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SECTION 3

A RENEWED FOCUS ON URBAN GOVERNANCE

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KEY MESSAGES

Bringing it all together for health equity

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Participation

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Citizen empowerment through information sharing

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Public–private partnerships

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Intersectoral action

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Equity as the core value

BRINGING IT ALL TOGETHER FOR HEALTH EQUITY

The primary purpose of this report is to elicit how health and health equity in cities is impacted by a multitude of factors and stakeholders, including social, political, and economic forces, urban planning, environment, safety, housing, pollution and access to health services, among others, and what can be done to remedy negative impacts and maximize positive health outcomes. Local governments are responsible for addressing many local needs. They typically have responsibility over a number of critical functions that determine liveability of cities such as land use, building standards, water and sanitation systems, roads and transportation, and environmental protection, among other issues. Their actions may exacerbate or diminish inequities in health, or in the distribution of determinants of health.

This concluding section of this report aims to bring together the various issues discussed in this report under the overarching issue of urban governance. It builds on the argument made earlier that the various topics covered in each chapter are actually closely interconnected and interdependent, and requires an integrated approach by different actors in order to maximize the desired effects and efficiency. Based on that premise, this chapter highlights some of the key features of urban governance that can help cities realize such an approach to becoming healthier and more sustainable places for all people.

WHO has previously identified four prerequisites for apt local action: political commitment; vision; institutional change; and networks (28). Political commitment to the values, principles and strategies of health for all urban residents is required at the highest level. A vision of the future with a strong health dimension provides a common basis for intersectoral action. Institutional structures, mechanisms and capacities must support both near-term change and enduring healthy public policy over the long term. Networks at local, national and international levels promote shared learning and innovation. These are all underpinned by strong leadership at the city or urban level.

Interest in urban governance and its impacts on city life is not new. The city council of Siena, Italy, commissioned a series of frescoes in 1338–1339 to illustrate the effects of good and bad government in the city (368). The artist Ambrogio Lorenzetti painted a series of six frescoes titled “Allegory of good and bad government”, which are often referred to as representing good and bad governance, or the conduct of government. In one of the frescoes, the artist depicts virtues of good government by six crowned, stately female figures: peace; fortitude; prudence; magnanimity; temperance; and justice. Bad government, in a separate fresco, is represented by crime, disease and drought.

Acting on ill-health and poverty became an imperative in major cities of 19th century Europe. In Great Britain, for example, rapid urbanization and economic growth were associated with rising mortality rates for the country’s poorest groups, who were increasingly concentrated in urban slums. However, actions to reduce the burden of disease were not realized until political shifts supported progressive urban governance, including sanitary improvements. Important policy lessons from Great Britain emphasize information systems as well as civic and political institutions in influencing the health development process (369).

Nearly seven centuries since Lorenzetti’s frescoes, the world has become an urban majority. Michael Bloomberg, former mayor of New York City, refers to this as the world’s first “metropolitan generation”. Bloomberg posits that the rise of this generation’s values of “industriousness, creativity, entrepreneurialism and, most important, liber-

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Source: Ambrogio Lorenzetti – Effects of good government in the city (1338–1339) – Google Art Project by Ambrogio Lorenzetti at the Google Cultural Institute. Licensed under public domain via Commons.

ty and diversity” will increasingly shape our world (8). As demonstrated throughout this report, cities are poised to play a leading role in addressing major global challenges of the 21st century, especially with respect to the economy, climate change and public health.

The quality of governance in cities will be important not only for the local populations, but also for the achievement of ambitious international goals such as the SDGs. For this reason, the SDGs 16 and 17 specifically focus on the issues of governance and partnerships. So what should urban health governance look like in the 21st century given the experience and knowledge accumulated over the past few centuries, and more awareness of contemporary and future challenges? The discussion below outlines key elements of urban governance and the roles of members of civil society, the private sector and government to shape the future of public health in cities.

ITA

PARTICIPATION

The United Nations defines governance as “the process of decision-making and the process by which decisions are implemented (or not implemented)” (370). The power of participatory decision-making is not just enshrined in theory. An important lesson from British cities of the 19th century is the role played by empowered and organized groups and citizens in creating healthy social change. The Health of Towns movement in the 1840s and the Sanitary Idea resulted in the first national Public Health Act in 1848. National legislation, though, was not nearly as important in the causal story of improved mortality rates in Britain as was the widening of the electorate in local government affairs in 1869 (371).

Broad participation, although widely recognized as a desirable process for

governance, has often been difficult to achieve in practice. Compromised processes have cut off participation in the implementation phases of projects and eliminated the need for accountability of authorities to grassroots stakeholders. Non-binding processes, lack of diversity in representation of stakeholders and lack of timely information sharing are some of the key barriers to effective participation. Furthermore, grassroots stakeholders may not have sufficient independence or capacity to apply pressure to organize outside of process. Where participatory processes yield gains, these are often due to independent grassroots actions (372).

These practical shortcomings are likely to reduce the effectiveness of participatory processes. A United States Agency for International Development (USAID)-sponsored study in the Plurinational State of Bolivia, Honduras, India, Mali, the Philippines and the Ukraine concluded that although democratic local governance has the potential to strengthen participation and accountability, “there seem to be important limitations on how much participation can actually deliver” (373). Even successful participatory budgetary programmes such as those in Belo Horizonte and Porto Alegre in Brazil did not reflect the priorities of the poorest populations in the cities. The majority of poor populations did not even participate in the deliberations. A survey in 150 municipalities across Brazil in 1991 showed that the poorest and less-educated voters mentioned economic survival concerns, including job opportunities, cost of living and low salaries, as their top priorities and not infrastructure, which was the main focus of the participatory budgetary investment (374).

Despite the difficulties associated with productive participatory processes, several examples of successful contemporary urban health initiatives are presented in this report in which community participation was also a key success factor. Building community ownership of processes and implementation is critical in ensuring sustainable action on health inequities. City authorities and local institutions can also play an important role in ensuring access. As Box 24 shows, city governments and city-based institutions such as universities can play an important facilitating role in participatory processes to improve health equity.

CITIZEN EMPOWERMENT THROUGH INFORMATION SHARING

Improving transparency and sharing quality information widely in cities will further empower people to participate productively in decision-making processes. Technology is likely to play an important role in this regard, but it is no longer the major barrier. It is often the government processes that can be slow, cumbersome and ultimately not that effective, despite laws that require them to provide data to citizens when asked (375).

Open data are powering a new civic movement that is changing the way citizens experience their cities. Originally driven by a commitment to transparency and accountability, citizens, public and private sectors can now work together to lay the groundwork for cities to be as efficient as possible. For instance, the United States federal government website (Data.gov) indicates that hundreds of software applications (apps) have been created by citizens using government data. Many of the apps focus on sharing knowledge and information on public health and its determinants. The app “AIRNow” uses United States Environmental Protection Agency data to provide location-specific real-time air quality information and air quality forecasts for both

ozone and fine particle pollution.

NGOs are also playing an important role in empowering citizens with information. Twaweza, an NGO working in Kenya, Uganda and the United Republic of Tanzania focus on enabling children to learn, citizens to exercise agency and governments to be more open and responsive. They have two main objectives. First, they seek to enhance citizen agency by enhancing the ability of people to get better information more quickly, cheaply and reliably, monitor and discuss what is going on, speak out and act to make a difference. Second, empowered with the information, citizens are then able to access quality basic education, health care and clean water (376).

If a city has appropriate data, then it is not very expensive to create platforms that are openly available. Not only can open data make it possible for citizens to do more with data, but it should also help governments get better at doing new things. Above all, a well-informed populace will be able to hold elected officials accountable to the data that are available in their communities.

While open data have the potential to further empower people, the use is currently limited to cities in high-income countries such as Amsterdam, Belo Horizonte, Melbourne, Paris, Nantes and Vienna, for example. By demonstrating the use of open data in enhancing citizen engagement to improve quality and reach of public services in the city, a precedent can be set for other cities around the world. Given the rapid spread of technology, such as smartphones, local governments in LMICs should soon have the capacity to generate and share city-level data openly; subject, of course, to their willingness to do so.

Community participation is a fundamental requirement for meaningful urban governance, from prioritizing issues to evaluating interventions and monitoring the outcomes. Participation of residents helps ensure that appropriate issues are being addressed, promotes local ownership and engenders the sustainability of interventions. It also supports the broader agenda of community development and empowerment.

PUBLIC-PRIVATE PARTNERSHIPS

Rapid urbanization is constraining city governments' ability to provide quality services to their increasing populations. Physical infrastructure and financial and human resources have to be continually upgraded to keep up with the demands of the population. In this scenario, the private sector plays a critical role in supporting the provision of services that people need. The United Nations Global Compact lists 10 principles that can help private businesses establish a culture of integrity, and support them in upholding their basic responsibilities to people and to the planet, while also setting the stage for long-term success (377). These principles are focused on issues related to human rights, labour, environment and anticorruption issues.

Business leaders are also encouraging private companies to take the lead in bringing business and society back together. This can be done, for example, by redefining their business models based on the principle of shared value, which involves creating economic value in a way that also creates value for society by addressing its needs and challenges. Shared value is not the same as social responsibility, philanthropy or even sustainability, but a new way to achieve economic success. Social success is not intended

to be on the margin of what companies do, but instead at the centre.

Demand for products and services that meet societal needs are rapidly growing. For instance, food companies that traditionally concentrated on taste and quantity to drive greater consumption are refocusing on the fundamental need for better nutrition. Given the comparative advantage of businesses in marketing to motivate customers to embrace products and services, governments and NGOs could partner with them to focus on products that create societal benefits, such as healthier food or environmentally friendly products, in line with international normative standards.

While public-private partnerships are not the focus of this report, they are an important aspect of urban governance. The private business sector can provide its financing capacity and business expertise to cities by working independently or in partnership with the public sector. Three main ways in which the private sector can engage in urban health governance are: (i) in a partnership with the public sector on building infrastructure and providing health-related services; (ii) by investing their comparative advantages in specific areas such as marketing to support the adoption of health-promoting behaviours and products; and (iii) as a donor or philanthropist supporting initiatives relevant to public health.

For instance, there is an increase in corporate philanthropic activity in Latin America (378). Health is one of the three priorities together with education and social assistance. Some companies are investing resources in local development programmes in municipalities or neighbouring communities. These programmes usually include participatory diagnostic processes and the establishment of partnerships with civil society organizations and local government authorities. Others aim to modernize public administration, offering financial resources and expertise to build the capacity of managers and policy-makers in the implementation of public programmes, often in health services.

Even so, there is a need for caution while considering public-private partnerships, especially with respect to promoting equity. With the rise of neoliberalism in the late 20th century, more private sector participation was widely promoted including by international development agencies. However, the resulting public-private partnerships proved no better at reaching deprived urban neighbourhoods.

In some countries such as India, it is not out of choice but out of necessity that much of the middle class in cities benefits from privately provided services for health and education (379). Public service provision is inadequate to meet the demands of its populations. For example, the key barrier in upgrading and maintaining cities in India is political. At one end, there is political resistance at the state government level to empowering towns and cities with a statutory urban local government that could articulate and deliver their demand for infrastructure and services. At the other end, rural local governments are reluctant to “go urban” because local politicians see more funds coming their way through rural development schemes. India’s urban population is projected to increase from 380 million (33%) in 2014 to 600 million (about 40%) by 2031. Inadequate planning for the inevitable increase in urbanization in India is creating a socially and environmentally unsustainable situation.

There are constraints in bringing public and private sectors together effectively. Getting the financial and institutional aspects right requires constructive and efficient negotiations between the two sectors. A study in Accra, Ghana, was conducted on waste collection performance from 1985 to 2000 under two different institutional regimes (380). The study compared the situation of entire public sector dependence to

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increased private sector involvement. It found that the public–private mix was more effective for the solid waste collection rate, and disposal improved from 51% in 1998 to 91% in 2000. However, the results could not be sustained in the long term, in this case beyond 10 years of public–private partnership.

According to a United Nations report (5), private sector contributions through both good governance in business practices and investment in sustainable development will be critical to the fulfilment of the SDGs. Public sector contributions will remain indispensable, but may be insufficient to meet demands across all SDG-related sectors. While recognizing the challenges in sustaining public–private partnerships in relation to productivity and equity in outcomes, it is time to enhance this relationship. With the wide and ambitious ambit of the SDGs there appears to be little choice but to do so.

INTERSECTORAL ACTION

Intersectoral action for urban health equity can refer to: (i) working across departments within city government (e.g. health; transport; environment); (ii) working across different actors (e.g. government, private sector; civil society); and (iii) action across the different levels of policy and action concerned with urban health (e.g. neighbourhood, city, provincial, national and international levels).

This report shows the impact of the health sector along with other sectors, such as housing, transport, urban planning and the environment on public health in cities. While each of the factors and their impacts are considered separately, this division is largely for convenient illustration. In reality, these factors are inextricable. For instance, increasing traffic density in poorly planned cities of LMICs with weak enforcement of seatbelt legislation and speed limits is not only a risk for road traffic crashes, but the pollution from motor vehicles contributes to ambient air pollution, which is strongly linked to cardiovascular and respiratory health.

Reducing the health impacts of increasing traffic density in such cities will involve improving legislation (e.g. on seatbelts), law enforcement and making roads and motor vehicles safer. To control the magnitude of ambient air pollution, exhaust and non-exhaust emissions standards for motor vehicles would have to be created and enforced. The health system would need to enhance its capacity to prevent, treat and manage health problems linked to air pollution. To develop positive impacts for health, additional options for low-emissions public transport or active transport will need to be formulated. Infrastructure development for new transport options will also necessitate appropriate urban planning, which can redefine urban form in cities. To add to the complexity, pedestrians, cyclists and motorcyclists account for 49% of all deaths (274). Therefore, any action would need to consider its differential impact on road users as well. Cities do not always have the mandate to develop legislation for all the issues discussed, such as for seatbelt use or exhaust emissions levels. This means that coordination with the national government will also be essential to mitigate the negative impacts of increased motor vehicle traffic on health.

While the analysis above may not be exhaustive, it illustrates the point that mitigating adverse health impacts cannot only be handled by the health system, it also requires a system-wide approach, working across sectors in the city government as well

as engaging with different levels of government.

Health in All Policies (HiAP), a specific application of intersectoral action, is an approach to decision-making that recognizes that most public policies have the potential to influence health and health equity, either positively or negatively (381). In the process of HiAP, decision-makers in other sectors routinely consider health outcomes, including benefits, harms and health-related costs.

HiAP has been most successfully applied at the regional level in Australia, Canada and Finland. The North Karelia Project, launched in 1972, aimed to reduce the impact of coronary heart disease in the Finnish region of North Karelia through engaging other sectors such as community organizations, dairy and meat producers, and schools to improve community health (382). The project resulted in significant reductions in CVD mortality and has been noted as a successful model for cross-sector collaboration. At the city level, Richmond in the San Francisco Bay Area has been pursuing and has successfully implemented an HiAP strategy that views its municipal employees as “community clinicians” (Box 24) (383).

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Box 24.	Health equity in all urban policies
<p>In the San Francisco Bay Area of California, local governments and university partners are collaborating to address chronic, socially produced urban health inequities. An African-American child born in West Oakland in this area will die, on average, 15 years earlier than a Caucasian child living just a few kilometres away. In this same geographic region, life expectancy for everyone increased between 1960 and 2006, yet the difference in life expectancy between these racial groups has persisted and is increasing.</p> <p>As part of a response to this longstanding problem, local governments and civil society groups began developing new strategies to alter policy and urban planning practice. The Richmond Health Equity Partnership (RHEP) strategy was crafted with the help of the University of California, Berkeley. As part of RHEP, the city/county health department, the school district and community-based organizations were brought together to work on health equity for the first time.</p>	<p>Three new initiatives emerged: (i) a full service community schools project, where public schools act as resources for children and adults in the community to deliver health services, employment and ongoing education; (ii) a health equity indicator effort, where residents and health officials gather data to define and track progress towards health equity; and (iii) a Health in All Policies strategy and ordinance. The result of 18 months of collaborative work was an HiAP law, enacted in April 2014, and accompanying implementation guidance that was the first for a city in the USA.</p> <p>The impacts of HiAP have been significant and gained national attention. Richmond is using HiAP to retrain municipal employees and create a culture of health, where all city staff are viewed as “community clinicians”. The city has also used it to: address housing foreclosure and gentrification issues; invest in violence reduction, not prisons; advocate industrial air pollution control; attract new</p>

economic development; revitalize parks and greenspaces; hire local youth for municipal improvement projects; and build a care centre for victims of domestic violence and human trafficking.

While population health outcomes may not change in only a few years, gun-related homicides were at their lowest number in 30 years by 2014, and city survey results

indicated that self-rated “good” health and positive perceptions of community and the role of local government were all at their highest level in seven years. As the work to implement HiAP in Richmond continues, it offers a democratic model for addressing health equity through an integrated urban governance strategy.

Source: HiAP 2014 (383).

Despite a long history of recognizing the need for intersectoral action in addressing public health and implementing specific strategies such as HiAP, there are limited examples of the process being effectively applied. A number of reasons for this have been put forward, but a critical one has been the lack of replicable models of successful intersectoral action. Specific challenges, for example, were identified in a city-based effort on intersectoral action for health in Varde, Denmark (384). First, employees outside the health sector perceived the initiative as an additional task. Second, there was a lack of direct funding for the initiative. Third, there was a lack of ownership of the policy and the level of ambition in pursuing success varied widely between sectors. Fourth, baseline measures were lacking and the objectives of the initiative were not clear to all participants.

Place-based intersectoral action for health offers an opportunity to overcome many of these barriers by focusing on improvements in neighbourhood resources and conditions. New York City’s Take Care New York (TCNY) 2020 initiative, for example, calls for working with communities to make neighbourhoods healthier (385). To determine neighbourhood health, the plan considers both health and social factors such as how many people in a community graduate from high school or go to jail. Including these social factors has highlighted the need for partnerships and collaborations to improve health. Financially backed by the city government and supported by evidence of community health profiles, community consultations are organized by TCNY with open invitations to the public. While this is still an ongoing process, such initiatives can potentially set an example of how to address health equity by including health considerations in all neighbourhood issues.

Given the complex interconnectivity of issues related to health in cities, HiAP is very much an essential approach to adopt. Truly embedding health equity into policy and decision-making processes across all city government departments will require that HiAP be institutionalized (386). This needs formal and sustainable structures, processes and resources that enable timely analysis of the health consequences of decisions. Translation of this understanding into action necessitates an active engagement of a wide range of relevant stakeholders.

There are a number of key considerations in order for HiAP to be successful. First, the most effective placement for HiAP will be within the executive office of government to help ensure that this becomes a priority across all agencies. Health experts or a health department would need to play an important leadership and technical assistance role. Second, funding allocation to a single agency or team can create

unfair burdens for other participating agencies, or unrealistic expectations for the funded agency. On the other hand, distributed funding requires interagency agreements that can be complicated or require contractual obligations that limit flexibility. A contextual approach, or even a place-based approach, for the funding strategy will need to be determined. Third, not every policy decision will impact health, and applying a health lens often requires resources. It is important to determine when a health lens analysis is appropriate, who will conduct that screening and how it will be done. Fourth, HiAP requires new skills for workers in public health and partner agencies including technical skills such as how to conduct a health lens analysis or policy analysis, collaboration skills and political skills. An active partnership with academia can support local authorities with the necessary evidence and expand the availability of skills for HiAP.

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At the heart of the matter is the urgency for cities to improve equity in health and development, which is being challenged by a multitude of forces such as rapid unplanned urbanization, climate change and unequal economic growth and prosperity. Increasing meaningful participation from citizens, especially those who are most affected by adverse events and conditions, will increase the effectiveness of programmes and initiatives to improve equity. Reaching an understanding with the private sector on the harmony between social and economic goals in the city will vastly expand opportunities and access to services for citizens. And all of this will be more efficiently achieved if health of the people is not viewed solely as a responsibility of the health system. All sectors in cities benefit from a healthy population. There should be no reason for not developing a shared responsibility for health in city departments.

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This report presents evidence that health is not only “manufactured” by the health sector. People’s health in cities is strongly dependent on their living and working conditions, and accessibility to a wide range of services as well as physical and social environments. Urban living is mostly beneficial with respect to increased prosperity and better access to health and social services. However, new threats to human health have emerged. While some health threats are due to limited resources in cities that are experiencing a rapid rise in population, other challenges are arising from how available resources are used, including how cities and their services are planned and managed. Of greatest concern are the implications for people who are socially and economically excluded from the benefits of living in a city.

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Effective urban governance is not the sole domain of government, but the combined effort of a multitude of actors, including different levels of government, NGOs, the private sector and the community. We all have a role to play in improving the situation either as a part of the community in which we live, or in our professional capacities. Our actions in making the city a better place to live and work in for all will result in important health improvements for current and future generations. Demand for transparency in generating and sharing evidence and in decision-making will increase accountability and efficiency. As citizens, we need to constructively engage in understanding the implications of policies and decisions taken on our behalf, and develop an informed response to situations that may not be in the best interests of people’s health.

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The global political commitment to the SDGs provides us all a platform to

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contribute to improving health and quality of life in cities. While each of the 17 SDGs address critical areas for development, it is important to capture the links between the different goals and address them holistically. For example, nearly half the goals are related directly to environmental and social sustainability. The World Economic Forum has linked five goals, including health, to the Global Competitiveness Index, which measures competitiveness of national policy environments (387). The United Nations has estimated a US\$ 2.5 trillion annual investment gap for achieving the SDGs in developing countries alone (5). If we are to address health of populations in cities, a holistic approach needs to be applied in achieving the SDGs for health, cities, education, nutrition, gender equality, poverty eradication, climate action, and clean water and sanitation.

One of Lorenzetti's six frescoes titled "Peaceful city" illustrates that if government is virtuous and rules justly, then the city thrives and prospers. The artist, in particular, emphasizes the role of "justice". At the lower end of the wall, words inscribed by the artist translate into "...how sweet and peaceful is that life of the city where is preserved this virtue [Justice] who outshines any other" (388). Health equity is social justice in health (389). As cities grapple with 21st century challenges and pledge to improve the health of their populations, it is critical that the core value of their strategy is equity.

ANNEX 1 — Methodological notes for the urban-level analysis using the Demographic and Health Surveys (DHS) and the Multiple Indicator Cluster Surveys (MICS)

Reliable and comparable data for 102 countries, mostly low- and middle-income (LMICs), were analysed for determining health and health inequities in urban areas. Data presented in this report are only from countries for which at least one dataset beyond 2005 for urban areas was publicly available at the time of analysis in 2014–2015. In order to assess how urban areas perform in comparison to the national and rural levels, national, urban and rural averages were calculated for all indicators of interest. To further investigate inequalities *within* urban settings, the indicators were also disaggregated using different socioeconomic stratifiers, including wealth and education.

The purpose of the comprehensive descriptive and trend analysis of these data was to identify countries that have been more effective at reaching the urban poor over the past two decades. The main objectives were to:

- identify patterns, magnitudes and trends of health inequalities in urban settings at the national level on key health and social determinants of health indicators;
- analyse whether the urban poor are being left behind by development initiatives and overall improvement of health indicators at the national level;
- identify health inequities in selected cities where sample sizes were sufficiently large and data were reliable.

While this report focuses on highlighting the most relevant evidence to support its key messages, the full datasets on 102 countries can be found on the WHO Global Health Observatory, urban health theme page: www.who.int/gho/urban_health.

DATA SOURCES

The descriptive analysis used two sources of data, namely the Demographic and Health Surveys (DHS) and the Multiple Indicator Cluster Surveys (MICS). The DHS and MICS have been conducted in several developing countries across the world since the late 1980s. Both provide information, mostly comparable between countries and over time, about health issues and their social and economic context. They include a variable that allows the extraction of data from urban areas. Therefore, they provide an opportunity to develop a reliable and comparable evidence base that will enable better understanding of relevant urban health issues. Both the DHS and MICS have been a major source of data for the Millennium Development Goals (MDG) indicators and will continue to be a major data source for the Sustainable Development Goals (SDG) indicators as part of the post-2015 agenda.

DATASETS AND INDICATORS

Data were used from 196 DHS surveys in 68 countries and 85 MICS surveys in 60 countries. Also used were all standard and interim DHS surveys, from Phase II to Phase VI, that were publicly available as of May 2015, covering the period from 1990 to 2013. Data from Phase I of the DHS (1984–1989) were not used, mainly because questionnaires have changed significantly, making data less comparable over time, and because key household wealth information was missing in many surveys in this initial phase. Also excluded were surveys with only raw data available and those that were not representative of the whole country. In addition, surveys were excluded that did not have wealth information and, therefore, were not suited for inequality analysis.

Data were used from all MICS surveys from Round III and Round IV that were publicly available as of May 2015, covering the period from 2005 to 2012. All nationally representative surveys were considered as well as specific regional/state surveys such as those from Macedonia, Pakistan and Serbia. To improve comparability across the MICS surveys and with the DHS surveys, surveys corresponding to the first rounds of implementation in the 1990s and early 2000s were excluded.

The list of indicators and their respective definitions for which data were available from the WHO Global Health Observatory urban health theme page is shown in Table A1.1. While only selected analyses are highlighted in this report based on relevance to the particular issue being discussed, data on all indicators can be downloaded from the WHO Global Health Observatory.

Table A1.1.
List of indicators and definitions

Indicator		Definition
HEALTH OUTCOMES		
1.	Under-5 mortality rate	Probability of dying before fifth birthday (5q0) expressed as number of deaths per 1000 live births
2.	Infant mortality rate	Probability of dying before first birthday (1q0) expressed as number of deaths per 1000 live births
3.	Adolescent birth rate	Number of births among women ages 15–19 per 1000 women ages 15–19
HEALTH SYSTEM COVERAGE		
4.	Coverage of skilled birth attendance	Percentage of births attended by a health-care professional
5.	Coverage of antenatal care (at least four visits)	Percentage of women who had at least four antenatal care visits to a health-care professional for their last birth
6.	Coverage of DPT3 vaccination in children	Percentage of children under 5 years immunized with the third dose of the DPT vaccine
7.	Coverage of measles vaccination in children	Percentage of children under 5 years immunized against measles

	Indicator	Definition
8.	Coverage of bednet ownership in household	Percentage of households that have a bednet for sleeping
9.	Coverage of ITN ownership in household	Percentage of households with at least one ITN for sleeping (an ITN is a factory-treated net that does not require any treatment or a net that has been soaked with insecticide within the past 12 months)
10.	Coverage of bednet use among children	Percentage of children under 5 years who slept under a bednet the previous night
11.	Coverage of ITN use among children	Percentage of children under 5 years who slept under an ITN the previous night
PHYSIOLOGICAL RISK FACTORS		
12.	Prevalence of (moderate or severe) chronic malnutrition in children (stunting)	Percentage of children under 5 years whose height for age is less than minus 2 standard deviations from the median for the standard reference population
13.	Prevalence of (moderate or severe) underweight in children	Percentage of children under 5 years whose weight for age is less than minus 2 standard deviations from the median for the standard reference population
14.	Prevalence of overweight and obesity in children	Percentage of children under 5 years of age whose weight for height is more than 2 standard deviations from the median for the standard reference population
15.	Prevalence of overweight and obesity in women	Percentage of women ages 15–49 years with a BMI greater than 25
16.	Prevalence of obesity in women	Percentage of women ages 15–49 years with a BMI greater than 30
BEHAVIOURAL RISK FACTORS		
17.	Prevalence of current cigarette smoking among women	Percentage of women ages 15–49 years that currently smoke cigarettes
18.	Prevalence of current cigarette smoking among men	Percentage of men ages 15–54/64 years that currently smoke cigarettes
19.	Comprehensive correct knowledge about sexual transmission of HIV/AIDS among women	Percentage of women ages 15–49 who know that using condoms AND having just one sexual partner can reduce the risk of getting HIV/AIDS
20.	Comprehensive correct knowledge about sexual transmission of HIV/AIDS among men	Percentage of men ages 15–54/64 who know that using condoms AND having just one sexual partner can reduce the risk of getting HIV/AIDS
21.	Knowledge about the use of condoms as a way to avoid HIV/AIDS among young women	Percentage of women ages 15–24 that identify the use of condoms as a way to avoid HIV/AIDS
22.	Knowledge about the use of condoms as a way to avoid HIV/AIDS among young men	Percentage of men ages 15–24 that identify the use of condoms as a way to avoid HIV/AIDS

Indicator	Definition	
ENVIRONMENTAL RISK FACTORS		
23.	Exposure to indoor air pollution	Percentage of the population using solid fuels as the main energy for cooking
24.	Access to piped water onto premises	Percentage of the population using a piped water connection located inside the dwelling, plot or yard
25.	Access to improved drinking-water	Percentage of the population using an improved drinking-water source
26.	Open defecation	Percentage of the population not using any sanitation facility (human faeces are disposed of in fields, forests, bushes, open bodies of water, beaches or with solid waste)
27.	Access to adequate handwashing facilities	Percentage of households with soap and water at a handwashing facility in the dwelling, yard or plot
28.	Poor housing quality (durable structures)	Percentage of households living in dwellings that have dirt (earth), sand, mud or dung floor

BMI, body mass index; DPT, diphtheria, pertussis and tetanus; ITN, insecticide treated net

Table A1.2 shows the list of countries for which data were analysed and disaggregated at the urban level for this report. It includes the United Nations 3-letter code for the country, the region to which the country belongs using the United Nations classification, income category using the World Bank classification, number of surveys available for the country during the study period and the latest year for which data were used in this report.

Table A1.2.
List of countries with DHS or MICS data available for urban analysis

	Country	3-letter United Nations code	World Bank income category	Total number of surveys (DHS or MICS) available, 1990–2013	Latest year of data available
AFRICA					
1	Benin	BEN	Low-income	4	2011
2	Burkina Faso	BFA	Low-income	5	2010
3	Burundi	BDI	Low-income	2	2010
4	Cameroon	CMR	Lower-middle-income	5	2011
5	Central African Republic	CAF	Low-income	3	2010

	Country	3-letter United Nations code	World Bank income category	Total number of surveys (DHS or MICS) available, 1990–2013	Latest year of data available
6	Chad	TCD	Low-income	3	2010
7	Comoros	COM	Low-income	2	2012
8	Congo (Brazzaville)	COG	Lower-middle-income	2	2011
9	Democratic Republic of the Congo	COD	Low-income	3	2013
10	Côte d'Ivoire	CIV	Lower-middle-income	4	2011
11	Djibouti	DJI	Lower-middle-income	1	2006
12	Egypt	EGY	Lower-middle-income	5	2008
13	Ethiopia	ETH	Low-income	3	2011
14	Gabon	GAB	Upper-middle-income	2	2012
15	Gambia	GMB	Low-income	1	2005
16	Ghana	GHA	Lower-middle-income	6	2011
17	Guinea	GIN	Low-income	3	2012
18	Guinea-Bissau	GNB	Low-income	1	2006
19	Kenya	KEN	Lower-middle-income	4	2008
20	Lesotho	LSO	Lower-middle-income	2	2009
21	Liberia	LBR	Low-income	2	2013
22	Madagascar	MDG	Low-income	3	2008
23	Malawi	MWI	Low-income	5	2010
24	Mali	MLI	Low-income	4	2012
25	Mauritania	MRT	Lower-middle-income	1	2007
26	Mozambique	MOZ	Low-income	4	2011
27	Namibia	NAM	Upper-middle-income	4	2013
28	Niger	NER	Low-income	3	2012
29	Nigeria	NGA	Lower-middle-income	6	2013
30	Rwanda	RWA	Low-income	5	2010
31	Sao Tome and Principe	STP	Lower-middle-income	1	2008
32	Senegal	SEN	Lower-middle-income	4	2012

	Country	3-letter United Nations code	World Bank income category	Total number of surveys (DHS or MICS) available, 1990–2013	Latest year of data available
33	Sierra Leone	SLE	Low-income	4	2013
34	Somalia	SOM	Low-income	1	2006
35	Sudan	SDN	Lower-middle-income	1	2010
36	Swaziland	SWZ	Lower-middle-income	2	2010
37	United Republic of Tanzania	TZA	Low-income	4	2010
38	Togo	TGO	Low-income	3	2010
39	Tunisia	TUN	Upper-middle-income	1	2010
40	Uganda	UGA	Low-income	4	2011
41	Zambia	ZMB	Lower-middle-income	3	2007
42	Zimbabwe	ZWE	Low-income	5	2010
ASIA-PACIFIC					
43	Afghanistan	AFG	Low-income	1	2010
44	Bangladesh	BGN	Lower-middle-income	7	2011
45	Bhutan	BTN	Lower-middle-income	1	2010
46	Cambodia	KHM	Low-income	3	2010
47	India	IND	Lower-middle-income	3	2005
48	Indonesia	IDN	Lower-middle-income	4	2012
49	Iraq	IRQ	Upper-middle-income	2	2011
50	Jordan	JOR	Upper-middle-income	6	2012
51	Kazakhstan	KAZ	Upper-middle-income	4	2010
52	Kyrgyz Republic	KGZ	Lower-middle-income	3	2012
53	Lao People's Democratic Republic	LAO	Lower-middle-income	2	2011
54	Maldives	MDV	Upper-middle-income	1	2009
55	Mongolia	MNG	Upper-middle-income	2	2010
56	Nepal	NPL	Low-income	4	2011
57	Pakistan	PAK	Lower-middle-income	3	2012
58	Philippines	PHL	Lower-middle-income	5	2013

	Country	3-letter United Nations code	World Bank income category	Total number of surveys (DHS or MICS) available, 1990–2013	Latest year of data available
59	Palestine	PSE	Lower-middle-income	1	2010
60	Syrian Arab Republic	SYR	Lower-middle-income	1	2006
61	Tajikistan	TJK	Lower-middle-income	1	2006
62	Thailand	THA	Upper-middle-income	1	2005
63	Timor-Leste	TLS	Lower-middle-income	1	2009
64	Uzbekistan	UZB	Lower-middle-income	2	2006
65	Vanuatu	VUT	Lower-middle-income	1	2007
66	Viet Nam	VNM	Lower-middle-income	4	2010
67	Yemen	YEM	Lower-middle-income	1	2006
EASTERN EUROPE					
68	Albania	ALB	Upper-middle-income	2	2008
69	Armenia	ARM	Lower-middle-income	3	2010
70	Azerbaijan	AZE	Upper-middle-income	1	2006
71	Belarus	BLR	Upper-middle-income	2	2012
72	Bosnia and Herzegovina	BIH	Upper-middle-income	2	2011
73	Georgia	GEO	Lower-middle-income	1	2005
74	Macedonia	MKD	Upper-middle-income	2	2011
75	Moldova	MDA	Lower-middle-income	2	2012
76	Montenegro	MNE	Upper-middle-income	1	2005
77	Serbia	SRB	Upper-middle-income	2	2010
78	Ukraine	UKR	Lower-middle-income	3	2012
LATIN AMERICA AND THE CARIBBEAN (LAC)					
79	Argentina	ARG	Upper income	1	2011
80	Barbados	BRB	Upper income	1	2012
81	Belize	BLZ	Upper-middle-income	2	2011
82	Bolivia (Plurinational State of)	BOL	Lower-middle-income	4	2008

	Country	3-letter United Nations code	World Bank income category	Total number of surveys (DHS or MICS) available, 1990–2013	Latest year of data available
83	Colombia	COL	Upper-middle-income	5	2010
84	Costa Rica	CRI	Upper-middle-income	1	2011
85	Cuba	CUB	Upper-middle-income	2	2010
86	Dominican Republic	DOM	Upper-middle-income	5	2013
87	Guyana	GUY	Lower-middle-income	2	2009
88	Haiti	HTI	Low-income	4	2012
89	Honduras	HND	Lower-middle-income	2	2011
90	Jamaica	JAM	Upper-middle-income	2	2011
91	Peru	PER	Upper-middle-income	9	2012
92	Saint Lucia	LCA	Upper-middle-income	1	2012
93	Suriname	SUR	Upper-middle-income	2	2011
94	Trinidad and Tobago	TTO	Upper income	1	2006

DHS, Demographic and Household Surveys; MICS, Multiple Indicator Cluster Survey

ANNEX 2 — Methodological notes on the calculation of the Urban Health Index (UHI)

ABOUT THE UHI

The UHI is a single, composite metric that can be used to measure and map the inequalities in health determinants and outcomes in urban areas. The UHI provides a flexible approach to selection, amalgamation and presentation of health data. Its purpose is to furnish visual, graphical and statistical insight into various health indicators and health determinants within particular geographic boundaries, with a focus on capturing intra-urban health inequalities.

The UHI was commissioned by the World Health Organization Centre for Health Development (WHO Kobe Centre) and developed by researchers at Georgia State University in Atlanta, USA, with funding and technical guidance from the WHO Kobe Centre. The tool that emerged through expert consultations and commissioned papers was not predicated on new methods, but rather built on a methodology that

has been under development for many years. A review of existent indicator databases and current approaches to the formation of indices revealed diversity in terminology, but considerable concordance in the types of indicators used (390). Numerous indices have been proposed, most predicated on the inclusion of specific indicators, and many employing arbitrary weighting schemes. The UHI builds on the considerable correlation among indicators of the same type (for example, total mortality and its subsets) and eschews weighting in favour of different indicator combinations.

The method for the UHI construction has drawn on the approach used by the Human Development Index (HDI) that standardizes indicators by converting them to a proportion of their range so that they are directly comparable, and then combines them using the geometric mean. The resulting UHI value has a range from 0 to 1. The UHIs for contiguous areas are rank ordered. A disparity ratio is calculated from the extremes of the distribution and a disparity slope is calculated by the angle of increase. UHIs for contiguous areas are mapped to provide an immediate visual grasp of the extent and distribution of disparities. This approach permits freedom to choose the scale (from small area estimates to national comparisons), the indicators (largely dependent on data availability) and the mode of presentation.

The detailed methodology for the UHI has been published elsewhere (32). A handbook for the calculation and use of the UHI is available from the WHO Kobe Centre, along with an Excel-based calculation tool and sample data (391).

ABOUT THE UHI RESULTS IN THIS REPORT

While the main focus of the UHI is on examining intra-urban inequalities, for the purpose of this global report, the UHI was applied to city data extracted from the Demographic and Health Surveys (DHS) to conduct an inter-city comparison across as many cities as possible. The dataset selected was all data made available and collected or released through the DHS from 2003 to 2013. For each country, a capital city was identified. Then, variables related to the residential location of the interviewee – mainly v024, v025, v026 – were used to identify and extract urban observations from the capital city (or capital region) of that country. In some cases where additional major cities were identifiable, urban observations from those cities were included in the analysis as well (e.g. Kolkata, Mumbai and New Delhi in India). Subsequently, 60 cities in 56 countries were identified.

Various combinations of indicators were considered for the construction of the UHI for this particular analysis. The main objective was to select a set of key urban health determinants and tracer indicators of UHC. Indicator selection also took into consideration the number of missing observations and effective sample sizes per variable in order to maximize the number of city samples that could be included in the analysis. Thus, the final construction of the UHI reflects the optimal balance between relevance of the indicators and number of city samples available for analysis.

The final version of the UHI presented in Figure 2 in the Introduction of this report is based on a UHI comprised of nine indicators calculated at the city level for the urban samples of households, women and children, as applicable: (i) percentage of households with water piped onto premises; (ii) percentage of households with improved sanitation; (iii) percentage of households that do not use solid fuel for cooking in

the home; (iv) percentage of women who completed secondary education or higher; (v) percentage of women who believe that having only one partner can decrease HIV risk; (vi) percentage of women who believe that condom use can decrease HIV risk; (vii) percentage of children 1–4 years of age who received three doses of the DPT vaccine; (viii) percentage of children 1–4 years of age who received three doses of the polio vaccine; and (ix) percentage of children 1–4 years of age who received the measles vaccine. The two indicators on HIV/AIDS were assigned a weight of $\frac{1}{2}$ each, while the three indicators on immunization were assigned weights of $\frac{1}{3}$ each.

This UHI could be calculated for 57 (mostly capital) cities in 54 countries. The results are visualized in the map presented in Figure 2 in the Introduction of this report. The city-level UHI has been divided into quintiles and colour-coded with the darker colour shades indicating worse UHI scores. The size of the bubble for each city represents population size. Specific findings are highlighted in the accompanying text.

A detailed technical report (27) describing the sample selection method, the rationale for the indicator selection and additional analyses is available from the WHO Kobe Centre. The indicator values and the resulting UHI values for each of the 57 cities can be found in the appendix of the technical report.

Another example of an analysis that used the UHI method is presented in the chapter on health equity in this report. It was applied to visualize the variance in health outcomes at the ward and municipal subdivision levels of the Greater Tokyo Area of Japan using a UHI based on age-adjusted, cause-specific mortality rates (32). In this case, a higher UHI value represented worse outcomes (higher mortality).

SEMANTIC INDEX - SDG

Each SDG is defined by a set of words, that when cited in the text, link to the respective SDG on the left of the page

SDG 1 - PVRTY

End poverty in all its forms everywhere

Poor/-s, poverty, slum/-s, exposure, low-income, exclusion, basic services, social protection, urban poverty

SDG 2 - HNGR

End hunger, achieve food security and improved nutrition and promote sustainable agriculture

Land/-s, malnutrition, hunger, agricultural land, agricultural sector, crop/-s, farmers, farming, farms, food/-s, food consumption, food deserts, food markets

SDG 3 - HLTH

Ensure healthy lives and promote well-being for all at all ages

AIDS, alcohol, alcoholic/-s, antenatal care, birth attendance, cancer/-s, condom/-s, CVD, diabete/-s, diarrhoea, diarrhoeal, epidemic/-s, medicine/-s, family planning, health financing, health risk/-s, HIV, hypertension, infectious disease/-s, injury/-s, low-birth-weight, malaria, mental health, NCD/-s, obesity, physical activity/-s, physical inactivity, premature mortality, primary health-care, reproductive health, respiratory disease/-s, respiratory infection/-s, risk reduction, sedentary behaviour, smoke, smoke-free, smoking, stillbirth/-s, stroke/-s, TB, tobacco, tuberculosis, UHI, UNAIDS, under-mortality, universal health coverage

SDG 4 - EDUC

Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Community/-ies, recreation, participation/-s, school/-s, education, enrolment, literacy, university/-ies, skill/-s, culture, learning, training

SDG 5 - GNDR

Achieve gender equality and empower all women and girls

Gender, empowerment, discrimination/-s

SDG 6 - WATR

Ensure availability and sustainable management of water and sanitation for all

Drinking-water, inadequate sanitation, open defecation, safe water, sanitation, sewer/-s, stagnant water, tap/-s, toilet/-s, undrinkable water, unsafe water, water, water storage, water supply system/-s, water source/-s

SDG 7 - ENRG

Ensure access to affordable, reliable, sustainable and modern energy for all

Coal, cooking, electricity, fuel/-s, heating, energy/-ies

SDG 8 - ECON

Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Economic growth, employment, job/-s, investment/-s, labour, salar/-s

SDG 9 - INFRA

Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

Infrastructure/-s, innovation, road/-s, transport, transportation, commute, commuter/-s, bicycle/-s, bicycle lanes, cycling, cyclists, private vehicles, public transport

SDG 10 - INEQ

Reduce inequality within and among countries

Disparity/-ies, equality, inequality/-ies, inequity, richest, poorest

SDG 11 - CITY

Make cities and human settlements inclusive, safe, resilient and sustainable

Dirt floors, mobility, affordable housing, age-friendly, ageing, air quality, carbon dioxide, decentralization, dioxide emissions, food price/-s, hospitals, house, household/-s, housing, inclusion, initiatives, lighting, motor vehicles, national and regional development planning, older adults, older people, overcrowding, parking, pedestrians, psup, public parks, road safety, settlement/-s, solid waste, traffic, traffic accident/-s, underserved neighbourhoods, urban growth, Urban Health Index, urban planning, urbanization, walking, waste, waste management

SDG 12 - CNSUM

Ensure sustainable consumption and production patterns

Production, consumption, food waste, supply chain/-s, sustainable tourism, taxation

SDG 13 - CLIMT

Take urgent action to combat climate change and its impacts

Air pollution, greenhouse gas emission/-s, natural disaster/-s, adaptation, awareness, climate change, mitigation, temperature/-s, weather, flood/-s, flooded, earthquake/-s, gas emissions, heat waves

SDG 14 - OCNS

Conserve and sustainably use the oceans, seas and marine resources for sustainable development

Harvesting, resilience, sea/-s

SDG 15 - BIODV

Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

Food security, biodiversity, habitat, shelter

SDG 16 - PEACE

Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

Abuse, corruption, crime, firearms, freedom, homicide, identity, murder/-s, security, trafficking, transparency, violence, violent, justice, peace

SDG 17 - PARTN

Strengthen the means of implementation and revitalize the global partnership for sustainable development

Stability, civil society, communication/-s, data, export, financial resources, financing, governments, knowledge, market, mobilization, monitoring, negotiation/-s, partnership/-s, policy/-ies, policy coordination, poverty eradication, private sector, science, support, technology

SEMANTIC INDEX - COUNTRY

When a city is cited in the text, the respective country code appears on the right of the page

AFG	Afghanistan
ARE	United Arab Emirates
AUS	Australia
AUT	Austria
BEN	Benin
BFA	Burkina Faso
BGD	Bangladesh
BRA	Brazil
BTN	Bhutan
CAF	Central African Republic
CAN	Canada
CHN	China
COD	Congo (Democratic Republic of the)
COG	Congo
COL	Colombia
CYP	Cyprus
DEU	Germany
DNK	Denmark
ECU	Ecuador
EGY	Egypt
ESP	Spain
ETH	Ethiopia
FIN	Finland
FRA	France
GBR	United Kingdom of Great Britain and Northern Ireland
GHA	Ghana
GIN	Guinea
GTM	Guatemala
HND	Honduras
IDN	Indonesia
IND	India
IRN	Iran
IRQ	Iraq
ITA	Italy
JEY	Jersey
JOR	Jordan
JPN	Japan
KEN	Kenya
KHM	Cambodia
LBR	Liberia
MAR	Morocco
MEX	Mexico
MLI	Mali

MNG	Mongolia
MOZ	Mozambique
MRT	Mauritania
MWI	Malawi
NAM	Namibia
NGA	Nigeria
NLD	Netherlands
NOR	Norway
NPL	Nepal
NZL	New Zealand
PAK	Pakistan
PER	Peru
PHL	Philippines
PRT	Portugal
RUS	Russian Federation
RWA	Rwanda
SDN	Sudan
SEN	Senegal
SLE	Sierra Leone
SLV	El Salvador
SOM	Somalia
SSD	South Sudan
STP	São Tomé e Príncipe
SWE	Sweden
SWZ	Swaziland
SYR	Syrian Arab Republic
TCD	Chad
TGO	Togo
THA	Thailand
TJK	Tajikistan
TLS	Timor-Leste
TUR	Turkey
TZA	Tanzania
UGA	Uganda
UKR	Ukraine
URY	Uruguay
USA	United States of America
VNM	Viet Nam
YEM	Yemen
ZAF	South Africa
ZMB	Zambia
ZWE	Zimbabwe