

Syndemics: committing to a healthier future

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The term syndemics was first coined in the 1990s by Merrill Singer¹ as a new theoretical perspective to understand the synergistic interaction of coexisting diseases and biological and environmental factors that worsen the complex outcomes of those diseases in populations. Issues such as global warming, environmental degradation, global health disparities, human rights violations, structural violence, and wars exacerbate syndemics with damaging impacts on global health.¹ A syndemic understanding of disease is now gaining recognition in the public and global health research spheres.

The *Lancet Series* on syndemics,¹⁻⁵ led by Emily Mendenhall from Georgetown University, Washington, DC, USA, introduces the syndemic approach, explains important contrasts with conventional approaches to public health and health-care delivery, and explores how syndemics can be used to tackle health inequities.

The first *Series* paper by Merrill Singer and colleagues² introduces the contributions of the syndemic approach for understanding both interacting chronic diseases in a social context and the importance of syndemic interactions for prognosis, treatment, and health policy. Unlike common medical approaches based on comorbidity and multimorbidity, a syndemic framework explores the health effects of identifiable disease interactions and the social, environmental, or

economic factors that promote such interaction and worsen disease.

The first syndemic identified was the SAVA syndemic (substance use, violence, and AIDS) and, in fact, many of the earliest identified syndemics include HIV/AIDS as a component. HIV/AIDS is often an integral component in disease interactions and is greatly affected by social, biological, and structural factors. But syndemics are not limited to infectious diseases. Non-communicable syndemics are the focus of the second *Series* paper,³ highlighting their particular relevance for low-income urban populations where infectious diseases are often prioritised for achieving health-care goals. Emily Mendenhall and colleagues³ call for funding for research and data that use a syndemic framework. To lend support to their argument, research, including randomised controlled trials that evaluate syndemics models, will need to show how syndemics can cost-effectively improve health outcomes.

Since health adversities tend to cluster among people in positions of structural vulnerability, this shift in approach will be important for the health of individuals in environments in which upstream social, economic, structural, and political determinants heighten their risk of poor health or death. Sarah Willen and colleagues⁴ explain, in the final *Series* paper, how a human rights approach can facilitate implementation and evaluation of a syndemic approach among vulnerable groups. Combining the two approaches provides an evidence-based foundation for essential collaboration between stakeholders, including clinicians, public health, and civil society professionals, to tackle health inequalities and promote changes in policy.

For a syndemic framework to be incorporated into current approaches for research and policy making, a deeper understanding of syndemic theory needs to be established. In a *Viewpoint* that accompanies the *Series*, Alexander Tsai and colleagues⁵ draw attention to misconceptions in the literature. They reveal that most quantitative studies aiming to test disease interactions on the basis of syndemic theory have used an empirical specification—that is, they have focused on a sum score of exposures, which cannot elucidate



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syndemic interactions or mutually causal epidemics. This misconception has led to the notion that a syndemic approach justifies the need for complex and expensive multicomponent interventions that simultaneously target all co-occurring epidemics. In fact, where synergistically interacting epidemics are not mutually causal, single-component interventions could be a cost-effective alternative, particularly in low-income settings. Tsai and colleagues call for future studies to incorporate data from multiple levels of analyses to facilitate better understanding of how epidemics interact both at the level of populations and individuals. Such evidence would identify the most appropriate interventions to improve the health of vulnerable populations.

Growing awareness and understanding of syndemics, their evolution over time, and the application of a syndemic framework in concert with other approaches is now needed to reduce the burden of health inequities

globally. The greatest challenge will be to introduce new collaborative strategies, particularly in politically charged environments. But, as Merrill Singer notes, “The will and commitment to find and use this knowledge at local, national, and international levels is what is most sorely needed to ensure a just and healthier future.”¹

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We declare no competing interests.

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- 5 Tsai AC, Mendenhall E, Trostle JA, Kawachi I. Co-occurring epidemics, syndemics, and population health. *Lancet* 2017; **389**: 978–82.

Syndemics: a new path for global health research

How we think about disease pathologies affects how we design policies and deliver care to those most affected by social and economic inequities. Conventional frameworks in medicine and public health, such as comorbidity and multimorbidity, often overlook the effects of social, political, and ecological factors. As the papers in this Series^{1–3} and the linked Viewpoint show,⁴ the theory of syndemics improves on conventional frameworks in both theoretical and practical terms by illuminating how macro-level social factors promote disease clustering at the population level and impact disease pathologies at the individual level.⁵

The syndemics concept has three core features. Syndemics involve the clustering of two or more diseases within a population; the biological, social, and psychological interaction of those diseases; and the large-scale social forces that precipitate disease clustering in the first place.⁶ Originally developed by medical anthropologists to make sense of HIV/AIDS,^{5,7} the theory of syndemics offers an innovative way of understanding why diseases cluster together in populations disproportionately affected by poverty, social exclusion, gender-based violence, climate change,

displacement arising from agricultural or industrial waste or pollution, and other forms of social and environmental stress.

The introduction of tobacco as a corporate commodity to Oceania precipitated one such syndemic.⁸ Tobacco use does not always interact syndemically—for example, plaque build up in the coronary arteries from tobacco use that impedes healing from a back injury may reveal a biological interaction but not reveal a macrosocial factor as a source of their clustering.⁹ Among Pacific Islanders, however, tobacco use clusters with the rapid escalation of non-communicable diseases (NCDs) such as coronary heart disease, cancer, diabetes, and chronic obstructive pulmonary disease.⁸ The rise of tobacco-related illness cannot be divorced from the introduction of industrially manufactured cigarettes to Pacific Islanders by tobacco companies.⁸ In this case, the concurrent rise in smoking and in this cluster of NCDs among smokers (as well as the biological impact of smoking on these conditions) comprises a syndemic. Syndemics involve more than simply co-occurrence of two or more diseases; they emerge when factors such as corporate exploitation, poverty, social trauma, environmental threat, and limited

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