What is the real point of lockdowns?

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We are all familiar now with the use of circuit breakers, lockdowns and other interventions, such as masks and social distancing: these have been policy decisions to restrict the spread of COVID-19 in many places. In the UK, the use of lockdowns aiming to restrict mass movement and gathering have been used to restrict the spread of infection and ensure the capacity of the virus to spread is limited (making that R number fall below 1).

The value of these circuit breakers treads a fine line—while epidemiologically we know that quarantines and restricting movement would break the virus transmission cycle, epidemiology can't exist in a vacuum and public health policy decisions need to be embedded in a broader social and economic context. Treading the tightrope of limiting infection spread, protecting the health services and maintaining the economy is a complex (nonlinear) problem fraught with scientific and political uncertainties.

Circuit breakers have other consequences than the immediacy of reducing R numbers. This can disrupt transmissions and affect the size and timing of infection peaks. In a recent commentary here we show that lockdowns can push the peak of subsequent waves of infection into the future. As an example, if a hard circuit breaker had been implemented through October, disrupting disease transmission, we have shown that the peak infections of COVID-19 would have been displaced by up to three months from early January to early April.

Provided these circuit breakers are longer than infection incubation periods and infected individuals follow self-isolation guidance, this sort of disruption to the flow of transmission has—in reality—multiple goals; first is the direct effect of reducing immediate transmission, second is shifting the infection peak and third is decoupling COVID-19 from other upper respiratory infections. Put simply, if a shift in the cycle of transmission of COVID-19 shifts an infection peak in January to a peak in April, then health services retain the capacity to offer support to patients with other infections such as seasonal flu.

Seasonal flu is a common upper respiratory infection; it has a lower spread rate than COVID-19 and there is a jab against the most likely common strain in circulation. However, it remains a virus of public health concern: it increases burden at this time of year on the health services and on average, kills 25K people a year in the UK.

Ultimately, circuit breakers can stem the transmission of COVID-19 and disrupt infection peaks, potentially separating peaks in seasonal flu and COVID-19 infections, and allowing critical health services to deal with winter illness.

As vaccine roll out develops at pace, further disrupting the spread of COVID and then using short circuit breakers might be the optimum approach to saving lives.

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