

YOUR HOST: DISCLOSURE



Jia Hu

Public health & preventive medicine
physician and family physician

Co-founder, 19 To Zero

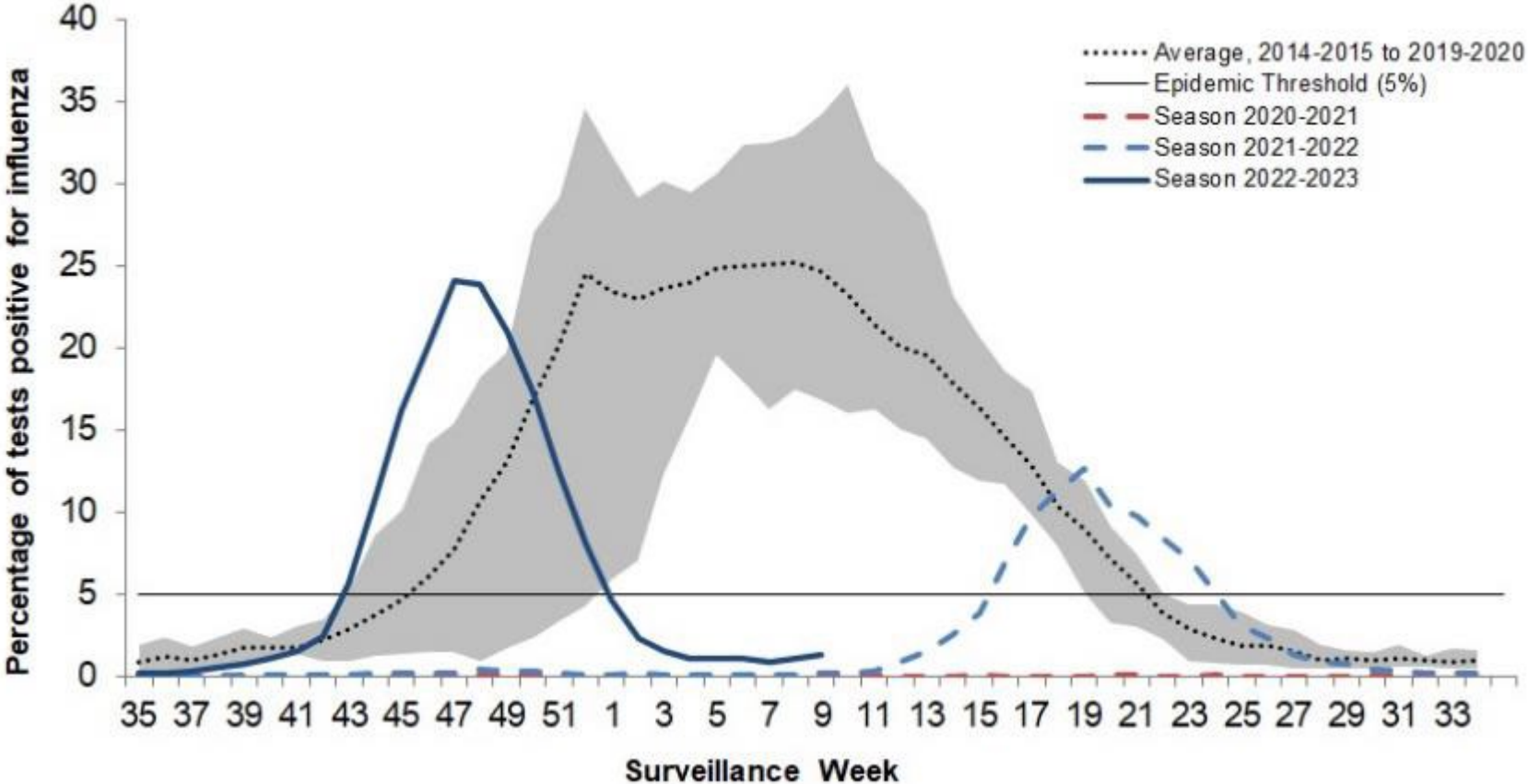
Adjunct professor, University of Calgary

Disclosures

- I have received research/operational funding and other honoraria from the following pharmaceutical companies: GSK, Pfizer, Merck Moderna, Sanofi, Novavax, and Seqirus

VACCINATION: FALL/WINTER RESPIRATORY SEASON

A snapshot of last influenza season – early & fast – that combined with RSV & COVID-19 led to a ‘triple-demic’

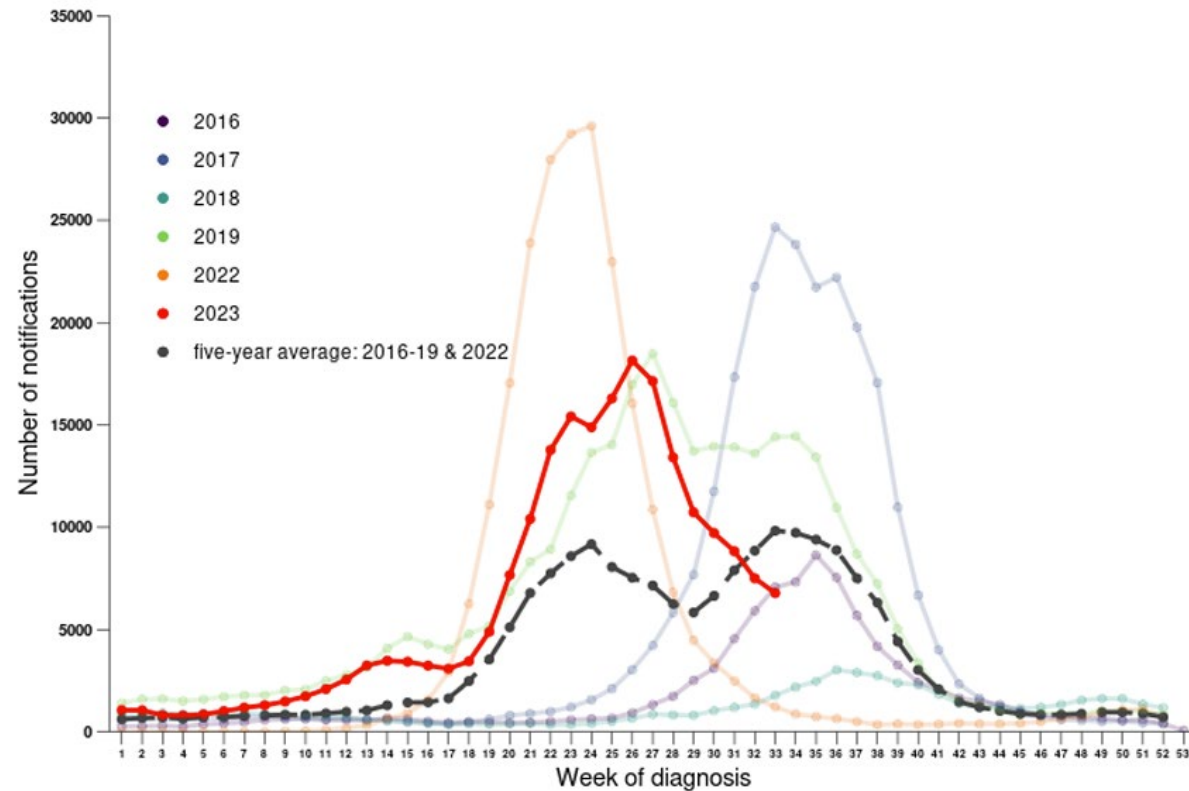


Source: FluWatch Report: February 26 to March 4, 2023 (week 9)

VACCINATION: FALL/WINTER RESPIRATORY SEASON

We look to the Southern Hemisphere to predict what will happen for our respiratory seasons

Notifications of laboratory-confirmed influenza, Australia, January 2016 – August 2023, by month and week of diagnosis¹



Source: Australian Government National Notifiable Diseases Surveillance System, Australian Influenza Surveillance Report and Activity Updates (2023)

- Australia's winter occurs during June/July/August and is often used to **predict what will happen during our winter months**
- **In 2020/2021, there were virtually no cases of influenza** – indicating that COVID-19 lockdowns were highly effective at stopping nearly all transmission of the less infectious influenza virus
- **In the 2023 Australia season (it is currently winter there)** – they appear to have had an early start to the season which has since tapered down
- It is a **bit early to draw conclusions** about what we will see in our **fall/winter 2023**, but we know **immunization will always be the best way to protect oneself**

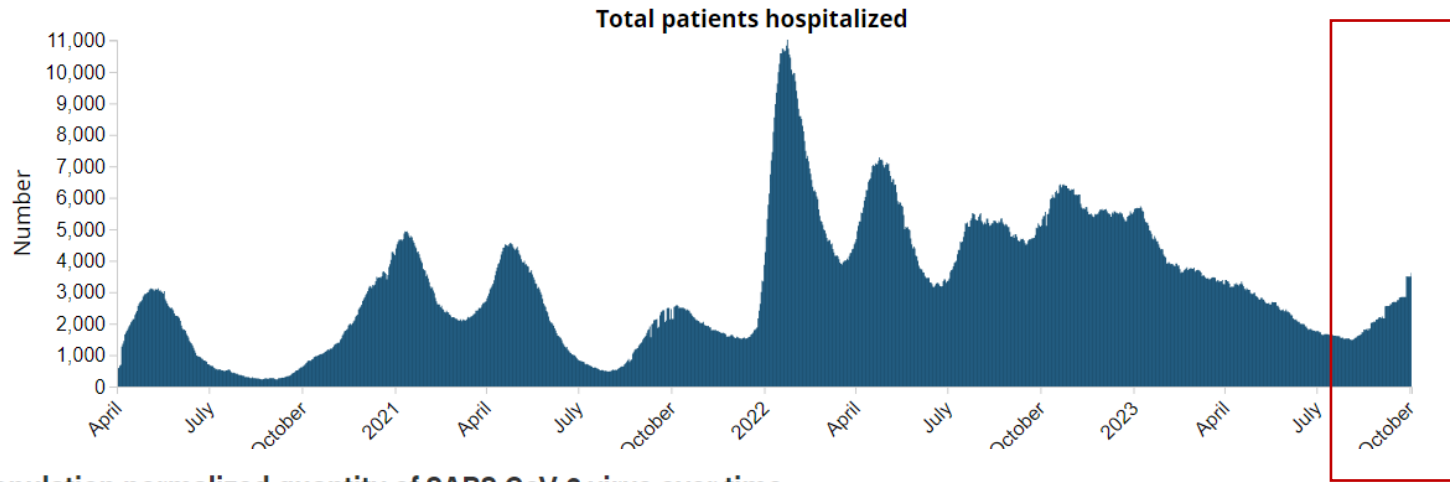
VACCINATION: FALL/WINTER RESPIRATORY SEASON

COVID-19 levels have been on the rise through September

Figure 5. Daily number of hospital beds and ICU beds occupied by COVID-19 patients as of October 3, 2023

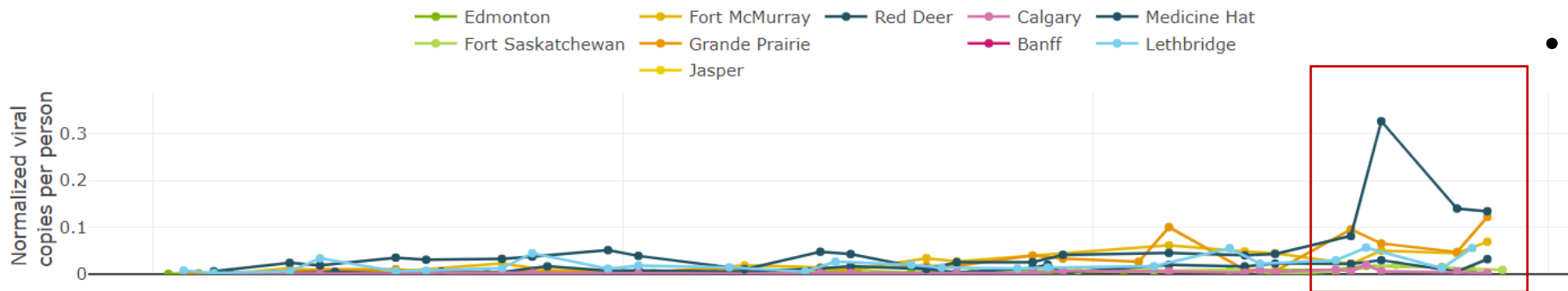


Relative scale



- COVID-19 hospitalizations across Canada are increasing this fall (from nadir of ~1,500 to current levels of ~3,500)

Population normalized quantity of SARS CoV-2 virus over time

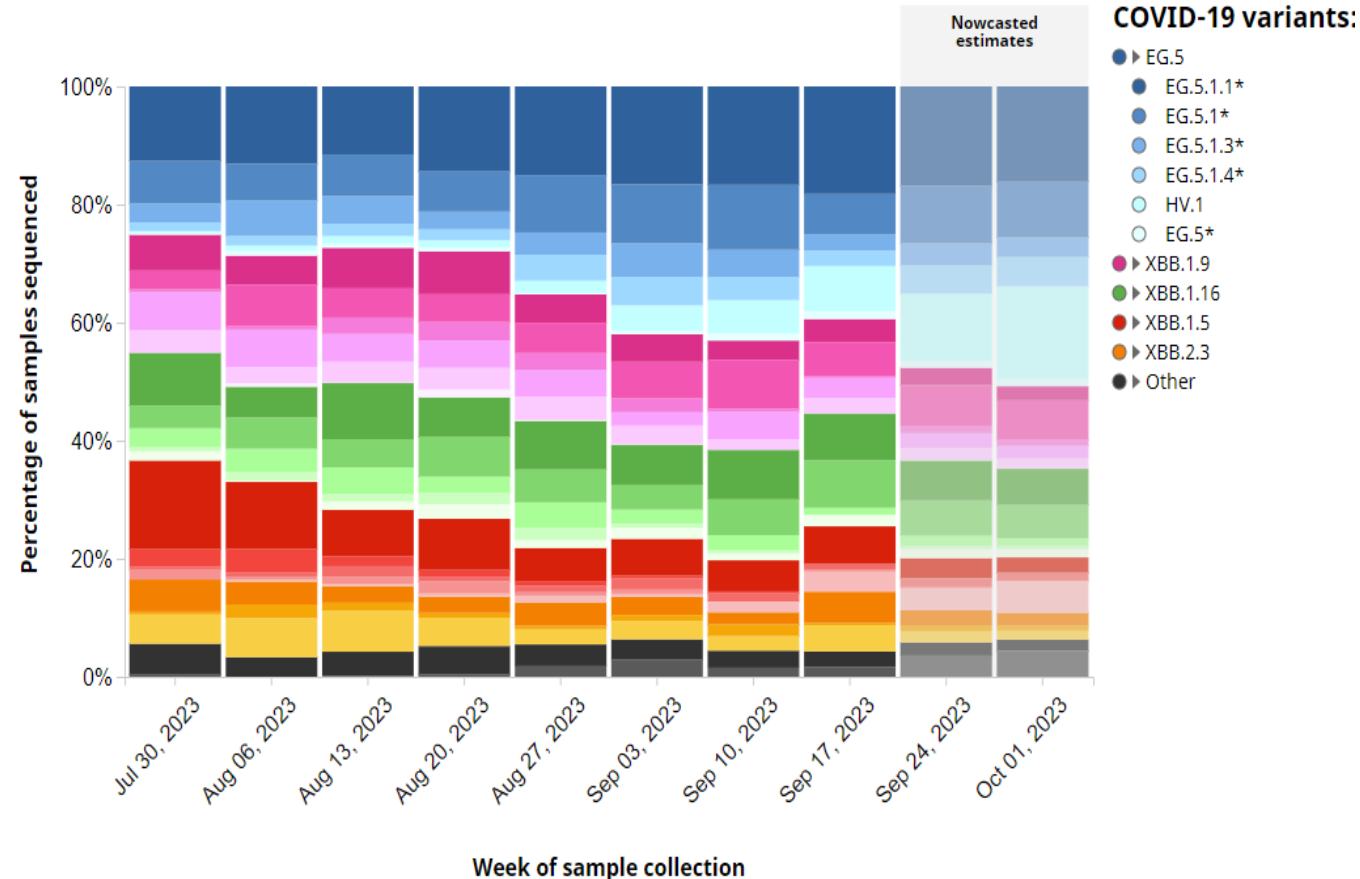


- And there is also a trend of increasing COVID-19 levels per wastewater surveillance in Alberta

VACCINATION: FALL/WINTER RESPIRATORY SEASON

New variants have been circulating, but all XBB family

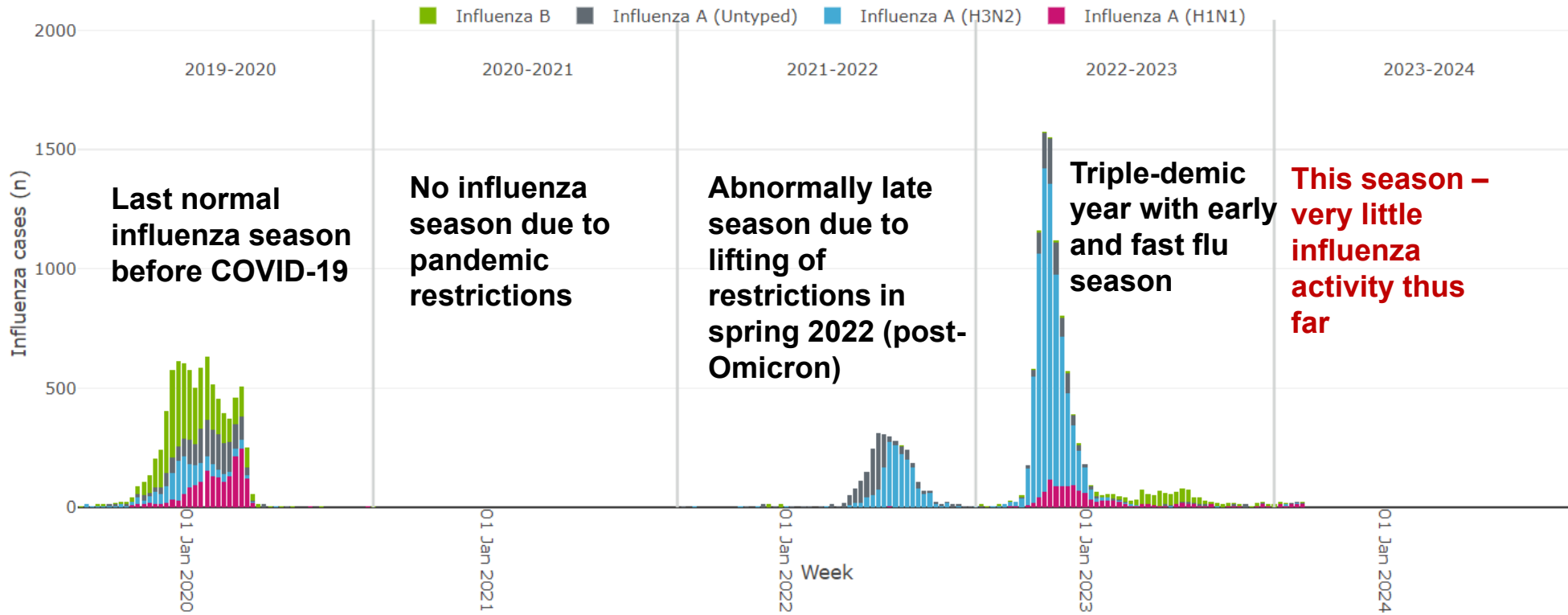
- On August 9, the WHO declared **EG.5 (or *Eris*)** a “variant of interest”, but said it *did not seem to most more of a threat to public health than others*
- EG.5 is a descendant of the XBB.1.9.2 lineage (the XBB family has been the dominant circulating variants in 2023)
- Another variant, BA.2.86 (from the BA.2 lineage) has been circulating recently and is known to have 30+ mutations – its clinical significant is not yet known
- Currently, **virtually all COVID-19 in Canada is either XBB or EG.5**



VACCINATION: FALL/WINTER RESPIRATORY SEASON

... but influenza levels are pretty low

Total weekly laboratory-confirmed seasonal influenza cases by subtype in Alberta, 2019-2020 to 2023-2024



VACCINATION: FALL/WINTER RESPIRATORY SEASON

Vaccinations for the fall respiratory season

Publicly funded

- COVID-19 – recommended for everyone 6 months and older
 - XBB monovalent formulation this year from Pfizer/Moderna/Novavax
- Influenza – recommended for everyone 6 months and older
 - Standard dose quadrivalent for 65 and under, high-dose quadrivalent for 65 and higher

Not publicly funded

- RSV – new vaccine (*Arexvy*), recently approved by Health Canada for 60+, no NACI statement yet; also, *Nirsevimab* for infants (very limited supply this year, hospital only for now)
- Pneumococcal – new(ish) vaccine – PCV20 – recommended for everyone 65+ and younger with certain medical conditions

VACCINATION: FALL/WINTER RESPIRATORY SEASON

Calgary Zone
webinar series:
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& hot topics

Respiratory Season Vaccinations: COVID-19

An Advisory Committee
Statement (ACS)
National Advisory Committee
on Immunization (NACI)

Guidance on the use of COVID-19 vaccines in the fall of
2023

Published: July 11, 2023

Beginning in the fall of 2023 for those previously vaccinated against COVID-19, NACI recommends a dose of the NEW FORMULATION OF COVID-19 VACCINE (XBB MONOVALENT) for individuals in the authorized age group if it has been at least 6 months from the previous COVID-19 vaccine or known SARS-CoV-2 infection (whichever is later)

Immunization is particularly important for those at increased risk of COVID-19 infection / severe disease, including:

- Adults 65 and older
- Residents of LTC / congregate living settings
- Individuals with **underlying medical conditions** that place them at higher risk of severe COVID-19
- Individuals who are pregnant
- Individuals in or from First Nations, Metis, and Inuit Communities
- Members of racialized and other equity-deserving communities
- People who provide essential community services



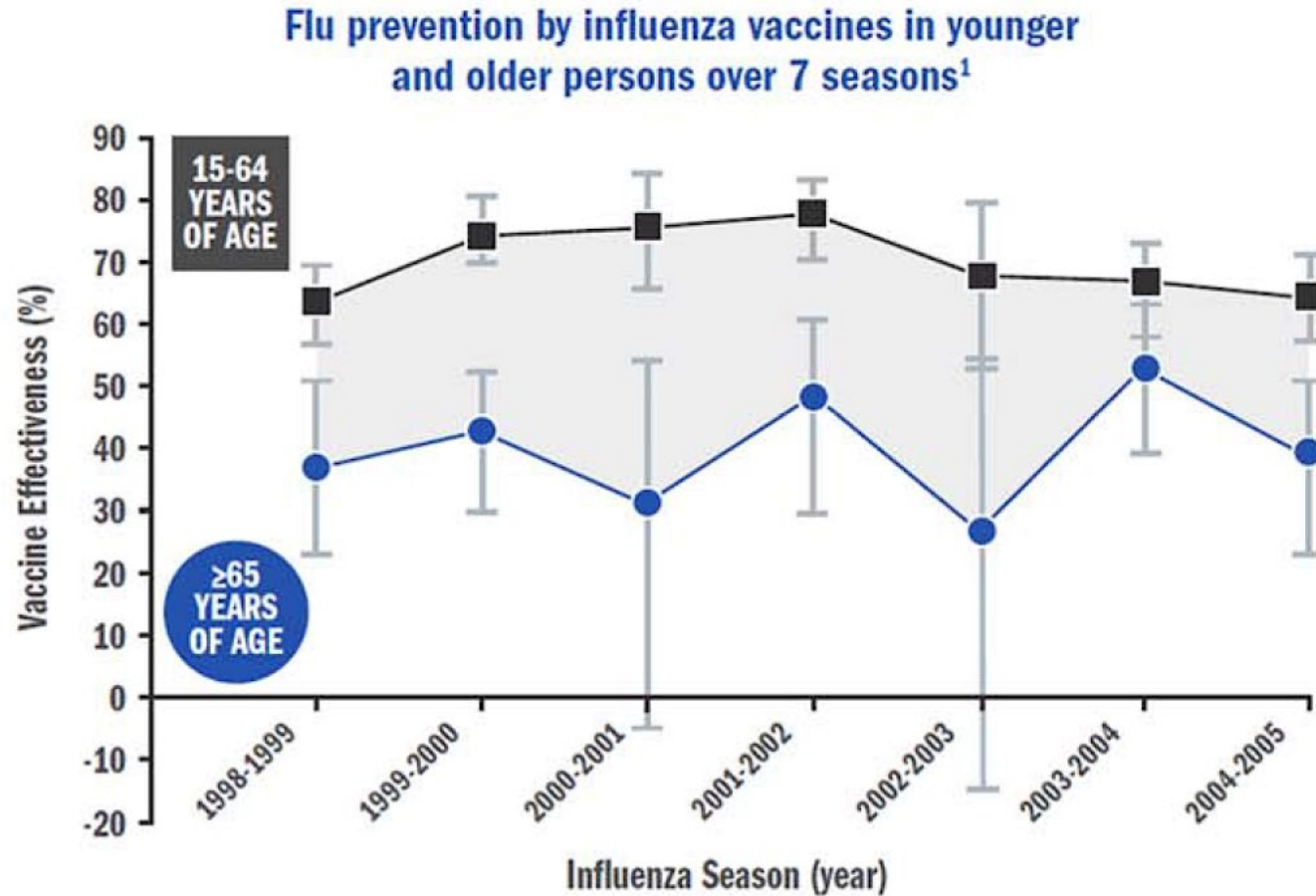
VACCINATION: FALL/WINTER RESPIRATORY SEASON

Respiratory Season Vaccinations: Influenza

Recipient by age group	Vaccine types available for use**	Recommendations on choice of influenza vaccine	
		Individual-level Decision-making	Public health program-level Decision-making
65 years and older	<ul style="list-style-type: none"> • IIV3-SD – trivalent standard dose • IIV3-Adj – trivalent adjuvanted • IIV4-SD - quadrivalent standard dose • IIV4-HD – quadrivalent high dose • IIV4-cc – quadrivalent cell culture • RIV4 – quadrivalent recombinant 	<p><u>IIV-HD should be used over IIV-SD,</u> given the burden of influenza A(H3N2) disease and the good evidence of IIV3-HD providing better protection compared to IIV3- SD in adults 65 years of age and older.</p> <p>Other than a recommendation for using IIV-HD over IIV-SD formulations, NACI has not made comparative individual-level recommendations on the use of the other available vaccines in this age group. In the absence of a specific product, any of the available age-appropriate influenza vaccines should be used.</p>	<p><u>Any of the available influenza vaccines should be used.</u></p> <p>There is insufficient evidence on the incremental value of different influenza vaccines (i.e. cost-effectiveness assessments have not been performed by NACI) to make comparative public health program-level recommendations on the use of the available vaccines.</p>

VACCINATION: FALL/WINTER RESPIRATORY SEASON

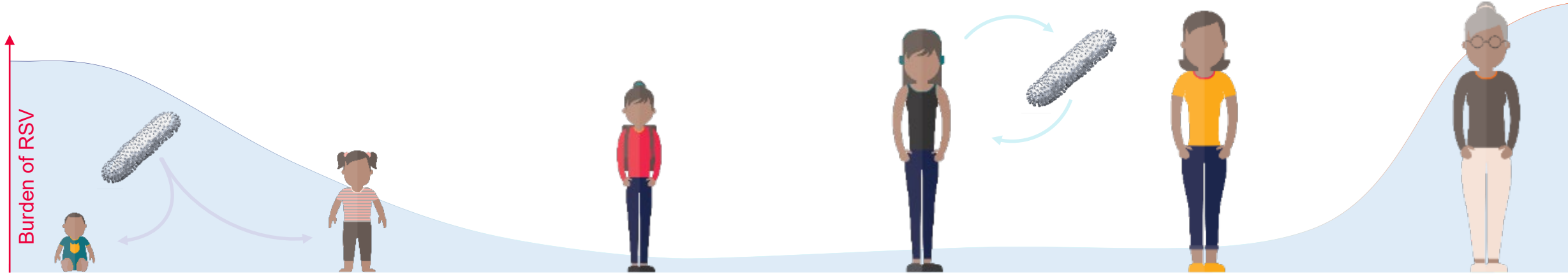
Respiratory Season Vaccinations: Influenza



Average vaccine effectiveness by age from the French Sentinel Network, 1998-2005.
Adapted from Legrand, J., et al. (2006).¹

VACCINATION: FALL/WINTER RESPIRATORY SEASON

Respiratory Season Vaccinations: RSV



Virtually all children will have been infected with RSV by age 2 years¹

Immune response after natural infection is incomplete and is short-lived^{2,3}. RSV reinfections occur throughout life³

Older adults are at high risk of severe RSV infection. Those with underlying medical conditions are at even greater risk^{4,5}

VACCINATION: FALL/WINTER RESPIRATORY SEASON

Respiratory Season Vaccinations: RSV (burden of disease)

RSV is the **leading cause of hospitalization** in **infants**

In children aged <5 years:

~58,000 hospitalizations,
~1.5 million outpatient visits
~520,000 ED visits

100-500 deaths

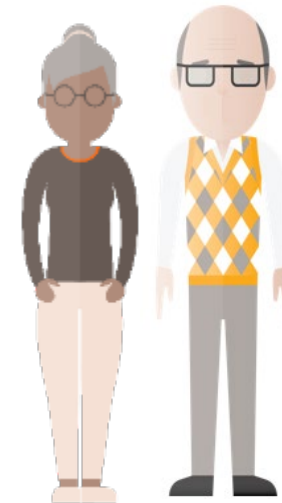


RSV is a **major cause of hospitalization and mortality** in older **adults**

In older adults, ≥65 years:

~177,000 hospitalizations
Outpatient and ED visits in adults underestimated due to lack of surveillance and underreporting

~14,000 deaths

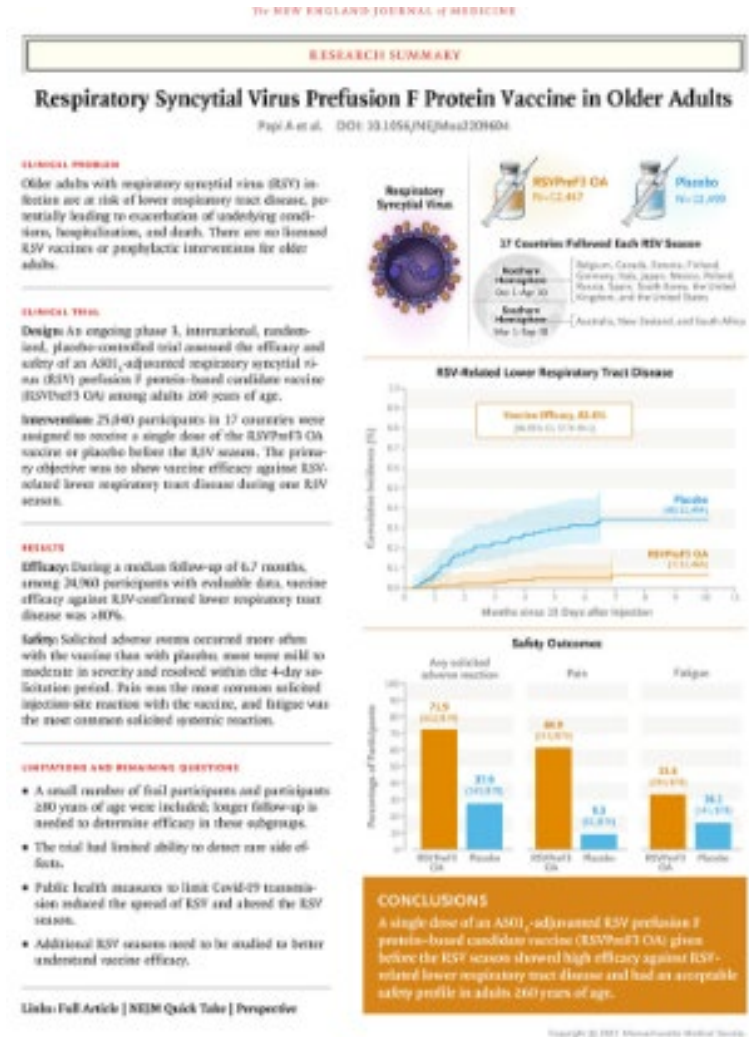


VACCINATION: FALL/WINTER RESPIRATORY SEASON

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Respiratory Season Vaccinations: RSV

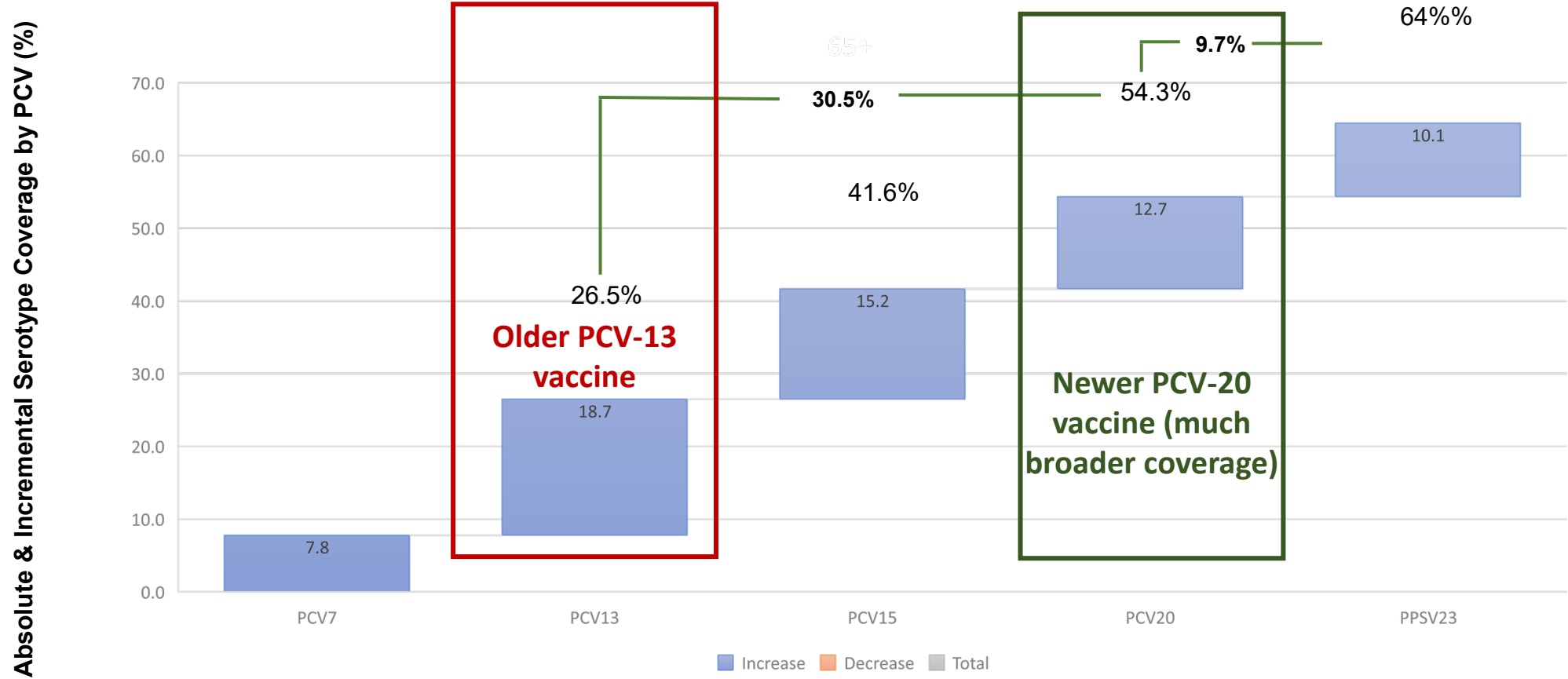
- GSK's Prefusion F protein-based candidate vaccine with AS01_E adjuvant studied in ~24,966 participants
- NEJM publication released February 2023
- Vaccine efficacy against PCR-confirmed RSV-related lower respiratory tract disease was **82.6% overall**, and **94.1% against severe** RSV-related lower respiratory tract disease
- This **vaccine was approved in Canada** earlier this year for adults 60 and older
- No current NACI recommendation on its use (expected early 2024)
- List Price ~\$230, Total Price ~\$300
- Not publicly funded (only public funding in Canada is a LTC program in Ontario)



VACCINATION: FALL/WINTER RESPIRATORY SEASON

Respiratory Season Vaccinations: Pnuemococcal disease

Invasive pneumococcal disease serotype coverage for PCVs in Canadian Adults ≥ 65 Years of Age from NML 2019 (N=1476)



VACCINATION: FALL/WINTER RESPIRATORY SEASON

Respiratory Season Vaccinations: Pneumococcal disease

An Advisory Committee
Statement (ACS)

National Advisory Committee on
Immunization (NACI)

Public health level recommendations on the use of
pneumococcal vaccines in adults, including the use of
15-valent and 20-valent conjugate vaccines



NACI recommends that pneumococcal conjugate vaccine PNEU-C-20 should be offered to pneumococcal vaccine naïve adults or adults whose vaccination status is unknown and who are

- **65 years of age and older,**
- **50 to 64 years of age** living with risk factors placing them at higher risk of pneumococcal disease,
- **18 to 49 years of age living** with immunocompromising conditions. (Strong NACI recommendation)

It's also a very *cost-effective vaccine*: *“The base-case analysis, supported by scenario analyses, indicated that PNEU-C-20 used alone is likely a cost-effective strategy at age 65 or 75, with ICERs ranging from \$6,500 to \$17,400 per QALY gained.”*

VACCINATION: FALL/WINTER RESPIRATORY SEASON

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Respiratory Season Vaccinations: Pneumococcal disease

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Public health level recommendations on the use of
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Table 1. Medical conditions and other biological and/or social risk factors resulting in high risk of IPD

Non-immunocompromising conditions	Immunocompromising conditions ^a	Other risk factors
<ul style="list-style-type: none"> Chronic cerebrospinal fluid (CSF) leak Chronic neurologic condition that may impair clearance of oral secretions Cochlear implants, including children and adults who are to receive implants Chronic heart disease Diabetes mellitus Chronic kidney disease ^a Chronic liver disease, including hepatic cirrhosis due to any cause ^a Chronic lung disease, including asthma requiring medical care in the preceding 12 months 	<ul style="list-style-type: none"> Sickle cell disease, congenital or acquired asplenia, or splenic dysfunction ^b Congenital immunodeficiencies involving any part of the immune system, including B-lymphocyte (humoral) immunity, T-lymphocyte (cell) mediated immunity, complement system (properdin, or factor D deficiencies), or phagocytic functions Immunocompromising therapy, including use of long-term corticosteroids, chemotherapy, radiation therapy, and post-organ transplant therapy HIV infection Hematopoietic stem cell transplant (recipient) ^c Malignant neoplasms, including leukemia and lymphoma Nephrotic syndrome Solid organ or islet transplant (candidate or recipient) 	<p>Individuals</p> <ul style="list-style-type: none"> who smoke who use illicit drugs with alcohol use disorder who are experiencing homelessness who live in communities or settings ^d experiencing sustained high IPD rates.

Note – fairly broad set of conditions put you at high-risk for IPD (invasive pneumococcal disease) for the Age 50-64 indication

Q&A

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