TOI TE ORA
PUBLIC HEALTH
Bay of Plenty + Lakes Districts

Medical Officer of Health Report
August 2021

RSV, COVID-19 and preparing for the re-opening of New Zealand

In mid-June our local laboratory, Pathlab, confirmed RSV (Respiratory Syncytial Virus) in swabs from five patients - four infants and one older adult over the age of 70. This would not seem very unusual. RSV is one of many common viruses that circulate in the winter months. RSV typically causes mild cold or flu-like symptoms in adults and older children, such as a runny nose, sneezing, dry cough, mild fever, and sore throat. However, it may sometimes cause more severe respiratory illness, most often in young children and babies. About one in 50 children under the age of two with RSV infection will require hospitalisation.

What was unusual about the June laboratory surveillance report was that RSV had not been identified in our communities since before the first COVID-19 lockdown in April 2020. What was also unusual was what followed – a rapid surge in RSV cases across our communities, resulting in pre-school closures, and a wave of presentations to primary care and emergency departments. Like with the first handful of confirmed cases most of the more severe illness occurred in young infants, but older adults also have been affected with numerous outbreaks in aged residential care facilities. The RSV epidemic and its impact on health services was being seen not only in the Bay of Plenty and Lakes areas but across New Zealand, with most towns and cities in New Zealand experiencing the peak of the epidemic more or less simultaneously over the month of July.

Figures 1 and 2 below, provided by Pathlab, reflect this surge in RSV cases in the Bay of Plenty and Lakes areas. And while it seems that the peak of the epidemic may have been reached and the numbers decreasing, the seasonal incidence is well above previous years (see Figure 3.) The effects continue to be experienced by our communities as well as health services as we deal with the increased demand along with increased staff absences. Even as the epidemic may be starting to ease in terms of new cases, the sequelae of effects may persist for some time for those with more severe illness and for older people with other medical conditions that may have been exacerbated or complicated by this acute respiratory illness.

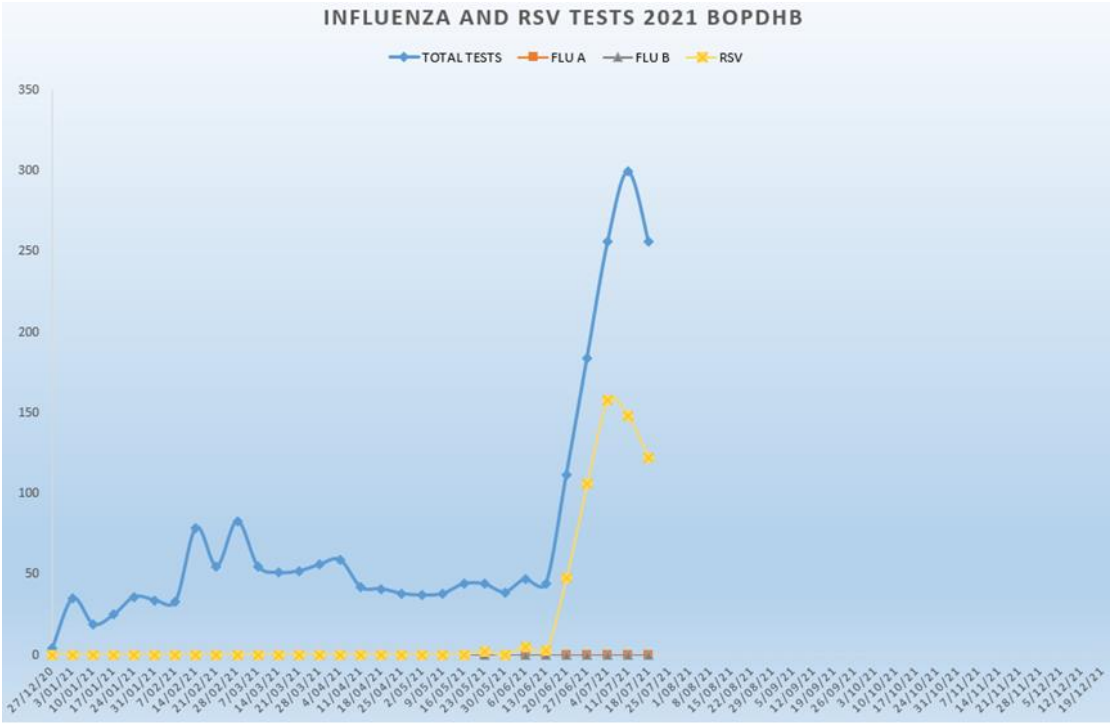

Figure 1. Total respiratory swab tests and influenza and RSV positivity (Bay of Plenty DHB area). Source: Pathlab.

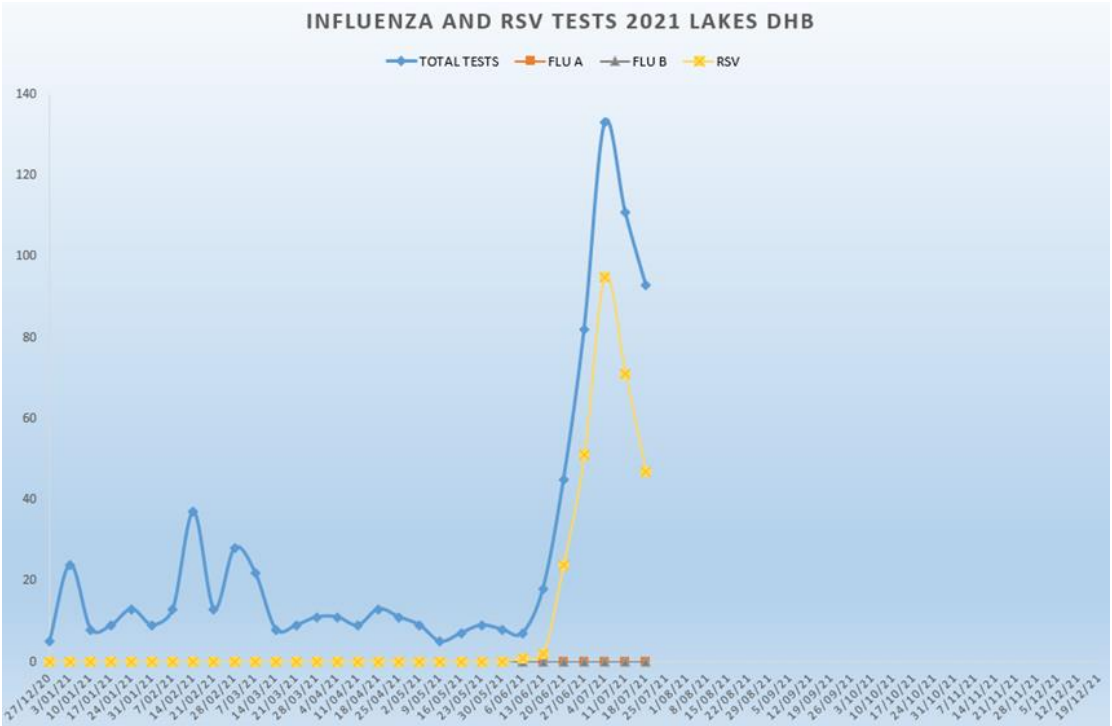

Figure 2. Total respiratory swab tests and influenza and RSV positivity (Lakes DHB area). Source: Pathlab.

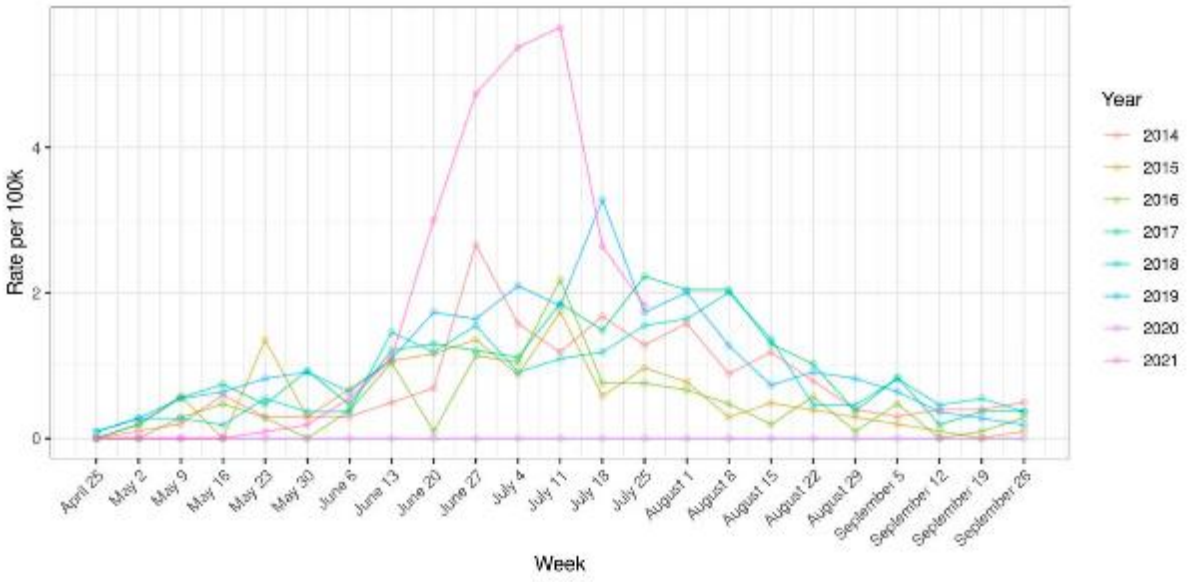

Figure 3. Weekly rate of RSV-positive severe acute respiratory infection hospitalisation, all ages (sentinel surveillance data, Auckland region). Source: ESR.

This RSV epidemic has exposed several of our vulnerabilities, and highlights issues pertinent to planning and preparedness in the health sector, especially over the coming year and in the context of COVID-19 and the 're-opening' of New Zealand:

- **Community conditions are very favourable for rapid transmission**
  RSV spreads easily between people, from person to person through infected respiratory droplets, much like COVID-19. While estimates of how easily RSV and COVID-19 spread are quite variable between studies, they are broadly similar. If anything, COVID-19 is more infectious and spreads more easily than RSV, and with airborne spread better documented than with RSV. The measures and desired community habits and practices for preventing spread are similar for RSV, COVID-19, influenza, and the many other viruses that can cause respiratory infections. These include staying home when sick; good hand hygiene practices; cough etiquette; and, not exposing those vulnerable such as the very young, the elderly or those at-risk due to underlying medical conditions. However, even with the current heightened awareness of such measures, RSV rapidly escalated into a national epidemic and overwhelmed health services. With the absence of recent COVID-19 cases there is no doubt some complacency. In Level 1 settings, and even with substantial education and awareness raising on community infection control measures, conditions for viral spread of respiratory viruses such as RSV, influenza or COVID-19 seem highly favourable.

- **Immunity 'gaps' and volatility of viral respiratory illnesses**
  RSV typically circulates in the winter months and most of us have been exposed and re-exposed on a frequent basis. Those most at risk are the newborns and under ones who

have not previously been exposed. One of the explanations for why RSV may have surged to epidemic levels this year is that with no RSV in the country since before lockdown in April 2020, there is a larger number of under ones and under twos who have not previously been exposed, and so therefore have no immunity to RSV. Lower levels of maternal exposure may have decreased maternal antibody levels and so also the immunity passed on by mothers to newborns. This resurgence of RSV could be seen as an unintended and unforeseen consequence of the 2020 lockdown and border control measures which kept it out of the country until quarantine free travel with Australia allowed re-introduction (or probably multiple re-introductions) and exposure of a larger and immunological naive under two population. It therefore seems plausible that when our borders are re-opened after this prolonged period of border quarantine controls, it may result in volatility and aberrant patterns in terms of other infectious respiratory illnesses. Of note, we have also been influenza-free since lockdown in April 2020, and so it would seem possible that when influenza is re-introduced into the country it may result in a seasonal epidemic disproportionate to previous years, or a non-seasonal epidemic. The previous pertussis (whooping cough) epidemic was over the summer of 2017/2018 and as pertussis epidemics tend to follow a 4-yearly cycle, it is another respiratory illness of potential concern at this time.

- **Overwhelming of the health sector**
  It seems clear that our health services operate at or above capacity most of the time. Increased acute demand that overwhelms emergency departments and hospital bed availability has become a recurring issue each year. The challenges of increased acute demand are typically exacerbated by increased staff illness, together with increased staff absence to look after sick family members, resulting in excessive pressures on remaining staff. Even as I write this the Bay of Plenty DHB has announced that 'non-urgent planned care will be cancelled for two weeks', that all non-essential meetings and education sessions are cancelled, and mental wellbeing support services are offered to staff to help deal with the effects of work pressures.

It is not yet known what the exact criteria will be for re-opening New Zealand's borders, but it entirely depends on the successful rollout of the COVID-19 vaccination programme. Broadly, re-opening and removing quarantine requirements can be considered when: a sufficient proportion of the overall population have been vaccinated; a sufficient proportion of those most at-risk of severe illness, hospitalisation and death have been vaccinated; and all eligible for vaccination have had an opportunity to be vaccinated. However, when New Zealand does re-open and lift border quarantine requirements, COVID-19 will be re-introduced. Given that not all will be vaccinated, and that the vaccine is less than perfect in preventing illness there will be a wave, or waves, of COVID-19 to manage. Given what RSV tells us about how easily and rapidly respiratory viruses can spread, the possibility for simultaneous resurgence of other infectious illnesses such as influenza, pertussis or indeed measles, and the capacity of health services to cope, this re-opening period may present significant challenges. These pressures and impacts are likely to be well in excess of what has been experienced this year with RSV, and they are likely to be sustained over several months.

In the months that remain for the COVID-19 vaccination rollout to be completed, every opportunity should be taken to prepare for the re-opening that will likely follow soon afterwards. There are several ways the health sector can prepare, some of which are within

the more direct influence of DHBs, primary care and other local health services, and some less so, but include:

- Achieving high levels of childhood immunisation uptake (especially for measles, pertussis and pneumococcal immunisations)
- Achieving high levels of community influenza vaccination
- Improving awareness, understanding and implementation of community infection control measures and practices (especially in pre-school, school, workplace and residential care settings)
- Addressing sub-optimal housing conditions and crowding
- Reducing smoking and especially indoor and passive exposure of children and infants
- Continuing to invest in and develop public health capacity, specifically contact tracing capacity and workforce
- Continuing to develop surge planning and preparedness across all health services - this includes the range of measures from infection control, planning for hospital outbreaks, and ensuring adequate staffing - through to ICU bed capacity
- Specifically, requiring all staff to be up to date with influenza and COVID-19 immunisation.

The most important immediate task is achieving the highest possible coverage for COVID-19 vaccination and ensuring this is uniformly high across the population without pockets of vulnerability. This is not only a prerequisite to opening but the key predictor of how manageable the months that follow will be.

Notwithstanding all the above, re-opening in summer when we are at our least vulnerable and health services are more able to cope would help mitigate some of the worst impacts that could follow. While no decisions on re-opening have been made or timelines announced, having the option to start the re-opening in the summer months would be a real advantage. This should add more impetus and urgency to ensure a successful and comprehensive COVID-19 vaccination rollout by the end of the year.

Neil de Wet
5 August 2021