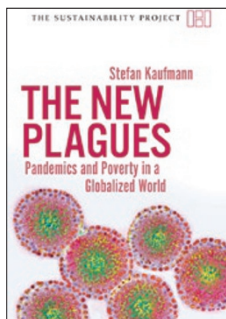


How epidemics happen



The New Plagues: Pandemics and Poverty in a Globalized World

Stefan Kaufmann

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Reviewed by Megan Murray

“Never has it been so easy for an epidemic to spiral into a pandemic.... We live in a global village with 800 million tourists, 1.5 billion flying passengers and millions of legally and illegally exported animals every year.” So writes Stefan Kaufmann in his book, *The New Plagues*. Kaufmann was not referring to the new strain of the H1N1 influenza virus first recognized in Mexico in April 2009 and two months later declared a global pandemic by the World Health Organization. Indeed, *The New Plagues* was originally published in German in 2007 and not released in English until 2009. But Kaufmann is clearly a man who knows whereof he speaks, especially when he writes about how epidemics happen in an increasingly globalized world. As director of the Max Plank Institute for Infection Biology in Berlin and a leading vaccine researcher, Kaufmann brings to this treatise both an extensive knowledge of the biology of microbes and the practical experience of one who has worked for many years at the task of bringing the fruits of that science to people who need it most. Given that perspective, it is hardly surprising that Kaufmann described the epidemic trajectory of a new influenza strain with such foresight.

H1N1 may be the cause of the first pandemic of the new millennium, but it is only one of a series of potential epidemic agents, such as SARS (severe acute respiratory syndrome) virus, Nipah virus, avian influenza virus and extensively drug-resistant *Mycobacterium tuberculosis*, that have riveted the world since the recognition of HIV in the 1980s. If there is a recurring theme here, it is not only that epidemics make for good press, but also as Kaufmann effectively argues, that globalization has changed the landscape on which infections spread. International airline travel was a major factor in the rapid intercontinental spread of HIV infection and SARS, and data from the first wave of the 2009 H1N1 epidemic suggest that the number of cases exported to other countries increased with the number of travelers arriving from Mexico. But globalization also increases the threat of epidemics in more subtle ways—by creating the often complex social, political and economic circumstances through which infections emerge, evolve and spread.

Consider, for example, the rise of tuberculosis in Eastern Europe that occurred in the 1990s during the economic collapse that followed the fall

of communism. In a controversial study, researchers found that countries that received loans from the International Monetary Fund (IMF) experienced an increase in tuberculosis-related deaths after receiving this aid, with country-specific death rates rising proportionally with the size of the loan. How might IMF loans have led to these increases? Critics argue that this champion of financial globalization requires loan recipients to agree to austerity measures that may decrease government funding for health care as well as other conduits to proper health such as improved food, sanitation and education. The authors of the study speculated that the loan ‘conditionalities’ imposed by the IMF led to reduced funding for tuberculosis treatment programs and thereby contributed to one of the most abrupt and rapid tuberculosis epidemics of our time.

In *The New Plagues*, Kaufmann cites this and many other examples as he diligently places the disease outbreaks within their biological, social, political and economic contexts. The first half of this concise and readable treatise introduces a general audience to the main players in the perennial battle between man and microbes. In chapters entitled “The Invaders,” and “The Defenders,” Kaufmann neatly summarizes the vast fields of microbiology and immunology, punctuating an overview of these topics with entertaining anecdotes and topical examples that testify to his encyclopedic grasp of these fields. In subsequent chapters, he provides a lucid review of HIV, tuberculosis, malaria, cholera and influenza among other major causes of infectious disease morbidity and mortality.

Although Kaufmann’s clear authoritative style distinguishes him from his many competitors in the field of popular books on emerging infectious diseases, it is his whirlwind tour of the world of global health that truly sets this book apart from its rivals. From ‘big pharma’ to nongovernmental organizations to the World Bank, the IMF and the Gates Foundation, Kaufmann covers the gamut of organizations and agencies that make up this complicated network of actors and provides an insider’s perspective on the relative contributions and failures of each. This is essential reading for any newcomer to the field, with the caveat that Kaufmann sometimes finds himself on treacherous ground when he ventures into this more subjective terrain. Unlike the clarity and brevity of his earlier chapters on the science of epidemics, these later chapters occasionally devolve into oversimplification, with scant references to direct readers to more nuanced treatments of these topics. Kaufmann’s terse treatment of the IMF story, for example, implies that the organization actively instructed its loan recipients to cut back on life-saving tuberculosis care, an accusation that as far as I know has not been made by even its fiercest critics.

In the final chapters of *The New Plagues*, Kaufmann spells out his vision of the future, outlining both the potential pressure points that could lead to new epidemics and a recipe for action that may prevent them. An essential part of this vision is the recognition that poverty and inequity are the potential drivers of future pandemics and that the enormous scientific progress of our time must and can be allied to economic and social change to yield durable results. In the words of the economist Amartya Sen:

“We live in a world that is not only full of dangers and threats, but also one where the nature of the adversities is better understood, the scientific advances are more firm and economic and social assets that can counter these menaces are more extensive. Not only do we have more problems to face, we also have more opportunities to deal with them.”

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