

## Chapter 3

# Urbanization and Emergence of Infectious Diseases

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### ABSTRACT

*The process of urbanization is ongoing and continuous since the industrial revolution in the 18th century. The United Nations has estimated the growth of world's urban population to be 6.3 billion by 2050. Rapid influx of migrants in cities led to the development of informal urban settlement which is the initial probable source of emerging communicable diseases. Due to overcrowding, closer contacts with wild and domesticated animals increases the risk of emerging zoonotic diseases. Adequate housing, proper city planning, proper hygiene and sanitation, and surveillance can help in preventing transmission of pathogens, emerging infectious diseases, and decline of ecosystem. This chapter considers the role of urbanization that plays in the emergence of zoonotic diseases and cross-species transmission of pathogens into new host population through exploring the dynamics and complexity of ecological system at wildlife-livestock-human interfaces and the factors affecting the epidemiology of disease emergence.*

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## **INTRODUCTION**

Urbanization is an ongoing process of increased and continuous movement and settlement of people around specific surroundings (Phillips, 1993). Economic growth, higher education, job employment, better health care, and safety of social services around cities are the reasons that alter the demographic and socioeconomic structures of both urban and rural areas (United Nations, Department of Economic and Social Affairs, 2014). The growth of the world's urban population, mainly in Africa and Asia, is expected to be the addition of another 2.5 billion by 2050. The most significant urban growth will likely occur in India, Nigeria, and China (Cohen, 2015). According to the UN development agenda, India, China, and Nigeria are expected to account for 37% of the total growth in urban areas of the world's total population by 2050. India, China, and Nigeria will have an additional 404 million, 292 million, and 212 million urban residents respectively by 2050. With the increase in urban population globally, the world is experiencing an increase in the growth of large cities to 'megacities' with around 453 million inhabitants, covering almost 12% of the world's urban population. Over recent years, megacities like Delhi and Shanghai, with 25 million and 23 million residents respectively, are growing at 3% per annum (Cohen, 2015).

United Nations Development Program (UNDP) reported a continual upsurge in the unequal wealth and resource distribution in both developing and developed countries, causing hindrance to economic development, threatening social harmony, and leading to recessions. Due to income inequality, corruption leads to a decline in environmental regulations, (Wang et al., 2021) causing various types of pollution, including greenhouse gas emissions. Income inequality has varied effects on the societal classes. Due to unequal distribution of resources, the poorest people of society are most affected, leading to the poorest migrating to cities and forcefully adapting an unhygienic lifestyle that not only affects environmental health but also surges the spread of infectious diseases. While protecting environmental degradation and attaining sustainable goals worldwide, climate uncertainty and income inequality are repeatedly featured as obstacles (Kyte, 2014). Besides globalization, climate change, lifestyle changes, unemployment, and psychology are some of the whys behind the mass migration of people from villages to cities. Because of migration, trade, and lifestyle of the people changes. Changes in eating patterns, living in unhygienic conditions, and increased demand for buying and selling products associated with urbanization also may help spread infectious diseases (Li et al., 2022). Urbanization also imparts adverse effects that increase the transmission of pathogens due to various human and social factors such as population size and density, migration, transport hubs, pollution, hygiene and sanitation, climatic factors, socioeconomic inequalities, and urban inequity (Boyce et al., 2019). The rise of new modern cities

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