



Strategies for increasing uptake of vaccination in pregnancy in high-income countries: A systematic review

Source: Bisset KA, Paterson P. **Strategies for increasing uptake of vaccination in pregnancy in high-income countries: A systematic review.** *Vaccine* 2018;36:2751-2759. <https://www.ncbi.nlm.nih.gov/pubmed/29661584>

Introduction: Vaccination in pregnancy is an effective method to protect against disease for the pregnant woman, foetus and new born infant... Improvement in the uptake of both pertussis and influenza vaccination among pregnant women is needed to prevent morbidity and mortality for both the pregnant women and unborn child.

Aim: To identify effective strategies in increasing the uptake of vaccination in pregnancy in high-income countries...

Methods: A systematic review of peer-reviewed literature was conducted using a keyword search strategy applied across six databases (Medline, Embase, PsychInfo, PubMed, CINAHL and Web of Science). Articles were screened against an inclusion and exclusion criteria and papers included within the review were quality assessed.

Results and conclusion: Twenty-two articles were included in the review. The majority of (studies) were conducted in the USA and looked at strategies to increase influenza vaccination in pregnancy. There is limited high quality evidence for strategies in high-income countries to increase coverage of pertussis and influenza vaccination in pregnancy. A number of strategies have been found to be effective; reminders about vaccination on antenatal healthcare records, midwives providing vaccination, and education and information provision for healthcare staff and patients.

Biological feasibility and importance of a gonorrhoea vaccine for global public health

Source: Vincent LR, Jerse AE. **Biological feasibility and importance of a gonorrhoea vaccine for global public health.** *Vaccine*. 2018 Apr 18. pii: S0264-410X(18)30278-0. doi: 10.1016/j.vaccine.2018.02.081. [Epub ahead of print]. <https://www.ncbi.nlm.nih.gov/pubmed/?term=Biological+feasibility+and+importance+of+a+gonorrhoea+vaccine+for+global+public+health>

There is a growing public health interest in controlling sexually transmitted infections (STIs) through vaccination due to increasing recognition of the global disease burden of STIs and the role of STIs in women's reproductive health, adverse pregnancy outcomes, and the health and well-being of neonates. *Neisseria gonorrhoeae* has historically challenged vaccine development through the expression of phase and antigenically variable surface molecules and its capacity to cause repeated infections without inducing protective immunity. An estimated 78 million new *N. gonorrhoeae* infections occur annually and the greatest disease burden is carried by low- and middle-income countries (LMIC). Current control measures are clearly inadequate and threatened by the rapid emergence of antibiotic resistance. The gonococcus now holds the status of "super-bug" as there is currently no single reliable monotherapy for empirical treatment of gonorrhoea. The problem of antibiotic resistance has elevated treatment costs and necessitated the establishment of large surveillance programs to track the spread of resistant strains. Here we review the need for a gonorrhoea vaccine with respect to global disease burden and related socioeconomic and treatment costs, with an emphasis on the impact of gonorrhoea on women and newborns...(and) we review recent research that suggests a gonorrhoea vaccine is feasible and discuss challenges and research gaps in gonorrhoea vaccine development.



First imported case of Mayaro virus disease detected in Canada

Source: MAYARO VIRUS DISEASE - CANADA: (ALBERTA) ex PERU A ProMED-mail post <<http://www.promedmail.org/direct.php?id=20180518.5804085>>

Date: Thu 17 May 2018 From: Kevin Fonseca <kevin.fonseca@albertahealthservices.ca>

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Mayaro virus (MAYV) has been detected in a 60-year-old male who recently returned from a vacation in South America that included a jungle tour in the Amazon basin. This is the first confirmed Canadian case.

His jungle tour began at Puerto Maldonado, Peru, on March 12, 2018, and lasted for four days. He flew back to Alberta, Canada, on Mar 18, 2018. The following day he experienced rigors and chills, although he felt afebrile during these episodes. Over the next few days the symptoms progressed to arthralgias in the large joints of his knees, elbows, and ankles as well as the small joints of his hands, together with myalgias and severe fatigue. He sought medical attention on two occasions, the first at his family physician's clinic the day after his onset of symptoms. Four days after symptom onset, he was seen by an infectious diseases specialist (Dr. Shannon Turvey), who noted a bilateral non purulent conjunctivitis, with a confluent, macular, erythematous rash on his chest, arms, and back, pharyngitis with no tonsillar involvement, no lymphadenopathy or organomegaly, and no signs of meningismus. His complete blood count (CBC) performed two days after symptom onset was mildly abnormal, with a low white blood cell count $3.7 \times 10^9/L$, but normal hemoglobin and no thrombocytopenia. Tests were negative for malaria on three consecutive collections. His C-reactive protein was high at 39.2 mg/L. His urine showed mild haematuria and 1+ protein; the liver enzymes and liver function tests were within

normal limits. Whole blood and serum were collected to test for arboviruses, leptospirosis, and other probable infectious causes of rashes and viral syndromes. Additionally, nasopharyngeal, eye, and throat swabs were collected to test for the respiratory viruses, viral causes of conjunctivitis and *Streptococcus pyogenes*. None of these yielded a positive result.

Laboratory investigations commenced for an arboviral etiology specific for dengue (DENV), chikungunya (CHIKV), and Zika (ZIKV) viruses, but the results were negative. At day 19 after symptom onset, a convalescent serum tested positive for CHIKV IgM and indeterminate for IgG. This result prompted the infectious disease physician to query whether a related alphavirus, such as MAYV, could cross-react in the CHIKV serologic assays, given the patient's recent travel and the earlier negative CHIKV polymerase chain reaction (PCR) finding. As a result, the acute serum collected two days after symptom onset was retested and PCR amplification was carried out (and the results compared) to the National Center for Biotechnology Information (NCBI) nucleotide database. The closest match showed 98 percent identity with a human MAYV genotype D isolate from Peru in 2000.

Mayaro virus and CHIKV are closely related alphaviruses. The MAYV is localized to South America and the Caribbean; CHIKV, in contrast, is now widely prevalent in South and Central America and the Caribbean. Broader tourist expansion into eco-conservation areas bring tourists into much closer contact with mosquitoes carrying these agents. This case raises the distinct possibility that an unknown proportion of cases may have been or are misclassified as acute CHIKV infections instead of MAYV infections, especially if these persons have been to travel destinations where this agent circulates.

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