

# Vaccine Safety - What can we learn from... *Special Immunization Clinic*

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*1 March, 2023*



# Land acknowledgement

BC Children's Hospital Research Institute operates on the traditional, ancestral, and unceded territory of the Coast Salish peoples — x<sup>w</sup>məθk<sup>w</sup>əy̓əm (Musqueam), Sk̓wx̓wú7mesh (Squamish), and Səlílwətaʔ/Selilwitulh (Tsleil-Waututh) Nations.



# BC Immunization Forum 2023 Presenter Disclosure

Manish Sadarangani

- Salary awards
  - BC Children's Hospital Foundation
  - Michael Smith Foundation for Health Research
- Research/Project Funding
  - Merck, Moderna, VBI Vaccines, GlaxoSmithKline, Pfizer, Sanofi-Pasteur, Seqirus, Symvivo
- All funds have been paid to my institute
- I have not received any personal payments



# Mitigating Potential Bias

- No vaccine trade names or company names will be mentioned during the presentation, unless to provide clarity to aid audience understanding
- No off label recommendations will be made



# My Brief

To be familiar with the contribution of the Special Immunization Clinics to research in vaccine safety including allergic events associated with COVID-19 vaccines



# Vaccine safety: from population to molecule...

- Special Immunization Clinic (SIC) Network



# Who are we?



<https://cirnetwork.ca/network/special-immunization/>

- National team of expert clinicians
  - Infectious diseases
  - Allergy
  - Immunology
  - Hematology-Oncology
  - Transplant
  - Neurology



# What do we do?



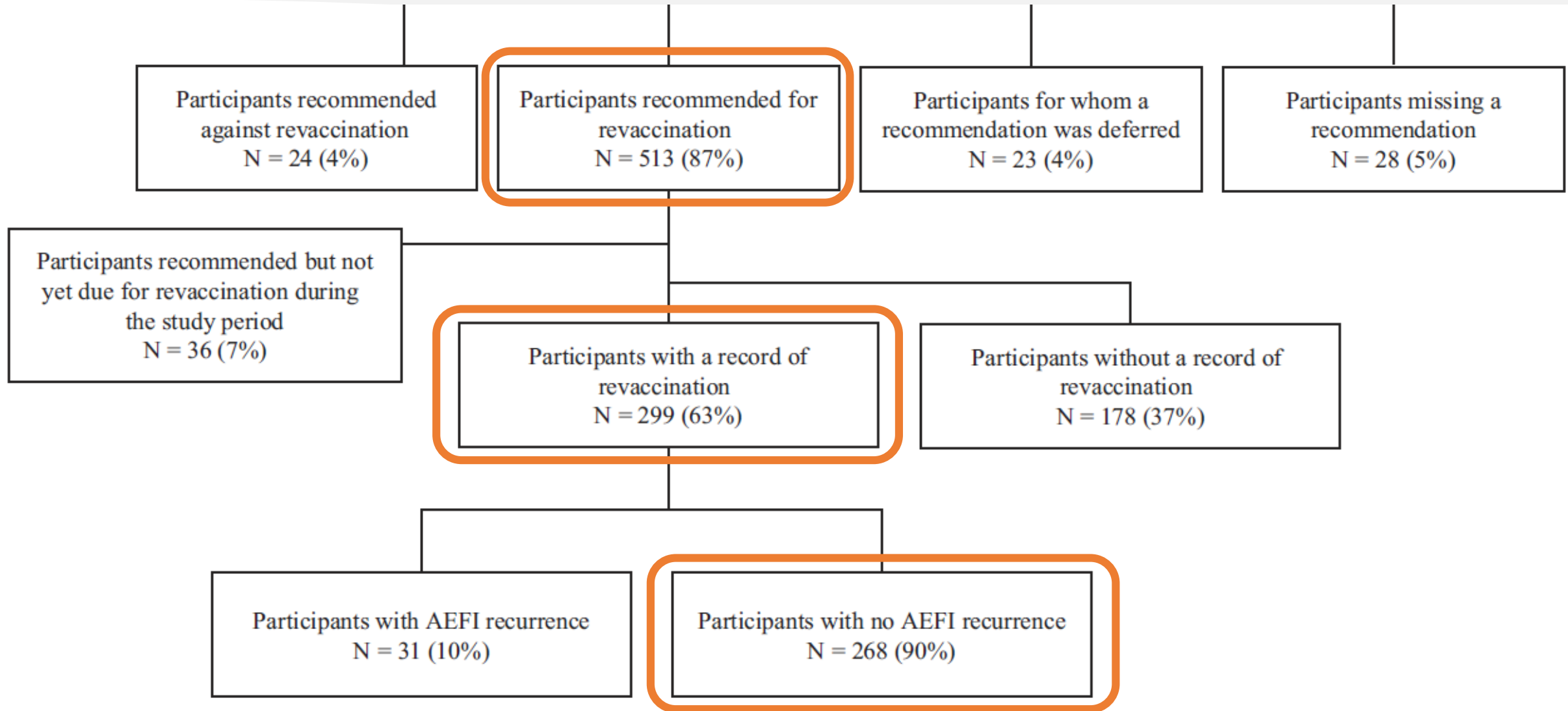
- Standard patient assessments
- Evaluate vaccine safety in patients
  - With previous adverse events
  - With comorbidities that may affect vaccine response
- Ongoing studies
  - Optimizing management of patients with contraindication to vaccination and those with AEFI
  - Optimizing varicella immunization after transplant
  - Safety of rotavirus vaccination in infants born to people on 'biologics' (mAbs) during pregnancy

<https://cirnetwork.ca/network/special-immunization/>





# Patients with previous AEFI

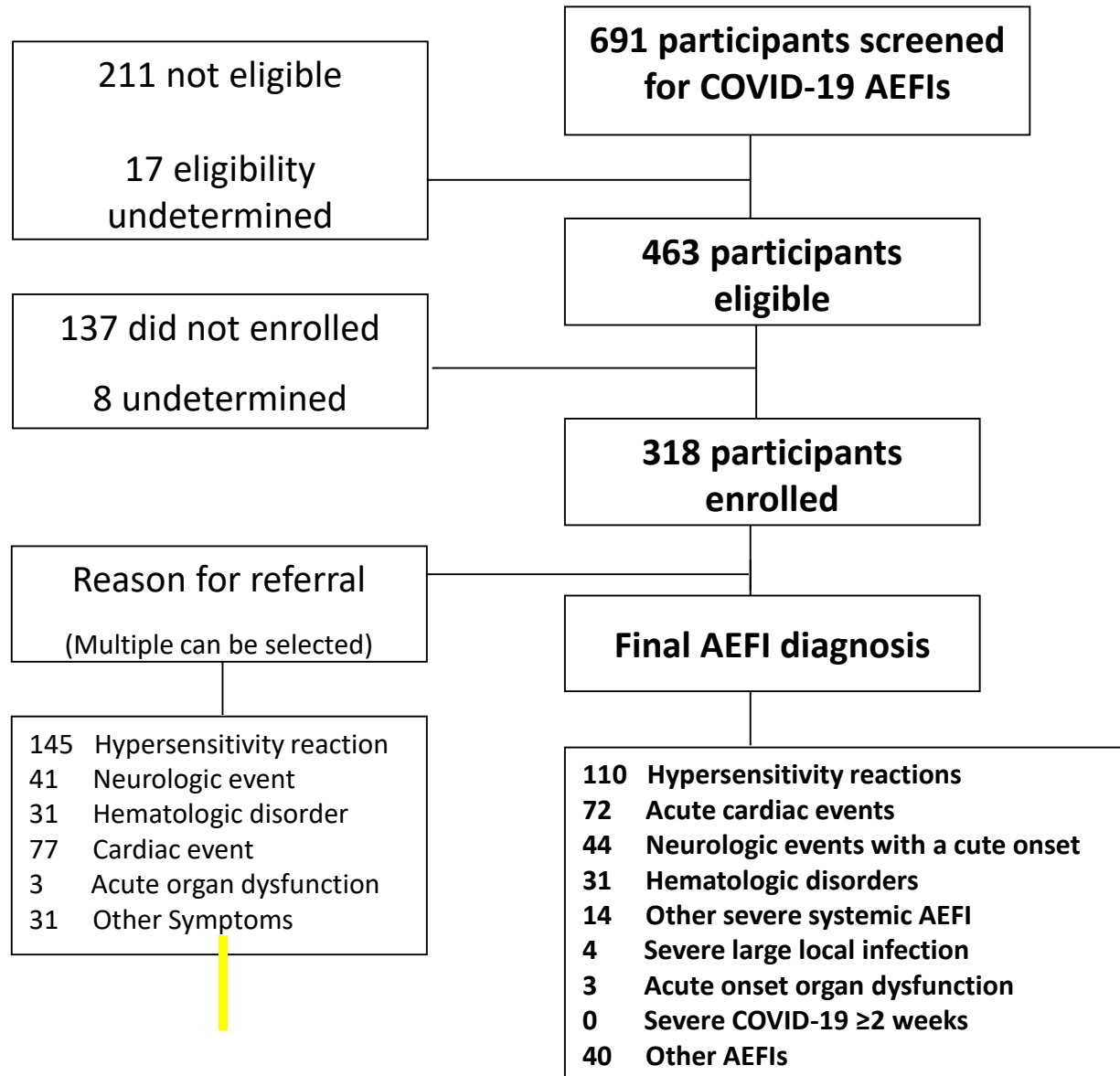


**Table III. Revaccination status and outcome of participants recommended and due for revaccination during the study period, stratified by AEFI type (N = 477)**

Revaccination status and outcome	Large local reaction	Other injection-site reaction*	Immediate hypersensitivity reaction <sup>†</sup>	Delayed hypersensitivity reaction and other allergic-like event <sup>‡</sup>	Seizure	Other neurologic AEFI <sup>§</sup>	Other systemic AEFI <sup>¶</sup>
	N = 77 No. (%)	N = 19 No. (%)	N = 101 No. (%)	N = 76 No. (%)	N = 21 No. (%)	N = 21 No. (%)	N = 162 No. (%)
Revaccination status							
Recorded revaccination	49 (64)	10 (53)	71 (70)	55 (72)	13 (62)	8 (38)	93 (57)
No recorded revaccination	28 (36)	9 (47)	30 (30)	21 (28)	8 (38)	13 (82)	69 (43)
Revaccination outcome							
AEFI recurrence	15 (31)	2 (20)	5 (7)	4 (7)	1 (8)	0 (0)	4 (4)
No AEFI recurrence	34 (69)	8 (80)	66 (93)	51 (93)	12 (92)	8 (100)	89 (96)
Severity relative to initial AEFI							
Milder	12 (80)	2 (100)	3 (60)	3 (75)	0 (0)		2 (50)
Same severity	1 (7)	0 (0)	1 (20)	1 (25)	0 (0)		1 (25)
More severe	2 (13)	0 (0)	1 (20)	0 (0)	0 (0)		1 (25)
Not reported	0 (0)	0 (0)	0 (0)	0 (0)	1 (100)		0 (0)

- Among 92 participants with suspected vaccine allergy who underwent skin testing and were revaccinated, the negative predictive value of skin testing for AEFI recurrence was 96% (95% CI 92.5%-99.5%)

# Patients with previous AEFI after COVID-19 vaccine

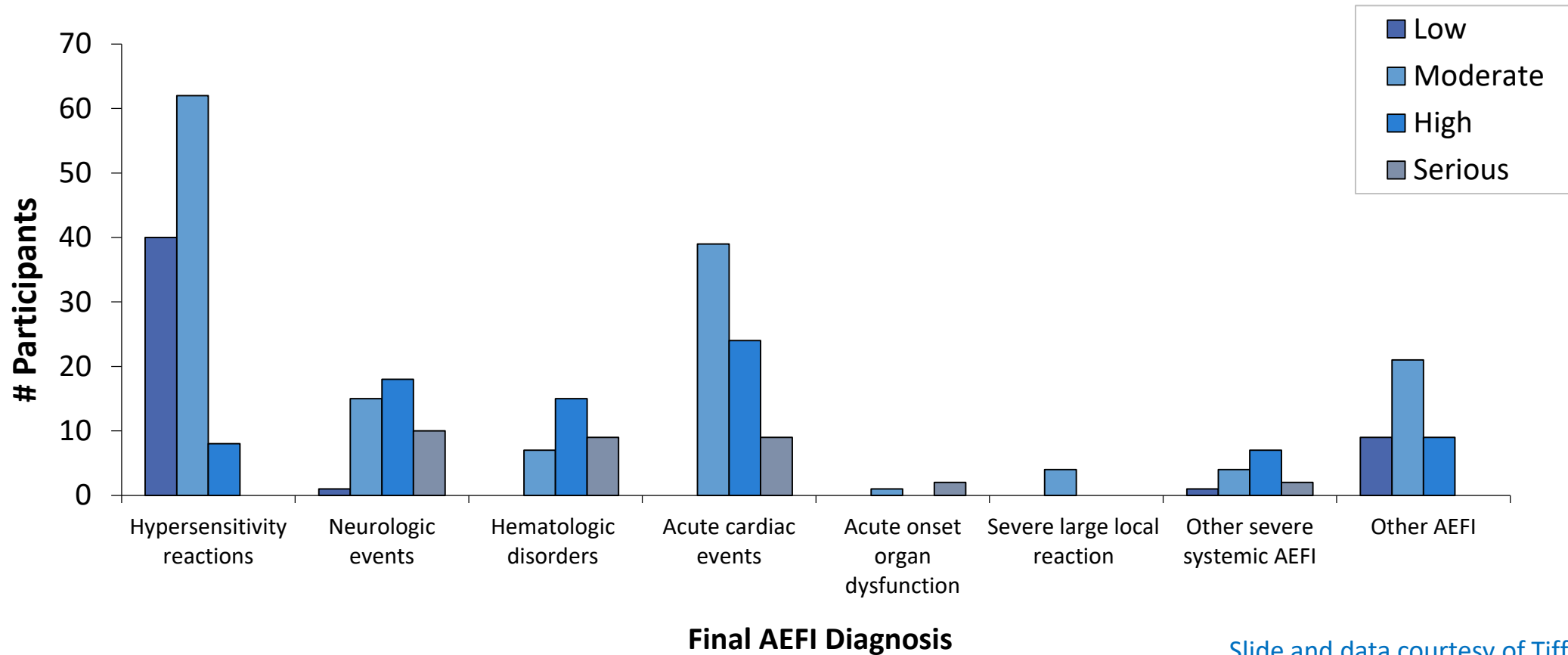


Age	%
12-17 yo	17%
18-39 yo	30%
40-64 yo	44%
65+ yo	10%

Slide and data courtesy of Tiffany Fitzpatrick and Karina Top



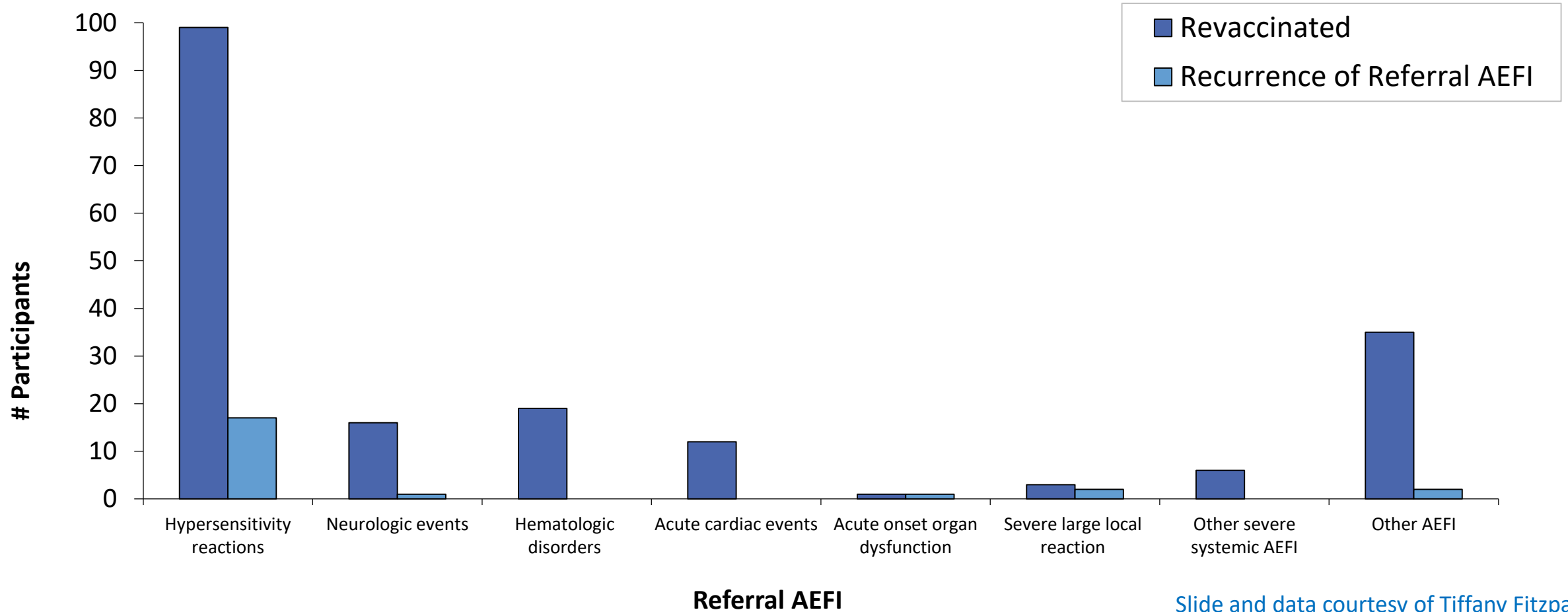
# Impact/Seriousness of AEFIs



Slide and data courtesy of Tiffany Fitzpatrick and Karina Top



# Revaccination outcomes



Slide and data courtesy of Tiffany Fitzpatrick and Karina Top



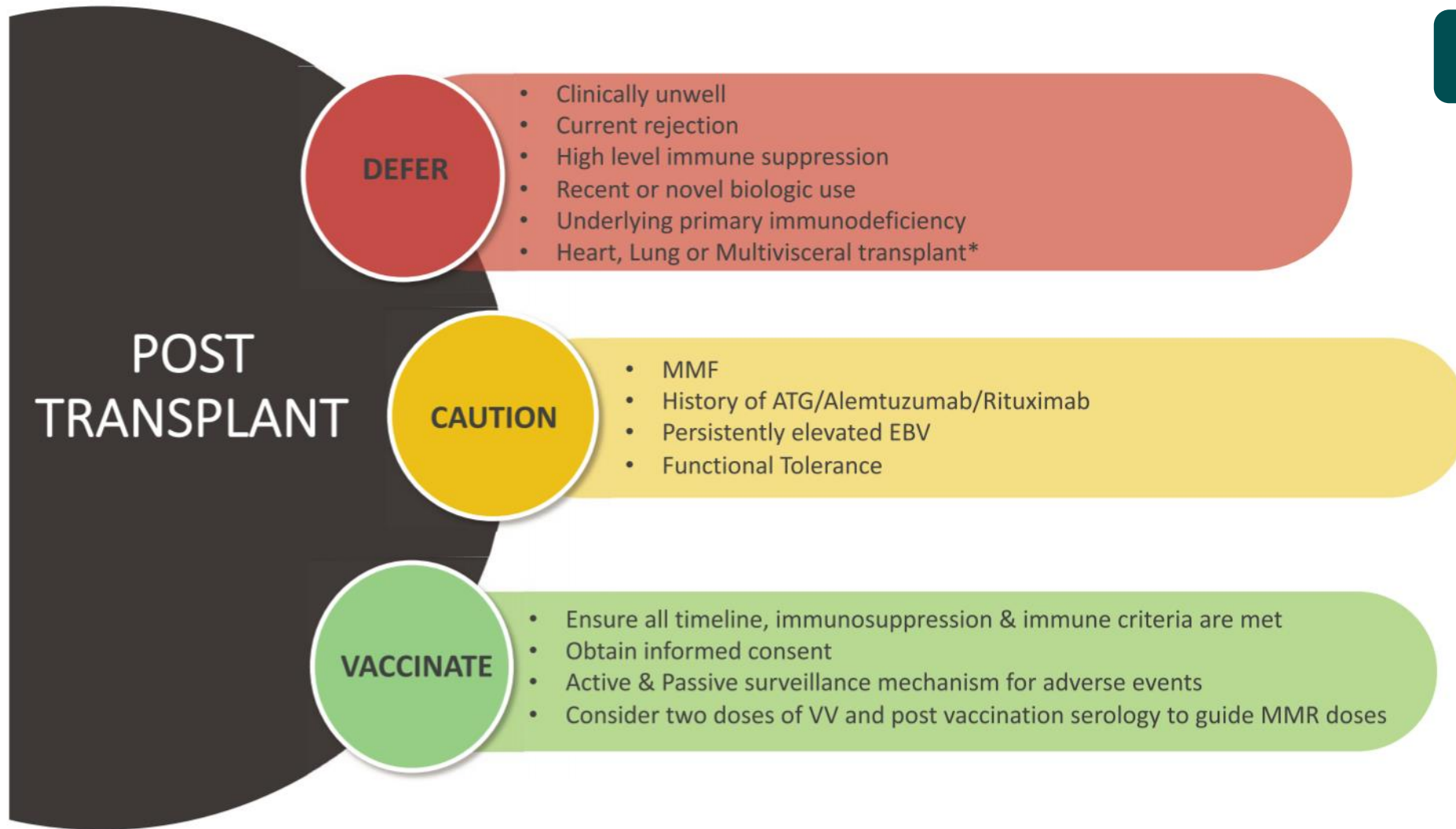
# Future/ongoing specific analyses

- Allergic-like events
  - To be presented at other meetings Spring 2023 (not yet public)
- Cardiac events
  - Data analysis ongoing
- Neurologic events
  - Data analysis ongoing



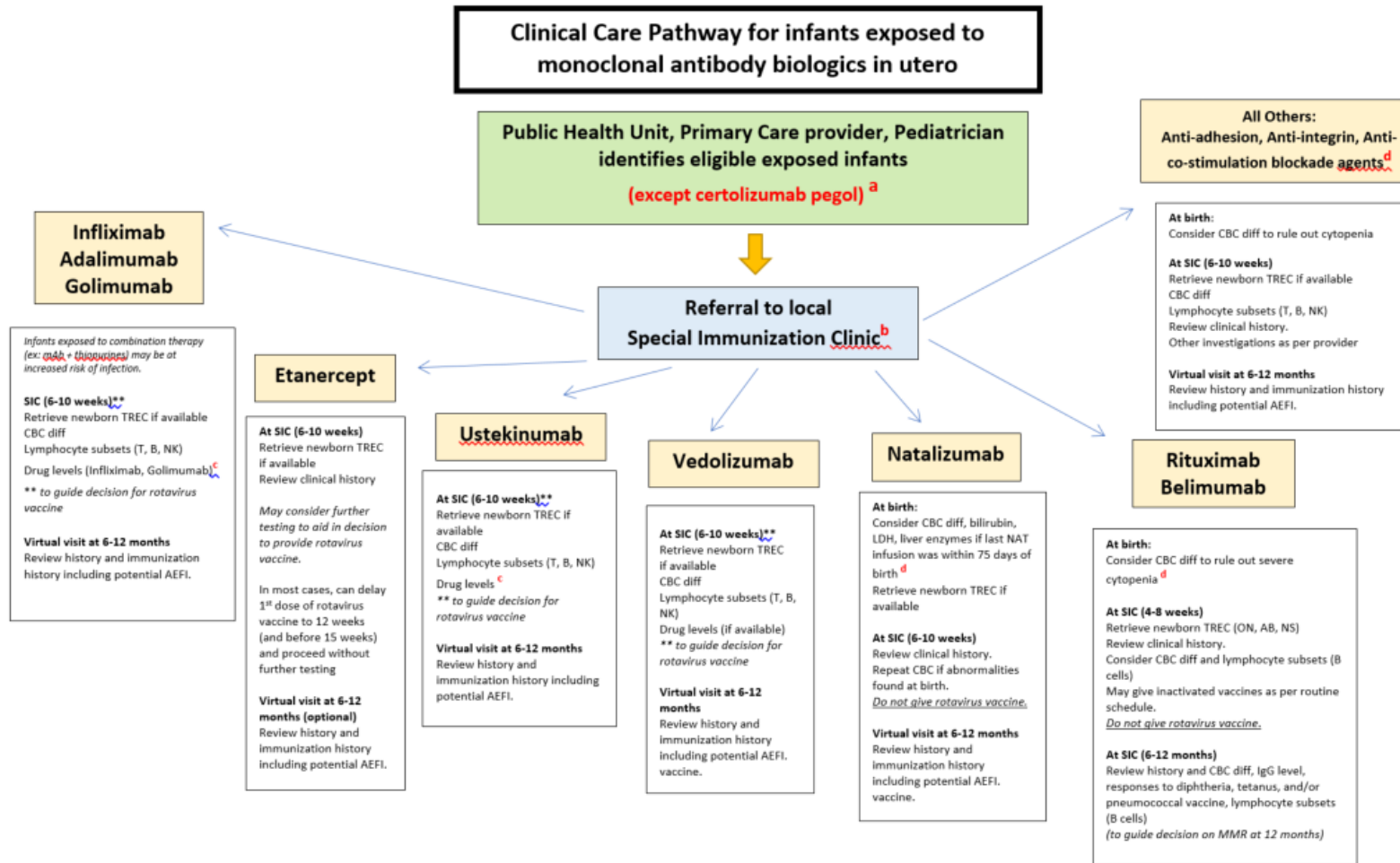
# Varicella vaccine after solid organ transplant

Manuscript due for submission



# Rotavirus vaccine after in utero exposure to biologics

Abstract accepted for presentation at Canadian Immunization Conference 2023



**Additional Information:**

- <sup>a</sup> No referral required for patients on Certolizumab pegol – due to lack of active transfer of drug in utero
- <sup>b</sup> SIC Referral sheet (see local referral form)
- <sup>c</sup> Funded drug level (one sample): Serum - min 100 µL red top tube (or by heel prick) to be sent to Dynacare in Laval Qc. Or by heel prick (special kit to be ordered)- (Special requisition required TAT 5 working days)
- <sup>d</sup> Examples: tocilizumab, certolizumab, secukinumab, abatacept, ustekinumab





# The present and the future



INSIS brings together specialist clinicians, international experts in vaccine safety, systems biology, and genomics to characterize the clinical spectrum, risk factors, and underlying mechanisms of adverse events following COVID-19 immunization such as:

- Myocarditis
- Pericarditis
- Thrombosis with Thrombocytopenia Syndrome (TTS)

**International Network of  
Special Immunization  
Services**

<https://insisvaccine.org/>



**BC Children's  
Hospital**  
Research Institute

# SIC investigators



**SIC Principal Investigators:** Karina Top (Halifax); Juthaporn Cowan (Ottawa)

## SIC Site investigators

- Gaston De Serres, Francois Boucher (Quebec)
- Francisco Noya (Montreal Children's)
- Caroline Quach (Montreal Ste-Justine)
- Emilia Falcone, Hugo Chapdelaine (IRCM)
- Alex Carignan (CHU Sherbrooke)
- Anne Pham-Huy, Arianne Buchan (Ottawa)
- Shaun Morris (Toronto)
- Jeffrey Pernica (Hamilton)
- Chrystyna Kalicinsky (Winnipeg)
- Athena McConnell (Saskatoon)
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- Cora Constantinescu (Calgary)
- Manish Sadarangani (BC)

## Co-Investigators

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- Montreal Childrens: Marina Salvadori
- Ste-Justine: Anne Des Roches, Soren Gantt
- Sherbrooke: Martin Blaquièrre
- Ottawa: Juthaporn Cowan, Simon Hotte
- Toronto: Julia Upton, Pierre-Philippe Piche-Renaud
- Hamilton: Zainab Abdurrahman
- Edmonton: Sneha Suresh
- BC: Jane Finlay, Kyla Hildebrand, Alissa Wright, Persia Pourshahnazari, Sara Belga, Allison Mah, Scott Cameron, Victoria Cook, Julie Bettinger
- Shelley Deeks



# SIC team members



- **SIC Nurses and Coordinators**
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- Emily Shallhorn, Deirdre McCormack
- Lena Coic
- Lousie Wang, Marie-Eve Benoit
- Wafa Djoumaa
- Mélina Denis
- Jennifer Bowes
- Elizabeth McNeil, Allison Wilkin
- Kim Simpson, Suganya Lee
- Evgenia Tshaikovski
- Shauna Richards
- Chris Ireland
- Barb Neufeld, Christine Bon
- Brittany Seligman, Lee Greiner

- **CCfV Team**
- Tessa Xidos
- Isaac van der Laan
- Raashni Chandrasekar
- Peter Ye
- Melissa Moore, Project Manager
- Dr. Tiffany Fitzpatrick

- **Funding**



COVID-19  
IMMUNITY  
TASK FORCE

GRUPE DE TRAVAIL  
SUR L'IMMUNITÉ  
FACE À LA COVID-19



BC  
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Research Institute



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**Thank you**