NCCOR
National Collaborative on Childhood Obesity Research

CASE STUDY

Green Health

Researchers and practitioners are increasingly using green building design to combat and prevent childhood obesity. Green building design creates an environment conducive to good health and includes everything from school siting and use of 'active' furniture in classrooms to the location of the salad bars and menu displays in a school cafeteria.

WHAT IS GREEN HEALTH?

Green health refers to the many shared priorities that exist between the green building industry and public health including promotion of more active, less automobile-dependent lifestyles and access to healthy, locally produced foods.

LEVERAGING COLLECTIVE CAPITAL

The Green Health project leverages NCCOR partners' "capital" i.e., time, resources, assets, and abilities to create high-value products. For the workshop and majority of green health work, financial capital is funneled through the NCCOR Coordinating Center; NIH and the Coordinating Center provided managerial capital for the workshop, and the Coordinating Center continues to manage follow-on activities. All four NCCOR funders contribute intellectual capital to the Green Health project.

The evidence base clearly demonstrates that individual behavior change alone is not sufficient to change the course of the childhood obesity epidemic. Research indicates that the design of the built environment at multiple spatial scales, from regional land use patterns to building architecture and even aspects of interior or graphic design, can influence both social norms and default behaviors related to dietary choices and daily physical activity.

With the NCCOR Green Health project, non-traditional public health partners, such as architects, interior designers, graphic artists, and green building advocates complement public health researchers' efforts to integrate childhood obesity priorities into social and build environment initiatives. This directly aligns with NCCOR goals.[i]

NCCOR Takes Action

NCCOR and the National Academy of Environmental Design (NAED) co-sponsored an October 2011 two-day workshop in partnership with the Center for Green Schools at the U.S. Green Building Council (USGBC). The workshop development was led by Dr. Matthew Trowbridge, then an NCCOR member with the National Institutes of Health.

Participants included federal researchers, as well as academic, nonprofit, and private sector researchers and practitioners from urban planning, architecture, landscape architecture, interior design, and law. They examined how environmental design strategies can be used to promote physical activity and healthy eating in school environments, thus integrating childhood obesity prevention into green building initiatives and school-based sustainability.

NCCOR contributor Dr. Terry Huang proposed architecture as an approach to decreasing childhood obesity while with the National Institutes of Health in 2006. "The workshop was instrumental in taking the discussion to a new level," said Huang, now of the University of Nebraska Medical Center.

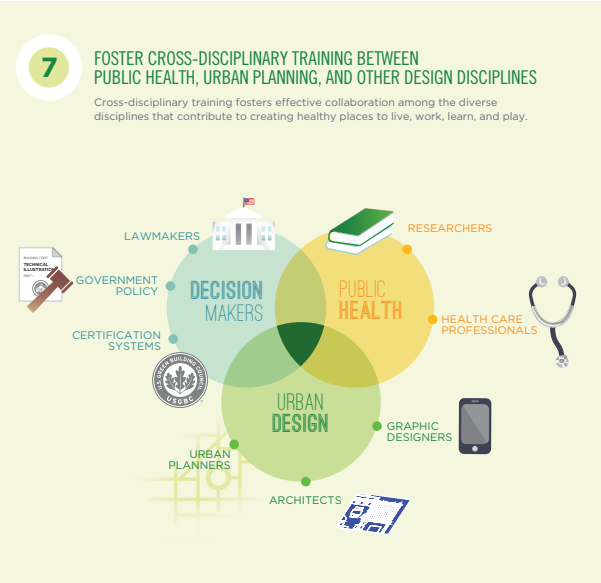
NCCOR Makes an Impact

As a result of the workshop, NCCOR produced *Green Health: Building Sustainable Schools for Healthy Kids,* a product that validates the collaboration between public health experts and green industry partners, and showcases the latest approaches. The report, available on the NCCOR website, garnered interest across both the public health and green building communities andcontinues to act as a resource for groups looking at the role and impact of design on health behaviors and serves to standardize topics like school design and children's health.

Stemming from the workshop and report, a team of authors led by Trowbridge published an article in the *American Journal of Preventive Medicine* (AJPM) titled "Public health and the green building industry: Partnership opportunities for childhood obesity prevention,"[ii] in May 2013. The article emphasizes the critical partnership between public health and the green building industry and lays out seven recommendations to guide the future field of green health research and practice, and that can be applied to childhood obesity prevention. Describing the context for the research recommendations, Trowbridge explains, "there is tremendous interest in increasing collaboration between design professionals, the green building industry, and public health from within and across each of these disciplines.

"Moreover, recent advances in mobile data collection and big data analytics provide remarkable new tools to improve our understanding of how the built environment can impact public health. NCCOR's Green Health project and these recommendations provide a framework to apply these new tools and partnership opportunities," said Trowbridge.

NCCOR translated the seven recommended strategies into a seven-part infographic to accompany the AJPM piece. The infographic demonstrates the Collaborative's commitment to translating research and increasing multidisciplinary opportunities. Shown below is the seventh recommendation. It advises spurring cross-disciplinary training to foster effective collaboration among the diverse disciplines that contribute to creating healthy places to live, work, learn, and play.



NCCOR members also participated in an innovative collaboration between architects, schools, and scientists to develop a comprehensive, evidence-based approach to influencing new school development and improving existing school environments for children's health. As a means to communicate the work being done through collaboration a document titled, "Healthy eating design guidelines for school architecture"[iii] was published in early 2013 in *Preventing Chronic Disease.*

"The Buckingham Elementary School video corresponding to the design guidelines is really a prototype of how some of the AJPM recommendations can be implemented at a school," said Huang.

What's Next

Increased collaboration between public health and the green building industry allows us to leverage research expertise and market transformation capacity, respectively, and accelerate community level changes. Green health partnerships can improve health outcomes, such as reducing childhood obesity, by driving changes in the design of buildings and outdoor space to promote physical activity and healthy eating. NCCOR is continuing to establish the evidence base and promote transdisciplinary research in this arena.

A SUITE OF PRODUCTS

- Green Health project webpage
- *Green Health: Building Sustainable Schools for Healthy Kids* report
- Public Health and Green Building infographic
- Glossary of Terms webpage
- Other Resources webpage
- Redesigning Buckingham Elementary School video

i. NCCOR Goal 5: Work with non-health partners to integrate childhood obesity priorities with synergistic initiatives (e.g., environmental design and sustainability, food systems, food marketing, disabilities, or economics).
ii. Trowbridge MJ, Huang TT-K, Botchwey ND, Fisher TR, Pyke C, Rodgers AB, Ballard-Barbash. Public health and the green building industry: partnership opportunities for childhood obesity prevention. American Journal of Preventive Medicine 2013;44(5):489-495. doi:10.1016/j.amepre.2013.01.010
iii. Huang TT-K, Sorensen D, Davis S, Frerichs L, Brittin J, Celentano J, Callahan K, Trowbridge MJ. Healthy eating design guidelines for school architecture. Preventing Chronic Disease 2013;10:E27. doi:10.5888/pcd10.120084.