Summary of the National Advisory Committee on Immunization’s Update on quadrivalent meningococcal vaccines available in Canada

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Abstract

Background: Invasive meningococcal disease (IMD) has an overall mortality of approximately 10% and up to 35% of survivors may experience long term sequelae. Canada’s National Advisory Committee on Immunization (NACI) recommends immunization with a quadrivalent conjugate meningococcal vaccine of individuals who are at increased risk of IMD due to an underlying medical condition or have a high risk of exposure to \textit{N. meningitidis}. Use of a conjugate vaccine, either monovalent or quadrivalent, is recommended for a routine adolescent booster dose at around 12 years of age.

Objective: To review and update the evidence on the use of quadrivalent (serogroups A, C, Y and W-135) conjugate meningococcal vaccines and vaccination schedules used in Canada following the approval of a new quadrivalent meningococcal vaccine conjugated to the tetanus toxoid (Men-C-ACYW-TT, Nimenrix™).

Methods: NACI reviewed the knowledge synthesis performed by the Meningococcal Working Group, including information on the IMD burden of disease; safety, immunogenicity, efficacy and effectiveness of the new vaccine; currently used vaccine schedules; and other aspects of the overall immunization strategy. Following the review of evidence, NACI voted on specific recommendations.

Results: A total of 21 studies were reviewed for immunogenicity and 12 studies for safety data relating to Men-C-ACYW-TT. Information from two additional studies assessing immunogenicity and safety of a quadrivalent meningococcal vaccine conjugated to the diphtheria toxoid (Men-C-ACYW-DT, Menactra®) in children 9 and 12 months of age was also reviewed. A good immune response and an acceptable safety profile when compared to the monovalent conjugate meningococcal vaccines (Men-C-C) were demonstrated by both vaccines in all the reviewed studies. For children less than 2 years of age, NACI continues to recommend the use of Men-C-ACYW-CRM (Menveo™) vaccine.

Conclusion: The new and complete set of current recommendations for conjugate meningococcal vaccines will be published in the updated “Meningococcal” chapter in the \textit{Canadian Immunization Guide} in the near future. The top surveillance and research priorities are: determining the coverage and impact of immunization (including carriage and herd immunity) on IMD in Canada; determining the duration of protection/immunity to allow the assessment of recommendations for booster doses of conjugate quadrivalent vaccines; comparative studies of the three available quadrivalent conjugate vaccines in the general population and high-risk groups; and the immunogenicity and safety of co-administration of quadrivalent vaccines with routine age appropriate vaccines, including the newly authorized meningococcal B vaccine.
Updated NACI recommendations on quadrivalent meningococcal vaccine (1)

**Recommendation #1**
For routine immunization of adolescents, any of the quadrivalent or monovalent C conjugate meningococcal vaccines registered in Canada may be used. The choice between quadrivalent and monovalent C conjugate vaccines is dependent on local epidemiology and other programmatic considerations. (NACI Recommendation Grade B)

**Recommendation #2**
For the immunization of high-risk individuals 2 years of age and older, any of the quadrivalent conjugate meningococcal vaccines registered in Canada may be used. (NACI Recommendation Grade B)

**Recommendation #3**
For the immunization of high-risk individuals between 8 weeks and less than 2 years of age, Men-C-ACYW-135 (Menveo™) is the recommended product. Schedules are provided in Table 3 of the “Meningococcal” chapter of the Canadian Immunization Guide (2). (NACI Recommendation Grade B)

**Recommendation #4**
For immunization of individuals 2 years of age and older travelling to areas where meningococcal vaccine is recommended, any of the quadrivalent conjugate meningococcal vaccines may be used. (NACI Recommendation Grade B)

**Conflict of interest**
None

**References**