

A Seat at the Table: Examining the Designer's Role in Health Equity Through the Social Determinants of Health

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The global pandemic reveals the imperative for designers to collaborate with health professionals. Designers can and must understand the role the built environment plays in health outcomes for individuals and populations; and design educators can and must develop the knowledge and skills needed to position nascent design professionals to become leaders who advance systemic change towards health equity, which is helping all people have a fair and just opportunity to be as healthy as possible.

Designers already contribute to health outcomes through the design of hospitals and medical devices, however, if we consider that health is influenced by the places that one lives, works, and plays, the role of the designer in health is much more expansive. Health is not just about treatment of disease and illness. A range of factors, like access to education, employment, and healthy food, housing, and social cohesion, collectively known as the Social Determinants of Health (SDoH), play a significant role. Housing, workplaces, bus stops and corner stores, for example, are therefore parts of healthcare design. If equity is the goal of the designer and design professions broadly, then the necessary role of the designer in advancing health equity becomes obvious.

Transdisciplinary collaborations between health and design professionals and educators in each domain must not only be advanced but prioritized to effectively address the complexities of health equity, the built environment, and the SDoH. For designers, this means that the territory of design in health must be broadened to include spaces and places not commonly thought of as healthcare design; and design educators must teach students to articulate the ethical ramifications of their designs and understand their agency as designers. Design decisions shape health. Consequently, design educators must prepare their students to marshal the power of design to advocate and realize systemic change, by improving health outcomes and ultimately creating an equitable and just 21st century built environment.

Educational pilots between 2017-2020 beginning at the Florida International University College of Medicine in Miami, and later at the College of Architecture Planning and Design at KSU, Manhattan, KS serve as transferable models for a transdisciplinary approach to teaching the SDoH in design and medical education, with the goal of promoting broader public health, empowering design and medical professionals to work collaboratively towards a just and equitable built environment.

1. INTRODUCTION

The global pandemic reveals the imperative for designers to collaborate with health professionals. Designers can and must understand the role the built environment plays in health outcomes for individuals and populations; and design educators can and must develop the knowledge and skills needed to position nascent design professionals to become leaders who advance systemic change towards health equity, which is helping all people have a fair and just opportunity to be as healthy as possible.¹

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2. BACKGROUND:

2.1 DEFINING HEALTH

To expand the designer's role in health, it is important to define what it really means to be healthy. Often in America, health is thought of as merely the absence of disease or infirmity. However, for decades the World Health Organization, among others, has advocated for a more holistic understanding of what it means to be healthy, and seeks to change how we think about what it means to be healthy. In the preamble to their constitution, the WHO defined health as more than the absence of disease or injury, that instead, health should be considered as a complete state of physical, mental, and social well-being.²

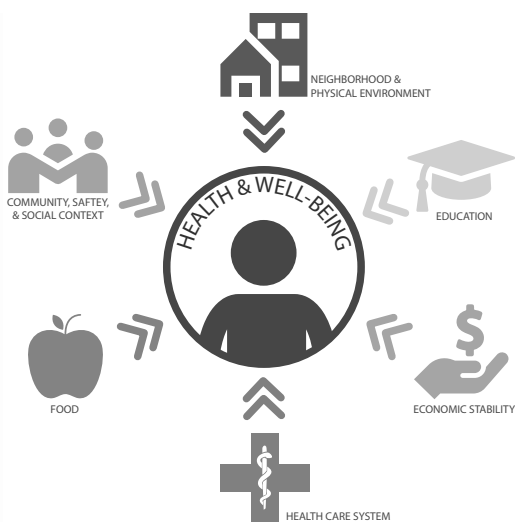


Figure 1. Social Determinants of Health.⁶ Illustration by author.

Health is more than the absence of disease or infirmity and the treatment of sickness (disease) and injury (infirmity) is only a small part of what determines health (Figure 1). In fact, the things many think of as determinants of health, ones genes, cells, biology, and access to healthcare only account for at most 20% of our health outcomes. The remaining 80% is determined by a person’s behavior and social, economic, and environmental factors.³ Health, good or bad, is the result of actions and interactions throughout each day, the majority of which are not happening in what are commonly thought of as healthcare environments.

The consequence of this misplaced emphasis on such a small determinant of what it contributes to health is evident in our health outcomes compared to other OECD nations. America is not as healthy as its peers, we have the highest obesity rates and highest rates of preventable deaths. However, we spend almost twice as much as our peers.⁴ Americans spend significantly more and are less healthy largely due to a lack of understanding and emphasis on what will actually make America healthier. Hospitals largely address sickness and injury. If healthier people and better health outcomes are the goal, it is imperative to start by understanding where health actually happens.

Health is determined by a range of factors beyond the treatment of sickness and injury, such as access to education, employment, and healthy food, housing, and social cohesion. These factors are collectively known as the Social Determinants of Health (SDoH) and they play a significant role in determining our health outcomes.⁵ Further, the built environment, its quality or lack of in many cases, directly and indirectly, plays a part in many of these determinants. It is imperative to reframe the understanding of what and where health is being determined to include not just traditional healthcare environments, but also those places and spaces where a person lives, works, and plays.

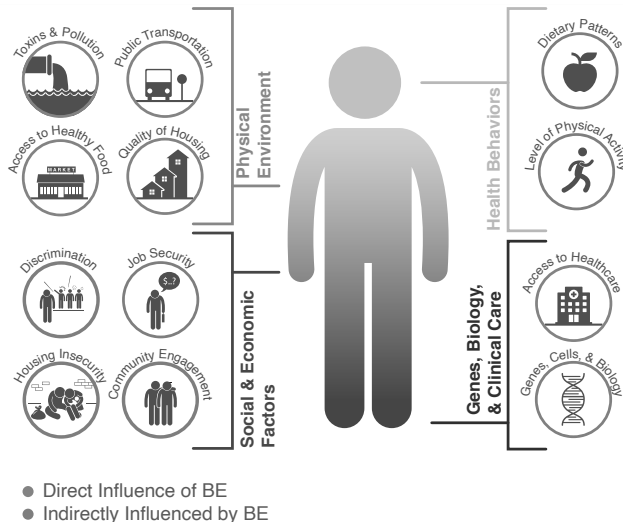


Figure 2. Influence of the Built Environment. Illustration by author.

2.2 EXPANDING THE TERRITORY OF DESIGNING FOR HEALTH

The quality of our buildings and neighborhoods directly impact health outcomes and indirectly influence our behavior and choices (Figure 2). For example, the food choices that surround a person influences what they eat, the safety of the streets and parks influences whether or not they’ll go for a brisk 20 minute walk each day, as recommended by the American Heart Association.⁷ The air, noise, and light pollution generated by highways adjacent to homes is responsible for causing and exacerbating a multitude of chronic diseases. Access to public transportation also shapes a person’s behaviors and limits or expands options for employment, healthcare and recreation. The ways in which the environment influences a person’s health is nearly endless.⁸ As such it is imperative designers expand their understanding of health to include a more holistic view and prioritize health, and equity, in all design. Within this framework housing, workplaces, corner stores, and even bus stops are therefore parts of healthcare design.

Not all built environments are created equal and in fact the global pandemic has highlighted for many just how profound an influence the built environment has on our health. In most cities in this county, the inequity of the built environment is manifested in the health of the people who live there. For example, in Miami Florida there is a 15 year difference in life expectancy between the populations of Overtown, a historically black neighborhood, and Brickell Key, one of the wealthiest gated islands, just 2 miles away (Figure3).⁹ A person’s zip code is more revealing about their health than their genetic code. If equity is the goal of the designer and design professions broadly, then the necessary role of the designer in advancing health equity becomes obvious.

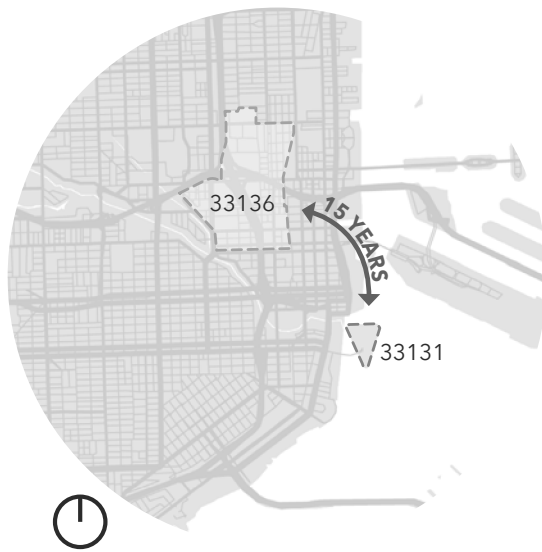


Figure 3. Downtown Miami Florida. Illustration by author.

2.3 AN OPPORTUNITY FOR COLLABORATION

Health is a complete state of being that exists along a dynamic continuum. The analogy of a river can be used to describe the state of health as a whole along a continuum¹⁰ and helps to situate the praxis of design and health professionals. The social determinants and the built environment are the upstream determinants in this river and health outcomes such as obesity, chronic disease, morbidity and ultimately mortality are the downstream outcomes. Designers may not immediately see how they can make changes that affect racism and health inequities, but if it is understood, for example, that health equity won't be realized by focusing only on downstream interventions, treating the consequences of SDoH, then designers belong at the table because they shape the upstream factors, the environment where we live, work and play. Design decisions shape health.

Further, understanding the social determinants reveals the imperative for designers to collaborate with health professionals. Physicians largely work 'downstream' whereas designers largely work 'upstream'. Designers are in the room with the developers and clients whose goals are often defining the built environment, and therefore have the opportunity to use their voice and agency to create awareness and promote equitable access to a healthy built environment. The health of a person generally and indeed human population health is too complicated for a single practitioner (physician/ architect), a single profession (medicine/ design) or even a single sector (healthcare practice/ design). If we want to help all people have a fair and just opportunity to be as healthy as possible and advance systemic change towards health equity, collaboration is vital.

2.4 COLLABORATION STYLES

Collaboration can take many forms and each is valuable, but they vary in method, integration across disciplines, difficulty, and expected results. Intradisciplinary collaborations consist of working on a team within one's own discipline or very closely aligned disciplines. Next are cross-disciplinary collaborations, which is still working on teams within one's own discipline but the team adopts the methodologies of other disciplines. Multidisciplinary collaborations are the first real step towards integrated collaboration across disciplinary boundaries, however, the outcomes are generally a sharing of results and knowledge but not an integration of methodologies, the collaborators work independently on a common theme, with individual but aligned goals. Interdisciplinary collaboration has a greater level of integration that attempts to work cooperatively across disciplinary boundaries and looks to synthesize the approaches used by each to address a shared goal. Transdisciplinary collaboration is similar to interdisciplinary collaboration but undertakes a much more expansive approach to integration that seeks to create a new methodology and framework from which to collectively approach a shared goal.¹¹ Transdisciplinary collaboration also extends beyond academic and professional borders to also include community members and other stakeholders (either through consultations or direct participation).¹² Transdisciplinary collaboration methods are ideal for working in the realm of the social determinants of health, but they also require the greatest commitment and present the most challenges.

Transdisciplinary collaborations between health and design professionals and educators in each domain must not only be advanced but prioritized to effectively address the complexities of health equity, the built environment, and the SDoH. For designers, this means that the territory of design in health must be broadened to include spaces and places not commonly thought of as healthcare design; and design educators must teach students to articulate the ethical ramifications of their designs and understand their agency as designers. Consequently, design educators must prepare their students to marshal the power of design to advocate and realize systemic change, by improving health outcomes and ultimately creating an equitable and just 21st century built environment.

Some collaborations are already happening, they are typically interprofessional and often don't expand to include other disciplines in a meaningful way or at the beginning of the process. Further, these collaborations are often focused on healthcare environments or medical devices. How often have we as designers thought to speak with local health professionals when considering a new corner store design?

The two examples that follow represent two vastly different scenarios that exemplify collaborations between health and design professions in higher education. They vary in scale and scope but when taken together a model begins to emerge that

highlights important conditions to spark and sustain transdisciplinary collaborations.

3. CURRICULAR EXAMPLES:

3.1 HACKING THE BUILT ENVIRONMENT, HERBERT WERTHEIM COLLEGE OF MEDICINE AT FLORIDA INTERNATIONAL UNIVERSITY, MIAMI, FL

The first example took place at the College of Medicine at Florida International University in partnership with Green Family Foundation Neighborhood Health Education Learning Program (NeighborhoodHELP). The College of Medicine at Florida International University is a community-based medical school meaning, unlike the traditional models, they are not associated with a major academic health center. Instead, students are in the community, among other locations, serving the healthcare needs of local families in their own homes. To prepare students for their visits with households, an intervention was collaboratively designed to give students the experience needed to identify, analyze, and diagnose the aspects of the built environment impacting health outcomes and propose multi-disciplinary solutions that address aspects of the built environment for improved health outcomes.

The intervention was as part of a larger course, Community Engaged Physician 1 and took place during a single 2-hour course session. The transdisciplinary teaching team included Dr. Marin Gillis, a philosopher and bioethicist, Assistant Professor Kendra Kirchmer, an architect and designer, and Dr Luther Brewster, a public health and policy expert, each bringing their expertise to bear in content knowledge as well as blending pedagogies. The structure of the intervention was that of a 'hack', similar to the notion of a design charrette, and which is fast-paced, team-based exploration, facilitated and guided by professional mentors. To prepare the students for the hack, a multimedia, interactive, pre-reading was developed using an online platform called RISE, which is a part of the Articulate 360 suite. The pre-reading provided foundational content describing the characteristics of the built environment and the ways in which it plays a direct or indirect role in the health outcomes. At the end of the reading, students were given a self assessment.

The hack took place over the course of two hours, beginning with a brief introduction, followed by small group break-out sessions, and ultimately concluding by reconvening as a whole class to pitch (present) their ideas. There were 124 first year medical students that were divided into 12 groups of 10-11 each. Each group had a prepared packet with all of the materials needed for the activity, which included case/use cards that contained details of a context, a user, and a challenge/prompt. Due to the brevity of the 2hr exercise we were unable to bring community members in directly outside of the facilitators, however we created case use cards that were mined from real experiences and situations that individuals in the community have faced. These were only possible due to the extensive

multi-year relationship between NeighborhoodHELP and the communities that they serve.

The groups were mentored by 15 multidisciplinary facilitators including everyone from the volunteers from the community to outreach partners to entrepreneurs who founded successful healthcare focused start-ups. The students pitched their ideas which focused on transdisciplinary solutions to health issues whose root causes were situated within the built environment. They were also asked to graphically represent their ideas on a large shared drawing that filled in areas of a community collage created by a member of the outreach team. The outcomes of the event were overwhelmingly positive and the follow-up online survey assignment emphasized the importance of collaboration in any solution to issues arising from the social determinants.

3.2 VITAL DESIGN, COLLEGE OF ARCHITECTURE, PLANNING, AND DESIGN AT KANSAS STATE UNIVERSITY, MANHATTAN, KS

The second example is at the other end of the spectrum in terms of preparation time before the intervention and amount of curricular space. The global COVID-19 pandemic and the subsequent shift to online teaching that many universities undertook in response created demand for a series of new online course offerings. The following course, Vital Design, was offered at College of Architecture Planning and Design at KSU, and was a prompt and timely response to this opportunity that built upon the lessons learned at the College of Medicine at FIU. The course focused on expanding the understanding of designing for health to include all design and understanding the role of the built environment as a determinant of health. Although offered from the Department of Interior Architecture and Industrial Design, the course was open to graduate and undergraduate students across all disciplines. Due to the accelerated nature of course planning and pandemic restrictions, the ideal scenarios for community engagement were not possible, however in substitute students were asked to look to their own communities and neighborhoods and utilize local resources to identify a need and opportunity to increase equity in the built environment where many of them were remotely learning from.

The course topics focused initially on illuminating how the built environment impacts health outcomes, the social determinants of health and also how historic and current discriminatory practices have reinforced and increased inequities in communities. Through interactive online modules, lectures, group discussions, and case studies students: examined and evaluated the intersections of the BE and the SDOH; identified challenges faced by underserved populations and define opportunities in their own communities to improve health outcomes; and, proposed a design solution that sought to address inequities in the built environment. Student work was assessed by a panel of health, medical, ethics and design professionals

many of whom were a part of the previous intervention. Solutions ranged in size and scope however all shared a common theme of using the power of design and design activism to advocate for and catalyze change.

4. DISCUSSION

The two examples previously described are different in scale and scope, however when taken together they can provide a set of conditions that are necessary to spark these sorts of collaborations. First, there must be space in the curriculum, which may seem obvious, however as the example at FIU illustrates the space doesn't have to be a whole course or even a whole day. A single class period can provide ample opportunity to create an impactful intervention.

Secondly, transdisciplinary expertise is essential for these types of collaborations. There is sometimes a 'jack of all trades' tendency shared among both design and health professions that leads to misplaced assumptions that a single practitioner or field can 'do it all'. However, the depth of knowledge and understanding gained from bringing in experts from their own fields is irreplaceable and elevates the depth of understanding and outcomes that students are able to achieve. As described in the section on collaboration styles, a fully integrated transdisciplinary collaboration from the beginning of the project through its completion is ideal, however there are many ways to engage in collaborative efforts from the extensive integration of the first approach to the targeted engagement of the second example. Similar to curricular space, involvement can vary based on each situation and bringing in critics from health professions could also serve to plant the seeds of future collaborations. It should also be noted that the success of the more limited integration presented in the second example was only possible due to the length and depth of the larger and on-going collaboration between the authors.

The third condition needed for a successful transdisciplinary curricular intervention is an open dialogue. Opportunities for formal conversations like those found at and during conferences are essential to finding collaborators and informal conversations are equally, if not more, important to provide space to develop a shared understanding of disciplinary scope and expertise, as well as identifying and articulating shared goals.

Lastly, the transdisciplinary collaborations thus far have been between faculty across disciplines, first within medical education and then later within design education. In both instances students were able to learn directly from the transdisciplinary teaching teams however the obvious next step will be to create an opportunity for transdisciplinary teams of students from both medicine and design to work together.

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professionals. Designers can and must understand the role the built environment plays in health outcomes for individuals and populations; and design educators can and must develop the knowledge and skills needed to position nascent design professionals to become leaders who advance systemic change towards health equity, which is helping all people have a fair and just opportunity to be as healthy as possible.

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