

**PART  
ONE**

**THE DAWN OF AN  
URBAN WORLD**

# INTRODUCTION TO PART ONE

In 1990, fewer than 4 in 10 of the world's population lived in cities. In 2010, more than half live in cities, and by 2050, 7 out of every 10 people will live in urban areas. Most of this explosive growth is occurring in developing countries, where municipalities and other government authorities are often overwhelmed by the rapid population boom, and struggling to keep pace.

Around the world, modern cities are centres of economic activity. Their skyscrapers and bustling marketplaces are testament to the development they have driven. Overall, urbanization has brought countries opportunity, prosperity and health.

At the same time, modern cities are filled with shadows. Beneath the skyscrapers, behind the marketplaces, the lives of city dwellers are hidden from view. This is especially true for the urban poor living in slums or other informal settlements, which are often excluded from estimates of cities' economic and health development. Relying on city averages, rather than examining differences between neighbourhoods and urban subgroups, has further obscured inequalities within cities.

Latter parts of this report will illuminate these hidden cities; Part One provides an overview of what is already known. The world is urbanized and will become even more so in the future. The rapid increase of people living in cities will be among the most important global health issues of the 21st century. Cities offer unique opportunities for residents to benefit from education, health and social services and to optimize their health and quality of life. At the same time, health hazards such as poor housing conditions, lack of access to safe water and sanitation, and economic downturns are fuelling a range of health problems. If left unchecked, climate change will multiply these and other urban health risks through heat waves, storms and changing weather patterns. Meanwhile, overwhelmed by the speed of growth, health services in many urban settings are poorly equipped to manage current and emerging public health threats.

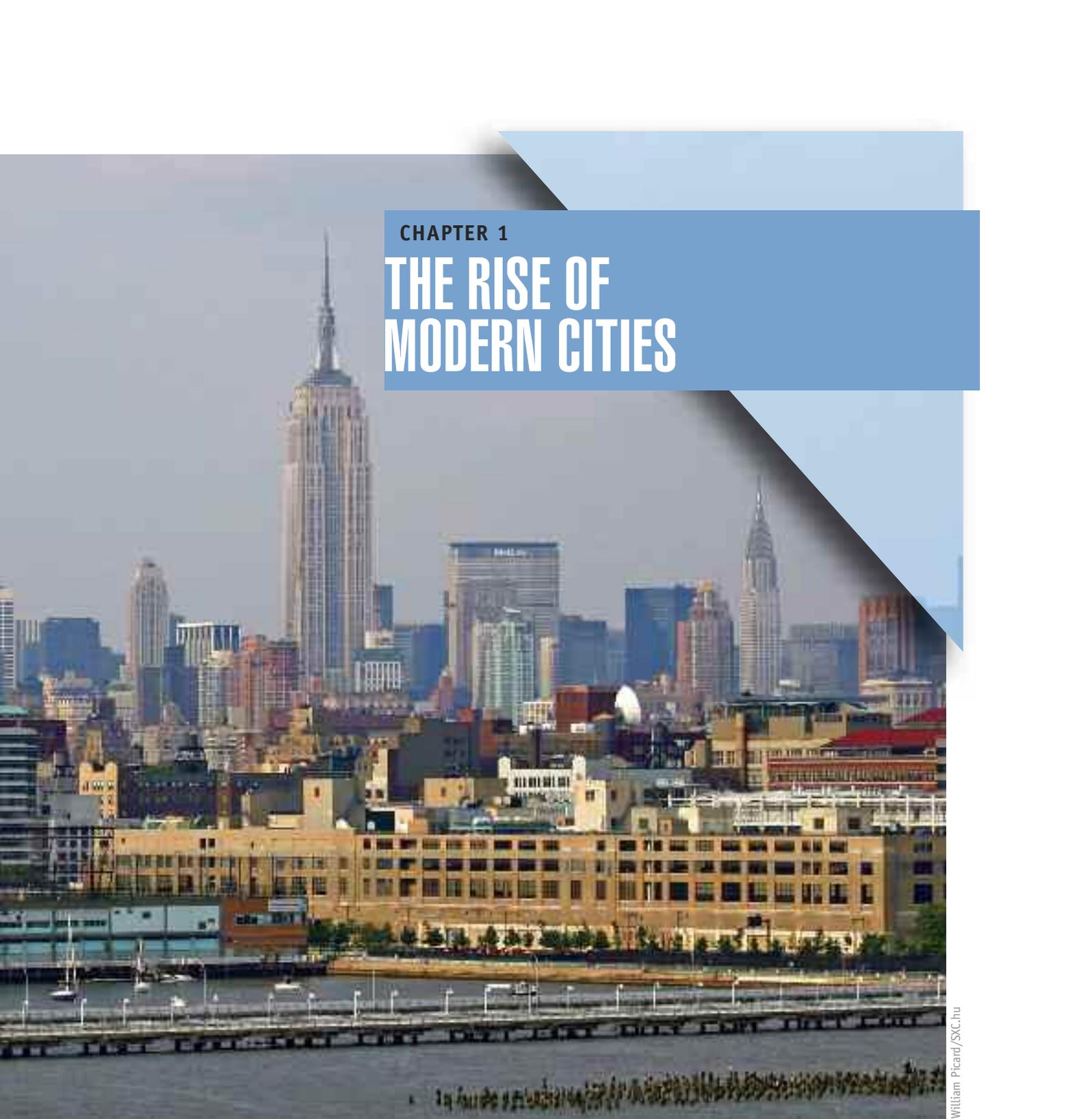
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## KEY MESSAGES

- For the first time in human history, the majority of the world's population is living in urban areas, and this proportion continues to grow.
- Cities concentrate opportunities, jobs and services, but they also concentrate risks and hazards for health.
- The rapid increase of people living in cities will be among the most important global health issues of the 21st century.
- Urban growth has outpaced the ability of governments to build essential infrastructures, and one in three urban dwellers lives in slums or informal settlements.



CHAPTER 1

# THE RISE OF MODERN CITIES

William Picard/SXC.hu

This chapter reviews trends and projections related to the rapid increase of people living in cities around the world, as well as some of the consequences of this phenomenon.

# Demographics of urbanization and trends

For the first time in history, the majority of the world's population is living in urban areas, and this proportion continues to grow. It was only a few years ago that the world's urban population started to outnumber its rural population. One hundred years ago, only 2 in 10 people in the world were living in urban areas. By 2030, 6 out of every 10 people will be city dwellers, rising to 7 out of every 10 people by 2050. According to population growth projections, virtually all global growth over the next 30 years will be in urban areas. The number of urban residents is growing by nearly 60 million every year.<sup>1</sup>

As humans change, so do their living and working environments. In contrast to agrarian rural settings, cities are characterized by their mass production, service industries and marketplaces. Their scale, density and diversity of social, cultural and ethnic groups also set them apart from rural contexts. It is not only the visible aspects of living and working environments that change, but also their intangible qualities, such as their intellectual assets, creativity, vibrancy and shared identity. Typical urbanites have more choice and opportunity than their ancestors ever had before.

## URBANIZATION EXPLAINED

Urbanization refers to the overall increase in the proportion of the population living in urban areas, as well as the process by which large numbers of people have become permanently concentrated in relatively small areas, forming cities.<sup>2</sup> While specific definitions of "urban" differ from one country to another, in all regions urbanization has been characterized by demographic shifts from rural areas to cities; growth of urban populations; and overall shifts in the economy from farming towards industry, technology and service.

## GLOBAL TRENDS AND PROJECTIONS

Urbanization became more rapid as globalization spread industry and technology to all corners of the world. For example, whereas London took roughly 130 years to grow from 1 to 8 million people, Bangkok took 45 years, and Seoul took only 25 years.<sup>3</sup> Globally, urban growth was at its peak during the 1950s, with a population expansion of more than 3% per year.<sup>4</sup>

By the middle of the 21st century, the urban population will almost double, increasing from roughly 3.4 billion in 2009 to 6.4 billion in 2050. In contrast, rural populations will decline around the world during this same time frame.<sup>5</sup>

Despite these dramatic increases in the total number of city dwellers, the overall pace of urbanization is not accelerating. On a global scale, the urban population is expected to grow roughly 1.5% per year between 2025 and 2030.<sup>5</sup>

As the world becomes more urban, people will continue to live in cities of all sizes, with a pattern of city size distribution similar to that which is evident now.<sup>6</sup> Currently, around half of all urban dwellers live in cities with between 100 000 and 500 000 people, whereas fewer than 10% of urban dwellers live in mega-cities (defined by UN-HABITAT as a city with a population of more than 10 million).<sup>1</sup> In many places, however, cities will merge together to create urban settlements on a scale never seen before. These new configurations will take the form of mega-regions, urban corridors and city-regions, creating a new urban hierarchy and landscape.

Today, mega-regions are amassing larger populations than mega-cities. Mega-regions are natural economic units that result from the growth, convergence and spatial spread of geographically linked metropolitan areas and other agglomerations.<sup>7</sup> They are growing considerably faster than the overall population of the countries in which they are located.<sup>8</sup> The population of China's Hong Kong-Shenzhen-Guangzhou mega-region, for example, comprises approximately

120 million people, and it is estimated that Japan's Tokyo-Nagoya-Osaka-Kyoto-Kobe mega-region will have a population of 60 million by 2015.<sup>1,9</sup>

In urban corridors, city centres of different sizes are connecting along transport routes. In Africa, the Greater Ibadan-Lagos-Accra urban corridor, spanning roughly 600 kilometres across four countries, is the engine of the regional economy in West Africa.<sup>10</sup> The corridor developing between Mumbai and Delhi in India will stretch about 1500 kilometres from Jawaharlal Nehru Port in Navi Mumbai to Dadri and Tughlakabad in Delhi.<sup>1,11</sup> Urban corridors are changing the functionality of large and small cities, and even towns, increasing the growth of trade, real estate development and land value along their ribbon-like development areas.

At still another level, city-regions are developing as the result of large cities extending beyond their administrative boundaries to engulf smaller cities and towns, absorbing semi-urban and rural surrounding areas, and in some cases merging with other intermediate cities. Many city-regions have grown enormously over the last 20 to 30 years. The extended Bangkok Region in Thailand, for example, is expected to expand another 200 kilometres from its current centre by 2020, growing far beyond its current population of more than 17 million. In Brazil, Metropolitan São Paulo already covers 8000 square kilometres, with a population of 16.4 million.<sup>6</sup> The extent of South Africa's Cape Town city-region, when including the distances from which commuters travel to and from the city every day, reaches up to 100 kilometres.<sup>12</sup>

Suburbanization, or urban sprawl, is also becoming prevalent around the world. Its hallmark characteristics include a population that is widely dispersed in low-density development; separated residential and commercial areas; a network of roads marked by long blocks and poor access; and a lack of well-defined, thriving activity centres, such as downtown areas. Other features usually associated with sprawl include overdependence on motorized transport coupled with a lack of transport alternatives, and pedestrian-unfriendly spaces. In most cases, sprawl leads to increased public infrastructure costs. Sprawling metropolitan areas consume

much more energy than compact cities and require a greater output of materials such as metal, concrete and asphalt because homes, offices and utilities are farther apart.<sup>13</sup>

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## URBAN GROWTH IS NOT UNIFORM

Urbanization trends vary across different parts of the world. Some cities and regions are experiencing rapid growth, whereas other cities and regions are in population decline. Currently, Africa and Asia are the least urbanized regions, with 40% and 42% of their populations, respectively, living in urban areas. Yet by 2050, their urban populations will increase to 62% in Africa and 65% in Asia.<sup>5</sup> Meanwhile, in Europe more than half of all cities are expected to experience population declines over the next 20 years.

Almost all urban population growth in the next 30 years will occur in cities of developing countries. Between 1995 and 2005, the urban population of developing countries grew by an average of 1.2 million people per week, or around 165 000 people every day.<sup>14</sup> By the middle of the 21st century, it is estimated that the urban population of these countries will more than double, increasing from 2.5 billion in 2009 to almost 5.2 billion in 2050.<sup>5</sup> Nonetheless, on average the rate of urban population growth is slowing in developing countries, from an annual rate of roughly 4% from 1950 to 1975, to a projected 1.55% per year from 2025 to 2050.<sup>5</sup>

In contrast, the total urban population in the developed world is expected to remain largely unchanged over the next two decades, increasing from 920 million people in 2009 to slightly more than 1 billion by 2025.<sup>5</sup> Immigration – both legal and illegal – will account for more than two thirds of urban growth in high-income countries. Without immigration, the urban population in these countries would probably decline or remain the same in the coming decades.

Urban growth in developing countries is far from uniform, and this dissimilarity will only increase in the future. While high growth rates are expected in

around half of urban areas in the next 20 years, another 16% will experience slow growth rates, and 11% will see their populations regress – and, very likely, their economies as well.<sup>15</sup>

Cities such as Phnom Penh, Cambodia; Tijuana, Mexico; Marrakesh, Morocco; and Lagos, Nigeria, are expected to continue to grow at annual rates of around 4%, effectively doubling their populations within the next 17 years. Some cities in China, such as Shenzhen and Xiamen, will experience annual growth rates of more than 10%, doubling their populations roughly every seven years.<sup>15</sup>

Meanwhile, other cities in developing countries are expected to experience population declines. These include La Paz, Plurinational State of Bolivia; Belo Horizonte, Brazil; Dengzhou, China; Madurai, India; Bandung, Indonesia; San Luis Potosi, Mexico; Rabat, Morocco; and Manila, Philippines. In these cities, departing residents will leave behind unoccupied houses, vacant commercial sites, idle infrastructure and neighbourhoods in physical decay.<sup>16,17</sup>

City and regional planning will require new methods and techniques that respond to urban development, expansion and growth management, but also to population decline or outmigration. Smart planning for growth needs to be combined with smart planning for contraction for more sustainable and balanced urban and regional development.

## The benefits of urbanization

For both rich and poor, in developed and developing countries, cities offer unique opportunities for residents to increase income, to mobilize for political action, and to benefit from education as well as health and social services. The density of urban settings lends itself to more efficient and environmentally sensitive housing, transport systems and other physical infrastructure.

Urbanization is also linked to economic development. Most urbanized countries have higher

incomes, more stable economies and stronger institutions, and are better equipped to withstand the shocks and volatility of the global economy. Conversely, most countries with a high per capita income are among the most urbanized, whereas most countries with a low per capita income are among the least urbanized. In both developed and developing countries, cities generate significant portions of gross domestic product and national wealth, and create development opportunities, jobs and investment. In the coming years, cities are likely to have even stronger roles as engines of growth and key factors of national development – particularly those cities that become parts of urban agglomerations such as mega-regions and urban corridors. In the future, regional and urban development will be linked more strongly, in such a way that successful cities will be located in successful regions.

Urbanization is not only a positive force for economic development, but also one that can confer desirable social and health outcomes. Urban populations are generally better off than their rural counterparts: they tend to have greater access to social and health services, literacy rates are higher and life expectancy is longer.<sup>18</sup>

Numerous cities around the world have capitalized on the opportunities presented by urbanization to create healthier environments. Healthy Cities networks are being established in all World Health Organization (WHO) regions. Initiated by the WHO Regional Office for Europe in 1986, the networks now include thousands of cities, towns and regions in dozens of countries around the world.<sup>19</sup> Some networks are country specific, whereas others are regional. Typically, each network develops its own approach based on local needs and concerns (Box 1.1), but all have a common root in the concept of the city as a key setting for health promotion; a place where environments support health; where municipal, regional, provincial and national governments develop and implement policies that are good for health; and where citizens are engaged in the process of creating healthier neighbourhoods and cities by increasing control over their health and its determinants.

## BOX 1.1

### HEALTHY CITIES AROUND THE WORLD (BY WHO REGION)

**HEALTHY CITIES IN AFRICA.** Introduced in 1999, Healthy Cities is still relatively young in the African Region. Although its activities have been limited to isolated projects, results are encouraging for the future development of the programme. Many Healthy Cities projects in Africa aim to improve the living conditions and health of the urban poor. Projects typically address pressing community issues such as access to water and sanitation.

**HEALTHY CITIES IN THE AMERICAS.** For more than 20 years, the Healthy Municipality Initiative has been promoted by WHO in Latin America. The movement arose from the need to effectively address the economic, social and political determinants of health. Regional networking activities and sharing of knowledge and experiences between municipalities and countries has been a key aspect in the success of the movement.

**HEALTHY CITIES IN THE EASTERN MEDITERRANEAN.** In the Eastern Mediterranean Region, Healthy Cities projects are being implemented in Bahrain, Islamic Republic of Iran, Iraq, Oman, Pakistan, Saudi Arabia, Somalia, Sudan and Tunisia, covering a population of nearly 13 million people. Many Healthy Cities projects in the region have been focused on improving city dwellers' diets, which would then help reduce diabetes, hypertension and other diet-related conditions such as heart disease and cancer.



**HEALTHY CITIES IN EUROPE.** The European Healthy Cities Network includes more than 1300 cities across the region, all of which are committed to health and sustainable development. They are designated to the WHO European Healthy Cities Network on the basis of criteria that are renewed every five years. Each five-year phase focuses on a number of core priority themes and is launched with a political declaration and a set of strategic goals. The overarching goal of Phase V (2009–2013) is health and health equity in all local policies.

**HEALTHY CITIES IN SOUTH-EAST ASIA.** The WHO Healthy Cities Programme was launched in the South-East Asia Region in 1994. By 2003, 40 cities from the region were participating in the initiative. Healthy Cities has now been expanded to Healthy

Settings; action in all contexts is guided by an appreciation for the complex connections between human settings and health.

**HEALTHY CITIES IN THE WESTERN PACIFIC.** Healthy Cities was adopted in the Western Pacific Region in 1992. Currently, some 170 cities in the region are implementing Healthy City projects. Of these, WHO has supported the development of 18 projects in Cambodia, China, the Lao People's Democratic Republic, Malaysia, Mongolia, the Republic of Korea, the Philippines and Viet Nam. The Alliance for Healthy Cities was founded in 2003, and is a group of cities and other organizations committed to the Healthy Cities approach. The network started with 25 cities, and had grown to 120 cities and organizations from 10 countries by December 2008.

Kursad Keteci/SxC.hu

## The challenges of rapid, unplanned growth

Despite their opportunities and benefits, many cities have generated inequalities, various forms of exclusion and marginalization, and serious environmental problems.

Rapid population growth can strain municipal capacity to regulate air and water quality, provide

sanitation, ensure food availability, protect food safety and safeguard the quality of health care provided by both the public and private sectors. Unhealthy housing, problems with food and water safety, congested traffic, air pollution and crime are common consequences.

Often, growth occurs so quickly that municipal planners do not know how many people are residing in their cities, where they are living or what kind of support they require. This lack of



### BOX 1.2 SPOTLIGHT ON NAIROBI'S SLUMS

According to Jhpiego, a nongovernmental organization working in the area, health is jeopardized in Nairobi's urban slums due to the following factors:

**INADEQUATE HEALTH SERVICES AND POOR ACCESS TO HEALTH SERVICES.** Health-care services are generally unavailable to urban slum dwellers. Qualified private facilities are too expensive, unlicensed providers can be dangerous, and government facilities are in general disrepair and are feared by community members due to rumours about their services. Additionally, Nairobi's urban poor often have a limited understanding of health issues and do not know where to access health-care services.

**UNHEALTHY LIFESTYLES AND UNSTABLE SOCIAL STRUCTURES.** Reduced access to safe food and water, poor sanitation, a breakdown of traditional family structures, and high unemployment rates affect slum dwellers' health. The urban cash economy forces slum dwellers to choose to spend scarce money either on health care or on other basic needs.

**INSECURITY AND NEGLECT.** Slum dwellers live in overcrowded, poorly constructed housing, often with insecure land possession. High crime coupled with disrespect by local authorities result in disenfranchised populations that distrust formalized services of any kind, including health services.

Manoocher Deghati/IRIN

basic information creates situations in which public resources fail to reach those who are most in need.

Rapid, unplanned urbanization also contributes to urban poverty, which is becoming a severe, pervasive and largely unacknowledged feature of urban life. Poverty can be found in all parts of the world, including cities in Sweden, the United

Kingdom and the United States.<sup>20</sup> In many low- and middle-income countries, the urban poor are most visible in large-scale slums.

Today, an estimated 828 million people live in slum conditions, representing around one third of the world's urban population. The vast majority of slums – more than 90% – are located in cities of developing countries. It is often the fastest-growing cities that have the highest concentrations of these informal settlements.<sup>14</sup>

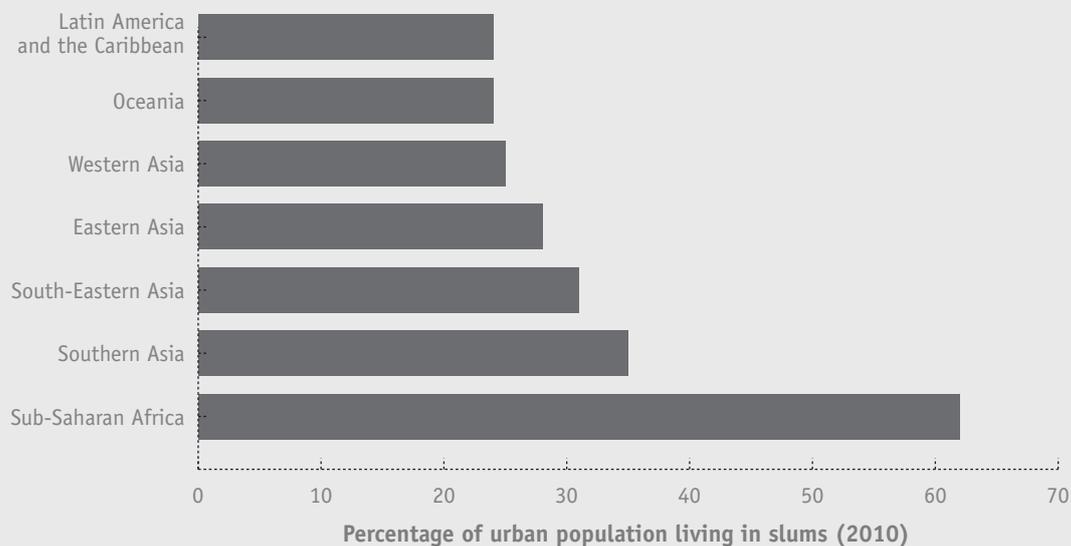
Slum dwellers often experience difficult social and economic conditions that manifest different forms of deprivation – material, physical, social and political (see Box 1.2 for a description of slums in Nairobi, Kenya).<sup>21</sup> They live in overcrowded, poorly constructed housing, often with insecure land possession. Reduced access to safe food and water, poor sanitation, a breakdown of traditional family structures, high crime and high unemployment rates affect slum dwellers' health. Slums are home to a wide array of infectious diseases (including tuberculosis, hepatitis, dengue fever, pneumonia, cholera and malaria), which spread easily in highly concentrated populations. Despite the tremendous need, health-care services are generally difficult to access in these areas.

Slums are no longer just marginalized neighbourhoods housing a relatively small proportion of the urban population. In many cities, they are the dominant type of human settlement (Figure 1.1), carving their way into the fabric of modern-day cities, and making their mark as a distinct category of human settlement that now characterizes so many cities in the developing world.

Cities, especially those in wealthier areas, have been significant contributors to climate change. Collectively, cities account for 75% of global energy consumption and a similar proportion of all waste. According to latest estimates, urban areas contribute directly to more than 60% of greenhouse gas emissions.<sup>22</sup> It is no coincidence, therefore, that climate change has emerged at the forefront of international debate at precisely the same time that the planet has become predominantly urban.

Ironically, cities will also be among the areas most affected by climate change. If sea levels rise by just 1 metre, many major coastal cities will be under threat, including Buenos Aires, Argentina;

## FIGURE 1.1 WHERE DO CITY DWELLERS LIVE IN SLUMS?



Source: *State of the world's cities 2010/2011 – cities for all: bridging the urban divide*. United Nations Human Settlements Programme (UN-HABITAT)/ Earthscan, 2010 (<http://www.unhabitat.org/pmss/listItemDetails.aspx?publicationID=2917>).

## BOX 1.3 SPOTLIGHT ON CITIES VULNERABLE TO SEA LEVEL RISE

Cities at risk from sea level rise include:

**COTONOU, BENIN.** Benin's largest urban centre, with around 700 000 residents, is in danger from sea level rise and storm surges. Most of Cotonou's population live in slums, making them especially vulnerable to these changes. Beaches, roads and buildings have already been destroyed.<sup>24</sup>

**ALEXANDRIA, EGYPT.** Along Egypt's Mediterranean coast, a sea level rise of 50 centimetres would force more than 2 million people to abandon their homes. World-famous historical, cultural and archaeological sites would also be lost.<sup>25</sup>

**DHAKA, BANGLADESH.** Dhaka, the capital of Bangladesh, is home to more than 13 million people. Like other parts of the country, Dhaka is highly vulnerable to flooding because of its situation among river basins. Its most urbanized areas are only 6

to 8 metres above sea level. With a long history of catastrophic floods, it is projected that the city will experience flooding more frequently due to the melting of glaciers and snow in the Himalayas, and increasing and more concentrated rainfall associated with climate change. Waterlogging and drainage congestion will add to the gravity of the situation, affecting infrastructure, the economy and public health. National and local authorities have undertaken measures to manage floods and address drainage congestion, while improving environmental quality and reducing greenhouse gas emissions.<sup>26</sup>

**VENICE, ITALY.** Now less than 1 metre above the level of the Adriatic Sea, Venice is threatened by land subsidence and sea level rise due to climate change. Both factors have contributed to a total relative sea level rise of about 25 centimetres in the 20th century (13 centimetres due to subsidence and 12 centimetres due to sea level rise). Severe damage to its urban heritage has occurred as a result. Mobile barriers installed to curtail flooding are considered by experts to be inadequate to safeguard the city in the wake of further, forthcoming climate-induced sea level rise.<sup>27</sup>



WHO/Anna Kari

Rio de Janeiro, Brazil; Shanghai, China; Cairo, Egypt; Osaka-Kobe and Tokyo, Japan; Lagos, Nigeria; and Los Angeles and New York City, United States.<sup>23</sup> Box 1.3 contains information about other cities vulnerable to sea level rise.

The urban poor – and chief among them, the nearly 900 million slum dwellers – will probably be the most affected by climate change. They live in vulnerable locations – along beaches prone to flooding or on slopes prone to landslides. The buildings in which they live are often of poor quality and would not withstand major weather events such as hurricanes.

At the same time, cities have the potential to play significant roles in reducing greenhouse gas emissions and mitigating climate change. Urban centres can be more energy efficient than rural areas if their population density is capitalized upon to create energy-efficient housing, transport systems and other physical infrastructure. Additional information on climate change and its relationship to urban health is contained in Annex C to this report.

## Cities of the future

What lies ahead for our urban world, and for the cities that comprise it?

Looking to past trends is a useful way of imaging the future, but unforeseen events are inevitable and will certainly shape the future of cities in

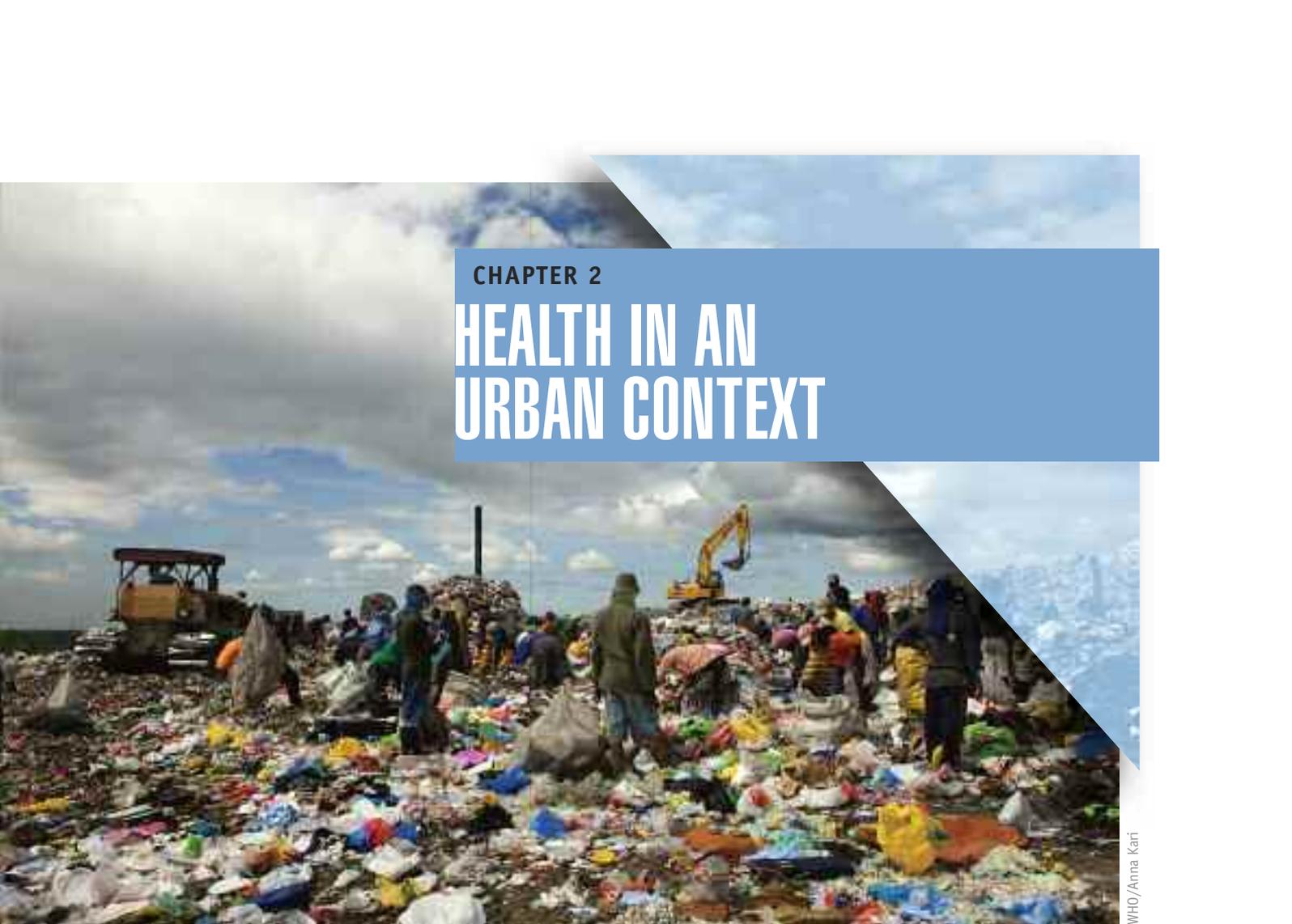
ways that cannot be predicted fully. Cities will differ from one another based on several factors. Their access to information, technology and the global marketplace will shape them, as will the ways in which they are governed. Migration will continue to influence the size and nature of their populations. Climate change impacts and new disease pandemics could trigger mass migration at an unprecedented scale, altering demographics within countries and cities, changing borders or generating conflicts.

Cities without adequate planning or proper governance will find it increasingly difficult to provide affordable land, decent housing, adequate transportation and public services. As a consequence, their political legitimacy will, sooner or later, begin to erode. Nongovernmental organizations or the private sector may attempt to fulfil roles previously held by local authorities, and fragmentation will ensue. In this scenario, slum dwellers and the urban poor will continue to be overlooked, and disparities within cities will continue to grow.

At the same time, cities present substantial opportunities for the future. The most prosperous cities will be those that design sustained, comprehensive visions, and create new institutions, or strengthen existing ones, to implement this vision. This will bring them to look for new methods of close cooperation with regional and central governments and other actors such as the private sector, all the while ensuring an equitable distribution of opportunities and sustainable development.<sup>28</sup>

### CHAPTER SUMMARY

This chapter has outlined trends and projections related to urbanization. It has revealed that virtually all global population growth over the next 30 years will be in urban areas; by 2050, 7 out of 10 people will be living in cities. ■ Urbanization is not inherently positive or negative. Historically, it has produced both desirable and adverse outcomes: while urbanization has been a positive force for countries' economic development, large inequalities have emerged between city dwellers, and urban slums have become a feature of many cities. Urbanization has also contributed significantly to global greenhouse gas emissions, although this need not be the case if cities commit themselves to sustainable development. ■ As the next chapter shows, the underlying drivers of urban health can be traced back to common determinants.



## CHAPTER 2

# HEALTH IN AN URBAN CONTEXT

WHO/Anna Kari

Since its inception in 1948, the World Health Organization has embraced a comprehensive understanding of health as “not merely the absence of disease or infirmity”, but rather “a state of complete physical, mental and social well-being.” Today, compelling scientific evidence shows that physical, mental and social health and well-being are closely interwoven and deeply interdependent, and that health is influenced by a broad range of determinants that lie beyond the health sector. This chapter introduces underlying drivers of health in urban areas, and describes some of the common health issues faced by people living in cities.

# Determinants of health

Determinants of health refer to the socioeconomic, cultural and environmental conditions that influence the health of individuals and populations. They include the conditions of daily life and the broader influences upon them.

As depicted in Figure 2.1, individual characteristics such as age and sex are nested within wider determinants of health, which arise from social, environmental and economic conditions. These include household living conditions, conditions within communities and workplaces, and health care, along with policies and programmes affecting any of these factors.

This field of inquiry was taken forward by WHO's Commission on Social Determinants of Health, which reviewed the evidence on a broad range of social determinants.<sup>31</sup> The Commission organized these health determinants into a more detailed

framework consisting of both underlying structural drivers, such as income, level of education and gender; and circumstances of daily life, such as access to water and sanitation, living and working conditions, and access to health services.

Looking at health issues from a determinants' perspective facilitates the identification of the root causes of health problems. From this point of view, waterborne diseases are not only caused by microorganisms, but also by the political, social and economic forces that fail to make clean water available to all. Heart disease is caused not only by clogged arteries, but also by diet, physical inactivity and tobacco use, which in turn are influenced by the environments in which people live.

## Health determinants in urban settings

Cities offer both the best and the worst environments for health and well-being. Multiple determinants converge to influence the health status of city dwellers, and positive and negative influences tend to cluster according to the specific neighbourhood or "place" within the city.

The physical and social environments in urban contexts are shaped by multiple factors and multiple players at multiple levels. Global trends, national and local governments, civil society, financial markets and the private sector all shape the context in which local factors operate. Each of these factors can greatly support or undermine residents' health.

Specific determinants of health in urban settings span population characteristics, urban governance, the natural and built environment, the social and economic environment, food security and quality, and services and health emergency management (Figure 2.2). Each of these areas is examined in detail in the following sections.



Source: Adapted from Whitehead M, Dahlgren G. What can we do about inequalities in health? *Lancet*, 1991, 338:1059–1063.

**FIGURE 2.2**  
**FACTORS INFLUENCING THE HEALTH OF CITIES**



1-3 from left: WHO/Anna Kari; 4: UN Photo/Jawad Jalali

## POPULATION CHARACTERISTICS

The demographic characteristics of those living in a particular city or urban neighbourhood at a particular time reflect historical trends, patterns of fertility and migration trends. The age, gender and disability status of city dwellers affect health, both at individual and populationwide levels.

Certain population groups require special consideration because they have particular health issues or needs within urban environments. Without targeted attention, they are likely to be excluded from overall health development.

**CHILDREN.** Children comprise a major portion of the urban population: it is estimated that 60% of all city dwellers will be under the age of 18 by 2030.<sup>32</sup> Although children living in urban areas are often regarded as better off than their rural peers, this is not always the case, considering that many children live in slums or other adverse environments.<sup>33</sup>

Deaths of children in cities are often the direct result of contamination of water, inadequate sanitation and lack of solid waste disposal, which exacerbate the occurrence and severity of diarrhoeal and related diseases. Gastrointestinal illness can lead to malnutrition and death, especially among younger and undernourished children who still have poorly developed immune defences.

Pneumonia and diarrhoeal diseases are the leading causes of childhood death globally,<sup>34</sup> and can be a particular problem in urban settings due to crowding, indoor air pollution and poor access to health care in urban slums. For similar reasons, children in urban areas are susceptible to death from malaria and vaccine-preventable illnesses such as measles.

Road traffic injuries among children are of significant concern in urban areas. Lack of consideration to children in urban and transport planning contributes to the problem.<sup>35</sup> Globally in 2004, road traffic injuries were the leading cause of

death among youths aged 15–24 years, and the second leading cause of death for those aged 10–14 years.<sup>36</sup>

Children are also particularly vulnerable to exploitation and crime at the hands of older children and adults. In deprived urban settings, children have higher rates of psychological and behaviour problems<sup>37,38</sup> and lower educational and occupational expectations<sup>39</sup> than those from rural areas.

**OLDER ADULTS.** Urbanization in low- and middle-income countries will concentrate an increasing proportion of the older population in cities. New York, London, Paris and Tokyo already have the largest concentrations of older people in their respective countries. The “oldest old” – those 85 and older – comprise the fastest-growing segment of this population.<sup>40</sup> In Africa and Asia, older people still live predominantly in rural areas, but it is expected that this situation will be reversed before 2020.<sup>32</sup>

In cities, older people are often invisible or forgotten among other priorities. They may become housebound due to physical impairments combined with inadequate transportation systems. Pride may discourage them from seeking help. Special attention is needed to ensure that older people can preserve their autonomy and independent living for as long as possible, and can access health and other social services, including home-based care.

**WOMEN.** While cities open many possibilities for women to meet, work and form social support networks, women living in cities also face unique challenges. These include heightened risk of physical, sexual and psychological violence; barriers in accessing health and social services due to lack of control over family financial resources, child-care responsibilities, restricted mobility and limited decision-making power; and lack of education and economic security relative to men.<sup>41</sup>

Urban poverty has become highly feminized. Compared to their male counterparts, poor urban women tend to have lower-paying jobs and higher illiteracy rates. They also are excluded from certain types of jobs because of lack of education or discriminatory practices. On top of this, women are often excluded from land and home ownership and inheritance.<sup>42</sup> All these factors place poor urban women and their dependents at increased risk for a range of health problems.

**MIGRANTS.** Immigration is commonly characterized as population movement from poor to richer localities, as well as from rural to urban areas. A complex set of context-dependent factors – economic, political and social – explain why some cities have large migrant populations. Migrants are attracted by the possibilities that cities can offer. Frequently, they are searching for better employment and economic opportunities, or fleeing from persecution and violence.

Those who migrate to escape difficult circumstances often experience a double jeopardy in cities: pre-existing vulnerabilities combined with greater exposure to migration-associated stressors. A social and economic gap often emerges between long-time urban residents and migrants.<sup>43</sup>

**PEOPLE WITH DISABILITIES.** People with disabilities are strongly affected by the physical and social environments of cities. Depending on their particular characteristics, urban environments can greatly facilitate or undermine the independence and quality of life of people with disabilities.<sup>44</sup>

Cities’ physical environments and infrastructure are particularly important for people with locomotor or sensory disabilities. Disability-friendly transport systems, sidewalks, pedestrian crossings and building



WHO/Anna Kari



**Dina, 16**  
Jakarta, Indonesia

### **FIGHTING DISEASE AT THE SOURCE – LIVING CONDITIONS AND DENGUE**

Dina lives with her father, mother, and little brother. She likes living in her neighbourhood because she knows everyone and says that people are kind. Her uncles and aunts and grandfather live next door.

“I got sick in 2009,” says Dina. “I had a headache, nausea, shivers and my temperature was very high.” She went to the doctor but after a week was still very sick and so she went to

I felt terrible and had a high fever. They did blood tests and the doctor told me it was dengue fever.”

“I was worried when the doctor told me,” continues Dina, “because I knew a girl my age who died a few years ago from dengue. I really wanted to get well quickly.”

After Dina came out of the hospital, she noticed that people were

the hospital with her mother. “I was admitted to the hospital for four days.

spraying in her neighbourhood. “Now they have been spraying the area to kill the mosquitoes every few months.” The community has also stepped up its prevention efforts. “There are people in the community who monitor the larvae. They put powder on the larvae they see which kills them. Without larvae, there will be no more mosquitoes.”

Still, Dina cautions, “People are not careful enough. They leave open containers with water and there is a lot of garbage dumped here.”

WHO/Anna Kari

entrances are but a few of the many factors that have a major impact on the daily lives of those who use assistive devices such as canes, walkers or wheelchairs. People with hearing or visual impairments often benefit from additional accommodations, such as the provision of key information in multiple auditory and visual formats.

The social environment of cities influences the degree of stigma and discrimination experienced by people with disabilities. In particular, people with chronic mental disorders or intellectual disabilities can be adversely affected by hostile environments if they are not specifically addressed through public awareness campaigns and antidiscriminatory regulations.

The ability to access regular health services and community support are particularly important for people with all types of disabilities.

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## URBAN GOVERNANCE

Urban governance refers to the mechanisms, processes and institutions through which residents and groups articulate their interests, exercise their legal rights, meet their obligations and mediate their differences.<sup>45</sup> It is important to note that governance is broader than government. In many formulations, governance includes government, and also the private sector, civil society and community groups. Second, governance emphasizes process. It recognizes that decisions are made based on complex relationships between many actors with different priorities.<sup>46</sup>

Urban governance is inextricably linked to the health and well-being of city dwellers. Good urban governance affirms that no one should be denied access to the necessities of urban life, and provides all city dwellers with the platform that will allow them to use their talents to improve their social and economic conditions.<sup>46</sup> Within developing countries, the best urban governance can help produce 75 years or more of life expectancy; with poor urban governance, life expectancy can be as low as 35 years.<sup>47</sup>

Healthy urban governance is discussed in detail in Part Three of this report.

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## NATURAL AND BUILT ENVIRONMENT

The natural and built environment refers to natural and human-made aspects of cities and their interaction therein. Facets of the natural and built environment that influence health include cities' geography and climate; housing conditions; access to safe water and sanitation; transport systems; and air quality.

**GEOGRAPHY AND CLIMATE.** The geographical location and climate of cities are linked fundamentally to health. They influence residents' vulnerability to natural disasters, including tornadoes, hurricanes or cyclones, floods, earthquakes, landslides and fires. They also influence residents' health via heat waves, droughts and susceptibility to illnesses carried by mosquitoes or other pests.

Climate change-related health impacts are already happening. A WHO assessment concluded that the effects of climate change since the mid-1970s may have caused 150 000 additional deaths in 2000.<sup>48</sup> This is probably an underestimate, considering that the study took into account only a subset of possible health impacts. It also concluded that these impacts are likely to increase in the future. The largest health risks are to children in the poorest communities, the group that contribute least to greenhouse gas emissions.<sup>49</sup>

The most adverse impacts of climate change are likely to be in urban areas where people, resources and infrastructure are concentrated. In the future, climate change will increasingly multiply existing urban health risks through its impact on access to water and sanitation, food security and living conditions, among other factors. Heat waves, air pollution, severe storms and infectious diseases will become more common (Box 2.1). Climate change-related health risks will be greatest for the urban poor, who often lack adequate shelter or access to health services.<sup>23</sup>

Tropical mega-cities and coastal cities will be particularly affected. Residents of these cities will be exposed to a combination of health risks such as heat waves, floods, infectious diseases and air pollution. The projected rise in sea level of between 18 and 59 centimetres by the end of this

## BOX 2.1

### CLIMATE CHANGE: A MULTIPLIER OF HEALTH RISKS

Climate change will exacerbate the impact of climate on urban health, through heat waves, air pollution, severe storms and infectious diseases.<sup>51</sup>

The frequency and intensity of heat waves will increase in the near future, causing particular problems in cities due to heat island effects. The urban heat island effect is a phenomenon whereby cities experience higher temperatures than surrounding rural areas due to dense urban buildings and lack of vegetation.

Increasingly severe and intense flooding and storms will cause the destruction of homes, health-care facilities and other essential services, particularly in slums. Gradual sea level rise, coupled with stronger storm surges, will lead to more frequent and severe coastal flooding and contamination of city water supplies. The consequent destruction of homes and communities will eventually force unprotected populations to seek safer ground, often increasing environmental and social pressures in their new locations.

Increasing temperatures and more variable precipitation are also expected to reduce crop yields in many tropical developing regions. This is likely to worsen the burden of malnutrition in many cities of these areas.

Around the world, higher temperatures will endanger cities' water availability and quality. Lack of water will compromise hygiene and increase diarrhoea. Conversely, floods will cause contamination of freshwater supplies. In extreme cases, water scarcity might result in famine.

The spread of illnesses carried by mosquitoes or other insects

and small animals is also expected to change as weather alters their geographical range, seasonal activity and breeding cycle. As such, climate change may slow, halt or reverse progress against infections such as diarrhoeal diseases, malaria and dengue.

Finally, rising temperatures will increase levels of air pollutants such as ground-level ozone. Urban outdoor air pollution caused more than 1.1 million deaths in 2004, mainly from heart and lung diseases.<sup>52</sup> A 1° Celsius rise in temperature would increase global deaths from air pollution by more than 20 000 people each year.<sup>53</sup>



UN Photo/Fardin Waezi

century<sup>50</sup> will strain some of the largest and fastest-growing cities, located on coastlines of developing countries. Degraded natural protection (through deforestation and building on floodplains), vast stretches of poor-quality housing, and extensive concrete ground cover without adequate drainage will contribute to the vulnerability of these cities. Heavy rains will result in intense and sometimes lethal flash floods, such as those that occurred in and around Caracas, Bolivarian Republic of Venezuela, in 1999, and Mumbai, India, in 2005.<sup>51</sup>

**HOUSING CONDITIONS.** A roof over one's head and an address in a habitable neighbourhood is a vital starting point for urban residents, from which they can tap into what the city can offer them by way

of jobs, income, infrastructure and services. Decent shelter provides people with a home; security for their belongings; safety for their families; a place to strengthen their social relations and networks; a place for local trading and service provision; and a means to access basic services.

Yet as described in Chapter 1, almost 900 million urban residents live in slums and squatter settlements. Housing in these settings ranges from high-rise tenements to shacks to plastic sheet tents on sidewalks. These settings tend to be unregulated and overcrowded. They are often located in undesirable parts of the city, such as steep hillsides, riverbanks subject to flooding or industrial areas.



**Elisa, 35, Kimberly, 5  
Manila, Philippines  
FLOOD DISPLACES THE  
URBAN POOR IN MANILA**

Elisa recalls the day the waters rose. "That day the creek had been overflowing since the morning. I was cooking rice in my house. I sell food to make a living." By the early afternoon, Elisa put the food on her roof in an attempt to save it, but the flood waters rose too fast and swept her food away. She escaped her submerged house with her daughter

Kimberly, by creating a bridge from her roof to her neighbour's using some wood she fished out of the water. She spent the night with 20 others on the roof until they were rescued the next day.

"I lost everything that day," says Elisa. "I saved only one chair and my cellphone." Her home was demolished because of the state it was in, a house she had bought for 40 000 pesos (US\$ 857) in 1989. Its base was cement, but the second floor was made of wood. The government

will relocate her and others affected by the floods to Bulacan.

In the meantime, she is staying in an open gymnasium. "They told us they will relocate us this week, because they need the gymnasium. The medical mission told me we are healthy."

Elisa says she is a bit worried about what will happen to her, but believes that maybe there is a reason she is still alive. "Now I have no money, I can't afford anything, but at least I am still alive. I just want to continue my life."

WHO/Anna Kari

Apart from those living in slums, countless other urban residents suffer from unsuitable living conditions, including building defects, poor ventilation of cooking and heating fuels, inadequate or non-existent refrigeration or other food storage facilities, and hazardous locations such as proximity to highways or hazardous waste sites.<sup>47</sup> Inadequate housing, especially where tenure is insecure, is associated with injuries, respiratory problems, infectious diseases and mental health problems.<sup>54</sup>

Overcrowding is an additional health hazard. While relatively rare in high-income countries, overcrowding is widespread in cities of low- and middle-income countries. The highest proportions of urban residents without sufficient living space are in Africa and Asia; these are the same regions that have the most slums.<sup>1</sup> The concentration of people living in small, poorly ventilated living areas increases the risk of disease transmission and other health problems. Infectious diseases thrive in overcrowded areas due to lack of ventilation, lack of hygiene and unhealthy environmental exposures. Overcrowding also contributes to stress and family violence, including child maltreatment, intimate partner violence and sexual violence, and elder abuse.<sup>55,56</sup>

People with disabilities require accessible housing to live independently in their communities. Accessibility is dependent on the nature and extent of people's disabilities. For some, access may involve small modifications such as grab bars, whereas for wheelchair users, access may require ramps, wide doorways and low countertops.

**ACCESS TO SAFE WATER AND SANITATION.** In developed countries, access to safe water and sanitation created the conditions for a dramatic reduction in deaths from infectious diseases in the late 19th and early 20th centuries; now cities in developing countries are facing these same challenges and opportunities.<sup>54</sup>

Almost half of city dwellers in Africa, Asia and Latin America suffer from at least one disease caused by lack of safe water and sanitation.<sup>57</sup> In sub-Saharan Africa, poor people spend at least one third of their incomes for treatment of waterborne and water-related diseases such as malaria, diarrhoea and worm infections.<sup>58</sup>

Although most official statistics reflect better coverage in urban areas than in rural areas, various surveys show that in many cities, the quantity and quality of water available to poor residents falls short of acceptable standards. Hundreds of millions of people who supposedly have access to water only have access to communal pipes shared by dozens of people. For many urban families who are poor, hours each day are lost just carrying water from distant sources. Others use water from tanker trucks or bottles provided by private vendors, at prices often far higher than those paid by wealthier residents, who obtain their water from public water supply systems.

Proper sanitation is also important for preventing infectious diseases. While a greater proportion of the urban population, compared with rural residents, has access to basic sanitation, overall risk exposure is greater in cities due to densely populated living conditions. Most cities in low- and middle-income countries do not have sewers; as a result, one quarter to one half of these urban residents lack access to sanitation that significantly reduces their risk of illness.<sup>59</sup> In many urban settings, especially densely populated areas, latrines do not significantly reduce the risk of disease because of their unhealthy conditions.

**TRANSPORT SYSTEMS.** The modes of transport city dwellers use on a day-to-day basis have major implications for their health, and for the health of the broader population.<sup>60,61</sup> Transport systems influence health directly and indirectly, through their impact on physical activity, road traffic safety, air quality and psychosocial stress. Yet despite the many ways in which transport systems affect health, the links are often unacknowledged or overlooked.

Transport systems have an impact on levels of regular physical activity among urban dwellers. Pedestrian- and bicycle-friendly cities, as well as those with robust public transportation options, encourage physical activity. Conversely, overreliance on private, motorized transport acts as a barrier to regular physical activity. Globally, insufficient physical activity caused 3.2 million deaths in 2004.<sup>62</sup>

Lack of proper urban planning can produce heavy traffic through residential areas, speeding and competition with pedestrians for limited road space.<sup>63</sup> Poor planning also provides limited crossing points, poor pedestrian access to amenities and a lack of separation of people from vehicle traffic, and inadequately regulated mass transit systems.<sup>64,65</sup> All these factors contribute to road traffic injuries.

Transport systems also influence health through air quality. Both the total number of motorized vehicles and the level of traffic congestion contribute substantially to air pollution in urban areas. Air pollution is considered further in the following section.

Social health and well-being also are affected. Transport systems can compromise mental and physical health through noise pollution, chronic stress and social isolation. Lack of reliable transportation can be a barrier to accessing health services and generate opportunities for violence.

When transport systems are poorly designed, the urban poor suffer disproportionately. They are usually the most dependent on non-motorized transport and public transport, which can be neglected in transport development. Poor families often work and live directly alongside congested urban streets, and thus may be exposed most

directly to the health hazards of road traffic. In particular, underprivileged urban children, whose primary playground is often the street, are vulnerable to road traffic injury as well as to the health and developmental effects of air and noise pollution.

The urban poor are also at risk for other types of road traffic injury. At an early stage of urbanization, pedestrians and bicyclists are at much higher risk of injury than those that can afford to use motor vehicles.<sup>63</sup> As economies develop, the urban poor tend to buy private motorcycles, while cars are purchased by wealthier city dwellers. The injury risk for motorcycles is much higher than for cars, so again a disparity develops between rich and poor urban residents.

The poor, however, are not the only population group to suffer the effects of poorly designed transport systems. People with disabilities are particularly affected by transport systems that do not accommodate the use of assistive devices or sensory impairments. Ultimately, traffic congestion, traffic-generated air pollution and traffic injuries touch the lives of all city residents.

**AIR QUALITY.** All city dwellers are affected by indoor and outdoor air quality. Air pollution compromises lung function and increases heart attacks.<sup>66</sup> In addition, high levels of air pollution



UNDP

directly affect people with asthma and other types of lung or heart disease.

WHO estimates that urban outdoor air pollution caused approximately 1.1 million deaths worldwide in 2004.<sup>62</sup> The air that city dwellers breathe is often polluted from outdoor sources such as motorized vehicles, industry and burning trash. People living in deprived neighbourhoods tend to have higher levels of air pollution exposure than those living in higher-income areas.<sup>67</sup> A survey conducted in Rome, for example, showed that people of low socioeconomic status were more likely to live near busy roads and suffer the negative effects of air pollution.<sup>68</sup>

Indoor sources of air pollution include smoke from indoor stoves, machinery in small, poorly ventilated workshops producing noxious fumes and second-hand tobacco smoke. WHO estimates that in 2004, indoor smoke from solid fuels caused almost 2 million deaths, while occupational exposure to airborne particulates caused an additional 457 000 deaths.<sup>62</sup> The living conditions typical of cities create the potential for substantial exposure to second-hand tobacco smoke,<sup>69</sup> particularly for people in low-paid and insecure work.

## SOCIAL AND ECONOMIC ENVIRONMENT

The social and economic environment has a major impact on the health of city dwellers. Influences range from local to global. For example, the 2007 global financial crisis precipitated by the downturn in the United States housing market and the subsequent collapse of major financial institutions affected the lives of countless urban residents, including many who previously thought that they had no connection to the workings of global financial markets. In many cities around the world, unemployment has risen, social services and public entitlements have been cut, wages have been slashed and loans have become difficult to obtain.

Specific social and economic factors discussed in the next sections are access to economic and educational opportunities, safety and security, social support and cohesion, and gender equality.



WHO/Anna Kart

**ECONOMIC AND EDUCATIONAL OPPORTUNITIES.** City dwellers' access to economic opportunities – whether employment or other income-generating activities – has a major impact on their health status. At a material level, access to economic opportunities translates into access to good-quality housing, water and sanitation, and other daily necessities. Beyond helping to meet material needs, access to economic opportunities provides a means by which people can participate fully within their communities and broader society.

Globalization – and in particular, trade liberalization, cross-border financial flows and the emergence of a global labour pool – has brought both opportunities and risks for city dwellers. For some, globalization has created job insecurity and poverty; for others, it has opened new economic opportunities.<sup>70</sup>

Informal economy workers constitute the majority of workers in most countries and the number of informally employed, unprotected and low-income workers is increasing rapidly in both developing and developed countries. The occupational health and safety hazards they face are often added to those of poor living environments, poor nutrition and unsatisfactory housing. They are not covered by social protection or comprehensive health care and besides work-related injury and disease, they are commonly affected by poverty-related diseases.<sup>71</sup>

At a local level, the economic environment also influences health through the degree of wealth disparity within a city. Relative poverty – often defined as living on less than 60% of the national median income – has been shown to relate to poor health and risk of premature death, arguably through the psychosocial stress of low socioeconomic status and the poorer quality of social relations.

Access to educational opportunities provides the foundation for future access to economic opportunities. Education equips people with knowledge and skills for daily living, increases opportunities for income and job security, provides people with a sense of control over life circumstances and enables them to participate in society. Children and adolescents who receive good-quality education are set onto life pathways that affect their health and well-being over time. Conversely, children with low levels of education are more likely to have poor health as adults.<sup>72</sup>

**SAFETY AND SECURITY.** Three major threats to the safety and security of cities are urban crime and violence, insecurity of tenure and forced evictions, and natural and human-made disasters.<sup>73</sup> The latter two topics are discussed elsewhere in this report; urban crime and violence are described below.

Crime and violence are typically most severe in urban areas and are compounded by their rapid growth. Sixty percent of urban dwellers in developing and transitional countries have been victims of crime, over a five-year period, with victimization rates reaching 70% in parts of Latin America and Africa. In Latin America, the rapidly expanding metropolitan areas of Rio de Janeiro, São Paulo, Mexico City and Caracas account for more than half of the violent crimes in their respective countries. The homicide rate in Rio de Janeiro has tripled since the 1970s, while the rate in São Paulo has quadrupled. In Africa, cities such as Lagos, Johannesburg, Cape Town, Durban and Nairobi account for a sizeable proportion of their country's crime.<sup>73</sup>

Both perceived and real levels of crime and violence in urban areas influence health. Crime directly affects the quality of life not only of

victims, but also of their friends, family and the general community in which they live.<sup>72</sup> Public opinion surveys in the United Kingdom and the United States repeatedly show that people rank crime among their top everyday concerns. In Nairobi, Kenya, more than half of residents worry about crime all the time or very often. Likewise, in Lagos, Nigeria, 70% percent of surveyed residents report being fearful of becoming victims of crime, with 90% being fearful of the prospects of being killed in a criminal attack.<sup>73</sup>

Fear of crime isolates communities and has financial repercussions for individuals, governments and the private sector.<sup>72</sup> Concerns about violence isolate the poor in their homes and the rich in their segregated spaces.<sup>74</sup> For all, fear and insecurity pervade people's lives, with serious implications for trust and well-being among communities.<sup>47</sup>

Violence in urban areas takes a variety of forms, ranging from self-directed violence to interpersonal violence and collective violence.<sup>75</sup> Acts of violence have a devastating impact on people's health and livelihoods in many urban areas.<sup>76</sup> They also have many other costs, such as undermining a city's economic prospects. The situation in some high-income countries is as bad as in many developing countries, and the underlying social determinants are similar.<sup>47</sup> Major contributors include social exclusion, poverty, unemployment and poor housing conditions.

**SOCIAL SUPPORT AND COHESION.** The social environment influences health in urban areas through buffering or enhancing the impact of stressors, and regulating access to the emotional and material goods that influence health.<sup>54</sup>

High levels of social support have been shown to contribute to a variety of positive health outcomes. Social support gives people the emotional and practical resources they need, and can have a powerful protective effect on health. Conversely, social isolation and exclusion are associated with poor health status and premature death.<sup>77</sup>

Social cohesion – the quality of social relationships and the existence of trust, mutual obliga-



tions and respect in communities or in the wider city – helps to protect people and their health. Societies with high levels of income inequality tend to have less social cohesion and more violent crime. High levels of mutual support will protect health, while the breakdown of social relations reduces trust and increases violence.<sup>77</sup>

**GENDER EQUALITY.** While “sex” refers to biological differences between males and females, “gender” describes socially constructed roles, rights and responsibilities that communities and societies consider appropriate for men and women.<sup>78</sup> Gender norms and values can give rise to gender inequalities – that is, differences between men and women that systematically empower one group to the detriment of the other. The fact that, around the world, women on average have lower cash incomes than men is an example of a gender inequality.<sup>79</sup>

Women living in urban areas experience gender inequalities that are similar to those experienced by women generally. Gender inequalities intersect with other health determinants, such as access to

economic opportunities, to influence the health of women. Some of the identified determinants include:

- reduced opportunities for education and paid employment;
- lower social status in families, communities and society;
- limited access to and control over resources;
- limited decision-making power;
- increased vulnerability to sexual and gender-based violence due to unequal gender norms;
- a lower value placed on women's health and lives outside their reproductive years.

Lack of attention to these determinants has led to a systematic devaluation and neglect of women's health, including in urban areas. For example, within households, girls and boys, women and men often do not receive equal access to nutritious food and health care. Norms and values that lead to societal acceptance of violence against women or control over women's reproduction and sexuality contribute to a range of reproductive and sexual health conditions for women.<sup>80</sup>

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## FOOD SECURITY AND QUALITY

The surge in food prices since the end of 2006 has led to increasing hunger in the world's poorest countries and made urban food security more precarious. Poor urban families use up to 70% of their income to purchase food, often neglecting education, child care and other costs. In countries deeply affected by famine or drought, families eat fewer meals, and children stop attending school to save education fees in order to pay for food. The doubling of global food prices over the last three years could potentially push 100 million people in low-income countries deeper into poverty.<sup>81</sup> Malnutrition and stunted development will become more common.

Paradoxically, urbanization has also been associated with a shift towards calorie-dense diets, characterized by high levels of fat, sugar and salt. Processed foods, ready-to-eat meals and snacks purchased from street vendors, restaurants and fast food outlets have increased in most cities,

magnifying residents' opportunities to consume high-fat, calorie-dense food. As a result, obesity is on the rise in cities around the world.

In middle- and high-income countries, it is the poor who tend to be more obese than the wealthy, which has been viewed as something of a contradiction. It is likely that several factors contribute to this relationship, but one explanation is that calorie-dense foods, such as fried or processed foods, tend to cost less on a per-calorie basis when compared with fresh fruit and vegetables.<sup>82,83</sup>

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## SERVICES AND HEALTH EMERGENCY MANAGEMENT

A range of health and social services influence urban health, including direct services such as education, health care and community-based support, as well as governments' capacity to respond to a wide range of public health threats that can strike urban centres. Key aspects of urban health systems that can influence city dwellers'



UN Photo/Eskinder Debebe

health are examined in greater detail below: access to good-quality primary care services, universal coverage and health emergency management.

#### **ACCESS TO GOOD-QUALITY PRIMARY CARE SERVICES.**

Cities offer at least some opportunities for accessing good-quality health care: health-care facilities are overwhelmingly concentrated in cities, and skilled health workers tend to flock to urban areas, especially those with teaching hospitals and higher incomes.

At the same time, many cities contain a complex combination of public, private and non-profit providers, with health facilities governed by different authorities, from national ministries of health to municipal authorities. Hospitals and specialists have gained a pivotal role, often at the expense of primary care services. Shortfalls in primary care have resulted in the emergence of an informal sector of unregulated, commercial health care in many cities. There are cities in Africa, for example, where public primary care has almost or completely disappeared, and been replaced by unregulated, commercial providers.

Unregulated, commercial health care raises serious quality concerns. It most often results in patients either not getting the care they need, or getting care that they do not need, and in any event paying too much for it. Unregulated, commercial care is often of substandard quality, and may be ineffective and unsafe. Adverse effects or complications put patients in a vicious cycle – needing more care and becoming more impoverished.

Social factors, such as the lack of culturally appropriate services, language barriers and prejudice on the part of health workers can also prevent poor and marginalized city dwellers, especially migrants, from accessing care. These same groups often lack a basic understanding of how to navigate the health system, and are therefore vulnerable to being preyed upon by unethical or incompetent health workers, providing poor-quality or even harmful care.

Good-quality primary care reduces exclusion and health disparities, and organizes health services around people's needs and expectations. When countries at the same level of economic development are compared, those where health

care is organized around the tenets of primary health care produce a higher level of health for the same investment.<sup>84</sup>

**UNIVERSAL COVERAGE.** As defined by WHO Member States, universal coverage would require all people to have access to needed health services – prevention, promotion, treatment and rehabilitation – without the risk of financial hardship associated with accessing services. Universal coverage implies not only financial risk protection, but also primary care networks (see previous section). It protects city dwellers from foregoing essential health care because of financial costs, or facing severe financial hardship and even impoverishment.<sup>85</sup>

In many cities, the urban poor face challenges in accessing health services due to their inability to pay out-of-pocket expenses for services. (This is in contrast to rural settings, where the main access issue facing residents is that health facilities are far from their homes and communities.) Even at many “free” public clinics, patients are required to pay for medications and supplies, if not for consultations.

Many urban dwellers at some point will face a dire choice: either to go without essential treatment, or to seek treatment and go into poverty. Although the first choice may seem more economically viable in the short term, over time it often leads to even more severe impoverishment through disability, loss of income and premature death.<sup>86</sup>

Governments, typically at the national level, have a responsibility to ensure that all people can receive the services they require and that they are protected from the financial risks associated with using them. Over the past century, a number of countries have achieved this level of protection. European countries began, for example, to put social health protection schemes in place in the late 19th century, moving towards universal coverage after the Second World War through tax-financed or social health insurance systems, or more commonly, a blend of the two. More recently, Chile, Costa Rica, Cuba, the Republic of Korea, Thailand and Turkey have ensured access to core services with financial risk protection to their entire populations. China, Colombia and Mexico among others are at various stages towards the implementation of ambitious plans to achieve universal coverage in the near future.



**Theophile, 62**  
Yaoundé, Cameroon  
**THE REALITY OF  
HEALTH CARE COSTS**

After retiring 10 years ago as a civil servant in administration, Theophile makes a living renting out the back room of his house for CFA 15 000 a month (US\$ 29). He did not work long enough in one job to receive a pension allowance, so money is tight. "I have to support other people, so it's not easy."

"My biggest problem is my health. I have had chronic inflammation of

the leg for about 15 years, but it is getting worse. It was diagnosed as rheumatism and I have only had elementary care for it." According to Theophile, other conditions soon followed, including hypertension.

"I get help from friends and family. I have already spent around CFA one million (US\$ 1940) over the years trying to treat what I have. The doctor thinks the leg should be operated on. He has been saying that for two years now, but I don't have the money. If I had the money, I could be walking properly now."

He buys medicine to treat his hypertension which costs CFA 22 000 (US\$ 42). When he doesn't manage to buy the medicine, his condition deteriorates rapidly. "I also buy anti-inflammatories, but only when I need them. I buy my medicine on the street because I can't afford to go to the pharmacy. It's dangerous, but I have no other option."

"I am forced to beg for a living now and that is the worst part. I was never a beggar before. This illness has made me a beggar."

WHO/Anna Kari

## BOX 2.2 SPOTLIGHT ON HAITI'S EARTHQUAKE

Urban areas in Haiti suffered immense devastation by the earthquake that struck on 12 January 2010. Thirty percent of buildings were destroyed in the capital, Port-au-Prince, and other cities were severely damaged. The earthquake disrupted Haiti's services that were designed to save lives and treat the wounded. Many government buildings and hospitals were destroyed, and countless government officials and health workers were killed. Even before the earthquake, the country's health status was already the lowest in the western hemisphere, and more than 70% of Haitians survived on less than US\$ 2 a day.

The large international response was beset by numerous logistical and infrastructure challenges, including how to receive and distribute large amounts of aid to 3 million people in a setting where airports and seaports were damaged and roads were blocked by rubble. Working with their bare hands, ordinary Haitians saved tens of thousands of people from the rubble in the first hours of the earthquake, before any international team arrived in the country.



Despite great damage caused to key government buildings, national authorities were keen to reclaim control of the overall coordination of the humanitarian response, which United Nations and other international partners supported. Local organizations, such as the Haitian Red Cross, were instrumental in delivering services to affected people, and the survivors themselves were greatly responsible for providing shelter, support and care to their fellow Haitians.

Among other pressing issues, Haitians must now consider ways in which the many thousands of people who underwent amputations can access rehabilitative care and ongoing support in their communities. Urban planners will need to determine how they can enable people with amputations to live and travel easily within cities. More broadly, the challenge for Haiti and its partners will be to move from the humanitarian response phase to a real development strategy that may ensure a better future for generations to come.

UN Photo/Sophia Paris

### HEALTH EMERGENCY PREPAREDNESS AND RESPONSE.

A city's degree of health emergency preparedness and community resilience has a major influence on the health of its residents when disaster strikes. The impact of natural disasters (such as extreme weather events and earthquakes), chemical and radiological hazards, fires, transport crashes and epidemics is amplified by both the population density and built environment of urban areas. Health facilities might be damaged, destroyed or overwhelmed, and the health workforce might be lost, leaving people with limited access to health and emergency services when they are most needed (see Box 2.2 for example of response to Haiti earthquake, January 2010).<sup>87</sup>

In today's interconnected world, cities are prone to the import of infectious diseases. Business and

leisure travellers, migrants, and imported animals and animal products are all potential carriers of infectious agents. Cities also are the places to which people with new and unusual illnesses are brought, because they are beyond the scope of rural clinics. Once an infectious pathogen arrives, cities become an efficient engine for its rapid national and international spread, due to their population density and multiple transport links through bus and train stations, large international airports and seaports (Box 2.3 on the next page).

Biosafety and biosecurity also are important because large cities not only host major research laboratories and biotechnology companies, but also constitute targets of choice for deliberate epidemics and malicious poisoning.

## Health consequences of living in cities

As outlined in the previous section, good-quality housing and living conditions, social and economic opportunities, and access to services such as education and health care contribute to the health and well-being of city dwellers. The higher levels of social support and greater social cohesion typically found in urban areas are also linked to a number of positive health outcomes. Good urban governance underpins the realization of these and other determinants of health.

At the same time, cities present a number of health risks, especially when they are poorly governed or fail to sufficiently prioritize health in all policies. Many are confronted by a triple threat: infectious diseases exacerbated by poor living conditions; noncommunicable diseases and conditions (such as heart disease, cancer and diabetes) and conditions fuelled by tobacco use, unhealthy diets, physical inactivity and harmful use of alcohol; and injuries (including road traffic accidents) and violence.<sup>89</sup>

### INFECTIOUS DISEASES

Infectious diseases are a major threat in many cities due to population density, overcrowding, lack of safe water and sanitation systems, international travel and commerce, and poor health-care access, particularly in urban slums. The 2003 outbreak of SARS (see Box 2.3) is a case in point. Other infectious conditions, such as the human immunodeficiency virus (HIV), tuberculosis, pneumonia and diarrhoeal infections, have an ongoing presence in cities.

Frequently, it is the urban poor who suffer the greatest burden. Slums are productive breeding grounds for tuberculosis, hepatitis, dengue, pneumonia, cholera and diarrhoeal diseases, which spread easily in highly concentrated populations.

Women face particular vulnerability to HIV infection, stemming from a combination of biological factors and gender inequality. Female drug users and sex workers are particularly at risk; stigma, discrimination and punitive policies only increase their vulnerability.<sup>90</sup>



#### BOX 2.3 SPREAD OF SARS VIA URBAN CENTRES

In 2003, severe acute respiratory syndrome (SARS) – the first severe new disease of the 21st century – highlighted the fact that no city is automatically protected by virtue of its wealth or its standards of living and health care from either the arrival of a new disease or the subsequent disruption it can cause. SARS was, to a large extent, a disease of prosperous urban centres. Contrary to expectations, it spread most efficiently in sophisticated city hospitals. Fortunately, the spread of SARS was halted less than four months after it was first recognized as an international threat. Had SARS been allowed to establish a foothold in a resource-poor setting, it is doubtful whether the demanding measures, facilities and technologies needed to stop it could have been fully deployed.<sup>88</sup>

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Conflict and insecurity in urban environments and the movement of people from crises in rural areas to cities pose other significant humanitarian challenges. Slums – and their associated health hazards – can proliferate as large numbers of displaced people seek refuge at the margin of urban areas.

The degree to which governments are prepared to manage these kinds of circumstances affects not only city dwellers, but also the country as a whole. When urban areas, which are countries' most concentrated sources of health, logistic and other resources, are affected by emergencies, assistance to the rest of the country becomes restricted.

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## NONCOMMUNICABLE DISEASES

Noncommunicable diseases and conditions, such as asthma, heart disease and diabetes, are a significant problem in urban centres. Most of this heightened risk can be traced back to changes in diet and physical activity as a consequence of urbanization, as well as exposure to air pollutants, including tobacco smoke. As mentioned in the subsection on “food security and quality”, urbanization is associated with a shift towards calorie-dense diets, characterized by high levels of fat, sugar and salt. As a result, obesity is on the rise in cities around the world. On top of this, people in cities tend to have physically inactive types of employment, and urban sprawl further discourages physical activity. Other factors that inhibit regular physical activity include overcrowding, high-volume traffic, overreliance on motorized transportation, crime and poor air quality. Air pollution, including tobacco smoke, is a risk factor for asthma and other respiratory diseases.

Rapid urbanization also threatens mental health. Poor housing conditions, overcrowding, noise pollution, unemployment, poverty and cultural dislocation can cause or exacerbate a range of mental health problems, including anxiety, depression, insomnia and substance abuse.<sup>91,92,93</sup>

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## INJURIES AND VIOLENCE

About 16 000 people die every day as a result of injuries – about 10% of all deaths. The principal causes of death from injury are road traffic accidents (22%), suicide (15%) and homicide (10%), with war accounting for another 3%.<sup>94</sup>

Road traffic injuries alone are responsible for 1.3 million deaths per year globally. In many developing countries, urbanization and the increased number of motorized vehicles have not been accompanied by adequate transport infrastructure, enforcement of traffic regulations or implementation of measures to ensure improved road safety. Low- and middle-income countries have higher road traffic fatality rates (20.1 and 22.1 per 100 000 population, respectively) than high-income countries (11.9 per 100 000).<sup>97</sup> And, more than 90% of the world’s road fatalities occur in low- and middle-income countries, which have only 48% of the world’s registered vehicles.<sup>95</sup>

Worldwide, over 1.6 million people lose their lives to violence each year.<sup>76</sup> Suicide accounts for 844 000 deaths, homicide for 600 000 deaths and collective violence for 184 000 deaths.<sup>96,97</sup> For every person who dies from violence, many more are injured and suffer a range of physical, mental and other consequences.<sup>76</sup> Child maltreatment, youth violence, intimate partner violence, sexual violence and elder abuse, although unlikely to result in death, are other highly prevalent forms of violence with significant behavioural and health consequences. Major contributors to urban violence include social exclusion, poverty, unemployment and poor housing conditions. The fear of such violence further contributes to the fragmentation of cities, socially, economically and politically.<sup>74</sup> Young people are particularly affected by urban violence. In urban areas, people aged 15 to 24 commit the largest number of violent acts, and are also the principal victims of violence.<sup>32</sup>

## CHAPTER SUMMARY

This chapter has explained how broad physical, social and economic determinants influence the health of people, and looked at some key determinants in urban areas. Health determinants in cities span the domains of the natural and built environment, the social and economic environment, food security and quality, services and health emergency management, and urban governance. ■ In practice, many cities offer both the best and worst environments for health and well-being. This dichotomy will be explored in detail in Part Two of this report.