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## Social Determinants of Health: Fundamental Drivers of Health Inequity

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**H**ealth inequity is one of the most profound problems facing our generation and our state. The opportunity to live a long and health-filled life is not equally available for all within Wisconsin. Many health conditions, including Alzheimer's disease, cancer, and diabetes, disproportionately impact racial and ethnic minorities and individuals who are socioeconomically disadvantaged. These populations are more likely to experience poorer health, in part due to the social determinants of health—conditions related to the environments in which people are born, live, work, play, worship, and age that impact a wide array of health, functional abilities, quality-of-life outcomes and risks.<sup>1</sup> Examples of such factors include housing quality, employment status, income, and education.

Well-accepted, mechanistic theories supported by decades of rigorous research confirm that social determinants of health are among the fundamental drivers of health inequity.<sup>2,3</sup> As such, these factors have become the focus of a large number of state, federal, and foundation

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initiatives aimed at improving health inequities and the health of the public as a whole. The National Institutes of Health (NIH), the Centers for Disease Control and Prevention, the World Health Organization, and many other organizations support initiatives to address social determinants of health. The director of the NIH, Francis Collins, MD, PhD, writes, "...successfully improving public health and reducing health disparities depends on a wide range of complicated and often subtle factors [the social determinants of health]. Putting them in perspective, and implementing carefully designed research that will provide rigorous evidence about causes and possible interventions will require many creative minds, including those who focus their attention well beyond what happens in the medical exam room."<sup>4</sup>

No longer should we hold the antiquated view that "health care" is separate from "social care." When viewed through the social determinants of health lens, it becomes clear that health care and social care are fundamentally intertwined and largely interdependent in their impact on population health. There are many examples of this interdependence. For instance, living in substandard housing without consistent electricity makes it nearly impossible to properly refrigerate insulin to treat diabetes. Unemployment and resultant poverty may limit opportunities to purchase nutritional food, thus worsening cardiovascular risk factors like hypercholesterolemia, hypertension, and obesity. Residing in neighborhoods plagued by

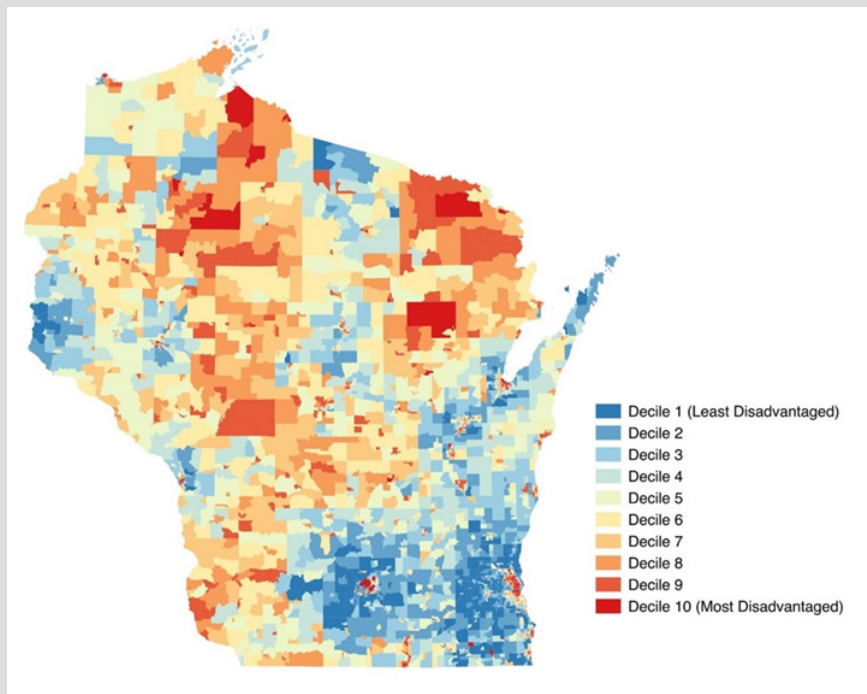
safety concerns may make it more difficult to exercise or to access pharmacies and clinics for needed medications or care, respectively. Each of us in clinical practice encounters myriad examples of social factors that directly and significantly impact the health of our patients.

### Multipronged Efforts to Catalyze Change

The University of Wisconsin School of Medicine and Public Health (SMPH) embraces our responsibility to address health inequities and catalyze sustainable change. We have launched, in partnership with other organizations, multipronged initiatives to address social determinants that span the full tripartite mission of education, research, and practice. Our strategy harnesses a mechanistic, theory-concordant approach and focuses on stakeholder partnerships that bridge multidisciplinary clinical, social, and community spheres. Many of our programs are supported by the SMPH's Wisconsin Partnership Program (WPP), which allocates peer-reviewed grants to research, education, and community partnerships designed to improve the health of Wisconsin. We offer a brief sampling of SMPH initiatives, including many that have received support from the WPP, below.

**Education**—Medical student education at the SMPH increasingly focuses on health equity and the social determinants of health. Our new transformation of medical education—the ForWard Curriculum—highlights the intersection of the health system and community throughout the students' educational journey,

**Figure.** Neighborhood Disadvantage Within Wisconsin



\*Source: Neighborhood Atlas. 2018; University of Wisconsin Department of Medicine, <https://www.neighborhoodatlas.medicine.wisc.edu/>.

emphasizing longitudinal public health, system-based practice, and the application of knowledge and best practices in community settings. The Wisconsin Academy for Rural Medicine (WARM) and the Training in Urban Medicine and Public Health (TRIUMPH) programs focus on increasing the number of physicians who will practice in rural and urban Wisconsin settings, respectively—a critical contribution to improving the health of our state. The Wisconsin Population Health Service Fellowship Program, which is funded by the WPP, trains new public health leaders, with a goal of addressing the social-health system interface by deploying early-career professionals to community-based organizations throughout the state. These programs and many others guarantee that SMPH graduates will be ready to advance health in a holistic manner with a scope of knowledge ranging from the organization of cells to the organization of communities.

**Research**—Research that propels innovation at the basic science, clinical science, translational science, and public health levels provides another cornerstone for building a healthier state. To make meaningful gains in health equity,

continued research into the factors that drive, modify, and ameliorate social determinants' impact on health outcomes is imperative. One of the newest innovations in this area is the NIH-funded Neighborhood Atlas project.<sup>5,6</sup> The atlas is a first-of-its-kind, free, customizable, online mapping and data tool that allows anyone to visualize locations of neighborhood disadvantage across the entire United States, including Puerto Rico. The atlas is utilized by thousands within governmental, nonprofit, academic, community, and industry groups (Figure).<sup>5,6</sup> Research partnerships with Native American, African American, and other racial and ethnic minority populations have been a proud tradition at the SMPH. These initiatives, which reach all corners of Wisconsin, have led to critical advances across a large breadth of conditions, including asthma, Alzheimer's disease, and cancer.

**Practice and Community**—Translation of educational initiatives and research discoveries toward “real-world” change requires a sharp and deliberate focus on the third arm of our mission—clinical practice and community engagement. WPP-funded innovations involving multidisciplinary stakeholders leverage authentic

community partnerships, targeting the social determinants of health while establishing the necessary groundwork for future independence and sustainability. For example, the WPP-funded Black Men's Wellness Sustainable Initiative is applying innovative approaches to addressing and improving the health of African American men in Dane County. We recognize that sustainable change will not be possible without an SMPH student, faculty, staff, and leadership population that fully mirrors the breadth of diversity within Wisconsin. Expanded programs for enhancing diversity in all areas of our school will remain a focus in the coming years.

**Future Vision**—We are on the cusp of a revolution in the field of health equity, and the SMPH is committed to help lead the way through innovations in education, research, and practice. As the challenges of the social determinants of health evolve, so must we. Continued investments through the WPP grant programs are key to ensuring lasting progress in this area. We recognize that we are one of many key players in this field, and even the wonderful resources that are available through the WPP do not compare to the funds that are allocated to public health in most state and national budgets. We hope to continue to catalyze the elimination of health inequities in Wisconsin and, in doing so, serve as a model for the nation.

## REFERENCES

1. Office of Disease Prevention and Health Promotion. Healthy People 2020: Social Determinants of Health. <https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-of-health>. Updated December 28, 2018. Accessed December 28, 2018.
2. Link BG, Phelan J. Social conditions as fundamental causes of disease. *J Health Soc Behav*. 1995;80-94.
3. National Institute on Minority Health and Health Disparities. NIMHD Minority Health and Health Disparities Research Framework. <https://www.nimhd.nih.gov/about/overview/research-framework.html>. Published 2018. Accessed December 28, 2018.
4. Collins F. Creative minds: considering the social determinants of health. NIH Director's Blog. <https://directorsblog.nih.gov/2016/05/12/creative-minds-considering-the-social-determinants-of-health/>. Published May 12, 2016. Accessed December 28, 2018.
5. Kind AJH, Buckingham WR. Making neighborhood-disadvantage metrics accessible - the neighborhood atlas. *N Engl J Med*. 2018;378(26):2456-2458.
6. University of Wisconsin School of Medicine and Public Health. Area deprivation index. <https://www.neighborhoodatlas.medicine.wisc.edu/>. Published May 1, 2018. Accessed December 28, 2018.

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