INTRODUCTION TO PART TWO

As described in Part One, virtually all population growth over the next 30 years will be in urban areas, and the rapid increase of people living in cities will be among the most important global health issues of the 21st century. While urbanization has improved health and development overall, it has also contributed to some adverse consequences, such as urban slums and increased greenhouse gas emissions. Municipalities and health authorities, overwhelmed by the sheer speed of urbanization, are struggling to keep pace.

Part Two reveals the substantial health gaps that exist within cities – the hidden side of cities that are normally obscured from view. It presents new information that reveals the extent to which certain urban residents suffer disproportionately from a wide range of diseases and health problems. It also shows how these health problems can be traced back to inequalities in social and living conditions. Finally, the report reveals that unless urgent action is taken on addressing urban health inequities, countries will not achieve key health-related Millennium Development Goal (MDG) targets by 2015.

CONTENTS

Chapter 3. Urban health inequity and why it matters
Chapter 4. Urban health inequities revealed
Chapter 5. Achieving the Millennium Development Goals

KEY MESSAGES

• In all countries, certain city dwellers suffer disproportionately from poor health, and these inequities can be traced back to differences in their social and living conditions.

• To unmask the full extent of urban health inequities, it is important to disaggregate health and health determinants data within cities.

• Unless urgent action is taken to address urban health inequities, countries will not achieve health-related Millennium Development Goal targets.
While it is generally understood that city dwellers, on average, enjoy better health than their rural counterparts, very little is known about health differences that exist within cities. Health information is usually aggregated to provide an average of all urban residents – rich and poor, young and old, men and women, migrants and long-term residents – rather than disaggregated by income, neighbourhood or other subgroup characteristics. As a result, the different worlds of city dwellers remain in the shadows, and the substantial health challenges of the disadvantaged go overlooked.

In particular, poor city dwellers are often totally neglected because public health authorities do not collect information in informal or illegal settlements, and miss homeless people altogether.

Understanding urban health begins with knowing which city dwellers are affected by which health issues, and why. By turning the spotlight on the information in this way, municipalities will better understand what the problems are, where they lie and how best to address them.
Health inequality and health inequity explained

**Health inequalities** are simply differences in health between groups of people. These differences might be due to non-modifiable factors such as age or sex, or modifiable factors such as socioeconomic status.

**Health inequities** refer to the subset of health inequalities that are systematic, socially produced (and therefore modifiable) and unfair. They are not distributed randomly, but rather show a consistent pattern across the population, often by socioeconomic status or geographical location. For example, a child who lives in a slum in Nairobi, Kenya, is far more likely to die before the age of five than a child living in another part of the city. In Glasgow, Scotland, male life expectancy varies from 54 to 82 years, depending on the part of the city in which the person lives. No law of nature decrees that these health differences must exist. Rather, they are the result of the circumstances in which people grow, live, work and age, and the health systems they can access, which in turn are shaped by broader political, social and economic forces. Because they originate from socioeconomic status, living conditions, and other social and environmental determinants, health inequities are inherently unfair.

Some health inequalities are not health inequities. For example, death rates among people in their eighties are higher than those among people in their twenties, but this is not a socially produced, unfair health inequity. Rather, it is the result of the natural biological process of ageing.

Opposite to health inequity, **health equity** implies that everyone has a fair opportunity to attain their full health potential, and no one is disadvantaged from achieving this potential because of their social position or other socially determined circumstances. Health equity refers to situations where there are no systematic or unfair disadvantages to individuals and communities in health outcomes, access to health care and quality of health care because of race, gender, nationality, age, ethnicity, religion, sexual orientation, immigration status, language skills, socioeconomic status, or geographical location or neighbourhood.

Urban health equity implies that all city dwellers are provided with opportunities to reach the highest attainable standard of health. More pragmatically, it means that no one is hindered from achieving his or her full health potential, and that equal opportunities for health are available and accessible across all urban subgroups.

Importantly, equality does not in itself confer equity. If, for example, health problems in a poor community are greater than in a wealthier one (as they tend to be), then the poor community would require a relatively greater level of service provision to achieve a fair or equitable distribution among the population as a whole.

Despite their importance, urban health inequities are often missed altogether because health information is typically collected and analysed to look at urban averages. Although some forward-thinking urban leaders have systematically examined intra-urban differences in health status, the majority of municipalities have no clear information about the type and extent of health inequities that lie within their cities.
**Why urban health inequity must be unmasked and overcome**

Conventional wisdom takes for granted that for several health conditions rural outcomes are worse than urban outcomes. For example, globally chronic malnutrition among under-five children is lower in urban areas in comparison to rural areas. However, in Figure 3.1 we can see that with respect to health inequity, urban inequity is higher in Africa and Asia and similar to rural inequity in the Americas.

This figure presents the results of a study of Demographic and Health Surveys (DHS) data for 47 developing countries in 1994–2004 which estimated the median urban proportion of stunted under-five children to be 28% compared to 43% in rural areas. Interestingly, the study pointed to two main conclusions that challenge the myth of better conditions in urban areas. First, it is mainly higher levels of household wealth in urban areas that account for lower average rates of stunting. According to the study, in a number of countries, the rural environment is healthier than the urban. Second, the degree of socioeconomic inequity in stunting was higher in urban areas in comparison to rural areas, for 32 of the 47 countries.

Reducing urban health inequity should be a central objective of cities’ health and development plans. Available evidence indicates that health inequities exist in all cities. No city – large or small, rich or poor, east or west, north or south – has been shown to be immune to the problem.

Urban health inequities are detrimental to all city dwellers. Disease outbreaks, social unrest, crime and violence are but a few of the ways that urban health inequities affect everyone. These threats...
André grew up surrounded by violence and crime. He lived with his mother and three brothers. “There were not many opportunities for me,” explains André. “My brothers were involved with drugs and there were always fights in the house. I left when I was 13 because I wanted some freedom and quiet.”

He soon found himself living in a house with many other kids and shared the rent. At first he sold soft drinks to make some money. “The house was full of drugs and guns, and eventually I got involved. I stole things, got drunk, and started to use cocaine when I was 14. But at that time the drugs were occasional and just for fun.”

In his sixth year of taking drugs, André knew it had become a problem. He went to a local Social Centre for Alcohol and Drug Addicts for help. “The Centre really helped me. They had no preconceived notions or prejudice and they understood me. One of the best things was meeting other patients and sharing our experiences.”

Yet most of the activities at the Centre were for older people – knitting, sewing, woodwork and painting. “Teenagers don’t really connect when they come here. Most are here because they are forced to be.” With the approval of the Centre, he started a breakdance and rap music programme to reach youth, enabling them to tell their stories at shows and health presentations.

“I take it as a responsibility and it makes me feel good when the younger ones listen to me and change their lives. There was a boy of just 12 who was already taking drugs and working in organized crime. I talked to him. He quit drugs and the criminal lifestyle and went back to school. His mother came to me crying and hugged me, thanking me for helping her son.”

“Before all this, I thought I would only get rid of my addiction through death, but now I believe I can beat it and that belief feels like a huge victory to me.”
can spread easily beyond a single neighbourhood or district to endanger all citizens and taint a city’s reputation.

On the other hand, taking action to reduce health inequities creates numerous benefits. It strengthens the branding strategies of cities and makes them more attractive to the private sector, investors, residents and institutions in a globally competitive environment. In addition, social cohesion is often improved, while violence and crime are reduced. Tackling health inequities can also generate action for integrating health into urban planning and for improving transport systems, housing and green spaces, while focusing on addressing the needs of vulnerable and disadvantaged groups. This brings immediate health benefits, and better prepares cities for natural disasters and future health-related impacts of climate change.

Ultimately, health inequities are an excellent social accountant: they are a reliable way to measure and monitor how well a city is meeting the needs of its residents. They can also be a rallying point for public demands for change; political resistance and inertia are often diminished when actions are undertaken in the name of health and health equity for all.

Local leaders have direct influence over a wide range of health determinants, including housing and transport policies, social services and smoking regulations. As such, they have numerous entry points for taking meaningful action against urban health inequities.

### Urban health equity is related to human rights and international frameworks

Health equity is an ethical principle and is related closely to human rights principles. Health itself has been enshrined as a human right at the international level since the adoption of the Constitution of the World Health Organization in 1946. The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being. This “right to health” has since been recognized in numerous internationally binding treaties and national constitutions around the world.

Numerous international frameworks provide additional justifications for taking action on urban health inequity. These include the World Health Assembly’s resolution on environmental health in rural and urban development and housing, Agenda 21, the United Nations Millennium Declaration, and the Alma-Ata Declaration, and subsequent calls for renewed action on primary health care.

In 1991, the World Health Assembly adopted a resolution on environmental health in rural and urban development and housing. The resolution recognized the rapid demographic transition towards urban areas and called on countries to strengthen their capacity for healthy urban development. Partnerships between government and community organizations, including nongovernmental organizations, the private sector and the local people, were identified as a key strategy for success.

Following this, Agenda 21 was adopted by the United Nations Conference on Environment and Development in Rio de Janeiro, 1992. It embraces a comprehensive view of sustainable development, including the notion that sustainable development meets present needs without compromising the ability of future generations to
meet their own needs. Because so many issues addressed by Agenda 21 have their roots in local activities, it was recognized from the outset that the participation and cooperation of local authorities would be a determining factor in fulfilling its objectives. The Local Agenda 21 campaign promotes a participatory, long term, strategic planning process that helps municipalities identify local sustainability priorities and implement long-term action plans. It supports good local governance and mobilizes local governments and their citizens to undertake such a multistakeholder process. The process leads to the preparation and implementation of a long-term strategic plan that addresses priority local sustainable development concerns.

The United Nations Millennium Declaration is another international framework that recognizes the importance of action to reduce health inequities. The Declaration was adopted in 2000 and translated into eight Millennium Development Goals (MDGs) to be achieved by 2015. Goals include eradicating extreme poverty and hunger, improving education, promoting gender equality, improving health and combating disease, ensuring environmental sustainability, and building a global partnership for development. Although the MDGs do not explicitly include the need to improve health equity, it is commonly understood that addressing health inequities is an important aspect of meeting MDG targets in most countries. It is also broadly acknowledged that to achieve the MDGs, urban settings must be considered. The MDGs are explored further in Chapter 5 of this report.

The renewal of focus on primary health care lends additional legitimacy to the health equity agenda. The Alma-Ata International Conference on Primary Health Care held in 1978, was the first to put health equity on the international political agenda. The World Health Report 2008 called for a return to primary health care, arguing that its values, principles and approaches are more relevant now than ever before. As the report noted, inequities in health outcomes and access to care are much greater today than they were in 1978. In 2009, the WHO World Health Assembly welcomed the publication of the report and reaffirmed its strong commitment to the values and principles of primary health care, including equity, solidarity, social justice, universal access to services, multisectoral action, decentralization and community participation.

CHAPTER SUMMARY

This chapter has introduced the challenge of urban health inequity and made the case for why it matters. Health inequities are health inequalities that are systematic, socially produced (and therefore modifiable) and unfair. They are not distributed randomly, but rather show a consistent pattern across the population, often by socioeconomic status or geographical location. Opposite to health inequity, health equity implies that everyone has a fair opportunity to attain their full health potential, and no one is disadvantaged from achieving that potential because of their social position or other socially determined circumstance. As such, health equity can be considered as a reliable way to measure and monitor how well a city is meeting the needs of its residents. Health equity is, above all, an issue of social justice, and related to several human rights principles and international frameworks. Despite their importance, urban health inequities are often missed altogether because health information is typically collected and analysed to look at urban averages. It is only through looking for differences within cities through disaggregated data that urban health inequities can be brought out of the shadows. The remaining chapters in Part Two present results highlighting these inequities.
This chapter highlights health inequities in urban settings and demonstrates how aggregated data often mask substantial health inequities within urban populations – inequities that are revealed only through looking at subgroups of city dwellers according to their socioeconomic status, neighbourhood or other population characteristics. Results uncover both gaps between richest and poorest urban subgroups, and gradients in health across entire urban populations.
Most examples featured in this chapter were drawn from new analyses conducted by the World Health Organization on the nature and extent of urban health inequities. Data were extracted from reliable sources (established international organizations, or national or municipal government agencies) for which disaggregation was possible by urban/rural setting and ideally by other socioeconomic factors, such as income and education level. Data from the 2003 World Health Survey and the Demographic and Health Surveys (DHS) were used for many of the topic areas. City populations were disaggregated according to their household income and education level. Health inequities were assessed by looking at how these different subgroups varied across a range of health indicators, including disease risk factors, healthcare access and health outcomes. For selected health indicators, an additional step involved identifying specific factors that contributed to urban health inequities.

This chapter is not an exhaustive review of the World Health Organization’s new analyses on urban health inequities or of urban health inequities in general. Examples from specific countries should not be interpreted as assessments of their overall urban health equity, nor should they be taken to mean that cities in these countries have more health inequities than cities in other countries. More detailed information about the World Health Organization’s analyses and results can be found in Annex B of this report.

**Health inequities between rich and poor urban populations**

Urban health averages often mask wide gaps between people of different socioeconomic status. This section demonstrates that disaggregated data reveal a starkly different reality for the urban poor. Differences exist not only between richest and poorest city dwellers, but also along the continuum of entire urban populations.

![FIGURE 4.1 UNDER-FIVE MORTALITY RATE IN URBAN AREAS, BY REGION, IN 42 LOW- AND MIDDLE-INCOME COUNTRIES](chart)

Note: These results represent averages of those countries for which urban DHS data were available for under-five mortality (Africa = 25 countries, Americas = 7 countries, Asia = 10 countries). As such, they are not representative of the regions as a whole.

Poor urban children are at increased risk for chronic malnutrition and death

Although child survival rates in urban areas are mostly higher than in rural areas, these averages obscure substantial inequities between different population groups. Figure 4.1 reveals that within urban areas, large inequities exist within and between regions in under-five mortality rates. Within each region, children from the poorest urban families are roughly twice as likely to die as children from the richest urban families. Between regions, mortality rates in urban areas of Africa are roughly double those of the Americas and Asia.

In each of the 42 low- and middle-income countries for which data (from 2000 onwards) are available, the poorest urban children are twice as likely as the richest urban children to die before the age of five years. The magnitude of difference varies substantially across countries, ranging from 1.3 to 15.6 times relative difference between groups. Nonetheless, the overall health penalty is clear. Across all 42 countries, the poorest urban children are the most likely to die before the age of five years.

Differences exist not only between the richest and the poorest, but also across entire urban populations. In urban areas of several exemplar countries (Figure 4.2), under-five mortality rates decline progressively as family income rises. These results indicate that efforts to reduce inequities need to address the entire population, rather than focusing only on the poorest groups.

A similar picture emerges for childhood malnutrition, which causes more than a third of all deaths during childhood. Globally, malnutrition among under-five children is less common in urban areas, compared with rural areas. Yet once again, these urban averages mask substantial differences within cities. Results from 41 low- and middle-
FIGURE 4.3
CHRONIC MALNUTRITION AMONG CHILDREN LESS THAN FIVE YEARS OF AGE, BY REGION, IN 41 LOW- AND MIDDLE-INCOME COUNTRIES

Prevalence of chronic child malnutrition (percentage, %)

<table>
<thead>
<tr>
<th>Region</th>
<th>Urban poorest 20%</th>
<th>Urban average</th>
<th>Urban richest 20%</th>
</tr>
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<tr>
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<td>Americas</td>
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<tr>
<td>Asia</td>
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</tbody>
</table>

Note: These results represent averages of those countries for which urban DHS data were available (Africa = 27 countries, Americas = 7 countries, Asia = 7 countries). As such, they are not representative of the regions as a whole.


FIGURE 4.4
CHRONIC MALNUTRITION AMONG CHILDREN LESS THAN FIVE YEARS OF AGE IN URBAN AREAS OF SEVEN SELECTED COUNTRIES

Prevalence of chronic child malnutrition (percentage, %)

Incomes countries for which data are available show that on average, the prevalence of stunting (see footnote i, Chapter 3, for a definition) among the poorest urban children is three times greater than among the richest urban children. Figure 4.3 displays inequities in childhood malnutrition among urban populations in Africa, the Americas, and Asia. In each region, large gaps exist between the poorest fifth and richest fifth of urban populations.

It is not only the children in poor households who are prone to malnutrition. In general, the middle classes also suffer more childhood stunting than the richest families. Examples from urban areas in selected countries in Figure 4.4 reveal that the risk of chronic child malnutrition increases progressively as family income declines.

What accounts for these inequities? To help answer this question, WHO conducted additional analyses to identify factors that contribute to inequities in childhood malnutrition. Results are presented in Figure 4.5. Across urban areas of seven studied countries, inequalities in household wealth had a strong impact on inequities in child malnutrition. The contribution of household wealth to inequity in malnutrition ranged from 30% to 76% across the seven countries. Inequalities in education levels of mothers and their partners also each independently contributed to childhood malnutrition, accounting for 1% to 31%, and 8% to 18%, of malnutrition inequities, respectively. Region of residence and the child’s biological characteristics were identified as additional contributors to inequity, although their relative impact was generally less than the aforementioned factors.
**FIGURE 4.6**

**SKILLED BIRTH ATTENDANCE COVERAGE, BY REGION, IN URBAN AREAS OF 44 LOW- AND MIDDLE-INCOME COUNTRIES**

Note: These results represent averages of those countries for which urban DHS data were available (Africa = 26 countries, Americas = 7 countries, Asia = 11 countries). As such, they are not representative of the regions as a whole.


**FIGURE 4.7**

**SKILLED BIRTH ATTENDANCE COVERAGE IN URBAN AREAS OF SEVEN SELECTED COUNTRIES**

individual countries. For example, in Bangladesh, skilled birth attendance coverage is 6% among the poorest fifth of the urban population while it is more than 75% among the richest fifth. While gaps tend to be smaller in countries where urban averages are higher, inequities exist even where average coverage in urban areas is relatively high. For example, Egypt’s average skilled birth attendance coverage is 89% in urban areas, but ranges between 74% for the poorest fifth and 99% for the richest fifth.

With few exceptions, inequities in skilled birth attendance also affect the middle classes of urban areas. Women from middle-income families are less likely than those in the upper class to be attended during childbirth, but more likely than the poorest city dwellers to have access to this form of health care (Figure 4.7).
Neniata has nine children, and lives in a small house with seven other adults and 12 children. “My children do painting, cleaning, gardening, whatever work they can get,” she says. “They give me money when they can, but they have their own children too, so I wait my turn.”

On good days, she eats a lot, but, she confides, “sometimes all we have is bread. When I get some money it usually only lasts a few days. Most of it I will spend on food. I don’t drink or gamble.”

Fifteen years ago she discovered she had diabetes, high cholesterol and high blood pressure. “I was weak and felt wobbly and dizzy,” Neniata recalls. Now, she relies on the medicine she receives for free at her monthly check-up, but she usually can’t afford to buy more when it runs out and needs to go looking for a clinic prepared to give a handout. For example, “Right now I have no medicine left. It ran out about two weeks ago.”

She can’t get insulin for free at the clinic and at US$ 6.50 a day, she can’t afford to buy it. Three years ago, this almost cost her a foot. “My foot was swollen to the knee and numb. The doctor told me they might have to amputate it. I asked him not to because I like to dance! I made him laugh. I spent two months in hospital recovering and getting insulin. I am happy I kept my foot!”

Neniata is a very humorous lady with a love for life. “Really my illness is nothing! I can’t worry too much about it. I like to smile and dance.”
As with child malnutrition, WHO conducted additional analyses on skilled birth attendance to identify factors that contribute to inequities in skilled birth attendance coverage. Results are presented in Figure 4.8. In general, results indicate that inequalities in household wealth again have a strong impact on inequities in coverage. Across the seven countries, household wealth accounted for between 34% and 58% of the inequities. Residing in different regions contributed additionally in some countries such as Cameroon (25%) and the Plurinational State of Bolivia (14%), while its contribution was negligible in India (~0%) and Morocco (3%). The education level of the mother was another important factor: its contribution to inequities in skilled birth attendance coverage ranged from 10% in Morocco to 31% in India. The education level of the mother’s partner also played a role, especially in Morocco, where the partner’s education contributed more than the mother’s education to inequities in skilled birth attendance. Finally, the birth order of the child, while not a major factor in most countries, contributed to inequities in skilled birth attendance up to 24% in Colombia and 23% in Turkey.

THE URBAN POOR ARE AT INCREASED RISK FOR DIABETES AS COUNTRIES DEVELOP

As a country's economy grows, the burden of noncommunicable diseases tends to shift from wealthier to poorer segments of urban populations. The specific reasons for this phenomenon are a topic of debate, but presumably are related to differential exposure to noncommunicable disease risks (for example unhealthy diet, physical inactivity, obesity and tobacco use) among different urban subgroups at different stages of a country’s economic development.

Diabetes is a case in point. Figure 4.9 shows the prevalence of self-reported diabetes among adults age 45 and older in urban areas of Bangladesh, a low-income country, by level of wealth. In this case, diabetes primarily affects the wealthier segments of the urban population. Tunisia, a middle-income country, showed a similar pattern, with diabetes prevalences rising in higher wealth quintiles (Figure 4.10). In contrast, Figure 4.11 shows that in Spain, a high-income country, the relation between wealth and diabetes prevalence is weaker, with no clear trend across wealth quintiles.
country, shows a relatively flat distribution of diabetes across urban wealth groups (Figure 4.10). In urban areas of Spain, a high-income country, it is poorer urban residents who are most likely to have diabetes (Figure 4.11). As several factors may contribute to these differences, more detailed epidemiological analysis is required to understand trends over time and causal relationships.

**DISPARITIES IN PIPED WATER ACCESS WITHIN URBAN AREAS**

Inequities between the rich and the poor exist not only for health outcomes, but also for health determinants, such as piped water access. Piped household water connections provide running water into dwellings, plots or yards. They are considered to be the most improved drinking-water source (provided pipes are maintained properly and water quality is assured). Improvements in access to piped household water connections have been the main driver of progress in access to safe water in most regions, with growth in piped household water access twice as high as growth in other improved drinking-water sources between 1990 and 2008.115

Globally, piped water coverage among urban households is much higher than that in rural areas.115 However, substantial inequities exist between the richest and poorest urban residents in Africa, the Americas and Asia (Figure 4.12). While magnitudes vary, the same relationship holds true within each of the studied countries in these regions.

When inequities in urban access to piped water are analysed in further detail, social gradients emerge; that is, systematic increases in urban piped water access correspond to increases in urban wealth quintile. Figure 4.13 displays these gradients in seven selected countries. Among these countries, the degree of inequity is largest in Mozambique and smallest in Morocco, although gradients exist in all countries.

One important caveat to these results is that routine administrative data generally refer to
existing water sources, whether or not they are actually used by households. More importantly, they might not take into account those living in slums. Thus, these data might provide gross overestimates of access to piped water, especially in cities with poorly maintained water distribution systems or with large slum areas.

SUMMARY

This section has demonstrated that aggregated data often mask substantial health inequities within urban populations – inequities that are revealed when looking at city dwellers according to their family income or wealth level. Specifically, these analyses show that families with the lowest incomes in urban areas are most at risk for adverse health outcomes such as child malnutrition and early childhood death, have less access to health services such as skilled birth attendance, and are also disadvantaged in terms of their living conditions, such as access to piped water. Importantly, these inequities exist along a social gradient, also affecting middle class city dwellers to at least some extent. The underlying causes of these inequities in health are primarily social in nature, including household wealth, education and location of residence, which outweigh the effects of predetermined attributes such as age and gender.

Health inequities between neighbourhoods

Evidence in this section looks at health inequities from a geographical perspective, by comparing neighbourhoods or districts within cities. Results show that city dwellers’ odds of being healthy depend very much on their “place” within the city.
Neighbourhoods vary dramatically within most cities, and disadvantage tends to cluster within certain districts. Some have ready access to fresh food via meat and produce markets; others have only fast food or street vendors. Some have good-quality housing, green spaces and clean air; others are run down, crowded and polluted. Some have an array of health and social services within their limits; others have none. These and other factors combine to influence health on a neighbourhood-by-neighbourhood level.

Although neighbourhoods differ according to residents’ economic status, not all urban poor live in slums or areas of concentrated disadvantage, and not all people who live in slums or areas of concentrated disadvantage are poor. It is therefore useful to consider health inequities by neighbourhood, in addition to socioeconomic status, although these two factors tend to correlate with one another.

SLUM DWELLERS IN NAIROBI, KENYA, ARE THE MOST LIKELY IN THE COUNTRY TO DIE DURING EARLY CHILDHOOD

The city of Nairobi, Kenya, exemplifies rapid urbanization amidst deteriorating economic and health conditions. With an annual growth rate of 7% over the last two decades, Nairobi remains one of the fastest growing cities in Africa. Since the 1960s, Nairobi’s population has increased more than tenfold, from 293,000 in 1960 to more than 3 million in 2009. Most of the growth of the city of Nairobi is a result of rural-urban migration rather than immigration from other countries or natural increase.

On average, infant deaths in Nairobi are less common than infant deaths in rural parts of Kenya. Nonetheless, this urban average masks stark differences between different areas of Nairobi. Figure 4.14 reveals that slum areas of Nairobi have infant death rates that far exceed corresponding rates for the city as a whole and its high-income areas. The same picture emerges for deaths in children less than five years of age (Figure 4.15).
TUBERCULOSIS RATES DIVERGE DRAMATICALLY BY WARD IN JAPAN’S LARGEST CITIES

Urban health inequities also exist in Japan, a country known for high standards of health and social development (as indicated by its residents’ life expectancies). Data obtained from the Research Institute of Tuberculosis in Japan reveal wide disparities in tuberculosis incidence within the country’s largest cities.

Tuberculosis (TB) was highly prevalent in Japan before and immediately after the Second World War, with hundreds of thousands of people dying from the disease each year. Poverty, poor housing and overcrowded cities were the major causes at the time. Japan’s economic development in the 1960s helped to change the situation: living standards improved enormously and the government reinforced its TB control efforts. Nevertheless, TB is more common in Japan than in other developed countries.

Figure 4.16 reveals wide disparities in the number of newly notified TB cases between the largest cities in Japan. In 2006, the average number of newly notified TB cases per 100,000 urban population ranged from a low of 11.5 in Sapporo to a high of 57.0 in Osaka. The national rate for that year of 20.6 new cases per 100,000 population (including both urban and rural areas) was exceeded in 9 of the 13 cities.

This figure also shows that substantial gaps exist within cities, from ward to ward. Such large variations over small distances are a characteristic of TB in many cities around the world. In Japan, inequities were found within all of the studied cities, including Tokyo, Kawasaki and Yokohama (part of the Greater Tokyo area), and Kyoto, Nagoya and Kobe (part of, or contiguous with, the Kyoto-Osaka-Kobe metropolitan area). The cities with higher average rates tended to have wider gaps, but even cities with relatively low rates, such as Yokohama, had large disparities between the worst and best performing wards in the city.

Figure 4.16
NEWLY NOTIFIED TB CASE RATE PER 100 000 POPULATION, LARGEST CITIES IN JAPAN, 2006

Source: Research Institute of Tuberculosis, Kiyose, Japan.
Osaka had the highest rate of newly notified TB cases, as well as the largest disparities among its wards. Among its 24 wards, new TB cases ranged from 31.6 per 100,000 residents in the Tsurumi ward to 284.3 per 100,000 residents in the Nishinari ward. Nishinari is home to one of Japan’s largest concentrations of day labourers, many of whom are homeless. Its extremely high TB rate probably reflects the situation among this economically and socially disadvantaged minority group.

**RISK OF HOMICIDE VARI E FOURFOLD BETWEEN SUBDISTRICTS IN CAPE TOWN, SOUTH AFRICA**

The following data from Cape Town, South Africa, show that disadvantaged clusters often exhibit a number of negative indicators – the subdistricts with the greatest number of homicides are also those that are the poorest, and have the largest proportion of residents who are unemployed and living in slums.

South Africa has one of the highest rates of homicide in Africa and in the world. Among South Africa’s major cities, Cape Town has the largest problem, with 63.5 homicides per 100,000 residents in 2007. When homicide data from Cape Town were disaggregated into 11 city subdistricts, striking disparities within the city were revealed. Homicide rates ranged considerably, from a low of 33 in South Peninsula to a high of 132 in Nyanga, equivalent to four times the risk of violent death. The two districts with the highest homicide rates, Nyanga and Khayelitsha, are also the most disadvantaged. Considerable proportions of people living in these areas live in slums, are unemployed and subsist below the poverty line. This stands in contrast to South Peninsula, which is among the most advantaged districts of the city (Figure 4.17).

**HEALTH INEQUITIES BETWEEN NEIGHBOURHOODS OF NEW YORK CITY, UNITED STATES**

Data from New York City, United States, reveal that poor health is concentrated in certain New York City neighbourhoods, and that the neighbourhoods with the worst health outcomes are also those that are the poorest in economic terms, and in which people are least likely to have access to essential health care. In 2001, the

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**FIGURE 4.17**

**HOMICIDE RATES VARY BY A FACTOR OF FOUR BETWEEN SUBDISTRICTS OF CAPE TOWN, SOUTH AFRICA, 2001–2004**

life expectancy in New York City’s poorest neighbourhoods was eight years shorter than in its wealthiest neighbourhoods.\textsuperscript{121}

Figure 4.18 illustrates this phenomenon by displaying the geographical relationship between the percentage of residents living in poverty and the likelihood of dying from acquired immune deficiency syndrome (AIDS). Neighbourhoods with high concentrations of poverty (indicated by darker colours on the left map) coincide with neighbourhoods that have higher rates of AIDS deaths (indicated by darker colours on the right map). Similar relationships have been found for numerous other indicators of poor health and adverse living conditions, including rates of hospitalization, infant deaths and deaths due to diabetes.\textsuperscript{121}

**Figure 4.18**

**Geographical relationship between percentage of residents living in poverty and likelihood of dying from AIDS, New York City, United States**

![Maps showing the geographical relationship between poverty and AIDS deaths in New York City.](source: Karpati A et al. Health disparities in New York City. New York, New York City Department of Health and Mental Hygiene, 2004.)

Within Preston, life expectancy varies dramatically between the largely deprived communities and the more affluent. Men in affluent areas live 14.7 years longer than those in deprived wards. For women, life expectancy varies 10 years between wards.\textsuperscript{122}

The maps of Preston (Figure 4.19 on the next page) illustrate in greater detail how level of income and crime and disorder cluster into the same areas of the city. These and other indicators are combined to form an index of multiple deprivation (IMD), which is used in a standardized manner throughout the whole of England.\textsuperscript{123}

**Poor Health Concentrated in Certain Districts of Preston, United Kingdom**

Data from Preston, United Kingdom, show a similar picture to that of New York City. Certain parts of the city (called wards) are localities of concentrated deprivation and premature death. As a growing city of around 132,000 people, and home to a university and the British aerospace industry, local leaders are now using the deprivation and health inequity data to better tailor interventions and services to communities with the greatest need.

**Summary**

This section has provided examples from a wide range of cities from around the world, showing that health inequities exist by neighbourhood or district. Once again, these data illustrate that while...
Urban averages give one picture, information disaggregated into neighbourhoods or districts provides a completely different view. Disaggregated data at subcity level can help identify areas and populations most in need of intervention and support. Health inequities between subgroups of city dwellers

Beyond socioeconomic status and neighbourhood, some city dwellers have poorer health outcomes than others due to unfair marginalization and discrimination as a result of their age, gender, ethnicity, disability or other aspects of their identity. Most frequently, these factors interact to create double or triple jeopardy for certain people. A poor, immigrant woman living in a disadvantaged neighbourhood, for example, will probably experience a very different reality than a wealthy, male citizen living in an upscale part of the city.

This section provides examples of different segments of the urban population having unfair differences in health status.

**Poor urban women are most likely to have HIV infection**

Results from the Demographic and Health Surveys (DHS) conducted in 21 selected countries, primarily in sub-Saharan Africa, show that the average HIV prevalence in urban areas is higher than in rural areas, and that women are particularly vulnerable to HIV within cities (Figure 4.20). Prevalence of HIV among urban women is 1.5 times higher than that among urban men, and 1.8 times higher than that among rural women.
“I have known for 13 years that I am HIV positive,” reveals Huguette. Soon after marrying, she says, “My husband started to get sick. There was no treatment. He knew he was positive but no one would talk about it. I only discovered it when I looked in his health papers one day and it was written. I was very angry with him.” She began to use condoms with him, but she tested positive. “My husband would go out with many girls and he refused to change. So I decided to leave him.” Yet her family persuaded her to return and care for him in his dying days.

She got pregnant by him and gave birth to an HIV-positive baby. “Poro had TB and suffered for so long. At that time the treatment was available, but it was too expensive, almost US$ 1040 a month. It was so painful to see him suffer. He would cough all night, and there was nothing I could do. He was 5 years old when he died.” Huguette remarried to a man she met at church, and lost another baby, this time a baby girl, to the virus before her own health made a turn for the worse. “I also started to become sick, and reached the last stage. I had TB, I was vomiting, coughing.”

Finally, she went to the central hospital and received ARVs, which saved her life. With her supportive husband and the falling cost of ARVs, eventually made free, “I got better and better and then I had a new baby. She was born healthy and is HIV negative. I now have a newborn son as well. I am so happy. I did all the treatments to prevent them from getting HIV from me.”

Now, Huguette has started her own small organization. “I advise other HIV positive people, give information, people come here to my house to talk. I also go to schools and churches to educate and tell them about HIV. I feel so happy when I help others. It feels so good to live.”

Huguette, 33
Yaoundé, Cameroon

STRUGGLE FOR SURVIVAL WITH HIV AND TB
Low socioeconomic status appears to further compound the problem for women living in urban areas. In 71% of the countries considered in this analysis, the poorest 40% of women in urban areas had a higher HIV prevalence than other women, who are relatively wealthier; among men, this income-based inequity was found in only 48% of the studied countries. There is an urgent need for further research to understand the urban conditions that may increase vulnerability to HIV infection among women, such as gender-related barriers in access to services, lack of access to education and economic opportunities, and violence against women and girls.

**CHAPTER SUMMARY**

This chapter has demonstrated how aggregated data often mask substantial health inequities within urban populations – inequities that are revealed when this same information is disaggregated according to defining characteristics of city dwellers, such as their socioeconomic status or place of residence. Examples in this chapter have illustrated that the urban poor suffer disproportionately from a wide range of diseases and health problems, and that disadvantage and disease tend to cluster within certain neighbourhoods of cities. Beyond socioeconomic status and neighbourhood, some city dwellers have poor health outcomes because of the way societies marginalize and discriminate against them for aspects of their identity they cannot change, such as their age, sex or disability. In every city, disaggregated data can help identify people and areas most in need of intervention and support. Once again using disaggregated urban data, the following chapter reveals that unless urgent action is taken to reduce health inequities in urban areas, many countries will not achieve the health-related MDG targets by 2015.
This chapter presents new analyses looking at health progress and projections on health-related MDGs in urban areas. It goes beyond urban averages to reveal how the richest and poorest city dwellers differ from one another in relation to MDG health targets.
From the 1990 baseline date, 2010 is 80% of the way towards the Millennium Development Goal (MDG) target date of 2015. Currently available data show that while some countries have made impressive gains in achieving health-related targets, others are falling behind.

Results reveal that at current rates of progress, many health-related MDG targets will not be achieved unless urban health inequities are addressed urgently. Current levels of urban health inequities are undermining countries’ ability to meet national targets, and preventing the realization of the international community’s vision of health and development for all.

Introduction to the Millennium Development Goals

In September 2000, the largest-ever gathering of heads of state and government ushered in the new millennium by adopting the United Nations Millennium Declaration. The Declaration was endorsed by 189 countries and was translated into eight Millennium Development Goals (MDGs – see Box 5.1) to be achieved by 2015.110,124

Health is at the heart of the MDGs (Figure 5.1). Achieving the health-related MDGs will not be possible without progress on poverty, food security, gender equality, wider access to education and better stewardship of the environment.

Although the MDGs are global and their related targets are set for countries as a whole, cities, as the newly dominant setting of human habitation, are essential for the realization of the MDGs. The success or failure in meeting MDG targets at global and national levels will depend to a large extent on how much is achieved within urban populations.
And while MDG goals and targets are not equity specific, evidence shows that failure to address the distribution of wealth undermines progress in development. Policies to promote equity, on the other hand, accelerate progress towards the MDGs.125

Projections presented in this chapter are based on observed rate of progress over the longest time period for which data are available. This form of linear projection might not be most accurate in every case, given that each country has a specific context and may be undergoing health reforms or economic growth (or crisis), which may create the conditions for better or worse performance leading to 2015. However, linear projection also has several advantages: it can be applied in a standard manner for all countries; it is dependent entirely on observable data, as opposed to arbitrarily assigned growth rates; and it is relatively simple to understand because it is based on past achievements. More detailed information about the World Health Organization’s analyses and results can be found in Annex B of this report.

**MDG 1: Eradicate extreme poverty and hunger**

The first MDG is to eradicate extreme poverty and hunger, both of which are determinants of health and development. The second of its two targets is to halve, between 1990 and 2015, the proportion of people who suffer from hunger. The health indicators for this target are the prevalence of underweight children (under five years of age), and the proportion of the population below the minimum level of dietary energy consumption.
Globally, the number of children younger than five years of age suffering from malnutrition, according to WHO child growth standards, declined from 1990 to 2007. But the progress is uneven, and an estimated 112 million children are underweight.

Our analysis examined the prevalence of stunted children (see footnote 1, Chapter 3, for a definition), which is considered an indicator of chronic malnutrition. Figure 5.2 reveals that among urban areas of 21 countries in Africa, 6 in the Americas and 5 in Asia, the poorest 20% of urban populations in Africa have, on average, experienced an increase in childhood stunting during 2000 to 2007, compared with 1990 to 1999. In the

Americas, the poorest 20% in urban areas have experienced an average reduction of 7% in childhood stunting. In all examined regions, the gap between the richest and poorest has not improved significantly over the two decades.

Linear projections indicate that in 88% of considered countries, stunting among the urban poor is unlikely to be reduced by 2015 to half of what it was nationally in the 1990s. On the other hand, the urban rich are likely to achieve this in 75% of these countries, based on current rates of progress.

Figures 5.3 and 5.4 display the prevalence of childhood stunting over time in urban areas of the Plurinational State of Bolivia and India. In both countries, large inequities exist between rich and poor urban children. However, in the Plurinational State of Bolivia, the gap between poor and rich children is widening, while in India, childhood stunting is declining in all segments of the population, resulting in a gap that is essentially unchanged over time. In urban areas of both counties, average levels of childhood stunting will not meet MDG-related targets by 2015. This is due in large part to the situation of the poorest urban children.
FIGURE 5.3
TRENDS AND PROJECTIONS TOWARDS HALVING STUNTING BY 2015 (IN RELATION TO 1990 LEVELS) IN URBAN AREAS OF THE PLURINATIONAL STATE OF BOLIVIA

Note: Projected estimates are based on the long-term annual rate of growth from the 1990s to the latest year with available data.
Source: WHO calculations based on data from Demographic and Health Surveys (DHS).

FIGURE 5.4
TRENDS AND PROJECTIONS TOWARDS HALVING STUNTING BY 2015 (IN RELATION TO 1990 LEVELS) IN URBAN AREAS OF INDIA

Note: Projected estimates are based on the long-term annual rate of growth from the 1990s to the latest year with available data.
Source: WHO calculations based on data from Demographic and Health Surveys (DHS).
MDG 4: Reduce child mortality

MDG 4 is to reduce child mortality, and its target is to reduce the under-five mortality rate by two thirds between 1990 and 2015. Under-five mortality rate is defined as the probability of dying before the age of five, expressed as the number of deaths per 1000 live births.

Globally, the number of children who die before their fifth birthday has been reduced by 27%, from 12.5 million estimated in 1990 to 8.8 million in 2008. Under-five mortality rates (number of deaths per 1000 live births) have declined in all regions of the world.

Figure 5.5 displays under-five mortality rates in urban areas of Africa, the Americas and Asia. Progress has been made in each of the three regions, in both poor and rich urban populations. Between the periods of 1990 to 1999 and 2000 to 2007, 86% of the countries studied improved their overall under-five mortality rates in urban areas. The few countries with worsened urban under-five mortality rates were all located in sub-Saharan Africa.

However, based on annual rates of progress since the 1990s, the poorest urban children in 80% of the countries studied will not achieve the target level of under-five mortality rate at the national level. This stands in contrast to the richest 20% of urban children, among whom the target is likely to be achieved in 57% of countries.

Figures 5.6 and 5.7 show trends and projections for urban areas of the Plurinational State of Bolivia and India. In both countries, progress is being made. On average, the Plurinational State of Bolivia is expected to achieve its national MDG target in its urban areas, whereas India’s urban areas will fall slightly short of its national target. Nonetheless, the poorest 20% of urban children will continue to suffer from unacceptably high mortality rates, and as a group will fall substantially short of their countries’ MDG targets. Similar results are found in many other countries.

Note: These results represent averages of those countries for which urban DHS data were available (Africa = 21 countries, Americas = 6 countries, Asia = 8 countries). As such, they are not representative of the regions as a whole.

FIGURE 5.6
TRENDS AND PROJECTIONS TOWARDS REDUCING BY TWO THIRDS UNDER-FIVE MORTALITY BY 2015 (IN RELATION TO 1990 LEVELS) IN URBAN AREAS OF THE PLURINATIONAL STATE OF BOLIVIA

Note: Projected estimates are based on the long-term annual rate of growth from the 1990s to the latest year with available data.
Source: WHO calculations based on data from Demographic and Health Surveys (DHS).

FIGURE 5.7
TRENDS AND PROJECTIONS TOWARDS REDUCING BY TWO THIRDS UNDER-FIVE MORTALITY BY 2015 (IN RELATION TO 1990 LEVELS) IN URBAN AREAS OF INDIA

Note: Projected estimates are based on the long-term annual rate of growth from the 1990s to the latest year with available data.
Source: WHO calculations based on data from Demographic and Health Surveys (DHS).
MDG 5 is to improve maternal health, and its target is to reduce by three quarters, between 1990 and 2015, the maternal mortality ratio (the number of women dying as a result of pregnancy or childbirth). One of the indicators for this target is the proportion of births attended by skilled health personnel (physicians, nurses, trained midwives), which, ideally, should be 100%. The proportion of women who deliver with the assistance of a skilled health-care worker is highly associated with maternal mortality ratios.128

Around the world, the proportion of births attended by a skilled health worker improved between 1990 and 2006, though still falling short of the 100% target. Improvements were made in almost all regions, except in Europe, where coverage levels were already high in 1990.128

Figure 5.8 displays skilled birth attendance coverage rates in urban areas in Africa, the Americas and Asia. Very little progress has been made in urban areas of these regions. At current rates of progress, 78% of the studied low- and middle-income countries in Africa, the Americas and Asia will not achieve even 90% coverage of skilled birth attendance for the poorest 20% of urban women. The situation is even more dire in 38% of the same countries, where fewer than half of the poorest women in urban areas will have access to skilled birth attendance in 2015, according to current rates of progress.

Trends and projections for skilled birth attendance in urban areas of the Plurinational State of Bolivia and India are shown in Figures 5.9 and 5.10. The Plurinational State of Bolivia has made remarkable progress towards skilled birth attendance for all urban women. In India, however, inequities have remained relatively constant and are projected to continue into the future. Around half of poor urban women in this country will continue to lack access to skilled birth attendance in 2015.
FIGURE 5.9
TRENDS AND PROJECTIONS TOWARDS ACHIEVING UNIVERSAL COVERAGE FOR SKILLED BIRTH ATTENDANCE BY 2015 IN URBAN AREAS OF THE PLURINATIONAL STATE OF BOLIVIA

Note: Projected estimates are based on the long-term annual rate of growth from the 1990s to the latest year with available data.
Source: WHO calculations based on data from Demographic and Health Surveys (DHS).

FIGURE 5.10
TRENDS AND PROJECTIONS TOWARDS ACHIEVING UNIVERSAL COVERAGE FOR SKILLED BIRTH ATTENDANCE BY 2015 IN URBAN AREAS OF INDIA

Note: Projected estimates are based on the long-term annual rate of growth from the 1990s to the latest year with available data.
Source: WHO calculations based on data from Demographic and Health Surveys (DHS).
MDG 7: Ensure environmental sustainability

MDG 7 is to ensure environmental sustainability, and a key target relating to urban areas is to achieve a significant improvement in the lives of at least 100 million slum dwellers by 2020.

UN-HABITAT estimates that this target has already been exceeded by at least 2.2 times. Between 2000 and 2010, 227 million people will have moved out of slum conditions. The proportion of slum dwellers has declined in all regions of the world, from 39% in the year 2000 to an estimated 33% in 2010. Because more than 200 million urban dwellers have gained access to improved water and sanitation or to durable and less crowded housing, their prospects have improved to escape poverty, disease and illiteracy, and to lead better lives.¹

However, due to population growth the absolute number of slum dwellers has grown considerably, and will continue to rise in the near future.

FIGURE 5.11
PROPORTION OF URBAN POPULATION LIVING IN SLUM AREAS, 1990 AND 2010

UN-HABITAT estimates that the number of slum dwellers has risen from 657 million in 1990 to 767 million in 2000 and 828 million in 2010. This means that 171 million urban poor have been added to the global population of slum dwellers since 1990.¹ There is therefore no room for complacency during the next decade.

In least-developed and conflict-affected countries, slum prevalence is expected to remain very high, comprising 70% of the urban population. In conflict-affected countries, the proportion of the urban population living in slums increased from 64% in 1990 to 77% in 2010.¹

Figure 5.11 displays the proportion of city dwellers estimated to be living in slums in 1990 and 2010, for various regions of the world. In 2010, the highest slum prevalence is in sub-Saharan Africa (62%), followed by Southern Asia (35%), compared to less than one third of urban residents in all other regions of the developing world. Despite the efforts of some cities and countries in sub-Saharan Africa to expand basic services and improve housing conditions in slum areas, inaction in other areas has prevented overall progress in the region. In Western Asia, the increase in the proportion of slum dwellers can be attributed largely to the conflict related deterioration of living conditions in Iraq, where the proportion of urban residents living in slum conditions has tripled from 17% in 2000 (2.9 million) to an estimated 53% in 2010 (10.7 million).¹

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**CHAPTER SUMMARY**

Although the MDGs are global and their related targets are set for countries as a whole, cities – by virtue of their population sizes – are crucial parts of the equation.¹³⁰ Results presented in this chapter show that at current rates of progress, many health-related MDG targets will not be achieved in urban populations by 2015. This will undermine countries’ ability to meet national targets, and will prevent the realization of the international community’s vision of health and development for all. ■ Results in this chapter also revealed that the urban poor are most at risk of not achieving national MDG targets. For example, more than 80% of low- and middle-income countries studied will fail to meet MDG-related benchmarks for childhood stunting and childhood deaths among their urban poor. MDG goals and targets are not equity specific: there is no explicit requirement for achievements to be made equally in all population subgroups. Nonetheless it is generally understood that achievement of the MDGs will improve equity, and that improving equity will contribute to achievement of the MDGs. ■ It is not too late to alter these trends. Action must be taken at street and neighbourhood levels, with municipal, provincial and national governments working in partnership with communities.¹³¹ Part Three of this report describes a strategy for overcoming urban health inequities and providing a better future for all city dwellers.