What Should Insurers Require From Research and Policy to Make Pandemic Business Interruption Insurable?

After the largest and least-anticipated catastrophes occur, the question soon gets asked: How can insurance cover this risk? In the immediate aftermath, insurers all too often want to cancel coverages, seeing the new risk level as toohigh and the quantification of risk as unconstrained.

This was the situation after the Great Fire of London in 1666. It was the question being asked around commercial and aviation insurance after the terrorist attacks of September 11, 2001. It is an active debate in the city of Paradise, California, 95 percent of which was destroyed in the 2018 Camp Fire.

In each case, government needed to invest in a program of risk reduction. Initially, the role for insurance should be to promote these targeted investments. Improved resilience benefits everyone while enabling insurance to cover the residual risk.

For London, risk reduction following the Great Fire called for regulations mandating that the city be rebuilt with brick and tile in place of place of timber and straw. The narrow medieval roads were widened to create fire breaks. The first private, public, and mutual fire insurers established themselves in the newly reconstructed city. With memories of the Great Fire strong in the public's mind, thousands of building policies were sold.

After September 11, to prevent future hijackings and other terrorist attacks, immediate action was taken to screen all passengers and baggage. Then came campaigns to infiltrate and destroy terrorist cells before they could mount more attacks. Measured by outcome in the United States, these actions have proved effective at thwarting further catastrophic attacks. Within 15 months of the September 11 attacks, commercial terrorism insurance was resumed (with a government-backed reinsurance mechanism).

For the sprawling, forested city of Paradise and its 26,000 residents, plans have been developed to create broad firebreaks around the town, to require all new buildings to be constructed according to a stringent building code, and to remove dead trees and vegetation. Also, the local utility provider, Pacific Gas and Electric, now switches off power when high winds are forecast during fire season. If the Paradise proposals are successfully enabled, they too will bring back insurance, along with the city's residents.

How do these lessons apply to pandemic business interruption insurance after the COVID-19 catastrophe?

Like terrorism, a pandemic can only be countered with co-ordinated international action. With vaccination campaigns progressing, now is the time for insurers to lobby for research and policy actions that will reduce future risk so as to enable the insurance industry to cover more of the costs of pandemic business interruption.

The industry could set a target—for example, that the risk of a new global pandemic involving lock-downs needs to be well below 1 percent per year. That's comparable to three other medium- to high-mortality, human-infecting novel coronaviruses that have emerged since 2000. Insurance coverages can only be designed and competitively priced once appropriate risk reduction has been achieved or is at least underway.

We cannot predict a future outbreak's critical properties, such as its infectiousness, mode of transmission, or age-related lethality. These properties will most likely be different from those of COVID-19. Therefore, we should plan with a minimum-regrets strategy that could be applied in any outbreak.

Key to protection is establishing multiple lines of defense, each with the potential to prevent further viral incursion.

We can identify five principal barriers of protection:

- Barrier 1—Prevent the most dangerous viruses in animal populations from making the jump to human populations.
- Barrier 2—Move to achieve complete containment and isolation of all those who are infected as soon as a new human-lethal virus has been identified.
- Barrier 3—Prevent regional and global viral spread through transportation cancellations, travel restrictions, and enforced quarantines.
- Barrier 4—Have in place everything required to employ active measures to identify, trace, and contain the infected, along with all those with whom they have been in close contact.
- Barrier 5—Through preparatory capacity-building, enable the accelerated production and delivery of vaccines.

In a small number of countries, the spread of COVID-19 was stopped by the third and fourth barriers. Most countries have fallen back on the fifth barrier, the availability of a vaccine, hoping that the most dangerous mutations are suppressed and vaccination rates move faster than the next wave of infections.

The outbreak of SARS in 2003 was also only stopped at the third and fourth barriers. However, the barrier with the greatest potential to stop a future pandemic is the second: complete containment of a new outbreak.

We can add some more detail below in ten research and policy initiativesdesigned to help strengthen these barriers.

1. Zoonotic virus survey, confinement, and eradication

   Viruses in wild-animal populations are the least-understood agents of the natural world. We need a comprehensive survey and classification of such viruses, identifying those with the potential to infect humans. We should aim to drive the most dangerous viruses to extinction (as has been achieved with the variola virus, or smallpox), ideally before they can make the species jump. Where dangerous viruses are present, all human contact should be restricted and preparatory vaccines developed.

2. Surveillance of new infectious disease

   Building on what the World Health Organization has already established, we need the enhanced operation of a worldwide surveillance system, using multiple streams of informal and official information, assisted by artificial intelligence, to identify and bring global attention to the first few cases of any new infectious disease. National and regional governments should recognise that there is no shame in identifying a new disease outbreak in their territory. The system also needs to be able to cope with false alarms and accept that they are the price to pay for effective surveillance.

3. Rapid containment

   International agreement is required to implement effective containment measures in under five days against any new or unrecognised disease outbreak, assuming a worst-case scenario of human-to-human pre-symptomatic spread. Developed countries will be expected to provide this capability themselves. Developing countries can expect the rapid containment and isolation procedures to be provided from outside.

4. Understand the role of air travel in viral spread

   Based on the analysis of data from the COVID-19 pandemic, we require a comprehensive predictive model for the role of air travel and other transportation systems in spreading a virus. How are passenger movements displaced to alternative routes or deterred by cancellations?What is the impact of quarantine arrangements and how they are policed? Having this knowledge, we would know when routes should be cancelled, when all passengers should be tested, and when and where to enforce quarantines.

5. Effective contact tracing

   Take the learning and experience from every country that has implemented contact tracing and testing to develop best practices on personnel and procedures. These should include how to maximise the identification and containment of all those likely to have become infected, how to employ smartphones to identify areas with high risk of infection, how to use local knowledge to trace contacts, and ways to ensure that quarantines are strictly observed.

6. Alternatives to lock-downs

   A programme of research, design, and innovation can help determine how industries such as retail, transport, hospitality, and entertainment can continue to function while limiting infection. This should include the role of ventilation, enhanced masks, social distancing, surface hygiene, testing, vaccination passports, etc. A key component is developing ways to measure and reward infection avoidance.

7. Improved hospital capacity

   We need to design and test ways to expand hospital capacity and ICU care, while providing maximum protection to staff, throughout the duration of a pandemic. Important questions to answer include: What surge in equipment, such as ventilators, might be needed? What constitutes the best personal protective equipment? How can we ensure adequate supply? To answer those questions, we must look at and analyse the COVID-19 experience and best practices from multiple countries, along with the outcomes of different procedures.

8. Rapid vaccine production

   The goal should be to have systems and preparatory procedures in place to accelerate the development, testing, and production of a vaccine against a new virus within three months. Vaccination across the population should be achieved within another three months. In particular, after the success of mRNA-based vaccines for COVID-19, it should prove possible to develop new vaccines in weeks and test for safety and efficacy in a few months. Rapid vaccination should prevent second or third waves of a future pandemic.

9. Pandemic risk management optimization

   It is crucial to develop a platform and modelling capability for comprehensive pandemic risk management optimization, designed to track and forecast: infections, hospitalizations, deaths from the pandemic, deaths from other infectious diseases, and future deaths from the delayed treatment of other conditions.

10. Strategies to minimise long-term economic damage

    Economic modelling of how to manage a future pandemic lock-down by sector can help ensure minimum long-term economic and cultural damage.

The challenge in enabling this research and policy agenda is that no single agency owns all these questions, which run from field virology through immunology, public health policy, and economic modelling.

Terrorism presented a similar challenge. In the aftermath of the attacks of September 11, the US Department of Homeland Security was created to co- ordinate counter-terrorism activities. It brought together 22 pre-existing agencies, spanning from animal disease to immigration. The agency has proved successful in its primary mission of securing the US against terrorist attacks.

We need such cross-sectoral national agencies for pandemic risk reduction, well supported with research funding, to pursue this set of inter-related objectives. This will also require strong international co-ordination: no state should be left outside the disease-surveillance and rapid-containment protocols. The World Health Organization would benefit from a strengthened mandate allowing it to intervene rapidly, like an emergency service, when appropriate containment is not being applied. However, those nations with sufficient capability will be expected to mount their own rapid containment based on all the lessons learnt from the early days of the spread of COVID-19.

The global cost of the COVID-19 pandemic has been estimated at $16 trillion.[i] If the probability of a future pandemic can be halved, that would save trillions of dollars.

A much larger reduction in pandemic risk is clearly possible with effective research and policy objectives. As demonstrated by the differences in the speed of vaccination campaigns, there are huge economic benefits for nations that can reduce the numbers infected and the need for prolonged lock-downs. It is worth investing hundreds of millions of dollars annually to reduce this risk to manageable levels.

Following the progress of the full range of research and policy objectives, especially those aimed at preventing a pandemic, we can model how their implementation reduces business risk and consider how best to design and price a business interruption insurance product. Such coverage should reward and motivate preparatory risk reduction.

The best way to start to close the pandemic business interruption protection gap is to promote and pursue a co-ordinated agenda of risk reduction.

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[i] David M. Cutler, PhD, and Lawrence H. Summers, PhD, "The COVID-19 Pandemic and the $16 Trillion Virus,"*Journal of the American Medical Association*, Oct. 20, 2020, https://jamanetwork.com/journals/jama/fullarticle/2771764 (accessed May 5, 2021).

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