

Understanding modern infectious diseases and their macroeconomic impacts

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Curbing or even containing a pandemic breakout like COVID-19 almost always implies unpalatable choices between lost lives and livelihoods. The authors of a new study just published in the *Journal of Economic Literature* set out to better understand the impacts and trade-offs policymakers must consider when addressing modern infectious diseases

and their macroeconomic repercussions.

It is undeniable that the global COVID-19 [pandemic](#) has drastically impacted the lives of practically every person on the planet. Since the outbreak started in early 2020, it has proved to be an unwanted, real-time experiment for the economic and social impacts of a modern infectious disease, as well as a test-bed for policy responses from governments. What was entirely underestimated, however, was the dynamic nature of the pandemic, which sent repeated shockwaves around the world as various mutations of the virus complicated mitigation efforts and containment measures.

COVID-19 is not the first global pandemic to hit humanity and it is unlikely to be the last. To better understand the economic consequences of infectious diseases, a team of researchers conducted a survey of recent theoretical and empirical insights into the economic and policy implications of modern infectious diseases.

"Our survey is broader and more general than previous studies on this topic, as it ties in literature on other important infectious diseases such as HIV, malaria, tuberculosis, and influenza. We captured a large chunk of the emerging literature on COVID-19 from the early 20th century up until August 2020, distilling insights that generalize beyond the context of (early) COVID-19," explains IIASA Economic Frontiers Program Director, Michael Kuhn, who was one of the study authors.

The paper provides a comprehensive and general set of insights into the economic consequences of infectious diseases, taking particular account of the responses of individual economic actors together with a set of policy lessons regarding both the response and prevention of epidemic and pandemic outbreaks.

The survey revealed distinct channels of disease impacts relating to very

specific disease typologies. Unknown and fast-moving diseases such as COVID-19 have fast, hard-hitting impacts in terms of, for example, consumption losses or lost labor supply, while endemic diseases like HIV/AIDs, malaria, or tuberculosis lead to longer-term behavioral and societal responses such as shorter-term prospects and the stifling of human capital investments.

"It is important to keep track of long-term impacts as driven by longer-term changes in the incentives to accumulate human capital in terms of social-cohesion. In addition, the huge role of heterogeneity in various dimensions plays a crucial role in pandemic outcomes, as they are typically very dependent on social status, which means that there are large distributional effects of pandemics within and across countries. This also emphasizes the importance of realizing that there can be no one-size-fits all policy to mitigate the impacts of a pandemic—the implementation of lockdowns, for instance, is much less appropriate in poor countries and/or for precarious communities," notes Klaus Prettnner, a study author from the Department of Economics at the Vienna University of Economics and Business (WU).

The results further indicate that it is crucial for implemented policies aimed at coordinating or focusing individual efforts during the pandemic to be complementary rather than substitutes for "normal" policies. As a consequence, expectations and focal points matter, which in turn calls for consistent policies and policy communication, as well as coordination between policymakers. This is particularly important in international pandemic settings where countries are linked both economically and epidemiologically.

"In the context of epidemics, the challenge is to design policy interventions and employ them in a way that reduces the trade-offs between lives and livelihoods and, in so doing, reduce the welfare loss from the pandemic, both in the short-term and the long-term. While

effective policies will minimize the trade-off, they typically cannot eliminate it altogether," says Kuhn. "The choice between these outcomes, in other words, weighing the loss of lives against the loss of livelihoods, cannot be delegated to scientists, but has to be decided on the basis of a transparent, evidence-based, ethics-guided, and inclusive social debate on which to base policies. Misunderstanding or misrepresentation of this generates dangerous misperceptions and may harm trust in institutions and social capital in the long run."

According to the authors, the avoidance of such trade-offs implies a huge value with regard to prevention and pandemic preparedness through investments in health care systems, pandemic monitoring and early warning systems, international support networks, and multi-purpose and ready-to-adapt pharmaceuticals (i.e., vaccines). In addition, the continued education of the population regarding modern infectious diseases and their impacts plays a crucial role in preparedness for future pandemics.

"Global epidemics and pandemics can take an enormous human toll and impose a staggering economic burden, the worst impacts of which are normally born by the most vulnerable populations in our society. Early and targeted health and economic [policy](#) interventions can often substantially mitigate these impacts, but understanding the dynamics of epidemics, in other words, how they spread and the ensuing lags and leads; the regime changing role of mutations; the interdependency between viral and host populations; and the long- vs. the short-term economic and social effects, is essential," concludes David Bloom, a senior researcher with the Department of Global Health and Population at the Harvard T.H. Chan School of Public Health.

More information: David E. Bloom et al, Modern Infectious Diseases: Macroeconomic Impacts and Policy Responses, *Journal of Economic Literature* (2022). [DOI: 10.1257/jel.20201642](https://doi.org/10.1257/jel.20201642)

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