



INSEAD Insights on Disease Outbreaks

The COVID-19 crisis has created significant disruption to business globally. To help governments, policy makers, and business leaders engage together to meet this challenge, INSEAD's Humanitarian Research Group and Healthcare Management Initiative have assembled the following insights associated with outbreaks more generally based on previous and ongoing research on related topics.

Demand Management

Managing capacity constraints that arise when normally functioning health systems become overwhelmed is essential for the continued stability and health of populations and businesses. Efforts to manage demand involve avoiding and smoothing peaks that can risk the stability of a country's healthcare system. Frontline health and community outreach workers can play a vital role in screening and early confinement to limit the spread.

Supply Management

Beyond managing demand for scarce resources, the capacity of such resources can be increased through optimal usage and creative means. In this context, operations management can play an important and versatile role: Scientific insights can be used to improve operations (e.g., flexible use of hospital space including intensive care units¹, rescheduling of operations, efficient shift planning) and international coordination of the usage of scarce resources such as vaccines², among others.

Supply Chain Resilience

Preparedness is key when dealing with large-scale epidemic crisis³, and supply chain resilience plays a crucial role in achieving this. Issues of supply chain lockups require that elements of resilience are built-in to avoid dependence on single suppliers. In the case of pharmaceutical and medical supply companies, for example, this may imply sourcing 50% of their products within borders and 50% internationally. Policy makers may also seek to ensure the firms such as these demonstrate such resilience to the U.S Food and Drug Administration and other regulatory bodies. Dependence on a single or a few sources is risk-prone and good governance should mitigate these risks.

Localized Decision-Making

Experts agree that improving efficiency and expertise at the local level is crucial in fighting epidemics⁴. In humanitarian operations, which can be extremely challenging and highly uncertain, it has been shown that approaches involving limited centralization are often more cost-effective⁵. In this light, there is much that

cities and local governments can do as a result of their proximity to the population, as well as their autonomy to act quickly in line with the context and specific needs of the local population. Ensuring that city governments have the necessary resources and decision-making powers may help, particularly as such entities can coordinate the ways in which small businesses can best contribute. Individual organizations may benefit from disaster management planning that includes elements such as top-down and bottom-up communications in process improvement, flexible processes, disaster recovery strategy, and a continuous improvement approach⁶.

Infectious Disease Risk Assessment and Management

Understanding, assessing, and mitigating risk is a critical leadership and management skill in times of crisis. Communicable disease risk is not niche: rather, it is here to stay, and an appreciation of those risks and how to model them is important to making effective preparedness and mitigation decisions⁷.

Financing and Disbursement of Funds

Country-level responses to pandemics highlight critical dimensions of inequality across health systems—not only in the overall level of funding, but also the ability to rapidly disburse funds in crisis situations⁸. Financial innovations can address some of these challenges. Parametric insurance, for example, is a sovereign insurance programme employing a multi-country risk pool in which a pre-defined event such as a pandemic allows relief funds to flow quickly to affected regions to address, in a timely manner, healthcare (and other) crises.

International Collaboration

Despite pandemics and epidemics of recent years, countries and organizations still lack governance systems equipped to openly sharing information. They must overcome any political differences or competitive concerns and allocate appropriate funding to facilitate exchanges, e.g. demand for products, so we are more efficient and better prepared⁴.

Public-Private Partnerships

Finally, private companies can play an important role in preparedness and response. The formation of public-private partnerships combines different levels of expertise and influence and can allow strategies otherwise not possible⁹. Clearly, it also entails many challenges, e.g., to what extent can companies take social responsibility and which of these responsibilities should be resolved prior to a crisis¹⁰. Resolving such issues and creating partnerships, however, play an important role in outbreak preparedness.

1 van der Sluijs AF, ER van Slobbe-Bijlsma, SE Chick, MB Vroom, DA Dongelmans, and APJ Vlaar (2017). The Impact of Changes in Intensive Care Organization on Patient Outcome and Cost Effectiveness - A Narrative Review. *Journal of Intensive Care*, 5, 13

2 <https://knowledge.insead.edu/responsibility/improving-pandemic-preparedness-2861>

3 <https://knowledge.insead.edu/blog/insead-blog/covid-19-preparing-for-the-worst-before-crisis-strikes-13366>

4 <https://knowledge.insead.edu/blog/insead-blog/local-capacity-building-crucial-to-contain-pandemics-7506>

5 De Vries H and LN Van Wassenhove (2020). Do Optimization Models for Humanitarian Operations Need a Paradigm Shift?. *Production and Operations Management*, 29(1), 55-61

6 <https://publishing.insead.edu/case/hotel-dieu-de-france-deployment-and-improvement-a-disaster-relief-plan>

7 Stevenson MD, L Uttley, JE Oakley, C Carroll, SE Chick, and R Wong (2020). Systematic Review of Creutzfeldt-Jakob Disease (CJD) Risk via Surgical Interventional Procedures and Economic Modelling of Management Policies. *Health Technology Assessment*, v. 24(11).

8 <https://www.ft.com/content/74df3565-166c-310f-adf3-ac04da6098b4>

9 Rangan, S, R Samii, and LN Van Wassenhove (2006). Constructive Partnerships: When Alliances between Private Firms and Public Actors can Enable Creative Strategies. *Academy of Management Review*, 31.3: 738-751.

10 <https://publishing.insead.edu/case/fighting-flu-tamiflu-stockpiling-a-pandemic-preparedness-policy>