

The Pediatric Infectious Disease Journal Publish Ahead of Print

DOI: 10.1097/INF.0000000000002242

Determinants of Influenza and Pertussis Vaccination Uptake in Pregnancy: A Multi-Centre Questionnaire Study of Pregnant Women and Healthcare Professionals

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Abbreviated Title: Improving Uptake of Maternal Vaccination: Questionnaire Study

Running Head: Questionnaire Study of Maternal Vaccination

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Funding: The study was supported by a grant from the British Paediatric Allergy Immunity and Infection Group (BPAIIG). BPAIIG had no role in the study design, data collection, data analysis/interpretation, report writing, or the decision to submit the manuscript for publication.

Acknowledgements

The authors would also like to thank all the pregnant women and healthcare staff who took part in the questionnaire, Stephen Yekini for his assistance with data collection in Southampton, and all of the non-study staff that helped facilitate recruitment in the participating sites.

Conflicts of interest statement: CW, AC, JM, KB, PH, AK, AF, MS and CJ are investigators for clinical trials done on behalf of their respective institutions, sponsored by various vaccine manufacturers, but receive no personal funding for these activities. All other authors report no potential conflicts of interest.

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collection in Southampton, and all of the non-study staff that helped facilitate recruitment in the participating sites.

Author Contributions: CW drafted the manuscript. All authors contributed to questionnaire design and critically revised the manuscript. CW, AC, JM, EK, RM, KB, PH, AK, AF, MS, TV, TN, MC and CJ were involved in study set up and data collection at the participating sites. CW, TN and CJ performed the data analysis. CJ conceived the study and was the chief investigator. All authors approved the final version of the manuscript.

Conflict of Interests Statement: CW, AC, JM, KB, PH, AK, AF, MS and CJ are investigators for clinical trials done on behalf of their respective institutions, sponsored by various vaccine manufacturers, but receive no personal funding for these activities. All other authors report no potential conflicts of interest.

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Clinical trial registration: The questionnaire study was registered on ClinicalTrials.gov prior to recruitment (NCT03096574).

Ethical approval: Ethical approval was granted from the West London & GTAC NHS Research Ethics Committee (reference 17/LO/0537) on 6th April 2017.

Abstract

Introduction

Uptake rates of antenatal vaccination remain suboptimal. Our aims were to determine: (1) the acceptability of routine vaccination among pregnant women, (2) the confidence of maternity healthcare professionals (HCPs) discussing vaccination and (3) HCP opinion regarding the optimum healthcare site for vaccine administration.

Methods

Separate questionnaires for pregnant women and HCPs were distributed within four NHS trusts in South England (July 2017-January 2018).

Results

Responses from 314 pregnant women and 204 HCPs (18% obstetricians, 75% midwives, 7% unidentified) were analysed. Previous/intended uptake of influenza and pertussis vaccination was 78% and 92%, respectively. The commonest reason for declining vaccination was feared side-effects for their child. White British women (79%) were significantly more accepting of influenza (85% vs. 61%, OR 3.25, 95% CI: 1.67-6.32) and pertussis vaccination (96% vs. 83%, OR 4.83, 95% CI: 1.77-13.19) compared with non-white-British women. Among HCPs, 25% were slightly or not-at-all confident discussing vaccination. Obstetricians felt significantly more confident discussing pertussis vaccination than midwives (68% vs. 55% were very/moderately confident, OR 2.05, 95% CI: 1.02-4.12). Among HCPs, 53%, 25% and 16% thought vaccines should be administered in primary care (general practice), community midwifery and in hospital, respectively.

Conclusion

Misconceptions exist regarding safety/efficacy of antenatal vaccination, and framing information towards the child's safety may increase uptake. Education of HCPs is essential, and vaccine promotion should be incorporated into routine antenatal care, with an emphasis on women from ethnic minorities. Administration of vaccines in primary care presents logistical barriers however support for alternative sites appears low among HCPs.

Keywords - Vaccination; Pregnancy; Influenza; Pertussis; Vaccine confidence

ACCEPTED

Introduction

Both influenza and pertussis result in severe outcomes for pregnant women and their infants (including respiratory illness and death)^{1, 2}, and vaccination in pregnancy is an effective means of protection until the period of greatest susceptibility has passed³⁻⁶. In the UK, influenza and pertussis vaccination have been routinely recommended for use in pregnancy since 2010 and 2012, respectively⁷.

Unfortunately, achieving vaccine acceptance among pregnant women and healthcare professionals (HCPs) remains a global challenge⁸. The World Health Organization (WHO) Strategic Advisory Group of Experts on Immunization have called for improved monitoring of vaccine acceptance, and research into the socio-economic determinants of attitudes towards vaccines⁹. The uptake of influenza and pertussis vaccination during pregnancy in England over the September 2016 - January 2017 period was 44.9% and 74.2%, respectively^{10, 11}. Pertussis vaccination uptake in the UK has gradually climbed from around 50% since its introduction in 2012, yet influenza vaccine uptake has been relatively static, and remains well below the WHO target of 75%¹⁰. Furthermore, coverage varies significantly between different regions of the UK, with average uptake approximately 10% and 20% lower in London than in northern England for influenza and pertussis, respectively^{9, 11}.

Uptake of vaccination could be significantly improved if we are able to fully understand the decision-making processes to acceptance. Furthermore, it is well-acknowledged that encouragement from a familiar HCP significantly improves vaccine acceptance^{12, 13}, yet few studies have considered the extent to which HCPs feel confident discussing vaccinations with pregnant women, and the associated factors which might influence this. Optimizing the healthcare site of vaccine administration is also an important issue that may have a considerable

