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TARRANT VIRAL WATCH

August 2025 Newsletter

TARRANT News & Updates

Greetings Sentinels!

We hope you are enjoying what you can of the summer, before we plunge into the fall and the next respiratory season. For your interest, we review a paper showing (yet again) that COVID-19 vaccines make a difference for older people. This holds more importance as our patients need to pay for their vaccines this year. While Andrew Nikiforuk makes political points that not all will agree with, he does give useful background to the decision about Alberta charging for vaccine and the implications for health care:
https://thetyee.ca/Analysis/2025/08/05/Alberta-Perverse-Barriers-COVID-Vaccines/?utm_source=daily&utm_medium=email

We also review the book that we are sending out to you for summer reading as our thanks for being a sentinel.

Viral Watch Off-Season Update

As expected during the respiratory virus off-season, we have seen a marked decrease in both the number of positive samples and case positivity for most viruses (*Figure 1*). The number of samples submitted by Tarrant sentinels has also decreased (*Table 1*), likely signifying a lower number of symptomatic patients in the community presenting to their primary care physicians. Since our last update in May, we have seen a very late peak in enterovirus/rhinovirus positivity in June and a slight uptick in SARS-CoV-2 positivity through June and July. Even though we have formally exited the respiratory virus season in Alberta, viral pathogens are always circulating in the community that our sentinel surveillance program continues to monitor. Even though we have formally exited the respiratory virus season in Alberta, viral pathogens continue to circulate in the community, and our sentinels remain active in their surveillance.

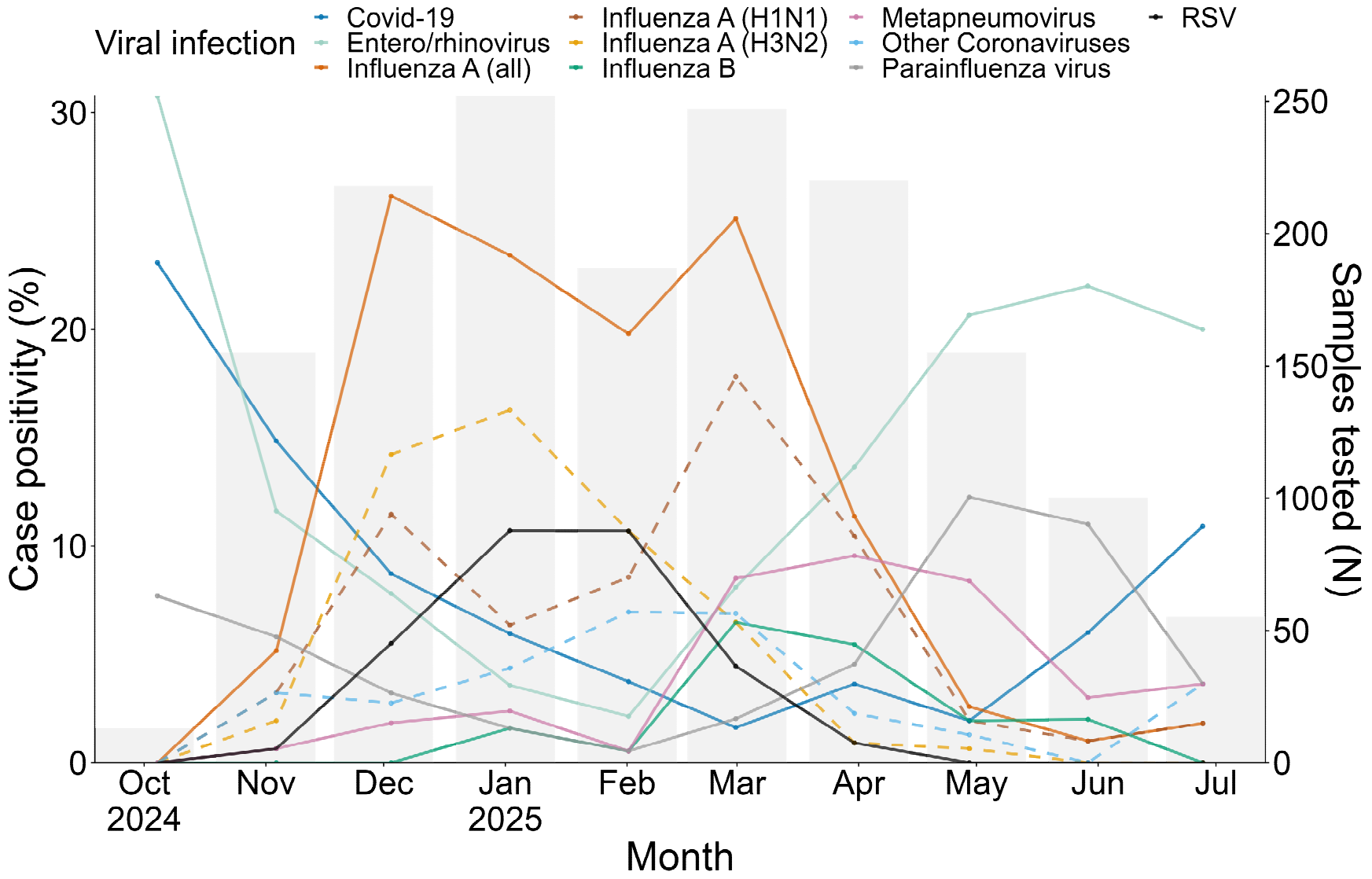

Figure 1: Monthly case positivity for several respiratory viruses circulating in Alberta between October 2024 and July

2025. All samples were collected by TARRANT sentinels.

Table 1: Monthly number of samples positive and case positivity for several respiratory viruses circulating in Alberta between October 2024 and July 2025. All samples were collected by TARRANT sentinels.

Month	Samples tested (N)	Samples testing positive (n, % case positivity)									
		Influenza A	Influenza A (H1N1)	Influenza A (H3N3)	Influenza B	RSV	Covid-19	Other CoV's	Para-influenza	MPV	Entero/ rhinovirus
Oct 2024	13	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	3 (23.1)	0 (0.0)	1 (7.7)	0 (0.0)	4 (30.8)
Nov 2024	155	8 (5.2)	5 (3.2)	3 (1.9)	0 (0.0)	1 (0.6)	23 (14.8)	5 (3.2)	9 (5.8)	1 (0.6)	18 (11.6)
Dec 2024	218	57 (26.1)	25 (11.5)	31 (14.2)	0 (0.0	12 (5.5)	19 (8.7)	6 (2.8)	7 (3.2)	4 (1.8)	17 (7.8)
Jan 2025	252	59 (23.4)	16 (6.3)	41 (16.3)	4 (1.6)	27 (10.7)	15 (6.0)	11 (4.4)	4 (1.6)	6 (2.4)	9 (3.6)
Feb 2025	187	37 (19.8)	16 (8.6)	20 (10.7)	1 (0.5)	20 (10.7)	7 (3.7)	13 (7.0)	1 (0.5)	1 (0.5)	4 (2.1)
Mar 2025	247	62 (25.1)	44 (17.8)	16 (6.5)	16 (6.5)	11 (4.5)	4 (1.6)	17 (6.9)	5 (2.0)	21 (8.5)	20 (8.1)
Apr 2025	220	25 (11.4)	23 (10.5)	2 (0.9)	12 (5.5)	2 (0.9)	8 (3.6)	5 (2.3)	10 (4.5)	21 (9.5)	30 (13.6)
May 2025	155	4 (2.6)	3 (1.9)	1 (0.6)	3 (1.9)	0 (0.0)	3 (1.9)	2 (1.3)	19 (12.3)	13 (8.4)	32 (20.6)
Jun 2025	100	1 (1.0)	1 (1.0)	0 (0.0)	2 (2.0)	0 (0.0)	6 (6.0)	0 (0.0)	11 (11.0)	3 (3.0)	22 (22.0)
Jul 2025	55	1 (1.8)	1 (1.8)	0 (0.0	0 (0.0)	0 (0.0)	6 (10.9)	2 (3.6)	2 (3.6)	2 (3.6)	11 (20.0)
Total	***1,602***	***254 (15.9)***	***134 (8.4)***	***114 (7.1)***	***38 (2.4)***	***73 (4.6)***	***94 (5.9)***	***61 (3.8)***	***69 (4.3)***	***72 (4.5)***	***167 (10.4)***

How Effective is COVID-19 Vaccination?

Our TARRANT program assesses the effectiveness of vaccines in reducing clinical respiratory syndromes. This is only one outcome but the most common: vaccines also reduce hospitalization, and deaths. But there is controversy on how much, and which groups benefit.

A new comparative effectiveness study published in JAMA Health Forum on July 25th, 2025, assessed the benefits of COVID-19 vaccination between 2020 and 2024[1]. In a world-wide model, Ioannidis *et al* used estimates of infection fatality rates, vaccination effectiveness for mortality, and the proportion of the population likely to have been infected before and after vaccination. They estimated that COVID-19 vaccination averted over 2.6 million deaths (1 death averted per 5,400 vaccine doses) and saved 14.8 million life-years (1 life-year saved per 900 vaccine doses) globally. Effectiveness against mortality and morbidity was particularly high in the Omicron period, compared with the pre-Omicron period. Individuals over 60 years old accounted for 90% of deaths averted and 76% of life-years saved. This occurred largely because of the higher rates of serious disease with age, and therefore greater probability of reducing it. The results are dependent on the quality of information used, and the assumptions made in the model. While the risk of death is low among the young, it is unclear how much indirect benefit occurs from vaccinating young people to reduce transmission and thereby protect older people.

These estimates provide perspective on the benefits of COVID-19 vaccination in terms of lives and life-years saved. These results are of particular interest given the Alberta government's recent decision to charge a $110 for the COVID-19 vaccine, citing discarded vaccines as the reason behind the policy change. It will only be free for specified high-risk groups: people living in care homes and group settings, those receiving home care, people on social programs such as AISH, and immunocompromised individuals. While vaccine waste is a valid concern, the benefits of vaccines especially for older people should also be considered in any evidence-based public policy decisions.

As we progress through further changes in both the circulating COVID-19 virus and vaccines we need continuing

research to guide vaccine strategies and public health measures in a post-pandemic era. It appears this policy will provide an inadvertent opportunity to compare infection rates in Alberta with other provinces.

1. Ioannidis JP, Pezzullo AM, Cristiano A, Boccia S. Global estimates of lives and life-years saved by COVID-19 vaccination during 2020-2024. In JAMA Health Forum 2025 Jul 3 (Vol. 6, No. 7, pp. e252223-e252223). American Medical Association.

Droplets vs. Aerosols

For your August holiday reading, we are sending sentinels a copy of *AIR-BORNE: The hidden history of the life we breathe*. Carl Zimmer. Dutton New York 2025

One of the greatest controversies of the COVID-19 pandemic was about the precautions needed to prevent transmission. The initial public health response focussed on droplet spread. Since droplets fall within a short distance, this led to the 2 metre or 6 feet separation rule, recommending cloth or surgical type masks, and ritual surface decontamination. These likely have some effect in reducing transmission. However, even from the beginning of the pandemic, there was evidence that aerosol transmission was a major mode of transmission.

Aerosols have various definitions but comprise particles smaller than 10 microns. Droplets this size can carry viruses or bacteria, and they tend to float in the air for long periods, over long distances. When inhaled they can penetrate deep into the respiratory tract, even into the alveoli, enabling infection. This appears to be the predominant mode of transmission of measles, influenza, mumps, chicken pox, tuberculosis, and a variety of other bacterial and viral infections. Aerosols can be produced by coughing or sneezing, but also singing, or during medical airway manipulation. These were the

apparent cause of several reported clusters of infection even early in the epidemic but were largely ignored.

How did we get into this mess? It seems there were several causes: Dr Fauci, who was the lead in the United States, is an infectious disease specialist with primary expertise in HIV, not respiratory disease. In other countries such as Canada, the lead was taken by classic public health and general infectious disease specialists. Respiratory disease expertise was often focussed on handling the disasters in the over-stressed hospitals. Few were able to stand back and ask the hard questions about what was going on. Worse, information for community practitioners was often limited, an afterthought, with minimal available resources for diagnosis, protection, or advice on management in our settings. We were left out in the cold.

Why did most public health authorities focus almost exclusively on droplets as the mode of transmission? Aerosol spread is not new knowledge. A science journalist, Zimmer describes the history of our knowledge of aerosols: from the time of Pasteur and Darwin. In particular he describes flawed but fascinating experiments in TB sanitoria in the 1940s showing that TB transmission could be prevented by attention to airflow, with filtering and UV light disinfection. Yet as antibiotic treatment was developed and dominated management of TB, these were forgotten, and the US public health authorities of the day were influenced by the ideas of Charles V Chapin: the pre-eminent public health physician of the US in the early 20th century, who had worked to discredit the previous "miasma" theory of disease. Therefore, this information was largely ignored and subsequent public health teaching omitted aerosol transmission.

At times Zimmer's book has too much detail, and the narrative drags, but it contains many gems of historical information. The first N95 masks were adapted from a method originally developed by the 3M company, of spraying

polyester fibres into a mold to make various products, notably brassiere cups. The spaces between the fibres are larger than aerosol particles, so one might wonder how they can be effective filters, but the manufacturing method now includes electrostatic charges that attract particles, preventing more than 95% of them from passing through. Hence the name: N95. Carefully considered air flow, especially of filtered air using high efficiency particulate air (HEPA) filters can reduce infection risk, and ultraviolet light will sterilise many bacteria and viruses.

As in so many medical issues, this is about probability. Too many want certainty: a black and white categorisation that *this* action will prevent or cure 100%. But that is seldom the case. Masks can protect the wearer, and/or others around them to variable degree, never completely. Reusable cloth masks were used for many years to reduce droplet egress from the mouth and nose, and thereby reduce the probability of surgical infections[1]. The lack of a seal around the masks limits their effect on aerosols entering when the wearer inhales. Even N95 masks may substantially reduce but not eliminate infection from inhaling aerosols, especially if not well fitted to reduce inhalation around the edges.

Understanding how respiratory infections transmit is essential to ensure safe practice for physicians, our staff and patients. In Canada, in epidemics health authorities have tended to focus on hospital issues, overlooking the contributions or needs of primary care, let alone providing support and protective equipment to us. This focus on the needs of hospitals occurred also in the Influenza pandemic in 2009[2], but public health has not yet learned from their mistakes. Until that changes family physicians must make our own decisions.

Now that the pandemic is settling down to become a regular seasonal infection, it is time to reflect and understand what we should have known from the beginning. This book will help readers understand not only what we know, but how we

know it in the messy progress of science, and why much of this information has been misunderstood. Maybe that will help make better decisions when the next epidemic inevitably arrives.

1. Strasser BJ, et al. The art of medicine A history of the medical mask and the rise of throwaway culture. Lancet 2020; 396:2
2. Dickinson, J.A., Bani-Adam, G., Williamson, T., Berzins, S., Pearce, C., Ricketson, L., & Medd, E., Alberta family physicians' willingness to work during an influenza pandemic: a cross-sectional study, Asia Pacific Family Medicine. 2013 Jun 26;12(3).

Thank you all for your support and participation in the TARRANT Viral Watch program so far. We hope you enjoy *AIR-BORNE: The hidden history of the life we breathe* as a token of our appreciation!

Regards,
The Tarrant Viral Watch Team

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