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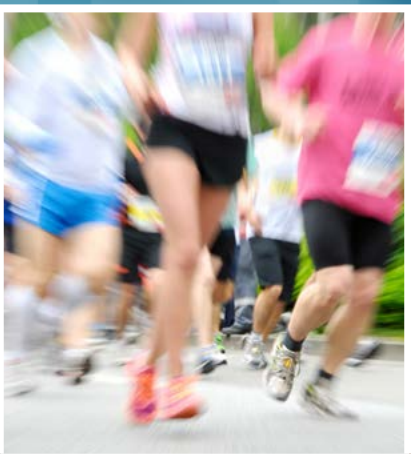
IMPROVING QUALITY OF LIFE:

The Effect of Aligning Local Service Delivery and Public Health Goals



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KEY NOTES

- **Local government leaders are recognizing that healthy communities have established a culture that is supportive of healthy choices. Public health is not a department but rather a community value.**
- **The growing complexity of public health requires innovative service delivery approaches, collaboration, and partnerships.**
- **Efforts to improve public health encompass a myriad of local services. In addition to those service areas with traditional public health roles — public safety, water, and sanitation — local governments increasingly realize that planning, infrastructure, parks and recreation, public transportation, and community development also greatly impact public health.**
- **One of the leading public health challenges facing countries across the globe is combating unhealthy behaviors like physical inactivity and obesity, which often lead to chronic diseases.**
- **Creating a healthy community can improve residents' quality of life, save resources, and enhance economic and labor force development.**
- **Local governments and their leaders are realizing that building a healthy community must be a multi-faceted and multidisciplinary endeavor that integrates public outreach and long-term policy changes.**
- **Ensuring the public health considerations are woven into all aspects of planning, programs, and policy will enable local governments to best position their communities for the challenges and opportunities ahead.**

INTRODUCTION

This report seeks to advance the conversation about viewing and managing general local government infrastructure, transportation systems, water and sanitation, land use and planning, and other services as part of broader efforts to contribute to a healthy environment and to support healthy lifestyles.

A strong link between the status of the public's health and the priorities and structures of the modern city has always existed. Around the turn of the 20th century, many cities in North American and Western Europe were experiencing major population growth while also facing a series of epidemics linked to water and waste. Because of this, particularly between 1890 and 1920, water, sanitation, transportation, and other networks were expanded to meet the health demands of local and regional populations. Further, governance structures were adapted in an effort to achieve a more equitable provision of these services.[1]

With the emergence of the modern jurisdiction and public health's increasing complexity and expanding scope, local level separate governance structures were established to oversee specialized staff. They provided direct public health services such as: disease and environmental health surveillance; immunizations; inspection of food-serving establishments and food safety education; inspection of school and related facilities; nutrition services; maternal and child health services; health screening and treatment programs; and vital records management, among others.[2] These are the core public health services often offered at the local level through local health departments and boards, outside of the direct purview of most general local government administrators, boards, and staff.

Nevertheless, general local governments fill important roles through their portfolio of services in support of community health and overall quality of life. In an environment of constrained public resources, increased community health needs, changing demographics, and an emphasis on intersectional and interlocal collaboration, many local public administrators have renewed their focus on the contributions their governments make or could make to underpin healthier communities, even if the core local public health responsibilities reside outside of their organization.

Through a review of existing research, a series of expert interviews, and analysis of global examples, this report examines the management of more traditional assets and services (i.e., roads and public safety) through a health-oriented lens. The study also considers new opportunities for collaboration, public engagement and education, decision making, and governance. This research builds on previous projects conducted by ICMA and the Center for Sharing Public Health Services, which documented collaborations between general local government and public health department back-office and administrative services.[3]

GOVERNANCE AND COLLABORATION

A healthy community does not just happen. It is created by a multitude of social, economic, environmental, and behavioral factors. Local governments play a critical role in shaping community health through the services they provide: drinking water, public safety, parks, planning, and the like. Acknowledging this responsibility, local leaders continually review, analyze, and work to improve service delivery. With a willingness to experiment and implement new initiatives, "local governments are the innovators in public health."[4] This leadership role is critical in order for local governments to address increasing public health needs with limited resources.

Local government leaders are also recognizing that healthy communities have established a culture that is supportive of healthy choices. Public health is not a department but rather a community value. Developing this value internally in the local government and throughout the community requires leadership, resources, and patience. Reshaping a community's infrastructure so that it supports healthy living, such as building sidewalks and increasing density, occurs after many years. Likewise, people will not change their habits overnight and will need continued education and encouragement. When this happens, the benefits are many: better quality of life for residents, lower medical costs, and in many instances, higher property values and economic growth. Strategic local government officials plan and govern for the long term, and public health is one area in which that commitment and outlook is needed.

Nashville, TN's health-centric culture. The City of Nashville, Tennessee, is committed to public health.[5] The city is striving to create a health-centric culture by improving the built environment and encouraging residents to adopt physically active lifestyles. A key component to the city's multi-faceted health initiative has been the coalescing of a diverse group of stakeholders, including the Nashville Area Metropolitan Planning Organization (MPO), Metro Public Health Department, Nashville Civic Design Center, and various city departments. The city's mayor has also worked with two dozen of the region's mayors to include two health-oriented goals within its Regional 2035 Transportation Plan:[6] "create a new vision for mass transit" and "support active transportation and walkable communities." To accomplish these goals, the MPO will invest 15 percent of its urban roadway funds to active transportation over the next 20 years. Nashville is also working to develop more mixed-use neighborhoods; address food deserts; and better serve low-income, minority, and elderly populations.

Collaboration and Organizational Structure

The growing complexity of public health requires innovative service delivery approaches and new partnerships between general local government units, health departments, schools, and nonprofit organizations.[7] These collaborations often start with basic conversations among officials, and may involve simply learning about each other's goals and objectives. What often results is the realization that local departments and nonprofit organizations share the same goal—public health—but approach it differently. The most successful collaborations have a strong leader as well as committed members who fulfill their obligations, share information, and stay motivated by and focused on their goal of a healthier community. Through collaboration, cities and counties can better ensure their policies and programs are most cost-effective in reaching public health goals.

Structural diversity in Public Health. The organizational placement of public health services can facilitate or hinder collaboration with local governments. In the United States, public health began through a combination of municipalities taking initiatives on their own and states needing local governments (primarily counties) to collect and oversee health statistics.[8] The result is a patchwork of differing management and funding relationships between local governments and the states when it comes to providing public health services.[9] Across the country, 28 percent of states provide public health services directly through state agencies and in 37 percent of states, public health has been decentralized and is provided through local or regional health departments. Finally, in 35 percent of states, public health is a hybrid system with both the state and local governments providing some combination of support. Four states report not having local health agencies. Because of this structural diversity, one would expect local governments to also have different collaborative opportunities with their local health departments.

In contrast, the United Kingdom's National Health Service transferred responsibility for public health to local government in 2013,[10] creating a powerful opportunity for health officials to overcome traditional silos and collaborate with other local government services. Local Health and Well Being Boards, composed of local representatives, allocate health funding based upon their communities' goals and priorities, national policy direction, input from a variety of stakeholders, and their Joint Strategic Needs Assessments.[11] Local governments have authority to direct their health funds to programs apart from treatment, if they can demonstrate to the national government a strong link between the program and improving community public health, such as outreach programs to promote physical activity. Although collaboration is not required under the public health service delivery system, several communities are creating new partnerships. In two-tier authorities in England,[12] it is particularly important that the county health teams have strong relationships with their local districts because these districts are responsible for planning, recreation, housing, and environmental licensing.

In Leicestershire County, England, the health team works closely with the county's seven local districts.[13] Each district has its own health and well-being forum with representatives from the public health team, and the health forum sets its own priorities that link into the county-wide strategy. Members of the health team meet regularly with district representatives (i.e., each district has its own health improvement officer). Furthermore, Leicestershire awards small grants to the districts as a means to support individualized public health programs like smoking cessation.

Canada's health system would make collaborations between cities and public health authorities a bit more difficult. The provincial governments are responsible for funding health care and developing health policies. Therefore, health initiatives requiring collaboration would typically be initiated by the provincial government. For instance, if a local government wants to integrate public health elements into a revised comprehensive plan, it would most likely hire a consultant for health expertise rather than go to the provisional authority for that support.[14]

Beyond the placement of public health within governmental structures, the make-up of these departments differs greatly, which can make collaboration more challenging for some local governments.[15] Health departments in the United States vary considerably in size, from staffing just a handful of personnel in a rural area to being quite large and sophisticated in major metropolitan areas. The availability of a health department's staff and other resources will likely affect its ability to collaborate. Public health staff may not have the expertise to assist a local government with reviewing a comprehensive plan and may be hesitant to transfer resources to acquire that knowledge. To the extent that public health budgets support collaboration with local governments over issues like obesity prevention, one would expect an increased willingness to do so.

Partnerships to promote public health need to increase vertically as well as horizontally.[16] States can and should work with local governments to support community health. They can provide funding for health initiatives or allow greater flexibility in how state funds can be spent to support health. Likewise, greater communication between local and state government agencies can help ensure that state rules and regulations promote local health goals. For example, state transportation plans should complement a local government's goal to increase miles of sidewalks and use of public transit.

Although collaboration may not be easy, it is often worth the effort. City and county managers are in an excellent position to champion these partnerships and

help members work through obstacles. Throughout this report, stories of successful collaborations among local government departments, health departments, and nonprofit organizations demonstrate the possibilities for creating healthy communities.

NEW TRENDS IN HISTORICAL PUBLIC HEALTH ROLES

The role and impact of some local governmental services on protecting public health is well established. The missions of these services have not been altered over many years, although achieving them has become more complex and daunting. This report posits that three core service areas—public safety, water, and sanitation—have traditional public health roles. They are presented separately from other services that are more directly linked to specialized public health responsibilities.

Public Safety

Public safety could be considered a cornerstone service of local government. By definition, law enforcement and fire services protect the public health by maintaining public order, apprehending criminals, extinguishing fires, and providing emergency medical services (EMS). In the United States, nationally, law enforcement made 11.3 million arrests in 2013[17] while fire departments responded to approximately 31.6 million calls in 2014 and of those, 64 percent were for medical aid.[18]

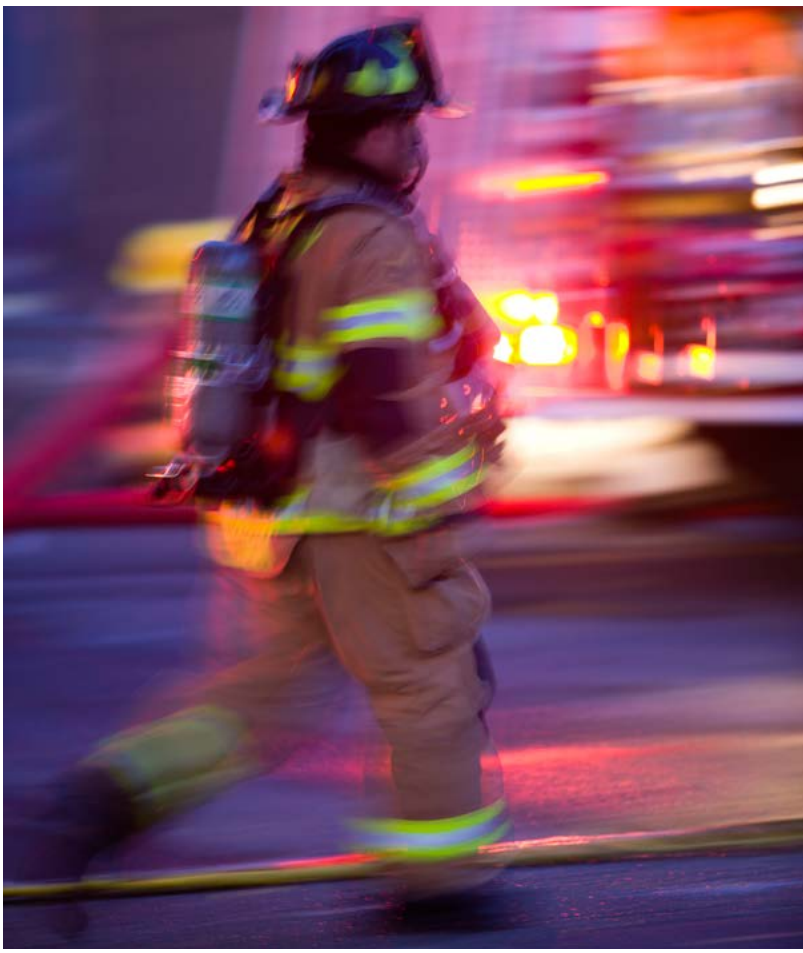
The substantial resources devoted to public safety demonstrates its high value to local officials and the public. Typically, local governments spend approximately 50–60 percent of their operating budgets on police/sheriff and career fire services. In 2008, there were 15,564 local law enforcement agencies employing 644,042 full-time and 39,144 part-time sworn personnel.[19] The National Fire Protection Agency estimates there were approximately 1,134,400 local fire fighters in the United States in 2014. Of those, about 31 percent were career fire fighters and 69 percent were volunteers.[20]

The value of public safety's prevention services may have an even greater impact on public health than direct public safety response services. The very existence of law enforcement can prevent crimes. For example, because police enforce traffic safety laws, more people obey them, resulting in less reckless driving and more saved lives.[21]

Likewise, fire safety efforts may prevent fires and suppression efforts stop structural fires from spreading across a neighborhood or even city. Fire departments across the United States, as in other countries, also play a crucial role in fire prevention through their public education efforts such as visiting schools; providing, installing, or checking smoke alarms; and participating in community events. Fire departments' smoke alarm programs can be particularly important. Research has shown that working smoke alarms reduce fire-related deaths by 50 percent.[22] Because one cannot measure what doesn't occur, it is difficult to truly gauge the full impact of law enforcement and fire service on public health. Still, their importance to a community's well-being is fundamental and unquestionable.

Emergency Medical Service

With the number of emergency medical service (EMS) incidents increasing, so too are expenditures for local governments.[23] There are many possible reasons for the increase. Conventional wisdom suggests the primary reasons are an aging population, a lack of access to



primary care, and the public's greater willingness to call 911 for help rather than visit their doctor or urgent care center. As these trends have continued, many local governments have begun to address the reasons for higher EMS usage directly.

New collaboration in Hayward, CA. To tackle rising EMS costs and improve community health, the City of Hayward, California, has created a one-of-a-kind collaboration between the fire department and the Alameda County Public Health Department.[24] The health department opened a clinic next to a city fire station. The primary goal of the combined health-fire campus is to increase data sharing. The expectation is that fire fighters will share information about the neighborhood's sickest members (and most frequent 911 callers) with health clinicians so that these persons can be directed into a managed-care setting. Through better primary care, the patients' health is expected to improve overall, thereby reducing the demand for EMS.

Water and Water Treatment

Clean, safe drinking water is necessary for life, and United States local governments are primarily responsible for ensuring the public has access to it. Approximately 53,000 community water systems in the United States[25] provide water to more than 286 million Americans. However, only a handful provide the vast majority of water to the public. In fact, just 8 percent of community water systems—large municipal water systems—provide water to 82 percent of the United States population. While public water utilities have been successful in ensuring that their customers have access to high quality drinking water, there are challenges.

Drinking Water[26]

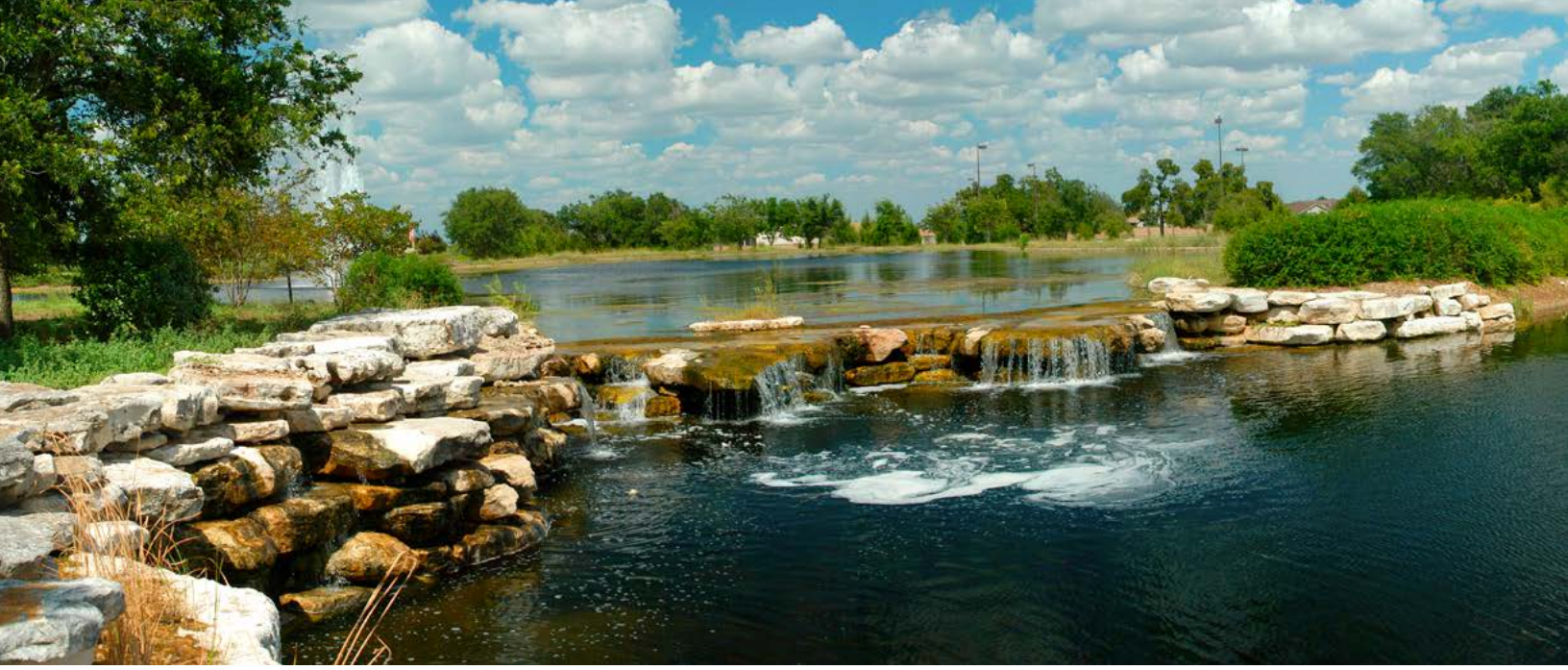
In providing clean water, United States local governments adhere to the laws and rules promulgated under the Safe Drinking Water Act (SDWA). The law sets standards for pollutants in drinking water provided through community water systems (e.g., local water utilities).[27] In fact, the U.S. Environmental Protection Agency (EPA), which has primary responsibility for overseeing the SDWA, sets legal limits for over 90 contaminants in our drinking water and requires testing for dozens more.[28]

The contaminant getting the most attention lately is lead. Due to a very small number of highly publicized cases, the EPA will be focusing more attention on lead in drinking water. In 2016, the EPA Administrator sent a letter to the nation's governors stating that the EPA is seeking funding to finance the upgrade and replacement of aging infrastructure and asking states to improve their oversight of drinking water to address issues of lead levels.[29] This may result in increased pressure on local governments to replace their lead pipes, but that would be a daunting task. Even though lead has been banned from pipes since 1986, the United States still has a huge legacy problem. There are approximately 7.3 million lead service pipes in the United States with an estimated replacement cost of $5,000 per pipe. [30] The City of Lansing, Michigan, has been working to replace its 13,500 lead pipes since 2004. The city is nearly finished but at a cost of $42 million.[31]

Replacing lead pipes is just an example of a larger water infrastructure problem facing local governments. Much of the water infrastructure in the United States is at the end of its useful life. There are an estimated 240,000 main breaks per year,[32] with old age being the primary culprit. According to the American Water Works Association, the cost to replace every pipe is estimated at more than $1 trillion[33] and local governments will be responsible for much of the bill. Local governments pay for over 97 percent of the total annual expenditures for public water, wastewater services, and infrastructure.[34] The hope is that cost will help drive innovation. For example, Lansing replaced its lead pipes without digging trenches. Instead, the city attached a new pipe to the back of an old one and pulled the latter out, a method that saved the city money.[35]

However daunting the challenge is to replace water infrastructure, it is an issue that will not go away and must be addressed. Whether dealing with long-term critical health problems like those from high lead levels or intermittent water main breaks requiring residents to boil water for a couple of days, residents of localities in the United States expect and deserve safe drinking water—as is the case globally. Financing capital replacement for water lines is based on basic public finance principles: user charges must be assessed to sufficiently meet current operating costs and capital replacement. Using an enterprise fund to administer water utility finances is common and can help local officials better manage future capital outlays.

For many local governments, it may be time to recalibrate their water usage charges, as difficult as this may be. Local leaders and the public rightly believe that



water should be affordable, but it also needs to be safe. Establishing an appropriate water rate that incorporates capital replacement can be tricky because local governments also want to promote water conservation, which reduces revenues. As consumers use less water, the utilities have less money for capital improvements that are needed regardless of usage. Therefore, fees to replace pipes (distribution) may need to be part of a base charge, independent of the amount of water used. This idea does conflict with the general finance principle that distribution expenses are considered a marginal cost and thus should not be included in a base charge.[36]

Water Treatment

A key component to ensuring safe drinking water is to protect it from pollutants and again, local governments serve this role through wastewater treatment services. In the United States, beginning with the passage of the Clean Water Act in 1972,[37] wastewater treatment has grown in importance and complexity. It now includes not just point source pollution (e.g., water from sewer systems) but also nonpoint source pollution prevention and storm-water runoff.[38] In urban and suburban areas, nonpoint source pollution is caused by impervious surfaces such as roads, roofs, parking lots, and sidewalks. The greater the amount of impervious coverage in a watershed, the higher the risk for water degradation.[39] As a starting point for managing nonpoint source pollution, local governments can develop a watershed management plan that includes measuring the amount of impervious surfaces within a watershed and estimating the resulting stormwater runoff from those surfaces. The plan can help local government officials understand the impacts of future development and guide watershed management.

With the technological advancement and success of water treatment plants to address point source pollution, local governments have increasingly focused efforts to improve water quality through stormwater management programs. Stormwater projects are evolving from retention ponds at the edge of a development to creating multifaceted projects that try to reflect the natural environment.[40] Specific techniques include using porous surfaces, rain gardens, and sand filters. These programs can be large or small. For instance, several cities in Australia (e.g., the cities of Kingston, Melbourne, and Adelaide) have planted rain gardens near curbs and storm drains to capture excess water. Furthermore, the governments encourage residents to create their own rain gardens. Public rain gardens are low cost but do require some public works maintenance. The City of Vancouver, British Columbia, Canada, is now designing "sustainable" streets[41] so that stormwater runoff naturally filters to the ground from planted areas and into ponds. They are also integrating absorbent materials like grass into the center of residential, low-traffic roads, essentially recreating the "country lane."

To fund stormwater projects, local governments in the United States have increasingly recognized the necessity of stormwater utilities. A stormwater utility establishes a consistent, dedicated funding source, reducing pressure on the general fund to pay for these capital projects. Currently, several hundred such utilities exist across the country. To assist a local government looking to establish a stormwater utility, the U.S. Environmental Protection

Agency has several resources available (visit https://www.epa.gov/waterfinancecenter/about-water-infrastructure-and-resiliency-finance-center).

Dual-use stormwater projects. Newer innovations for larger stormwater projects include building them to be dual use. The City of Wentzville, Missouri, recently built a 50-acre park close to the city's main commercial area.[42] The park includes traditional amenities like playing fields and walking trails, but the former uses synthetic turf while the latter is made from pervious rather than impervious pavement. The park also utilizes rain gardens, bioswales,[43] and wetlands to slow stormwater runoff before it goes into a seven-acre lake. In 2011, the City of Toronto, Ontario, Canada, also developed a stormwater treatment facility that serves as a park but with a different design. In contrast to Wentzville's more naturalistic approach, Toronto is using ultraviolet disinfection in addition to other techniques to treat sewer overflow during heavy rains before it goes into Lake Ontario.[44] The facility includes a waterfront promenade with trees and public art. The dual-function parks reflect the growing importance of collaboration to promote public health and maximize resources.

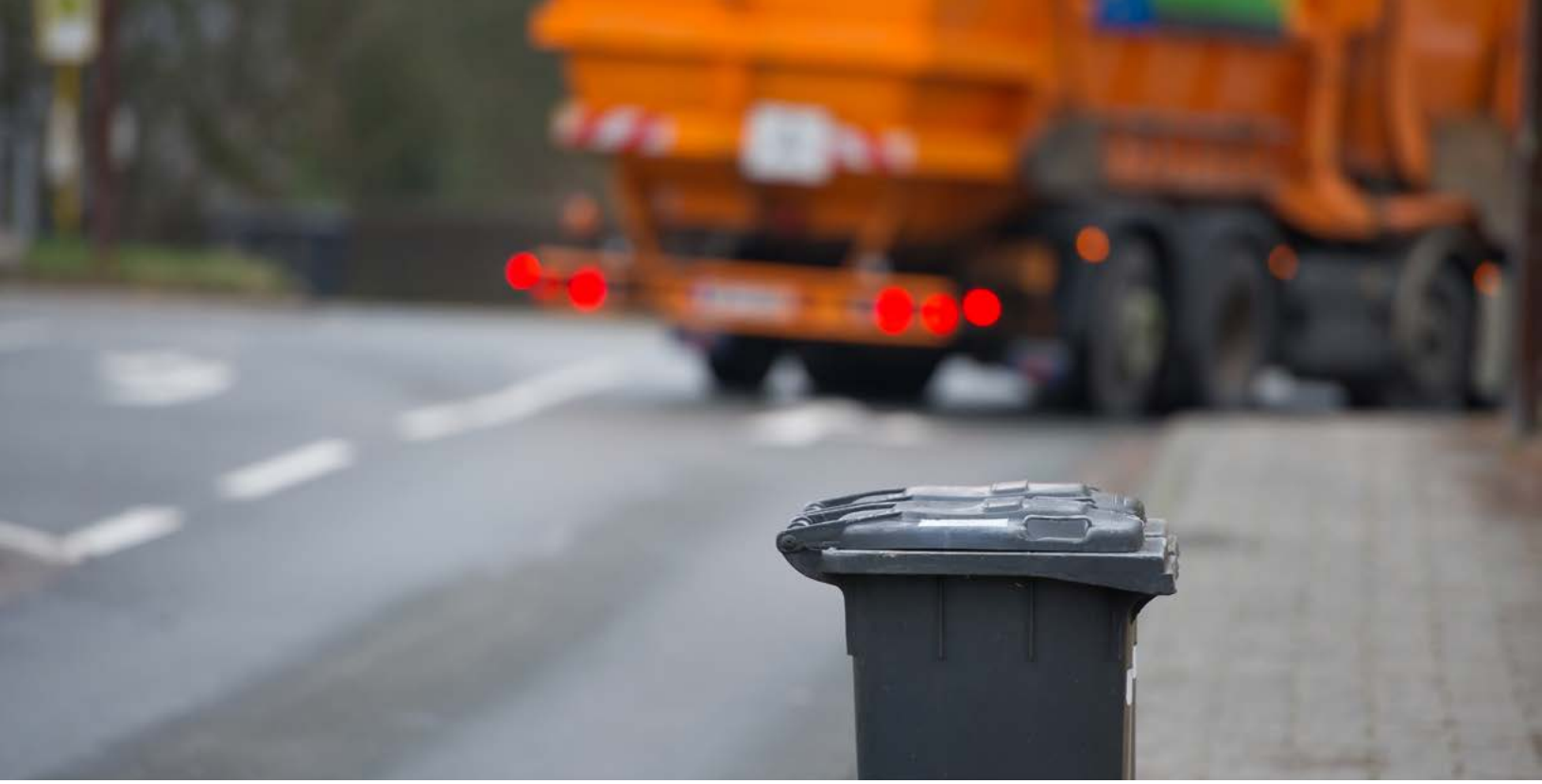
Water protection in the agricultural sector. Agricultural stormwater discharges continue to be exempt from federal regulation. However, some agriculture practices can negatively impact water quality and hence public health. Therefore, rural communities are starting to work with the agricultural sector to protect and improve watersheds through collaborative programs. In order to engage the local agricultural community in water protection, local governments need to approach any collaboration by understanding that farmers must view projects or programs as making "good business sense" by improving their operations, creating healthy soils, and/or advancing farming sustainability.[45]

Several diverse case studies of successful agricultural-focused water improvement programs are highlighted in a recent study sponsored by AGree, the National Association of Clean Water Agencies, and the U.S. Water Alliance.[46] These programs range from a water trading program with the Miami (Ohio) Water Conservancy District, to sustainable resource planning aimed at reducing nitrate levels in drinking water of California's Central Valley, to providing funding to farmers who implement conservation practices in Dane County, Wisconsin.

Water challenges in India.[47] Counties with emerging economies like India continue to struggle with supplying safe drinking water to residents. Manvita Baradi,[48] executive director of the Urban Management Centre (an ICMA partner organization headquartered in Ahmedabad), believes supplying safe drinking water to the Indian population is their local governments' biggest health challenge. Approximately 37.7 million Indians are affected by waterborne diseases annually, and 1.5 million children are estimated to die of diarrhea.[49]

Although India has strong water protection laws in place, enforcement of them can be lax. Rapid urbanization, insufficient management capacity, historically siloed government departments, and cost all come together to make addressing the problem very difficult. Cities have built water systems, but the water can be contaminated by insufficient water treatment and sewerage systems. The inability to address water quality problems can be exacerbated by cultural issues that make determining the causes of intestinal illness difficult to pinpoint. Examples include children not washing their hands properly before eating (traditionally, Indians eat with their hands) or eating food purchased from street vendors.

Moreover, drinking water is often only available for a few hours a day in many cities. Yet, there are options for improvement. Technology offers the best opportunity to efficiently and effectively address water quality. Through GIS, health professionals could pinpoint geographic "hot spots" for malaria or diarrhea that could be caused by problems with water or sewer systems. As local government professionals increase their management capacity, they can focus more on implementing organizational reforms, applying technology to problem solving, and improving water system operations.



Local Sanitation

A key aspect of maintaining healthy sanitation levels in communities relates to how liquid and solid waste are managed. Effectively maintaining sanitation systems and related infrastructure to process residential, commercial, and social waste helps to limit the spread of disease, reduce the prevalence of pests, prevent ground water contamination, and mitigate unpleasant odors that impact overall quality of life.[50] While the United States and most upper-income countries have universal or near universal access to improved sanitation facilities,[51] and even though 2.1 billion people have gained access to improved facilities since 1990, 32 percent of the world's population does not have access to adequate sanitation facilities.[52]

In developing counties, the lack of capacity of local sanitation systems is often a function of how urbanized a jurisdiction is and how rapid its growth has been, inhibiting manageable public and private buildout. Examples of cities that continue to have waste removal challenges include Dhaka, Lagos, and Mexico City. While national governments play a role, closing the gap between residents with and without adequate sanitation services is a central responsibly of local (and other sub-national) governments that often have prime responsibly for these services—services that create the foundation for almost all other health-related efforts.

As in many parts of the world, in the United States, local governments play a central role in liquid and solid waste removal and other related sanitation efforts, often in coordination with other sectors. As of 2007, 75 percent of local governments provide sewage collection and treatment, 58 percent directly provide these services entirely, with the rest acquiring some or all of these services from another government, the private sector, and/or a nonprofit entity.

Sixty-seven percent of local governments are responsible for residential solid waste collection, and half (50 percent) are responsible for commercial solid waste collection. A minority of local governments, 34 percent for residential services and 22 percent for commercial services, directly offer these services (with their own employees), with the rest contracting with outside entities.[53] There continues to be increased interest by both the public and private sectors to sustainably leverage municipal waste products. For example, from a cost-saving and/or revenue-generating perspective, as of 2015, almost 8 percent of United States local governments were generating electricity through refuse disposal, wastewater treatment, or landfill operations.[54] Also, aside from the United States, countries such as France, Spain, Bulgaria, Norway, and others continue to use biosolids, the by-product of wastewater facilities, for crop fertilization, filtration of stormwater, and fuel, among other uses.[55]

Looking ahead, there are challenges in both developed and developing country environments. In many

cities in North America and Western Europe, recent austerity measures at national levels, revenues impacted by sluggish economic growth, and aging infrastructure assets all place strains on managing local sanitation networks. This confluence of factors has lead local governments to explore new arrangements for maintaining and expanding sanitation services, including, among other approaches, increased contracting out of trash services,[56] increased use of interlocal arrangements, and increased role of institutional investors.[57]

Many jurisdictions in developing economies, from central cities that are experiencing rapid population growth to those that are more rural and isolated, continue to look for strategies to expand access to sanitation facilities for resident use, while enabling the removal of solid and liquid waste away from population centers.[58] In several environments, governments and foundations are addressing this by incentivizing public private partnerships for building facilities and commoditizing waste products; developing new toilet technologies; and building out sanitation service provider markets.[59]

NEW ROLE FOR LOCAL GOVERNMENTS IN PUBLIC HEALTH[60]

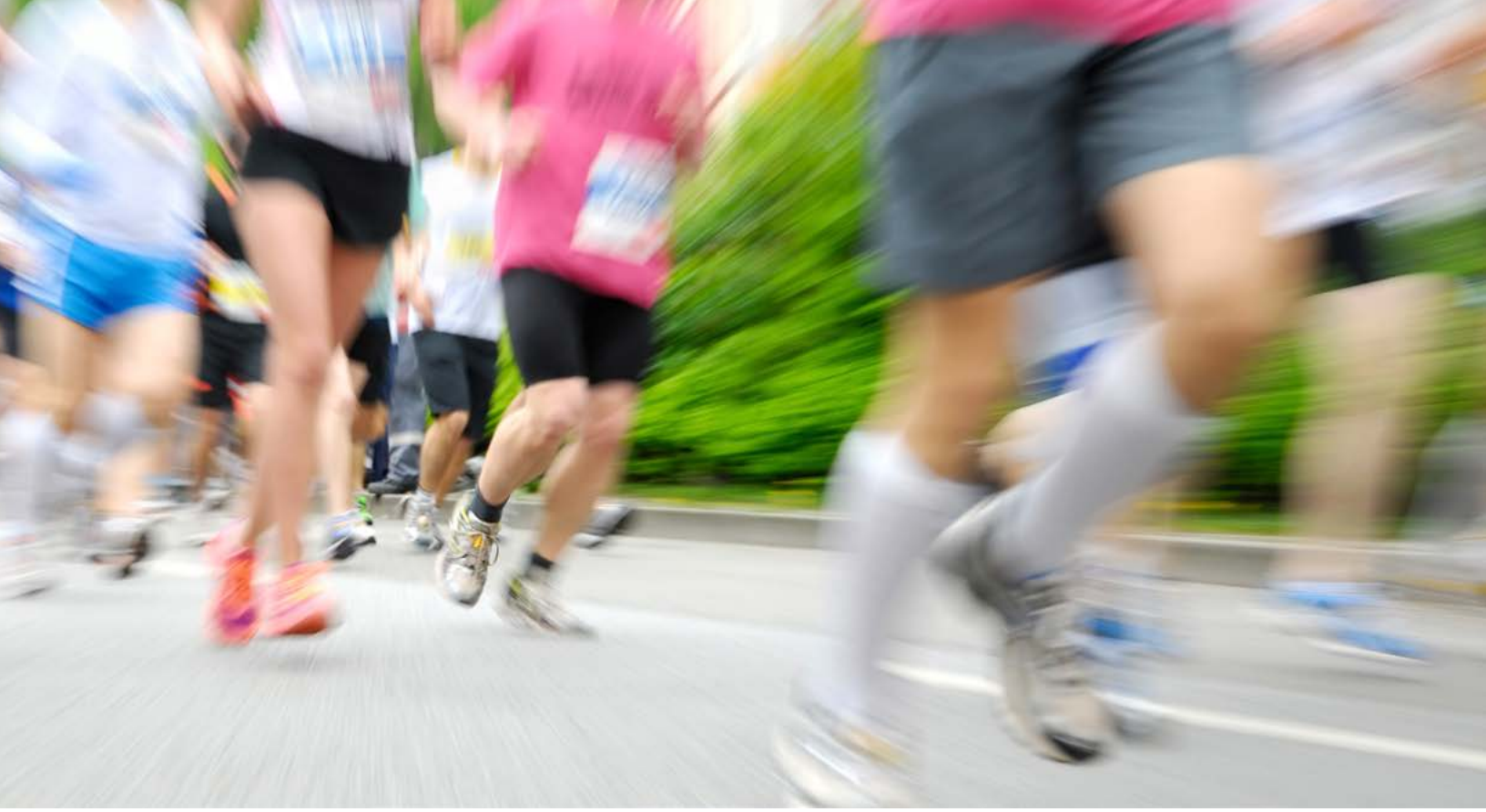
As public health needs evolve, so too must local governments' responses to address them. While still attending to traditional health needs such as public safety, water, and sanitation, local governments recognize they have a new critical role to play in public health. One of the leading public health challenges facing countries across the globe is combating unhealthy behaviors like physical inactivity and obesity, which often lead to chronic diseases, most notably type 2 diabetes, hypertension, and heart disease. The health costs to manage these illnesses are staggering and will only increase as people age. To reduce the occurrence or negative impacts of chronic diseases, local government officials are starting to evaluate their services, most notably planning, infrastructure, recreation, transit, and community development, to help make their communities healthier places to live and work.

Costs of a Global Epidemic

Obesity is a global epidemic. In 2014, more than 1.9 billion adults (39% of global population) were overweight, and of these, 600 million were obese (13% of world population),[61] double the number from 1980. Furthermore, 42 million children under the age of 5 were overweight or obese in 2013,[62] and overweight children are far more likely to become overweight adults. Even more disturbing is that the ill health effects from being overweight as a child carry into adulthood.[63] In the United States, obesity is increasing among persons of all races, genders, and income groups.[64] Sixty-nine percent of American adults are either overweight or obese (35.1% are obese), and approximately one-third of all children and adolescents (ages 6–19) are considered overweight or obese.[65] Similarly, two-thirds of English adults and approximately 20 percent of English preschoolers are obese or overweight.[66] Once only associated with high-income countries, obesity is even common in middle- and low-income countries.[67]

Of course, physical activity can help combat obesity and lead to better health. United States national health guidelines recommend adults get at least 150 minutes of moderate activity every week, such as briskly walking five days a week and working out all major muscle groups two or more days a week.[68] Children need 60 minutes of moderate to intense aerobic activity a day as well.[69] Unfortunately, Americans are sedentary. Only about one in five meet these physical activity guidelines, and less than 30 percent of high school students get at least 60 minutes of physical activity every day.[70] The United States is not alone when it comes to inactivity. In the United Kingdom, people walk less than nine minutes a day on average, and that includes time walking to the car, work, and shopping.[71] Likewise, only about 15 percent of Canadian adults meet physical activity guidelines (which are the same as in the United States).[72]

The medical costs of obesity and physical inactivity are staggering. Of the $2 trillion spent on medical care in the United States each year, 75 percent is attributed to chronic health conditions and nearly 10 percent of all national medical costs are obesity related.[73] Medical costs for obese persons in the United States were $1,429 higher than for a person of normal weight.[74] The direct financial cost to the United Kingdom's National Health Service from inactivity reached approximately £900 million ($1.29 billion USD) in 2009,[75] while in Canada direct health costs equaled $2.4 billion ($1.8 billion USD) for that same year.[76] In Australia, 84 percent of all preventable deaths were due to chronic diseases, and treatment of chronic disease accounts for nearly 70 percent of all allocated health expenditures.[77] Fortunately, health benefits can happen



from increased activity even when body weight status does not change.[78] Therefore from a policy perspective, the greatest health benefits occur when the least active people become slightly more active.

There are real economic losses from an unhealthy society as well. Lost productivity for health reasons costs the United States $260 billion in reduced economic output.[79] United States workers who are overweight or obese and have chronic health conditions like diabetes miss an estimated 450 million more days of work annually compared to healthy workers.[80] England's Department of Health estimates that the overall United Kingdom economy loses £20 billion ($28.3 billion USD) each year due to inactivity.[81] More generally, according to the World Economic Forum and the Harvard School of Public Health, between 2012 and 2030, $47 trillion in global economic output will be lost due to noncommunicable diseases.[82] While there is not a complete consensus,[83] most researchers and practitioners identify a positive link between a healthy community and a labor force that is productive and creative,[84] with more sustainable health care costs, making it more attractive to businesses.

The Attractions of Healthy Communities

Healthy communities are desirable places to live. Investments in sidewalks and walkability increase land values by a range of approximately 70 to 300 percent.[85] For every one point increase in a neighborhood's walkability score (out of 100),[86] property values increase from $800 to $3,000.[87] This trend will likely continue because of changing housing demands from millennials and aging baby boomers. By 2025, half of all households will be single person,[88] dramatically reducing the need for larger homes on half- or three-quarter-acre lots. Furthermore, the majority of millennials desire walkable communities with multiple transportation options (i.e., public transit).[89] Baby boomers are also interested in walkable communities with access to public transit and housing that enable them to "age in place."[90] These new expectations will challenge traditional viewpoints about development, services, and ultimately what communities should look like.

Influence of Local Government's Built Environment

Even though local governments provide emergency management services and health insurance for their employees, and some even support their public hospitals, they bear a relatively small portion of the national health costs discussed above. Yet cities and counties are, in many respects, the most influential level of government when it comes to improving public health because they create the environments in which people live. Local governments can help make a healthy lifestyle the easier

choice for the public through comprehensive plans, capital improvements like sidewalks and parks, and public transit. Building a healthy community can improve residents' quality of life, save resources, and even enhance economic development.

Local government managers across the globe are recognizing that it is time to take a leadership role in addressing this health crisis. A 2007 ICMA survey found that 99 percent of respondents believed it was very (70%) or somewhat (29%) important that local governments encourage and provide opportunities for physical activity for residents in their communities. From the same survey, respondents also said improving the quality of life for constituents (89% selected) and reducing health insurance/absenteeism costs to local government and business (53% selected) were the two most important reasons for local governments to take a leadership role in combating obesity.

Challenges to addressing obesity. Many managers face an uphill battle when trying to promote and implement programs and policies that encourage healthy behaviors. The day-to-day needs of managing a city or county can make it difficult to bring longer-term issues like health promotion to the forefront of an elected body's attention. Furthermore, dedicating limited resources for health initiatives is challenging when local governments are still dealing with extensive backlogs of needs caused by the Great Recession. In England, Australia, and Canada, financial stress is particularly acute as their national, state, and provincial governments have all dramatically reduced intergovernmental transfers to local governments. For example, England's central government has decreased grants to local governments by 36.3 percent from 2010 to 2015.[91]

Perhaps the largest barrier to reducing obesity and inactivity is perceptual, resulting in a lack of political will from elected leadership. The World Health Organization's recent report on ending childhood obesity stated, "The greatest obstacle to effective progress on reducing childhood obesity is a lack of political commitment and a failure of government and other actors to take ownership, leadership and necessary actions."[92]

We note that this attitude is not limited to children but rather encompasses the whole obesity and inactivity problem. Unlike earlier public health interventions that dealt with contagious diseases, many residents and public officials resist government involvement in what is deemed a behavioral issue and personal responsibility. People choose not to exercise and eat healthily, and so, the thinking goes, it would be a waste of resources to build sidewalks and bike lanes or change zoning to encourage local supermarkets. What is missing is an appreciation that people may *want* to be active and to eat healthily but lack the opportunity in their built environment, something local governments control. There is a growing appreciation that public health needs to be reframed and thought of more broadly. It involves more than just treatment but also its antecedents, such as housing, education, income, and the environment in which people live.

More research on evidence-based strategies. Of course, many people have reservations about investing significant public resources for more active environments like sidewalks and bike lanes without assurances that residents will use those assets. More research on evidence-based strategies that reduce obesity are needed to fully address the complex decision making involved with lifestyle choices. Fortunately, public and private organizations across the globe like the World Health Organization, Centers for Disease Control and Prevention, the Robert Woods Johnson Foundation, and Public Health England have been sponsoring programs and projects to better understand what strategies are most effective at fostering long-term health improvements. Likewise, academicians are also analyzing public services such as street design, public transportation, and outreach programs to learn how they affect physical activity. The confluence of local government initiatives, public and private financial support, and systematic analyses is giving local decision makers the tools and evidence they need to build a better quality of life for their communities.

Climate Change as a Public Health Concern

The effects of climate change will dramatically impact thousands of communities across the United States and the globe. A recent study estimates 13 million people living along United States coastlines will be affected by sea level rise.[93] The flooding associated with sea level rise poses a serious public health concern due to inoperable water and sewer facilities, trash and debris entering waterways, lack of access to medical care, and so on. Local governments in these coastal areas will need to invest in infrastructure to mitigate flooding as well integrate these impacts into their comprehensive, transportation, and emergency response plans.

No complete cost estimates exist on climate change's impact on coastal communities. Each local government

will need to decide how much to invest based on its estimated risk from different sea level rise scenarios and the concomitant needs for infrastructure and other land-use planning policies.[94] Currently, resources are available to determine what infrastructure will likely be effected by flooding within communities, and this can serve as a baseline for estimating impact.[95] Even inland local governments will likely have to address public health considerations due to more severe weather events and higher temperatures. Solutions to address these concerns include increasing tree canopies along sidewalks to allow residents to walk more comfortably, creating programs to reduce risks of the elderly experiencing heat strokes, and managing water demands during more intense periods of drought or flooding.

Melbourne prepares for climate change. Australian local governments consider climate change one their leading public health challenges.[96] Concerns include extreme heat, intense rainfall and storms, fire, and sea level rise for coastal communities. The City of Melbourne, Victoria, Australia, has been a leader in preparing for climate change for several years and in 2012 achieved carbon-neutral status.[97] In 2007, it undertook a comprehensive assessment of its risks from climate change and adopted an adaptation strategy. In developing the strategy, the city extensively engaged the public, sought advice from the academic community, and included multiple community stakeholders. To implement their plan, the city has invested tens of millions of dollars over the years. Their plan is multifaceted, and the city is addressing

- Flooding, with stormwater investments
- Greenhouse gas emissions, by constructing "green" buildings[98] and converting street lights to LED bulbs
- Heat, with tree canopy expansion
- Public education, through forums and extensive content on its website.

In order to assess its progress, the city tracks achievement of specific policies and goals through performance measurement.

Planning and Zoning[100]

Planning is the foundation for a community's built environment. Through comprehensive or land-use plans, communities articulate their visions for the future, guiding growth and development. These plans bridge the gap from the present to that vision such as helping to determine the location and timing of capital improvements and the density of buildings. The process of planning also supports building consensus within a community about its future, which in turn enhances the sense of place for residents. Land-use policies, codes, and standards that emanate from plans direct specific decisions for implementation and ultimately create the built environment. Planning covers all of the critical quality-of-life elements— housing, land use, natural and cultural resources, transportation, recreation, capital improvements, solid waste management, sustainability, economic development, and more—and therefore is critical to the public health of a community.

At its inception, planning was integral to public health. Planners addressed poor ventilation in tenement housing that was causing tuberculosis and improved air quality by using zoning to segregate polluting factories from housing. They continue to play a role in public health by reviewing development plans for water wells, septic tanks, and sanitation. However, these actions are at the end of the development

CHALLENGES IN DEVELOPING COUNTRIES

In addition to limited resources, developing countries often lack the management capacity to address long-term complex problems like obesity and climate change. For example, India has faced incredibly rapid urbanization over the last 10 years, and many cities cannot keep up with growth. For perspective, India's city of Ahmedabad has increased in population from 3.5 million in 2001 to nearly 5.8 million in just 10 years. For the country's cities, this extreme expansion has led to unwieldy governmental structures that have large, siloed departments and fractured governance from dozens of elected city wards. Civic organizations like the Urban Management Centre (UMC), an ICMA partner, are working to improve the management skills of local officials, but it is a challenge. UMC Executive Director Manvita Baradi[99] believes that in time Indian cities will have the management expertise and ability to substantially address their public health challenges, but it will take time.

process and do not consider preventable diseases like diabetes or hypertension. With our communities' current medical challenges, it is time to re-engage planning in public health. City and county managers recognize the link between the built environment and health. Ninety-two percent of respondents to ICMA's 2007 membership survey on public health believed that the relationship between community layout/design and the ability of residents to be physically active was an important or emerging issue.

Planning creates opportunities for positive change in a community. As one interviewee stated, "We now have the opportunity to tackle preventable diseases through the design of the places we create or re-shape."[101] Our "new healthy communities" would in many respects resemble our historic urban centers before planning shifted its focus to accommodate the automobile.[102] It would have sidewalks with benches and tree canopies, bicycle lanes, and narrower streets to slow down traffic. Land use would permit higher density development and integrate residential and commercial uses (i.e., mixed use) so that people could walk or bike to destinations. Sidewalks would enable residents to walk to nearby parks that had trails, playscapes, and exercise equipment for the elderly.

To promote walkability, design standards would reflect a human scale. (With walking and cycling's slower speed of movement, people can observe more of their environment, thus building details become more important.[103]) Public transit would be available. Infrastructure and buildings would be designed to limit stormwater runoff by using pervious pavement, green roofs, and water gardens. Finally, all residents would have access to nutritious food, primary health care facilities, community centers, and safe infrastructure. If these considerations sound familiar, it is because many of them reflect the ideas espoused in Smart Growth, an initiative and approach that communities across the country have been adopting since the 1990s.

Successfully integrating public health into comprehensive plans will be a multifaceted effort.[105] As with any major initiative, a champion to spearhead the process and keep momentum going will be needed. In addition to traditional data such as economic and demographic projections, health data will be very important to help develop priorities and objectives and to eventually measure the impact of policies. Plan development requires significant outreach efforts both internally with other government departments and externally with nonprofit organizations, community leaders, and the general public. Service departments would likely benefit from education on the connection between their services and public health. Likewise, the general public should be informed about the benefits of including health elements into the comprehensive plan. Finally, health officials should be encouraged to review all aspects of the plan to ensure that health is fully incorporated throughout.

ABOUT MIXED USE

- Mixed use is a zoning category or principle that allows multiple kinds of land-use categories within a particular geographic area. Typically, mixed use can describe areas that include both residential and commercial uses such as small retail shops, restaurants, and offices.
- Successful mixed-use neighborhoods require sufficient residential density to support the shops and restaurants. A standard rule of thumb is that people will walk one-quarter to one-half mile to reach a destination.
- The appropriate kind of mixed use will differ based on the size and character of a jurisdiction. Larger, more urban cities can support vertical mixed use while more rural and suburban places will have to develop horizontal mixed use.
- Successful mixed use requires support from a local government's economic development team to encourage small businesses to locate in neighborhoods and mixed-use developments.[104] For example, if a zoning ordinance requires new multifamily developments to include commercial spaces, then the builder may need support finding businesses that will rent them. Empty commercial space will give rise to serious doubts about the viability of a mixed-use building ordinance.

Grand Rapids, MI, engages citizens in the plan design process. In 2011, the City of Grand Rapids, Michigan, adopted its most recent comprehensive plan update, and it effectively integrates public health priorities.[106] An important component to the success of the update was the planning staff's extensive and innovative outreach efforts, such as creating a game to engage citizens in the plan design process. The plan update concentrated on three areas: multimodal transportation, particularly bicycling; the tree canopy; and accessible parks (i.e., parks with playgrounds within one-quarter mile for all residents). The city established measurable goals for these areas, and implementation has been successful overall. For example, a park has already been expanded and renovated in a low-income neighborhood, a farmers market is being constructed in the downtown area, and the city has added 27 miles of new bike lanes with an additional 34 miles identified.

Beyond a comprehensive plan, communities can implement several different approaches to make their existing built environment a healthier place. Some actions can be relatively simple, such as restriping existing roads to create bike lanes. To encourage walking in shopping districts, local governments can amend parking regulations or create a monthly pedestrian mall by temporarily closing a road to automobiles. Planning policies can also promote redevelopment that creates mixed use. For example, a city can allow small commercial development on arterial roads that adjoin subdivisions and build sidewalks that allow residents to walk to new shops and restaurants.

Local governments can rezone select residential areas (i.e., spot zoning) for dual commercial use of properties with a caveat to protect homeowners from dramatic increases in their property taxes. Spot zoning is also an effective way to increase density with multifamily housing, which may be necessary to support these commercial enterprises. In an older neighborhood in Vancouver, Canada, large single-family homes are being divided into multiple apartments with encouragement from the government. It is hoped that this "invisible density" will encourage cafes or shops to open nearby.[107] To address food deserts, zoning rules can be amended to permit corner grocery stores as well.

Mixed Use and New Development. Because retrofitting existing suburbs for walkability, density, and mixed use can be difficult, some local governments may want to focus on new development for adopting healthy design elements. Community "nodes" are one possibility. These are new developments zoned for higher density than older subdivisions and permit or even require mixed used. Residents may drive to work but will walk or bike to nearby shopping or a restaurant. It is also possible to offer developers incentives that promote healthier design. For example, a county could allow higher density if the development includes green space. Developers are usually more open to incorporating design changes, like those supporting health, if they are brought forward at the beginning of the planning review process. Local Governments can also pass ordinances that require all new developments to include sidewalks with the expectation that over time, sidewalk connectivity will improve.

Dubuque, IA's planners and health officials' long-standing collaborations. Collaboration between planners and public health officials is often an important first step to reducing obesity and increasing activity in a

community. These two groups can effectively work together because they share complementary expertise, focus on the well-being of populations, and try to engage stakeholders in decisions.[108] In Dubuque, Iowa, city planning and city and county health officials have been meeting for close to 20 years.[109] When the city updates its comprehensive plans, the planning department integrates information from the county health department's Community Health Plan and Needs Assessment and Health Improvement Plan. The result has been a strong public health focus in the city's comprehensive plans since the 1990s.

Ideally, collaboration between planning and health departments would encompass more than a single project, but would become institutionalized through comprehensive plan implementation. For instance, the Tri-County Health Department (TCHD) in Colorado serves three counties within the Denver Metropolitan Area by reviewing and commenting on hundreds of development applications annually from their member counties.[110] Comments from the TCHD focus on far more than those mandated under public health laws and include reviews of zoning and land-use policies to ensure public health is consistently considered on a community-wide basis.

British Columbia, Canada's Health Authority. The provincial government of British Columbia, Canada, has developed a series of model programs related to health and land-use planning.[111] To implement these programs, the Health Authority (HA) began working with local planners on implementation. In 2007, the HA created the Healthy Community Environment (HCE) position to develop a model that links health and land use around seven dimensions:

- Environment (water, air)
- Injury prevention
- Nutrition and food security
- Healthy child development
- Physical activity related to public transportation and recreation
- Housing and social wellness
- Access and inclusion for persons with mental illness or disabilities.

After first learning about residential land development applications, the HA created templates for local planners to review these applications based on the seven health dimensions. Furthermore, the HA provided education about the seven health dimensions to local governments along with the templates. Local governments have given significant attention to the physical activity dimension as they seek to lower greenhouse gas emissions and reduce vehicle dependency. Moreover, several local governments in the region have sought additional HA involvement in plan review and now consider public health a stakeholder in planning.

Many nonprofit organizations in the United States and around the globe are working with local governments to design healthy communities. In the United States, the American Planning Association, Urban Land Institute, and the American Institute of Architects all have healthy design initiatives, while in England the Design Council is a national leader in this area as is 8-80 Cities in Canada. 8-80 Cities stresses public engagement in assisting communities with (re)designing public spaces. The goal of the organization is to design cities that are places where people of all ages—8 to 80—can grow up and grow old.

Perceived Obstacles to Health-Based Design

Concerns or perceived obstacles often arise when discussing whether and how to better utilize planning to improve public health. One of the largest is a lack of appreciation that the built environment heavily influences obesity and physical activity. A common belief is that these health issues are totally dependent on individual behavior. While it is true that ultimately people decide whether or not to exercise, local governments can make that choice easier or more difficult. Local governments already attempt to influence behavior through nonsmoking ordinances, zoning where alcohol

may be sold, and the like. Educating planning stakeholders, such as traffic engineers and developers, about the benefits of and strategies for healthy design may lessen resistance to it. Furthermore, city and county managers will need to remind stakeholders and the general public that integrating public health into planning only means that it is considered along with other topics like economic development and demographics. Impact on health will never be the only criterion from which a development is evaluated for appropriateness.

Arguments are also raised about the cost of healthy design, such as building sidewalks or bike lanes. While some new infrastructure investments can be expensive, many are not. Restriping roads, limiting on-street parking, or adding sidewalks when replacing water lines or widening roads can be efficient. Furthermore, healthy design, as with all planning policies, has long-term goals. Some communities have invested significant resources in building sidewalks and other improvements within a short period of time to support immediate health impacts. In many cases, the influence of healthy design may take several years as a community grows.

Another perceived impediment to healthy design is economic. Business owners may fear that reducing parking and focusing on active transit will reduce the number of customers and concomitantly, their income. However, research refutes that assumption.[112] When comparing the spending of vehicle drivers, cyclists, pedestrians, and users of public transit, drivers spend the most money per trip. However, when measured over a period of time, the latter three groups spend the same or more than drivers because cyclists, pedestrians, and transit users make more frequent shopping trips. The one exception to this finding was for groceries. In the past, similar doubts were expressed about produce in convenience stores. Ten years ago, fresh fruit like bananas and apples in these stores was unheard of, but today it is commonplace across the country because these businesses are making money from selling it.[113]

Challenges with collaboration can create obstacles to integrating health into planning as well.[114] Planning and health officials often have similar goals but also different proverbial languages, organizational cultures, and types of expertise. For many local governments, persistent silos and a mutual lack of trust must be overcome. Those hesitant about collaboration often fear limited staff resources will be diverted from more pressing needs—even though the long-term benefits of improved health outcomes would outweigh the cost. These obstacles can be exacerbated if health departments are given short deadlines from which to make assessments or provide information for a planning project or policy review.

Ultimately, the biggest obstacle to planning for health is a lack of political will.[115] Planning policies require substantive outreach, education, and analyses to develop and implement. The effort required to adopt a new planning orientation can dampen a local government's interest in adopting healthy design. However, thriving communities are not built on the status quo but on strong leadership, innovation, and vision.

Even taking into account all the challenges, integrating the components of healthy design into planning warrants serious consideration for the simple reason that they are effective.[116] Multiple research studies have found that compact and connected streets are highly correlated to increased walking, biking, and transit usage;[117] to reductions in diabetes, high blood pressure, heart disease and obesity;[118] and to less time spent driving. [119] Furthermore, one study showed that walking was positively correlated with higher levels of social interactions and perceived neighborhood cohesion.[120]

This ever-growing body of evidence demonstrates that planning is instrumental in reducing obesity and inactivity of the population. Healthy design is only expected to grow in acceptance and implementation across the United States and the world over the next 10 to 20 years. Generally, planners support these concepts and techniques but are waiting for direction and leadership from elected leaders and senior management to begin integrating health into policy development and practice.

Implementation Ideas for Healthy Design

The Centers for Disease Control and Prevention has developed tools and techniques to educate the public about how changing the physical design of their neighborhood can lead to a healthier community. The online toolkit (http://www.cdc.gov/healthyplaces/toolkit/) provides resources such as a checklist of questions to help individuals consider and understand healthy design elements and a customizable PowerPoint presentation on healthy community design.

Communities in the United States and Canada are creating simple checklists for planners to evaluate the health impact of developments.[121] These checklists can be a useful tool for local governments unable to collaborate with a public health department on reviewing building applications. In the Michigan township of Meridian, planners and developers created a simple checklist to evaluate and improve proposed development projects in nine health-related areas, including water and air quality, noise, social capital, and health equity. This checklist has positively affected the built environment over the last several years, such as increasing elderly residents' access to public transportation, adding open space near housing, and incorporating farmers markets into development plans.[122]

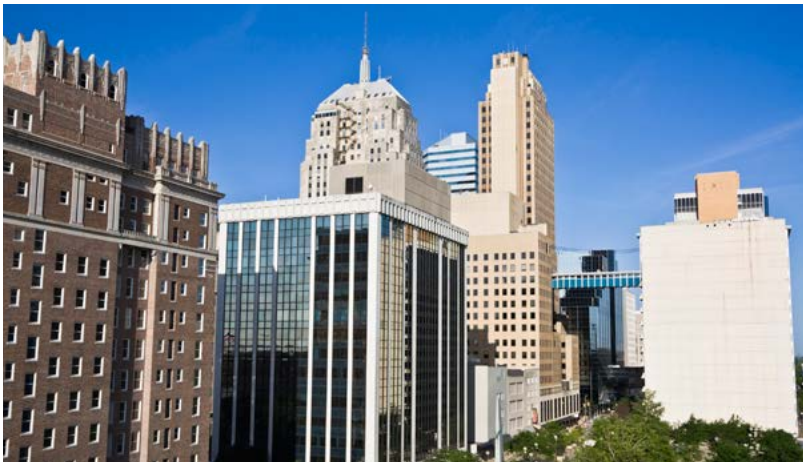
Infrastructure

Many of the goals of a comprehensive plan are implemented through investments in infrastructure, and this is especially true for those related to public health. In this section, we discuss roads, sidewalks, and bridges as the main focus of local government infrastructure.[123] Historically, traffic engineers have designed infrastructure to enable people to move quickly and safely with vehicles. Over the last decade, this mindset has evolved. Engineers and public works officials realize that roads can serve multiple users, not just those in vehicles, and that "complete streets" provide important benefits to communities.

Sidewalks and Walkability

To reach public health goals in reducing obesity and inactivity, communities need sidewalks and bike lanes. For example, people who live in communities with sidewalks on most streets are 47 percent more likely to meet physical activity guidelines than those who live in cities with few or no sidewalks.[124] The importance of sidewalks will continue to grow as our elderly population quits driving and has to walk. Canadian cities are also recognizing they will have to build differently to accommodate the needs of their aging populations.[125]

Not every street must have a sidewalk, but in some areas they are more important. Streets in lower income neighborhoods need sidewalks because residents are less likely to own cars. Unfortunately, in many communities these areas are actually less likely to have them.[126] Likewise, public transit users require sidewalks to safely reach their bus or train. Finally, parks and recreation centers can be far better utilized and enjoyed if they are connected to residential areas through sidewalks.[127] There is a certain irony when local governments essentially require residents to drive in order to exercise.



Oklahoma City's walking weight-loss plan. Over the last many years, Oklahoma City has invested extensively in sidewalks and walkability.[128] Building off the city's growing inventory of sidewalks, Mayor Mick Cornett launched a new campaign in 2008 to help the city loose one million pounds. To be a leader, Cornett knew he needed to change himself first, and he lost 40 pounds. With a population of over 600,000 and 621 square miles (much of the land is zoned for agriculture), the sheer size of the city was a challenge for the walkability effort. To achieve the greatest impact, the city has focused on planning and integrating walkability with parks and public transit. Using a local option one-cent sales tax as a key funding source, the city has added 108 miles of dedicated multi-purpose trails, 145 miles of on-street bike routes, nearly 80 miles of walking paths in parks, and plans to add 260 miles of linear sidewalks with a significant portion already completed.

Complete Streets

Supporters of healthy communities do not advocate that cars disappear, only that other means of transport be accommodated, leading to the "complete streets" concept. A complete street is one "that is planned, designed, operated, and maintained to provide safe mobility for all users, including bicyclists, pedestrians, transit vehicles, truckers, and motorists. . . .Every complete street looks different, according to its context,

community preferences, the types of road users, and their needs."[129] Therefore, a complete street in a rural or suburban area would look different from one in an urban area. Complete streets are often built as part of an overall redesign of an existing roadway and usually cost the same or even less than conventional road projects; and, they are safer.[130]

Complete streets can have strong positive economic impacts. The City of Lancaster, California, invested $11.6 million in 2010 to reconstruct a roadway in the heart of the city's historic district. The transformation included narrowing streets to slow traffic, extensive landscaping, sidewalks, and crosswalks; it even integrates spaces for public events on weekends. The result has been more than $273 million in economic output with 48 new businesses, 802 permanent jobs, and sales tax revenues in 2012 that were 96 percent higher than in 2007 (preconstruction).[131]

Best practices. Even though complete streets are all unique, there are evidence-based best practices when it comes to designing a street that promotes physical activity.[132] They include:

- Well-marked crosswalks, special pavers, and curb extensions to visually highlight pedestrians and slow traffic
- Lights on streets, trails, and public spaces to minimize dark areas
- Street trees for shade and benches for rest
- Maps and signage to orient pedestrians with mileage and key points so that people feel at ease about walking in large urban areas
- Bike lanes within the street network when possible, and maximizing connections to existing bicycle networks, including multi-use trails and greenways.

Overcoming Budget Concerns

By far the biggest challenge with constructing sidewalks and bike lanes is cost. Local governments struggle to even maintain current infrastructure, so adding sidewalks is often difficult.[133] The American Society of Civil Engineers assigned the nation a "D" for the current condition and needs of our roads in its *2013 Report Card* for *America's Infrastructure*. This rating was given in large part because of estimated $170 billion in annual capital investment needed to significantly improve road conditions and performance.[134] This expense does not include necessary capital investments for bridges and other infrastructure. Building one mile of sidewalk can easily reach $200,000 or more,[135] and adding sidewalks to an existing road can become very expensive if rights-of-way must also be purchased.

To overcome budget concerns, local governments may want to start measuring sidewalk costs in terms of their return on investment as they promote a healthier community and property values.[136] Furthermore, local governments can adopt cost-conscious approaches to walkability and road redesign. For example, local governments can add sidewalks when repairing a road or a water line, since the additional expense is relatively little. The expense of a bike lane can be as little as restriping a road. Reducing automobile lanes to add bike lanes can be expected to slow down traffic, making the road safer as well. Many communities require developers to build sidewalks as part of their projects, even in redevelopment. The expectation is that street connectivity will come over time. Cities in Canada have historically shared the costs of sidewalks with developers and as a consequence, sidewalks are prevalent. [137]

Safe System Approach to Street Design

Another critical aspect of health when it comes to roads is public safety. According to the World Health Organization, 1.24 million traffic fatalities occur annually, with 90 percent of them in low- and middle-income countries.[138] In the Middle East and North Africa region, traffic accidents are the fourth leading cause of death.[139] In addition to these huge social costs, there are serious economic development losses as well. In India and Indonesia, traffic deaths are estimated to represent a three percent loss to gross domestic product.[140]

One underlying cause of these traffic deaths is a mismatch between current infrastructure capacities and rapid population growth, especially in urban centers. As cities grow, so do the number of streets, but often without the necessary safeguards for pedestrians. With more vehicles and limited availability of formal parking spaces, cars are often parked on sidewalks and other areas designed for pedestrian flows. Lax enforcement of traffic laws can also be a problem. A common argument to deal with traffic safety is to repeat what the United States has done, design communities and build roads around automobiles. Yet, the long-term impacts of this choice are already known: greater reliance on cars with eventual traffic congestion, high infrastructure maintenance costs, and an unhealthy society.

Instead, safety advocates are calling for a "safe system" approach to street design[141] which in many respects closely resembles the design characteristics of a complete street. For example, safe system design recommendations include:[142]

- urban design that reduces the need for vehicle travel through mixed-use development
- arterial corridors with safe conditions for all road users
- traffic-calming measures and safe crossing for pedestrians
- specifically designed infrastructure networks for bicycles
- safe access to mass transit stations and stops
- safe pedestrian facilities and access to public spaces.

Local government professionals know how to design roads to promote health and safety, namely, adhere to the basic principles of complete streets. Complete street polices are an accepted best practice and recommended by several national associations such as the American Planning Association, American Public Works Association, and the Association Society of Civil Engineers. State and local governments across the country are reconstructing their roads to serve all groups and often find that the return on investment in terms of quality of life, health, and economic growth is very positive.

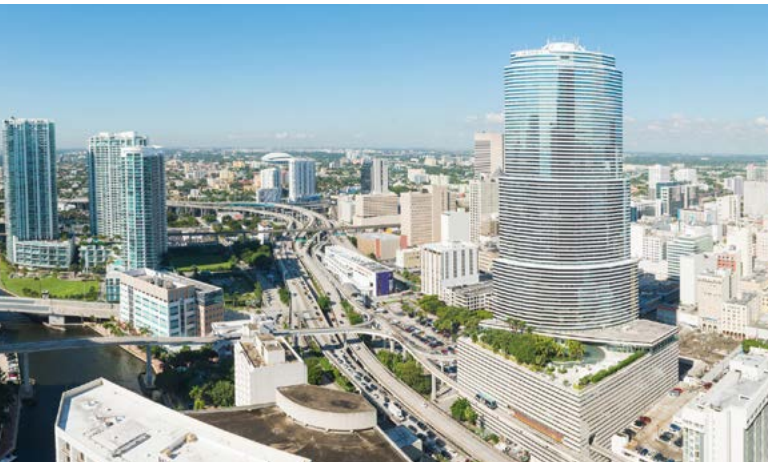
Parks and Recreation[143]

The benefits of parks and recreation to mental and physical health are well documented[144] and, practically speaking, intuitively obvious. Local governments believe in the benefits of parks and recreation as can be seen by their investments in them. In 2013, local governments across the United States spent over $8.5 billion for parks and recreation.[145] The largest 150 cities in the United States have over 1.3 million acres of local park land within their boundaries.[146] As local government officials better appreciate the need to help improve public health, the importance of parks and recreation will continue to grow. In a joint 2005 ICMA-National Association of Counties (NACo) survey on public health, 89 percent of ICMA respondents and 80 percent of NACo respondents listed parks and recreation as the department most likely to take the lead in active living initiatives. To maximize health, parks and recreation departments are, first, improving their programs and policies and, second, working collaboratively with a variety of governmental agencies, nonprofit organizations, and businesses.

Parks and recreation departments are reviewing their policies and programs to support health through exercise, nutrition, smoking cessation, and the hosting

of resident sports leagues. Parks departments are building more walking trails and increasing their offerings of exercise programs and equipment to accommodate a wide variety of populations, such as the elderly and those with disabilities. The growth of famers markets over the last decade in the United States has been strong. According to the U.S. Department of Agriculture, the number of farmers markets exceeded 8,200 across the country in 2014, up from just 3,700 in 2004 and 1,750 in 1994,[147] and parks are one of the prime locations for them.

Through afterschool programs, parks departments are the second largest supplier of food to children in the United States,[148] and many are changing what snacks they offer to reduce obesity. Healthy-only choices in vending machines is also becoming more commonplace as parks departments realize they need to practice what they preach. Finally, over 1,300 municipalities across the country have banned smoking in all their parks.[149] Similar initiatives are underway across Canada, Australia, and the United Kingdom as well.



Miami-Dade County's open space plan. One community that has fully embraced parks as the foundation for health is Miami-Dade County.[150] In 2008, the county approved a 50-year open space master plan based on the principles of sustainability, connectivity, equity, access, beauty, and multiple benefits.[151] The plan built off the county's first 50-year plan, which focused on land acquisition and building parks. However, this new plan is about much more: natural and cultural areas, public spaces, greenways, blueways, streets, and of course parks. In developing the open space plan, the department brought together experts from a wide variety of fields —such as transportation engineers, landscape architects, biologists, operations persons, recreation professionals, and others—to get their input in a series of workshops. The department sought extensive public input as well. Importantly, the department worked with the planning department so that the open space plan integrates with the county's development regulations.

The open space plan has received strong support from both county leadership and the municipalities.[152] Mayor Carlos Gimenez has been a powerful advocate for the plan and the Parks, Recreation and Open Spaces Department because the plan supports his vision for improving the quality of life in Miami-Dade. Gimenez says of the parks, "They are public spaces where we as a community of diverse individuals can come together as equals to enjoy family, friends, civic life, and nature."[153]

Support from the county's 35 municipalities was very important for the open space plan to fully achieve its goals because nearly 1.3 million of the county's 2.8 million residents reside in municipalities. More specifically, municipalities needed to incorporate the plan's principles into their own strategic, zoning, and master plans. The vast majority of municipalities have formally approved the plan through the region's coordinating body, the South Florida Parks Coalition. Today, the department continues to move forward on the open space plan, innovating with new programs and initiatives that further its goal of creating a holistic park system that equitably promotes health.[154]

Diverse collaborations. Parks and recreation departments collaborate extensively to support their programs. Nationally, 88 percent of parks and recreation providers have participated in health partnerships.[155] These collaborations include a variety of governmental and nongovernmental partners such as health departments, public schools, health-oriented nonprofit organizations, and even businesses. Partnering for health initiatives makes sense because partnerships can increase a parks and recreation department's public visibility and access to funding such as grants. The types of collaborations are as diverse as their partners. Parks and recreation departments across the country have partnered to increase healthy food options in restaurants and convenience stores and to promote wellness programs, smoke-free policies, and even breast feeding accommodations at private businesses.[156]

Annapolis, MD's park prescriptions. One outreach partnership that is growing in popularity is park prescriptions from pediatricians. Through a collaboration between the parks and recreation department, public health department, and two local medical groups, pediatricians in Annapolis, Maryland, now write park prescriptions for children who are overweight or obese.[157] The prescription highlights to parents and caregivers the medical importance of children having a healthy weight and being physically active. With support from the parks and health departments, the pediatricians were given lists of recreational resources and low-cost or free activities for children along with maps of local parks to distribute with the prescriptions. The partners even created a special prescription pad to reinforce the medical link between exercise and health. As a key component of the program, the parks department offers scholarships for low-income families so that all children can participate in a sport or activity program.

Just as critical as collaborating with external partners, parks departments need to collaborate with other departments within their jurisdiction. Like Miami-Dade County's Opens Space Plan, parks and planning departments need to create a holistic vision of the community and decide how parks will fit into an overall development pattern. As stated earlier, parks are now being built to help meet stormwater needs from stormwater utility and grant funds. Likewise, parks should work with public works personnel for funding sidewalks and access to parks and recreation facilities. Finally, public transit can also be an important means for people, particularly the elderly and low-income populations, to reach a park. In Helena, Montana, the city created a trolley system to take youths to recreation activities (e.g., parks, trails, and the public pool) during the summer months.[158] The rides were free and for kids only. (A hired chaperone rides as well to collect data and "create a culture of safety and respect" on the trolley.)[159]

Funding Challenge

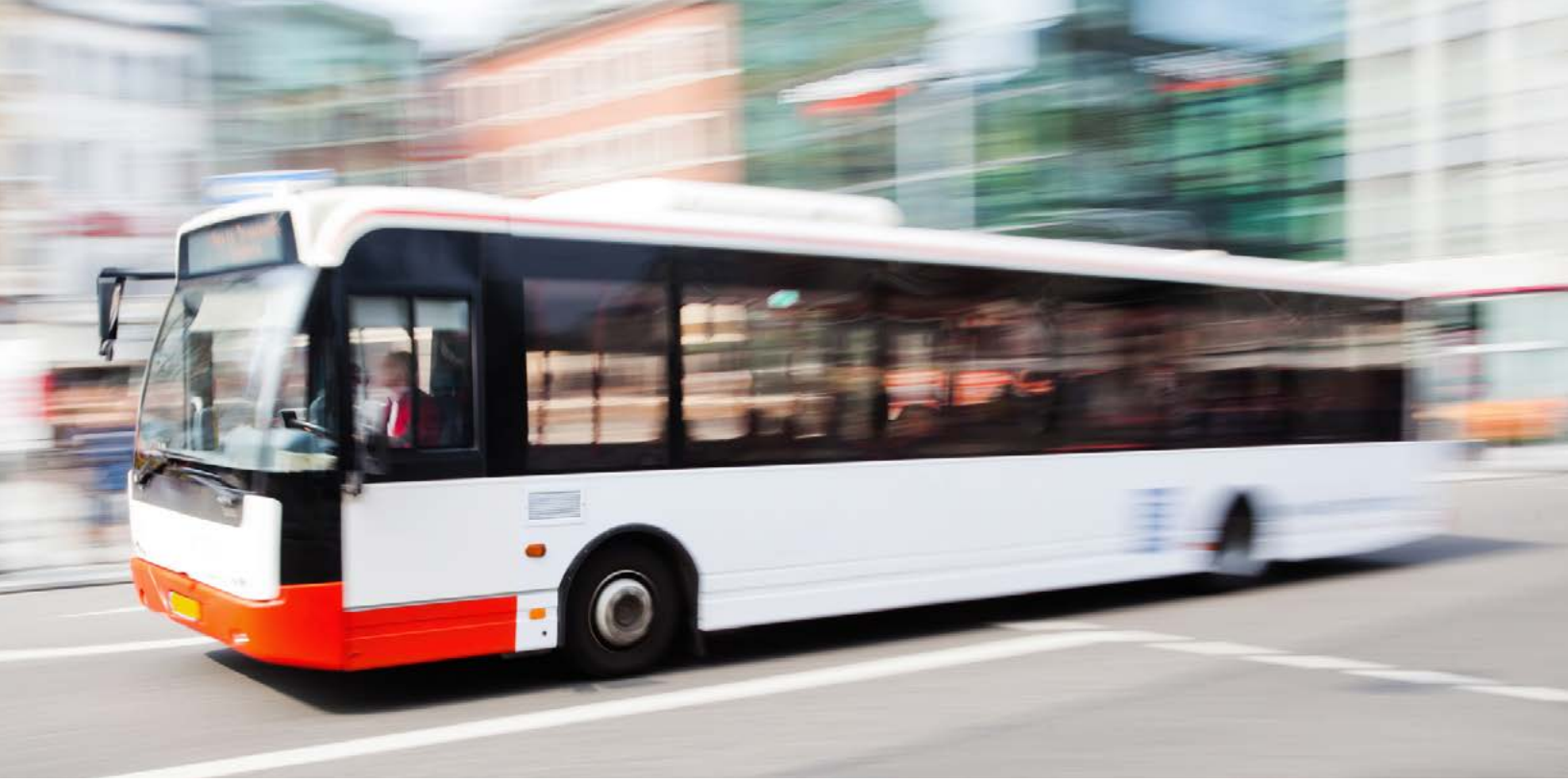
The biggest challenge to parks and recreation departments in fulfilling their goal to promote health is funding. Often perceived as a supplemental rather than a core service, their budgets are reduced during times of fiscal stress. Furthermore, as departments raise participation fees for sports and exercise classes, fewer lower-income residents will be able to participate in them, exacerbating health inequalities. Over the long-term, these policy choices can result in higher medical costs for communities.

To help address health inequality, scholarships or fee assistance programs for low-income children are important. Likewise, when evaluating budget priorities, local governments should consider the positive health impacts of parks and recreation. The need for healthy and safe places for children to play and adults to exercise and find respite will only increase. Those communities that determine how to leverage their parks and recreational assets most effectively will likely see a healthier and happier community.

Public Transportation

The United States has the world's busiest public road system with more than three trillion vehicle-miles-traveled each year.[160] The result of focusing on transportation through private vehicles has been increased emissions harmful to human health and the environment and decreased physical activity. An important transportation alternative to the private car is public transportation. Greater reliance on public transportation translates into safer roads, less traffic congestion, and less road maintenance. Furthermore, public transportation is particularly important to people who don't have personal vehicles (e.g., those with low incomes or disabilities and the elderly) because public transportation makes it possible for these individuals to commute to work, shop, visit medical offices, and meet basic needs.

The number of public transit users in the United States has slowly risen in recent years.[161] Buses are by far the most common form of public transit, with 1,178 systems across the country (excluding bus rapid



transit and demand-response only). In 2014, Americans took 10.6 billion trips on public transit for 58.9 billion miles. Since 2004, the number of passenger miles has increased 21 percent even though population growth has only been 9 percent. Transit ridership is at its highest levels in four decades. Although the number of people who commute to work via public transit is still relatively small, the number is climbing and is now at 5.2 percent nationally (2014). In urban areas that number is much higher: In the country's 10 largest metropolitan statistical areas (MSAs), 12.9 percent of workers commuted via public transit, and in the central cities of those MSAs, 31.5 percent relied on transit to get to work.

What these passenger data demonstrate is that access and convenience are necessary for people to use public transit. A study by U.S. Department of Transportation found that travel time, frequency, and reliability strongly influence the level of support for public transportation.[162] Those commuting in urban centers often have access to high-quality public transportation, such as subways or light rail that meets these expectations.

In other countries, support for public transit is mixed but overall is much higher than in the United States. For example, the reliance on rail in Europe and many parts of Asia is well acknowledged. In an international study by the National Geographic Society (2009), 25 percent of respondents from 17 countries reported using public transportation daily, and 41 percent reported they used it at least once a week.[163]

As in the United States, Canadians generally prefer their personal cars to public transit.[164] Except for three rapid transit stations in Montreal, Toronto, and Vancouver, Canada also relies mostly on buses to provide public transportation. In Great Britain, bus ridership has experienced downward trajectory since the 1950s. Two important caveats to this generalization are the use of public transportation in London, which has substantially increased since the 1970s, and ridership of the elderly.[165] In Great Britain, persons over sixty can ride buses for free, with some small limitations in some areas. Without the increased ridership of this group in recent years, the number of overall passenger trips would continue to be decreasing across the Great Britain.[166,167] In contrast to the United States, Australians are much more likely to use public transportation, with 13.7 percent either taking the bus or train or walking to work.[168]

Taking public transportation increases physical activity because riders must walk to and from their bus or train to reach their destinations.[169] Furthermore, transit users tend to have healthier body mass indices (BMI) than nontransit users.[170] This increase in physical activity stays even when controlling for myriad other variables such as demographics, exercise apart from nontransit related activity, and the like. The actual amount of additional physical activity attributable to taking public transit is shown to range from 8 to 33 minutes [171]per day, and about 19 minutes per day is

generally accepted as a good national average.[172] This amount of walking is on average 8 minutes more daily physical activity than nontransit users. The higher levels of physical activity from transit use correspond to better health outcomes. Research has found that every percent decrease in auto use correspondingly reduces the chance of obesity by 0.4 percent, high blood pressure by 0.3 percent, high blood cholesterol by 1.3 percent, and heart attack by 1 percent.[173]

Public Transit Reduces Air Pollution

Improving air quality is a concern in the United States and across the globe, and public transit is one local government service that is effectively reducing air pollution. Air pollution from vehicles contributes to greenhouse gas emissions and to individual health problems like asthma. Researchers have estimated that vehicle emissions in the United States contributed to 2,200 premature deaths and more than $18 billion in public health expenditures in 2010.[174] In contrast, public transit saves the country four billion gallons of gasoline and prevents 37 million metric tons of carbon dioxide emissions annually, equaling the annual carbon storage capacity of 29 million acres of forest.[175] Local governments across the country are working to further reduce emissions by changing their bus fleets to natural gas or electric power and encouraging public transit. Currently, over one-third of all buses are electric/hybrid or use natural gas.[176]

When thinking about public health and public transportation, concerns are raised that those exposed to particulate matter from bus emissions will face adverse health effects like increased asthma. This medical cost, it is argued, would thus offset benefits of riding the bus. However, this belief appears to be incorrect.[177] In fact, emergency room visits by children for asthma decreased by 42 percent in Atlanta, Georgia, during the 1996 Olympics when peak morning traffic decreased by 23 percent.[178] Since many local governments' bus fleets contain a mix of traditional diesel and natural gas or electric vehicles, buses can be scheduled to minimize the negative impacts of particulate matter exposure while taking into consideration reducing overall greenhouse gas emissions and controlling operating costs.[179]

Overcoming the U.S. Bias toward Public Transit

While the benefits of public transit are manifold, actually convincing the public to give up using their vehicles continues to be a significant challenge. In addition to expectations about frequency, convenience, and reliability, the public also wants to feel safe and comfortable while riding transit and at stations/stops.[180] Finally, there exists a much more difficult challenge to overcome, namely, issues of class. In the U.S. Department of Transportation study mentioned earlier, interviewees (the study was both quantitative and qualitative) discussed the perceived social stigma of riding a bus. In contrast to other countries, many Americans believe, rightly or wrongly, that only the poor ride the bus. To overcome this bias, transit systems need to appeal to young people who may be more open to public transit, such as having a sophisticated website and being clean and convenient.[181]

Chattanooga, Tennessee's area transit system, CARTA, is one system trying to encourage ridership in innovative ways. CARTA was one of the first systems to use electric vehicles, and it still offers free rides on electric shuttles around downtown to promote tourism. Bus riders have access to free WiFi and can even download a bus-tracking app to their phones. Even with these services, CARTA has found it is hard to attract people with cars and other transportation options. A 2010 survey of CARTA users found that the majority of their passengers were low-income earners, students, and transit dependent (i.e., lacking a personal vehicle).[182]

Changing America's love affair with the automobile will not be an overnight endeavor. Nevertheless, even incremental change will improve public health for those using it by increasing their physical activity and for the entire community by reducing automobile emissions. To attract riders, particularly those with their own vehicles, local governments should provide a quality transportation system that is convenient, reliable, and perceived as safe. In turn, this investment can reduce government spending on road construction and maintenance. It is estimated that a 10 percent increase in transit capacity could reduce congestion costs by approximately $1 billion per year.[183] With millennials and baby boomers as potential new customers, city and county officials may want to evaluate how public transit can be an important tool to promote public health and save money.

Community Development

Through community development services, local governments work with nonprofit associations, real-estate developers, financial institutions, and foundations to address blight, revitalize struggling neighborhoods, and provide public or subsidized housing. These programs

serve a fundamental role in improving public health because they seek to address some of the social determinants of poor health: income, education, housing, employment, among others.[184] Likewise, the people typically served through community development are often the most vulnerable, and therefore promoting health equity for this group can be particularly effective.

When promoting public health through community development, partnerships and collaborations are especially important. There are signs of progress: A national survey of community development organizations found that partnerships that include the health community are occurring and are being applied in a variety of areas such as access to health care, healthy food, quality child care, wellness education, and physical activity.[185]

Ideas for Improving Health Outcomes

However, more can be done. The following are actions and policies local governments can undertake to improve health outcomes of community development projects:[186]

- Require developers to include design features that address health in their projects. Doing so will likely require education and input from health professionals.
- Involve financial institutions in community education and awareness activities.
- Consider neighborhood features that influence health such as the access to healthy food, public transportation, sidewalks, and parks.
- Incorporate health data and measure health outcomes of projects. Again, doing so may require collecting new information as U.S. Census and health data are often not neighborhood specific.
- Require collaboration as a condition of funding, but concomitantly offer cross-sector education so that all parties have the tools to effectively collaborate. Furthermore, be prepared to serve as a leader in the collaboration.
- Offer training and assistance to improve communication among stakeholders. Often a lack of effective and regular communication inhibits effective partnerships.
- Engage the community in project design and needs. Engagement is needed to ensure projects and program are not missing critical elements. For example, a new housing design may include walking and bike trails to a park, but residents still need to feel safe using them. Engaging the community could highlight the need for lighting or other safety features.

Both small and large communities have the capacity to undertake the above initiatives. For example, in the City of Coatesville, Pennsylvania (pop. 13,100[187]), community development finance organizations collaborated with public health and human service groups to build a health and housing center that offers medical, dental, and mental health services; housing for seniors; community meeting space; and a children's library.[188] Likewise, when significantly renovating the city's largest public housing development, San

COMMUNITY DEVELOPMENT AND THE DEVELOPING WORLD

While community development in developed and emerging economies may vary in terms of specific points of emphasis, level of need, and overall approach, cross-sectoral collaboration is important in all environments. Globally over the past decade, there has been an increasing number of organizations conducting work through public, private, non-profit coordination to improve community quality of life and housing. A couple of key examples include: the multi-stakeholder partnerships emphasis of UN Habitat's Participatory Slum Upgrading Programme which attempts to leverage governments', civil society's, and slum dwellers' knowledge and resources to improve conditions for the one billion global slum population. This coordination often focuses on housing policy, urban design, and equitable housing stock expansion.[190] Also, The World Bank has aligned several of its urban development initiatives with the *Sustainable Development Goal #11* in order to "Make cities inclusive, safe, resilient and sustainable." Components of this work are centered on developing lagging regions and improving inclusivity in current and future (projected) housing needs across multiple sectors and stakeholder groups, underpinned city management and governance, among other considerations. [191]

Francisco public health researchers collaborated with developers and residents to collect baseline health data of residents to measure the long-term health impacts of the project.[189]

Community development plays a key role in promoting public health for those populations most likely impacted by health inequality. In fact, community development's purpose is to improve the economic and social determinants of health for low-income neighborhoods; yet, local governments can do more by implementing the best practices for health.

Housing and public health in England.[192] With the oldest housing stock in Europe, housing is a significant public health concern in England. In 2014, one in five homes there were classified as "non-decent," and there is a significant shortage of adequate affordable housing.[193] The national government has made improving the country's housing stock for vulnerable populations one of its public health goals. However, local governments are responsible for housing and face serious challenges in addressing the problem. When trying to build low-income housing, they can face the proverbial not-in-my-back-yard public opposition to projects. Another significant issue is convincing low-income homeowners and landlords who serve low-income tenants to address their properties' health concerns such as inadequate heating or old and dangerous wiring. Astonishingly, cold housing coupled with a lack of resources to pay for heating fuel results in approximately 25,000 deaths in the United Kingdom each winter. Many local governments offer some type of financial incentive to improve housing, such as grants for low-income elderly homeowners. Unfortunately, these kinds of programs are expensive and local councils are already experiencing fiscal stress due to reductions in transfers of funding from the national government and limited own-source revenue options.

ENGAGING THE PUBLIC IN HEALTH

Ultimately, the public has to be engaged in improving their own health. Yet, local governments can be leaders and cheerleaders for residents trying to make healthy choices. In this area, public outreach becomes another core component of improving public health. Using effective engagement strategies is particularly important because changing personal behavior is such a challenge.

Successful public engagement incudes some or all of these actions:[194]

1. Provide strong leadership to bring attention to the issue, motivate citizens, and build networks for support.
2. Co-design health-supporting programs with the community so that residents feel a part of the process.[195] For this to happen, public officials need to build personal relationships with target populations. If the initiative is for an entire city or county, outreach may require meeting with key neighborhood and civic leaders to learn of any issues that might hurt the health initiative's success and to garner their support. Otherwise, the outreach messages could simply be ignored and health would not improve.
3. Seek alternative methods of engagement to reach as broad an audience as possible, such as through social media and other technology.
4. Take advantage of existing community events and holidays to advertise the health initiative. With the community already gathering, it will be easier to reach a wide audience.
5. Partner with different organizations. Bring all relevant governmental departments and nongovernmental organizations (NGOs) together. Examples of NGOs include health-oriented nonprofit groups, civic groups, churches, hospitals, and high-profile businesses.
6. Evolve the health initiative as needed to keep it relevant and interesting to residents. Changing behavior does not happen overnight, which means that creating a culture of health in a community will take sustained energy and resources.

The following examples of health-oriented public engagement programs apply many of these best practices.

Creative competition in Georgia. The Georgia Municipal Association (GMA) is encouraging the state's cities to become more active through an innovative yet simple web-based program. With CMeCompete, cities compete over whose residents will have the greatest amount of physical activity over the year. Any person can go to the CMeCompete website to join a participating city's team. When that team member exercises, whether it be walking, jogging, swimming, and so on, he or she logs the activity into the website and the city earns points. At the end of the year, the city with the most points wins a prize.

Last year, GMA gave the winning city a new piece of exercise equipment for their park. Individuals can earn small prizes for reaching activity goals as well. Currently, 24 cities in Georgia participate. GMA underwrites the small annual fee ($2,400), making the program free for cities. Some cities have sponsored fun runs and other activities to get people moving (and earn points). However, because CMeCompete is web-based and individualized, even those residents who are uncomfortable exercising in a large community event can still participate. As a web-based program, CMeCompete encourages individuals to exercise on their own terms: their schedule, their interest, and their level of activity.

Involving youth. From 2008 to 2014, the Robert Wood Johnson Foundation invested $33.4 million to reduce obesity through its *Healthy Kids, Healthy Communities* (HKHC) initiative in 49 communities across the country.[196] In several, youth helped assess, plan, implement, and evaluate the projects in their communities. For example, youth helped assess the walkability of streets and the safety and accessibility of parks, and they surveyed the prevalence of healthy foods in convenience stores. Some communities had youth organize and participate in park cleanups and even the construction of playgrounds. Others created youth councils to give voice to young people and help them serve as advocates for policy changes at local and state levels of government.

Diversified program offerings. The City of Melville, Western Australia, has been implementing its well-being strategy since 2013. The strategy is based upon the approach that healthy communities are a combination of lifestyle and the social, economic, built, and natural environments. To promote health, the city uses an array of services and outreach programs, such as free group exercise programs in parks and mental health education programs geared toward adolescents. The city even has two outreach health specialists. These health specialists attend community events and visit schools, senior organizations, sporting groups, and so on to educate the public about healthy eating and exercise. The city also sponsors facilitated play at parks with a fitness instructor and health specialists to encourage more physical activity of youths during the autumn and winter months. For accountability, the city measures the success of its health and wellness strategy using health data and citizen wellness surveys.

Fit-friendly programs. Live Well Perris is a continuing program to help the City of Perris, California, residents eat well, get fit, and live healthier, happier lives.[197] The program started in 2013 and received a three-year grant from Riverside County in 2014. The 2014 program featured expanded free work-out sessions, sports clinics, healthy cooking classes, and more family-friendly community events. The American Heart Association presented city elected representatives and administrators with its Gold Level Fit-Friendly Worksite Award.[198]

INTEGRATING PUBLIC HEALTH INTO DECISION MAKING

Local governments and their leaders are realizing that building a healthy community must be a multifaceted and multidisciplinary endeavor that integrates public outreach and long-term policy changes. One comprehensive approach involves adopting a Health in All Policies (HiAP) approach so that services, programs, and ordinances consider health impacts on residents. Local officials are also integrating health impact assessments into their policy and program review processes to improve decision making. By appreciating that a wide variety of service decisions ultimately affect public health, localities can begin to foster healthy behavior.

Health in All Policies

Many local government officials across the United States and the globe recognize that most policy decisions influence public health. To ensure that this impact on health is explicitly recognized and considered, local governments are adopting a Health in All Poli-

cies approach to policy review and adoption. HiAP "is a collaborative approach to improving the health of all people by incorporating health considerations into decision making across sectors and policy areas."[199]

Implicit in HiAP is the appreciation that health is shaped by the social determinants of health—the social, physical, and economic environments. With this understanding, local officials would also recognize the need for government officials to work with a variety of internal and external stakeholders who can influence and ultimately improve those determinants. Because each community is different, advocates for HiAP argue there is no "right way" for implementation. Rather, HiAP is meant to be structured to account for the values, issues, resources, and membership of a community. Ideally, the HiAP approach would be internalized into a government's decision-making processes, and not limited to a particular program or initiative. To do so, many governments would need to undertake a cultural shift which would be challenging. However, HiAP advocates argue that such a reform may be necessary to see lasting change in a community's overall health.

Richmond, CA and HiAP. The City of Richmond, California, has been applying HiAP concepts in community development strategies for several years.[200] The process started in 2007 with multiple meetings, forums, and workshops with residents, community activists, school officials, and others to ensure health equity was considered in the city's new community development strategy. In 2008, the city presented its "Community Health and Wellness" strategy to the public and included several health features such as improved parks, expanding healthy food choices, public and active lifestyle transportation options, access to medical facilities, high-quality affordable housing, economic opportunity, and improved safety, among others. Furthermore, the city adopted a Health in All Policies ordinance.

Getting the community development and HiAP ordinance passed was not easy. Some city departments were concerned the initiative would result in more bureaucratic hurdles, but by linking HiAP goals to the city's budget, resistance was diminished. A second challenge was the lack of needed neighborhood health data to draft health indicators for community development. The third major challenge was simply changing the perception that the City of Richmond was an unhealthy place in order to attract economic development. When the University of California, Berkeley, decided to locate its second Lawrence Berkeley National Laboratory campus in Richmond, it provided a significant boost to the HiAP approach and the city as a whole. Since initiation of the HiAP approach, the city has seen rising levels of resident satisfaction with their personal health and in their attitude toward the city.

Health Impact Assessment[201]

Health impact assessment (HIA) is an analytical tool that attempts to measure how policies and programs might impact public health—either intentionally or unintentionally. For example, HIAs have been used when reviewing comprehensive plans, freeway expansions, changes to public transit fees and routes, and park design. The goal of HIA is to improve public policy decision making by providing high-quality, nonbiased information to public officials. Differing from other types of impact analyses, HIA explicitly requires stakeholder engagement and promotes health equity as a core value.

The HIA process relies on both quantitative and qualitative methodologies involving six steps. The process begins with screening to determine the need and value of an HIA and continues through to identifying recommendations to improve health impacts (or minimize negative ones), reporting and communicating findings, and monitoring the HIA's impacts. In implementing the steps, the analyst has substantial flexibility. For example, the time and intensity spent on each step can vary and steps can overlap. Receiving input from stakeholders is a critical component of the analysis. If the HIA is for a large area, such as a city, engagement may come from focus groups with key community representatives. For smaller study areas, participation may involve community meetings.

HIAs have been performed in parts of Europe since the 1980s, while Canada and Australia have been conducting them for several years. In the United States, HIAs are becoming more common, and approximately 400 health impact assessments have been conducted. Of these, about 63 percent focus on planning, such as for comprehensive plans, planning policies, and specific development projects.[202]

As in the case with other cost/benefit research approaches, HIAs have several challenges, starting with finding the resources to pay for them, reliance on assumptions, access to data, and the like. Finding

accurate health data can be particularly problematic for studies with a small geographical scope (e.g., a neighborhood or small city) because most health data are collected at the county level. In contrast, getting sufficient public input can be difficult for large sites. However, the often most troublesome aspect of HIA is a lack of understanding about it. Some government officials view it as another hurdle to completing a project rather than as a valuable piece of information. It is anticipated that as public officials better appreciate the link between public health and economic development and larger quality-of-life issues, support for HIAs will increase.

Data: A Key to HIA and Health Assessment

Access to a wide variety of quality health data at a neighborhood level isn't readily available for many local governments in the United States, but other countries have invested significant resources to compiling data in order to improve public policy decision making. Here are two examples:

AURIN: Australian Urban Research Infrastructure Network. The Australian government established the Australian Urban Research Infrastructure Network (AURIN) in 2010. It is an online portal that integrates more than 1,000 datasets from 35 different data sources. The types of datasets include demographic, urban design and housing, health, infrastructure, transportation, and energy and water. To collect this data, AURIN is collaborative, bringing together more than 70 institutions, including the country's top universities and government agencies. One of the primary objectives of AURIN is to encourage evidence-based research, policy, and practice for local governments, such as integrating health impacts into planning decisions. For more information, go to www.aurin.org.au/

WHO European Health Economic Assessment Tool (HEAT). The World Health Organization's Health Economic Assessment Tool (HEAT) is an online program for European countries to conduct economic assessments "of the health benefits of walking or cycling by estimating the value of reduced morbidity that results from specified amounts of walking or cycling."[203] HEAT can value projected increases in cycling or walking resulting from new programs or infrastructure as well. These figures can be used to advocate for greater infrastructure investment or integrated into more comprehensive economic assessments. For more information, go to http://heatwalkingcycling.org/

CONCLUSION

Local governments serve as the foundation for public health by providing residents safe drinking water, sanitation, roads and sidewalks, parks, public safety, and other services. Public health responsibilities continue to expand as new challenges arise, particularly regarding the global obesity epidemic and aging populations. To address these needs, local governments are redesigning their communities, investing in active transportation, and undertaking new public education and outreach programs. Creating a culture of health will not be easy or quick, but local government leaders know that a healthy place to live is a good place to live.

Looking ahead, local governments around the globe will likely continue to experience increased service demands, funding uncertainly, a devolution of additional responsibilities from state and national levels of government, the negative effects of climate change, and increased emphasis on a healthy quality of life by residents, regional leaders, and the business community. Ensuring that public health considerations are woven into all aspects of planning, programs, and policy will enable local governments to best position their communities for the challenges and opportunities ahead.

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