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NEWS ANALYSIS

RSV: The year the respiratory infection “took its gloves off”

The covid pandemic is having some unexpected repercussions, not least an unseasonal spike in respiratory infections in children. **Matthew Limb** looks at the scale of the problem and what health services are doing

Matthew Limb

Why are we seeing a surge in infections?

Respiratory syncytial virus activity was very low in many countries in the autumn and winter of 2020, as measures to curb the covid-19 pandemic, including social distancing, lockdowns, and school closures, protected children from infection. But isolation also stopped children developing immunity, and as restrictions have eased so new exposures to the virus have led to a surge in cases.

Usually seen in winter months, an unexpected and acute increase of RSV cases was first reported from Australia between September and November 2020, during the southern hemisphere spring. A higher than average number of cases and infections was reported in older infants. South Africa, the southern states of the US, and Japan have also seen unseasonal rises in cases.

How serious is RSV?

RSV is one of the common viruses that cause coughs and colds in winter and is the commonest cause of bronchiolitis. Nearly every child has been infected by the age of 2 years.^{1,2} Usually causing mild respiratory infection, it can be severe in infants who are vulnerable to acute lower respiratory tract infection, such as those who were born premature or who have a heart condition. Infants under 12 months and elderly adults are also at greater risk. Infants under 6 months often develop the most severe disease, such as bronchiolitis.

In England RSV leads to about 33 500 hospital admissions a year among children under 5 and about 25 deaths. It has been estimated that RSV associated lower respiratory tract infections account each year for 3.2 million hospital admissions and between 94 600 and 149 400 deaths worldwide.³

What is the situation in the UK?

Steve Cunningham, a consultant in paediatric emergency medicine, said that 2021 was the year “RSV took its gloves off.” Public Health England Health warned in July that cases in young children had begun to rise. Its surveillance system showed that positivity of samples tested for RSV increased over five consecutive weeks, from 1.2% to 8.9%.⁴ By the week ending 8 August 16.4% of samples tested positive for RSV.⁵ Thirty per cent of the children affected were under 5.

The North West was the first NHS region in England to see a rise in RSV prevalence, followed by other

parts of north England and the South West. Emergency departments across the UK have seen many more children with mild fever than they would normally expect in summer. Some, already under intense pressure, have reported being overwhelmed, with crowded departments and long delays putting patients at risk.⁶ In mid-July the proportion of hospital admissions for RSV reached a peak, at 250 in every 100 000 cases. Admissions remained at over 200 per 100 000 cases for the next two weeks.⁵

Cunningham said, “Most admissions are short: under 24 hours. Our job is to keep it simple. Some trials suggest the more interventions you do in young children with RSV bronchiolitis, the longer it takes to get better. Recovery can continue at home if you have good advice and support.”

How bad could things get?

The UK Academy of Medical Sciences has warned that RSV outbreaks this coming autumn, together with winter flu, could be around double those seen in a normal year and may overlap with another peak in covid-19 cases.⁷

NHS Providers’ chief executive, Chris Hopson, says, “There’s obviously a worry that RSV prevalence will increase as we head towards winter. This is an identified issue—it showed up in our recent member survey on operational pressures—and we know trusts are preparing, but, given all the other pressures, it’s a concern.”

What are health officials doing?

Health services have urged parents to look out for symptoms of severe infection in children at risk, including fever, a dry and persistent cough, difficulty feeding, and wheezing. Yvonne Doyle, medical director at Public Health England, said, “This winter we expect levels of common seasonal illnesses such as cold and flu to increase as people mix more and given that fewer people will have built up natural immunity during the pandemic.”

The UK health departments have also widened the use of passive immunisation with palivizumab, which has been used to prevent serious disease from RSV in at-risk patients since 2010 and has been shown to reduce hospital admissions.⁸ Eligible children have been offered palivizumab from July, rather than the usual October, and the number of doses has been extended from five to seven.

Public Health England has also extended its surveillance system to ensure that early signals of respiratory illnesses are being reported from a sample of NHS trusts. This surveillance usually ends in May and resumes in October but has continued into the summer months.

Is there a vaccine?

Earlier this month Moderna received fast track designation from the US Food and Drug Administration for mRNA-1345, its investigational single dose mRNA vaccine, against RSV in adults older than 60 years.⁹ The company said that a phase I study of mRNA-1345 to evaluate its tolerability and reactogenicity of mRNA-1345 in younger adults, older adults, and children continued but that one month data showed that the vaccine candidate generated a geometric mean rise of at least 11-fold in neutralising antibodies relative to baseline. “The fast track designation for older adults underscores the urgent need for a vaccine against RSV,” said Moderna’s chief executive, Stéphane Bancel.

What can we expect in autumn and winter?

Scientists have said it is difficult to predict the pattern and infectivity of respiratory viruses. Given the late RSV season, and the absence of infection in the previous season because of covid-19 restrictions, there is likely to be a larger, more vulnerable group of children at risk of infection.

Paediatric disease specialists Rabia Agha and Jeffrey Avner recently wrote in *BMJ Opinion*, “We know that vulnerable hosts tend to have worse disease. Therefore, we need to be vigilant in infection surveillance testing, be prepared to exercise control measures quickly, maintain good hygiene practices and improve lapsed vaccination rates to counter any upsurge in viral illnesses.”¹⁰

Sanjay Patel, a lead author of bronchiolitis guidance for the Royal College of Paediatrics and Child Health, told a recent college webinar, “We need to recognise that infection prevention covers more than just covid. I know it sounds like heresy at the moment. We need to move away from covid pathways to transmission based precautions for all respiratory viruses. We need access to rapid tests to maintain patient flow, especially if numbers of cases start to rise.”

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