

# Canadian Parents' Acceptance and Intentions Regarding an Adjuvanted Seasonal Influenza Vaccine for their Infants

William Fisher<sup>1</sup>, Vladimir Gilca<sup>2</sup>, Michelle Murti<sup>3</sup>, Alison Orth<sup>3</sup>, Paul Roumeliotis<sup>4</sup>, Emmanouil Rampakakis<sup>5</sup>, Vivien Brown<sup>6</sup>, John Yaremko<sup>7,8</sup>, Paul Van Buynder<sup>9</sup>, James A. Mansi<sup>10</sup>

1. University of Western Ontario, London, ON; 2. Institut Nationale de Sante Publique du Québec and Université Laval, Québec City, Canada, QC; 3. Fraser Health Authority, Vancouver, BC; 4. Eastern Ontario Health Unit, Cornwall, Ontario; 5. JSS Medical Research, Montreal, Quebec; 6. University of Toronto, Toronto, ON; 7. The Montreal Children's Hospital, Montreal, QC; 8. McGill University, Montreal, QC; 9. Griffith University, Southport, Queensland, Australia; 10. Seqirus Canada Inc., Montreal, Quebec

## Background

- The highest rates of seasonal influenza infection and associated hospitalisations occur in infants and children.
- Influenza vaccination coverage among infants in Canada remains far below the 70% target.
- Adjuvanted trivalent influenza vaccine (aTIV) provides enhanced protection against seasonal influenza in children compared with non-adjuvanted vaccine (TIV).
  - aTIV rapidly induces antibody responses which are higher and more persistent than those in response to TIV, and generates superior levels of seroprotection against homologous and heterologous strains of influenza.

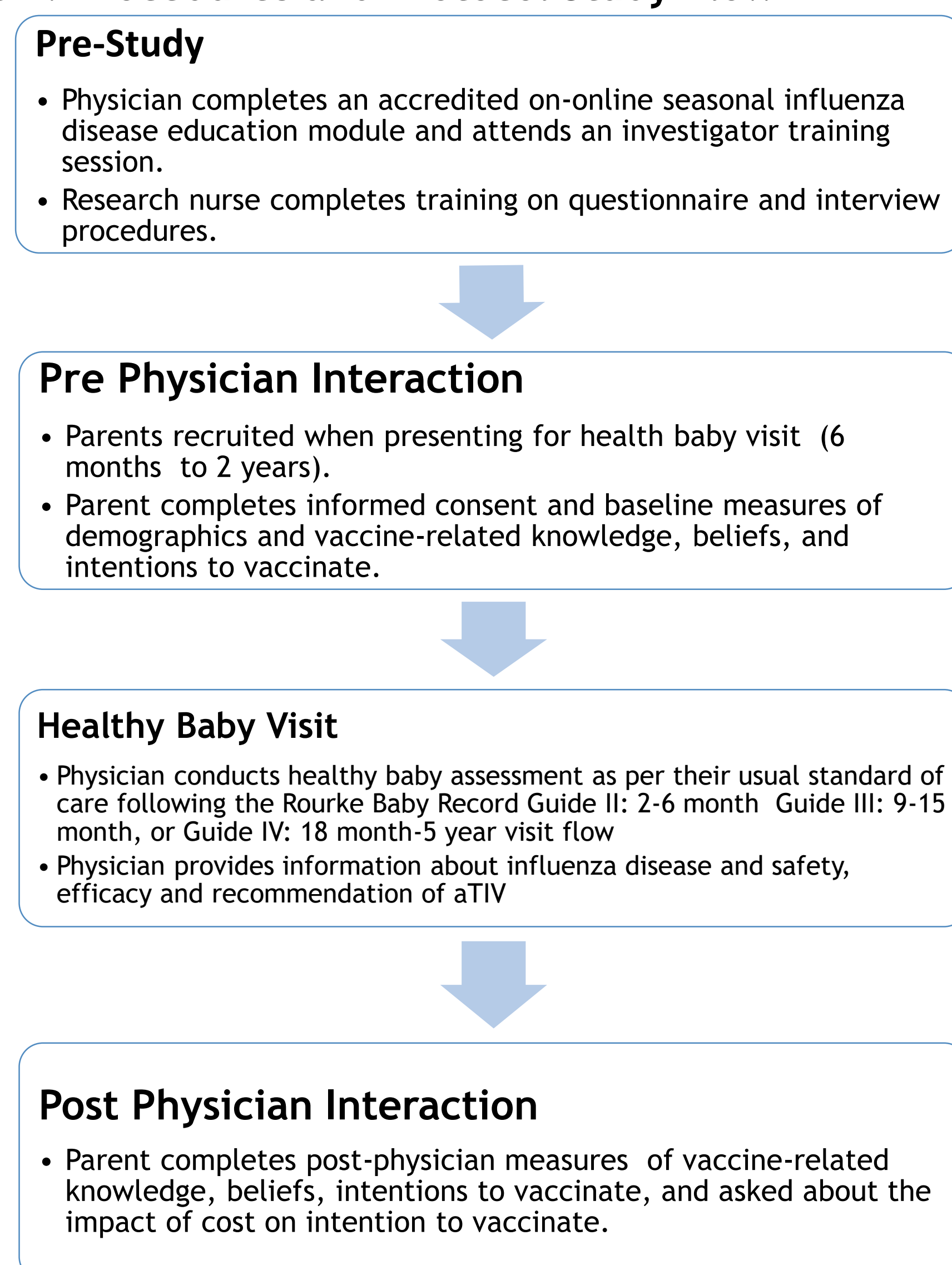
## Objective

The primary objective of this study was to assess parental attitudes and intentions towards immunizing their infants with MF59<sup>®</sup>-adjuvanted trivalent influenza vaccine (Fluad<sup>®</sup>, Seqirus Inc.).

## Methods

- Study design:** Prospective cohort survey
- Time period:** 2015-16 influenza season
- Survey population:** Parents of infants aged 2 to 6 months, presenting for a scheduled "healthy-baby visit", were recruited and interviewed by the research nurse before and after the physician interaction where information about influenza and aTIV was provided (**Figure 1**).

Figure 1. Procedures and Protocol Study Flow



- Statistical analysis:** A multivariable logistic regression model was used to evaluate predictors of intention to vaccinate with the adjuvanted seasonal flu vaccination;
  - Individual predictors were chosen using a backwards selection method from univariable regression models. Variables were entered and removed at the  $\alpha = 0.05$  and  $\alpha = 0.10$  levels, respectively.
  - Covariates considered in the model were: Parent attitudes, perceived social support, perceived physician support, highest level of education, yearly home income, and previous infant vaccination experience.
- Ethics:** The research protocol received ethics approval by the Western University Health Sciences Research Ethics Board, the Fraser Health Research Ethics Board, and IRB Services.

## Results

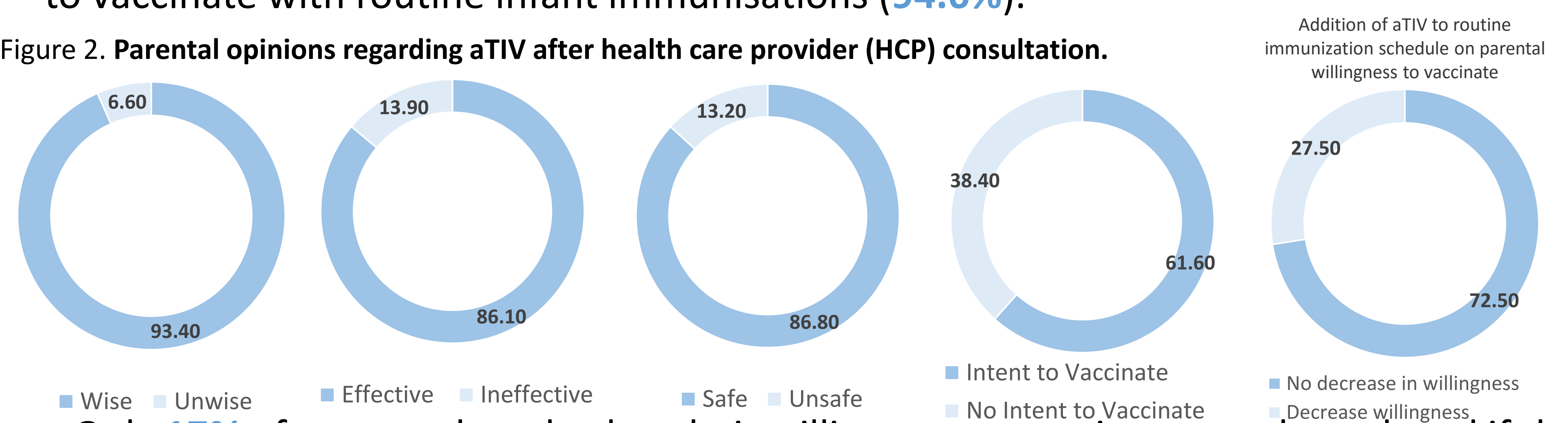
- A total of 24 community practice and public health clinics across Canada participated; 15 community practice clinics enrolled 136 parents whilst 9 public health clinics enrolled 71 parents ( $n_{\text{total}} = 207$ ) (**Table 1**).

Table 1. Parental socio-demographics.

Age (years)	
Mean	33
Min-Max	17-54
Female (%)	83.1
Highest level of education (%)	
University/Graduate degree	51.2%
Community college/CEGEP/trade school	30.9%
High school/equivalent	16.9%
Primary/grade school	1%
Ethnicity	
Caucasian/white	64.3%
Asian	22.2%
Native American	2.4%
African/Afro-Caribbean	2.9%
Other	8.2%

- Overall, parents enrolled in this study had an excellent understanding and strong intention to vaccinate with routine infant immunisations (**94.6%**).

Figure 2. Parental opinions regarding aTIV after health care provider (HCP) consultation.



- Only **17%** of parents thought that their willingness to vaccinate may be reduced if their child experienced fever following administration of aTIV.
- If publicly funded and free of charge at the time of administration, **73%** of parents intended to vaccinate their children with aTIV.
- Results from the multivariable logistic regression model are presented in **Table 2**: Overall, parental attitudes to vaccinating their infant with aTIV were the strongest influence on intentions. Parental intention to vaccinate with aTIV was further influenced by strength of HCP recommendation and perceived social support.

Table 2. Predictors of intention to vaccinate with the adjuvanted seasonal flu vaccination – Multivariate Logistic Regression Model Results.

Variable	Odds Ratio (OR)	95% Confidence Interval
<b>Attitudes</b>	Negative	(Referent)
	Neutral	22.008
	Positive	<b>79.248</b>
<b>Social Support</b>	Negative	(Referent)
	Neutral	5.042
	Positive	<b>3.462</b>
<b>Physician Support</b>	Negative	(Referent)
	Neutral	1.358
	Positive	<b>4.553</b>
<b>Income</b>	≤\$39,999	(Referent)
	\$40,000-\$79,999	4.787
	≥\$80,000	<b>5.401</b>

## Conclusions

- The vast majority of parents perceived routine infant vaccines and aTIV as being effective and safe.
- Following a brief HCP explanation, acceptance of aTIV was high, with 74.8% of parents intending to immunize their children if the vaccine was free of charge.
- Parental attitudes to vaccinating their infant with aTIV were the strongest predictor of parental intentions to vaccinate their child with aTIV followed by strength of HCP recommendation and perceived social support. This understanding of parental perspectives and intentions towards aTIV informs policy decision, and helps to ensure optimal uptake and compliance in Canada.

## References

- Campitelli MA, Inoue M, Calzavara AJ et al, Low rates of influenza immunization in young children under Ontario's universal influenza immunization program. *Pediatrics*. 2012 Jun;129(6):e1421-30
- Nolan T, Bravo L, Ceballos A, Mitha E, et al Enhanced and persistent antibody response against homologous and heterologous strains elicited by a MF59-adjuvanted influenza vaccine in infants and young children. *Vaccine* 2014 Oct 21;32(46):6146-56
- Vesikari T, Knuf M, Wutzler P, Karvonen A, Kieninger-Baum D, Schmitt HJ, Baehner F, Borkowski A, Tsai TF, and Clemens R. Oil-in-Water Emulsion Adjuvant with Influenza Vaccine in Young Children. *N Engl J Med* 2011;365:1406-16.

## Acknowledgements

This study was funded by Seqirus Canada Inc. and was conducted under a collaborative research agreement between Seqirus Canada Inc. and the study's Scientific Committee. Seqirus does not have any ownership rights to the findings and results of the study. The Scientific Committee has absolute discretion and the final decision over the contents and authorship