Addressing population health inequities: investing in the social determinants of health for children and families to advance child health equity

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Purpose of review
This review provides a critical assessment of recent pediatric population health research with a specific focus on child health equity. The review addresses: the role of the healthcare sector in addressing fundamental social drivers of health, challenges within healthcare organizations in addressing health-related social needs and the social determinants of health, and the rationale for incorporating race and racism in pediatric population health research and practice.

Recent findings
The coronavirus disease 2019 pandemic brought greater attention to the disparities and inequities in American health and healthcare. In response to these stark inequities, many health systems are adopting efforts and initiatives to address social needs, social determinants of health, racism, and health equity. However, empirical evaluation detailing the effectiveness of these interventions and initiatives is limited.

Summary
While attention to identifying social needs among pediatric populations is increasing, there is limited evidence regarding the effectiveness of these interventions in producing sustained reductions in health disparities. To advance child health equity, researchers should move beyond individual behavior modification and directly examine fundamental drivers of health inequities. These drivers include government and health policies as well as societal forces such as systemic racism.

Keywords
child health, health equity, health related social needs, population health, structural racism

INTRODUCTION

Achieving sustained improvements in population health with a focus on equity in the United States is urgently needed. The lasting social, political, and economic impacts of the coronavirus disease 2019 (COVID-19) pandemic elevated concerns about the health of the nation, yet the warning signs of persistent inequities were mounting even before severe acute respiratory syndrome coronavirus 2 (SARS-CoV2) was declared a global pandemic in 2020. In fact, the health of the U.S. population has been declining in recent decades along with the health trajectories of children and young adults nationwide [1▪,2].

In the wake of pockets of deepening poverty, increasing economic inequality, growing social and political division, and the collective trauma wrought by the pandemic, the United States also faces a youth behavioral health crisis. This crisis will produce pervasive effects including worsening trends in substance use, limited access to behavioral healthcare, and increased chronic disease burden for the adult population in the future. Behavioral and physical health threats disproportionately impact historically marginalized racial and ethnic groups, people living in poverty, families with children, and rural communities [1▪]. Poverty represents a clear threat to the health of the nation in the decades ahead [3,4].

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Curr Opin Pediatr 2023, 35:8–13

DOI:10.1097/MOP.0000000000001189

KEY POINTS

- Understanding how healthcare savings and investments impact population health and health equity is critical in the healthcare sector transition to value-based care, particularly as it relates to optimizing outcomes that advance health equity across the life course.
- Defining and demonstrating the importance of healthcare delivery systems' roles in addressing the social determinants of health to advance population health and health equity is essential. Interventions should target upstream contributors to health disparities rather than focus on individual behavior modification alone.
- Social needs screening and social determinants of health (SDOH)-focused initiatives are increasingly prevalent, but the evidence to support their impact on health outcomes remains limited.
- SDOH interventions need to fully assess and address racism and other systemic and structural factors that influence healthcare delivery systems.

The role of healthcare delivery systems in achieving optimal health of the U.S. population remains a central issue. At its core, population health is defined as ''the health outcomes of a group of individuals, including the distribution of such outcomes within the group [5].'' The World Health Organization defines health equity as ''the absence of unfair, avoidable or remediable differences among groups of people, whether those groups are defined socially, economically, demographically, or geographically or by other dimensions of inequality [6].'' The social determinants of health are integral components of health equity and can create and sustain health disparities through institutional structures and social systems [7]. Social determinants of health (SDOH) are ''the conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life [8].'' Racism and discrimination are examples of social determinants of health that function within systems and structures, including healthcare [7,9]. Overall, conditions related to SDOH are estimated to account for 30–55% of health outcomes [8].

Achieving optimal population health outcomes for the nation requires progress toward health equity, which is measured by changes in the magnitude of health disparities between groups. Health disparities, or the ''preventable differences in the burden of disease, injury, violence, or opportunities to achieve optimal health that are experienced by socially disadvantaged populations [10]'' are impacted by interpersonal, political, and societal factors. Health disparities are persistent and costly, with some estimates of lost productivity associated with health disparities reaching over $1 trillion [11]. As the healthcare sector continues its evolution toward value-based care that ties compensation to population-based clinical outcomes, it is critical to understand where opportunities exist for healthcare investments to improve population health overall, reduce health disparities, and achieve health equity for children and families.

Pediatric population health research and practice are still coming to terms with the intersecting impacts of poverty and racism on child health and their impacts on future morbidity and mortality among adult populations. This article examines current strategies at the intersection of pediatric population health and health equity with a focus on three key issues: the role of the healthcare sector in addressing fundamental social drivers of health, challenges for healthcare organizations in addressing child health equity through the lens of the social determinants of health, and the rationale for incorporating race and racism in pediatric population health research and practice.

THE ROLE OF HEALTHCARE IN ADDRESSING THE SOCIAL DRIVERS OF HEALTH OUTCOMES: THE CURRENT STATE OF POPULATION HEALTH EFFORTS

The social determinants of health have been linked to health outcomes and utilization. Rigdon *et al.* [12▪] conducted a retrospective cohort study of patients with at least one identified social risk factor and demonstrated that children with risk factors had higher rates of chronic conditions including attention-deficit/hyperactivity disorder (ADHD) and asthma when compared to children without any identified social risk factors. Furthermore, there was a positive association between increased number of social risk factors and emergency department utilization and hospitalizations.

Attention to SDOH, including screening pediatric populations for unmet health related social needs, has increased over the past two decades. A systematic review by Sokol *et al.* [13] found that SDOH screening among pediatric populations most often examined domains relating to economic stability and family context. Garg *et al.* [14] conducted a cluster randomized controlled trial among mothers of healthy infants at well child visits and screened for needs such as housing, food security, and education. Mothers in the intervention arm had greater odds of being enrolled in a community resource, of being employed, and of having childcare, as well as lower odds of being in a homeless shelter. A recent systematic review of social needs

screening research studies among the general population found that most studies reported process measure findings, nearly half reported outcomes related to SDOH, and only about one-third of studies reported health outcomes or findings related to healthcare cost and utilization. Findings were overall positive for process measures and mixed for health outcome as well as healthcare cost/utilization measures [15▪▪].

Thus, most existing studies discuss interventions and/or referrals performed after positive screens. Yet, there is less understanding and attention in the literature on whether SDOH screening accurately assesses a child's social needs. Furthermore, a recent update to the Patient-Centered Outcomes Research Institute interactive evidence map of social needs interventions found that the majority of published literature focuses on adult populations, and that there are few high quality, randomized controlled trial studies [16▪]. There is also limited evidence demonstrating whether referrals and interventions after screening adequately address the various needs experienced by specific populations of children or ultimately produce lasting improvements in overall well being [13].

The Affordable Care Act mandated that nonprofit hospitals engage with communities to improve overall health and conduct community health needs assessments every 3 years [9]. Many children's hospitals have engaged in population health efforts through collaborations with community organizations to address the social determinants of health [17]. Franz *et al.* [17] examined community partnerships and cross-sector collaboration by children's hospitals as mechanisms for moving upstream to address social and behavioral health needs. Other approaches include engaging community health workers to address social needs and connect patients to community-based organizations [18,19].

Health systems are providing direct funding for community programs to address the SDOH. Horwitz *et al.* [9] identified over fifty health systems from 2017 to 2019 that invested a total of $2.5 billion in community programs, with the most funding spent on housing-focused interventions and employment. Other areas of investments included education, food security, and transportation. NYU Langone's community-based program, ParentCorps, engages parents living in low-income households and belonging to historically marginalized racial and ethnic groups during school transitions [20]. And, the Kaiser Permanente system has invested in several youth social determinants programs, including $20 million in funding for youth workforce development in Seattle, WA [9]. However, many programs have faced challenges demonstrating improvements in health outcomes and utilization at a population level.

CHALLENGES IN ADDRESSING CHILD HEALTH EQUITY THROUGH THE SOCIAL DETERMINANTS OF HEALTH

Pediatric healthcare organizations have developed tools and interventions to identify and address social needs. However, there are gaps in the literature regarding the healthcare sector's role in addressing social drivers of health and population health outcomes. The overall emphasis in the SDOH literature among pediatric populations focuses on the processes surrounding implementation: screening, uptake, response, and referral. What is less clear is whether screening accurately identifies social needs or improves overall health outcomes. There is also a lack of data from social needs and SDOH screening interventions to inform the development of evidence-based and systemic policies addressing the root causes of unmet social needs among children and families [7].

Another gap relates to the emergence of healthcare organization and community partnerships that have emerged from increasing recognition that the health sector cannot address upstream influences on health alone. Rather, partnering with community organizations and policymakers is essential to address root causes of health inequities and achieve sustained improvements in pediatric population health. However, partnerships between healthcare organizations and human services organizations often exhibit a power differential with the healthcare organization setting the agenda and providing the funding. Often, these partnerships operate under the assumption that investing in social/human services will reduce healthcare cost, which has not been consistently supported by the literature [19].

Value based payment innovation to address SDOH has the potential to move investments upstream. Value-based payment (VBP) focuses on decreasing cost and improving quality of care and is becoming increasingly common as a payment system in pediatrics. By 2016, roughly half of pediatricians participated in a form of value-based payment [21]. VBP has the goal of supporting pediatricians in intervening on upstream influences on health to reduce long-term cost. These payment systems utilize incentives for addressing the SDOH through universal screenings, referrals to community-based organizations, and investments in housing assistance, food, transit passes, and other supports [21]. Examples include Ohio Medicaid's Comprehensive Primary Care program which incorporates a prospective per-member-per-month payment with retrospective shared savings. This program supports initiatives such as community health worker programs [18].

Such initiatives are important first steps to improving pediatric population health but may

have varied impacts. For example, most VBP social needs programs are created through Medicaid rather than private insurers. Therefore, families who are low- or middle-income with unmet social needs (but not enrolled in Medicaid) are not reached by these programs. Additionally, infrastructure to address unmet social needs varies significantly across communities, which leads to unequal access to these resources [21]. Furthermore, such programs and approaches may vary in the extent to which they address systemic barriers that impact access to care such as hours of operation, capacity to provide culturally and linguistically appropriate care, and even practices that reinforce racial discrimination or cultural biases within the healthcare system. Given the extensive evidence of racial disparities in healthcare, it is thus vital to collect data on which patients and families receive resources and the extent to which resource allocation within healthcare aligns with disease severity, unmet need, and outcomes. Such intentional approaches that acknowledge the nonrandom distribution of unmet social needs across racial/ethnic and historically marginalized groups within the population are critical to optimize the effectiveness of VBP investments on reducing health disparities, advancing health equity, and addressing the social determinants of health.

MOVING TOWARD ROOT CAUSES: RACISM IN PEDIATRIC POPULATION HEALTH AND PRACTICE

Much of the social needs literature is focused on assisting individuals rather than on reducing structural barriers to optimal health and healthcare. Although healthcare system efforts to identify and address individual needs are important, approaches to addressing unmet social needs focused at the individual level places the burden on patients and caregivers to disclose unmet needs in healthcare settings. In addition to screening and responding to urgent health related social needs, changing the social conditions that impact population health requires a closer examination of systemic factors that produce certain patterns of disparities within the overall population. Thus, social needs interventions cannot succeed without attention to systems and structures and without explicit recognition of race and racism as key social determinants of health. Such interventions require bold, disruptive solutions to achieve a distinct set of outcomes for a generation of children.

For example, recognizing the direct impacts of racism on disparate health outcomes requires constant vigilance around racial disparities and a transformative approach to healthcare delivery. For example, transformation could mean changing the focus from patients' adherence to care regimens to a focus on the extent to which healthcare infrastructure is designed to respond equitably to the needs of all patients rather than on reinforcing a set of biases about health behaviors and populations. Within the context of the COVID-19 pandemic, families of color and low-income families have faced higher risk for COVID-19 hospitalization. Hillis *et al.* [22▪] found significant disparities in COVID-19 deaths of parents/caregivers across racial and ethnic groups, with the risk of the loss of a caregiver 1.1 to 4.5 times higher among children belonging to racial and ethnic minority groups compared to non-Hispanic White children.

Few published examples exist of effective interventions addressing systemic racism in the healthcare system. Hassen *et al.* [23▪] performed a scoping review of antiracism interventions in outpatient healthcare settings and found a wide range of interventions, ultimately including 37 peer-reviewed articles. Roughly one-third of identified peer-reviewed articles described interventions that were focused on Indigenous populations, another one-third for minoritized and racialized patient groups in general, and 14% on Black populations. Interventions ranged from cultural competency training, interpersonal workshops, organizational strategies, and community engagement with minoritized stakeholders. Few articles included complete evaluation results [23▪].

Systemic transformation within pediatric healthcare also means moving upstream to examine maternal and parental health and family wellbeing. This includes public health investments or partnerships with other sectors such as early childhood education and Title V. For example, the ACA created the Maternal, Infant, and Early Childhood Home Visiting (MIECHV) Program to improve child and family health disparities by race and ethnicity through evidence-based interventions and reached nearly 80 000 families in 2017 [24]. A recent commentary by Weiss-Laxer *et al.* [25] calls for greater attention on families for population health and health equity initiatives. The authors note that policies that support overall improvement in socioeconomic status have the greatest impact on the health of families, and that most public health policies fail to consider families' needs [25].

CONCLUSION

Health inequities originate within a broader social and societal context. They begin with historic, social, and political conditions that can either potentiate or undermine optimal health. Although disparities and inequities in child health do not start

within healthcare delivery systems, they are often reproduced or further entrenched within healthcare. Current population health trends in the wake of the COVID-19 pandemic and response should serve as a call to action to develop a coordinated agenda for improving the health of the U.S. population. Emphasis on optimizing the health of children and families is essential for such an approach to reap dividends for future generations.

Tackling inequities in health and healthcare is not an issue for the healthcare sector alone. Significant investments are needed in affordable housing, early childhood and universal pre-K programs, mental health supports, and other upstream contributors to health outcomes. Screening families for health-related social needs will not result in addressing these needs if adequate resources and supports simply do not exist. Researchers should be wary of focusing solely on individual behavior-based outcomes at the expense of examining the root causes of systemic racism, housing insecurity, transportation difficulties, and other SDOH. Such research may define behaviors or characteristics of individuals or groups as the problem to be ''fixed'' instead of calling attention to the upstream systems and structures that lead to inequities in healthcare delivery [7].

In the recent *Mirror Mirror, Reflecting Poorly* report published by The Commonwealth Fund, the United States had the largest income-related disparities in domains such as affordability, timeliness, and patient engagement (and was last overall when compared to the healthcare outcomes of 10 other high-income countries) [26▪]. Healthcare organizations in the United States have made significant strides toward developing social determinants of health screening interventions, investing in community initiatives, and engaging in value-based payment initiatives. However, gaps in the literature remain regarding the effectiveness of these interventions on accurately identifying social needs and improving health and healthcare system outcomes. Moreover, addressing systems and policies that perpetuate health inequities requires explicit interventions that highlight the effects of racism as a core social determinant of pediatric population health.

Acknowledgements

Drs Thornton and Yang did not receive intramural or extramural grant support specifically related to this manuscript.

Financial support and sponsorship

This work was conducted without extramural or intramural funding support.

Conflicts of interest

There are no conflicts of interest.

REFERENCES AND RECOMMENDED READING

Papers of particular interest, published within the annual period of review, have been highlighted as:
- ▪ of special interest
- ▪▪ of outstanding interest

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This publication summarizes the proceedings of a workshop that was held by the National Academies of Sciences, Engineering, and Medicine to explore various themes involving population health in the setting of the COVID-19 pandemic including the role of the social sector in health. Some panelists noted that philanthropy has not created adequate change toward equity and justice and advocated for systems change through more robust funding requirements. The panelists also expressed hope that the COVID-19 pandemic will bring to national attention the contexts that create inequitable conditions.

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A systematic review of studies that examined the integration of social determinants of health screening into electronic medical records and the effects of these interventions. The authors found that most studies reported process outcomes, and few reported on social needs outcomes, health outcomes, or any changes on healthcare cost and utilization.

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This evidence map is published by PCORI and provides interactive visualization of interventions addressing the social determinants of health and their impact on health outcomes. The summary of the most recent update to the evidence map found that the number of studies examining the SDOH has grown rapidly, but that high quality studies remain rare. Additionally, most studies included adults rather than children or families.

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In this report published by The Commonwealth Fund, the study authors analyzed performance measures across several domains, including equity, for 11 high-income countries. The study found that the U.S. performed poorly on measures of healthcare affordability and equity, among others. The authors also found that countries that performed well had several characteristics in common including investment in social services.

