At 80% urban, the Latin America and the Caribbean (LAC) region is among the most urbanized of the world (World Bank 2018). The cities of the region encompass not only many megacities but also large numbers of rapidly growing (“emerging”) small and middle-sized cities (UN-Habitat 2012a). LAC cities are also heterogeneous in physical, economic, and social environments. In addition, LAC cities are characterized by large social inequities (UN-Habitat 2012b).

Most importantly, LAC cities have begun to implement policies and interventions that could impact not only health but also long-term urban environmental sustainability. The LAC region thus provides an unprecedented opportunity to study the drivers of urban health in settings with large heterogeneities and rapid transformations to inform policies to promote urban health and sustainability worldwide. This chapter explores what is already known about urbanization and urban health in LAC, describes urban policies and interventions that could have important health and environmental impacts, and concludes with a discussion of research needs to support healthy urban policies in the region and worldwide.

Social and Physical Characteristics of LAC Urban Environments Relevant to Health

Health in cities is affected by urban social and physical environments. Although detailed information on how social and physical environments vary across the cities of the region is limited, a few selected characteristics of LAC cities that are especially health relevant are described here.

A prime social feature of LAC urban environments is inequality: 19 of the world’s 30 most unequal cities are located in LAC (UN-Habitat 2010). Although poverty levels have decreased substantially in LAC in the past decades, dropping from 48.3% in 1990 to 33.1% in 2009 (UN-Habitat 2012a), levels remain unacceptably high and may have stagnated or even increased slightly in recent years (ECLAC 2018).

Like cities all over the world, cities in LAC reveal strong residential segregation by social class (Sabatini 2006). Social segregation by economic class in LAC cities is generally characterized by 1) an extreme concentration of upper- and middle-income residents in only one zone of a city, usually in or near the city’s historical center, 2) the development of housing for low-income residents in peripheral and poorly serviced parts of the city, with the addition of other housing in deteriorated sectors close to the city center, and 3) the presence of specific low-income groups residing alongside upper- and middle-class residents. Residential segregation reinforces social inequality by limiting
Figure 8.1  Young men in Buenos Aires’s “Villa 31” neighborhood.

“La Villa 31 alienta a la selección” by the Ministerio de Cultura de la Nación Argentina is licensed under CC BY-SA 4.0 (https://creativecommons.org/licenses/by-sa/4.0/). Original accessible at: www.flickr.com/photos/culturaargentina/14461479319/

Figure 8.2  Urban poverty headcount ratio at national poverty lines (percentage of urban population).

Data source: World Bank Open Data (UN-Habitat 2012a).
opportunities for social mobility and by creating stark differences in resources, services, and opportunities across neighborhoods. These differences have profound health implications.

The most pronounced manifestation of segregation is the presence of informal settlements or “slums” (UN-Habitat 2012a). In 2014 over 20% of the LAC region’s urban residents lived in slums (World Bank 2018), although the proportion varies substantially across the region. Living in slums is linked to many adverse health outcomes and has been shown to be associated with significantly worse health, including substantial reductions in life expectancy in the region (Szwarcwald et al. 2011).

Violence is another key social feature of cities in the region (Vilalta et al. 2016). LAC has the highest homicide rate in the world (23–25 per 100,000 compared to the global average of 6.2 per 100,000), and violence is especially prominent in cities (Vilalta et al. 2016). Within cities, violence is strongly spatially patterned and associated with neighborhood poverty (Pereira et al. 2017; Sampson and Groves 1989; Vilalta et al. 2016).

Urban physical environment features most relevant to health include land use and transportation, air pollution, and environmental hazards including adverse impacts of climate change. Transportation in LAC cities remains heavily dependent on public transportation and walking, but patterns are changing very rapidly. In 2017, 39% of trips within LAC urban centers were completed using collective public transportation, and 26% walking (CAF 2017). However, motorization has been increasing steadily across the LAC region since 1990 (CAF 2017; UN-Habitat 2012a). As LAC cities increase in population, they are also increasing in geographic size through continuous urban sprawl (Inostroza et al. 2013). For example, researchers estimate that, if current rates of growth in Latin America continue, urban centers of major Latin American cities could double in geographic size by the year 2035. Urban sprawl and increased reliance on automobiles for transportation can increase air pollution, reduce physical activity associated with active travel, and increase rates of motor-vehicle-related injuries (Ewing et al. 2014; Frumkin 2002).

Figure 8.3 Urban population living in slums in 2005 in Belize, Costa Rica, Dominican Republic, Ecuador, Guyana, Haiti, Honduras, Mexico, Panama, Peru, and Suriname, and in 2007 in Argentina, Bolivia, Brazil, Colombia, and Guatemala.

Data source: UN-Habitat Global Indicators database (UN-Habitat 2012a).
Air pollution levels across LAC cities are often unacceptably high. Despite some recent decreases, the regional mean annual average of concentration of particulate matter in LAC cities is still more than double the WHO recommended level (Green and Sanchez 2012). Ozone concentrations in LAC cities have also been observed at high levels (Green and Sanchez 2012). Urban populations in LAC are highly vulnerable to the effects of climate change (Hardoy and Romero Lankao, 2011), including floods, mudslides, extreme heat, scarcity of drinking water, and drinking water contamination (Gasper et al. 2011). Within LAC cities, the risk of experiencing the impact of climate-related disasters is highest among the urban poor (Hardoy and Pandiella 2009).

### Health in LAC Cities

Urbanization can have important beneficial health consequences through improved access to services and better living conditions (Vlahov et al. 2007). For example, those living in many urban areas in LAC have better access to health care that allows them to better manage health conditions such as hypertension (Chow et al. 2013; International Labour Organization 2015; Salinas et al. 2010). Maternal mortality rates in urban areas in LAC are considerably lower than in rural areas (International Labour Organization 2015). In addition, children residing in LAC urban areas generally have overall better nutritional status than children living in rural areas and, in general, experience less growth stunting (Smith et al. 2005; Van de Poel et al. 2007).

However, urban living may also have adverse health impacts. These may operate through the adverse health consequences of crowding, exposure to air pollution or other toxins, stressors, and the experience of living and working environments that promote sedentary lifestyles and unhealthy consumption patterns (Vlahov et al. 2007). Increased automobile use and congestion can promote injury-related deaths. Social inequalities and social exclusion in cities can promote violence and violence-related morbidity and mortality.

There is limited data on the state of health or trends over time in health in LAC cities. Even data on urban–rural comparisons are limited. Most data are focused on regional- or country-level patterns. However, given the very high levels of urbanization it is safe to assume that national data are heavily driven by patterns observed in urban areas. Mortality in the region is now heavily dominated by non-communicable diseases, with 73% of deaths attributed to those causes, and only 13.7% of deaths attributed to communicable diseases, prenatal and maternal conditions, and diseases related to nutrition (World Bank 2015). Deaths due to injury are also common, causing 12.4% of mortality (World Bank 2015). Of all adults killed by injury, 57% die from intentional injuries, and 25% as the result of motor-vehicle collisions, in which pedestrians are the most common victims (Barreto et al. 2012).

Many aspects of urban environments in LAC amplify non-communicable disease risks: the double burden of malnutrition and obesity among the urban poor (Fay 2005; Rivera et al. 2014), high availability and marketing of ultra-processed and fast foods, socio-spatial segregation and lack of healthy food options in high-poverty neighborhoods (Menezes et al. 2017), and living and work environments that promote sedentarism (Fraser 2005). Injuries in LAC countries are linked to violence as well as to motor-vehicle-related transport and the road conditions within which vehicles and pedestrians interact. It is of note that, although the region has experienced a transition to a higher burden of non-communicable and injury-related morbidity and mortality, many historical and emerging communicable diseases remain uncontrolled, especially in disadvantaged population groups (Barreto et al. 2012). Changing ecological and social conditions have contributed to the emergence and endemic nature of infectious diseases like Zika or dengue in urban settings (Rivera et al. 2004; Santosa et al. 2014).

Behavioral changes influenced by social and economic trends in cities also have profound implications for urban health. Food consumption and diet are a prime example. Between 2000 and 2013,
regional consumption of ultra-processed foods and drinks increased from an average of 102.3 kilograms per capita per year to 129.6 kilograms (Pan American Health Organization 2015b). Urban living and urban environments may be contributing to this increased consumption of processed foods in various ways, including availability and marketing of processed foods, as well as changes in food preparation practices and in dining out of the home associated with time pressures and cultural changes (Pan American Health Organization 2015b). Similarly, greater reliance on automobiles, growing urban sprawl, and the creation of less walkable urban environments disincentivize active transportation and can lead to reductions in physical activity (Mosquera Becerra et al. 2013; Reis et al. 2013). Access to parks and public open spaces is also related to leisure physical activity among city residents (Florindo et al. 2017; Gomez et al. 2010; Jaime et al. 2011).

Although data is limited, current evidence suggests that cities in LAC are characterized by large inequalities in health by social class and by neighborhood (Dias et al. 2016; Diez Roux et al. 2007; Fleischer et al. 2008; Szwarcwald et al. 2011). Social inequalities appear to be larger in more urban than in less urban contexts (Fleischer et al. 2011). These inequities result from the combined impact of lifecourse exposures linked to social conditions, work-related factors, and neighborhood environments. For example, urban environments conducive to unhealthy eating and lower physical activity are increasingly patterned by neighborhood socioeconomic conditions within cities of the region: poorer neighborhoods have less access to healthy foods and physical activity resources (Duran et al. 2013; Jaime et al. 2011). Air pollution levels and the adverse health impacts of air pollution are also
patterned by the socioeconomic characteristics of neighborhoods, with lower-income neighbor-
hoods experiencing higher levels of air pollution and greater adverse health effects of air pollution
(Romieu et al. 2012).

**Urban Policies and Health: Promising Examples from the Region**

In the context of rapid urbanization, high rates of inequality, the rising prevalence of non-
communicable diseases, and increasingly frequent extreme weather events and temperatures, the
LAC region has implemented a range of urban policies with plausible impacts on health and health
equity. Below we review a few examples, and note if any evidence of health impacts has been
documented. These examples illustrate the importance of considering policies across sectors when
seeking to promote health in cities.

**Urban Transportation**

Urban transport policies in LAC cities have aimed to reduce congestion and air pollution and
curb greenhouse gas emissions (Bontempo et al. 2014; Davis 2008; Hidalgo and Huizenga 2013).
Approaches have attempted to prioritize public and active transport over private vehicle usage in
cities (Rogat and Hinostroza 2007). Investments in public transportation systems have focused on
enhancing sustainability features, including cost-effectiveness, safety, efficiency, convenience, and
speed (Rogat and Hinostroza 2007; World Bank 2009). Installation of infrastructure that promotes
walking and cycling has also been an area of emphasis (Florindo et al. 2017; Gomez et al. 2010; Reis
et al. 2013).

The development of bus rapid transit systems (BRTs) and cable cars (aerial trans, gondola lifts)
have been two distinguishing transportation initiatives of the region (Brand and Dávila 2011; Di
Pasquale et al. 2016; Mejía-Dugand et al. 2013). BRTs are bus-based transit with separated lanes,
user stations with off-board fare collection, and priority given to buses on mixed-vehicle roads
(Hinebaugh 2009). LAC’s first BRT system (Rede Integrada de Transporte) began operation in 1972
in Curitiba, Brazil, followed by Trole Quito in Ecuador in 1995 (Pardo 2008). TransMilenio is a BRT
system that initiated service in Bogotá, Colombia in 2000 (Jirón 2011). Mexico City’s Metrobus,
Santiago de Chile’s Transantiago, Guatemala City’s TransMetro, and Lima’s Metropolitano are other
BRTs known for their performance and high passenger volume (Hidalgo and Graftieaux 2008;
Hidalgo and Gutiérrez 2013; Rodriguez and Vergel Tovar 2013). As of 2018, BRTs were active in
54 cities across 12 countries in LAC, with the most in Brazil (21), Mexico (11), and Colombia (7)
LAC is referred to as the global epicenter of the BRT movement (Cervero 2013; Etingoff 2016), accounting for approximately 60% of passengers worldwide (BRTData 2018). Cable cars, also known as aerial trams, including the Metrocable (Medellín), Mi Teleférico (La Paz), Teleférico do Alemão (Rio de Janeiro), and Mexicable (Mexico City), are also gaining traction in transportation planning, particularly as a method of increasing transportation accessibility for high-poverty and socially isolated communities (Grieco 2015).

Improvements to urban transportation have been hypothesized to improve health, environmental sustainability, and social equality (Becerra et al. 2013). One of the most direct effects is improvements in air quality and associated reductions in health problems associated with poor air quality, primarily respiratory and cardiovascular diseases (Abe and Miraglia 2016; Bel and Holst 2018; Kelly and Fussell 2015). Mobility policies can also facilitate access to employment, education, and health services (Jaramillo et al. 2012). In Bogotá (Lemoine et al. 2016) and Mexico City (Welle 2017), the implementation of BRTs was associated with increased physical activity and meeting recommended activity levels through walking for transport. Evaluations of the social impacts of BRTs note savings in travel time and costs, and improved accessibility to opportunities throughout the urban space (Bel and Holst 2018; Cervero 2013; Medina 2012; Suárez-Alemán and Serebrisky 2017). An evaluation of a natural experiment in Medellín, Colombia found that the Metrocable cable car resulted in increased perceptions of safety and reduced homicide rates (Cerdá et al. 2012).

Comprehensive Urban Development

Comprehensive urban development interventions have surfaced in cities throughout LAC as an expansion of earlier efforts to upgrade informal settlements, financed by development banks and other international agencies beginning in the 1970s (Cohen 2001; Magalhães et al. 2016). While earlier projects primarily focused on housing and basic services, comprehensive urban development integrates improvements to the built environment with multimodal approaches to reduce urban poverty, support the political and social empowerment of communities, and deliver health and social interventions (González Alcocer et al. 2010; Jaitman and Brakaz 2013; Riley et al. 2001). Improvements to living conditions are accompanied by assistance in a range of services, such as credit and home and land tenure, subsidization of utilities, job training, support for microenterprises (Jaitman and Brakaz 2013), water and sanitation infrastructure, improved security, investments in energy supply, increased road connectivity, and health promotion and education (Magalhães and di Villarossa 2012; Turley et al. 2013).

Comprehensive development programs in Brazil (COHAB-Paraná, Favela-Bairro, Prover, Terra Mais Iguais, Vila Viva) (Gomes 2008; Magalhães and di Villarossa 2012; Riley et al. 2001), Chile (Quiero mi Barrio) (Link et al. 2017), and Colombia (100.00 Viviendas Grátis) (Cecchini et al. 2015) have been particularly recognized for the scope and innovation in their interventions (Cecchini et al. 2015; Magalhães et al. 2016). Similar programs aimed at the development and integration of neighborhoods have also been implemented in Argentina (PROMEBA and PROMIHB) (Rojas and Medellín 2011), Mexico (Programa Comunitario de Mejoramiento Barrial) (Valverde Viesca and Gutiérrez Márquez 2017), Peru (Fondo MiVivienda and Techo Propio) (Calderón 2015), and elsewhere in the region, including Bolivia, Costa Rica, El Salvador, Panama, Uruguay, and Venezuela (Cecchini et al. 2015).

Although scant empirical evaluations exist, comprehensive urban development strategies have been hypothesized to impact health, health equity, and quality of life on both individual and neighborhood levels (Corburn and Sverdlik 2017; Jaitman and Brakaz 2013). Possible health impacts may include: 1) reductions in communicable diseases related to sanitation, 2) improvements in maternal health as well as infant and child health and development related to improved social conditions, housing, and access to care, 3) beneficial mental health effects related to better physical and social environments,
and 4) reductions in injury and non-communicable disease morbidity and mortality related to physical improvements (Friche et al. 2015; Jaitman and Brakaz 2013; Soares and Suarez Dilllon Soares 2005; Turley et al. 2013). An important adverse effect of neighborhood improvement interventions that has been observed especially in high-income countries but may become increasingly common in other countries is gentrification, a process by which low-income residents are displaced by the influx of higher-income inhabitants as neighborhood physical and social environments improve.

Social Inclusion and Poverty Reduction Policies

LAC is a pioneer in social inclusion policies and programs designed to eradicate poverty and reduce social inequality. Although many of these policies are not necessarily targeted at urban areas, they may have an especially beneficial impact on city residents given high levels of urbanization and high levels of urban poverty. Conditional cash transfer programs (CCTs) are the most widespread poverty reduction approaches and provide reoccurring (usually monthly) cash grants to eligible households contingent upon their participation in education, health, or nutrition services or other programming (Adato and Hoddinott 2010). The first generation of CCTs were introduced in Brazil and Mexico in the 1990s, providing social safety nets to poor and extremely poor households (Robles and Mirosevic 2013; Tetreault Weber et al. 2012). By 2017, 20 countries in LAC had adopted CCTs, and innovation in social inclusion policies continued to evolve, giving rise to integrated anti-poverty programs and “unconditional” income transfers (Barrientos and Santibáñez 2009; Cecchini and Atuesta 2017; Cecchini and Madariaga 2011; Stampini and Tornarolli 2012).

Figure 8.6 Elderly women take a stroll, Santa Teresa District, Rio de Janeiro, Brazil.

“Elderly Women Take a Stroll—Santa Teresa District—Rio de Janeiro—Brazil” by Adam Jones is licensed under CC BY-SA 2.0 (https://creativecommons.org/licenses/by-sa/2.0/). Original accessible at: www.flickr.com/photos/adam_jones/5984354885/
Social inclusion policies may promote health and health equity by addressing social determinants of health (via income transfers) and providing targeted services and support. In evaluations and health impact assessments, CCTs in Brazil, Colombia, and Mexico improved health in under-five populations, including greater infant birthweight, reduced stunting and obesity, greater height for age scores, higher cognitive development, and lower incidence of illness (Segura-Perez et al. 2016). Jamaica’s PATH program increased school attendance and health clinic visits among children (Levy and Ohls 2010). In urban areas in Mexico, CCTs are associated with greater preventative health care utilization in adults, fewer illnesses in adults and children, an increase in physical activity in adults, and declining hospitalizations among some elderly populations (Cruz et al. 2006). Evaluations of the family allowance program in Argentina show positive effects on child growth and nutrition (Nuñez et al. 2016) and compliance with health care visits and completed vaccination calendars (D’Elia and Navarro 2013).

However, it is also important to note that social inclusion and poverty reduction policies may have unintended consequences on health outcomes. For example, a prospective evaluation of the impact of Mexico’s Oportunidades CCT program found that adults living in households receiving a higher amount of funds through the program was associated with higher BMI, higher diastolic blood pressure, and higher prevalence of overweight and obesity (Fernald et al. 2008). Researchers hypothesize that this could be due to increased availability of funds for the purchase of ultra-processed foods and alcohol, and overall higher consumption of calories (Fernald et al. 2008). Understanding the contexts in which these programs are most beneficial for health is an important need.

**Promotion of Healthy Behaviors**

One of the region’s responses to growing concerns over non-communicable diseases has been the proliferation of health promotion policies directed at food-related issues (Perez-Escamilla et al. 2017) and physical activity (Hoehner et al. 2008). Food policies in LAC have taken different approaches, seeking to 1) curtail consumption of sugar-sweetened and energy-dense foods through, for example, taxation and food labeling (Pan American Health Organization 2015a), 2) counter unregulated food production and marketing (Boza et al. 2017), and 3) improve access to and affordability of healthier foods among socially vulnerable populations (Forster et al. 2015). In addition, public programs have been developed to promote physical activity and provide spaces for active mobility and recreation in urban settings (Hoehner et al. 2008; Torres et al. 2013).

The Mexican government was the first in the region, and among the first in the world, to implement a tax on unhealthy foods at the point of purchase (Hagenaars et al. 2017; Pan American Health Organization 2015a). These taxes aim to reduce consumption by decreasing such foods’ appeal relative to more expensive healthier foods and by incentivizing food manufacturers to produce healthier alternatives (Caraher and Cowburn 2005). The Mexican tax, officially the Special Tax on Production and Services (IEPS), was implemented in 2014 under the broader National Strategy for the Prevention and Control of Overweight, Obesity, and Diabetes. IEPS taxes the purchase of energy-dense foods and sugar-sweetened beverages at rates of 8% and 10%, respectively. The Mexican government utilized public outreach and mass media campaigns to educate the population about the tax, its benefits, and the importance of nutrition, exercise, and healthy habits (Pan American Health Organization 2011). Since the implementation of Mexico’s tax, similar policies have been implemented throughout the region, including in Barbados (Alvarado et al. 2017), Chile, Dominica (Heise et al. 2016), and Saint Vincent and the Grenadines (World Cancer Research Fund International 2017).

Other initiatives have focused on promoting physical activity in cities. For example, Ciclovías, involving the temporary closing of streets to motorized vehicles, have been implemented throughout
LAC (Hoehner et al. 2008; Sarmiento et al. 2010; Torres et al. 2013). Ciclovías began in Colombia and have recently gained traction as community-based interventions to support healthier and more active lifestyles (Torres et al. 2013). Through designated spaces and times, the Ciclovías provide safe and equitable opportunities for physical activity in a community setting to encourage healthier habits. There are approximately 40 Ciclovías and Ciclovía-inspired programs in LAC (Hoehner et al. 2008). In Brazil, programs such as Academia da Cidade (City’s Gym), which originated in Recife, have been developed to promote physical activity using these spaces for recreation (Prefecture of Recife 2018). The Academia da Cidade programs offer free aerobic exercise and dance classes, jogging groups, and nutritional and physical education classes (Prefecture of Recife 2018; Simoes et al. 2009).

The health promotion policies described above work to create supportive urban environments for healthier behaviors and choices. Evaluations of these policies are showing promising results for population health. In Mexico, two years after IEPS was implemented, national consumption of unhealthy foods had decreased 7.4% for junk food and 9.7% for sugar-sweetened beverages (Colchero et al. 2017). Falling consumption is projected to lower obesity rates by 2.5% in the decade following implementation, which could prevent 40,000 heart attacks and strokes and 189,000 cases of diabetes (Barrientos-Gutierrez et al. 2017). Users of Bogotá’s Ciclovías are also more likely to meet physical activity recommendations. The profile of users suggests these programs are important for increasing the accessibility of recreation spaces in high-risk low-income populations and promoting social cohesion (Sarmiento et al. 2010; Torres et al. 2013).
Urban Governance

The way urban governments operate can affect the health and wellbeing of city residents. LAC cities have pioneered urban governance initiatives that may have important implications for health and health equity. An excellent example is participatory budgeting. Participatory budgeting modifies the traditional budgeting model through two mechanisms: 1) by providing politicians with direct access to and knowledge of citizens’ needs and preferences regarding government expenditures, and 2) by creating transparency in the budgeting process, which is hypothesized to strengthen the accountability of politicians and increase the likelihood that they will follow through on their promises and commitments (Gonçalves 2014).

The Brazilian city of Belo Horizonte provides a useful case study. Since 1993 Belo Horizonte has implemented a participatory budgeting process that engages tens of thousands of city residents in deciding how the city should spend its money (Prefecture of Belo Horizonte 2008). During the participatory budgeting process, residents meet in groups with members of the public administration, where they present their priorities for the development of the city. The public administration then assesses the financial viability of these priorities and provides feedback to the public. Using this feedback, residents in each sub-region of the city pre-select 25 initiatives and public works they would like to support for the year, and elect delegates who will serve on a Regional Forum of Budgetary Priorities. The elected delegates conduct site visits to the 25 pre-selected public works that are being considered for funding. Taking into consideration the delegates’ impressions from these visits and the budgetary cost of each, public works are selected for funding each fiscal year in each city sub-region. These public works are monitored by elected resident representatives to ensure that the projects are implemented within the appropriate time frame.

A small, emerging body of research suggests that participatory budgeting can have a beneficial impact on the health of city residents. An analysis of municipal-level data in Brazil from 1990 to 2004 found an association between the adoption of participatory budgeting and an increase in government spending on basic sanitation and health services. These changes in spending may in turn be linked to the significant reductions in infant mortality rates that have been observed in municipalities that utilize the participatory budgeting model (Gonçalves 2014; Vlahov and Caiaffa 2012). Cities that have employed participatory budgeting have implemented improvements to housing and sanitation, increasing the proportion of residents with access to clean water, routine garbage collection, and street lighting. New health centers, public schools, and housing units have also been constructed. New programs that promote physical activity and good nutrition have also received funding as a result of participatory budgeting decisions (Vlahov and Caiaffa 2012).

Opportunities for Urban Health Promotion in the Region

As described throughout this chapter, urban living presents both challenges and opportunities for population health. A key issue is identifying how cities should be designed, governed, and managed to promote health. The LAC region, because of its very high levels of urbanization, the health challenges cities face, and a high level of policy innovation, provides a unique opportunity to obtain evidence about drivers of urban health and the health impacts of urban policies that may be relevant for the planet as a whole. Most importantly there are unprecedented opportunities to use data and research in ways that are directly policy relevant by highlighting the links between a range of urban factors (and the policies that shape them) and the health of city residents. Below we discuss needs and opportunities for advancing urban health through research and policy evaluation.
Enhancing Descriptions of Levels and Trends in Urban Health

Descriptions of levels of health in LAC cities and their evolution over time (as well as in cities all over the world) are hampered by limited comparable data across cities and countries. There is a paucity of systematically reported information on health or health determinants in cities. And yet a range of health-related data resources are increasingly available and can be compiled to allow meaningful comparisons. Even simple descriptions can provide valuable insights for policy makers and can stimulate improvements to data collection and generate research questions that are critical to policy making in the region. Collaborative data harmonization efforts are needed to promote an accurate description of urban health and how it is changing over time. Systematic georeferencing of health and environmental data is also fundamental. In addition to characterizing levels and trends over time, descriptions should highlight inequities in health by social class, neighborhood, and critical subpopulations.

Evaluating How City- and Neighborhood-Level Factors Are Related to Health, Health Inequities, and Environmental Sustainability in Cities

The growing availability of social and physical environment data that can be compiled from many sources provides an unprecedented opportunity to study how features of physical and social environments are related to health and health equity in LAC cities. Although a growing body of research has begun to explore the drivers of health in LAC cities, research remains limited and scattered. It is especially important to capitalize on unique features of the LAC urban context to better understand the relationships between urban environments, health, and health equity. Linking city and neighborhood factors not only to health and health equity but also to environmental conditions and environmental sustainability broadly defined will be key. Interdisciplinary approaches capitalizing on the human capital of the region will be critical. Importantly, research in this area should not attempt to replicate the types of studies conducted in high-income countries but rather take advantage of the unique features of LAC cities to identify new factors and to understand the modifiers of these associations or the conditions under which they are present.

Understanding the Health Impacts of Urban Policies under Varying Conditions

As we have described in this chapter, cities in the region have experimented with a range of urban policies and initiatives. Yet rigorous evaluations of the health and environmental impacts of these policies remain very limited. Evaluation of health impacts is challenging for many reasons, including the need for strong partnerships between researchers and those implementing the policy, the need for agility and flexibility due to the extremely time-sensitive nature of these opportunities, and finally the important methodological challenges in conducting these evaluations. And yet there are increasing examples of successful partnerships to evaluate these policies. This information can be useful to the policy makers involved but can also provide generalizable knowledge of use to cities worldwide. In understanding the impacts of various policies, taking a systems approach to understanding the dynamic relations involved will be important (Diez Roux 2015).

Understanding the Drivers of Healthy Urban Policies

The innovative nature of many city policies and programs in the region provides a unique opportunity to study the processes through which these policies emerge, are developed, and are adopted and implemented. The ways in which forms of governance, social movements, political and economic
conditions, intersectoral engagement, and scientific evidence influence the policy development, policy adoption, and policy implementation process are important. Findings from this type of research would be highly relevant to extending healthy urban policies across the region and the global south.

**Building Regional Capacity and Engaging with Local Policy Makers**

Creating opportunities for capacity building of interdisciplinary researchers from the region remains an important need. Training opportunities should promote exchanges across institutions not only between LAC countries and established research institutions in the northern hemisphere but also between LAC institutions themselves and across the global south. Training in the context of working with LAC data to promote data use, data improvement, and capacity building in a synergistic manner is ideal. It is also important for researchers to engage proactively with urban policy makers to prioritize research questions so that they are relevant to the context, and to disseminate evidence in ways that are most useful to policy makers and the public, using a collaborative and transdisciplinary approach. Capacity building and policy maker engagement can also result in the development and implementation of new data collection and compilation efforts that can be better used to understand urban health and its determinants in LAC cities. In turn, these efforts can then contribute to evidence-based policies and interventions that have a greater impact on health outcomes in cities.

**Conclusion**

Improving health in cities will be key to the health of the LAC region over the coming decades. Addressing issues of health equity and clearly demonstrating the links between urban health and long-term environmental sustainability are fundamental. The LAC region because of its history, its high level of urbanization, its heterogeneity, and its innovation provides a unique opportunity to better understand how urban environments and urban policies affect health. Although we have some information on health in cities and its drivers, and some evidence on the possible health impacts of some urban policies, much remains to be documented and studied. Urban health in LAC cities thus presents an unprecedented opportunity for research, capacity building, and policy maker engagement in ways that are relevant not only to health in the region but to cities worldwide.

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