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Offline: The second wave



Fabrice Coffini/AFP/Getty Images

The spectre of a second wave of COVID-19 hangs over us. Some infectious disease specialists believe that SARS-CoV-2 might be losing virulence. Most are less sanguine. Dr Tedros Adhanom Ghebreyesus, WHO's Director-General, reported last week that "the pandemic is accelerating"—across the Americas, south Asia, and the Middle East. "The world is in a new and dangerous phase", he said. "The virus is still spreading fast, it is still deadly, and most people are still susceptible." The shadow of the 1918 influenza pandemic darkens our perspective. The first wave of that outbreak took place between March and July. It proved relatively mild. The second wave arrived in August. It was much worse. Most of the 50–100 million deaths caused by influenza took place during 13 weeks between September and December, 1918. The past century has incubated the idea that a second wave should justify mortal fear. Whether true or not, it is right to ask: what should we do to prepare?

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In the UK, new infections are still taking place across the whole country. This week, Tim Spector, Professor of Genetic Epidemiology at King's College London, wrote to Prime Minister Boris Johnson. His COVID Symptom Study app has 3.9 million contributors across the UK. Those who have signed up to Spector's survey self-report their symptoms. These data are the most reliable information we have about the spread of coronavirus. The government's testing regime is missing two-thirds of people with COVID-19. If we could diagnose new infections more rapidly, we could exit lockdown faster and more safely. Spector argues that what is needed is a campaign to educate the public to suspect infection not when they have later stage symptoms of fever and cough, but when they have earlier signs of muscle pain, fatigue, headache, diarrhoea, and rashes. Self-isolation at this earlier stage would reduce the risk of others becoming infected. If all new infections could be identified within 48 h, there is every possibility that a second wave could be avoided. And once one gets to fewer than 1000 new infections per day—the current number is estimated to be 3612 per day—the embryonic test, trace, and isolate system would have the capacity to detect and follow up every new case.



Tim Spector app

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Prolonged lockdowns are certainly not the answer to future waves of COVID-19. School closures are not sustainable. The economy cannot be refrigerated again. Risks to mental health are real. Work at the Institute for Health Metrics and Evaluation (IHME) in Seattle suggests that SARS-CoV-2 displays strong seasonality. In the Northern Hemisphere, IHME scientists predict that a second wave will arrive in September, peaking by the end of 2020. They expect the public will have less tolerance for future government mandates to shut down societies. So what if local outbreaks do take off? Modelling suggests that brief lockdowns (eg, for 2 weeks) followed by relaxations for between 2 and 6 weeks might be enough to cut lines of virus transmission. But one casualty of COVID-19 has been public and political trust in models attempting to forecast the course of the pandemic. Gabriel Leung's team at the University of Hong Kong has described one solution to managing a second wave—real-time tracking of transmissibility by closely monitoring the instantaneous effective reproduction number (Rt). Measurement of Rt should be supplemented by early diagnosis (Spector's data are important here), contact tracing, isolation, and continual efforts to keep public awareness high. In the UK, the test, trace, and isolate system is still not fully functional. There have been angry debates about whether physical distancing should be 1 m or 2 m. The lesson from the HIV pandemic is that no single preventive measure is adequate to control virus transmission. What matters is combination prevention—in the case of coronavirus, a mix of measures that include handwashing, respiratory hygiene, mask wearing, physical distancing (as much as is reasonably possible), and avoiding mass gatherings. So far, politicians and public health officials have not advocated the idea of combination prevention—they should. Another lesson from HIV is the importance of protecting key populations. COVID-19 is not socially neutral. SARS-CoV-2 exploits and accentuates inequalities. And on the dangers of a second wave to the most socially vulnerable, there has been not a word.

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