WOMEN'S HEALTH Prevention Brief

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The Built Environment

This Women's Health Prevention Brief highlights the importance of addressing the built environment in order to improve maternal health and birth outcomes. The brief begins with an overview of the built environment and research on the connections between the built environment and health. Next, the biological and social impacts of an unsupportive built environment on maternal health and birth outcomes are explored. Finally, promising programs at the state and local levels are highlighted. The Women's Health Partnership (WHP) seeks to focus attention on the built environment and its impact on health, particularly on health outcomes for women of reproductive age.

With funding from the Centers for Disease Control and Prevention (CDC), the Association of Maternal & Child Health Programs (AMCHP) and CityMatCH have formed the Women's Health Partnership (WHP). The goal of the WHP is to identify and promote unique state and local maternal and child health (MCH) roles and opportunities to improve women's health before and between pregnancies. Initial partnership efforts (2005-2008) focused on the importance of healthy weight among women of reproductive age in order to improve maternal health and birth outcomes. To continue the work of the partnership we are publishing a series of Women's Health Prevention Briefs. Each brief will provide background on a priority area, selected facts and data points specific to women of reproductive age, and examples of promising programs. The goal of the Women's Health Prevention Briefs is to advance our members' efforts in strengthening systems for women's preventive health.

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THE BUILT ENVIRONMENT AND HEALTH

According to the CDC, the built environment is defined as "all of the physical parts of where we live and work (e.g., homes, buildings, streets, open spaces, and infrastructure that are designed to support human activity)."[1] Research on the connections between the built environment and health has largely focused on housing, transportation, and neighborhood characteristics. These research endeavors have pointed out that the burden of illness has been greater on lower socioeconomic strata and minority populations, who often live in unsupportive built environments.[2] A growing body of evidence has emerged suggesting that physical and mental health problems—anxiety, depression, attention deficit disorder, substance abuse, aggressive behavior, asthma, heart disease, diabetes, and obesity—are linked to an unsupportive built environment, particularly to poor urban planning and inadequate housing.[2]

For example:

- In sprawling urban communities, cars and trucks pollute the atmosphere with ground-level ozone and particulate matter, contributing to human health problems such as

lung disease. The people most affected by air pollution include older adults with pre-existing respiratory disease, children (especially those with asthma), persons with inadequate health care (such as minority populations), and even healthy individuals who work and exercise outdoors.[2]

- Lower socioeconomic status communities often have limited access to quality housing and therefore are composed of low-income neighborhoods that do not facilitate outdoor activities or provide many healthy food options. Additionally, inequities in construction and maintenance of housing in low-income neighborhoods, especially for African Americans, older persons, persons with disabilities, and immigrants, have resulted in insufficient housing and overcrowding. Consequently, these communities may have higher levels of population density and health problems, such as greater rates of respiratory disease, developmental disorders, obesity, chronic illnesses, and mental illness.[2]

WHAT DOES THIS MEAN FOR MCH?

While research to validate direct linkages between the built environment and health outcomes for women of reproductive age is still forthcoming, indirect linkages are measurable and their impacts are far reaching. However, the impact of an unsupportive built environment on health is not confined purely to biological health outcomes. An unsupportive built environment also impacts the social determinants of health (e.g. access to education, social support), which affect mental health outcomes. The table below offers a few examples of the potential biological and psychological impacts of an unsupportive built environment on the health of a woman and a fetus/child.

Biological and Psychological Impacts

Four categories of the built environment	What it includes	If unsupportive, potential impact(s) on women's health and well-being	If unsupportive, potential impact(s) on fetus/child
Recreational Resources	Walking & biking trails; parks and open spaces; gyms; pools	• Sedentary lifestyle/obesity due to a high availability of fast food options • Poor mental health/depression/ helplessness/anxiety due to a lack of social support[3] • High levels of stress due to inadequate educational and/or employment options • Type II Diabetes Mellitus • Cardiovascular disease • Increased risk of asthma from residential, air, and tobacco smoke exposure • Fear due to physical and/or emotional abuse or violence	• Preeclampsia (for mother) • Increased risk of diabetes[4] • Neurodevelopmental disorders • Developmental disabilities • Exposure to high levels of carbon monoxide and particles during pregnancy are at higher risk of adverse birth outcomes, including preterm delivery, low birth weight, and congenital heart defects[5] • Reduced birth weight, mental and cognitive development due to the traffic-related air pollution[6]
Land Use	Residential and employment density; building types and services in the community; proximity of work, school, and healthy food options to one's home		
Neighborhood Form	Sidewalks; street lights		
Community Environment	Aesthetics; cleanliness; traffic, crime safety; social support; environmental toxicants		

WHERE DOES MCH GO FROM HERE?

The first step in addressing the impact of the built environment on health is to examine its effect on health outcomes using the life course theory. A key concept of life course states that the broader community environment–biological, physical, and social–strongly affects the capacity to be healthy. This calls for broader, community-wide approaches in MCH beyond mere direct health care services. Specifically, approaches that account for the impact of the built environment on maternal health and birth outcomes are needed at the state, local, and community level. Applying the life course concepts creates opportunities for collaboration within current programs and services.

Key life course concepts:

- Timeline: Today's experiences and exposures influence tomorrow's health
- Timing: Health trajectories are particularly affected during critical or sensitive periods
- Environment: The broader community environment–biological, physical, and social–strongly affects the capacity to be healthy
- Equity: While genetic make-up offers both protective and risk factors for disease conditions, inequality in health reflects more than genetics and personal choice[7]

EXAMPLES FROM LOCAL AND STATE HEALTH AGENCIES

Local Examples

Who: Contra Costa Health Services, Contra Costa County, California

What: Found that pregnant women needed trash removal and better after-school caregivers for their children even more than access to prenatal care.[8]

Who: University of Washington, Urban Design and Planning, King County, Washington

What: Asked local communities to develop their own Neighborhood Plans. From these, actionable items were identified and changes were made to neighborhood land use plans.[9]

Who: Healthy Beginnings Program, Berkshire County, Massachusetts

What: Trained nurses, midwives, obstetricians, and Lamaze instructors on environmental risks during pregnancy.[9]

Who: Racial and Ethnic Approaches to Community Health Across the U.S. (REACH U.S.), Genesee County, Michigan

What: Initiated case management outreach to high-risk pregnant women and community dialogues to increase awareness around infant mortality and evidence-based clinical practices, among other strategies. This reduced rates of infant mortality within the African-American population, consequently reducing the disparity between African-American and Caucasian rates of infant mortality in the county.[10]

State Examples

Who: California Department of Public Health

What: Tracked work place hazards, such as mercury, to inform their effects on poor pregnancy outcomes through their Hazard Evaluation System and Information Service (HESIS).[10]

Who: North Dakota Department of Health

What: Developed a Birth Defects Monitoring System that incorporates environmental toxicants as a measure.[11]

Who: State of Arkansas

What: Formed the Arkansas Coalition for Obesity Prevention (ArCOP) in August 2007 as a result of the Southern Regional Obesity Summit held in Little Rock, Arkansas. Members include the Arkansas Department of Health, local and national nonprofits, and private foundations committed to expanding access to healthy, affordable foods and increasing the number of physically active Arkansas residents.[12]

RESOURCES

A list of resources has been included for local and state MCH health agencies interested in addressing the impact of the built environment on health outcomes for women of reproductive age within their MCH programs.

Current federal efforts where the built environment's impact on health is already being addressed:

- Community Transformation Grants (CDC)
- The National Prevention Strategy (U.S. Department of Health and Human Services)
- Healthy Community Design Initiative (National Center for Environmental Health, Division of Emergency and Environmental Health Services, CDC)
- Health Impact Assessment (CDC)
- National Environmental Public Health Tracking Network (CDC)
- American Planning Association, The Planning and Community Health Research Center
- Healthy Communities Program (CDC)
- Healthy Homes Program (U.S. Department of Housing and Urban Development)

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