Childhood Poverty and Its Impact on Health and Well-Being: Enhancing Training for Learners Across the Medical Education Continuum

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Abstract:

Objective: Childhood poverty is unacceptably common in the U.S. and threatens the health, development, and lifelong well-being of millions of children. Health care providers should be prepared through medical curricula to address the health harms of poverty directly. In this article, authors from The Child Poverty Education Subcommittee (CPES) of the Academic Pediatric Association Task Force on Child Poverty describe the development of the first such child poverty curriculum for teachers and learners across the medical education continuum.

Methods: Educators, physicians, trainees, and public health professionals from 25 institutions across the US and Canada were convened over a two year period and addressed three goals: 1) define the core competencies of child poverty education, 2) delineate the scope and aims of a child poverty curriculum, and 3) create a child poverty curriculum ready to implement in undergraduate and graduate medical education settings.

Results: The CPES identified four core domains for the curriculum including the epidemiology of child poverty, poverty-related social determinants of health, pathophysiology of the health effects of poverty, and leadership and action to reduce and prevent poverty's health effects. Workgroups, focused on each domain, developed learning goals and objectives, built interactive learning modules to meet them, and created evaluation and faculty development materials to supplement the core curriculum. An editorial team with representatives from each workgroup coordinated activities and are preparing the final curriculum for national implementation.

Conclusions: This comprehensive, standardized child poverty curriculum developed by an international group of educators in pediatrics and experts in the health impact of poverty should prepare medical trainees to address child poverty and improve the health of poor children.

Introduction:

The Great Recession of 2007[1] triggered an increase in child poverty rates raising concern for many American families and leaders.[2] The United States, compared to many western nations, has high rates of child poverty with 22% of children living in families below the Federal Poverty Line (FPL). Families with children have suffered disproportionately during this Recession, with 2.9 million more families now living below the FPL, bringing the total to 16.1 million households in 2015. In addition, these families have been disproportionately left behind by the recovery.[3]

During the same time frame, a growing body of evidence is emerging defining the negative impact of child poverty on health, development, and achievement across the life-course. Research in several disciplines is explaining the mechanisms and far reaching health effects of child poverty.[4] In the short term poverty is associated with developmental delay, asthma, dental caries and obesity. Long-term outcomes of poverty include increased incidence of mental illness, heart disease, and premature death.[5]

The prevalence and impact of child poverty creates a need to train doctors to assess and mitigate poverty's effects. This is important as many low-income children receive primary medical care in "safety net settings" where care is delivered by pediatricians-in-training, including hospital-based continuity clinics, teaching Federally Qualified Health Centers (FQHCs), and emergency departments.[6]

Innovative enhancements to training in child poverty are imperative to impact health and well-being. Recent health care reform anticipates that population level health improvement will become the goal of the health care team. [7] This cannot be done without first understanding the role of poverty in primary prevention. Therefore, the Academic Pediatric Association's Child Poverty Education Subcommittee (CPES) formed to develop a curriculum to train future physicians on child poverty and its impact on health and well being. In this manuscript the CPES members describe their process to date: 1) mapping the current state of similar training and accreditation requirements; 2) defining the curricular gaps and barriers that exist; 3) building the team and curriculum; and 4) future directions for curriculum evaluation and dissemination.

Mapping existing training and accreditation

Existing Training

The value of a pediatrician understanding a child's context is not new[8]. As recently increasing numbers of children live in poverty, there has been a concomitant increase in the need for providers to care for them. Since 2005, training in community pediatrics has been championed by the American Academy of Pediatrics (AAP) Community Pediatrics Training Initiative which is dedicated to improving child health by strengthening community pediatrics and advocacy training.[9] Evidence exists demonstrating that such training is impactful.[10,11] Pediatric residents who learn the concepts of social determinants and the skills of community engagement are more likely to continue these behaviors throughout their career.[12,13] Current training to address the health effects of poverty has been recently developed in Pediatrics[10,14-16] and new models in Internal Medicine are emerging.[17] These important early examples vary widely in content, depth,

and delivery which undermines systematic and broad dissemination. This emerging need is echoed in evolving educational accreditation requirements.

Accreditation Requirements

Pediatrics has emerged as a leader in adapting training requirements, while medical schools still do not require training in child poverty. In 1997, the Pediatric Residency Review Committee required advocacy training[18] although training specifications were not delineated. In addition, the core competency evaluation framework made it difficult to assess residents' management of issues related to child poverty.[19] The Pediatric Milestone Project[20] may facilitate improved assessment of the competency domains (Patient Care (PC),[21] Interpersonal and Communication Skills (ICS),[22] Systems-based Practice (SBP),[23] Professionalism, and Personal and Professional Development (PPD)[24]) that relate to the care of children living in poverty. (Table 1) With competency domains delineated by competencies and then further divided into distinct observable milestone levels, residents can recognize their current level of performance in assessing issues related to poverty and devise self-improvement strategies. This potential to integrate meaningful evaluation and feedback into teaching rotations that regularly address child poverty (i.e. continuity clinic, advocacy and community health blocks) is critical. Since twelve of the 21 competencies initially selected as key indicators of resident performance are highly relevant to the discussion of child poverty and advocacy[25] teaching can be integrated and readily assessed in clinical practice.

Entrustable professional activities (EPAs) are defined as the routine activities a professional is expected to perform independently. Institutions of both undergraduate and graduate medical

education are starting to incorporate EPAs into evaluations as a means to bridge the gap between the competencies and clinical care.[26, 27] Several of the EPAs set forth by the American Board of Pediatrics (ABP) and the Association of American Medical Colleges (AAMC) contain elements that require knowledge of the intersection between poverty and health. For example, a patient interview addressing the social determinants of health is one element separating an entrustable from a pre-entrustable learner.[28] Other similar EPAs include working in inter-professional teams (ABP EPA 15, AAMC EPA 9), provision of a medical home (ABP EPAs 5 and 6) and the application of public health principles in the care of communities (ABP EPA 14).[29,30] Due to the prevalence and increasing relevance of addressing poverty, it has been suggested that caring for children from underserved populations deserves its own EPA.[31]

Existing Training Gaps and Barriers

Training Gaps

Traditional medical education fails to teach medical students[32] and residents to identify and address poverty.[33] Lack of training arises from 1) a lack of evidence-based curricula, 2) limited experienced faculty, and 3) competing curricular priorities. The lack of a curricular standard for poverty-informed care risks reinforcing harmful bias and misperceptions about low-income patients. [34] Most pediatric trainees lack direct life experience with poverty.[35] This world-view gap may limit the trainees' understanding and empathy of poverty's impact. While educational exposure can never equal personal experience, training in the health impacts of child poverty may help align the mismatch.[36]

Training Barriers

Two barriers of our clinical systems exist when considering an integration of poverty into medical education 1) clinic capacity, and 2) disconnect between medicine and public health. The needs of economically struggling families often require a multidisciplinary approach, which clinical settings often lack. Trainees can experience frustration when unable to respond to their patients' needs, resulting in resentment. Explicit training to recognize the systems-level issues at play are necessary to counter common societal stereotypes that can easily arise.

A second barrier is the historical lack of cohesion between medicine and public health. The recent shift in some medical school curricula toward greater consideration of social determinants of health is a welcomed first step in narrowing the divide. Medical education curricula would benefit from imparting basic tenets of public health: poverty is a root cause of disease causing pediatric morbidity and, via the life course, adult-onset disease.[37,38] The science of poverty's detrimental effects on health is well defined and could seamlessly be integrated into the teaching of pathophysiology, biochemistry, and clinical medicine. Teaching such content will require faculty expertise and collaboration across varying disciplines. This multidisciplinary approach is underway in some programs across the county.[39-41]

Building the Team and Curriculum

Building the team

A diverse multidisciplinary team of educators, physicians, and public health professionals from the US and Canada convened to develop a curriculum on child poverty and its impact on health. Members were recruited from the Academic Pediatric Association (APA), the Council on Medical Student Education in Pediatrics (COMSEP), the Association of Pediatric Program

Directors (APPD), and the American Academy of Pediatrics (AAP) to create a diverse group

representing a broad range of perspectives. The CPES included 32 members, from 25

institutions in the US and Canada. The CPES then divided into four workgroups to develop

curricula. Each workgroup intentionally consisted of 5-8 members with self-identified expertise

in the areas of public health, curriculum design, survey development, program evaluation and

qualitative research. (Table 2) A separate editorial team was identified which included

members from each workgroup. The editorial team was tasked with reviewing and editing

materials from all workgroups at key intervals to ensure the creation of one cohesive curriculum.

Building the Curriculum

The CPES created a schematic to clarify domains of the new child poverty curriculum, ("the

Poverty Curriculum") by delineating existing components from those needing development.

(Figure 1) Much existing curricula involve community immersion activities, such as facilitated

visits to Woman, Infant and Children (WIC) offices, Head Start sites, homeless shelters, etc.

Providers should be familiar with such valued institutions that serve low-income populations.

However, these visits do not sufficiently address underlying elements which drive child poverty.

Thus, four key domains for training were identified: Epidemiology, the Social Determinants of

Health, Pathophysiology, and Leadership and Taking Action.

Utilizing the principles of backward design,[42] the workgroups began by drafting goals and

objectives for their domain. Initial goals and objectives were shared via the APA's Wiki[43] for

review by the larger CPES group and editorial team. The editorial team used an iterative process

with the workgroups to refine the goals and objectives, ensuring clarity and reducing redundancy

across workgroups. Each workgroup ultimately generated two goals with 3-4 corresponding

learning objectives. (Table 3)

With the goals and objectives set, the workgroups shifted focus to building interactive learning

modules targeted to those objectives. Each workgroup is currently creating the modules via

group discussion and consensus building through virtual, telephone, and face-to-face

interactions. The editorial team continues to review the modules at strategic intervals to provide

guidance and standardization across the four modules.

Module design was grounded in adult learning theory[44] and utilized a flipped-classroom model.[45]

The four modules include assignments to complete prior to the session, a one-hour in-person

session focused on active discussion and application of the concepts, and optional in-depth

follow-up activities for advanced learners. Facilitator guides are being created to standardize the

educational components. For example, a "train-the-trainer toolkit" is under development to

support faculty enhancement of their own knowledge and skills.

 Future Directions:

Future directions for the CPES include implementation and evaluation, dissemination and

tailoring the work to local communities.

Implementation and Evaluation

Once all curricula components are complete, we plan to pilot and evaluate the Poverty

Curriculum at several sites. A logic model was developed as a preliminary framework to define

inputs, resources and activities necessary to create the desired short and long-term outcomes. (Figure 2) Prior to launching the Poverty Curriculum's evaluation, input will be sought from nationally renowned educators.

- *Short-term outcomes*

Short-term outcome metrics, although lower on Kirkpatrick's evaluation model,[46] are necessary to assess the feasibility of curriculum implementation from the faculty perspective and the changes in learner knowledge and self-assessed skills. Changes in learner practice and attitudes will be assessed via previously published tools and may also be reflected in the corresponding milestones and EPAs. Since learner reflection is critical, qualitative analysis of reflections on attitudes towards caring for children in poverty and provider bias, among others, will be sought.

- *Long-term outcomes*

Long-term learner outcomes involve assessment of application of knowledge and skills on screening and intervention of issues related to poverty, either in simulation or actual clinical care. These types of outcomes will potentially require use of Observed Structured Clinical Examination, direct observation, simulation and/or caregiver surveys. The ultimate goal of the Poverty Curriculum is to improve patients' and families' health and well-being. Therefore, a significant long-term outcome is impact on patients, including the proportion of families assessed for appropriate public benefits (i.e. SNAP, EITC), housing assistance and educational interventions in the learner's identified population (i.e. continuity clinic panel). Ultimately clinical practice will evolve from *ad hoc* to universal screening and intervention as the new standard of care. This shift aligns with the new perspectives put forth by the Affordable Care Act via accountable care organizations where physicians expand their practice from the individual patient towards improving the health of populations.[47, 48]

The leadership and taking action module of the Poverty Curriculum aims to empower learners to engage in policy to alleviate poverty-induced health threats. This could be measured by tracking the proportion of learners continuing to engage in legislative advocacy (i.e. letters, calls or visits to elected officials) after completion of the curriculum. This will complement existing community pediatric training that engages faculty and residents at the local level.

Academic Dissemination

The dissemination of this work will be through traditional venues (i.e. workshops, peer-reviewed publication) and sharing curricula materials via on-line curricular repositories (i.e. APA portal, APPD Shared Warehouse, MedEdPortal). Since many practicing academic faculty have not had formal training on child poverty, dissemination of this curricula will also provide training for current faculty. The traditional setting for curricular diffusion is through national meetings, such as the Pediatric Academic Societies (PAS) annual meeting. To date we have met with success in presenting our preliminary work to like-minded, early adopter faculty with poster presentations (PAS 2014, Pediatric Educational Excellence Across the Continuum 2015) and will be presenting the first CPES workshops at the 2016 APPD and PAS meetings.

Tailoring to local communities

Finally, an important consideration is the need to create a flexible national curriculum that can be tailored to account for local and regional differences in rates of poverty by population. Without such adaptation, the curriculum might provide insufficient attention to the ways neighborhood and race shape the face of poverty in the United States. This is similar to disseminating new

evidence-based guidelines to practicing physicians on the treatment of otitis media, as practice guidelines must consider local bacterial resistance patterns.

Conclusion

There is an urgent need for training learners across the medical education continuum about the impacts of child poverty on health. The increasing child poverty rate, health care reform's focus on population health, and emerging science on the impact of poverty on health define the gap in medical education. This innovative training is aligned with LCME and ACGME goals for equipping physicians to provide family-centered, culturally-aware, holistic care for patients and families emphasized in many of the competencies and EPAs. While this Child Poverty Curriculum will be a strong educational starting point, much work remains in evaluating the most effective educational interventions to achieve the CPES's ultimate goal of integrating a robust Child Poverty Curriculum across the continuum of medical education.

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