book we focus on the circumstances and conditions of the United States. We take this perspective because our own experience is here and we believe that an understanding of urban health must emerge from concrete analysis of specific situations. Where appropriate, we link broader global forces to the experience in the United States (e.g., immigration); however, we recognize that the experience in the United States does not and cannot adequately describe or address the effects of urban living in developing and other developed countries. In the United States, urbanization and urban development have been major historical trends for the past 150 years, driving changes in multiple areas, such as economic development, education, criminal justice, transportation, and housing. Therefore, in this book we aim to draw lessons from the U.S. experience that can guide research and intervention domestically and globally.

Key Terms and Definitions

Defining Urban

The U.S. Bureau of the Census defines "an urbanized area" as "a place and the adjacent densely settled surrounding territory that together comprise a minimum population of 50,000 people." Moreover, "the 'densely settled surrounding territory' adjacent to the place consists of territory made up of one or more contiguous blocks having a population density of at least 1,000 people per square mile."[1] The Census Bureau thus provides a dichotomy, designating territory, population, and housing units within specific size and density parameters as urban areas and all others are nonurban.

The U.S. Census definition is limited in many respects. First, a more nuanced appreciation of gradations of urban may be helpful. In the early 21st century, few cities exist in isolation, clearly set apart from other urban areas by vast underpopulated space (e.g., Las Vegas 10 years ago). Most cities (e.g., Hartford, Conn., Atlanta, Ga., Los Angeles, Calif., Detroit, Mich.) are part of a far-reaching, densely populated area that continues relatively uninterrupted for miles beyond the actual city and city-center. This broader zone is often called a "metropolitan area," which the U.S. Census Bureau defines as "a city with a population of at least 50,000 people or an urbanized core area of at least 50,000 people who are closely integrated socially and economically with the core." Figure 1.1 illustrates the changing proportion of the U.S. population living in metropolitan areas.[2]

In the past two decades, urban and suburban settlements within metropolitan areas have converged and now share many features of urban living and their consequences; a dichotomous definition of urban fails to recognize this metropolitan phenomenon. Since half the U.S. population lives in this suburban interface, excluding suburbs from a study of metropolitan health risks missing important public health issues related to the urban condition.

While seemingly straightforward, the Census definition threshold of 50,000 is also problematic. Although a "threshold" population size facilitates demographic analyses, it is conceivable that areas with fewer people, particularly in sparsely populated areas, may also share many characteristics of cities. For example, the city of Whitehorse, in the Canadian Yukon Territory, has a population of fewer

Figure 1.1. Growing Metropolitan Areas in the United States

Within the United States, 80% of Americans now live in metropolitan areas, and these areas continue to increase in size. Between 1990 and 2000, the U.S. metropolitan population grew more rapidly than the nonmetropolitan area population, 13.9% compared with 10.2% (see table). Almost 60% of the U.S. population lived in metropolitan areas of more than 1 million people. In 2000, about a quarter of the U.S. population lived in central cities (the urbanized core of metropolitan areas), and half in the suburban areas surrounding these cities.

Population Change and 2000 Share by Metropolitan Status and Size Category: 1990 to 2000

Population size category	Population, April 1, 2000	Percentage change, 1990 to 2000	2000 share of U.S. total
United States	281,421,906	13.2	100.0
Total for all metropolitan areas	225,981,679	13.9	80.3
5,000,000 or more	84,064,274	10.8	29.9
2,000,000–4,999,999	40,398,283	19.8	14.4
1,000,000–1,999,999	37,055,342	17.7	13.2
250,000–999,999	45,076,105	13.1	16.0
Less than 250,000	19,387,675	11.1	6.9
Total nonmetropolitan	55,440,227	10.2	19.7

Source: U.S. Department of Commerce, Bureau of the Census, *1990 Census: Population and housing unit counts* (Washington, DC: Bureau of the Census; 1990).

than 20,000 people; however, Whitehorse is the only large density of people for hundreds of miles. As such, it functions very much like a city for the surrounding area, sharing with larger cities issues of population density, higher priced real-estate than surrounding areas, and to an extent, suburban sprawl.

Several other definitions of urban have been adopted by various countries, some of which stem from an attempt to address the complexities just described. Among 228 countries on which the United Nations has data, about half use administrative definitions of urban (e.g., living in the capital city), 51 use size and density, 39 use functional characteristics (e.g., economic activity), 22 have no definition of urban, and eight define all (e.g., Singapore) or none (e.g., Polynesian

countries) of their population as urban.[3] Official statistics (i.e., all the statistics above) rely on country-specific designations and do not use a uniform definition of urban. In specific instances, definitions of urban in adjacent countries vary tremendously (e.g., Democratic Republic of the Congo v. Burundi). Thus, global statistics on urbanization depend on international definitional differences that may be as much a function of statistical expediency as an effort to characterize urban as a distinct construct. Compounding these difficulties, definitions of urban have changed in different ways in different countries.

Hence, depending on who is using it, the word *urban* may denote a range of settings from city centers to periurban fringe cities to densely populated isolated regions. Although this lack of uniform definition may hinder investigation of what is unique in urban versus nonurban living and its relation to health, it also highlights the dynamic nature of urban as a construct. Furthermore, it underscores that both the condition of *being urban* and the *process of urbanization* are important considerations. The diverse definitions of urban suggest that a core set of characteristics (e.g., housing quality, access to health care services), driven, to an extent, by population size, density, heterogeneity, and distance from other such centers, are common to urban areas and shape the conditions of living within these areas. These factors have been shaped by the forces that have driven urbanization in the past several centuries and also directly and indirectly shape the health of urban populations.

Static versus Dynamic Definitions of Urbanness

To expand the somewhat limiting definitions offered by the U.S. Census Bureau, we define several different dimensions of *urbannness* that may affect our understanding of how changes in urban living conditions across time and place affect health. At the risk of introducing additional complexity, these concepts provide a more dynamic view of variation within and between cities. Two of the terms—*urbanicity* and *urban dominance*—refer to status measured at given time (cross-sectional view), while the other three—*urbanization*, *urban development*, and *metropolitan development*—refer to ongoing processes (longitudinal perspective). By analogy, the first two are snapshots of cities and their regions, while the others are videos of changing urban conditions. Each provides important perspectives for studying urban health.

Urbanicity refers to the unique characteristics of an urban area at a given time. These unique characteristics specify the living conditions in a city, which include physical (e.g., transportation routes) and social (e.g., racial/ethnic segregation) conditions that in turn reflect political, economic, and social forces. Because urban conditions vary both within and between cities, it is possible to assess the impact of urbanicity on health within different neighborhoods and between populations in different cities at a particular time. The intent is to be able to describe the health impact of current (or some other defined period) urban living conditions. Rather than focusing on the factors that contributed to producing these conditions, this perspective seeks to draw associations or links with living conditions and health. For example, to understand differences in asthma hospitalization rates, which are

higher in cities than in nonurban areas and vary between cities or neighborhoods within a city, researchers could compare access to health care, housing conditions, air pollution, and poverty rates. By identifying urban characteristics associated with higher asthma hospitalizations (e.g., inexperienced health care providers, poor housing conditions, or air pollution), public health authorities could design interventions to reduce hospitalizations. Several national studies are now under way that will help to define those features of urbanicity that contribute to asthma prevalence and severity.[4]

It is worth noting that, ultimately, urbanicity is socially constructed and changes with time and place. In the United States, there is a vast scientific and popular literature on urban life.[5–7] In American culture, cities are seen both as the epitome of freedom, culture, and democracy and as the embodiment of sin, corruption, crime, and pollution.[8] These conflicting images have shaped changing views on the influence of urban life on health.

Urban dominance describes a stage in societal development when cities have become leaders of political, social, cultural, and economic life in their region or nation and the point of origin for major social problems and their solutions. As a society reaches the "tipping point"[9] of becoming predominantly urban, city influence on health predominates. The national diffusion of urban forms such as gay communities, community health centers, youth gangs, or the concept of protected parkland illustrates this phenomenon. Each has had a major influence on health, both inside and outside cities. The tipping point may also reverse, as when certain cities lose their population and influence to their suburbs and are reduced in their dominance within a region. The experiences of Detroit and other Rust Belt cities in the 1980s and early 1990s are examples of this process.

The first two concepts provide tools to consider the different ways that urban conditions affect health as place varies. The next three terms are classifications of urban processes: Urbanization, urban development, and metropolitan development incorporate the dimension of time. *Urbanization* describes the movement of people and resources from nonurban areas to urban ones. This historical process reached its peak in Western Europe and the United States between the late 19th and first half of the 20th century; an example is the migration of millions of African Americans in the rural South to the cities of the East and Midwest in the middle third of the 20th century.[10] Urbanization is now occurring at a rapid pace in Asia, Africa, and Latin America, where it will have a powerful impact on health (see Figure 1.2).

Urban development signifies the movement of people and resources within cities. The concentration of low-income African Americans and Latinos within a few low-income neighborhoods in many cities;[11] the creation of new commercial zones, such as the Inner Harbor in Baltimore, Faneuil Hall in Boston, and the Galleria area in Houston; and the replacement of street cars with highways for automobiles in Los Angeles in the early 20th century are all examples of urban development. The process can make living conditions better or worse, and since no city is static, this development is continuous, though it may vary in pace.

The final process, *metropolitan development*, describes the movement of peo-

ple and resources between an urban core and its surrounding suburbs. Examples include the creation of mostly white suburbs surrounding most U.S. cities in the post World War II period,[12, 13] the integration of urban and suburban economies in the past two decades,[14] and the emergence of edge cities.[15]

These three urban processes unfold with specific characteristics in different places and historical periods. Although each has distinct dynamics linked to health, they also share common antecedents. As we explain in Chapter 2, for example, in the post World War II period in the United States, the driving social forces for all three urban processes have been four broad trends: migration, suburbanization, changes in the role of government, and the globalization of the U.S. economy.

Health

Health has traditionally been used to describe the absence of disease, but gradually its meaning has been expanded to include wellness and even human potential. A broad range of outcome measures, discussed throughout this book, are now used in studies comparing health differences between and within metropolitan areas (see Figure 1.3 for one example). These measures include disease rate, or morbidity, and mortality, an extension of disease rate that may also reflect nondisease outcomes such as injury or trauma. Where morbidity and mortality are shown not to differ, other dimensions of health may be significant. Individual-level behaviors, such as poor diet, lack of physical exercise, smoking, and substance abuse, for example, produce disease and can be measured as precursors to disease or as outcomes to target for preventive interventions. Several other measures such as quality of life, quality of life adjusted years, and years of productive life lost, add another important dimension.

Contrasting Approaches to Urban Health

Recent research on urban health has in general taken two different approaches: *urban health penalty* and *urban sprawl*;[16] both are descriptive of different phenomena that have characterized cities in the United States. Urban health penalty grows out of earlier work on the impact of industrialization on the health of urban populations in Europe in the late 19th and early 20th centuries.[17–20] This approach posits that cities concentrate poor people and expose residents to an unhealthy physical and social environment. As a result, cities bear a disproportionate burden of poor health. The urban sprawl approach focuses on the adverse health effects of urban growth into outlying areas: increasing automobile pollution and accidents, sedentary life-styles and the rise in obesity, and social isolation and the breakdown of social capital.[21]

Both of these approaches make important contributions. The urban penalty approach correctly describes the appalling health conditions that persist in many inner cities,[19, 22] the growing racial/ethnic and socioeconomic inequalities in health that result from these conditions, and the necessity of improving health conditions in inner cities if the United States is to achieve its health goals. Similarly, the urban sprawl approach focuses attention on the pervasive and health-damaging