

# Antenatal vaccine uptake – a cross-sectional study investigating factors influencing women’s choices in pregnancy

Moir D<sup>1</sup>, Gunter K<sup>1,2</sup>, Lynch L<sup>1</sup>, Vogrin S<sup>3</sup>, Said JM<sup>1,2</sup>

1. Joan Kirner Women’s and Children’s Sunshine Hospital, Western Health, St Albans, Victoria, Australia.
2. Department of Obstetrics and Gynaecology, The University of Melbourne, Parkville, Australia
3. Department of Medicine – Western Health, Melbourne Medical School, The University of Melbourne, St. Albans, Victoria, Australia  
Australian Institute for Musculoskeletal Science (AIMSS), The University of Melbourne and Western Health, St. Albans, Victoria, Australia

## Introduction

Seasonal influenza and pertussis cause significant morbidity and mortality among expectant mothers and infants. Vaccination in the antenatal period is a safe and effective method of disease prevention. <sup>(1,2)</sup> Despite recommendations, uptake has been suboptimal in the antenatal setting<sup>(3)</sup>. Understanding and addressing the drivers and barriers to immunisation will help improve vaccination rates

### Study objectives:

1. Determine the rates of antenatal vaccine uptake for women attending Sunshine Hospital for perinatal care.
2. Identify how vaccine uptake may be affected by socio-demographic factors
3. Understand factors affecting women’s decision-making regarding vaccination during pregnancy

## Methods

A convenience sample was recruited from the maternity wards of Sunshine Hospital in Melbourne’s western suburbs. Participants were approached after delivery and completed a self-administered questionnaire. Participants were offered questionnaires in English, Vietnamese, Burmese, Punjabi, Arabic or Simplified Chinese. Factors that women identified as impacting their decision to vaccinate were recoded into thematic categories for analysis. STATA/IC14.2 was used for data analysis. Fisher’s Exact Test was utilised to investigate the differences in demographic variables between vaccinated and non-vaccinated women. Univariate and multivariate logistic regression were used to determine socio-demographic characteristics affecting vaccine uptake.

## Results

During the 12-month study period (23/01/2017 - 24/01/2018), 5573 women delivered at Sunshine Hospital. A total of 1305 completed questionnaires were included for analysis.

Australian born women were the largest group (42.9%), comprising less than half of all those surveyed. Women from Southern and South-Eastern Asia constituted the next largest demographic (36.0%). The vast majority of women opted to complete the questionnaire in English (97.6%)

### Vaccine Uptake Rates

The uptake of seasonal influenza vaccine (48.3%) was less than pertussis (82.9%). The majority of women (72.9%) reported receiving a recommendation for influenza vaccination, and 91.9% a recommendation for pertussis vaccination.

Uptake of seasonal influenza vaccination varied greatly from 26.6% (April) to 86.5% (September). Uptake of pertussis was consistent across the 12 month period.

Figure 1. Thematic breakdown of why women accepted vaccination

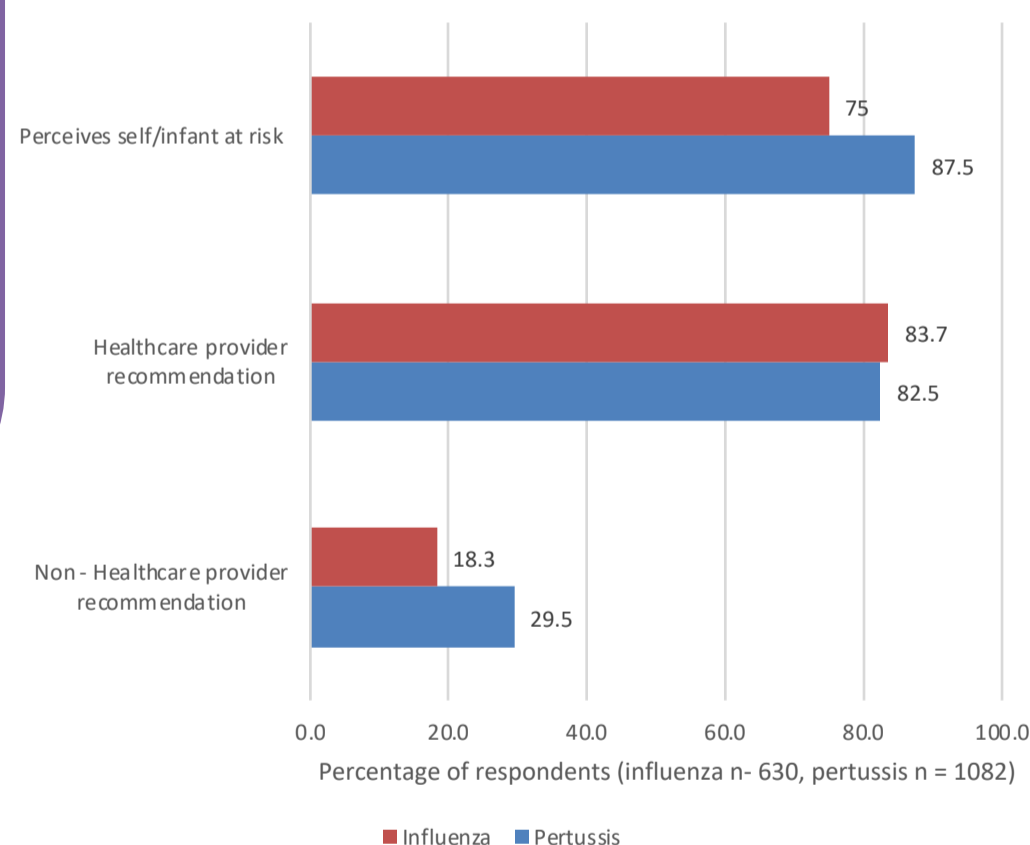
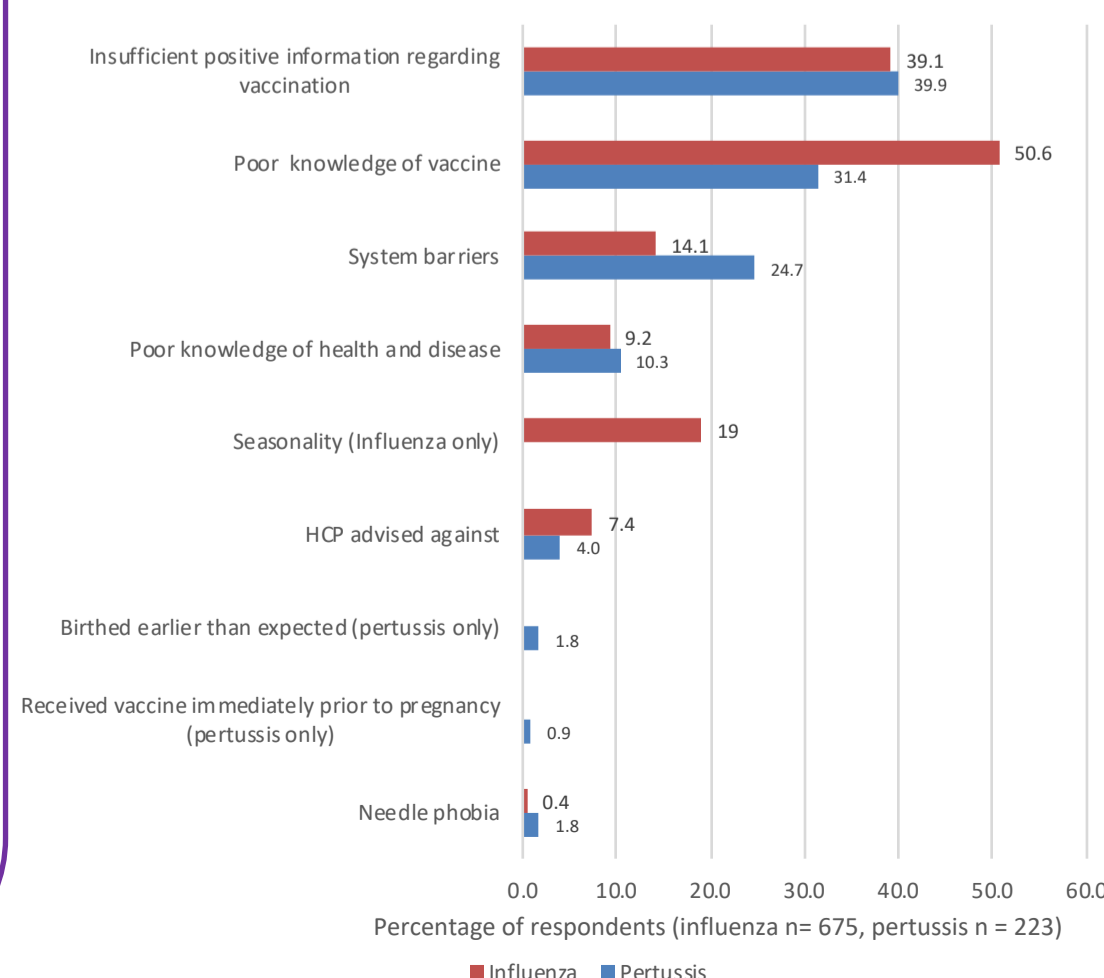


Figure 2. Thematic breakdown of reasons why women did not accept vaccination



### Factors significant to seasonal influenza vaccine uptake

Women who received a recommendation from a healthcare provider were more likely to receive the influenza vaccine than those who did not receive a recommendation (aOR 26.59; 95%CI 16.23 – 43.52). Migration status was a predictor of influenza vaccine uptake, with migrant women having twice the odds of receiving the influenza vaccine as Australian born women (aOR 2.13; 95%CI 1.61 – 2.83).

### Factors significant to pertussis vaccine uptake

Women who received a recommendation from a healthcare provider were more likely to receive the pertussis vaccine than those who received no recommendation (aOR 41.78; 95% CI 20.03 – 87.17). Women aged under 25 and over 45 were less likely to receive the pertussis vaccine. Primiparous women were more likely to receive the pertussis vaccine than women having their second or more child. In contrast to influenza vaccination, migrant women were less likely to receive a pertussis vaccination compared with Australian women (aOR 0.50; 95%CI 0.33 – 0.75).

### Self-identified barriers and facilitators of vaccination

Figure 1 depicts the thematic categories that facilitated vaccination in pregnancy. Figure 2 demonstrates the thematic barriers to antenatal vaccination. A common reason women declined pertussis vaccination was a lack of time. Also of note, was the proportion of women who believed they did not need to receive the vaccine as they had received it in the past (16.1%).

The majority of women who did not receive the influenza and pertussis vaccine asserted that if they had received a recommendation from a health care provider, they would have been influenced to accept the vaccines (68.3% and 58.9% respectively)

## Conclusion

This study demonstrates that the majority of pregnant women are not receiving the seasonal influenza vaccine. Our results further strengthen the understanding that the recommendation of a healthcare provider is the most significant factor in determining women’s acceptance of the vaccine. All clinicians should endeavour to discuss the benefits of vaccination with their patients. System barriers to vaccination may be addressed by providing access to the vaccines in the antenatal clinic setting.

## References

1. Pertussis vaccines: WHO position paper - September 2015. Wkly Epidemiol Rec. 2015;90(35):433-58.
2. Vaccines against influenza WHO position paper - November 2012. Wkly Epidemiol Rec. 2012;87(47):461-76.
3. Rowe SL, Perrett KP, Morey R, Stephens N, Cowie BC, Nolan TM, et al. Influenza and pertussis vaccination of women during pregnancy in Victoria, 2015-2017. Med J Aust. 2019;210(10):454-62.