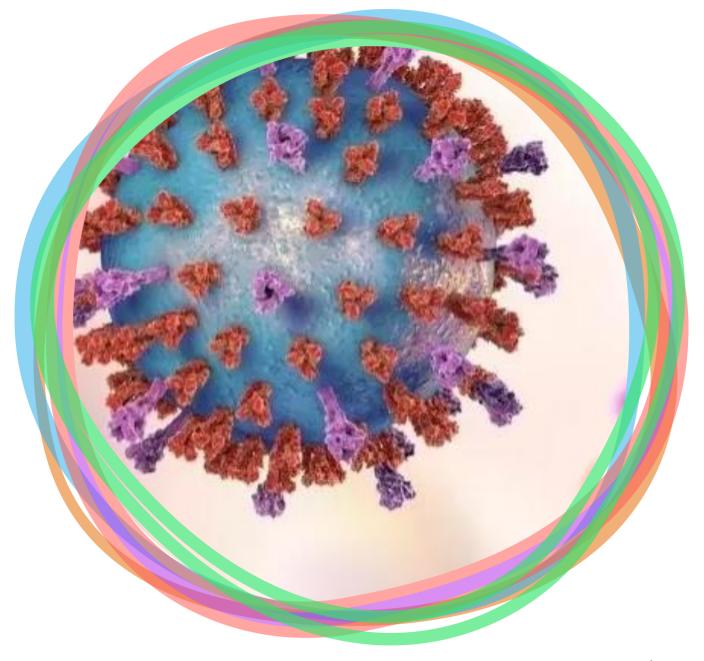
# RSV in Babies and Pregnancy

Ale Heddon Rita Ha Dr. Lara Rosenberg October 17, 2024\*



## Agenda

- 1. RSV impact
- 2. Options for RSV prevention
- 3. Beyfortus MOA, precautions, dosing
- 4. Beyfortus vs Abrysvo
- 5. Publicly funded Beyfortus, Abrysvo
- 6. RSV at NYFHT EMR assets, QI program
- 7. Patient resources



# RSV impact

- RSV infects almost all infants by 2 years of age
- Respiratory tract infection, lasting 1-2 wks
  - Nasal congestion
  - Cough
  - Low grade fever
  - Loss of appetite
- 20-30% of infants with RSV develop bronchiolitis or pneumonia
- Croup or otitis media may also occur



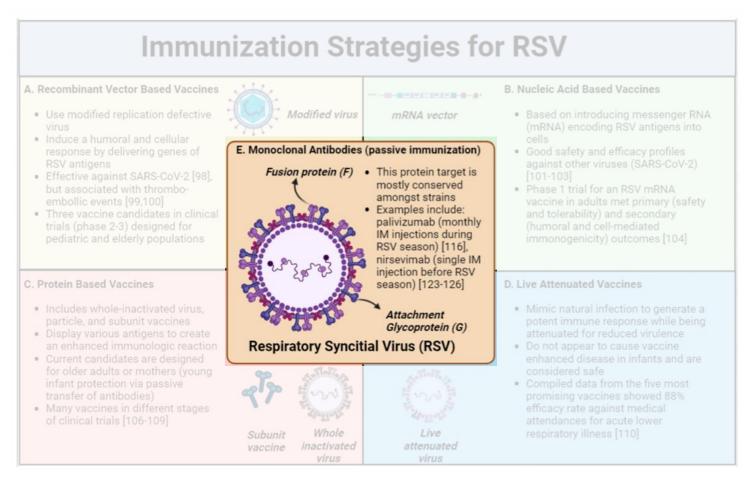
# Options for RSV prevention

### **Monoclonal antibodies**

- Synagis (palivizumab)
- Beyfortus (nirsevimab)

### **RSV** vaccines

- Arexvy (RSVPreF3)
- Abrysvo (RSVpreF)

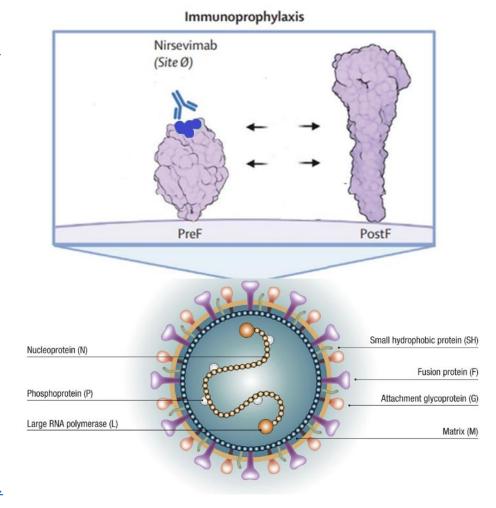




Gatt 2023. Prevention and treatment strategies for RSV.

# Beyfortus MOA

- Engineered human monoclonal antibody
- Binds to prefusion protein for RSV A and RSV B (bivalent) and inhibits membrane fusion for viral entry to host cell
- Injected antibodies provide direct and immediate protection against disease
- Does not activate the immune system
- Protection wanes as antibodies degrade
- Effective for 6 months





## Beyfortus Precautions

### When not to give it

- Current RSV infection
- History of RSV infection in current RSV season (except immunocompromised infants)
- Healthy infant (no risk factors) with mother who received Abrysvo during pregnancy
- Moderate to severe illness, with or without fever – consider defer with clinical discretion

### Side effects

- Rash (mild-moderate)
- Fever
- Injection site reactions
- Overall rates of adverse events were comparable with placebo



NACI. RSV vaccines.

# Beyfortus Administration

### First RSV season:

For neonates and infants based on body weight at the time of dosing<sup>1</sup>









### Second RSV season:

For children who remain vulnerable to severe RSV disease, up to 24 months of age<sup>1</sup>



Different injection sites should be used

Beyfortus is for IM injection only.

Preferably in the anterolateral aspect of the thigh.

Can be given at the same time as, or at any time before or after other immunization products.



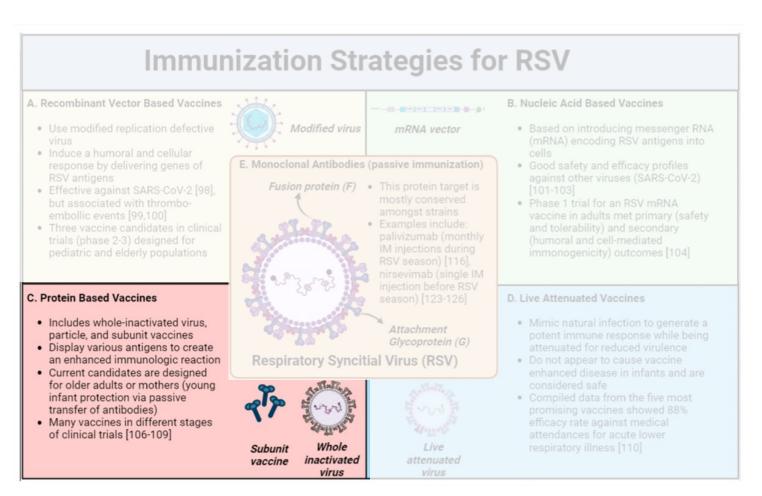
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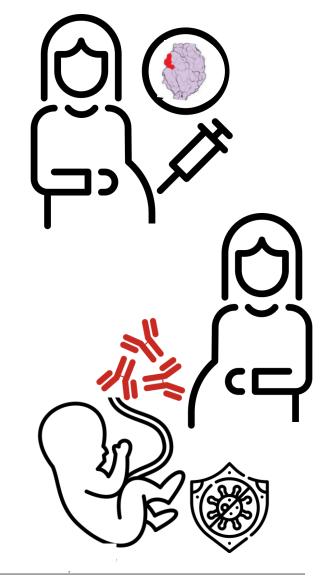




Gatt 2023. Prevention and treatment strategies for RSV.

# Abrysvo (RSVPreF)

- Prefusion F antigens elicit immune response (active immunization)
- Maternal immune response develops neutralizing antibodies
- Antibodies are passively transferred from mother to infant
- Infant is born with passive immunity against RSV
- Maternal immunization confers passive immunity to infants without fully functional immune system





Abrysvo [product monograph]. <a href="https://pdf.hres.ca/dpd\_pm/00073900.PDF">https://pdf.hres.ca/dpd\_pm/00073900.PDF</a>
Terstappen 2024. <a href="https://pdf.hres.ca/dpd\_pm/00073900.PDF">Thttps://pdf.hres.ca/dpd\_pm/00073900.PDF</a>
Terstappen 2024. <a href="https://pdf.hres.ca/dpd\_pm/00073900.PDF">Drevent RSV in infants</a>
Terstappen 2024. <a href="htt

# NACI RSV guidelines

### Beyfortus (nirsevimab)

- Reduce hospital admission by 81-83%
- Reduce MA RSV LRTI in healthy infants by 80%

### Abrysvo

- Reduce hospital admission in infants by 57%
- Reduce MA RSV RTI in infants by 51%



# NACI RSV guidelines

- 1) Beyfortus is recommended for all infants entering, or born during, their first RSV season
- 2) Beyfortus is recommended over Abrysvo due to Beyfortus' superior efficacy, duration of protection and available safety data.
- 3) Infants whose gestational parent received Abrysvo, still need Beyfortus if:
  - Infant meets criteria for high risk of severe RSV disease
  - Infant born less than 2 weeks after administration of Abrysvo



# Publicly funded RSV programs

# Beyfortus (monoclonal antibody) for infants Eligible patients:

- Born in 2024 prior to the RSV season (i.e. entering their first RSV season)
- Born during the 2024/25 RSV season (November-April)
- Children up to 24 months of age who remain vulnerable from severe RSV disease through their second RSV season
  - Chronic lung disease
  - Congenital heart disease
  - Severe immunodeficiency
  - Down syndrome/Trisomy 21
  - Cystic fibrosis
  - Neuromuscular disease impairing clearing of respiratory secretions
  - Severe congenital airway anomalies impairing the clearing of respiratory secretions



# Publicly funded RSV programs

### Abrysvo (RSV vaccine) for pregnant individuals Eligible patients:

 Pregnant individuals (32-36 wks gestational) who will deliver prior to or during RSV season (November-April)



# Publicly funded RSV programs

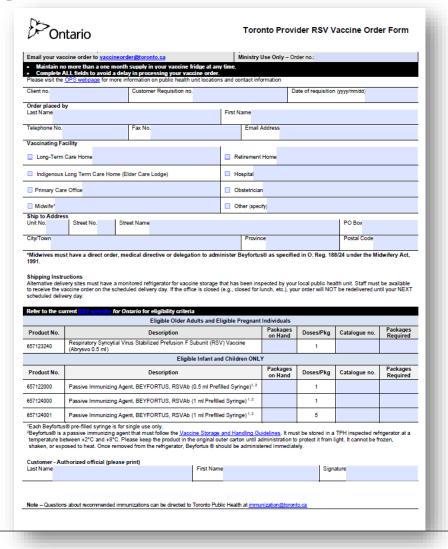
### **Vaccine Ordering Details:**

Submit <u>Toronto Provider RSV Vaccine</u> Order Form (updated October 2024)

Send completed forms to vaccineorder@toronto.ca

Do not batch order

Toronto Public Health will be monitoring orders and may contact HCPs if clarifications on their orders are required.





# RSV at NYFHT

**EMR** assets QI Program



# EMR: RSV prevention macro/stamp

EMR documentation Macro/stamp

"RSVbeyfortus"

"RSVpregnancy"

- Discussion guide
- Benefits, risks
- Recommendations
- Eligibility for publicly funded RSV program

RSV Publicly Funded Infant Prevention Program 2024/25

Discussed RSV, high-risk populations, and seasonality.

Provided information on changes to Ontario's RSV prevention program for infants.

Discussed Beyfortus:

- NACI recommended first line; monoclonal antibody providing immediate protection.
- Eligibility: infants born in 2024 before RSV season, infants born during the season, and high-risk children up to 24 months.
- Efficacy: reduces RSV-related hospitalizations by up to 83% and medically attended visit due to RSV by 80% for up to 6 months
- Dose: Single-dose IM injection. Weight based dosing (50 mg if <5 kg, 100 mg if  $\ge$ 5 kg, 200mg if  $\le$ 24 months and high risk).
- Common side effects: injection site reaction, fever, rash. Possible hypersensitivity reactions.

Outcome of Discussion:

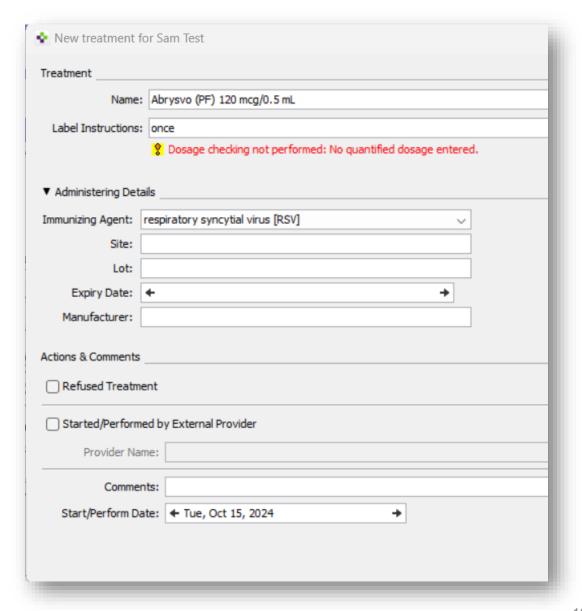
- «Parent agreeable to receive Beyfortus. Appointment scheduled.»
- «Parent agreeable to receive Beyfortus and will call back to schedule appointment.»
- «Parent declines Beyfortus immunization.»
- «Parent undecided, will follow up.»



# PSS - Abrysvo

Abrysvo

Be sure to also include Abrysvo receipt in hospital/antenatal record



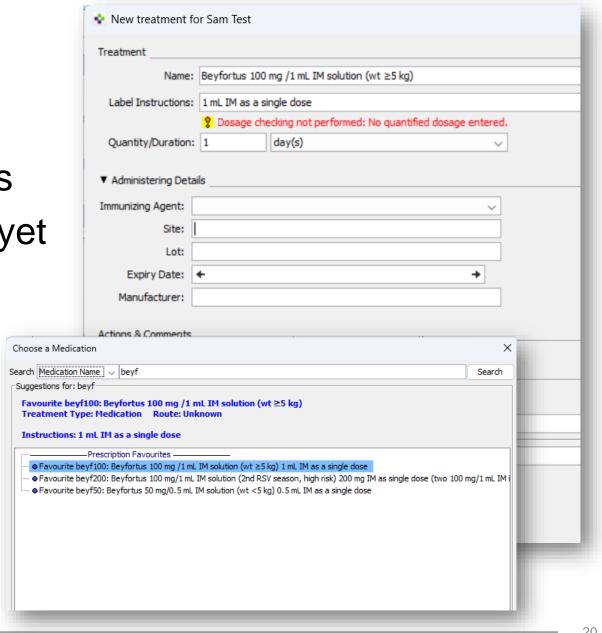


# PSS - Beyfortus

- Not yet available in Medications
- No Immunization Agent option yet

### In the meantime

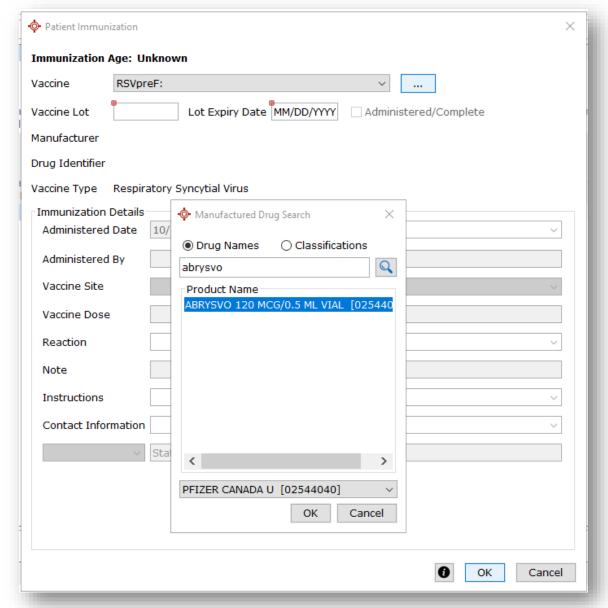
- Use Prescription Favourites
  - Beyf50
  - Beyf100
  - Beyf200





# Accuro - Abrysvo

- Immunization Summary "RSVpreF"
- Select "..." "Abrysvo"
- Enter Immunization Details as usual practice





## Accuro - Beyfortus

- Immunization Summary "RSV mAb"
- But...Beyfortus "brand" is not available for administration until Accuro update
- May need to retrospectively re-enter immunization summary (QI project?)

### In the meantime:

- Enter "nirsevimab" as Active or External Medication
- Enter immunization details in SIG

Vaccine Lot:

Vaccine expiry date:

Administered date:

Administered by:

Vaccine site:



# Accuro - Beyfortus

### Import Beyfortus as a Prescription Favorite

1. Select \* for Prescription Favorites.



- 2. Import Beyfortus prescriptions from another user who has created favorites (e.g. RiHa).
- 3. Once imported, search and select appropriate RX for your patient in your Favorite Prescription list (Active vs External category).



# NYFHT QI: EMR queries

EMR query RSV 2024/2025 EMR query # babies eligible Oct/Nov 2024 season # eligible babies for Beyfortus at Beyfortus start who received Offer Beyfortus **NYFHT** in hospital Beyfortus from to eligible DOB Jan2024 babies NYFHT onward Distribute physician patient lists in EMR



### Clinical Resources



### Multilingual available





https://www.pcmch.on.ca/wpcontent/uploads/pcmch-rsv-parent-factsheet.pdf

### Patient Resources



Ministry of Health

# Infant and High-risk Children Respiratory Syncytial Virus (RSV) Prevention Program – Immunity, Monoclonal Antibodies and Vaccination

Version 1.0 - August 8, 2024

This fact sheet provides basic information only. It is not intended to provide or replace medical advice, diagnosis, or treatment. You should talk to a health care professional about health concerns and illness.

#### **Immunity**

Immunity against diseases is achieved by the presence of antibodies in the body. Antibodies are proteins the body produces to neutralize or destroy harmful organisms, such as viruses and bacteria, that cause disease. These antibodies are specific to each disease (e.g., measles antibodies will only help protect a person exposed to measles). Immunity is divided into two types: active and passive.

Active immunity arises when the immune system is prompted to produce antibodies in response to exposure to a disease organism. This can happen through natural infection or vaccination.

- Natural immunity develops when a person is exposed to and infected by a disease organism
- Vaccine-induced immunity occurs when a person is vaccinated with a killed or weakened form of the disease organism or part of it (e.g., protein).

In both cases, the immune system remembers the disease and can quickly produce antibodies if exposed again. Active immunity takes time to develop (usually several weeks) but tends to be long-lasting, sometimes providing life-long protection. However, some diseases, like respiratory syncytial virus (RSV), do not provide long-lasting natural immunity.

Passive immunity is obtained when a person is given ready-made antibodies rather than their immune system producing them.

1

https://www.ontario.ca/files/2024-08/mohinfant-high-risk-children-rsv-immunity-en-2024-08-29.pdf



Ministry of Health

# Infant and High-risk Children Respiratory Syncytial Virus (RSV) Prevention Program – Monoclonal Antibody for Infants and High-risk Children

Version 1.0 - August 8, 2024

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### Protecting Your Infant from RSV: Understanding Your Options

Two safe and effective ways to help prevent RSV infections in infants are available in Ontario: vaccination during pregnancy (Abrysvo<sup>™</sup>) and monoclonal antibodies (Beyfortus<sup>™</sup>) given after birth.

Generally, only one product is recommended to help protect an infant from RSV. Using both the vaccine and the monoclonal antibody is not necessary, unless the infant is high-risk (e.g., monoclonal antibody is recommended for all infants with certain medical conditions such as cardiac disease) per recommendation by a health care provider.

The National Advisory Committee on Immunization (NACI) recommends the monoclonal antibody product, Beyfortus™, be used over the vaccination of the pregnant individual based on its efficacy (i.e., how well it works), duration of protection, and safety profile.

This fact sheet presents information only for the monoclonal antibody prevention product Beyfortus<sup>TM</sup>. For information about the vaccine available to pregnant persons, please see the *Infant RSV prevention program – Vaccine for pregnant individuals*.

### Beyfortus<sup>™</sup> Provides Immediate RSV Protection for Infants

Beyfortus<sup>TM</sup> is an injectable monoclonal antibody given to infants soon after birth during the RSV season, young infants born prior to the RSV season, and high-risk children during their second RSV season. The RSV season is generally from November to April,

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https://www.ontario.ca/files/2024-08/moh-infanthigh-risk-children-rsv-beyfortus-monoclonal-en-2024-08-28.pdf



Ministry of Health

#### Infant and High-risk Children Respiratory Syncytial Virus (RSV) Prevention Program - Vaccine for Pregnant Individuals

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The National Advisory Committee on Immunization (NACI) recommends the monoclonal antibody product, Beyfortus®, over the vaccination of the pregnant individual based on its efficacy (i.e., how well it works), duration of protection, and safety profile.

This fact sheet presents information about the Abrysvo™ vaccine for pregnant individuals. For information about the antibody prevention product available to infants, please see the fact sheet, Infant RSV prevention program – Monoclonal antibody for infants and high-risk children.

#### Vaccination for Pregnant Individuals

Health Canada authorized the Abrysvo™ vaccine to be given to pregnant individuals between 32 and 36 weeks of pregnancy if they will deliver near the start of or during RSV season. The RSV season is generally from November to April, peaking in December. In response to the vaccine the pregnant person creates antibodies that are

https://www.ontario.ca/files/2024-08/mohinfant-high-risk-children-rsv-abrysvopregnancy-en-2024-08-28.pdf



# Case Examples

What? Beyfortus 50mg Where? In hospital When? Before discharge What? Beyfortus 100mg Where? PCP When? Prior to RSV season What? Beyfortus 200mg Where? PCP When? Prior to RSV season

What? Beyfortus 50mg Where? In hospital When? Before discharge

Born: December

Weight: 3.6kg

Healthy

Born: May

Weight: 7.9kg

Healthy

Born: Oct/23 Weight: 9.3kg

Chronic lung disease

Born: November/24

at 36 weeks Weight: 3.2kg Mom received

Abrysvo at 35 weeks



# Questions?

