaning, it was not a manifest code). However, as the researcher re-reviewed the interviews, the underlying context of discussions about the staffing and prioritization of evaluation in terms of resources suggested that “adequate funding” was indeed a relevant factor present in all the cases. This latent finding was confirmed during the second review. Table II summarizes the code additions by phase of the analysis. See Appendix B for a measurement table describing the processes for analyzing collected data in relation to the constructs.

The second phase of analysis concluded with the fourth step, another informal synthesized member check in which the three case study stakeholders (the lead evaluators and points of contact for this research) examined the final list of factors that materialized from the research. This small group, along with the researcher, recognized that it may be daunting for an

evaluator who sought to increase the use of evaluation data and findings to approach addressing each of the 20 factors in their unit. In the same spirit that drove their work in their units, the case study stakeholders agreed that, in order to promote the use of the findings from this evaluative study, they needed to produce concise findings that would empower readers to use the factors and encourage them to incorporate the lessons learned into their own work.

Through an iterative process, the group selected eight as key to successful use of evaluation findings. This process involved three cycles of debate to lead to the final list of eight

Table II. Summary of codes by analysis phase

ANALYSIS PHASE	ANALYSIS TOPIC	<i>A PRIORI</i> CODES	EMERGENT CODES
One	Factors associated with use	4 codes, 20 sub-codes	n/a
Two	Factors associated with use	n/a	3 sub-codes
	Barriers/challenges and negative effects	2 codes	4 sub-codes
	Types of use	4 codes, 12 sub-codes	7 sub-codes

factors. The researcher drafted an initial list for reaction and then gathered the stakeholders' input. After revising, the group re-reviewed and provided additional feedback. Finally, the group met to deliberate the list and reach agreement on the factors. The goal of identifying these eight factors was to provide a starting place for evaluators to focus their resources when beginning to work toward more use of evaluation data and findings. The eight factors represent the levers the group agreed are necessary to create an environment favorable to achieving the use of evaluation findings. A discussion of the eight factors follows in Chapter 5.

D. Validity Considerations

Qualitative research can be prone to common weaknesses, leaving rigor in question; however, steps can be taken to boost the soundness and integrity of the work. The researcher employed several strategies to increase the trustworthiness and robustness of this research, guided by the work summarized by Noble and Smith (2015) and Maxwell (1992):

Keeping thorough and detailed records. The researcher maintained well-documented accounts of the data collected, including transparent records of processes; detailed descriptions of interviewees' reported experiences and perspectives as well as direct quotes; and careful capture of information from document analysis.

Acknowledging biases. The researcher sought to recognize conscious biases and uncover unconscious biases through systematic reflection; seeking the perspectives of other researchers and stakeholders, including individuals at CDC, the dissertation committee, and a peer learning community; and giving critical consideration to paths that diverge or conflict with her perceptions.

Engaging with other researchers. Throughout the research, the researcher discussed each phase with stakeholders who are expert in aspects of evaluation or of programmatic and organizational cultures at CDC. These individuals included CDC's Chief Evaluation Officer and the advisory committee of evaluation leaders. The researcher held regular meetings to discuss process issues, test assumptions, voice biases, and authenticate findings.

Grounding in literature. After a significant review of the literature around evaluation use, the researcher conceptualized a study that examined established factors around evaluation use in the setting of a federal agency. The researcher developed a conceptual model based on constructs supported by previous research along with *a priori* constructs. The study design is built upon a foundation of evidence-based case study processes.

Ensuring interrater reliability. The researcher engaged a graduate student researcher in the coding of the interview data. Together, they compared their individual coding and thematic identification to check for consistency and general agreement. When conflicts arose, the research team discussed to resolve the issues and make adjustments as needed.

Conducting stakeholder checks. The researcher engaged stakeholders in the research in two ways. First, the researcher engaged evaluation leaders in PPEO and the advisory committee in periodic review of elements of the research, for example, in guiding case selection and in checking early theme identification. These checks aided in sense-making, bolstered credibility of the findings, and reduced researcher biases by questioning assumptions and testing the soundness of conclusions. Second, as described earlier in this chapter, the researcher conducted a Synthesized Member Check using the ORID methodology to verify the initial findings with four stakeholders and make meaning of the early results together.

IV. Chapter 4: Results

This study aimed to understand the factors associated with successful use of evaluation data and findings in three CDC units. Two primary research questions and two sub-questions guided the research. To address these questions, data was collected via document review and semi-structured interviews. A secondary analysis of the interview data was conducted. The findings are presented by each research question in this chapter.

A. Summary of Analysis Process

Seventeen interviews were conducted with key informants from each case, lasting between 45-60 minutes. Those interviewed worked in evaluation, programmatic, and leadership roles in the case units. The interviews aimed to answer the research questions:

1. What are the ways that program evaluation data and findings are used in the exemplar CDC unit?
 - a. How do the CDC unit's uses align with the four types of evaluation data use, instrumental, conceptual, enlightenment, and persuasive/symbolic?
2. What factors enable and hinder the use of program evaluation data and findings in the exemplar CDC unit?
 - a. How are the four categories of factors, organizational/social context, user, evaluator, and evaluation, exhibited in the unit?

The researcher conducted a secondary analysis of previously collected interview data. As described in chapter 3, the research team undertook the secondary analysis of the interview data in two phases. In the first phase, a preliminary analysis of the complete interview dataset resulted in initial themes for presentation at CDC's Evaluation Day. In the second phase, a deeper exploration of the data uncovered themes in the type of uses, challenges and barriers, and additional analysis on the factors associated with use. The interview data was analyzed and

managed using a combination of manual coding, Microsoft Excel, and MaxQDA. A codebook was created using *a priori* codes developed from the constructs. Throughout the analysis, emergent codes were identified. The researchers conferred to reach consensus through discussion and deliberation, and then the new codes were added to the codebook. See Appendix E for the final codebook. Themes were drawn from the codes both by individual case and across the three cases. The individual case themes can be found in Appendix H. The cross-case findings follow a short description of each case below.

B. Case Descriptions

Three cases were identified as exemplar programs in their use of evaluation data and findings, as described in chapter 3. The cases share several commonalities including that each is based at CDC and funded through tax-payer dollars and are generally organized through an evaluation team and a programmatic team who support the operation of the program. The cases also represent diversity their characteristics to provide richness in the case studies and allow for comparisons of factors.

Table III. Select case characteristics

ELEMENT	CASE A	CASE B	CASE C
Topic	Communicable disease	Chronic and non-communicable diseases	Non-communicable diseases
Impetus	Funding initially stemmed from an executive branch (Presidential) allocation	Used supplemental funding from a larger program to focus on specific strategies	Partly funded by Congressional mandate to CDC to address the disease
Resources	Small. In last funding cycle, awarded appx. \$4M to four organizations.	Midsize. In last funding cycle, awarded appx. \$70M to 21 states and cities.	Large. In last funding cycle, awarded appx. \$180M total to 100 recipients.
Funding model	Solely funded from a single source	Joint funded from several CDC divisions	Solely funded from a single source
Age of program	8 years (2 funding cycles)	3 years (1 funding cycle)	≈ 29 years (numerous funding cycles)

The following sections provide an overview of each case and describe the top themes identified in the secondary analysis of each case. A detailed exploration of the cases' top themes can be found in Appendix H.

i. Case A

Case A aims to improve local capacity to control, reduce, and prevent communicable disease, guided by principles of health equity and community empowerment. The eight-year-old program provides programmatic and evaluation support to interventions that address three goals: reducing disparities through the identification of social and societal determinants of health; promoting health; and advancing community wellness. With health equity as the foundation of Case A, many of the funded interventions focused on minority adolescents, LGBT youth, and other special populations. The original funding of the program arose from an Executive Branch allocation but is now funded through the CDC division's budget. In the most recent funding cycle, Case A awarded four organizations approximately \$4M.

As described earlier, each case was selected because of their self-reported success at using evaluation data and findings. In addition to meeting the exemplar criteria, this case was selected because of their unique characteristics that contributed to the diversity of the three cases studies. In this case, these features included the small size of the program, the focus on communicable diseases, and the relative age of the program in comparison to cases B and C. Five respondents from Case A were interviewed (two evaluation staff, two programmatic staff, and one leader).

ii. Case B

Case B was built on a previously funded initiative focused on chronic disease prevention. Through a collaborative effort involving three divisions, this program was grounded in a health equity approach that aimed to reduce health disparities among the general adult population.

Funding recipients implemented activities in several domains: environmental determinants, health care system interventions, and community programs linked to clinical services. In the only funding cycle for this program, Case B awarded approximately \$70M to 21 state and city health departments.

As noted in table III above, this exemplar case was selected because of their differing characteristics from cases A and C, notably the joint funding model with several divisions, the mid-range size of the program, and the short length of the program. Though three divisions were involved in the funding and execution of Case B, this case study focuses on the use of evaluation findings exclusively from one division. Only staff from that division were interviewed, though occasionally they reference interactions with the other divisions' colleagues and their collaboration. Six respondents from Case B were interviewed (three evaluation staff, two programmatic staff, and one leader).

iii. Case C

Case C describes two closely related non-communicable disease screening programs who, in many ways, operate as a unified unit. For the purposes of this case study, the programs were examined as a single entity.

Case C's first component is a congressionally mandated program aiming to increase access to and the quality of disease screening and treatment for low income, uninsured and under-insured populations. This program also supports the implementation of population-based and health systems-based interventions to improve the quality of disease screenings. Case C's second component funds recipients to work with health systems clinics serving populations with low screening rates and implements evidence-based strategies to increase screening rates. This unit has conducted the first component since 1991 and the second component since 2005. In the

most recent funding cycles, Case C collectively awarded approximately \$180M total to 100 non-mutually exclusive recipients across both components.

This exemplar case was selected because of the large size of the program, its long history, and unique legislative mandate. In this case study, six respondents were interviewed (two evaluation staff, three programmatic staff, and one leader).

C. Cross-Case Findings

The secondary analysis of the interview data revealed many common uses and factors among the three cases. There was also much alignment with the factors identified in the literature though several factors present in the literature did not bear out in these cases. The findings, and divergences, are presented below by research question.

A. Research Question One: Types of Evaluation Data Use

The types of evaluation data use in this study were gathered to address research question 1 and the sub-question: *What are the ways that program evaluation data and findings are used in the exemplar CDC unit? How do the CDC unit's uses align with the four types of evaluation data use, instrumental, conceptual, enlightenment, and persuasive/symbolic?* These data were acquired in three ways: 1) respondents from each case were queried on specific ways in which their unit's used the evaluation data and findings, 2) during the analysis, the researcher coded additional instances of phrasing indicative of use, and 3) evidence of evaluation data use was recorded during the document review. Data were coded and grouped into the four types of use.

Key Takeaways: The three case units reported a wide variety of ways they use their evaluation data and findings. The uses spanned three of the four categories of use: instrumental, conceptual, and enlightenment. Several emergent uses were uncovered. Most of these uses were common across all three cases.

Table IV: Cross-case findings: Types of Evaluation Data Use

TYPE OF USE	IDENTIFIED USES	USE REPORTED BY CASE		
		CASE A	CASE B	CASE C
Instrumental <i>Use that modifies the object of the evaluation, the evaluand. This is often the most direct and visible outcome of evaluation use. This form of evaluation use can inform evidence-based decision making. (Greene, 1998; Rich, 1977; Shulha and Cousins, 1997)</i>	Make changes to existing program activities	X	X	X
	Continue or end the program	X	X	X
	Scale-up the program	–	X	X
	Change funding allocation	X	X	X
	Make staffing decisions	X	X	X
	Inform professional development	X	X	–
	Fulfill accountability to stakeholders (<i>latent and manifest finding</i>)	X	X	X
	Emergent*: Improve and focus technical assistance to recipients	X	X	X
	Emergent: Determine recipient training needs	–	–	X
	Emergent: Change evaluation strategies or performance measures	X	X	X
	Emergent: Improve evaluation data reporting	X	X	X
Conceptual <i>Use that leads to new understanding of the program. It often includes process use, knowledge gained during the practice of the evaluation. Process use can often be an unanticipated but beneficial consequence by growing evaluative thinking among users. (Kirkhart, 2000; Rich, 1977; Patton 1997; 2003; Weiss, 1979)</i>	Change program support structures	X	X	X
	Provide feedback to recipients	X	X	X
	Build evaluation capacity	X	X	X
	Emergent: Mitigate risk to the program	–	X	–
	Emergent: Influence approach to other programs (<i>latent and manifest finding</i>)	X	X	X
Enlightenment	Develop best or promising practices	X	X	X

TYPE OF USE	IDENTIFIED USES	USE REPORTED BY CASE		
		CASE A	CASE B	CASE C
<i>Use that add knowledge to the field, allowing for use by anyone not just those engaged in the original evaluation. (Weiss, 1979)</i>	Publish and present	X	X	X
	Emergent: Model effective working relationship between evaluation and programmatic teams	–	X	–
Persuasive/Symbolic <i>Debated, often negative meanings including conducting evaluation with no sincere intention of using the findings (American Evaluation Association, 2008; Alkin and Taut, 2003; Greene, 1998; Henry, 2000; Leviton and Hughes, 1981; Weiss, 1998)</i>	None identified	–	–	–

* “Emergent” indicates uses of evaluation data stated by the respondent that did not align with established response categories in the interview guide.

All the cases indicated three types of use in their programs: instrumental, conceptual, and enlightenment. The fourth type, persuasive/symbolic, was not found in the data for any of the cases. This may be due to the sensitive nature of disclosing negative uses or non-use, or limitations of the interview instrument which did not specifically probe on this type of use.

a. Instrumental Use

This type of use often is the most visible result of using evaluation data, leading to changes to the object of the evaluation. In this study, the CDC unit and related programs are generally the evaluand. Respondents in each case offered multiple examples of instrumental use in their units. These included changes the program’s strategies, testing the effectiveness of activities and then replicating or removing them from the program’s interventions, and making decisions on the way funding is allocated to emphasize certain aspects of the program or pursue

joint funding with other entities at CDC. Instrumental uses were seen across all the cases; a sampling of respondent examples of instrumental use sub-themes follows below.

Instrumental use: Make changes to program activities

A programmatic respondent from one case explained how the teams used evaluation data to make changes to program activities.

I think from the inception, and it's just been funny as we have learned, evaluating ourselves as well as we've made adjustments and sometimes, we've had to make immediate adjustments is like, "Oh my God, what we blew that one. We got to make a change here." We have from the very inception where internally we've talked about things that are working well or working not so well. I think we just recognized, that in order for this thing to work, we're going to have to be flexible. And when things are not working at all, we'll get to put a stop to it and not just say, "Well, let's just see how this goes for six months."

Respondents gave examples of the kinds of changes made to programs ranging from a modified focus on mutually reinforcing strategies to including youth on community advisory boards to adapting successful intervention approaches for another program. An evaluator noted their unit's cycle of replication and learning stemming from the evaluation of the program strategies. She explained that the unit sought to scale up a program from a higher-resource setting to a lower-resources setting.

Basically, we try to work across that entire continuum of identifying the things that work [or] that may look promising, through a series of pre-evaluation assessments and then conducting a rigorous evaluation, disseminating, identifying the core components and disseminating the findings. And then trying to take it to this next step of replicating, then evaluating again.

Instrumental use: Continue or end a program

Beyond changing program activities, other respondents gave examples of how evaluation data was used to determine whether to continue or end a program.

It was a situation where the funding got cut big time and we were only going to be able to fund three recipients, but we were able to use our evaluation findings. And [our division leader] was so compelled that found the money somewhere for the fourth recipient so that she can maintain our funding level.

Instrumental use: Scale-up a program

Two of the cases noted that the evaluation results had been used to expand the program from a few sites to many more in the next funding cycle.

The only scale up is from the very first version of the program was kind of like a pilot. So, I only had like six sites and then the next one had 29 grantees and then this version has thirty. I think it [findings from the evaluation] did show that it didn't fail so in that sense it was like, "Okay, yes, it works. Therefore, let's carry on."

Instrumental use: Change funding allocation

As documented in the table above, funding decisions were also influenced by the evaluation data in each of the cases. An evaluator in Case B explained that the evaluation helped to determine that a joint funding mechanism was not the best approach.

I think we also learned [multiple] divisions is too much. So, the change was made to just have us on [one topic] and the next one [another CDC division] will do their own one. So, there was a lot of inefficiencies of having [multiple] divisions work together. I think maybe at the state level they can coordinate better across chronic disease.

In another case, the evaluation data influenced a change to the way recipients received funding for activities. *"I think it [findings from the evaluation] did feed into the decision in the next go around, we're going to end the direct payment for critical services as it is right now."*

Instrumental use: Make staffing decisions

Respondents in the three cases also confirmed that evaluation data was used to make staffing changes, or in this example, maintain staffing levels.

In many ways, I think it solidified how we're staffed. So, this was our first time. We've always had evaluators who provide technical assistance and project officers who are doing that. This is the first time we were probably this interconnected, and I think it solidified that we needed to stay this way.

Instrumental use: Inform professional development

Two of three cases indicated that their evaluation data and findings were used to identify gaps in the knowledge or skills of the CDC staff. This information shaped the professional development agenda for staff of the unit. In one case, a respondent working in evaluation explained how the evaluation data highlighted the need for additional staff training in health equity, a new area of focus for the unit's program.

It's a new challenge for us to measure health equity... We did a reasonable job of starting that task... but it [this case's evaluation findings] magnified the need for it. It has helped us then seek out opportunities for professional development in measuring health equity as a team. I think it's influenced how we develop evaluation questions we choose and how we develop methodology for evaluating our projects in general when they include things like addressing health equity.

Another case's evaluator described how she used evaluation reporting to spur on her colleagues to take courses to grow their evaluation skills, *"I've been pushing everybody for data visualization, now they all want to learn more about data viz... I definitely use evaluation results [to see that] 'Oh, well we need to do this. Okay, let's take a class on this.'"*

Instrumental use: Fulfill accountability to stakeholders

Respondents from all three cases mentioned that the data from their unit's evaluations were used to fulfill their responsibilities to be accountable to various stakeholders. (This use was also apparent in the document reviews.) These stakeholders ranged from Congress or other government agencies such as the Department of the Health and Human Services, the unit's funded recipients, audiences internal to CDC like leaders and policy office colleagues, and to fields relevant to the unit's work (e.g., those working on prevention of the communicable disease, those focused on increasing health equity). An evaluation staffer in one case explained how a new communication material was used to facilitate the sharing of evaluation data with recipients, policy makers and other stakeholders.

We did that every year with a new update of the performance measures and sent that out to the policy folks in every division... who were able to share that with congressional leadership when policy was asked. So that's one of the ways that we consistently fed back

performance measure data. We needed to find a way for recipients to have their own data, right...[and] they wanted to see what was being done in their individual states or large cities, so we came up with “profiles” that would speak to just their performance measure data and they were able to share those profiles.

A leader in one of the cases discussed how she pushes for dissemination to keep the unit accountable to its mission to share and increase the prevention activities of the program. *“I’m the one who insists that they publicize...we have to be more deliberate about that. One of the missions is the dissemination of lessons learned...It’s not enough that we do it well. We have to teach others to do it well. We have to see it magnified.”*

Instrumental use: Improve and focus technical assistance to recipients

The evaluation data also shaped changes to technical assistance CDC provided to recipients. When asked what the benefits are to using this case’s evaluation data and findings an evaluation staffer shared their experience.

“We’re able to use the findings to feed back into the program as we went and to inform our technical assistance where people are struggling. Because we’re already making a list of things that come up related to the strategies to give back to program. And we meet regularly with all the project officers and all of our [evaluation] people.

These conversations led to the programmatic staff providing better and targeted guidance to recipients.

Instrumental use: Determine recipient training needs

In one case, a respondent noted how the evaluation data was used to determine training needs for recipients.

We conducted [the evaluations] to figure out what areas they [the recipients] needed the most help and that they needed more assistance. Medication adherence was a big topic that was a part of the cooperative agreement that they were struggling with. So, through our evaluation, we were able to determine that and then also develop trainings and webinars for the recipients related to how they can evaluate medication adherence and how they can report to us on their status with medication adherence.

Respondents used the data from their evaluations to develop targeted guidance and tools that were responsive to recipients' needs.

Instrumental use: Change evaluation strategies or performance measures

Changes were made to the evaluation in each case as a result of the data. An evaluator in one case described how they used the evaluation data as a chance to advance and refine the evaluation.

We took the opportunity to jump in with innovative ways of doing things. We've changed from traditionally we had always had recipients submit a logic model. We took the logic model out and created our own conceptual model that got at outcomes but also focus in on some of the strategies we were looking at, like the dual approach and mutually reinforcing strategies. And that's what we had recipients report back to us. So, then that's what we used to continue that conversation throughout the cooperative agreement.

A programmatic respondent in another case described how the teams learned that they needed to adjust the evaluation measures. As the case teams recognized that the evaluation was not able to accurately measure the recipients' efforts, they regrouped and switched approaches by gathering clinic-level data.

I almost want to say it was almost from lack of evaluation ability to get the evaluation data that we wanted...So we just sort of generically told them 'Here's community guide and here are these evidence-based interventions. Go out there and do that.' Then we didn't give them enough parameters about where to do them and who to do them with...It was like, okay, we cannot rely on sort of state level data. We have to get data from the level of intervention that they're actually doing. And we had to tell them like, we need you to like work with health systems and individual clinics.

Instrumental use: Improve evaluation data reporting

The cases also took cues from the evaluation data to improve future reporting of results. As the case program evolved, the evaluator sought to improve the timeliness and readability of the evaluation data internally.

I wanted to try to create a situation where it was more instant gratification almost with the evaluation results. I think a lot of times we hold on to evaluation data way too long and we wait till we get the perfect report with the perfect data visualization...but [I tried] to build evaluation in where each month we can see what's going on. Having that real-time data every month is something that I've learned. I don't have to wait until I get to the

end of year one to share things with people. We can have meetings every month where we share the results.

Another case's evaluation staff explained how improving the reporting of their evaluation results is an ongoing effort.

For the past several years, we've been getting better and working really hard on our communications. Years ago, we would do this evaluation, we give people information and then [people] would say "We don't know what the evaluation results were," or "Oh, there weren't any." And you would hear people say this and we're just like, "What's happening?" So me and the team just started saying, "Clearly whatever message we're trying to get across is not getting across the way that we need it to," and so that's when we started doing infographics [and] two page briefs... We've got to find a better way to get the information across because if it's not being heard, it doesn't matter.

As seen in table IV, instrumental uses were most of the types of uses identified in these case studies. The kind of changes that came about from these uses were tangible and visible; respondents had top-of-mind examples of these uses. The next category of uses, conceptual, required respondents to think more abstractly about the ways evaluation data may have been used.

b. Conceptual Use

This type of use leads to a new understanding of the evaluand. It commonly results in process use, leading to mid-stream changes that emerge from knowledge gained during the evaluation. Respondents in each case noted multiple examples of conceptual use of evaluation findings. All cases indicated that using evaluation data led to changes in the support mechanisms for the program, how feedback loops were implemented, and ways in which people thought differently about evaluation. Examples of conceptual use sub-themes in the cases are quoted below.

Conceptual use: Change program support structures

All the cases used their evaluation data to adopt changed support structures. The changes ranged from deciding to keep the evaluation and programmatic teams co-located, co-conducting

meetings with recipients, and establishing knowledge exchange processes. One respondent explained how the evaluation and programmatic groups build new ways of collaborating as a result of lessons learned.

Both at the program branch level for two divisions, they're still meeting and working together...And I think that's all a product of what happened in [Case B]. It has served us well for the most part, in being able to collaborate and do those kinds of things. So, the support structure in general, from leadership, [and] from program and evaluation leadership across the divisions, all the way down has changed, and I would say for the better, based on [Case B].

Conceptual use: Provide feedback to recipients

Respondents in each case confirmed that evaluation data had been used to provide feedback to recipients. Sometimes this was in the form of returning recipients' data to them to examine trends or in conjunction with data from other recipients' sites to compare progress; at other times, CDC staff shared approaches that were proving successful at other sites. One evaluator explained how they used evidence from the evaluation to recommend successful strategies to their recipients.

We noticed early on [that] clinics with a champion in their clinic who promoted screening, or clinics with a specific written policy tended to have higher screening rates...They] tried to provide that back to the grantees so that they could promote those things that within the clinics. And I remember we did that really early on, I think we saw an increase of clinics implementing that.

In another example, a case used evaluation, and evaluation findings, to help recipients obtain and use feedback from their stakeholders.

For [the first funding cycle], we were trying to figure out why people were abandoning the ship after the first year. Then in [the second funding cycle] we finally a recipient go, "We've noticed that our meeting participation rates are really, really low. Like people are just kind of dropping off." And so I said, "Well, let's go in and do some interviews. After the meeting, when everyone is coming out of the room, we're asking them just three questions." And so they did that with everybody and they figured out that's the reason why people were leaving: they just didn't feel engaged. And so then [a recipient] came up with the state tool: "What's making you stay? Why do you stay on the board?" Once you know those things, you could determine, "Okay, this is what we need to continue doing."

Respondents in all the cases confirmed that the evaluation data and findings had been used to change how people think about evaluation and build evaluation capacity.

Conceptual use: Build evaluation capacity

A leader explained how she worked to normalize evaluation, and using the evaluation data, in her unit.

[This case] is another way of showing that it [evaluation] takes time and you nurture and you help people find out it's not the most scary, awful thing. For instance, a logic model has been so important to us in the [case] projects...So [this case] then becomes a vehicle to teach people about the application of a logic model and how that then helps you evaluate. So now we're beginning to hear [that] people have turned to [the lead evaluator] to help them evaluate their initiative...People are beginning to say, "Maybe I do need to rethink evaluation and incorporate it at the beginning of my project as opposed to tagging it on the end."

Through the course of conducting the evaluation and finding ways to use the findings, evaluation capacity was built within the CDC staff. One respondent noted that one of the biggest benefits of using their case's evaluation data was the growth seen among programmatic colleagues as well as recipients

One of the things that I was pleasantly surprised about was, in interacting with program evaluation internally, recognizing that we needed a different approach and sort of shaping what that approach to providing not only programmatic guidance but evaluation and technical assistance guidance. I feel like in doing that we've built the capacity not only of our internal staff but both the evaluation and programmatic implementation capacity of the recipients.

Conceptual use: Mitigate risk to the program

A leader in one case noted a unique use in this category, using evaluation evidence to sidestep programmatic hazards. She explained how she uses this approach to inform her leadership and make evidence-based recommendations.

If I fight with you, you become defensive and less apt to do what I want. My approach is to foresee issues and make incremental changes throughout that help us not hit roadblocks. I collect evidence along the way too, to show you why we should make change. This mitigates risks along the way.

Conceptual use: Influence approach to other programs

Finally, there was evidence in each case that staff were influenced by the evaluation data in their other work. They took lessons learned and effective approaches that were uncovered in the evaluation, and then replicated the strategy or pre-empted a challenge in another project. A programmatic respondent shared his experience.

I think this work has also had an impact on other programs that we do within the division. I've got this HBCU [Historically Black Colleges and Universities] initiative and the work that I've done with community engagement with [this case]. I've used some of the lessons learned with the HBCU initiative. And that's been very helpful where we have an advisory group and now started to expand our stakeholder group within the HBCU initiative. And so again, all things that I've learned from [this case] I've now taken on.

Most of the conceptual uses identified in this study were found across the cases, as are the few in the next category of enlightenment uses. In this third section of types of use, respondents readily recalled the ways that their cases were engaged in sharing the knowledge they gained from evaluations.

c. Enlightenment Use

This type of use is that which adds knowledge to the field, extending beyond those who were engaged in the original evaluation. Respondents in each case noted examples of how the findings from the evaluation reached outside of the unit, and findings from each cases' evaluation work were found in the published literature. Through developing and disseminating effective practices, the evaluation findings may have influenced other programs and even further to topical and evaluation fields. Quotations below illustrate some of the respondents' examples of sub-themes of enlightenment use.

Enlightenment use: Develop best or promising practices

In all the cases, findings from the evaluation were distilled into best or promising practices. Respondents described that the findings were used to improve internal operations and elevate successful approaches across recipients. One evaluator explained her experience.

Our team did a special evaluation of one grantee's navigation program that we were seeing that their clinic data looked really good. So we went to New Hampshire and we said, 'Hey, this looks really good. What are you doing that's special here?' 'Well, it's our navigation program that gets all these people screened.' And so we designed a special study of that program. And then once that was done, it had great results. We did a comparison group. We published several papers on it, and we did a cost effectiveness study of it and then we hired a contractor to create a replication manual of that intervention. Now that is a tool that's a packaged intervention that came from one of our evaluations.

Another evaluation respondent shared that a best practice they had initiated was so effective that they were replicated across the CDC division.

Those recipient profiles and the [aggregate] snapshots I would say have been some of our most, in terms of the cooperative agreement products, popular products that we've created. We've worked into our evaluations for all our cooperative agreements based on the popularity of those products from [Case B] ...For people who don't understand all this stuff about evaluation, [the snapshot] is like our key product now that we're known for. The policy office asked me, "Is your new snapshot ready? Do you have the new profiles?" So like that speaks their language, if that makes sense. That has been a game changer. So based on how effective those are in [Case B], we're doing [them] for everything and people are super excited about it.

Enlightenment use: Publish and present

Evaluation findings were also translated into information that could be shared across CDC. A respondent described how they presented evaluation findings within their division and presented widely at the agency, multiplying the benefits of using the evaluation data.

I felt like everybody valued [evaluation] in our division, leadership valued evaluation. But I feel like it allowed others in our center to see the value in evaluation. When we did an all hands [meeting], or the Info Share [talks], we got a huge response. People came to us afterwards on CDC Evaluation Day; we just presented on [Case B] and its impact on health disparities and we got a ton of response from people, saying that they valued what we shared in the products that we produced and the response that we got from the recipients because we ask that they develop health impact statements. That's one thing that was new and has been valuable, not just to CDC but also to the recipients.

Enlightenment use: Model effective working relationship between evaluation and programmatic teams.

Finally, a leadership respondent identified a use particular to her unit. She explained that she used the review of evaluation data as a way to model effective collaboration for the staff.

Evaluation helps us in two ways: with giving better technical assistance by feeding information back into how program works with recipients, and by helping to figure out what is successful so that we can replicate and scale up programs. Also, we model the relationship between evaluation and program so that state (recipients) can build that capacity too. As a leader, I should be demonstrably setting a tone for how that should happen in the field.

Enlightenment use often resulted in external dissemination of the evaluation findings, whether in the literature, presentations, or materials documenting best practices. The final category of types of use is less overt in its manifestation. Persuasive or symbolic uses were absent or hidden in these case studies.

d. Persuasive/Symbolic Use

There is not a single definition for this type of use, though most assert a negative connotation often associated with uses that have no true intention of using the evaluation findings for meaningful purposes. In this study, no respondents noted uses of evaluation findings that were consistent with persuasive or symbolic use. This could be a result of a lack of interview questions that specifically queried respondents on negative uses. It may also be due to respondents' hesitation to raise issues that may expose sensitive or unflattering issues about the unit.

B. Research Question Two: Factors in Evaluation Use

The second research and sub-question sought to reveal the factors present in the successful use of evaluation data and findings in the CDC context: *What factors enable and hinder the use of program evaluation data and findings in the exemplar CDC unit? How are the four categories of factors, organizational/social context, user, evaluator, and evaluation, exhibited in the unit?* The 25 factors that manifested in the case studies are organized by the four categories below.

In the interviews, respondents were asked about a variety of factors that have been documented in the literature as contributing to the use of evaluation data. The secondary analysis of the interview data found that many of the literature-informed factors are present at CDC, and most are features of all three cases. A summary of the cross-case themes, organized by the four conceptual categories of factors, are accompanied by select quotations from respondents.

Key Takeaways: Twenty-five factors were uncovered as facilitators to using evaluation data and findings. The evidence from the three case units were largely similar across the four categories of factors: organizational/social context, user, evaluator, and evaluation. Most of the factors mined from the literature were confirmed by the three cases' experiences and several additional factors emerged in the research.

Table V. Cross-case findings: Factors associated with evaluation data use

FACTOR CATEGORY	FACTOR	FACTOR REPORTED BY CASE		
		CASE A	CASE B	CASE C
Organizational/Social Context	Leadership buy-in	X	X	X
<i>Organizational/social context factors refer to the environment in which the program operates that impacts the use of evaluation findings. In the CDC setting, these factors must account for the complexity of the organization and the political pressures and external forces that influence its programs (Alkin and King, 2017; Alkin, Daillak, and White, 1979; Johnson et al, 2009; Patton, 2001).</i>	Culture of organization learning and program improvement	X	X	X
	Structure of program and evaluation	X	X	X
	Adequate staff expertise (manifest and latent finding)	X	X	X
	Functional knowledge exchange processes	X	X	X
	Maturity of program (latent finding)	X	–	X
	Political climate	–	–	–
	Emergent: Data-driven culture (manifest and latent finding)	X	X	X

FACTOR CATEGORY	FACTOR	FACTOR REPORTED BY CASE		
		CASE A	CASE B	CASE C
Human: Users <i>User factors refers to the factors affecting those who use the evaluation findings. In the CDC setting, users of evaluation findings commonly include programmatic staff such as project officers, evaluators, and leaders (Alkin and King, 2017; Alkin, Daillak, and White, 1979; Cousins and Leithwood, 1986; Johnson et al, 2009; Patton, 1977).</i>	Information needs	X	X	X
	Personal factor (manifest and latent finding)	X	X	X
	Trust in evaluator/evaluation	X	X	X
	Commitment / receptiveness to the evaluation	X	X	X
Human: Evaluator <i>Evaluator factors describes the characteristics and actions of the individual planning, conducting, analyzing, and sharing the results of the evaluation. In the CDC setting, the evaluation may be designed and conducted by a single individual or a team of evaluation staff (Alkin and King, 2017; Johnson et al, 2009; King and Stevahn, 2013).</i>	Interpersonal skills	X	X	X
	Commitment to facilitating and stimulating use	X	X	X
	Credibility	X	X	X
	Good working relationships	X	X	X
	Political sensitivity	–	–	–
	Emergent: Intentional hiring for skills and fit	X	X	X
Evaluation <i>Evaluation factors focus on the evaluation itself. The use of evaluation findings is associated with quality and credible evaluations and the resulting information must be relevant, legitimate, and accessible by the user (Alkin and King, 2017; Alkin, Kosecoff, Fitzgibbon, and Seligman, 1974; Contandriopoulos, Lemire, Denis, and Tremblay, 2010; Cousins and Leithwood, 1986; Shulha and Cousins, 1997).</i>	Quality and credibility of evaluation	X	X	X
	Communication quality	X	X	X
	Findings congruent with expectations and of value to decision-making	X	X	X
	Relevant, legitimate, and accessible	X	X	X
	Adequate funding (latent finding)	X	X	X
	Timeliness	X	X	X
	Emergent: Inclusion of evaluation in program planning (manifest and latent finding)	X	X	X

a. Organizational / Social Context Factors

Organizational/social context factors refer to the environment in which the program operates that impacts the use of evaluation findings. In the CDC setting, these factors must account for the complexity of the organization and the political pressures and external forces that influence its programs. Well-functioning knowledge exchange processes must exist in the organization to allow information flow to and from the relevant stakeholders to facilitate learning. The maturity of the program may also impact use of evaluation findings. Several other factors affect the organizational ability to use evaluation findings at CDC, including the presence of leadership buy-in, a culture of organizational learning and support for program improvement, and a co-located structure of program & evaluation teams within the CDC unit.

Organizational factor: Leadership buy-in

Across the cases, leaders played an important role in creating a culture of learning, setting the standard for the incorporation of evaluation, and modeling the use of evaluation data. Respondents in two cases shared their perspective on leadership's engagement with the evaluation data.

We have leadership who values data, who understands data, and understand(s) the evaluation. [The leadership] understand the importance of asking the right questions, getting the right data and that the information is getting out in a timely manner so that we can use it.

We don't have to fluff findings. We have real outcomes associated with this. And I think that makes the leader want to support it even more. [The leader] knows that it's a good project, but the fact that we're able to feed that quantitative side of her brain, I think that that helps as well.

Leadership supported the use of evaluation data in visible ways including using evaluation findings to justify consistent funding for the program and ensuring programs achieved goals and progress toward outcomes.

Our main champion is the associate director (leader) ...she's always trying to get us to disseminate the findings. It was her idea for us to come up with a dissemination calendar

or a dissemination table so that we can be very strategic about how we're disseminating the data and how we're using the data to change the program...Even the division director, she's the one who's always putting the findings to the forefront and talking about how we're using the evaluation to make the program better. And at any chance, anybody who will listen to her, she would tell them that in [this case], we've used these results to make the program better.

Organizational factor: Culture of organizational learning and program improvement

Respondents from all cases recognized that evaluation is an iterative process; there will always be areas for growth and improvement both internally and externally. Using evaluation findings to facilitate program improvement depended on being receptive to feedback and using real-time evaluation data to gather accurate program updates.

I think there's a culture that is open minded to evaluation. I think the understanding of the importance of evaluation is very clear and grounded. This comes from our associate director (leader)...So I think the culture is one where we understand everything that we do. The data collected through evaluation is what justifies the continuation [of programmatic aspects].

The ability to adapt and apply findings for program improvement resulted from the shared understanding of the utility of evaluation and having open-minded team members. As mentioned previously, leadership played an important role in facilitating an appreciation for evaluation. Having leaders actively demonstrate support of evaluation (either through sharing findings or securing funding), set the tone for the degree to which evaluation should be integrated throughout the program. Program staff and evaluators were more likely to collaborate if they each understood the importance of incorporating evaluation and associated evaluation with program improvement. The inclusion of open-minded individuals was also important for internal capacity building. A culture of program improvement relied upon the application of feedback and a willingness to use evaluation findings to make program improvements.

An evaluation respondent, in the course of the stakeholder facilitated discussion, highlighted the program improvement cycle as the most important method they use to facilitate use.

One major approach used by our [unit] that really advances data use is our performance monitoring/quality improvement cycle. That is, where data are submitted by grantees semi-annually; standard reports or dashboards are produced; the data are reviewed with grantees via a conference call; grantees then respond to any required 'action items' based on the call. This process is really fundamental to our efforts to improve data quality and make program improvements.

An evaluator in one case discussed the unique context of the unit, noting that it is possible to recreate the culture elsewhere through intentional effort.

I think this is a unique environment, but I don't think it's an environment that isn't replicable. I think it's important to note we didn't know each other before we got here. We met here. And that culture was developed here. [We worked in a way] for program and evaluation to be linked, in a way that allowed us to feel like we were all a part of the same team...When evaluators and project officers and leadership or evaluation teams and branches and program teams are working on the same team, [evaluation data] use is not really a thing that is outside of the work we're doing. It's all kind of cyclical. I think in many ways we would even have a hard time really articulating what made us able to use it, because to us that's a part of how we work. Everything we do has use in all of it.

Internal facilitators of learning and team norms around evaluation supported the use of evaluation findings to inform future cycles of the program. Respondents provided several examples of programmatic changes resulting from using evaluation data. In one case, evaluation data promoted subsequent assessments of the community's perceived input.

Halfway through year one, one particular recipient conducted a power assessment within the community advisory board. That assessment [demonstrated] that an overwhelming number of community advisory board members felt that although they had been regularly participating, their voices were not heard...that input was enlightening to the recipient and helped them see that they weren't being true to the community engagement approach.

Evaluation findings were also used to “determine what strategies we would fund. So there are strategies that we didn't like that we would not move forward with based on [this case] and then strategies that we definitely chose to move forward with based on [this case].”

Organizational factor: Structure of program and evaluation

Two structural elements of the programs facilitated evaluation use: structuring program and evaluation to operate as a unified entity; and physical proximity and close organizational

composition between the two groups. First, combining program and evaluation into the same branch allowed evaluators to be viewed as one of the team. By attending the same meetings and even working on the same floor, project officers and evaluators could form relationships organically. This improved the trust and collaboration between program and evaluation, while also making evaluators both approachable and accessible. Secondly, since two of the cases had many recipients, both units strategically paired project officers with an assigned evaluator who would attend routine recipient calls and offer evaluation support.

We work really closely with program, physically our proximity is with them. We work together quite a bit on our NOFOs. We're pretty entrenched in the work together. So the learning kind of happens kind of organically. We were all at the same table. We're all having the same discussions. So when there are roadblocks, when there are challenges, we all see them and then we're all talking about how we best to fix them.

The availability and accessibility of evaluators was a common theme across all programs. In two of the cases, the physical proximity between program and evaluation was an additional factor that contributed to the positive working relationship between program and evaluation. Having frequent in-person interactions helped to facilitate trust and open-communication. Several respondents spoke to the benefits of having a “*nested evaluation team in the program branch*” as it allowed the evaluator to be involved with the decisions and gain a programmatic perspective.

The way we work together. Any questions that we have about project, they're [the evaluators] very accessible, particularly to me. Like they're right next to me and they're very easy to individuals to talk to, they're amicable.

Evaluators started being amongst us. They're not like this external force that comes down and descends upon you. But [these were] your colleagues and peers...And I think what helps is that we have these evaluators present in our day to day encounters.

Organizational factor: Adequate staff expertise

This factor encompassed the expertise of both programmatic and evaluation staff. Staff must have a reasonable level of competency to understand and use the evaluation data and

findings. Respondents mentioned the importance of having an accessible evaluation expert that was trained and experienced in evaluation. In each case study unit, the lead evaluator was formally trained and/or had substantial experience in evaluation. The skilled evaluator, functioning on the core program team, was essential for the design and implementation of an effective evaluation and built a foundation that led to the use of evaluation data. Two evaluation respondents explained their view of the diverse skill sets on their case's evaluation teams.

Just overall, a culture that supports evaluation's been critical. I have a great a multidisciplinary team. We bring a lot of different expertise to bear so that we can look at our evaluation problems or questions in a really comprehensive way has been excellent.

I think [the lead evaluator] is invaluable. I mean, [she] is really with her expertise and insight. I think that has made a difference. And I think too, we don't bring our egos, when we have these meetings. We have worked well together and we have put those kinds of egos aside and it's really tapping [into] each everyone's skill set because we all bring different skill sets to the table and being appreciative of that.

Organizational factor: Functional knowledge exchange processes

Although each of the three programs used different approaches to disseminate findings at different levels, the strategic sharing of information was consistently used as a way to maintain leadership support and gather unique perspectives on the implications of evaluation findings.

Evaluation data needed to be succinct, timely, and useful to aid programmatic staff and leaders in using the findings. Respondents from the Case B and Case C units elaborated on the most helpful formats used to present findings. These included one-pagers, infographics, health impact statements, metric-tracking meeting agendas, and program snapshots.

The flow of information differed in each case. In one, the evaluator would share information with the leader who would then disseminate these findings to the project officers. Using a top-down communication approach helped to set the tone in the unit for how evaluation should be used throughout the program.

In the other cases, the units had more formal spaces to share functional knowledge with the entire division or center. This allowed a wider pool of individuals to provide input on the implications of findings. In one example, the Case A program demonstrated effective knowledge management through sharing evaluation findings with leaders during “learning hours.”

We can have different divisions represented and present their findings in a Center-wide a webinar or a learning hour is one way that we're going to try to promote this because we recognize there are things that are happening within the center but it's not shared. It's in a vacuum for the most part because if I'm working on it, then yes, I know it, but if I'm not working on it, I got no clue. So we think this is a way that we can do this when we get them started, then giving people an opportunity and an avenue to broaden the audience.

Respondents in another case highlighted their efforts to keep the evaluation data and findings concise and communicated regularly.

We definitely share it [evaluation data] back out to the recipients [through] the recipient meetings [and] regular webinars. [Also through] peer learning discussions, all hands [meetings], or we'll go to project officer meetings. Everything that we put out is basically breaking documents down. We may have internal long reports, but...those are even shorter now...If you're going to do a hundred-page report, every five pages, write a summary. That's all anybody wants to see.

Organizational factor: Maturity of program

Program longevity contributed to the normalization of evaluation use within the program. The Case A and Case C have been in place for approximately 8 and 29 years, respectively. Over each iteration of both the Case A and Case C programs, the culture shifted to reflect a more advanced integration of evaluation into the program. Evaluators became increasingly involved in writing the NOFOs and assisted in the program-wide application of evaluative thinking.

One evaluation staff member reflected on how the perception of the evaluation continues to evolve over time.

I think generally that people in [this] program, it's [the evaluation] been around for a while. It's really well respected, the data that we collect. I know a lot of people find it to be high quality and especially since you've had a pretty stable outcomes from the program. But I think also in addition to it being respected that also kind of like, 'Oh, this is just like the status quo.' ...There's no innovation being done with the evaluation or no

new ideas that are coming out of the evaluation. Except now that we are kind of incorporating this clinic level data, it puts a new perspective on the program.

The duration of the program has allowed for this evolution from nascence to stability to innovation.

In another case, the leader mentioned how stable funding allows new recipients to learn the approach and benefit from the program

Somehow every cycle, and we're in our third cycle, we have not had repeat projects. We get brand new [recipients]. And so now it feels as if the money does even more so because it becomes seed money and it, what it does is people learn this process and...they have the support and the assistance and the time to develop their proposals and then they're sustainable. And then when the money leaves from [this NOFO], the projects don't leave. They continue on. And that to me seems like if I'm going...to truly move equity forward, that's exactly what you want.

A programmatic staffer in another case noted how the repeated cycles of funding improves the work and keeps him engaged.

Every time we do a new funding announcement, and fortunately for us we've gotten new recipients every time, and it's another opportunity to learn, another approach to learn, another way of doing things. And so I think that for me, that's been the thing that's just been so, so much fun.

Organizational factor: Data-driven culture

In each case a new facet of the organization emerged in the data, that of a data-driven culture. Respondents described leaders that appreciated and required data from the evaluation to report progress and inform changes to the program. They noted that attention to and necessity for data was an essential input in decision-making and program improvement.

An evaluator stated it succinctly,

Having a culture that's data-driven here is the huge facilitator of what we do. And having the support from our direct division director on down for our evaluation work. I mean that's huge. You just cannot understate that. And so resources and just overall, a culture that supports evaluation [has] been critical.

In another case, the evaluator emphasized the value of delivering data to leadership.

[The division director] is the first to tell you she cares nothing about process. She'll tell me, "Everybody give me process. I want outcomes." And I'm like, "You want outcomes? I'll give you outcomes." We have to figure out how to get this [data] from people in a way that we can analyze it and across the board report these markersSo I think where we've benefitted the most is how we collect the data because I use evaluation to justify why I needed to collect data the way we're collecting data. And I think that's been the strongest thing for [Case A] because we can prove why it needs to exist. [The division director] can be compelled because of the data.

b. Human factors: User

User factors refers to the factors affecting those who use the evaluation findings.

Important sub-factors in this category include user's trust in the evaluation and the evaluator, their commitment and receptiveness to the evaluation, and the personal factor. The personal factor in this category accounts for the user's attitudes toward and previous experience with evaluation. The User category also includes considerations of the users' information needs.

User factor: Information needs

Recognizing the information needs of the programmatic staff and recipients was important for the uptake of evaluation data. Evaluators were receptive to the information needs and proactive in addressing them.

We have one person on our data and surveillance team [who was working] in Tableau one day and I was over at her desk and she said, "This is good, but what really would be great if it could do this." And I was like, "Okay, you should email that [to the evaluation team]." She emailed it to them and hers was the next new report in Tableau. And she was thrilled because it was, "I gave you some feedback and you know, it's turned out to be a great report." We all needed it, who knew we all needed it. He'll [the evaluation staffer] take a spark of an idea and just operationalize it.

By simplifying data collection instruments and condensing evaluation findings into one-pagers and infographics, users could easily identify relevant information and apply it to their work. Evaluators also worked to be accessible and approachable to aid the flow of communication with programmatic staff and recipients.

We're more proactive now than reactive. Before we were a little bit reactive. We've done a better job now of populating a SharePoint site for Case A. So we populated that with all kinds of information, lessons learned from previous awardees, documents from previous

awardees. We put that information in there and we wouldn't have done that before. We'd use our evaluation data to say, "Oh wait a minute. They need more TA [technical assistance] up on the front end; we need to provide more information on the front end. That's one thing that helped even [a troubled recipient] turn things around so quickly with things were muddled. The next call, the new person was like, "Oh, I went into SharePoint, I got it. Now I know what to do."

User factor: Personal factor

Respondents attributed the successful use of evaluation data in part to project officers that were adaptable, communicative, driven, and eager to learn. In addition to appreciating the utility of evaluation, programmatic staff also had to apply findings. This required project officers to be flexible in their provision of technical assistance and be willing to learn from available feedback and findings. The increased approachability and accessibility of evaluators impacted how project officers perceived and used evaluation findings. A programmatic staffer shared her perspective on the relationship with her evaluation colleagues, *"I feel like we have enough interactions, engagements, both planned and on the fly that I feel like we know a lot about what the other is doing to make sure that we're all working towards the same outcome."*

A leader shared how perceptions of the evaluation are changing because of their evaluator.

I've worked so tightly with [the evaluator] on things and other people are increasingly doing that and it's making that a more friendly climate to evaluation. It's still hard to have the thing you most love and have your work be assessed by somebody else. But I do think it is better [due to] the fact that people get it and as long as we have evaluators branding it and present and working next to you, that really goes a long way to making the environment more friendly.

User factor: Trust in evaluator/evaluation

Respondents from all cases spoke to the strong relationship between program and evaluation. Both project officers and evaluators respected one another and worked as a collaborative unit. Respondents recognized the contribution of each of their skills to program improvements, which encouraged an open line of communication and trust. User trust in

evaluation was demonstrated by how programmatic staff spoke about the importance of evaluation. *“The trust that exists [is] established from the beginning of the project. With the recipients, they feel like they can trust [us] and they can come to us with anything or any of the [road] blocks that grantees face.”*

Shifting to the mindset of “continuous quality improvement” helped some programmatic staff find utility in the evaluation data. A programmatic staffer noted, *“They designed an amazing outcome evaluation that was just simplified.”* In another case, a respondent shared how others recognize the quality of their program’s evaluation and clamor for further advancements in the evaluation.

It's really well respected, the data that we collect. I know a lot of people find it to be high quality but I think also in addition to being respected [its] also kind of like, “Oh, this is just like the status quo. We really respect it as high quality evaluation but maybe there's no like innovation being done with the evaluation or no new ideas that are coming out of the evaluation.” Except for now that we are incorporating this clinic level data. It puts a new perspective on the program.

User factor: Commitment / receptiveness to the evaluation

Even if not trained in evaluation, project officers demonstrated a willingness to learn and apply evaluative thinking methods to their work. Understanding the importance of evaluation in the context of program improvement, being receptive to feedback, and working collaboratively with evaluators facilitated project officers’ commitment to evaluation. One programmatic respondent noted, *“As a project officer [I] had a foundation and an understanding of evaluation. But that understanding has grown and I appreciate the evaluation component even more and the importance of it.”*

User commitment to evaluation was partly shaped by the program goals. The Case A and Case B programs were both rooted in health equity. Working in a team where the goals were to alleviate health disparities motivated project officers to constantly seek and apply feedback. *“I want to know as much as I can...there's just so much out there to learn and this is why it's always*

been fun. Every time we do a new funding announcement, it's another opportunity to learn, another approach to learn, another way of doing things."

There was also a shared commitment to improving the internal capacity for evaluation across the three programs. Feedback from recipients, leaders, and evaluators was applied to improve the provision of technical assistance from project officers. However, receptiveness to the evaluation was also demonstrated by the professional development of the programmatic staff. In one case, several project officers expanded their skills in qualitative analysis as a result of their commitment to evaluation. *"I mean we've gone through a lot of changes in leadership, but the evaluation has always been highly valued here, which is very helpful because that's not the case everywhere at CDC."*

c. Human factors: Evaluator

Evaluator factors describes the characteristics and actions of the individual planning, conducting, analyzing, and sharing the results of the evaluation. The evaluator demonstrates interpersonal skills in which she/he shows a commitment to facilitating and stimulating use of the evaluation findings, as well as good working relationships with users. This category also encompasses the need for sensitivity to political pressures that may influence use of evaluation and findings.

Evaluator factor: Interpersonal skills

Respondents attributed the successful use of evaluation data, in part, to having an evaluator that was enthusiastic, approachable, adaptable, and a strong communicator. Respondents described evaluators as available and accessible. This allowed recipients to feel comfortable in providing timely feedback and articulating challenges. Evaluators saw their roles as supporting recipients and project officers in meeting the goals of the program. Professionalism

and quick thinking were needed to respond to recipient challenges. One evaluator shared her experience working collaboratively with programmatic teams.

I think we both try to understand each other. Although sometimes I'll hear we're so data driven on the evaluation team [that] sometimes we'll ask, 'Why are your screening numbers going down?' And there are really nuances of what's going on at the grantee level or at the state level where the program consultants are. Program consultants get the context of what's going on [while] we just see the data. So we need to always have a better conversation of incorporating and understanding both sides.

An evaluator in another case described how she put recipients at ease when reporting challenges.

[In these meetings, recipients say], 'I've never heard CDC say that before. I've never felt comfortable telling CDC I have a problem. I'm always scared that I'm going to lose NOFO funding.' And we [say], '...this is very different than what you've experienced [before] and we hope that you see a lot more of this open[ness] and honest[y] in [this case].' That's why it's called a cooperative agreement. We don't want people to feel like it's going to be punitive if they say something's not working.

Instead of blaming or penalizing recipients, evaluators provided support to recipients to address the challenge. This positivity and solutions-oriented mindset was important for maintaining recipient trust and establishing open communication.

Evaluator factor: Commitment to facilitating and stimulating use

Evaluators promoted the use of evaluation findings by being proactive and being prepared. They were ready to shift approaches to evaluation use as recipient and project officer needs emerged.

All the cases made mention of evaluators making evaluation more accessible through the development of toolkits or other solution-based deliverables. According to evaluators, if program staff understood the utility of evaluation and had the tools to successfully execute evaluation efforts, they would be more motivated to embrace evaluative thinking and integrate evaluation into their communication with recipients. To make evaluation seem less arduous, evaluators also intentionally presented findings using concise and straightforward formats. Most of the evaluators aimed to make evaluation finding practical, useful, and informative. When presenting

evaluation findings from recipient reports, evaluators summarized these findings into formats that allowed users to quickly gather relevant information on program-level progress.

Evaluators also welcomed feedback from project officers regarding evaluation efforts.

There was a collective sense that evaluation should not be limited to evaluators.

Both sides really needed to be looking at both things and not just siloing it off to somebody else...Recently, states are in the process of submitting evaluation performance measure plans. Theoretically that's the domain of the evaluators primarily. But there's also been discussion of does the project officer need to look at that (evaluation performance measure plans) and make sure that this is linking up with the work plan so there's not a disconnect.

Because evaluation informs the implementation of the program, evaluators encouraged programmatic staff to take a significant role in providing input on evaluation materials.

Evaluator factor: Credibility

The lead evaluators had formal training and/or significant experience in evaluation, lending weight and expertise to their evaluations and analyses of data. One respondent reiterated the importance of having an experienced evaluator helping design the program as well as the evaluation.

The key component [to evaluation use] is having evaluation expertise involved in the project design. Having [the evaluator's] expertise involved in informing the writing of the funding opportunity is critical. So that involvement on the front end and not an afterthought is probably the most critical piece. Oftentimes, there are projects where there [are] questions asked in the aftermath... and these projects are not designed properly to capture that information. That's why I think the most critical piece is that early involvement (of evaluators) as the project is being designed.

They encouraged creative approaches to addressing evaluation challenges and using the data to improve the programs. The evaluators in these cases demonstrated a commitment to the program goals and a shared aim of helping recipients achieve outcomes. One evaluator explained, “Evaluation does not have to be this arduous process that nobody wants to do...For me, it's about asking the right questions and really listening to them. Because if you're able to process it really quickly and show it to them, then they can see the value of it.”

Evaluator factor: Good working relationships

Evaluators that were action-oriented, approachable, proactive, and motivated to make evaluation more accessible was important in creating relationships where recipients and project officers could openly ask questions and communicate challenges. *“You have to build that trust and [show] that we really do want their input and we really are incorporating it.”*

Across all of the cases, evaluators demonstrated openness, helpfulness, creativity, and accessibility to foster strong relationships with programmatic staff. *“I think [having] patience to understand ... your audience, how they feel about evaluation and just addressing that and taking the time to build the relationships and build capacity and interest... are keys to success.”*

Evaluator factor: Intentional hiring for skills and fit

An emerging finding in the interview data was the purposefulness of the composition of the evaluation teams. Evaluation leads were intentional in their hiring practices. Respondents described how their colleagues were well-suited for the team and skilled to tackle the evaluation tasks.

A programmatic staffer reflected on the keys to success in working with her evaluation colleagues.

I think having an evaluation team that has the right skill set...it's very diverse. So anytime I go to the team and we need a thing, we can actually get it. [The lead evaluator] knows how to hire the right people with the right attitudes...[she] has a knack for recruiting team members who are just service-oriented...They are just the most creative and service oriented and "I want to work with you" people. I don't know how she hires these people.

An evaluation staffer in another case noted how they fit as a team.

[The lead evaluator] loves what she does and hires others who share her passion for evaluation. We're all here because we enjoy our work and are committed to it. Hiring is very intentional. We use strengths-finders as one way to fill gaps on the team.

d. Evaluation factors

Evaluation factors focus on the evaluation itself. The use of evaluation findings is associated with quality and credible evaluations and the resulting information must be relevant, legitimate, and accessible by the user. Communication is a key element, as it must be clear, comprehensible and timely. The evaluation and the findings must be aligned with decision-maker expectations and provide value to the decision-making process. Adequate funding to support an appropriate evaluation as well as resources (human and programmatic) to share and learn from evaluation findings may also be a key factor in this category.

Evaluation factor: Quality and credibility of evaluation

The successful use of evaluation data in the cases required many elements including expert evaluators, multiple stakeholder perspectives, quality data, and effective tools for understanding the findings. An evaluator in one case explained how they design an evaluation with the reportable data in mind.

[We think about] what products can we put together to help with implementation so that they have the right data to give us. How do we share this in a way that puts recipients in a position to be able to share data with us? So we did a lot of that front end [preparation], which to me walks the gray line between evaluation and program. Although probably leaning heavily towards program, we [evaluators] saw that as the way to collect better data. If you have better implementation, then you have better data collection.

Another evaluator described how the evaluation was shaped by the history of inquiries and data needs that emerged over time.

I think a lot of the evaluation was designed around questions that we got all the time. Obviously, the screening rates [questions] were a big one... They would say, "Well, have screening rates changed?" We couldn't answer. So that definitely led [to knowing] we need to be able to answer these questions. We need to be able to say who they're partnering with; we need to be able to say which you guys are doing it. We need to be able to say how clinic screening rates have changed. Those kinds of things were very much a direct result of all the questions we've gotten over time.

Evaluation factor: Communication quality

Sharing feedback, program updates, and technical assistance required open lines of communication both within CDC and with recipients. The following techniques were used to promote effective communication: building trust through increased interaction, using purposeful forms of communication; and developing feedback loops.

Trust existed both within the CDC team and with the recipients. Within the respective CDC teams, the use of evaluation data required an understanding of the utility of evaluation as well as an understanding of the importance of integrating evaluation within the program. For collaboration to occur between program and evaluation, trust and mutual respect between evaluators and programmatic staff was required. *“We [the evaluation team] have a strong working relationship with program [team]. We are able to communicate very openly and frequently and frankly, I mean, there's always some things to be worked out, but they're engaged in evaluation and interested in it.”*

Respondents from each program also spoke to the importance of having a strong relationship with recipients. To use evaluation data to improve the program, recipients had to have confidence in their relationship with CDC staff. They needed to feel comfortable voicing real-time challenges and feel empowered to apply feedback. Through routine check-ins with recipients and organized feedback groups, respondents described the importance of creating a space where recipients could articulate challenges and progress without fearing penalization. An evaluator explained how the unit shares information with recipients to help them avoid pitfalls.

When it comes to effective communication methods, we've shared all of those with the recipients on what worked well, what didn't work well. So we for partnerships, same thing: ‘What worked well? What did you do?’ that so, [by] our first recipient meeting, we had three different presentations that we did with them. We chunked it out into three separate modules so to speak, to just that they can take it in bites.

Whether communicating in-person or through writing, respondents from all programs discussed the importance of using purposeful and focused communication techniques. It was important that recipients understood the program's goals and expectations. Using more direct forms of communication facilitated evaluation use as it ensured that recipients correctly reported indicators and answered the most relevant program questions.

The biggest lesson learned was to have a very specific and well communicated evaluation question...That helped because, for our clinic data, we had a very specific goal and we wanted to see [Case C's] rates go up in these clinics. We were able to communicate that with the branch, with our division, with our grantees and so almost everyone understood that goal and everyone was able to work toward that goal.

As part of building internal capacity, the cycle of feedback was an important factor in improving the provision of technical assistance. Within all three cases, there was a two-way feedback loop. CDC programs not only provided feedback but were receptive to suggestions from recipients on ways to improve technical assistance. An evaluation staffer explained where she sees opportunities for improving how evaluation data is disseminated to stakeholders.

There's a lot of challenges to people using what [evaluation data] we have and it's a constant struggle and I think you need have to take a very proactive mindset to how do we facilitate use. It's a whole other part of the evaluation kind of cycle that we need to give a lot of thought. "Who are different audiences? How are we going to speak to this one, this one and this one? What's the best way to communicate to them? How do we really make that happen?" So I am really excited about it, but we got a long way to go on some of it too.

Evaluation factor: Findings congruent with expectations and of value to decision-making

Findings from the evaluation reinforced the utility of evaluation. Project officers from each program appreciated how evaluation findings justified programmatic approaches. Evaluation findings were applied to allocate portions of the budget for certain activities and set requirements for data collection. Seeing the value of evaluation encouraged the incorporation of evaluators in the initial program design and in subsequent programmatic decisions. *"It was very*

important to the evaluator that the program consultants saw the evaluation team's work and the results that they generated as helpful. The evaluator did not want program to see this as a burden, which at one time I think they did.”

Leaders found value in the evaluation data through using it to monitor the program’s progress toward outcomes, justify continuing funding, and informing decisions on approach, populations and collaborations.

The division director ultimately makes the decision on funding applications within the division for various projects. And so for the past 11 years the funding has been consistent which is a demonstration of her level of support for what we're doing and how it's being carried out.

Evaluation factor: Relevant, legitimate, and accessible

An evaluator in one case describes her philosophy in making the evaluation relevant and accessible to users.

To me, program evaluation is consists of evaluation and translation, findings and products that facilitate programs being able to implement better. So in general, I focus most of our attention on evaluation and what are we looking at, what can we produce that helps implementation run more smoothly, that you can speak to stakeholders with that everybody finds useful and that influences how the program progresses after that.

Evaluation findings were tailored to promote user engagement. Evaluators from all three programs created tools to promote recipient engagement in evaluation. These tools included clear data collection instruments and explanations on strategy implementation. By clarifying the evaluation process and simplifying reporting measures, evaluators made findings more useful and informative for the recipients and project officers.

A project officer noted appreciation for the efforts of the evaluators to make the information easy to digest, “*Routinely [the evaluator] presents data in a lot of different way(s)...She would do these nice, very straightforward slide shows; these are the questions, here's the data, here's how many clinics.*”

Evaluation findings were also presented in succinct and clear formats. Two of cases particularly emphasized presenting information in user-friendly formats. Instead of sending lengthy reports, evaluation findings were condensed into infographics, one-pagers, and brief statements summarizing the process and outcomes of the program. Data visualization, whether through specialized software or creative use of traditional formats, increased the relevance and accessibility of evaluation.

Project officers could compare progress at the recipient level and provide targeted technical assistance based on findings from the data.

One thing that we're just really excited [about] is that we're trying to use all these new technologies like Tableau...or data visualization in general. We try to make it accessible and user friendly and I hope that continues, and that we can continue to learn what people appreciate about our data and how they use the data.

Evaluation factor: Adequate funding

Sufficient resources to sustain a robust and effective evaluation facilitates the use of evaluation data and findings. In each case, adequate funding supported the evaluation allowing staff enough time and resources to carry out the evaluation and find opportunities to creatively facilitate use.

One evaluator noted their evaluation's funding has not only been stable but had additional infusions. *"I would say we've been very supported and even been able to maintain good staffing level. We've had level funding throughout the time I've been here, basically. Sometimes even we've gotten additional money to do, you know, some of our projects."*

In another case, an evaluator confirmed that consistent, adequate funding helped make evaluation a pillar of program.

We had resources. I mean that's a big one, right? There's a lot of divisions or programs that just don't have a lot of resources leftover for evaluation, you know? And [here], they always carved it out from the beginning that this was going to be a critical component of the program.

Evaluation factor: Timeliness

The successful use of evaluation findings depended on timely communication, feedback, and data updates. Each program organized routine meetings both externally and internally. First, all cases utilized some form of regularly scheduled recipient check-ins. The meetings served at least three purposes: gathering timely updates to ensure progress, identifying challenges early on, and developing trust with recipients. Secondly, each case afforded frequent opportunities for exchanging feedback at the recipient, programmatic, and evaluation levels were also important for making programmatic and technical assistance improvements internally.

I think the biggest benefit [of the evaluation's data dashboard] is that you can really see what works and what does not work...sometimes it's the data itself and sometimes it's the way you were trying to get the data but [the dashboard] eliminates those problems very quickly...It makes it much easier to say, "Okay, this is not working. We need to do these things instead."

Another evaluator echoed the importance of speed in sharing the evaluation findings to improve the likelihood of use: *"I've tried to get it as quick as we can, like rapid turnaround, with these monthly reporting templates and having that data there. I think that you do a lot better even from month to month, sharing the results back out to the grantees."*

Evaluation factor: Inclusion of evaluation in program planning

The importance of including evaluation in the planning of the unit's program emerged as an important factor in the interviews. Respondents noted how the deepening of relationships between the programmatic and evaluation arms, along with people seeing the utility of the evaluation data, led to both groups working together to develop program plans. In one case, a respondent recalled that in the writing of the NOFO for the program, it was the first time that evaluators *"were at the table too"*.

An evaluation respondent described how the evaluation team develops core program activities in close collaboration with their programmatic colleagues, marking a change from the past.

We sat around an evaluation table and came up with that and then we took it to program and said, 'We think this is a better way of making sure that they're implementing the strategies. It keeps it at the forefront of the conversation. What do you guys think?' They were like, 'We think that's great, let's use that.' And so [this] was...different than we have been doing it traditionally in the past, which I think took buy-in from both sides. We don't send anything out from an evaluation perspective that program hasn't approved or hasn't weighed in on... We also bring both the program and evaluation to the table when we were designing things and I think it helped a lot.

A leader from one case explained how the unit evolved to include evaluation at the forefront of programming planning.

We've always been committed from the start to get the lessons out as fast as we could. And we fortunately had really great division leadership that supported us at that point [who] said, 'We will commit to making sure we have this strong evaluation component.' So when we set up [this case's] projects, evaluation was not an afterthought. They were at the table.

C. Negative Effects, Challenges, and Barriers

This research was grounded in an appreciative inquiry approach that focused on the strengths and successes of the case study units. However, the researcher asked about negative effects of using evaluation findings and listened for and probed on mentions of challenges or barriers. None of these emergent findings were consistent across all of the cases. This does not necessarily indicate that the issue was not present in each case but rather that respondents may not have considered the issue or felt comfortable disclosing it. A description of the themes follows a table summarizing the occurrences in the cases below.

Table VI. Cross-case findings: Negative effects, challenges, and barriers

NEGATIVE EFFECT, CHALLENGE OR BARRIER	ISSUE REPORTED BY CASE		
	CASE A	CASE B	CASE C
Limited evaluation capacity among users of evaluation data and findings		X	X
Competing demands on the time and attention of users of evaluation data and findings	X		X
Unrealistic expectations by users of evaluation data and findings		X	X
Risks to the program from misinterpretation or misuse of the evaluation data and findings	X		X

Respondents in two of the cases mentioned the challenge of limited evaluation capacity among programmatic staff and leadership. Programmatic staff who were interviewed demonstrated awareness that their colleagues lack of understanding the evaluation work hindered the use of evaluation data and findings. *“If folks can understand the nature of the work that we do, what the data sources are, they would be, it would go a long way to helping the division tell the same story that program and evaluation have learned to tell together.”*

Another programmatic respondent noted a lack of training in evaluation can hinder use.

I think [another] thing is intimidation by some of it, especially if you don't have that background. If you're not trained in evaluation, you're a little bit intimidated by it in terms of really looking at some of the data and some of the processes that then derive the data so to speak. If you don't understand some of those things or how that's done because maybe health education was your background, maybe it's not evaluation.

Interviewees in one case mentioned that trainings are available to increase evaluation capacity but attendance among programmatic staff could be improved.

The things that we offer to recipients in terms of training, particularly around evaluation and programmatic implementation, we also offer, where appropriate, to internal staff. And I think not as many internal staff take advantage of those opportunities as I would like. And I would venture to say that evaluation probably feels the same. And because I feel like a lot of the things that are being shared in these webinars, in these communities of practice, if folks outside of program evaluation were participating, they wouldn't be asking the questions that they do or they wouldn't be making the kind of demands for data reporting that they are.

The dual needs for user to be able to understand the data in order to use it was recognized by evaluation and program staff alike, a finding that echoes that of the constructs related to adequate staff expertise and users' receptiveness to the evaluation.

As the quote above touches on, another issues that respondents raised was the challenge of addressing users' unrealistic expectations of the evaluation data. This gap in evaluation capacity extends to leadership too, especially in latching onto evaluation concepts without fully understanding why and how those data could be useful to the program.

One respondent explained the challenge of helping decipher stakeholders' needs in evaluation data.

Not everybody really understands evaluation...They're just like, "We just want to know impact and ROI." So I'll even try to ask probing questions like, "So what does that mean to you? Like what is showing impact? What does that look like to you?" And [they're] just like, "Yup. Impact, you know what I mean." And so that's always frustrating, but all of us who work on these are definitely on the same page with understanding what kinds of things we can show and what's not really feasible in terms of just being able to come up with a number.

An evaluation respondent mentioned that they work to involve users from the outset to help build evaluation capacity and shape the expectations about what the evaluation may produce.

Sometimes they're asking questions that we just can't answer. But it is good to have their input from the very beginning because we can try and explain to them with the questions that they want answered, [it] maybe difficult or they may not receive the answers that they want.

Another evaluator explained that they work to shape the evaluation to meet the requests of users but still find challenges in answering every request for data. *"Everyone seems to think it's so simple. It's never a straightforward as you want. But there's some repeat questions we'd get that we can't answer easily. Like, people always want to know, 'How many lives did you save?' That's not an easy question."*

Respondents also touched on the challenges of competing demands on staff. When users, especially the programmatic staff, are overworked, their capacity to understand and use the evaluation data and findings suffer. An evaluator in one case noted how they use caution in over-taxing their programmatic colleagues when it comes to a deep understanding of the evaluation data: *“We’ve really sold the team leads of the [project officers] groups on data use. Our [project officers] are coming along. I think they’re so important to [evaluation] use, but they have so much on their plate. Otherwise learning a lot about the data is probably too big of an ask.”*

A programmatic colleague in the same case explained the burden from her perspective, *“Part of it is just work burden, you know, hiring freezes, people leave and our staffing shrinking. And then they keep winding up with more programs so it doesn’t give them a lot of bandwidth to absorb all this new information.”*

An evaluator in another case described how she manages to keep the evaluation moving forward despite colleagues’ workloads.

So I do take initiative sometimes because sometimes people don’t want to make changes because they don’t have the time or they think is going to be too much work for them. So over the years I have taken on that, especially if [its] quick for me that I can just do that really quick and directed.

Two of the three cases mentioned potential negative consequences of using evaluation findings related to risks to the program. However, the respondents identified different kinds of threats. In one case, a respondent in a programmatic role explained that they must be cautious in framing the evaluation findings especially to funded recipients:

That’s something that we have learned early on to be very mindful on how we do this...What is the greater good here? What are we really trying to do? And so we’ve had some situations where folks who wanted to do some finger-pointing, not that’s not the purpose.

Several respondents in described risks to the program around the potential for misinterpretation of the evaluation findings. An evaluator in the unit noted that there is a risk of

misinterpretation but can be staved off by ensuring the context is well understood. *“You know, data can be misinterpreted. So I think it has to be used carefully and thoughtfully and understood and unique context. So that's always a risk, I guess.”*

A programmatic staffer brought their experience in deciphering the findings with recipients; the staffer echoes the need to understand the individual situation thoroughly.

You have to be careful, of course, of how you interpret things, you shouldn't just interpret something and say, “Well their numbers have gone down because they're not working hard,” and that may not be the case... You have to know the whole story and that would be the only drawback would be misinterpretation of data. But if you do a good job of really delving in and figuring out what's going on, hopefully you can translate a lot of that information to other programs in other states [with] the same kind of program.

These emergent challenges and barriers contribute additional richness to the story of each case. However, they should be considered with caution as they were only identified through probing and not through systematic questioning of each interviewee.

The results from the seventeen interviews show alignment with the factors identified in the literature and illuminate a broad range of uses of evaluation data in the three cases.

Additional factors and uses emerged during the interviews and several appeared across all three cases. Several challenges were revealed through probing that offer a contrasting view of the cases' successes in using evaluation data and findings. A discussion of the meaning and implications for these results follows in Chapter 5.

V. Chapter 5: Discussion

As described in earlier chapters, there appear to be rare units at CDC who are successfully putting their evaluation data and findings to use in the programs. Few CDC programs are able to routinely achieve the final step of the Framework for Program Evaluation which describes the dissemination and use of evaluation data and findings at the conclusion of the evaluation cycle. This study identified the ways that three exemplar cases are using their evaluation data and which factors documented in the literature were present in their unique units. This chapter discusses the interpretation of the findings, their bearing on the conceptual model presented in chapter three, and implications for CDC, federal agencies, and the field of evaluation.

These case studies complement the other research conducted around the 20th anniversary of the Framework, as discussed in chapter 2. They offer a unique perspective on the facet of use of evaluation data and findings, in contrast to the other lanes of study that looked more broadly at the reach and impact of the Framework across CDC and beyond. Together the research begun to mark the anniversary help create a picture of the evolution of evaluation at the agency. This research, for the first time, shows how several units are having success with use. The findings are strong evidence that the factors outlined in the literature contribute to how these cases are able to use their evaluation data and findings and reveal additional factors at play in the CDC setting. The factors in the literature, and others this research identified, are relevant and manifest in programs that are successful in reaching step six of the Framework. The majority of the factors were corroborated across all three cases, adding strength and validity to the findings.

This research demonstrates that there are units at CDC that are using common approaches to increase the use of evaluation data and findings – and that there is an opportunity for growth, even within these exemplars, as noted by the case study stakeholders. The research offers another

facet, learning from evaluation data and findings, in which a unit at any level of the agency can exercise operating as a learning organization. One area in particular stands out as ripe for progress, that of building evaluation capacity among users of evaluation data. These cases show described their efforts, both successes and work yet to do. There is an opening for CDC to increase evaluative thinking and advance strong evaluation practices in units across the agency. Leaders at CDC can capitalize on many units within it that function as learning organizations, gathering best and promising practices from their experiences, as this research highlights, and putting policies in place to institutionalize and aid learning from evaluation. Further, the findings in this research can open lines of discussion around how evaluation data can be used in evidence-based decision-making; the types of uses uncovered in the exemplar cases can act as a springboard to conversations within a unit about how the data can be of value to program planning at micro and macro levels. The implementation of Foundations for Evidence-Based Policymaking Act can provide additional momentum to these efforts, as agencies across the federal government work to align with the Act's mandates.

With this tangible evidence and actionable recommendations, CDC leaders can take steps to leverage existing factors in their organizations and establish others to begin to increase the use of evaluation data and findings in their programs.

A. Linkage with literature

The constructs selected for this study were drawn from the aggregation of 30 years of literature by Alkin and King (2017). They organized the factors associated with the use of evaluation findings into four categories: user factors, evaluator factors, evaluation factors, and organizational/social context. In addition, the researcher, in consultation with Mr. Chapel, generated several additional constructs that they agreed may be at play in the CDC cases and worth exploring in the study. The constructs that were identified in the literature, and several that

were added from the researcher's experience, were appropriate for this study because most of them bore out in the findings. The results from this study confirmed the validity of the four categories and most of the factors by demonstrating their presence in three CDC cases. The data analysis resulted in 25 factors that were present in the case studies. A description of those factors that appeared in the data (i), those that emerged in the analysis (ii), and those that did not have evidence in the data (iii) are described below.

i. Factors present in the case studies

As discussed in chapter 3, the conceptual model for this study incorporated 22 constructs as factors associated with successful use of evaluation data and findings. Of the 22 original factors, 20 bore out in the interview data. Three new sub-codes emerged in the data and were added to the list of factors. Twenty-two of the factors appeared in the data for all three cases. The presence of nearly all of the factors across the cases lends strength to the assertion that these factors are important to achieving evaluation use and are manifest in the CDC setting.

Only one factor was associated with just two cases, the "maturity of program". In cases A and C, they have been established for several funding cycles, 8 years and 29 years respectively. Case B was intended to only exist for a single funding cycle of 3 years. The length of operation of cases A and C likely allowed an opportunity for learning year over year to make improvements to the programs and gains in their ability to institutionalize the use of their evaluation findings. Case B was designed to be a short, single-cycle program – and respondents indicated that lessons were intentionally gathered and incorporated from the case B experience – but did not have the chance to use the evaluation findings in future iterations of the same case program.

iii. Factors that emerged during the analysis

The three emergent factors appeared across all three cases. The consistency of the evidence suggests a strong finding that these factors should be considered among those essential for use of evaluation data in these CDC cases. The emergent factors also fit well within the four established categories from the literature. For example, one emergent finding included that the evaluation leaders made intentional efforts to hire evaluators with complementary skills and a passion for evaluation. This finding aligned with the category “Human: Evaluator” which describes the factors associated with evaluators who are successful at helping others use the evaluation findings. The intentional hiring factor fit within this category as it related the characteristics inherent in the evaluator, be she the evaluator or the evaluation lead responsible for staffing the team.

iii. Factors without evidence in the case studies

Two of the original constructs were not confirmed as they did not appear in any cases. The factors that did not appear in the interview were the organization’s “political climate” and the evaluator’s “political sensitivity”. Professional experience at CDC by the researcher would suggest that the political factors would influence the organizational context. However, these issues did not arise often in the conversations in relation to the use of evaluation data or findings, nor did the political savvy of the evaluator in navigating the climate of the organization. Probing specifically on these issues may yield different information in future research.

These confirmations, additions, and removals resulted in a final list of 25 factors that are associated with successful evaluation use in the CDC case studies. The homogeneity of the factors across the three cases strongly suggests that these factors are critical to the cases’ ability to use their evaluation data. The findings from the case studies reveal the breadth of the

facilitators that made it possible for their units to learn from their evaluation data and use it improve their programs.

B. Bearing on frameworks

The conceptual framework that guided this research was adapted from the visualization of the interaction between categories of factors proposed by Peck and Gorzalski in 2009. The findings from this study suggest that the framework is a valuable conceptualization of the factors present in the three cases. The framework has been modified to reflect the additional factors that emerged in the secondary analysis and striking of two factors that did not bear out in the findings. See Appendix F for the revised conceptual framework. The current model is a valuable starting place for CDC to understand the factors found in these three cases, and likely present in any CDC unit that is having success using their evaluation data.

The results of this research also have implications for CDC's Framework for Program Evaluation, the anniversary of which was the catalyst for this research. This study focused on step six, the dissemination and use of evaluation data and findings, but, as discussed in chapter 1, the steps are interrelated. As the work progresses between steps in the evaluation cycle, sometimes moving back and forth, so too would the influence and importance of the 25 factors revealed in this research ebb and flow. Professional experience would suggest that the majority, if not all the factors, have relevance to each step of the Framework. Any progress that a CDC unit makes toward establishing or strengthening the factors is likely to have positive effects on their ability to apply the Framework, conduct evaluations, and use the resulting data and findings.

C. Interpretation of findings

This secondary analysis revealed the common elements of three cases at CDC who are successful at using evaluation findings in their units. The results of the study shed light on the

ways that the cases use their evaluation data and the factors that seem to be meaningful in their success. Two research questions, and two sub-questions, were used to guide this inquiry. A discussion of the findings are organized by the research questions below.

i. Types of use

The first line of inquiry sought to answer the research questions, *what are the ways that program evaluation data and findings are used in the exemplar CDC unit?* and *How do the CDC unit's uses align with the four types of evaluation data use, instrumental, conceptual, enlightenment, and persuasive/symbolic?*

Respondents from each unit noted a variety of uses spanning three of the four categories identified in the literature. The data from the three units reveal that many uses are shared across the cases. This may suggest that the ways these CDC units employ evaluation findings have evolved to become standardized in the program, being commonplace and usual activities. For example, the interviewees' response pointed to routine use of evaluation data to test the effectiveness of program interventions and determine if the activity was continued, modified, or ended.

The interviews also revealed additional ways that individual cases used their evaluation data. These emergent uses for evaluation data included several that were common among two or three of the cases. One example is the manifest finding that all of the cases used evaluation data to improve and focus technical assistance to recipients. Respondents in each of the cases explained how the evaluation findings shaped the unit's approach to supporting recipients. However, several emergent uses were noted only by a single case, such as one noted by a respondent who stated that they used the evaluation findings to determine recipient training needs. The presence of a type of use in a single case does not necessarily mean that the other cases did not experience that use. It is possible that, if asked, the other cases would concur that

the evaluation findings were used in that way. Respondents did not mention any uses that could be categorized as *persuasive or symbolic*. The perception of this type of use is often negative which may have discouraged respondents from mentioning such uses. However, respondents were asked if there were negative consequences to using their unit's evaluation findings, thereby providing an opportunity to disclose deleterious types of use or its effects.

ii. Factors associated with use

The second avenue of this research focused on answering the questions, *what factors enable and hinder the use of program evaluation data and findings in the exemplar CDC unit? How are the four categories of factors, organizational/social context, user, evaluator, and evaluation, exhibited in the unit?*

As with the types of use, the three cases' respondents described many similar elements that contributed to the units' success in using their evaluation findings. The consistent appearance of the individual factors across the three cases strengthens the argument that these factors are essential to the successful use of evaluation findings. It also confirms the applicability of the factors as identified in the literature to the CDC setting. The commonalities between the three cases, which are diverse in many characteristics yet share their success at using their evaluation findings, suggests similarities among other units at CDC who are making intermediate strides toward successful use of evaluation findings. The intersections of types of use and factors associated with use were not clear in this data; the topics of discussion in the interviews were distinct and had limited overlap. However, this is an area ripe for future exploration to assess the linkages between the types of use and the factors and the strength of the connections.

iii. Application for audiences

The researcher sought to increase the transferability of the findings through thick descriptions of the contexts for each case study. This aim was weaved into case selection; the

researcher and the evaluation advisory committee sought diverse case study sites representing a wider variety of characteristics that may aid audiences in applying the findings to their settings.

Case study units. The case study units that were involved in this research were provided a unique perspective on their program's functioning around the use of their evaluation data. In reading the results, the key stakeholders shared that they were gratified to learn that their programmatic colleagues saw the benefits of using the evaluation findings. The results confirmed that their efforts were contributing to the use of the evaluation findings and leading to improvements in the program. The cross-case findings highlighted the value of certain efforts, such as the quality of the communication of evaluation findings and the critical dependence on trust between evaluators and users, in making customary the use of the findings by leadership and programmatic staff. The case study stakeholders may use this information to continue positive processes and institutionalizing those that appear particularly valuable. Further, those involved in the case studies may replicate the findings in other projects or programs in the unit. Indeed, one of emergent factors that was uncovered expressed how learning from the evaluation findings spread to other programs.

Other CDC units. Another purpose of this research was to elevate across CDC effective practices that are leading to the use of evaluation data and findings. Through dissemination of the results of this study, and particularly, the key factors, CDC units may glean insights into the ways the case study sites found success and be spurred to put in place some of the factors. As noted earlier, the potential for other units to adapt and apply the case study sites' approaches influenced the selection of the sites so that others at CDC may find similarities with the cases and be encouraged to adopt and adapt their approaches.

CDC leadership. Leaders in PPEO and the Office of the Director may gain awareness of the factors and approaches the case study sites used. Ideally, this study promotes the use of

evaluation findings and established the issue as a priority for advancing evaluation use and performance measurement at the agency, especially in light of the new legislation mandating increased use of evidence in decision-making. Leaders may use the results of this research to adapt and applying similar efforts in the programs. For example, PPEO may coach a program to adopt a tailored approach described in the case studies during their consultation on evaluation design and implementation. In addition, this research may lead PPEO and other leaders at the agency to prioritize to additional research and initiatives to further evaluation at CDC and throughout public health.

Evaluation leaders beyond CDC. The primary audience for this research was leadership within CDC; this is partly due to restrictions on federal research stemming from OMB Paperwork Reduction Act which, for this study, limits the generalizability of knowledge. However, there were potential benefits from the findings from these case studies that extend beyond CDC. The results from this research may reach to other public health organizations in two ways. First, other CDC programs may implement some of the promising practices identified in this study and require funding recipients to participate in new approaches to using evaluation data. In turn, recipients may find value in the approaches and adopt them for use in other, non-CDC funded programs within their organization. Second, public health organizations may be exposed to the findings from this research through dissemination efforts (e.g., conference presentations, publications), potentially leading to tailoring and adoptions of the lessons learned and promising practices revealed in the results.

In addition, insights from this research may contribute to the federal conversation around institutionalizing evaluation, particularly as the Foundations for Evidence-Based Policymaking Act is implemented. Lessons learned and promising practices from the experience of these three CDC units may inform programs at other federal agencies. The factors identified may add to

models aiming to increase evidence-based decision making in public health. These findings may also contribute to larger conversations about building a culture of evidence-based decision making throughout the field of evaluation.

iv. Limitations

Strengths-based approach. Limitations in these case studies may have stemmed from the research's design. The study used a strengths-based approach, influenced by the appreciative inquiry methodology. In particular, the interview guide focused on aspects of the case study that demonstrated success or strengths in using evaluation findings. While this approach was useful in the context of CDC, it can have disadvantages such as suppressing weaknesses and curtailing discussion of challenges that need addressing. However, skillful facilitation can mitigate these effects. In this study, respondents tended to report on positive experiences and facilitators of use. Additionally, the interview guide included one question on potential negative effects of using evaluation data. The researcher made efforts to probe on areas of weakness, obstacles or failures when it was alluded to by the respondent. In allowing for these issues emerge, the interviews surfaced a few challenges but also reinforced and clarified how the case's staff overcame challenges. There may have been additional challenges and barriers present that were not surfaced using this approach.

Unconfirmed factors. For the two factors regarding the political climate and sensitivity to political issues that were not confirmed in the case study data, several reasons may explain their absence. First, the issues surrounding the factors may not have been sufficiently explored in the case study interviews. Second, there may have been sensitivity by respondents in discussing the presence, or lack, of the factors in their CDC unit. The researcher did not identify any contradictory information in the case study data, which may point to either strong homogeneity among the factors that underpin the cases' successes or shortcomings within the interview guide.

The lack of specific questions in the guide may have discouraged a discussion of differing or contradictory issues.

Generalizability. An additional issue inherent in case study research is the limit to which the information gleaned from single, in-depth examination can be generalized. The unique environment and culture of CDC compounds the challenge to generalize the findings; however, thick descriptions of the cases' contexts and diversity among the cases aids in transferability of the findings for non-CDC audiences. The presence of uses and factors in three cases helps to bolster the validity of the results but caution must still be used in applying the findings more broadly. In addition, as noted earlier, the nature of the interviews did not allow for co-occurrence analyses because of limited overlap in the discussion topics and codes. Future research that examines the linkages between types of use and factors, and the strength of the connections, would be valuable.

D. Practice and Research Implications

i. Influencing practice: Making findings actionable

Because the focus of this study was to highlight the factors present in programs excelling at evaluation data use, the researcher and key stakeholders from each case study unit were committed to making the findings of this study useful and accessible. Engagement with the evaluation advisory committee will continue to get feedback and guidance on efforts to shift practice toward more use of evaluation data. The researcher and the three case study stakeholders will continue to collaborate on translating the findings into materials, engaging evaluation groups, and encouraging changes in practice within their professional networks. Below are two examples of these efforts; they remain in flux and will evolve with additional feedback from stakeholders.

Example 1: Key factors across cases. The researcher and case study stakeholders recognized that the full report of the findings is lengthy and the list of factors that contributed to their success could be overwhelming to a reader who sought to improve the use of evaluation data in their units. As described in chapter III, the researcher and one key stakeholder from each case study unit conducted a final phase of the secondary analysis to begin to develop a succinct list of factors that were agreed to be the most critical in their cases' success at using evaluation data. The below draft list was determined by a process of ordering, inclusion, and exclusion through iterative rounds of ranking and deliberation between the researcher and the three case study stakeholders. Feedback from the evaluation advisory committee will be incorporated in time, which may result in changes to the list. This information may be disseminated via a variety of methods, e.g., a one-pager distributed at a workshop.

Table VII. Draft key factors associated with using evaluation findings from three CDC cases, in no particular order.

FACTOR CATEGORY	FACTOR
Organizational	Leadership buy-in
	Organizational: Culture of program improvement
	Adequate staff expertise
User	Trust in evaluator/evaluation
Evaluator	Commitment to facilitating and stimulating use
Evaluation	Communication quality
	Timeliness
	Inclusion of evaluation in program planning

The rationale for this list of key factors focused on the group's concurrence that these are the levers necessary to create an environment favorable to achieving the use of evaluation findings. The group aims to produce a concise list that will empower readers to use the factors and encourage them to incorporate the lessons learned into their own work. As noted earlier, the factors are interconnected and prove difficult to segregate from one another. For units hoping to

increase their use of evaluation findings, this means that several factors must be leveraged or improved upon before change may occur. They expand on a foundation of factors that likely must be in place to have a strong evaluation underway. Indeed, these factors must be built upon a foundation of a credible, adequately funded evaluation conducted by credible evaluators who foster strong relationships with their leadership and programmatic colleagues. While this ranking of factors was not a quantitative component of the original study, the professional expertise provided by the case study stakeholders lend credence to the list. Much work is needed to solidify the list, including incorporating the insights of the evaluation advisory committee.

Example 2: Intersection of findings on types of use and factors associated with use. This study has revealed the interrelated nature of the types of use and the factors associated with use. During discussions with the case study stakeholders and PPEO, the group agreed that the factors identified in this research are strongly interrelated. It would be difficult to isolate a single factor and associate it with a particular use because of the interconnected nature of the influences the factors have on the unit and the people in it. Each category of type of use is affected by many factors. However, there is an alignment of the audiences and types of uses that can be inferred. Using professional judgement in consultation with the case study stakeholders, the researcher conducted an assessment of the mostly likely uses of evaluation data and findings by audience.

Figure 11. Draft alignment of types of use by audience

<i>How could cross-cutting groups use evaluation data and findings to—</i>	<i>How could leaders use evaluation data and findings to—</i>	<i>How could programmatic staff use evaluation data and findings to—</i>	<i>How could evaluation staff use evaluation data and findings to—</i>
<ul style="list-style-type: none"> • Make changes to existing program activities? • Inform professional development? • Achieve accountability to stakeholders? • Change program support structures? • Influence other programs? • Develop best or promising practices? • Publish and present? • Model effective relationships between evaluation and programmatic teams? 	<ul style="list-style-type: none"> • Continue or end the program? • Scale-up the program? • Change funding allocations? • Make staffing decisions? • Mitigate risk to the program? 	<ul style="list-style-type: none"> • Provide feedback to recipients? • Improve and focus technical assistance to recipients? • Determine recipient training needs? 	<ul style="list-style-type: none"> • Change evaluation strategies or performance measures? • Improve evaluation data reporting? • Influence the way people thought about evaluation? • Build evaluation capacity?

This assessment can be a useful reference for leaders in each audience to home in on particular uses as a starting point for increasing the use of evaluation data. Future examination that dives deeper into the intersections between types of use and factors associated with use at CDC, as well as the connections to specific audiences, is a valuable next step in this research.

ii. Opportunities for change in practice

This research can spark efforts towards more use of evaluation findings within CDC and in the field of evaluation. It is the hope that readers will find the results suitable to transfer and adapt to their individual contexts. In addition, the utilization focus of developmental evaluation (DE) can aid in furthering the application of the findings for program improvement and organizational learning. There are opportunities to immediately improve practice to increase the use of evaluation findings as well as explore new avenues of research in this area.

Within CDC. For the first time, CDC leadership and units can access a comprehensive list of the facilitators that influence evaluation use. The strength of this research's findings are

bolstered by the confirmation of the factors in not one but three case studies. CDC units can apply these findings with confidence that they are strongly suggestive that these 25 factors are essential in any program that uses their evaluation findings successfully.

This study's findings can guide CDC units that seek to increase their programs' use of evaluation data and findings can begin with the list of key factors. This list may prove a useful starting place to consider where they might leverage existing strengths. An internal assessment, using the key factors or the full list of factors, is a recommended first action. The factors offer a framework for examining different facets of the organization's and its staff's gaps and opportunities. In addition, the types of use can catalyze conversations within the unit about how evaluation data is currently being used and where opportunities exist. The appreciative inquiry approach used in these case studies may also be a useful model for CDC units to begin to capitalize on strengths first and ease into a deeper look at challenges and areas for growth among the factors and ways to use their evaluation data.

With CDC recipients. CDC units may also extend these findings to their interactions with other organizations. The uses and factors can be used collaboratively with recipients to increase their use of evaluation findings. In turn, recipients may adapt new ways of feeding evaluation data into other programs in the organization. For example, a CDC unit may begin to establish a regular cadence of rapid cycle of reviewing evaluation data with a health department who receives CDC funding, akin to the practice outlined in Case A's narrative. The health department may find value in the new processes, shortening the time from data collection to seeing trends in the program's effects. These successes may lead the health department to adopt similar processes in another division of the health department.

In government agencies and beyond. The results from this research can impact the practices of organizations beyond those with direct contact with CDC. Other government

agencies are in the throes of implementing parts of the Foundations for Evidence-Based Policymaking Act. The findings from this research can inform their attempts to use evaluation data to influence policy creation. These findings can also add a new facet to the conversations about building a culture of evidence-based decision making throughout the government. Academia, foundations, and others in the field of evaluation may be exposed to the findings from this research at conferences and through publications. This study contributes a recent examination of the factors in the literature at play in three real-world cases, and a first examination of this kind at CDC. The emergent findings from this study should be considered in revised models aiming to increase evidence-based decision making in public health.

iii. Dissemination

Plans for dissemination span print, web, and presentations with an aim of creating concise and accessible materials that are relevant for the audiences. Since this research was conducted in the setting of a government agency, the researcher seeks to share the information in as many ways as possible in the spirit of public service and a commitment to sharing knowledge freely. The researcher plans to create 1-pager materials on each case that will be posted and promoted on the CDC website. A quick start guide summarizing the key factors with examples will also be created. A full report excerpted from this dissertation and tailored for a public audience will also be disseminated on the web and possibly through email distribution lists. An interactive workshop for CDC units may be possible in the coming year. To share these findings across the field of evaluation, the researcher intends to publish a practice-focused article summarizing the findings of the case studies, authored with the case study stakeholders. Lastly, these findings will be presented at evaluation conferences, such as the American Evaluation Association's annual meeting, which reach broader audiences than public health and government agencies.

iv. Future research

This study established a set of factors, and types of uses, from which additional research could be developed. Several lines of inquiry could extend the findings from this study. First, it would enhance these findings to explore the barriers that suppress the use of evaluation findings. A converse view of the factors may also aid CDC units by focusing their efforts on both shoring up facilitators and dismantling barriers to using their evaluation findings. Next, an exploration of the interactions between the factors would be valuable to understand how they affect one another and uncover where CDC units should focus to maximize the impact of limited resources. Finally, as touched on in chapter 1, evidence-based decision making is a natural extension of this research. Evidence-based decision making is largely unexplored at CDC. Additional study could explore how evidence-based decision-making manifests in programs that successfully use their evaluation findings, as well as those who do not.

E. Conclusion

This research provided important insights into the use of evaluation CDC. The three case studies shed light on the factors at play in their successful use of their evaluation data and findings. In this first foray into three CDC units' inner workings, the facilitators of their success and the ways they are using their evaluation data were uncovered, along with several challenges. This research set the stage for more research on use at CDC including the interaction of the factors and how they influence the types of use. Ideally, the results from the case studies stimulated thinking and encouraged new and invigorated use of evaluation findings across CDC. The findings may also add to federal government conversations about increasing the use of evaluation data to inform evidence-based decision making. The case studies may also spark renewed interest in how organizations of all kinds can increase their use of evaluation data and findings to improve their efforts.

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VITA

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Education

Doctorate in Public Health, Leadership
University of Illinois at Chicago, Chicago, IL.

Master of Public Health, Health Behavior Health Education
University of Michigan, Ann Arbor, MI.

Bachelor of Arts, Communications in Electronic Media
University of Michigan, Dearborn, MI.

Professional Experience

U.S. Centers for Disease Control and Prevention, Atlanta, GA, August 2006 to present.

- **Deputy Associate Director**, Division of State and Local Readiness (DSLRL), Center for Preparedness and Response. August 7, 2018 – present.
 - Serve as deputy for the Program Planning and Development Unit in the DSLRL Office of the Director, leading operational aspects and partnering on the strategic direction of the team.
 - Lead or co-lead the coordination of cross-cutting initiatives using systems thinking to address complex issues facing state, local, and territorial public health.
 - Analyze issues and formulate comprehensive plans to solve problems collaboratively across CDC and with public health partners.
- **Lead Policy Analyst**, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention. July 5, 2016 – August 6, 2018.
 - Serve as a senior analyst for public health policy and issues management activities for the Office of Program Planning and Policy Coordination.
 - Spearhead Center's opioid crisis response and other complex, high-stakes projects with sound judgment and evidence-based recommendations to leadership.
 - Coach policy analysts on managing multifaceted and nuanced issues, and on delivering exceptional service to NCHHSTP divisions and external partners.
 - Inform required reporting with strategic consideration of risks, opportunities, accomplishments, and areas for improvement.
- **Public Health Analyst**, Office of Public Health Preparedness and Response, October 7, 2012 – July 4, 2016. 40 hours/week. Acting Team Lead, August 23, 2015 – January 11, 2016.
 - Advance evaluative and strategic thinking within OPHPR through consultation and guidance and promote the importance of systematic assessment.
 - Develop visible and influential materials to communicate with Congressional staff, key partners, CDC leadership, and stakeholder groups.

- Led the programmatic and operational management of the highly visible National Health Security Preparedness Index, an annual measure of preparedness across the country, and successfully negotiated its transfer to the Robert Wood Johnson Foundation.
 - Used diplomacy and facilitation skills to engage stakeholder workgroups (with membership from over 25 national and federal government organizations) toward consensus and action.
 - Directed the work of contract teams, including developing and monitoring budgets and contracts, as well as managing deliverable schedules and processes.
- **Deputy Team Lead**, Quarantine Training and Education Team, Division of Global Migration and Quarantine, May 09, 2010 – October 6, 2012. Acting Team Lead, December 2011 – April 2012.
 - Co-directed a team to strengthen the U.S. Quarantine System and public health partnerships.
 - Managed high-visibility, politically sensitive initiatives with key partners, maintaining strong relationships while aligning with branch, division and agency policies.
 - Served as communication lead within branch to ensure messaging supported and aligned with branch, division and agency policies and goals.
 - Advised on and co-coordinated branch evaluation efforts, including an evaluation of cholera communication in influencing behavioral intentions.
 - Collaborated with state and local health departments to support outbreak investigations in Rhode Island, North Carolina, Florida, and Pennsylvania.
 - Co-planned and served as faculty at international training workshops for the Ministries of Health and public health partners in Peru, Guatemala, Indonesia and Trinidad.

Response Roles and Special Assignments

Senior Advisor and Partner Support, State Coordination Task Force. Guided aspects of the establishment of the task force structure during the beginning of the response to COVID-19 and supported the communication and activities with major national partner organizations including ASTHO, NACCHO, CSTE, and APHL.

Lead, Zika Response Liaison Office (OD LNO), Office of the Chief of Staff. Served as the conduit between the Emergency Operations Center's teams, CDC senior leadership, and the Department of Health and Human Services (HHS) during the response to the Zika outbreak.

Deputy Team Lead and Policy Analyst, Ebola Response Policy Unit. Served in a supporting leadership role to a team of 7-10 who monitored political landscape for the response to Ebola and bridged between leaders across the agency and government.

Lead, Policy Unit, DoD Sample Investigation Incident Response. Established and directed the team to address the policy aspects of the response to the release of anthrax.

Policy Analyst, Global Polio Eradication Initiative. Supported the polio eradication effort by creating communication tools and evaluating policy functions.

Communications Officer Co-lead, Division of Global Migration and Quarantine. Shared communications leadership responsibilities in a variety of responses, including to the Japan earthquake and tsunami, and Haiti earthquake and cholera outbreak.

Health Communication Specialist, Division of Global HIV/AIDS, Nairobi, Kenya. Led communication efforts to highlight CDC's HIV interventions and served as country Communications Officer for the first visit of the HHS Secretary to Africa.

- **Public Health Project Manager**, SRA International contractor to NCEZID Division of Global Migration and Quarantine, August 16, 2007 – May 08, 2010.
 - Served in leadership role on contract team and collaborated on the development of team strategic plan and long-range goals.
 - Conducted a three-year needs assessment to evaluate the training, education, and communication needs and assets for nine key partner federal and nonfederal agencies at the U.S. ports of entry.
 - Developed contract staff performance goals and conducted performance evaluations, as well as advised and mentored new and established branch staff.
 - Developed and monitor timelines, budget, and deliverable development.
- **Health Education Fellow**, NCEZID Division of Global Migration and Quarantine through the Association of Schools of Public Health, August 01, 2006 – August 15, 2007.
 - Developed materials for key partners, internal staff, and general public using plain language techniques and with sensitivity to literacy issues.
 - Supported the outbreak investigation of social distancing behaviors, created evaluation instruments and interviewer training, and assisted with dissemination of findings.
 - Directed the planning and execution of the week-long 2007 Annual Quarantine conference.

University of Michigan School of Public Health, Ann Arbor, MI, 2003 – 2006.

- **Research Assistant** for Robert Wood Johnson Foundation-funded Allies Against Asthma
 - Assisted in the planning, implementation, and process and outcome evaluation phases of a study of successful asthma programs.
 - Recruited and conducted in-depth interviews with asthma programs from community-based organizations to international, national, state and local health department initiatives.
 - Co-conducted data interpretation, report writing and results dissemination, and co-presented findings to the Environmental Protection Agency.

Detroit Department of Health and Wellness Promotion, Detroit, MI, 2006.

- **Graduate Student Research Assistant**
 - Advised on and expanded final phase of evaluation for local health department heart disease screening program.
 - Trained student to conduct telephone interviews and provided guidance on data analysis.
 - Served as co-chair of the health department-sponsored Prevention Walk Volunteer Committee; managed over 30 volunteers during the event.

Ovarian Cancer National Alliance, Washington, DC, 2005.

- **Graduate Student Research Assistant**
 - Developed an evaluation plan and survey instruments for a partner education program.
 - Completed a comprehensive website content review with recommendations for design and organization improvements; completed website content migration and editing.
 - Crafted policy letters, press releases, and member newsletter.

Health Assistance Partnership, Families USA, Washington, DC, 2005.

- **Graduate Student Research Assistant**

- Co-developed an intervention proposal for Medicare beneficiaries; created evaluation plan.
- Co-created materials for state-level members, including workbooks, toolkits, and articles.
- Supported strategic planning, including co-developing program goals and objectives.

Michigan Radio, and Detroit Public Radio, Ann Arbor, and Detroit, MI, 2001 – 2003.

- **Production assistant, operations**

- Engineered audio interviews, and edited elements of radio segments.
- Researched stories, and recruited experts, artists and writers for show topics.
- Developed communication materials to market show.
- Supported the twice-yearly fundrive through volunteer management and board operation.

Honors and Awards

Nominated for CDC's Excellence in Human Capital Management: Employee Development Award as part of the team contributing to the Quarantine and Border Health Services Branch's Drug Release Training Program (2020)

National Center for Environmental Health Award for Excellence in Emergency Response (Domestic) as part of the Flint Michigan Water Contamination Response Team (2016) Nominated for CDC Honor Award.

National Center for Emerging and Zoonotic Infectious Diseases (NCEZID) Excellence in Emergency Response (Internationally) Award as part of the Ebola 2014-2015 Response Team (2016)

NCEZID Excellence in Emergency Response (domestic) Award for exemplary support of CDC's response to imported cases of Middle East respiratory syndrome in the United States as part of the Global Migration Task Force (2015)

Office of Public Health Preparedness and Response (OPHPR) Esprit de Corps Honor Award as part of the DoD Sample Investigation Incident Response Team (2015)

CDC Honor Award for 2014 International Excellence in Emergency Response Award as part of the Middle East Respiratory Syndrome Coronavirus Team (2015)

OPHPR Honor Award for Excellence in Innovation for the National Health Security Preparedness Index Project Team (2014)

NCEZID Director's Recognition Award for the Global Migration Task Force's exemplary support of the CDC's 2014 response to imported cases of Middle East Respiratory Syndrome cases confirmed in the United States (2014)

OPHPR Office of Policy, Planning and Evaluation Employee of the Quarter Award (2014)

CDC and Agency for Toxic Substances and Disease Registry Honor Award for Excellence in Policy: Policy and External Relations Unit for Polio Eradication Activation for exemplary leadership in developing policy and sustaining partnerships in support of CDC's response to global polio eradication (2013)

National Center for Emerging and Zoonotic Infectious Diseases (NCEZID) Honor Award for Exemplary Partnership among state and federal agencies to support the response to Japan's nuclear disaster (2012)

NCEZID Award for Excellence in Human Capital Management for the establishment of the Field Operations Training Center (2011)

NCEZID Award for Excellence in Communications for the response to the Haitian earthquake and cholera outbreak (2011)

NCEZID Award for the development of a Preparedness Toolkit for ports of entry (2011)

National Center for Immunization and Respiratory Diseases (NCIRD) Honor Award for Excellence in Communications for the H1N1 influenza pandemic communication strategy (2010)

National Center for Preparedness, Detection, and Control of Infectious Diseases (NCPDCID) James Virgil Peavy Work Force Development Award for Exceptional Contributions on the Surge Capacity Training Workgroup (2009)

Division of Global Migration and Quarantine Award for Outstanding Team, Activity or Workgroup (2009)

NCPDCID Award for strategic leadership in addressing public health threats at U.S. ports of entry and fostering multi-agency coordination and preparedness to protect the health security of Americans (2008)

NCPDCID James Virgil Peavy Work Force Development Award for Exceptional Contributions by the Quarantine and Training Education Team to the agency in support of workforce development (2007)

Leadership and Professional Activities

- Career mentor, CDC Public Health Associate Program, Emory University, and University of Michigan
- Trained facilitator, including for Health Education Week, Population Health workshops, and strategic planning retreats
- Voice-over talent for broadcast services, Centers for Disease Control and Prevention
- Current member, former officer, CDC Behavioral and Social Science Working Group
- Member, Watsonian Society, an organization for public health advisors
- Member, Sigma Xi, a scientific research society
- Member and abstract review, American Public Health Association
- Member and abstract reviewer, American Evaluation Association
- Abstract reviewer, National Public Health Information Coalition and Association of Schools of Public Health
- Manuscript reviewer, Public Health Reports
- Pro Bono evaluator, American Evaluation Association-Atlanta chapter

Publications and Select Presentations

Selent M, McWhorter A, Beau De Rochars V, Myers R, Hunter D, Brown C, et al. Evaluation of Travel Health Alert Notices as a health communications tool during the Haiti cholera outbreak -- Florida, 2011. *Emerging Infectious Diseases*. 2011 November.

Gift TL, Palekar RS, Sodha SV, Kent CK, Fagan RP, Archer WR, et al. Household Impact of School Closure Due to Novel Influenza A (H1N1), Pennsylvania, May, 2009. *Emerging Infectious Diseases*. 2010 August.

Marchbanks TL, Bhattarai A, Fagan RP, Ostroff S, Sodha SV, Moll, ME, et al. An Outbreak of 2009 Pandemic Influenza A (H1N1) Virus Infection in an Elementary School in Pennsylvania. *Clinical Infectious Diseases*. (2011) 52 (suppl 1): S154-S160.

Luckhaupt SE, Kornlyo K, Hastings H, Hunter D, McWhorter A, Edelson PJ. Social Distancing During a School Closure Because of Communicable Disease, Rhode Island 2007.

Acknowledged in: Barrios L, Koonin L, Kohl K, Cetron M. Selecting Nonpharmaceutical Strategies to Minimize Influenza Spread: The 2009 Influenza A (H1N1) Pandemic and Beyond. Public Health Reports. November/December 2012.

McWhorter A (co-presenter), Avchen R, Reinold C. Operational Readiness Review (ORR) Expansion: Pilot Planning. Virtual meeting, 2020.

McWhorter A. Using Evaluation Data and Findings: Exemplar Cases from the Centers for Disease Control and Prevention. University of Illinois at Chicago, 2020.

McWhorter A (co-presenter), Avchen R, Reinold C, Talbert T. Operational Readiness Review (ORR) Expansion: Implementation Discussion. Directors of Public Health Preparedness post-conference meeting, 2019.

McWhorter A (co-presenter), Avchen R, Reinold C, Talbert T. Operational Readiness Review (ORR) Expansion: Implementation Discussion. Directors of Public Health Preparedness meeting, 2019.

McWhorter, A (co-presenter), DeGroff A, Wright S, Vaughan A. Do not throw away your shot! Become an evaluation use revolutionary. CDC Evaluation Day, 2019.

McWhorter A (co-presenter), Goss T, Burkhart T, Dionne C. Strategic Management in Focus: Garfield County Public Health. Public Health Leadership Seminar, University of Illinois at Chicago, 2016.

McWhorter A (co-presenter), Goss T, Bigley C. A Closer Look at BMI and Adolescents in Brazil. Quantitative Methods for Leadership in Public Health Practice, University of Illinois at Chicago, 2016.

McWhorter, A (co-presenter), Goss T, Burkhart T, Dionne, C. Public Health Leadership Under Pressure: Oklahoma Northwest Public Health Region. Public Health Leadership Seminar, University of Illinois at Chicago, 2015.

McWhorter, A (co-presenter), Weber MK. Tweeting public health? Using social media to advance public health objectives. Public Health Leadership Seminar, University of Illinois at Chicago, 2015.

Luna-Pinto C, McWhorter A, Myers R, Cutts E, Hunter D. Using learner-center and distance-based methodologies to effectively train a geographically dispersed workforce. Annual DGMQ Training and Staff Development Workshop, 2012.

McWhorter A (presenter), Myers R, Hunter D, Benenson G, Selent M. Attention Travelers! Evaluating Health Communication with On-the-Move Audiences. American Evaluation Association National Conference, 2011.

McWhorter A (presenter), Hunter D, Holton K, Bair-Brake H, Benenson G. Getting H1H1 messages into the hands of international travelers. Annual Meeting of the American Association of Public Health, 2010.

McWhorter A (presenter), Benenson G, Cox A. Ready, Set, Surge! Engaging the workforce in a training course for surge capacity. Integrated Medical, Public Health, Preparedness and Response Training Summit, 2009.

McWhorter A (presenter), Benenson G, Polder J, Drew A. Ensuring surge capacity resources at U.S. ports of entry. Public Health Preparedness Summit, 2008.

McWhorter A (presenter), Benenson G, Polder J, Drew A, Montgomery J, Boulton M. Meeting the need for surge capacity at the U.S. ports of entry. Annual Meeting of the American Association of Public Health, 2007.

McWhorter A (presenter), Hunter D, Cutts E, Public health and the Customs and Border Protection role. Taught regularly at the Federal Law Enforcement Training Center, 2006-2012.

Appendix A. Environmental Scan of Current Evaluation Practices at CDC

An environmental scan was conducted to get a sense of the issues around using evaluation findings at CDC. I gathered inputs from formal interviews and informal discussions, using both systematic and ad hoc approaches, beginning with a structured examination and then allowing discovery and new questions to lead to me sources. During the conversations, I drew from the tools of Creative Interchange and reflective listening (Sobell and Sobell, 2008), including confirmed paraphrasing to advance discussion, voicing drawbacks and positives, using metaphors, and asking “wish” questions to probe on the ideal state and reveal desired change (Moten Marshall, 2016). Because I work for and was inquiring about CDC with individuals who are funded by or have relationships with the organization, it was especially important to bear in mind the principles of responding in creative interchange: “to see and hear what actually is being communicated prior to any interpreting, assigning of meaning or evaluating” (Palmgren 2016). I recognize that my affiliation with the organization may color how interviewees responded, so I sought to listen carefully to their words but also possible subtext, create a safe space for candor, and allow the conversation to flow toward topics they raised within reason.

I conducted eight interviews with individuals including several who were currently or previously funded by CDC and responsible for developing and implementing evaluations to meet funding requirements, as well as those who were charged with awarding CDC funding and managing recipient evaluations. Themes emerged from the interviews that provided insights on the challenges to effectively using evaluation findings. As previously discussed, there is growing pressure to demonstrate in the reporting substantial progress toward outcomes. Recipients and funders in this environmental scan corroborated this from their experience. They expressed the feeling that evaluations are driven by the requirements of the funder rather than by the needs of the research or program. They noted that the rigidity in evaluation requirements and the intense

focus on showing improvement in outcome metrics to the detriment of foundation-building steps in program development and implementation. This leads to curtailed and narrow evaluations that collect limited data, often weighted toward demonstrating outcome successes.

If funding recipients are tasked with collecting evaluation data that only shows progress on long-term outcomes, they are less able to capture progress on the critical, foundation-building work measured in short- and mid-range indicators. Several individuals indicated frustration and bewilderment at what CDC does with all of the data they collect from recipients; evaluation findings are not disseminated or not shared in ways that are useful to recipients. Interviewees on both sides of the funding process also noted that the structures of grants further impede the effectiveness of the public health programs they seek to support, e.g., the short timeframe for the funding (i.e., 3-5 years); the bureaucratic processes for dispersing and using the funds; and unsustainable funding in any single area, or uncertainty if it will be funded again.

Appendix B. Measurement Table

CONSTRUCT AND DEFINITION	DATA COLLECTED	CODES, SUB-CODES	DATA ANALYSIS
<i>RESEARCH QUESTION 1. What are the ways that program evaluation data and findings are used in the exemplar CDC unit? 1a. How do the CDC unit's uses align with the four types of evaluation data use, instrumental, conceptual, enlightenment, and persuasive/symbolic?</i>			
<p>Instrumental use describes a use that modifies the object of the evaluation, the evaluand (Rich, 1977; Shulha and Cousins, 1997; Greene, 1998). This is often the most direct and visible outcome of evaluation use. This form of evaluation use can inform evidence-based decision making.</p> <p>Conceptual use leads to new understanding of the program (Rich, 1977; Weiss, 1979). It often includes process use, knowledge gained during the practice of the evaluation (Kirkhart, 2000). Process use can often be an unanticipated but beneficial consequence of stakeholder involvement in evaluation by growing evaluative thinking among users (Patton 1997, 2003).</p> <p>Enlightenment use characterizes utilizations that adds knowledge to the field, allowing for use by anyone not just those engaged in the original evaluation (Weiss, 1979).</p>	<p>Document review</p> <p>Key informant interviews</p> <p>Relevant interview question: 9</p>	<p>Make changes to existing program activities</p> <p>Continue or end the program</p> <p>Scale-up the program</p> <p>Change funding allocation</p> <p>Make staffing decisions</p> <p>Inform professional development</p> <p>Fulfill accountability to stakeholders (latent and manifest finding)</p> <p>Emergent*: Improve and focus</p>	<p>Data collected: Document review, key informant interviews</p> <p>Document analysis: use constructs to identify key information in reports, notes, and other materials and gather themes.</p> <p>Interviews: use constructs to guide deductive coding for thematic analysis in Microsoft Excel. Add emergent codes and analyze co-occurring codes.</p> <p>Conduct within-case and cross-case analysis.</p>

CONSTRUCT AND DEFINITION	DATA COLLECTED	CODES, SUB-CODES	DATA ANALYSIS
<p>Persuasive or symbolic use has debated meanings, often negative in connotation, including demonstrating that program values accountability or legitimizing foregone decisions with no sincere intention of using the evaluation findings (Leviton and Hughes, 1981; Greene, 1998; Weiss, 1998; Henry, 2000; Alkin and Taut, 2003; American Evaluation Association, 2008).</p>		<p>technical assistance to recipients</p> <p>Emergent: Determine recipient training needs</p> <p>Emergent: Change evaluation strategies or performance measures</p> <p>Emergent: Improve evaluation data reporting</p>	
<p><i>RESEARCH QUESTION 2. What factors enable and hinder the use of program evaluation data and findings in the exemplar CDC unit? 2a. How are the four categories of factors, organizational/social context, user, evaluator, and evaluation, exhibited in the unit?</i></p>			
<p>Organizational/Social Context Factors</p> <p>Organizational/social context factors refer to the environment in which the program operates that impacts the use of evaluation findings. In the CDC setting, these factors must account for the complexity of the organization and the political pressures and external forces that influence its programs. Well-functioning knowledge exchange systems must exist in the organization to allow information flow to and from the relevant stakeholders to facilitate learning. Several other factors affect the organizational ability to use evaluation findings at CDC, including the presence of leadership buy-in, a</p>	<p>Document review</p> <p>Key informant interviews</p> <p>Relevant interview questions: 4, 5, 6, 16, 17, 18, 19, 20</p>	<p>Leadership buy-in</p> <p>Culture of program improvement</p> <p>Structure of program and evaluation</p> <p>Adequate staff expertise</p> <p>Functional knowledge exchange</p> <p>Maturity of program</p> <p>Political climate</p>	<p>Data collected: Document review, key informant interviews</p> <p>Document analysis: use constructs to identify key information in reports, notes, and other materials and gather themes.</p> <p>Interviews: use constructs to guide deductive coding for thematic analysis in Microsoft Excel. Add emergent codes and analyze co-occurring codes.</p> <p>Conduct within-case and cross-case analysis.</p>

CONSTRUCT AND DEFINITION	DATA COLLECTED	CODES, SUB-CODES	DATA ANALYSIS
culture of organizational learning and support for program improvement, and a co-located structure of program & evaluation teams within the CDC unit.		Emergent: Data-driven culture	
Human Factors: User User factors refers to the factors affecting those who use the evaluation findings. The personal factor in this category accounts for the users' commitment or receptiveness to the evaluation and if they "care" about the evaluation's findings. Use of evaluation findings is also influenced by the users' trust in the evaluator and the evaluation.	Document review Key informant interviews Relevant interview questions: 1, 2, 5, 6, 7, 13, 17, 18, 21, 22	Information needs Personal factor Trust in evaluator, evaluation Commitment/receptiveness to the evaluation	Document analysis: use constructs to identify key information in reports, notes, and other materials and gather themes. Interviews: use constructs to guide deductive coding for thematic analysis in Microsoft Excel. Add emergent codes and analyze co-occurring codes. Conduct within-case and cross-case analysis.
Human Factors: Evaluator Evaluator factors describes the characteristics and actions of the individual planning, conducting, analyzing, and sharing the results of the evaluation. The evaluator demonstrates interpersonal skills in which she/he shows a commitment to facilitating and stimulating use of the evaluation findings, as well as good working relationships with users. This category also encompasses the need for sensitivity to political pressures that may influence use of evaluation and findings.	Document review Key informant interviews Relevant interview questions: 5, 6, 8, 11, 12, 15, 16	Interpersonal skills Commitment to facilitating and stimulating use Credibility Good working relationships Political sensitivity Emergent: Intentional hiring for skills and fit	Document analysis: use constructs to identify key information in reports, notes, and other materials and gather themes. Interviews: use constructs to guide deductive coding for thematic analysis in Microsoft Excel. Add emergent codes and analyze co-occurring codes. Conduct within-case and cross-case analysis.
Evaluation Factors Evaluation factors focus on the evaluation itself. Use of evaluation findings is associated with quality and credible evaluations and the	Document review Key informant interviews	Quality and credibility	Document analysis: use constructs to identify key information in reports, notes, and other materials and gather themes.

CONSTRUCT AND DEFINITION	DATA COLLECTED	CODES, SUB-CODES	DATA ANALYSIS
<p>resulting information must be relevant, legitimate, and accessible by the user. Communication is a key element, as it must be clear, comprehensible and timely. The evaluation and the findings must be aligned with decision-maker expectations and provide value to the decision-making process. Adequate funding to support an appropriate evaluation as well as resources (human and programmatic) to share and learn from evaluation findings may also be a key factor in this category.</p>	<p>Relevant interview questions: 8, 9, 10, 11, 12, 13, 14, 15</p>	<p>Communication quality</p> <p>Findings congruent with expectations and of value to decision making</p> <p>Relevant, legitimate, and accessible</p> <p>Adequate funding</p> <p>Timeliness</p> <p>Emergent: Inclusion of evaluation in program planning</p>	<p>Interviews: use constructs to guide deductive coding for thematic analysis in Microsoft Excel. Add emergent codes and analyze co-occurring codes.</p> <p>Conduct within-case and cross-case analysis.</p>

Appendix C. Key Informant Interview Guide

Case studies in program evaluation: Using program evaluation data

KEY INFORMANT INTERVIEW GUIDE

INTERVIEWEE:

DATE:

INTRODUCTION

Good morning/afternoon/evening. Thank you for participating in this discussion of the ways your program is using program evaluation data and findings. [If not previously acquainted] My name is Amanda McWhorter and I will facilitate our discussion today. Let me begin with a bit of background about the goals of today's interview.

I'm working with the Program Performance and Evaluation Office, PPEO, to look more closely at a few programs at CDC that are having success using their program evaluation data and findings to make changes to their programs. Your program was identified as one that is having success at using your data and findings so we are conducting a case study to understand the factors that have played a role in your effective approach.

This interview will last about 60 minutes. Your participation is voluntary, and you do not have to answer any question that you do not feel comfortable answering. There are no right or wrong answers. If you do not want to be identified in the information from this interview, in parts or in its entirety, you can let me know now or at any time while we are talking. If you do not request anonymity, you may be identified by your role (e.g., programmatic staff, evaluation staff, leadership) in the case narrative, findings, or attributed quotes. You can change your mind about anonymity at any time.

I would like to record our conversation today simply to ensure the accuracy of the information. The recording and transcripts will not be shared with PPEO and will be deleted at the end of the study. I will keep both the recording files and transcripts in a secure location. If you request anonymity, the recording and transcripts will be de-identified. I've got three yes or no questions to capture your consent.

- *Do you agree to proceed with this interview? Yes or No*
- *Do I have your permission to record our discussion? Yes or No*
- *Do you agree to be identified by role? Yes or No*

Great. Thank you. Do you have any questions before we begin?

QUESTIONS

[Inform participants of the program within their CDC unit that is the focus of this case study. Ask them to respond to the questions as they pertain to that program and to specifically let me know if they are referring to a larger or different program at any time during the conversation.]

Participant information

1. What is your role in the [case study program]? What are your key responsibilities?
2. How long have you been in this role?

[Review concepts for this study: program, evaluation, data, and use. Emphasize breadth of definitions and for the participant to think broadly.]

Let's dive right into the program and evaluation, and how you've used the data from the program. Here's what I know about the program and the evaluation: *[Summarize the basics]*

3. Is there anything I missed about the main elements of the program and the evaluation?
[If needed, probe as a continued warm-up: Stakeholders, key population, major challenges, CDC's role, history, evidence-base for program?]
 - a. How do you define program evaluation? What does that mean to you?
[If needed, probe: Is it just program data? Does it mean looking at the data for some specific purpose or something else?]
4. How do you think people feel about learning from evaluation *[branch, division, Center]*?
[If needed, probe: What are the prevailing attitudes here toward evaluation as a learning tool?]
5. What are the facilitators to learning from evaluation in this *[branch, division, Center]*?
6. What are the barriers to learning from evaluation here?
7. Give me a look-ahead: What's the most significant thing you learned from the evaluation of this program?
 - a. What did that lead to, what changed because of it?

Let's move to talk about specifics and some examples of how the program used their evaluation data to inform decisions or changes.

8. How were data, findings, and recommendations disseminated in this program?
 - a. To whom were they disseminated? Internally, recipients, others?
9. I'm going to go through a quick list of some ways the findings could have been used. Please think broadly about how findings were put to use and what changes came about from that. Were the program's evaluation findings used to—
 - a. ☐ Make changes to existing program activities?
 - b. ☐ Continue or end the program?
 - c. ☐ Scale-up the program?
 - d. ☐ Make changes in the way funding is allocated?
 - e. ☐ Make decisions about staffing (e.g., hiring)?
 - f. ☐ Inform professional development?

- g. ☐ Develop best practices?
- h. ☐ Make changes in program support structures?
- i. ☐ Provide feedback to program implementers or recipients?
- j. ☐ Influence the way people thought about evaluation?
- k. ☐ Some other use?

Please give me a few examples of how that worked here. *[Refer back to these examples as needed.]*

Let's talk about the conditions that were necessary to be able to use the data to make changes to the program.

10. How long have you been using the evaluation data in this way?
11. What are the main facilitators to using the program's data and findings?
12. What are some barriers to using the information that you and the program surmounted?
 - a. Are there any that are still a challenge?
13. What do you see as the benefits to using the program's evaluation data?
 - b. Do you perceive any drawbacks or negative consequences?
14. What have been the biggest effects, or impact, of using evaluation data in this program?
 - c. What areas of the program are most successful in using program data?
 - d. What areas of the program could use the data more effectively?

[If needed, rephrase: Where is it still a challenge to use the data? Where do opportunities exist?]
15. What were the keys to your success, so to speak? What would you say the program definitely needs to repeat when it comes to using their data? What should it do differently?
16. What kind of activities do you engage in with *[evaluation or program]*? How do you work together?
 - e. How would you characterize the relationship between evaluation and program?
17. What role do *[branch, division, center]* leaders play in your work? How does *[she/he/they]* impact or influence the use of program evaluation data?
 - f. How much do you think *[she/he/they]* understand the program's evaluation and data? How much do they value it?
18. Is there a champion of using the program's data that makes it all possible? If yes, what does she/he do to be considered a champion of its use?

Let's touch on the structure of evaluation and program in this *[branch, division, or center]*.

19. Is the evaluation and program work separated or joint?

20. How does the structure of evaluation and program here influence or affect how evaluation data gets used?

[If needed, expound: By structure I mean aspects like how evaluation and program are organized, integrated or separated, and how they work together.]

a. What are the advantages and disadvantages?

21. What have been the biggest lessons learned for you? *[Keep open; allow for exploration.]*

22. What would you like to see the program do next in this area? Where do opportunities exist?

23. Do you have anything else to add that we haven't touched on?

Closing

That was my last question. Do you have any questions for us?

Thank you for your time and valuable insights about your program. You are helping us paint a picture of evaluation use here at CDC, and hopefully help others model or adapt this program's approach in their own to increase use of their evaluation data. You can anticipate the findings from this evaluation to be shared on CDC's Evaluation Day which will take place in September and I'll circle back to your program [POC] with the final materials. If you have any further questions, please contact me anytime.

###

Appendix D. Stakeholder Facilitated Discussion Guide

Case studies in program evaluation: Using program evaluation data

STAKEHOLDER FACILITATED DISCUSSION

INVITEES:

Case Study A POC

Case Study B POC

Case Study C POC

Tom Chapel, CDC Chief Evaluation Officer, Program Performance and Evaluation Office

Dan Kidder, Monitoring and Evaluation Team Lead, Program Performance and Evaluation Office

DATE:

PURPOSE: Get participants' feedback on the topline findings and the case study experience using a modified ORID approach as a method of validation.

DISCUSSION AGENDA ***draft questions, need paring down***

- Explain purpose of today's discussion and use of ORID
- Recap aims of the case studies
- Walk-through topline findings
- Facilitate discussion

Objective: Facts, Data, Senses

- What caught your attention in the experience of participating in the case studies? Why?
- Which comments, ideas, or words caught your attention in the findings? Why?
- What were the key points in the document that stood out to you? Why?
- Do you see any significant gaps in the information? What would you add?

Reflective: Reactions, Heart, Feelings

- How did the experience of these case studies affect you?
- What was the collective mood of the group involved? How did they react to the case study process?
- What resonates with you about the findings?
- Where are you really clear? Where are you confused or concerned?
- Where is more work needed around using evaluation findings at CDC?
- What seems the most critical?
- What are you most doubtful about?

- What inspires you or gives you hope?

Interpretative: So What?

- What was your key insight from the experience and the findings?
- What was the most meaningful aspect of this activity?
- What can you conclude from this experience?
- What have you learned from this experience?
- How does this relate to any theories, models and/or other concepts?
- What are the values we are holding here?
- What does this mean for CDC?
- What does this mean for the broader field of evaluation?
- What new vantage point has this given us?
- What difference will it make?
- What would you say lies underneath these issues?
- What other things do we need to consider?
- What kind of decisions do we need to make as a group?
- How could this improve evidence-based decision making at CDC?
- What is being recommended here?
- What questions did this raise for you?
- What insights are beginning to emerge?
- What kinds of changes will we need to make?

Decision: Now What?

- How has this experience and the findings changed your thinking?
- What is the significance of these findings to your work?
- What, if anything, will you do differently because of this experience and the findings?
- What are these themes really about?
- What does this mean for CDC? What about the public health evaluation more broadly?
- How could these findings influence evidence-based decision making?
- If we did this again, what would we change?
- What applications or ideas has this project triggered for you?

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Adapted from Hogan, C. (2003). Practical facilitation: A toolkit of techniques. London: Kogan Page, and The Institute of Cultural Affairs, ToP Group Facilitation Methods: Focused Conversation

Appendix E. Codebook

CODE	DEFINITION	SUB-CODE	DEFINITION
Instrumental use	Defined as a use that modifies the object of the evaluation, the evaluand. This is often the most direct and visible outcome of evaluation use. This form of evaluation use can inform evidence-based decision making. (Greene, 1998; Rich, 1977; Shulha and Cousins, 1997)	Make changes to existing program activities	Defined as changes in approach, strategies or interventions in a CDC-funded public health program.
		Continue or end the program	Defined as decisions made that extend or stop a CDC-funded public health program.
		Scale-up the program	Defined as decisions that expand a CDC-funded public health program beyond an initial, often pilot, phase.
		Change funding allocation	Defined as changes to the way funding is distributed or apportioned to funding recipients and within a CDC department.
		Make staffing decisions	Defined as decisions on how human resources are funded and allocated.
		Inform professional development	Defined as decisions to determine needs for and strategies to improve the skills of CDC staff.
		Emergent: Change evaluation strategies or performance measures	Defined as changes to the design of the evaluation especially in regard to the evaluation approach and measurement.

CODE	DEFINITION	SUB-CODE	DEFINITION
		Emergent: Improve and focus technical assistance to recipients	Defined as changes to the guidance, support, and direction to funding recipients.
		Emergent: Improve evaluation data reporting	Defined as changes to the communication and dissemination of the evaluation data and findings.
		Emergent: Determine recipient training needs	Defined as decisions to determine needs for and strategies to improve the skills of funding recipients.
Conceptual use	Defined as a use that leads to new understanding of the program. It often includes process use, knowledge gained during the practice of the evaluation. Process use can often be an unanticipated but beneficial consequence of stakeholder involvement in evaluation by growing evaluative thinking among users. (Kirkhart, 2000; Rich, 1977; Patton 1997; 2003; Weiss, 1979)	Change program support structures	Defined as the operational or organizational policies, resources, and processes that support the operation of a CDC-funded public health program.
		Provide feedback to recipients	Defined as the processes for providing input and responses to funding recipients.
		Influence the way people thought about evaluation	Defined as the effects of altering how individuals perceived the evaluation and the resulting data and findings.
		Emergent: Mitigate risk to the program	Defined as the ability to lessen the potential threats to a CDC-funded public health program.
		Emergent: Influence approach to other programs	Defined as the effects of changing the strategy or operation of a CDC-funded public health program.

CODE	DEFINITION	SUB-CODE	DEFINITION
Enlightenment use	Defined as a use that adds knowledge to the field, allowing for use by anyone not just those engaged in the original evaluation. (Weiss, 1979)	Develop best or promising practices	Defined as the act of summarizing evidence and creating recommendations that elevate effective practices in a public health program.
		Publish and present	Defined as the act of disseminating evaluation data and findings.
		Emergent: Model effective working relationship between evaluation and programmatic teams	Defined as demonstrating positive interaction and connections between two key groups in a typical CDC unit, evaluation and programmatic staff.
Persuasive or symbolic use	Definition of this use has debated meanings, often negative in connotation, including demonstrating that program values accountability or legitimizing foregone decisions with no sincere intention of using the evaluation findings. (American Evaluation Association, 2008; Alkin and Taut, 2003; Greene, 1998; Henry, 2000; Leviton and Hughes, 1981; Weiss, 1998)	None identified	n/a

CODE	DEFINITION	SUB-CODE	DEFINITION
Organizational/Social Context Factors	Defined as the environment in which the program operates that impacts the use of evaluation findings. In the CDC setting, these factors must account for the complexity of the organization and the political pressures and external forces that influence its programs. (Alkin and King, 2017; Alkin, Daillak, and White, 1979; Johnson et al, 2009; Patton, 2001)	Leadership buy-in	Defined as the positive engagement and commitment to the use of evaluation data and findings by individuals in authority roles.
		Culture of program improvement	Defined as the organizational beliefs, values, and ways of working that encourages and expects individuals to continually monitor and improve the organization's performance.
		Structure of program and evaluation	Defined as the organizational configuration of two keys groups in a typical CDC unit, evaluation and programmatic staff.
		Adequate staff expertise	Defined as the skills and experience of an organization's evaluation and programmatic staff to understand and use evaluation data and finding.
		Functional knowledge exchange	Defined as the existence of spaces and processes that allow individuals to process new information, develop ideas, and share information in a way that facilitates learning.
		Maturity of program	Defined as the age and development of a CDC-funded public health program.
		Political climate	Defined as the prevalent mood and opinions in the organization, potentially influenced by governmental or agency pressures, especially as they pertain the use of evaluation data and findings.

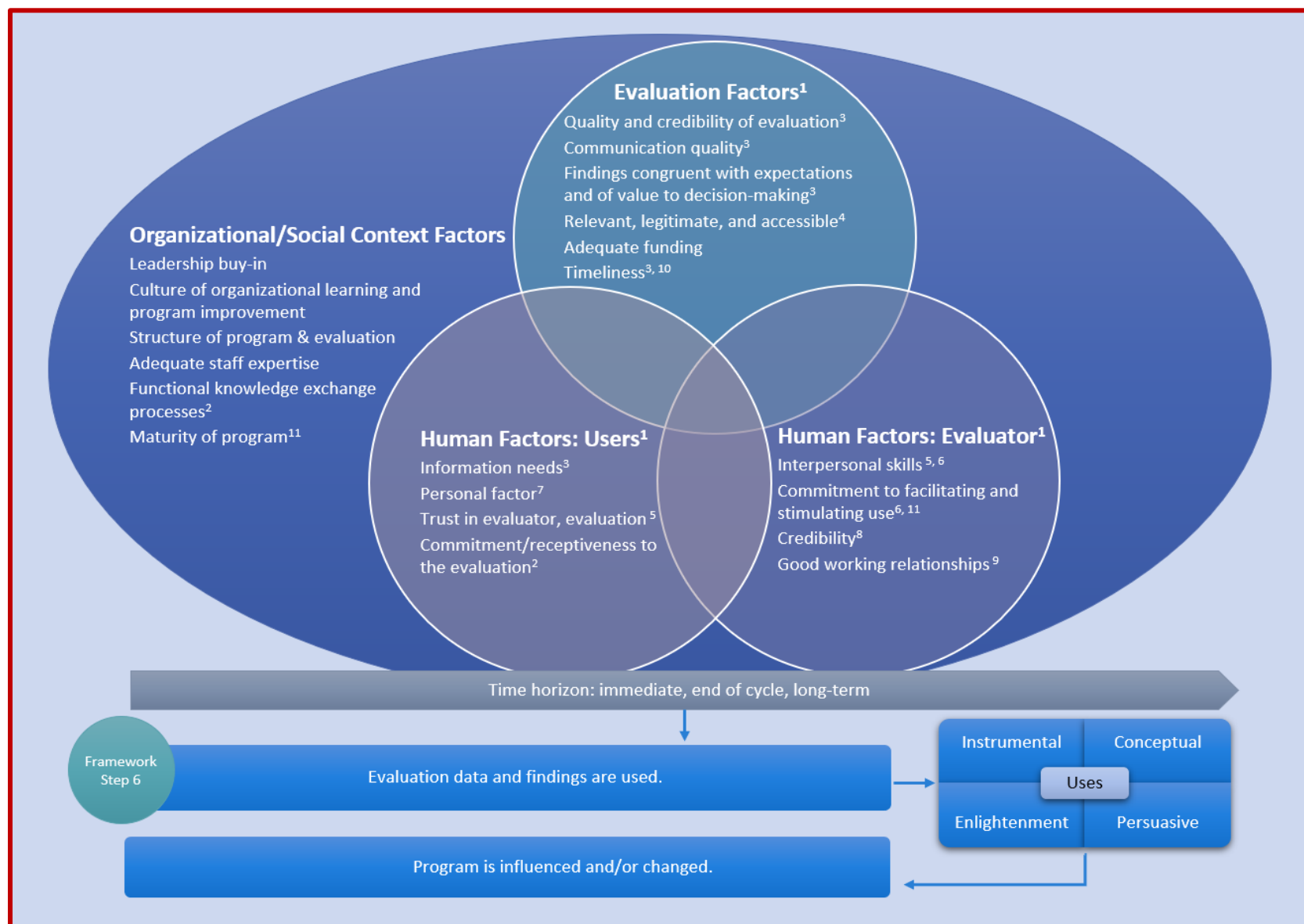
CODE	DEFINITION	SUB-CODE	DEFINITION
		Emergent: Data-driven culture	Mentions of how relying on data has affected the program structure, relationship with evaluation, and/or the system for program monitoring.
Human Factors: User	Defined as those who are the intended users or actual users the evaluation findings. In the CDC setting, users of evaluation findings commonly include programmatic staff such as project officers, evaluators, and leaders. (Alkin and King, 2017; Alkin, Daillak, and White, 1979; Cousins and Leithwood, 1986; Johnson et al, 2009; Patton, 1977)	Information needs	Defined as the needs of the individual seeking or receiving evaluation information, especially in regard to meaning, implications, and actions inferred from the data and findings.
		Personal factor	Defined as the individual's attitudes toward and previous experience with evaluation.
		Trust in evaluator/evaluation	Defined as the belief in the truth, ability, and reliability of the evaluator and the evaluation.
		Commitment / receptiveness to the evaluation	Defined as the individual's openness and dedication to participating in and using the data and findings from the evaluation.
Human Factors: Evaluator	Defined as the characteristics and actions of the individual planning, conducting, analyzing, and sharing the results of the evaluation. In the CDC setting, the evaluation may be designed and conducted by a single individual or a team of evaluation staff.	Interpersonal skills	Defined as the professional soft skills that necessary in the evaluator to build connections and trust with users of the evaluation.
		Commitment to facilitating and stimulating use	Defined as the inherent motivation to seek information, improve evaluation efforts, and continue successfully applying evaluation strategies.
		Credibility	Defined as characteristics of the evaluator relating to training, experience, and expertise to

CODE	DEFINITION	SUB-CODE	DEFINITION
	(Alkin and King, 2017; Johnson et al, 2009; King and Stevahn, 2013)		design, conduct, analyze, and use the evaluation data.
		Good working relationships	Defined as the ability to foster positive and functional connections with colleagues, especially as it pertains to the evaluation and the use of evaluation data and findings.
		Political sensitivity	Defined as savvy in navigating political issues that surround the evaluation and the use of evaluation data and findings.
		Emergent: Intentional hiring for skills and fit	Defined as the purposeful effort in identifying evaluation team needs and seeking individuals who contribute complementary expertise, diversity in experience and background, and soft skills.
Evaluation Factors	Defined by references to the evaluation itself. (Alkin and King, 2017; Alkin, Kosecoff, Fitzgibbon, and Seligman, 1974; Contandriopoulos, Lemire, Denis, and Tremblay, 2010; Cousins and Leithwood, 1986; Shulha and Cousins, 1997)	Quality and credibility of evaluation	Defined as the utility, value, and evidence-based design, and ethical, unbiased and professional, administration.
		Communication quality	Defined as the utility, value, and design, and dissemination of information about the evaluation, especially data and findings.
		Findings congruent with expectations and of value to decision making	Defined as the utility, importance, and significance of the evaluation data and findings to inform users.

CODE	DEFINITION	SUB-CODE	DEFINITION
		Relevant, legitimate, and accessible	Defined as the characteristics of the evaluation that ensure it produces meaningful, authentic, and available data and findings for users.
		Adequate funding	Defined as the allocation of sufficient resources to design, conduct, analyze, and disseminate an effective evaluation.
		Timeliness	Defined as the delivery of evaluation data and findings with promptness and aligned with decision-making timing.
		Emergent: Inclusion of evaluation in program planning	Defined as the involvement of evaluators and evaluation in the early stages and throughout planning and development of a CDC-funded public health program.
Barriers	Defined as challenges (overcome or remaining) that hinder the use of evaluation data and findings.	Emergent: Limited evaluation capacity	Defined as the lack of ability of users to understand and put to use evaluation data and findings.
		Emergent: Competing demands	Defined as the simultaneous requirements on the time and attention of users of evaluation data and findings.
		Emergent: Unrealistic expectations	Defined as the lack of engagement or understanding of the limitations of the evaluation that lead to impractical or uninformed requests of the evaluation data and findings.
Negative effects	Defined as adverse consequences stemming	Emergent: Risks to the program from	Defined as threats to a CDC-funded public health program stemming from intentional or

CODE	DEFINITION	SUB-CODE	DEFINITION
	from the use of evaluation data and findings.	misinterpretation or misuse	unintentional misunderstanding or misapplication of the evaluation data and findings.

Appendix F. Revised Conceptual Framework, reflecting 25 factors revealed in the three CDC case studies



Appendix G. Conceptual Framework References

- ¹ Alkin, M. C., & King, J. A. (2017). Definitions of Evaluation Use and Misuse, Evaluation Influence, and Factors Affecting Use. *American Journal of Evaluation*, 38(3), 434–450.
- ² Patton, MQ. (2001). Evaluation, Knowledge Management, Best Practices, and High Quality Lessons Learned. *American Journal of Evaluation*, 22: 329-336.
- ³ Cousins, B.J., & Leithwood, K. A. (1986). Current Empirical Research on Evaluation Utilization. *Review of Educational Research*, 56(3), 331–364.
- ⁴ Contandriopoulos, D., Lemire, M., Denis, J. L., & Tremblay, E. (2010). Knowledge exchange processes in organizations and policy arenas: a narrative systematic review of the literature. *The Milbank quarterly*, 88(4), 444-83.
- ⁵ Taut, S. M., & Alkin, M. C. (2003). Program staff perceptions of barriers to evaluation implementation. *American Journal of Evaluation*, 24 (2), 213-226.
- ⁶ King, J. A., & Stevahn, L. (2013). *Interactive Evaluation Practice: Mastering the Interpersonal Dynamics of Program Evaluation*. Los Angeles: Sage.
- ⁷ Patton, M. Q., Grimes, P. S., Guthrie, K. M., Brennan, N. J., French, B. D., & Blyth, D. A. (1977). In search of impact: An analysis of the utilization of federal health evaluation research. In C. H. Weiss (Ed.), *Using social research in public policy making* (pp. 141–163). New York, NY: D. C. Health.
- ⁸ Yarbrough, D. B., Shulha, L. M., Hopson, R. K., & Caruthers, F. A. (2010). *The program evaluation standards: A guide for evaluators and evaluation users*. Thousand Oaks, CA: Sage.
- ⁹ Johnson, K., Greenesid, L. O., Toal, S. A., King, J. A., Lawrenz, F., & Volkov, B. (2009). Research on evaluation use: A review of the empirical literature from 1986 to 2005. *American Journal of Evaluation*, 30, 377–410.
- ¹⁰ Alkin, M. C., Kosecoff, J., Fitzgibbon, C., & Seligman, R. (1974). *Evaluation and decision-making: The Title VII experience*. Los Angeles, CA: Center for the Study of Evaluation.
- ¹¹ Alkin, M. C., Daillak, R., & White, P. (1979). *Using evaluations: Does evaluation make a difference?* (Vol. 76). Sage Library of Social Research. Beverly Hills, CA: Sage.

Appendix H. Detailed themes by case

Case A: Snapshot of Themes

Four themes that contributed to the unit's success at using the program evaluation data and findings include—

1. Integrating evaluation at the beginning and throughout the program promoted consistent evaluation use. This infused evaluative thinking throughout the program and built internal evaluation capacity.
2. The culture of the Case A program embraced evaluation. Characteristics of the team that promoted a culture of evaluation use included—
 - A strong relationship between program and evaluation
 - Supportive leaders who championed evaluation use
 - Open-minded individuals who welcomed evaluation capacity building
 - Demonstrated willingness to receive and apply feedback
3. Facilitating trust between CDC and recipients was important for collecting evaluation data and engaging recipients with evaluation findings.
4. Evaluators possessed traits which helped to demonstrate evaluation utility and promote evaluation accessibility, including evaluation expertise, preparation, proactivity, and processing information quickly and identifying potential solutions.

Detailed findings and supporting evidence

Finding 1: Integrating evaluation at the beginning and throughout the program

1a. Integrating evaluation at the beginning

The Case A team intentionally incorporated evaluation at the outset of program development; the evaluator served as a member of the development team. Having the evaluator involved from the beginning allowed for evaluation methods and evaluative thinking to be weaved throughout the development and implementation of the Case A program. This resulted in the program collecting the desired data from the recipients from the start of the project.

- This early engagement of evaluation resulted in at least two effects: Collecting better data from the beginning of the project period, saving valuable time during the project period (in three ways: strategically considering data needs and metrics in the program design, being able to articulate the evaluation to recipients early, and providing them with well-designed data collection tools), and allowing for programmatic or recipient issues to be identified sooner.
 - One project officer stated, “*The key component [to evaluation use] is having evaluation expertise involved in the project design. Having [the evaluator’s]*

expertise involved in informing the writing of the funding opportunity is critical. So that involvement on the front end and not an afterthought is probably the most critical piece. Oftentimes, there are projects where there [are] questions asked in the aftermath... and these projects are not designed properly to capture that information. That's why I think the most critical piece is that early involvement (of evaluators) as the project is being designed."

- Integrating evaluation into the Case A model from the beginning also facilitated the preparation of program monitoring tools for recipients prior to the project commencement. A Case A evaluator described how “creating all of the data collection instruments ahead of time and giving those to people” was essential to the success of Case A. Integrating evaluation at the beginning helped to set clear expectations of project goals and requirements for ongoing program documentation and reporting. The preparation of data collection tools and templates at the beginning of the project further ensured that both internal CDC members and external recipients had a clear understanding of necessary data reporting measures.

1b. Inclusion of evaluation throughout the program

- The Case A team intentionally incorporated evaluation throughout the program cycle. Evaluators were not perceived as ancillary staff to be consulted only for evaluation specific tasks. Instead, evaluators were an asset to the Case A team; they were included in nearly all decision-making processes as well as in routine meetings with recipients, project officers, and leadership staff.
- Much of the intentional inclusion of evaluation stemmed from having an evaluator that demonstrated the utility of evaluative thinking. Interviewees repeatedly praised having an evaluator that could process information quickly, conceptualize the program functions, and simplify program complexities to address potential challenges. Because of the wide applicability of these skills, members of the Case A team felt more inclined to include the evaluator in all aspects of the project. The resulting incorporation of evaluation impacted the program in the following ways: 1) the internal Case A team improved their provision of programmatic technical assistance to recipients; and 2) the capacity of recipients to engage in evaluation data collection improved through intentional CDC efforts to make evaluation more accessible.
- The Case A program also included evaluators on monthly check-in calls with recipients and allotted a section of the call for discussing evaluation-specific updates. Project officers described their increased “appreciation for the evaluation component” and stated that they now understood the importance of “asking the right questions with recipients.” One project officer described the calls as “an opportunity [to] intervene early or raise questions”. As demonstrated through these calls, evaluation was not relegated only to the evaluator. Project officers also began embracing evaluative thinking to improve the project.

- The evaluator at Case A was intuitive and receptive to recipient needs; she willingly created tools for data collection and established an open line of communication with recipients to voice any challenges. One project officer stated, “The evaluator’s expertise and experience has provided an increasing amount of contact with the recipients. [She provides] guidance, design[s] tools and provide[s] those tools to the recipients to help them better capture certain measurable goals within the project.” Infusing evaluation through the creation and dissemination of tools helped build the recipient capacity to engage in evaluation efforts that would be used for program improvement.
- Whether developing data collection tools to assist recipients in evaluation or modeling the importance of asking questions to fully understand a program challenge, the evaluator on the Case A team consistently demonstrated evaluation as an important and accessible approach that can be used to improve funded projects.

Finding 2: Team culture integrates evaluation and promotes evaluation use

The Case A team consisted of an evaluator, an evaluation fellow, two project officers, and a leader. Together they formed a tightly knit, collaborative group that met regularly to, among other issues, discuss evaluation findings and trends emerging from the data. Respondents noted the relationship was built upon a culture of “open-mindedness” and “mutual understanding”. Some characteristics of the team culture include mutual respect between evaluators and project officers, regular communication, easily accessible evaluators, supportive leadership, and openness to feedback.

2a. The strong relationship between program and evaluation

Respondents viewed the relationship between program and evaluation as an important factor in cultivating a team culture that values evaluation. The normalized presence of and exposure to evaluators reduced any intimidation and friction in the programmatic and evaluation relationship. A culture of collaboration, open-mindedness, and open communication flourished in the unit. These factors allowed for a working environment where project officers and evaluators felt encouraged to collaboratively collect and use accurate program evaluation data.

- The working relationship between evaluators and project officers at Case A was viewed as a collaborative effort founded on mutual respect. In context of an evaluator-program officer relationship, valuing unique skillsets and perspectives can serve as a mechanism for motivating and encouraging collaboration.
 - *“There's mutual respect. I think that project officers value what I do and I certainly value what they do and the experiences that they have. For one of the first times in my career, I feel like I'm being respected as an expert...It makes me want to work even harder on this project.”*
- The collaborative work environment also resulted from an open line of communication and feedback between project officers, evaluators, and leadership staff. Within Case A,

evaluation was not a task limited to evaluators. The team cultivated a culture where feedback from both programmatic and evaluation members was essential for advancing the program and its evaluation. Both evaluators and project officers recognized the complementary nature of their roles, which helped to foster a relationship of mutual respect and collaboration. Some notable quotes describing the nature of this relationship include:

- *“Project officers are all taking on evaluation and they will give feedback about evaluation... So it's not just the evaluator giving feedback on the evaluation items; the [project officers] are involved in that.”*
- *“[A project officer] is taking the initiative to make evaluation recommendations. Even on recipient calls, just seeing them grow with their evaluator hats. That's what I want to see for them because I don't think you have to have the title of ‘evaluator’ to do evaluation.”*

Further evidence suggests that working alongside one another contributes to this productive relationship.

- *“Evaluators started being amongst us. They're not like this external force that comes down and descends upon you. But [these were] your colleagues and peers...And I think what helps is that we have these evaluators present in our day to day encounters.”*

This reinforces a previous finding that the evaluator at Case A is seen as one of the team and suggests that facilitators of this collaborative relationship include the availability, approachability, and accessible presence of the evaluator.

2b. Leaders who champion evaluation use

Leadership support was an additional factor contributing to the successful use of evaluation data and findings in the Case A program. Having leadership model and emphasize the importance of evaluation data motivated the Case A team to utilize and strengthen their evaluation findings. This created a cyclical effect where providing data to leadership further justified the consistent collection and use of evaluation data.

- Participants highlighted the role of leadership in shaping the culture surrounding program evaluation. According to respondents, if leaders value evaluation and promote an understanding of evaluation, other team members are more likely to echo this appreciation for evaluation.
 - *“I think there's a culture that is open minded to evaluation. I think the understanding of the importance of evaluation is very clear and grounded. This comes from our associate director (leader) ...So I think the culture is one where*

we understand everything that we do. The data collected through evaluation is what justifies the continuation [of programmatic aspects].”

- Leaders also used evaluation findings to justify continued funding of the program. The Case A leader ensured that decision-makers in the CDC division saw the successes of the program via the evaluation findings. When external funding for the program ended, the division allocated internal funds to continue Case A based on the strength of the evaluation evidence that the program was achieving its goals. Several notable quotes include:
 - *“The division director ultimately makes the decision on funding applications within the division for various projects. And so for the past 11 years, the funding has been consistent, which is a demonstration of her level of support for what we're doing and how it's being carried out.”*
 - *“The division director is so compelled that she gave us the money, she found the money somewhere for the fourth recipient so that we can maintain our funding level.”*

2c. Knowledge management among leaders to facilitate timely evaluation use

The Case A program demonstrated knowledge management and exchange processes that allowed evaluation data to be effectively shared. The unit made intentional efforts to disseminate evaluation findings with programmatic and division level leadership. Notably, prioritizing the sharing of information at the division scale, and specifically with leaders at multiple levels, helped to translate evaluation data into programmatic action.

- The Case A team leveraged existing spaces where the team could share data and information with members of the division, including leaders at multiple levels. One example is a series of discussions called “learning hours” that served as a way to “be transparent about what was happening with [Case A]” and presented an “opportunity to have a dialogue, pose questions [and] challenges, as well as learn [from the data],” (Case A Programmatic Staff). As one project officer described, having evaluation knowledge shared at a division scale helped to shape “the bigger picture.” This facilitated evaluation use since people could openly identify program obstacles and “identify opportunity to advance public health.”
 - *“Our main champion is the associate director (Case A leader) ...she's always trying to get us to disseminate the findings. It was her idea for us to come up with a dissemination calendar or a dissemination table so that we can be very strategic about how we're disseminating the data and how we're using the data to change the program...Even the division director, she's the one who's always putting the*

findings to the forefront and talking about how we're using the evaluation to make the program better. And at any chance, anybody who will listen to her, she would tell them that in [Case A], we've used these results to make the program better.”

- The interaction between the Case A program lead and division director also contributed, in part, to the use of knowledge management as a tool to facilitate the use of evaluation data. Leadership support and use of evaluation findings appeared to be mutually reinforcing factors. As mentioned previously in finding 2-B, leaders who share an understanding of the utility of evaluation are important for creating a culture that is supportive of evaluation. However, it appears that sharing real time findings from evaluation strengthens that leadership support. This creates a cycle of motivation for the Case A team to continue presenting evaluation findings and maintaining leadership support.
 - *“We don't have to fluff findings. We have real outcomes associated with this. And I think that makes the leader want to support it even more. [The leader] knows that it's a good project, but the fact that we're able to feed that quantitative side of her brain, I think that that helps as well.”*

2d. Cultivating an environment that fosters evaluation capacity building

Members of the Case A team were also open-minded and willing to adapt their methods to improve the program. There was a clear expression of a desire to learn which has benefited how the Case A program applies previous lessons from each cycle.

- In the Case A program, embracing evaluation was a two-step process in which leadership articulated the importance of evaluation and team members willingly accepted guidance to integrate evaluation methods into their work. Fostering a team culture that understands and appreciates the utility of evaluation required open-minded individuals who were willing to evolve their perceptions and understand the value of incorporating evaluation. Below are some examples of how the project officers' perceptions regarding the importance of evaluation in Case A evolved:
 - *“As a project officer [I] had a foundation and an understanding of evaluation. But that understanding has grown and I appreciate the evaluation component even more and the importance of it.”*
 - *“I want to know as much as I can...there's just so much out there to learn and this is why it's always been fun. Every time we do a new funding announcement, it's another opportunity to learn, another approach to learn, another way of doing things,”*

- Members of the Case A team who were not expertly trained in evaluation demonstrated a willingness to learn and apply evaluative thinking to their work. This expands upon finding 2a. which highlighted the importance of not limiting evaluation only to evaluators.

2e. Cultivating a team culture that is receptive to feedback

The Case A team expressed a willingness to receive and apply feedback from evaluation findings. This desire for feedback stemmed partly from being open-minded and partly from the program's roots in health equity. The Case A team used several methods to seek and apply feedback. These included more informal pathways of feedback through internal Case A meetings as well as placing a greater emphasis on qualitative data and requesting recipient feedback at the end of each program cycle.

- Part of the reason individuals were so willing to receive feedback was a result of the program being rooted in health equity. Members of the Case A team described how the emphasis of health equity from leadership influenced their commitment to honoring the legacy of the program. Health equity became their purpose, which impacted how they contextualized the program and influenced their motivation to improve the program. The program's roots in health equity justified the need for routine and timely feedback.
 - *"We have a champion all the way from the top: the director. She's a huge proponent and (is) committed to addressing social determinants of health in at-risk populations."*
 - *"In the office of health equity, I think there is a culture that is open minded to the evaluation, and I think, the understanding of the importance of evaluation is very clear and grounded."*

The commitment to reducing health disparities drove the Case A team members to seek real time updates. If evaluation findings demonstrated areas needing improvement, individuals were eager to know that information as soon as possible so appropriate changes could be made.

- Several participants highlighted the importance of qualitative data. While evaluations of programs tend to be more quantitatively driven due to leadership requests and funding obligations, there was a common theme of understanding the narrative behind the numbers. Respondents were eager to know not only aspects of the program that worked and aspects that needed improvement, but also the reasons behind a project's strengths and weaknesses. This allowed for targeted changes and timely program adaptations.
- Another demonstration of openness to feedback occurred when participants described how they sought feedback from recipients at the end of each program cycle. By

welcoming and applying feedback from team members, recipients, and partners, the Case A program improved their provision of technical assistance and improved the use of evaluation data.

Finding 3: Facilitating recipient trust to promote external evaluation use

The Case A program funds capacity building efforts to reduce STD disparities through local-level organizations that work closely with the community. This required fostering trust and open communication with the recipients as well as the community partners. Recipients had to feel comfortable enough to provide accurate data, even if the data showed negative results, and CDC had to be skilled enough to address these challenges without penalizing the recipient. There also had to be a level of trust and confidence such that recipients felt empowered to use the evaluation findings and apply CDC recommendations to make improvements to the program.

- Within the Case A program, recipients are accountable for building local relationships with community stakeholders, creating community advisory boards, using local resources to implement sustainable interventions, and evaluating the progress of these interventions. This type of work requires stable support from CDC officials and open communication. This means that recipients should not only feel comfortable sharing program strengths with CDC but should also feel confident enough to communicate challenges without fearing penalization.
 - *“[In these meetings, recipients say], ‘I’ve never heard CDC say that before. I’ve never felt comfortable telling CDC I have a problem. I’m always scared that I’m going to lose NOFO funding.’ And we [say], ‘...this is very different than what you’ve experienced [before] and we hope that you see a lot more of this open[ness] and honest[y] in Case A.’ That’s why it’s called a cooperative agreement. We don’t want people to feel like it’s going to be punitive if they say something’s not working.”*
- Respondents described how developing this level of trust relies on ensuring that recipients understand the utility of evaluation. Recipients may be more likely to communicate barriers to evaluation reporting and be more receptive to suggestions for improvement if they understand the rationale and benefits of the evaluation. One way that the Case A team was able to communicate this understanding and begin building trust was through an initial orientation session. At the beginning of each program cycle, all recipients and Case A internal team members met in-person for a recipient orientation. These orientations provided an opportunity for recipients to form relationships with other recipients and with the CDC team members. Meeting face-to-face also helped to humanize the work of Case A; through in-person interactions, recipients gained a real sense of the team’s dedication to health equity and their devotion to community empowerment principles. In these orientations, the Case A team also set clear expectations of recipients and developed an open line of communication and trust.

- *“The trust that exists [is] established from the beginning of the project. With the recipients, they feel like they can trust [us] and they can come to us with anything or any of the [road] blocks that grantees face.”*
- Participants also highlighted the role of monthly check-in calls in building recipient trust and using evaluation findings. The frequency of communication between the Case A team and recipients facilitated a culture of trust such that recipients eventually felt comfortable enough to voice challenges. The importance of this open communication and trust on these calls is demonstrated by an instance where a community advisory board (CAB) identified a barrier to STD testing that was outside of the scope of “creative interventions and strategies” (Case A Programmatic Staff).
 - In Baltimore, the evaluation data demonstrated low STD testing rates at a particular clinic. The CAB recognized that youth were not going to this clinic because of the unappealing physical condition of the building. CAB members communicated this challenge to funded recipient and the recipient felt confident and empowered enough to share this challenge with the CDC Case A team. As described by a project officer, “painting the walls, making them bright, and putting pictures up to appeal [to the youth]” increased the number of individuals using the clinic services. This simple fix was possible because recipients felt confident enough to articulate this challenge to the internal CDC Case A team.

Finding 4: Evaluator specific competencies and traits that promote evaluation use

Respondents attributed the successful use of evaluation data, in part, to having an evaluator that was approachable, enthusiastic, well-versed in evaluation, and could process information quickly. The positive, honest, and open-minded personality of the evaluator allowed other individuals (internal Case A team members and recipients) to ask questions at any time, voice challenges, and provide feedback. The evaluator’s professional training in evaluation allowed her to accurately probe recipients on their progress and quickly develop tools to assist recipients in their data collection efforts. Overall, the evaluator saw her role as making evaluation less arduous; she represented evaluation in a way that emphasized utility and minimized burden.

- Two important skills that promoted the use of evaluation findings were preparation and proactivity. Over each iteration of the program and through recipient feedback, evaluators identified common challenges with the Case A evaluation. Instead of waiting for recipients to communicate a challenge, evaluators anticipated areas that could be challenging for recipients. They prepared toolkits and handouts in advance that could be used to assist in program evaluation efforts. All of the available tools were stored in one place that was accessible by all evaluators, project officers, and recipients.

- Evaluators also demonstrated proactivity by taking on tasks that were time consuming for project officers or confusing to recipients. Doing so allowed users to see utility of evaluation instead of laboring to comprehend the findings.
- Evaluators demonstrated an aptitude for processing information quickly. Whether assisting in understanding programmatic functions or providing feedback on certain measures, evaluators were able to grasp the fundamental issues that were at play in complex challenges. Evaluators could then transfer their understanding of the fundamentals into practical solutions or “tools” that made evaluation findings easy to read, understand, and apply. For example, an evaluator explained that *“Evaluation does not have to be this arduous process that nobody wants to do...For me, it's about asking the right questions and really listening to them. Because if you're able to process it really quickly and show it to them, then they can see the value of it.”*
- The evaluator’s expertise in evaluation also contributed to the successful use of evaluation data in the Case A program. As referenced in finding 1b, the infusion of evaluative thinking into the program was important for understanding program findings and making programmatic changes based on those findings. Having a person with formal training in evaluation on the Case A team “provided an increasing amount of contact with recipients, guidance, [and] designing tools... which helped [recipients] better capture certain measurable goals within the project.”

Case B: Snapshot of Themes

Five themes that contributed to the unit's success at using the program evaluation data and findings include—

1. The Case B program emphasized the importance of building internal evaluation capacity to improve the provision of technical assistance to recipients.
2. To promote the use of evaluation data at the recipient level, recipients needed to understand that their efforts were valued and see evidence that the program incorporated their feedback.
3. The use of knowledge management and exchange processes as a tool for program improvement required purposeful communication and succinct presentation of findings.
4. The collaborative working relationship between program and evaluation cultivated a culture of inclusion, where evaluation was infused throughout the program and all staff applied evaluative thinking to their work. This was particularly germane in the joint efforts to develop new NOFOs.
5. Evaluators possessed traits which helped to demonstrate evaluation utility and promote the accessibility of the evaluation including proactivity and preparation; demonstrating an evaluative thinking approach; and presenting evaluation finding in an accessible, easy-to-navigate format.

Detailed findings and supporting evidence

Finding 1: Building internal capacity to promote the use of evaluation findings

Respondents from the Case B case recognized the importance of building evaluation capacity internally. They shared an understanding that it was important that the Case B staff understood the utility of evaluation and had adequate resources to carry out the evaluation. This allowed evaluation to be integrated throughout the program and improved the provision of technical assistance to recipients.

- Respondents emphasized the importance of “building capacity internally [in order] to build capacity externally.” After each program cycle, evaluation findings were not only used “to strengthen processes and activities from a program implementation perspective,” but were also used to improve programmatic and evaluation technical assistance internally. Some respondents indicated it was unreasonable to expect high quality data and improvements from recipients if the CDC team did not have the resources or knowledge to conduct the evaluation strategies.
 - *“Most of our evaluation budget goes into evaluation TA [technical assistance] contract to help us with the evaluation, the division evaluation, NOFO evaluation strategy, and some deliverables...This is all evaluation; it's everything from contract staff to ORISE fellows. Again, building the capacity internally so that we can build a capacity externally.”*

Finding 2: Building recipient trust and engagement with evaluation data

Building trust with recipients was important for accurate data collection and application of evaluation findings. In Case B, recipient trust was developed by providing multiple opportunities for recipient feedback and actively demonstrating the incorporation of that feedback.

- According to programmatic and evaluation staff in Case B, recipients appreciated being engaged throughout the program cycle. “[The recipients] appreciated that we used lessons from [Case B] and engaged [recipients] from the beginning...they appreciated that they were heard,” (Case B Evaluator). As one evaluator explained, *“You have to build that trust and [show] that we really do want their input and we really are incorporating it.”* In Case B, recipients needed to understand that their efforts were valued. Having the recipients see program and reporting changes based on their feedback motivated their engagement with evaluation and helped to build trust with the Case B CDC teams.
- The program structure of Case B enabled recipients to provide feedback on both program implementation and evaluation aspects at multiple points throughout the program cycle. One way in which recipients provided feedback was through peer learning groups. In these meetings, recipients would share information on topics that seemed confusing or would share tips on how to approach a certain performance metric. A partner organization also facilitated the “EEC (Epidemiology and Evaluation Collaborative) group “which consisted of recipients, evaluators, and surveillance staff. This group discussed “reporting requirements...implications for data collection...[and] implications for community engagement” (Case B Programmatic Staff). Through these types of groups, recipients were directly involved in specifying performance measures and refining the language for data collection. According to a program officer, this direct engagement with CDC allowed recipients to “feel like they have a vested interest in evaluation [since] they participated in shaping and framing that work.” By involving recipients in operationalizing evaluation, recipients developed a better understanding of the importance of program evaluation and felt motivated to engage with evaluation data.

Finding 3: Information sharing that promotes evaluation use

There were two primary pathways of information sharing that impacted the use of evaluation findings: communicating with recipients and partners to provide technical assistance and feedback, and communicating with other CDC teams, branches, and divisions to share evaluation findings. Respondents found that incorporating the following techniques increased the effectiveness of information sharing: using purposeful communication, providing timely responses and feedback, and creating succinct reports summarizing evaluation findings.

3a. Using purposeful communication

- The successful use of evaluation data in Case B was partly due to their ability to clearly communicate expectations with recipients. The Case B teams learned to be “granular” and “prescriptive” in all forms of communication with recipients, including “information toolkits” that were shared with recipients to assist in their evaluation efforts.

- One example of the purposeful approach to communicating evaluation data was described by a Case B evaluator: *“For the evaluation approach document, we were really clear that we wanted equity at the front of that... We were very purposeful in making sure that folks could see that from a program perspective and from an evaluation perspective that we were really focused on health equity and we'd be focused on it throughout all of the work we were doing.”* In this case, evaluators intentionally designed documents and other toolkits to ensure that recipients reported findings and interpreted those findings using a health equity lens.
- Another Case B evaluator described the importance of designing evaluation tools to facilitate the collection of the data that could be used for program improvement: *“[We think about] what products can we put together to help with implementation so that they have the right data to give us. How do we share this in a way that puts recipients in a position to be able to share data with us? So we did a lot of that front end [preparation], which to me walks the gray line between evaluation and program. Although probably leaning heavily towards program, we (evaluators) saw that as the way to collect better data. If you have better implementation, then you have better data collection.”*

3b. Facilitating evaluation use by creating a feedback loop with recipients

- Project officers and evaluators also promoted evaluation use by providing timely feedback to recipients. Whenever recipients submitted performance measures or evaluation plans, evaluators worked diligently to return feedback quickly. This quick turnaround demonstrated the program's commitment to giving feedback and aided the recipients' desire to put needed changes into action quickly.
- The timely provision of feedback also provided Case B program staff and evaluators with an idea of each recipient's technical assistance needs. Doing so allowed project officers and evaluators to develop documents and other tools that could be used to improve the program strategies.
 - *“For example, some recipients had more difficulty implementing things like the ‘dual approach’. They had a difficult time thinking through how they would implement a strategy and then also how a sub-awardee is implementing that strategy... So we sent a couple of examples from the field and did some light case study work. Then we translated those into examples of how to implement the dual approach that other recipients [could also] use.”*

3c. Presenting evaluation findings in user-friendly formats

- The Case B team also facilitated the use of evaluation findings by developing concise and appealing infographics that demonstrated recipient progress. Every year the evaluators developed a “snapshot of the findings for heart disease and stroke and for diabetes and for nutrition and physical activity. [These] one-pagers reported on the best [outcomes]”

and were sent to “recipients, policy team members, and sometimes Congressional leadership.” These snapshots benefitted recipients in two ways: recipients could monitor their progress against other recipients at annual benchmarks, and it illustrated how their evaluation efforts were being utilized to strengthen the program. The Case B team also welcomed using these snapshots as it provided them with a “big picture” and allowed them to easily summarize the program’s progress. Overall, these snapshots allowed users to quickly identify program strengths and potential weaknesses that could then be applied to inform future iterations of the program.

- The use of evaluation findings was also demonstrated through “health impact statements.” Instead of submitting lengthy, final evaluation reports, recipients were required to submit health impact statements as a way to “tell the story” of their outcomes. It was “a short document that was able to answer the big questions from Congress.” Because of how succinct and accessible these statements were, “the recipients and leadership at the center were the most receptive to it.” It was a feasible and accessible approach to understanding the how the program achieved its outcomes and how the program used evaluation findings to guide the implementation of the program.

Finding 4: Cultivating a culture of inclusion through a strong relationship between program and evaluation

Evaluation use was in part attributable to the collaborative relationship between program and evaluation. This relationship was strategic and cultivated a culture that was supportive of evaluation. Leaders intentionally hired individuals with an appreciation for evaluation and with unique skillsets in order to build a well-rounded and complementary team. Placing Division for Heart Disease and Stroke Prevention programmatic staff and evaluators in close physical proximity also increased collaboration. Together these factors enhanced the communication quality between program and evaluation and normalized the culture surrounding evaluation use.

- The Case B team demonstrated mutual respect for different skillsets. Respondents understood the importance of having both programmatic and evaluation staff working together on a program. Valuing the unique skillsets that both project officers and evaluators contributed was important for forming a collaborative and respectful working relationship.
 - *“From a programmatic perspective, we know we can't document the successes we have in an organized or standardized fashion without working closely with the evaluation team. [They help us] to make sure that we're getting those performance measures and we're identifying proxy measures to track specific strategies and programmatic implementation.”*
- In Case B, project officers and evaluators recognized a degree of overlap between their roles. This was in part due to project officers recognizing the importance of evaluation. These factors facilitated an open line of communication between the two teams.
 - *“I feel like we have enough interactions, engagements, both planned and on the fly that I feel like we know a lot about what the other is doing to make sure that*

we're all working towards the same outcome. So to me, programming and evaluation really needs to speak to the programmatic implementation, sort of looking at approved activities and strategies as well as making sure those activities and strategies can speak to the performance measures to get us all to the outcomes.”

- The evaluation leader intentionally hired individuals “who shared a passion for evaluation” and filled a skill or strength gap on the team. The strategic hiring process facilitated a culture of mutual respect and allowed evaluation to be integrated throughout the program. The intentional hiring of individuals with a desire to incorporate evaluation into their work combined with the physical accessibility of DHDSP evaluators cultivated a work environment that thrived on the unique skillsets of its team members and ingrained an evaluative mindset across the team.
- The open communication and collaboration encouraged project officers and evaluators to take on tasks outside of their designated roles. Neither team limited themselves to strictly providing feedback on program implementation or evaluation. Both roles developed a “strong working relationship” where they could “communicate very openly, frequently, and frankly”.
 - *“Both sides really needed to be looking at both things and not just siloing it off to somebody else...Recently, states are in the process of submitting evaluation performance measure plans. Theoretically that's the domain of the evaluators primarily. But there's also been discussion of does the project officer need to look at that (evaluation performance measure plans) and make sure that this is linking up with the work plan so there's not a disconnect.”*
- Program and evaluation efforts were also viewed as complementary approaches necessary for the improvement of the Case B program. Any changes to the program needed to be informed by both evaluation and programmatic perspectives. One program officer described how the team used *“the information garnered from previous NOFOs to strengthen [and] home in on the strategic implementation of the program aspects, while keeping in mind the full outcomes to ensure performance measures spoke to those strategies and activities.”* This not only demonstrates the intertwined nature of program and evaluation in program improvement, but also demonstrates that evaluation capacity was not an afterthought. Improvements to the program were tied to ongoing evaluation efforts.
- The open line of communication and collaboration between program and evaluation normalized the input from both program and evaluation staff in decisions, tools, or deliverables. This kept their collaboration and integration in the “forefront” and increased “buy-in” from leadership.
- Physical proximity also facilitated a strong working relationship between program and evaluation. Working on the same floor allowed relationships to form organically. Project officers and evaluators were less intimidated by one another and felt comfortable approaching one another informally. This helped to normalize the daily presence of

evaluators and cultivate a strong working relationship between program and evaluation staff.

Finding 5: Evaluator traits that promoted evaluation use

In Case B, evaluators considered themselves to be a facilitator of data use; they directly engaged with program consultants and recipients to encourage evaluation use as a tool to improve the program. Evaluators consistently demonstrated positivity and proactivity. Having an evaluator that was action-oriented, approachable, proactive, and motivated to make evaluation more accessible was important in creating relationships where recipients and project officers could openly ask questions and communicate challenges.

- Evaluators saw their role as encouraging both project officers and recipients to engage with evaluation as a mechanism for program improvement. The evaluators' job was to ensure recipients were meeting the objectives of the program and that they had the data to support their progress. One leader described how even in a situation where a recipient was experiencing many challenges, the evaluator "was so professional in how she handled it." Instead of devolving into a negative response, the evaluator responded with "we'll figure it out and get it done." The consistent display of professionalism and encouragement was important in building recipient trust and establishing an open line of communication.
- Case B evaluators were also proactive in creating evaluation tools and disseminating evaluation findings to show recipient progress. Evaluators wanted finding reports to be practical, useful, and informative. Evaluators worked to create reporting documents that clarified the evaluation process and simplified the reporting measures. Even when presenting findings from recipient reports, evaluators worked to condense performance measurements into formats that allowed users to quickly gather relevant information on program level progress.
- Evaluators were also skilled at processing information quickly. They were receptive to the needs of recipients and worked quickly to address technical assistance needs. One evaluator described an instance where recipients had trouble implementing a dual approach strategy. As noted earlier, the evaluators conducted short case studies and translated the findings into examples for recipient use.

Case C: Snapshot of Themes

Five themes that contributed to the unit's success at using the program evaluation data and findings include—

1. The organizational culture of the Case C unit contributed to the institutionalization of evaluation use, notably supported by the program's Congressional mandate and data driven leadership. The culture of program improvement is fueled by evaluation data-driven quality improvement cycles.
2. The Case C programs prioritized the presentation of data as a mechanism for ensuring the use of data. By using a data visualization platform, programmatic staff came to view evaluation data as a tool for advancing their work with recipients.
3. Purposeful, focused communication was used to build the CDC's internal capacity for evaluation.
4. Having program and evaluation in the same branch fostered a relationship where both roles understood the benefits of collaboration.
5. Evaluators possessed the qualities which helped to demonstrate evaluation utility and promote evaluation accessibility including the willingness to take on tasks in order to ease the workload of project officers (called program consultants in the Case C unit), the ability to present findings from evaluation data in an accessible, easy-to-navigate format, and fostering a learning environment that allowed program consultants to become comfortable using data visualization dashboards in their interactions with recipients.

Detailed findings and supporting evidence

Finding 1: Evaluation use facilitated by a data driven culture

Expectations from Congress and division leadership facilitated the use of evaluation through Case C program. Because these programs are congressionally mandated to some degree, they are required to submit clear outcomes that demonstrate increases in Case Crates and diagnostic and treatment services. The program's structure combined with the leadership's push for a data-informed work environment, facilitated the ongoing use of evaluation data.

- The Case C unit is comprised of two high profile efforts that are well-funded and have access to adequate resources. The breast and cervical screening component is a congressionally mandated program, and the colorectal screening component receives congressionally specified funding. The high visibility of the program creates pressure to demonstrate significant health outcomes. Members of the Case C teams expressed how the expectation to present “good data” and “stable outcomes” motivated “high quality evaluation” efforts.
- The Case C programs focus on increasing screening rates and treatment services. Assessing the effectiveness of these program required maintaining a comprehensive database that accurately recorded patient level information from electronic health

records as well as broader health system and clinic level indicators. The large datasets and intensive data analyses, coupled with the Congressional expectations, contributed to the emphasis on data use throughout the division.

- The importance of data to the division leadership also encouraged the timely use of evaluation findings.
 - *We have leadership who values data, who understands data, and understand(s) the evaluation. [The leadership] understand the importance of asking the right questions, getting the right data and that the information is getting out in a timely manner so that we can use it.*

Another program consultant went on to say that having this support “from the top is kind of like an expectation” and helps to “shape the culture” of data use. Anytime that an individual approached the director “with concepts, ideas, or changes in direction, the director expected data to back that up.” Within these programs, the leadership played an important role in modeling how, when, and why evaluation data should be used. This set the tone for how everyone in the division, not just the evaluator, should be using data to enhance their work.

Finding 2: Data visualization increased evaluation data use

Evaluators of the Case C programs prioritized the use of interactive data visualization techniques. Using platforms such as Tableau increased the accessibility of the database; program consultants could easily compare screening rates at the recipient level and could offer more targeted technical assistance based on areas of concern demonstrated by the data. This encouraged the ongoing use of data, reduced the burden associated with tracking real-time progress, and empowered program consultants to use data to inform their technical assistance.

- There was an intentional effort in the Case C programs to promote ongoing use of the available database to monitor progress and identify areas of concern early in the project period. The available dataset for these programs was large and could be intimidating to staff that were unfamiliar with the methods to make sense of raw data. One program officer stated, *“Data presentation is key. It doesn't matter how wonderful your evaluation team and your data [are] if you can't figure out how to present it in a way that people can readily use it.”* The recognition of this issue led to the utilization of new tools to improve data presentation.
- Transferring databases from Excel to a more interactive data visualization platform empowered program consultants to use evaluation data. The unit began using Tableau, an innovative and more interactive platform, which facilitated increased engagement with the data. Respondents described Tableau as a “game changer” that “drove program performance.” Users could easily view and compare progress at the recipient level and apply this information to improve technical assistance. During scheduled check-in calls with recipients, project officers could easily access information regarding their current progress and identify areas needing improvement.

- *“When the data got put into Tableau, it was just at my fingertips and in a format where I can see it...It was just so data-friendly.”*
- *“I think the biggest benefit is that you can really see what works and what does not work...sometimes it's the data itself and sometimes it's the way you were trying to get the data- - but [the dashboard] eliminates those problems very quickly...It makes it much easier to say, okay, this is not working. We need to do these things instead.”*

Although there were some delays in getting all team members to adjust to using these dashboards, having data available in a format where users can toggle between different indicators and gather real-time updates empowered program consultants to use data regularly when interacting with recipients.

- Overall, the dashboard eliminated some of the burden associated with having to gather updates through raw data. By transferring data to a more user-friendly dashboard, project officers and evaluators were able to use real-time data to monitor and improve funded projects. Some notable quotes regarding the dashboards and its impact on evaluation use include:
 - *“I really think a huge driver of performance is going to be the development of these dashboards for the clinic data. [It will impact] the QI (quality improvement) cycle with the grantee, the program consultant, and the technical consultant to look in a focused way at their data, [and] make action plans for how you're going to improve.”*
- The Case C unit improved the accessibility of data through these dashboards by hiring data contracting services to process the data. This ensured the credibility of the data and reduced the programmatic burden associated with data use. Because programmatic and evaluation staff did not have to spend as much time cleaning the data, they could allocate more of their time to understanding the findings and investigating potential reasons underlying the observed data. Notably, the Case C unit had a long-standing relationship with the data contracting service. For approximately 20 years, data contractors worked alongside the CDC staff, making contractors essentially one of the team. This long-standing relationship is further evidence of a culture that values data and evaluation.

Finding 3: Emphasizing purposeful communication to spur evaluation data use

The Case C unit effectively communicated the objectives of the program and expectations of recipients using purposeful, focused communication. This ensured the clear communication of evaluation expectations and prompted the use of feedback to improve the program structure and the quality of evaluation assistance.

3a. Using purposeful communication to convey evaluation expectations

- In the Case C programs, communication around the evaluation (as well as the programmatic aspects) was purposed and focused. The evaluation and programmatic leaders intentionally communicated the goals and expectations of the evaluation and

programmatic teams. All members of the staff were grounded in a clear understanding of the programs' aims. In terms of evaluation, this helped to ensure that the most important evaluation questions were answered and that recipients reported consistent measures.

- *“The biggest lesson learned was to have a very specific and well communicated evaluation question... That helped because, for our clinic data, we had a very specific goal and we wanted to see [Case C's] rates go up in these clinics. We were able to communicate that with the branch, with our division, with our grantees and so almost everyone understood that goal and everyone was able to work toward that goal.”*

3b. Using goal-oriented communication to facilitate feedback

- Having the program's end goal in the minds of all team members throughout the program cycle allowed the team members to constantly orient their thinking towards improvement. Throughout the year, one programmatic member described how she kept a flipchart on her wall for 12 months and edited areas of strength and weakness as a method to track future program improvements for the next cycle.
- Relying on goal-oriented communication also influenced the team's desire to seek and apply feedback. The team perceived the use of feedback as a way to achieve the program's aims and make mid-course improvements. As described by the evaluator, one example of the implementation of a feedback cycle was the “an annual grantee survey where information [was collected] on what recipients' biggest challenges, training, and TA needs were.” Findings from this survey informed future trainings that the Case C programs then provided. By intentionally seeking and applying feedback from recipients, the Case C programs improved their provision of technical assistance and addressed recipients' data collection challenges.

Finding 4: The strong relationship between program and evaluation

Respondents viewed the relationship between program and evaluation as an important factor in cultivating a team culture that values evaluation. Having program and evaluation “nested” in the same branch reduced feelings of hesitancy or apprehension in the programmatic and evaluation relationship. There was also a willingness to collaborate and learn from each other that created a working environment where program consultants and evaluators felt encouraged to use the evaluation findings to strengthen their work.

- The relationship between program and evaluation in the Case C programs thrived when both roles understood the value of each of their perspectives. This shared understanding of the importance of each role facilitated collaboration and open communication. One of the benefits of having an open platform to discuss the implications of evaluation data was developing a narrative that accurately reflects the recipient context.
 - *“I think we both try to understand each other. Although sometimes I'll hear we're so data driven on the evaluation team [that] sometimes we'll ask why your screening numbers are going down. And there are really nuances of what's going on at the grantee level or at the state level where the program consultants are.”*

Program consultants get the context of what's going on [while] we just see the data. So we need to always have a better conversation of incorporating and understanding both sides.”

- Having an accessible and approachable evaluation team also contributed to a strong relationship between program and evaluation. Several respondents spoke to the benefits of having a “nested evaluation team in the program branch” as it allowed the evaluator to be involved with the decisions and gain a programmatic perspective. Working within the same program branch also forged a relationship where both program consultants and evaluators felt comfortable to approach one another and ask questions. An evaluator stated that having program and evaluation staff working in the same office is helpful because their constant interaction reduced seclusion and apprehension. Program and evaluation staff “attended enough of the same meetings” and worked close enough that people felt comfortable to “just open [the evaluator’s] door to learn more about data since they are right there.”

Finding 5: Evaluator specific competencies and traits that promote evaluation use

In the Case C unit, evaluators considered themselves to be a facilitator of data use; they directly engaged with program consultants and grantees to assist in understanding the data. Evaluators willingly took on tasks to ease the workload of program consultants, developed processes to make evaluation more accessible, and demonstrated patience as program consultants adapted to using the new data dashboard. Having evaluators that were proactive and willing to make evaluation less arduous for program consultants improved the working relationship between program and evaluation staff. This also helped to free up program consultants’ time so that they may focus on understanding and using the evaluation findings.

- Evaluators dedicated their time to making evaluation useful for program consultants. They understood the amount of work that programmatic staff were responsible for and did not want evaluation to be an additional burden.
 - *“It was very important to the evaluator that the program consultants saw the evaluation team's work and the results that they generated as helpful. The evaluator did not want program to see this as a burden, which at one time I think they did.”*

Evaluators believed that if program staff understood the utility of evaluation and could easily implement evaluation techniques the routine monitoring of recipient progress, program consultants would be more inclined to incorporate evaluation into their interactions with recipients.

- Evaluators were sensitive and receptive to the needs of program consultants. They worked to make evaluation useful and logical for program consultants. Evaluators invited programmatic colleagues to assist in reviewing evaluation plans and had meetings to encourage program consultants to embrace evaluative thinking. The evaluator also presented data using accessible formats, including straight forward slide shows and one-pager handouts:

- *“Routinely the evaluator presents data in a lot of different way(s)...She would do these nice, very straightforward slide shows; these are the questions, here's the data, here's how many clinics. Of course, they designed an amazing outcome evaluation that was just simplified.”*
- Shifting the database to a new data dashboard was not a seamless transition for everyone. Evaluators fostered a safe learning environment for program consultants to gain comfort using Tableau to supplement their calls with recipients and inform the provision of technical assistance. In these situations, evaluators made a concerted effort to demonstrate the utility of evaluation findings.
 - *“I think [having] patience to understand ... your audience, how they feel about evaluation and just addressing that and taking the time to build the relationships and build capacity and interest... are [the] keys to success.”*

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