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Circulation of influenza, RSV, and SARS-CoV-2: an uncertain season ahead



A new report by the Academy of Medical Sciences has warned that the UK could face exceptionally large outbreaks of respiratory syncytial virus (RSV) and influenza during the autumn and winter of 2021–22. The surge in infections could overlap with the spike in cases of COVID-19 that is expected to follow the lifting of lockdown restrictions across the country. “It is clear that the health-care system must plan for a high burden of respiratory diseases”, wrote the authors of the new report. They urged the government to rollout point-of-care joint testing for influenza, SARS-CoV-2, and RSV, and to ensure that the influenza vaccine is widely taken-up by eligible populations.

The warning partly reflects the success of the precautions that have been deployed against SARS-CoV-2. Mask-wearing, social distancing, and sharply constrained population movements have dramatically reduced transmission of respiratory pathogens such as RSV and influenza. Hospitals in Italy and France reported drops of more than 80% in the number of paediatric patients treated for acute bronchiolitis during the 2020–21 season, compared with previous years. Australia, Chile, and South Africa registered just 51 cases of influenza between them over the entire 2020 southern hemisphere winter. In the USA, the 2020–21 influenza season was the mildest since at least 1997, the earliest year for which records are available.

The vast majority of children contract RSV before the age of 2 years. “We now have a whole bunch of children who have not been exposed to the virus for 18 months to 2 years”, points out Charlotte Summers, reader in intensive care medicine at the University of Cambridge, UK, and member of the expert advisory group for the Academy of Medical Sciences report. The larger the susceptible population, the greater the risk of a

sizeable outbreak once a virus starts circulating.

England discontinued nearly all of its lockdown restrictions on July 19, 2021. Scotland and Wales are scheduled to do the same by mid-August. Even though there are several weeks of summer remaining, cases of RSV are on the rise (the USA is also seeing an out-of-season increase in RSV detections). Whether this will translate to increased hospitalisations remains to be seen. The Academy of Medical Sciences report recommended that children’s wards and paediatric intensive care units should be ready for a potential influx of patients with RSV, otherwise they could find themselves overwhelmed. Modelling studies undertaken for the report suggested that a reasonable worst-case scenario for RSV would entail an outbreak somewhere in the region of 1.5–2 times greater than during a typical year, assuming the UK stays out of lockdown.

The results for the modelling studies for influenza were similar. “There has probably been a waning of immunity to influenza, plus we have not had enough cases elsewhere in the world to offer a strong idea of what needs to go into the vaccine”, said Summers. The mildness of the 2019–20 influenza season in the UK might have further reduced population immunity.

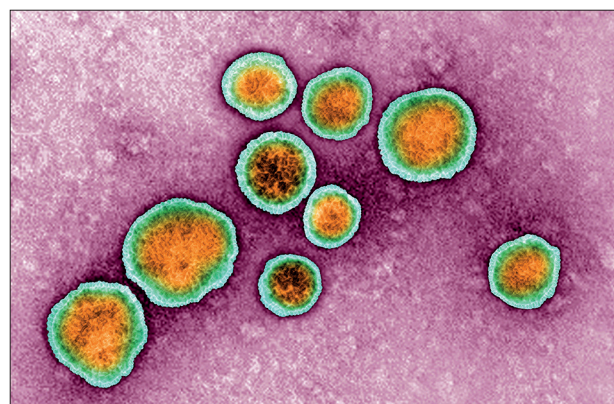
Much is uncertain. “We do not know what the influenza virus is going to look like when it returns”, said Rachel Baker, associate research scholar in the department of ecology and evolutionary biology at Princeton University, USA, “How much did the virus evolve during the period of low case numbers? Will we see a strain that people have been exposed to or vaccinated against in the past?” It is unclear how the British will respond to the easing of the lockdown restrictions. “Without national mandates for things like mask-wearing and distancing, a lot

will come down to individual behaviour, and no-one really knows how people’s behaviour will change”, said Summers. Baker suggested that vulnerable populations should continue wearing masks in crowded public places.

Hospitals will have to quickly identify which patients have influenza and which ones have COVID-19, and ensure the two sets of patients are kept separate from each other and from vulnerable patients who do not have any respiratory symptoms. No small task, particularly if the viruses are surging at the same time.

At the centre of the response will be the vaccines for COVID-19 and influenza. More than half of the UK population has been fully vaccinated against COVID-19. All adults in the country are now eligible for the first dose of the vaccine. In 2020–21, take-up of the influenza vaccine stood at 76.8% for frontline health-care workers and 80.9% for individuals over the age of 65 years. As it turned out, the health-care system only had to deal with COVID-19 last winter. This year could be very different. “We could get RSV, influenza, and SARS-CoV-2 circulating at the same time, and we just do not know how that is going to play out”, Baker told *The Lancet Respiratory Medicine*.

Talha Khan Burki



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