Introduction

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Mjondolos, bustees, favelas, ghettos, slums. Different as they are by name, living conditions, and social and political factors, the populations living in these urban communities all face serious challenges to their safety, getting access to adequate medical care, and living lives free of disease-related disabilities. The people in these neighborhoods and the organizations they often form are among the twenty-first-century public health innovators. Slum dwellers in partnership with researchers, nongovernmental organizations (NGOs), and medical professionals are blazing new trails to access greater opportunities for their families to be healthy. Slum dwellers are building a new kind of urban health system, overcoming exclusion from economies and many basic services, and building new kinds of institutions and social arrangements that are changing not just their own lives but those of billions of people living in cities everywhere. This book aims to help tell their stories.

Addressing the human health challenges facing the millions of urban poor living in informal settlements or slums of the global South can seem overwhelming. Yet we were inspired to write this book by our work with slum dwellers. Time and again, from Salvador to Nairobi to India, slum dwellers would let us know that their health and that of their children formed a major impediment to improving their lives in so many other ways. Thus, we aimed for *Slum Health* to be responsive to and offer a practical guide for all those interested in improving the lives of the urban poor around the world.

As of 2015, not only does a majority of the world's population live in cities, but global poverty is increasingly moving from rural to urban areas. Wealth is increasingly concentrated in the hands of a few, and the percentage of the metropolitan-area population living in poverty is rising. In the growing cities of Latin America, Africa, and Asia, urban poverty is often associated with insecure living conditions—what we call slums in this book—and lack of basic services, political rights, and health care. These forces combine to coproduce poor health for many urban slum dwellers. Yet these generalizations are not the same from city to city or even within the same city; slums and the risks and opportunities slum dwellers face vary from place to place and over time. In this book we set out to dispel the all too common assumption that all slum dwellers need similar interventions—more care, more services, more rights, more economic opportunities, and so forth—and offer details concerning the nuances and challenges facing slum health in specific places: Salvador, Brazil, Nairobi, Kenya, and urban India.

We also want to acknowledge here (and we return to this point throughout the book) that recognizing the differences and unique characteristics of urban poor communities and the populations that live there involves questioning the word "slum" itself. We recognize the term "slum" is loaded with historical baggage that tends to be linked to dirty, disorganized, and dysfunctional places and people. "Slums" too often are assumed to be one thing: unhealthy places and people; and the term fails to acknowledge the assets, resources, and cultures of urban poor places and populations that can contribute to health and well-being. Some would prefer to use alternative, less emotive phrases to describe urban poor communities, such as "low-income communities," "informal settlements," "squatter colonies," "shantytowns," "self-built communities" or, depending on the country, "bustee," *bidonville,* "favela," *katchi abadi,* "barrio," or *kampung.* While we purposely use the term "slum" throughout this book to call attention to the inequities faced by many places and people, we by no means intend it to carry any derogatory associations. In short, "slum" here is used as an entry point for the reader to explore the variegated characteristics of places, populations, and practices that can all contribute to improved health and well-being for the millions of urban poor in the world.

We are not romanticizing the term "slum" or the living conditions faced by slum dwellers; nor are we blaming the poor for the living conditions they face; nor are we blaming the slum for "creating" unhealthy

people. We recognize that forces often beyond the control of the urban poor continue to contribute to the formation and perpetuation of urban slums: from an anti-urban bias among national governments, or a retreat of the state from engaging with the complex issues of urban poverty, to political corruption that profits from urban poverty, to global neoliberal economic pressures that have weakened or privatized government services. This book aims not to grapple with all the forces that have created and perpetuate urban slums, but rather to recognize the human right of the urban poor to lead a healthy life and to offer some strategies toward this goal.

Some have viewed urban slums as natural and inevitable; as the rural poor move to cities, they seek low-cost housing near employment. Yet many urban slums around the world have expanded in the absence of economic growth in these same cities. Slums can grow in cities with declining as well as emerging economies. Similarly, others view urban slums as a stage in the development process; according to this theory, as the economic status of the urban poor improves, they move out of slums into other, presumably healthier neighborhoods. Yet there is a disturbingly low degree of intergenerational socioeconomic mobility for households living in urban poor neighborhoods and slum settlements around the world. As we highlight throughout this book, slum conditions are fundamentally a manifestation of institutions underinvesting in housing, infrastructure, and life-supporting services for the urban poor, not an inevitable consequence of urban growth. At the same time, understanding how the institutions of public health, city development, and other policy decisions have underdeveloped cities to coproduce slum conditions demands a critical look at the histories of colonialism, the "export" of urban planning decisions from the global North to the South, and the emergence of an anti-urban bias in international development. We briefly engage in these histories in chapter 1 and remain cognizant of the legacies of these decisions in efforts to promote slum health today.

While we focus on three regions of the world, some material in this book can be generalized to other urbanizing areas. However, we emphasize a bit of caution here since culture, political processes, and acceptable healthy living conditions do vary from place to place. Interventions should always be mindful of the histories of places and the biographies of the people living in urban areas. Thus, historical and contemporary context is a crucial factor in slum health and must never be ignored for some seemingly universal "best practice."

OUTLINE OF THE BOOK

This book is divided into five parts. Part I introduces the basic concepts and approaches to slum health research and action, and the challenges that need to be addressed. Chapter 1 discusses various definitions and nuances of the term "slum." It provides an overview of the contemporary slum health issues that were shaped by historical evolution of urban informal communities in the global South and the global North, including the United States. We explore how the health challenges of slums in cities of the global South in the twenty-first century often cannot be divorced from the legacies of institutions and policy decisions from the past 150 years in rich, global North countries. Part I introduces the coproduction approach to addressing slum health, which is expanded by specific applications of the approach in subsequent parts. Chapter 2 is a reprint of a paper that discusses suggestions for intervention and actions that may be taken based on better knowledge and research regarding slum-specific biological, structural, social, economic, and political factors that engender adverse health outcomes in slums. Chapter 3 describes five frameworks toward slum health equity: (1) coproduction of slum health, (2) a relational view of slum places, (3) ecosocial epidemiology, (4) urban systems science for the city, and (5) adaptive city management. We explore the extent to which the features of these frameworks exist in the research and practice discussed in each of the three sections on Brazil, Kenya and India. The last two chapters of this section discuss the challenges of slum health in the larger context of urban poverty and upgrading programs. Chapter 4 is a reprint of an article produced by a team of World Health Organization leaders articulating the challenges of urban health promotion. Chapter 5 is an original paper reviewing the health challenges and opportunities associated with urban slum upgrading.

Parts II–IV compare and contrast contemporary slum health issues in three regions of the world that serve as paradigms for major concepts and approaches to understanding slum health that we believe relevant to most regions of the world. We focus on urban Brazil, Kenya, and India because these are regions of the world shaped by different urbanization pressures, political changes, and economic conditions. Brazil is now a middle-income nation with an increasingly strong social support system. Social policies in Brazil—from wealth distribution to social security programs such as Bolsa Familia—are perhaps some of the most promising in the world for reducing urban poverty and addressing social and economic inequalities that contribute to health inequities in urban Brazil.

Yet, even with progressive policies, the number of urban poor in most Brazilian cities is on the rise, according to the 2010 Brazilian census. In Kenya, a new constitution in 2010 guaranteed the right to health, housing, and adequate sanitation. Part III explores the multiple ways slum dwellers and researchers are leading the way toward implementation of these human rights. Nairobi, Kenya's capital, is known for having some of Africa's largest and most unhealthy slums, so investigating the ways civil society groups are working to change living conditions, planning, and policy can offer insights for how to grapple with similar challenges in sub-Saharan Africa. Specifically, we explore how lack of secure land tenure—a chronic condition in urban slums and one that can limit investment in health-supporting infrastructure—does not have to be a barrier to slum health, and how resident-driven improvement projects focused on health can increase the security and legitimacy of settlements and slum dwellers. In India, the worlds' largest democracy, with some of the most polluted and unhealthy urban slums, we highlight the importance of comparative data and community innovation for slum health. The examples from urban India offer suggestions for how health infrastructure can both support community organizing and coproduction strategies that involve researchers and state institutions in urban health promotion. For instance, we highlight a case in urban India where community groups and state institutions negotiated a sanitation intervention that bypassed official infrastructure standards to meet both local needs and cost-effectiveness goals, ultimately ensuring that healthy infrastructure development was embedded in a broader poverty alleviation agenda.

In addition to organizing this book by three geographic regions of the world, a major theme this book explores is the interaction between the biology of disease ("the cell") and the structural, historical, social, economic, and political forces ("the street") that ultimately affects disease outcome and distribution in slums. A recent catastrophic world event illustrates the need for this type of exploration—the Ebola epidemic in West Africa. As of February 2015, more than 23,000 confirmed, probable, and suspected cases of Ebola and more than 9,300 Ebola-related deaths had been reported.[1] Although the Ebola epidemic was recognized as early as 1976, the magnitude of the 2014–2015 epidemic is unprecedented. In the early phase of this West African epidemic, a variety of factors were blamed: local cultural practices, poverty, inadequate health infrastructure, and political strife. However, these factors have always been known to be associated with Ebola epidemics. What was rarely mentioned in the international discourse concerning this epidemic was

the fact that this was the first time in history that Ebola entered urban centers largely comprised of informal settlements. Slums were the "elephant in the room."[2] When a highly transmissible virus enters urban slums, the disease epidemic takes on a different characteristic, and its control requires understanding both the biology of the virus and the environmental and community social context in which this virus transmits itself. This observation is not limited to the Ebola virus. The world will witness and experience many other episodes of epidemics like this, caused by other highly transmissible agents (e.g., the Zika virus in Brazil), as well as noncommunicable diseases. This book discusses these interactions in chapters that focus on slum-specific infectious and noncommunicable diseases.

Part II, "From the Cell to the Street: Slum Health in Brazil," focuses on Salvador, Brazil, the third-largest city and the first colonial capital of Brazil. We explore how scientists and residents have built an action research program aimed at improving the health of residents Pau da Lima, one of the city's largest favelas. We examine how clinicians working in a local hospital discovered a disproportionate number of cases of leptospirosis, an infectious disease caused by the spirochete bacteria *Leptospira,* transmitted by rat urine. We highlight how clinical and community research was crucial for understanding this disease and other health issues faced by slum dwellers. We show how clinical and biomedical researchers and slum dwellers can combine their expertise to coproduce improvement in slum health.

In Part III, "Urban Upgrading and Health in Nairobi, Kenya," we focus on slum upgrading in Nairobi, Kenya. Kenya and Nairobi have a different colonial and cultural legacy than Brazil, one that presents this region with different challenges. While slavery and racism defined significant aspects of urbanization and health in Brazil, British colonialism in Nairobi organized the city into segregated land uses, with the largest and most productive areas reserved for Europeans, and marginalized land left for Indians and Africans. The infrastructure of colonial Nairobi was built to extract resources, not to facilitate internal movement or provision of services. Thus, the legacy of colonial land segregation and development decisions shapes Nairobi's slums today. In Mathare, the slum we focus on, residents live on steep slopes and flood-prone land sandwiched between rivers and highways. Almost all supporting services, including water, sewer, electricity, and health care, are "informal"—meaning that they are not provided by the state. Yet we highlight how slum dwellers and academic partners have gathered data to replan

the community and successfully advocate for state-supplied services, primarily infrastructure. That story alone would be welcome among the many, more frequent cases of evictions and demolitions that slum dwellers face across the world. However, in Nairobi, the research and advocacy process also contributed to a new regional plan that includes Mathare within the larger fabric of the city and now acts as a model for inclusive urban development. Further, slum dwellers in Nairobi have participated in and significantly shaped new national policy on slum upgrading and prevention, ensuring that all slum dwellers will benefit from legal protections from evictions and human rights to water, sanitation, and health, just to name a few. In this section, we highlight how slum dwellers coproduce knowledge and action for their health and well-being, sometimes with and sometimes antagonistic to the state.

In Part IV, "Indian Cities and Slum Health Planning," we turn to India and the challenges faced in one of the world's largest and fastest-growing economies. India's 2010 census reported that about 93 million people, or about 21 percent of the total urban population, live in slums, and a substantial proportion of the slum population consists of squatters, migrant colonies, pavement dwellers, families living on construction sites, street children, and other vulnerable populations. Since at least 2011, India has been developing the National Urban Health Mission (NUHM), focused on the implementation of a healthy city framework in Indian cities and towns with the cooperation of local municipal bodies. The NUHM seeks to improve the health of the urban poor by facilitating equal access to available health services and strengthening the existing capacity of health delivery. The NUHM has designated 430 cities and towns across India for program implementation. In this section, we highlight the challenges Indian slum dwellers face in terms of access to basic infrastructure and services, including primary care. We emphasize the gendered dimensions of these inequalities and highlight the work of the Urban Health Resource Center (UHRC) in Delhi and how it has helped organize slum-dwelling women to identify core health issues and advocate for services.

Part V, comprising the final chapter of this book, addresses some of the gaps and future considerations regarding slum health. In particular, we highlight the need for more research especially in the area of noncommunicable diseases emerging in slum communities and their interaction with prevalent infectious diseases; development of new metrics designed to assess the disease burden in slums; new international, national, regional, and local policies directed at maximizing health in

slums; and training in research and action to address the major gaps that persist in slum health coproduction.

Throughout this book, we seek to combine the viewpoints and voices of slum dwellers and outside professionals. We use interview and ethnographic data along with survey statistics, spatial mapping, and biological measures. We include discussions of science and medicine along with those of planning and policy. For us, this combination of methods, data, and viewpoints values multiple forms of expertise and recognizes that slum health science is as much political as technical.

The prelude narrates a brief reflection from one of our Kenyan slum-dwelling partners. The hope is to situate the reader in the everyday life of the slum dweller and to recognize the multiple challenges and even opportunities he or she might face for being healthy. We also aim to highlight that no slum dweller should be blamed for her or his lot in life and that those of us with privileges—in education, politics, resources, culture, or the like—can and must work in partnership with slum dwellers to improve their lives and living conditions. We hope this book inspires you to act.

NOTES

1. Centers for Disease Control (2015). *Morbidity and mortality weekly report* 64(7; February 27):186–87.

2. Snyder, R.E., Marlow, M.A., & Riley, L.W. (2014). Ebola in urban slums: The elephant in the room. *Lancet Glob Health* 2(12; December):e685.