Connecting Public Health and Planning:

Building Healthy Communities

Jessica Solomon

Research increasingly points to the impact that planning and design can have on the health of communities. This article provides an introduction to the connection between planning and public health, examples of tools that local practitioners can use to build cross-disciplinary partnerships, and examples of how agencies across the country have worked together to improve health outcomes and quality of life in their communities.

When thinking of public health, most people think of vaccinations and restaurant inspections. But in addition to these activities, local health departments (LHDs) are involved in a wide array of programs and activities from working with hazardous waste and brownfield sites to addressing maternal and child health needs. Public health is as interdisciplinary as planning. In fact, the roots of planning can be found in public health, as zoning and other land use regulations were first established to respond to the need to separate residential areas from harmful practices. Though later the two fields diverged, there has recently been a movement to bring them back together, both in theory and in practice, as a renewed understanding of concerns common to both professions has emerged. Today, we no longer worry about designing cities to prevent the spread of communicable diseases such as cholera and tuberculosis; however, we now recognize that design can threaten well-being in other ways. Research suggests correlations between land use and community design decisions and public health concerns such as physical inactivity, chronic diseases, pedestrian safety, water quality, air quality, social capital, and others.

The National Association of County and City Health Officials (NACCHO) represents the nearly 3,000 local health departments nationwide. Five years ago, within NACCHO's environmental health division, the connection between public health and the built environment became increasingly clear, and NACCHO started a program to identify its members' needs around land use planning. The goal of NACCHO's land use project is to increase the capacity of local health departments so that they can proactively contribute to decisions affecting the built environment. At the same time that NACCHO's program began, there was a movement at the national level among researchers, health practitioners, physicians, planners, smart growth advocates, and bicycle and pedestrian advocates to address how community design can negatively impact health. NACCHO began working with the American Planning Association

Jessica Solomon works in the environmental health section at NACCHO, focusing on projects related to land use planning and the operational definition of a local health department. Ms. Solomon will receive her Masters in Community Planning from the University of Maryland in May 2006, with a specialization in planning policy. With background and experience in urban planning and public health, she brings an interdisciplinary approach and perspective to NACCHO's work on the connection between these fields.

NACCHO works to support efforts that protect and improve the health of all people and all communities by promoting national policy, developing resources and programs, seeking health equity, and supporting effective local public health practice and systems.

(APA) with the realization that coming together at the national level to address mutual issues could serve as an example of what could happen at the local level if local practitioners were equipped with the right knowledge and tools. And so began a relationship between the leading public health and planning organizations in the nation, with a common goal of educating local practitioners and providing them with the tools and resources necessary to forge effective relationships that work toward building more healthy communities. To improve the health of—and quality of life in—a community, it is important for local public health practitioners and planners to collaborate on healthy solutions to public health issues where we live, work, and play.

Healthy Planning

The mission of public health is to "fulfill society's interest in assuring conditions in which people can be healthy" (Institute of Medicine, 1988). According to the Association of Schools of Public Health (ASPH), "public health carries out its mission through organized, interdisciplinary efforts that address the physical, mental and environmental health concerns of communities and populations at risk for disease and injury. Its mission is achieved through the application of health promotion and disease prevention technologies and interventions designed to improve and enhance quality of life" (ASPH, 2005).

The World Health Organization (WHO) defines public health as "a state of complete physical, mental, and social well-being and not merely the absence of infirmity" (WHO, 2005). Certainly, planners look to design communities that foster the same characteristics in order to make places where people will want to live, work, and play. Thus, by working together, planners and public health practitioners can address this common goal of creating more healthy communities.

The idea of healthy or livable communities has gained prominence during recent years, particularly as the obesity epidemic has exploded in the media spotlight. However, a healthy community does not refer solely to access to physical activity opportunities; rather, it must be defined broadly to encompass the physical, social, economic and environmental determinants of health. In April 2002, the American Planning Association stated that communities with the qualities of healthy design:

1. Have a unique sense of community and place
2. Preserve and enhance valuable natural and cultural resources
3. Equitably distribute the costs and benefits of development
4. Expand the range of transportation, employment, and housing choices in a fiscally responsible manner
5. Value long-range, region-wide sustainability rather than short- term, incremental, or geographically isolated actions
6. Promote public health and healthy communities

The first five of these qualities reflect characteristics that planners are familiar with, as they encompass values similar to those found in the Smart Growth Principles (EPA, 2005). The last quality goes a step further to urge planners to look specifically at policies and development practices that will improve health.

Healthy community design can result in a better quality of life for all individuals in a community. However, it cannot be accomplished without effective partnerships between a variety of stakeholders and innovative solutions to challenges that affect the ability to provide environments that support positive health outcomes.

The Relationship Between Disciplines

Over the years, cities and towns have changed and expanded, often without regard to the impacts that partic-

ular development patterns can have on the health of the community. Community design can influence the economic, environmental, and social aspects of people's lives in addition to contributing to negative personal health outcomes related to chronic diseases and injuries, such as asthma and pedestrian injuries, and mental health issues like isolation and stress. Traditionally, even local health departments that were involved in planning processes were only involved in commenting on water and sewer issues during development review. Recently, there has been a shift to encourage LHDs to work hand in hand with planners, developers, and others to include health considerations in a variety of planning processes. Increasingly, across the nation, LHDs and planners are coming together to address issues of physical activity and nutrition, traffic safety, air pollution, and more. Local health departments can ensure that community health is emphasized throughout planning processes by becoming involved early and contributing the skills and knowledge sets of the public health discipline.

Public health data can contribute to planning efforts that work to change school siting policies to bring back the idea of the neighborhood school, as well as working to create walk to school programs.

The Physical Activity Nexus

One of the most publicized connections between public health and community design is related to physical activity and chronic disease. Data show that individuals who are overweight or obese are at higher risk for developing coronary heart disease, diabetes, and a multitude of other illnesses. Further, the obesity rate in children has skyrocketed over the past 25 years, with about 15 percent of adolescents (ages 12 to 19) and 15 percent of children (ages 6 to 11) considered obese (American Obesity Association, 2002). As schools are increasingly built on large campuses further away from neighborhoods, less than 13 percent of children walk or bike to school (CDC, n.d.). Health practitioners must look to physical education programs in schools and what types of foods are available for students, but together with planners, they can look to where schools are sited and the availability of infrastructure, like sidewalks, in the surrounding neighborhoods. While there are numerous and complex factors that contribute to obesity and chronic disease, creating opportunities for individuals to engage in physical activity as a part of their daily activities will help to encourage healthy behavior and lifestyles.

Planners and health practitioners can work together to promote public transit use that is accessible and affordable and to encourage carpooling in areas where public transit is unavailable.

The Transportation Nexus

The design of communities as it relates to transportation can affect communities by increasing commuting times and air pollution, adding to stress from traffic congestion, and contributing to pedestrian and bicycling injuries and fatalities. In fact, of nearly 10,000 pedestrians killed in 2002 and 2003, more than 40 percent were killed where no crosswalk was available, and another 18 percent were killed where crosswalk availability was not known (Ernst, 2005). Minority populations are disproportionately represented among the fatalities.

Auto-oriented communities cause an increase in vehicle miles traveled, leading to increases in traffic congestion and vehicle emissions. In North Carolina, nearly 80 percent of workers travel to their jobs by driving alone, while only about one percent use public transit to get to work (U.S. Census Bureau, 2004).

As the number of vehicles on the road increases along with the vehicle miles traveled for each, the amount of

A Tool for Working Together

In order to work together on these and other issues, we must learn to work across disciplines to effect change in the practice of both public health and planning. To succeed in such partnerships, each profession will have a significant language barrier to overcome. While the meaning of various acronyms, terms, and concepts used in the respective fields requires little or no explanation when one is speaking to or writing for an audience of fellow public health professionals or fellow planners, the case is quite different when one addresses professionals from outside the field.

In some cases, each field may use the same term, but define it in a much different way. In order to work together, we must be able to communicate effectively and learn to speak the other's language. NACCHO and APA have created a Jargon Fact Sheet (http://archive.naccho.org/Documents/jargon.pdf) to begin to breakdown the communication barrier between disciplines. Below are some examples of terms from the public health perspective that may vary in meaning between planning and public health practitioners.

Access
In public health terms, "access" means the ability to obtain needed health care services.

CDC
The Centers for Disease Control and Prevention (CDC) is part of the Department of Health and Human Services. It provides federal leadership in the prevention and control of diseases.

Quality of Life
In public health terms, "quality of life" means the degree to which individuals perceive themselves as able to function physically, emotionally, and socially. In a general sense, it is that which makes life worth living. In a more quantitative sense, it refers to a person's time remaining alive, free of impairment, disability, or handicap.

vehicle emissions increases. Vehicle and other emissions have been linked to asthma and other respiratory problems (Environmental Defense, 2003), with African-Americans, other non-Hispanic minorities suffering disproportionately higher rates of asthma than whites (NCHS, n.d.). During the 1996 Summer Olympics, strategies to decrease potential road traffic congestion problems were implemented, resulting in significantly less vehicle traffic in Atlanta, Georgia. At the same time, there was a substantial decrease in the amount of ozone pollution and the number of childhood asthma-related events (Friedman, 2001).

Hazardous waste storage and transport, disaster management and evacuation, as well as issues of water quality related to impervious surfaces and sewer systems are also areas of where public health and planning practitioners can work together to influence policy and development to promote healthy design.

Working Together

Across the country, LHDs and planners are working together in a variety of ways related to anything from community assessments to comprehensive planning. There are tools and resources that exist for helping agencies collaborate on challenging cross-connecting issues like community design. As general guidance, the American Planning Association has determined five distinct areas, termed the five Strategic Points of Intervention, where planners can leverage public health expertise to affect change in planning processes for healthier planning:

1. Visioning and goal setting
2. Rethinking planning in all contexts
3. Local implementation tools

4. Site design and development
5. Siting Public Facilities and Capital Spending

Visioning and goal setting allows for a discussion of common values and points to a desired outcome. Public health planning tools use many similar elements to community development strategic planning tools. For example, planners are familiar with visioning exercises, as they often begin some planning processes. Similarly, public health professionals use strategic planning tools like MAPP[1] and PACE-EH,[2] which also include visioning components. Visioning allows for a discussion of common values and points to a desired outcome. In addition, both contain community-based assessments. As such, there is an opportunity for planners to incorporate elements from public health planning tools, such as health assessment and other data elements, in order to effectively work with communities in setting goals and objectives for their community's design that maximize quality of life. These tools enlist broad-based community support which leads to engaged participants who take ownership of improving the quality of life and health outcomes in their own communities through community design. Data and other results from these tools can be used by LHDs in conjunction with planning departments to address local needs around built environment issues.

Rethinking planning in all contexts refers to considering health at all scales of planning, from broad comprehensive plans to functional plans like bicycle and pedestrian plans. Trails and parks alone do not promote health. However, in the right context and with the right design features, trails and parks can include elements that encourage physical activity, such as safety features, trails that are connected to destinations, and parks with physical activity signage. A Washington agency, Public Health Seattle-King County, built an effective relationship with city and regional planning agencies and was successful in lobbying for a chapter on health in the four-county regional comprehensive plan. California's Riverside County Department of Public Health was also successful in partnering with local planning agencies and is now participating in the redesign of sidewalk and street design guidelines.

Local implementation tools, such as zoning and other regulations, can be informed by public health data. For example, LHDs may use Geographic Information Systems (GIS) to map pedestrian injuries, which can inform planners as to where traffic calming or other efforts might be needed. Public health data on access to nutritional foods can be used to justify the need for regulations that allow for mixed-use development or transportation alternatives and street connectivity that would allow food stores in more residential areas. Health departments in Ingham County, Michigan and Lincoln-Lancaster, Nebraska have been successful at using GIS data to work with their planning counterparts to address issues related to growth management as well as environmental health issues such as hazardous materials storage and transport.

Site design and development that improves the pedestrian environment via security, lighting, protection from traffic, and other amenities has obvious implications for public health and quality of life. Encouraging pedestrian activity through appropriate design will encourage physical activity as well as provide more vibrant commercial centers. Creating requirements for usable parks and accessible stairways and sidewalks encourages safety, activity, and a more pleasant pedestrian experience. North Carolina's Nash County health education staff worked to promote stairwell use in a county building, although efforts to strategically locate the stairwell where it would most support use were not successful.

The siting of public facilities and capital spending can be used as an example for other development. Siting schools in neighborhoods and making them accessible not only provides a sense of community, but also allows for a variety of transportation options for students and

Postcard from the Piedmont

Dr. John E. Wear, Jr.

In the past few years, air quality problems in the Carolina Piedmont have become increasingly prevalent. In 2004, three of the region's urban areas found themselves on the American Lung Association's top-25 list of metropolitan areas with the worst ozone pollution in the United States: Charlotte-Gastonia-Salisbury ranked 14th; the Triad ranked 16th; and the Triangle ranked 23rd (ALA, 2005). This environmental challenge impacts community health and quality of life. It will only be exacerbated by the significant growth expected in the future.

These realities are further complicated by the fact that the Piedmont is losing its natural filtering system, the tree canopy. David Nowak, a research forester with the USDA Forest Service, found that trees in two counties in the greater Chicago region removed a daily average of 1.3 tons of carbon monoxide, four tons of sulfur dioxide, 4.2 tons of nitrogen dioxide, and 11.9 tons of ozone (Nowak, 1994). The monetary value of that pollution removal was $9.2 million. If growth trends continue, the Piedmont will experience additional tree canopy loss. Currently, the City of Salisbury and its planning department are looking at ways to incorporate the preservation of canopy into long-range planning through ecosystem analysis.

Preserving tree canopy and planning for growth are critical to good air quality. A study by Abt Associates found that a quarter of a million asthma attacks, 6,000 emergency room visits, and almost 2,000 hospital admissions over the course of a year can be attributed to air pollution. Lung-related deaths in the state are also increasing. Exposure to fine particulate matter is like "living with a smoker," according to Dr. Clay Ballantine, a nationally recognized authority on the relationship between air quality and health (Ballantine, 2004).

Policy makers, planners, and developers can guide communities in ways that preserve resources and protect health. The Catawba College Center for the Environment will host an air quality conference in March 2006 that will give decision-makers an opportunity to learn more about challenges faced in the Piedmont and to discuss viable solutions.

For more information, visit the web site at www.centerfortheenvironment.org. Works cited are provided on page 12.

Dr. John E. Wear, Jr., is the founding director of the Catawba College Center for the Environment and Bashore Distinguished Associate Professor of Biology and Environmental Science at Catawba College in Salisbury, NC. He received the Conservationist of the Year Award from the Governor's Conservation Achievement Awards Program in 2003.

staff. Public spaces and public buildings can serve as community centers, either formally or informally and may also provide necessary services for communities (e.g. post offices or libraries), including those who may not have ready access to automobiles. Municipalities can serve as an example to private sector developers in the siting of these facilities, and in spending money on sidewalks and traffic calming measures that will encourage healthy behaviors. Because planning decisions around these points are made in a broad context with beliefs from many stakeholders, it is necessary to recognize the impact that they will have on the health and quality of life of the community.

Health Impact Assessment

Given the connections between public health and the built environment, it becomes critical to assess, prevent, or mitigate health risks associated with proposed non-health sector programs, projects, or policies that could impact the public's health. Health impact assessment (HIA) is one method that can be used to begin to address

the health implications of planning decisions. Such decisions could be related to new development, zoning or other land use policies. Widely used in Europe, HIA is broadly "a practical assessment of policies, programs and projects that may affect the public's health, and which provides recommendations to maximize positive health effects and minimizing the negative health aspects of proposals, policies and projects" (WHO, 2005; National Institute for Health and Clinical Excellence, 2005). Rather than focusing on the traditional medical model of health that looks at diseases and treatment, health impact assessment is based on a broader, more holistic and social model, which "recognizes that the health of individuals and communities is determined by a wide range of economic, social, and environmental influences as well as by heredity and health care" (Barnes and Samuel, 2002).

In the U.S., many local health departments have expressed a strong interest in using HIAs, and many have begun using a variety of health assessment tools to identify local problem areas that could have potential negative health impacts on communities. There are many types of HIA tools available that can address health outcomes in detail or more superficially. Regardless of the depth of the HIA, a prospective approach is preferable, as this allows findings to be taken into account at the start of planning processes or perhaps even before the proposal is final. Because this may not always be possible, HIA can be implemented concurrent to planning processes or retrospectively, in which case findings would inform continued efforts to existing work. While there are many tools available for HIA, there are five basic steps that generally constitute a HIA (Health Impact Assessment Research Unit, 2003). The steps are similar to those found in an Environmental Impact Statement, although the two processes need not be related. These include:

- Step 1: Screening—a process that can help to determine if a HIA is necessary
- Step 2: Scoping—involves identifying what aspects of a proposal are to be examined, goals and objectives of the HIA, geographic and demographic information about the affected area, and a description of available resources and methods that will be used
- Step 3: Appraisal—identifies the depth of the process to be used (rapid versus comprehensive) and assesses how the population may be affected by the proposal
- Step 4: Recommendations and Final Report—where the final report is developed and shared
- Step 5: Evaluation and Monitoring—so as to follow the program or policy implementation and determine the success of the HIA through process and outcome evaluation

The San Francisco Department of Public Health is using HIA to explore how zoning affects social and economic diversity, affordable housing, access to public transportation, and a variety of other social and physical determinants of health. The Centers for Disease Control and Prevention is using HIA to design and evaluate alternatives to a high-speed arterial road that exemplifies low-density strip development, auto-oriented design, and is notoriously dangerous for the many pedestrians that must traverse it each day. Other institutions and local agencies are implementing a variety of HIA tools to assess the health impacts of programs and policies on our communities.

There are a number of useful resources and web sites available on HIA. For more information on HIA, visit NACCHO's HIA resource list at http://www.naccho.org/topics/hpdp/land_use_planning/LUP_Tools_Links_to_HIA.cfm or the Health Impact Assessment Gateway, available at http://www.hiagateway.org.uk/.

A Case Study: Planning and Health Partnership in Cabarrus County, NC

Across the nation, there are numerous local planning and public health partnerships being developed and maintained. The State of North Carolina hosts a variety of these partnerships, with efforts focusing on land use controls, institutional changes within schools, infrastructure improvements, and more. One successful example of collaboration is that of the Livable Communities Blueprint project in Cabarrus County. The local health department in south-central North Carolina, the Cabarrus Health Alliance (CHA), led efforts to increase physical activity opportunities for residents by providing bicycle and pedestrian facilities. These facilities would provide a no-cost means for incorporating physical activity into the residents' daily routines. Together, local government agencies in area cities collaborated to improve the quality of life for citizens by developing the Livable Communities Blueprint, a parks and recreation master plan with provisions for improving quality of life.

As directors from the planning department, parks and recreation department, and the city administration began working on the multi-jurisdictional parks and recreation master plan, the CHA became involved and suggested the inclusion of bicycle and pedestrian facilities within this plan. While there was a lack of funding and political support for such facilities, the agencies agreed that these facilities would be an important addition to the master plan.

Although the group continued to develop the master plan, there lacked a clear focus and drive forward, which resulted in slow progress and frustration. The collaboration was further threatened by mistrust between agencies and questions over how to distribute the costs of projects detailed in the plan. This is a challenge faced by many partnerships. However, the group gained momentum by defining a concrete goal and working toward accomplishing it.

In an effort to move forward, the group applied for funding from the Environmental Protection Agency's (EPA) Sustainable Development Challenge Grant Program. CHA took the lead in writing the proposal, framing the application to explain how bicycle and pedestrian facilities and park development were a means to improve air quality and to protect and preserve open space. While the proposal was not accepted, the group grew closer through this endeavor because it represented a tangible activity that the different agencies could get behind. In addition, their focus broadened to include additional quality of life concerns.

In order to proceed with the project without EPA funds, the group looked to the area's Metropolitan Planning Organization (MPO) for support. While there had previously been mistrust between local government agencies and the MPO, CHA had cultivated a relationship with the MPO while awaiting word from EPA. Thus, the MPO agreed to join the group and work to provide funding for bicycle and pedestrian facilities. The MPO raised their budget on these types of facilities from $1,500 to $30,000 to fund bicycle and pedestrian planning for two years. CHA was also able to provide funding from their cardiovascular health program to contribute to the effort.

The master plan soon became known as the Livable Community Blueprint, and included a section on bicycle and pedestrian transportation. An external consultant developed the final plan, with considerable input from community groups and residents. The original group of city agencies became the Livable Community Blueprint Steering Committee, and a subcommittee was formed to address the bicycle and pedestrian plan element. This subcommittee included members of the Steering Committee, a developer, bicycle advocates, and citizens who worked to identify major routes and to determine how to connect residential areas to commercial areas, schools, and other parts of the community.

Throughout the effort, the health department was seen as a neutral party, thus allowing the tension between other agencies to dissipate as the partners came together around quality of life issues. The tense relationships between agencies transformed into effective partnerships that grew even beyond the scope of the project, with CHA staff being asked to serve on a Pedestrian Improvement Plan Committee by an area Mayor. Further, health became recognized as an essential consideration in the design of communities, thus contributing to an improved quality of life for residents. In the end, the Blueprint included parks and recreation facilities, a greenway network plan, and provisions for bicycle and pedestrian transportation routes.

Conclusion

Today, so many communities are characterized by separated land uses, auto-dominated design, and inattention to human scale. Local health departments have a role to play in ensuring health considerations are taken into account in the design of communities. LHDs should be included in local planning decisions in light of the fact that the built environment can be designed to impact health outcomes in a positive or negative manner. Traditional health promotion approaches of community outreach and education can be complemented with efforts to encourage and promote healthy lifestyles through community design. Public health has a great deal to bring to the planning table. Local health departments are often seen as a neutral partner in what may be highly politicized environments; public health is an issue that is easy for residents, city agencies, and politicians to support. The field of public health can lend data and credibility to decisions and processes, and practitioners are highly skilled in community education and outreach. CDC's Healthy Places web site states, "a healthy community environment encompasses aspects of human health, disease, and injury that are determined or influenced by factors in the overall environment. Examining the interaction between health and the environment requires studying not only how health is affected by the direct pathological impacts of various chemical, physical, and biologic agents, but also by factors in the broad physical and social environments, which include housing, urban development, land use, transportation, industry, and agriculture" (CDC, 2005). Though more empirical research is needed to determine the exact relationships between specific community design factors and public health outcomes, it is evident that the built environment can influence lifestyles and environmental factors that impact health. Skills and expertise of public health practitioners can be joined with that of planners to provide strategies for healthy planning that improve the quality of life in our communities.

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Endnotes

1. Mobilizing for Action through Planning and Partnership (MAPP) is a community-wide strategic planning and implementation tool for improving community health. For more information on MAPP, visit: http://www.naccho.org/topics/infrastructure/MAPP.cfm.
2. Protocol for Assessing Community Excellence in Environmental Health (PACE-EH) is a methodology to guide local communities in identifying and addressing environmental health priorities. For more information on PACE-EH, visit: http://www.naccho.org/topics/environmental/CEHA.cfm.

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