



## FACTSHEET: MENINGOCOCCAL DISEASE

### MENINGOCOCCAL DISEASE AND VACCINES

There are five main types of *Neisseria meningitidis* that cause invasive meningococcal disease: Meningococcal A, B, C, Y and W.<sup>1</sup>

#### Incidence

Incidence varies from year to year, by type, and by age group. For example, in Canada between 2006 and 2011, incidence rates were highest among infants less than one year of age (average 7.35 cases per 100,000), followed by 1 to 4 year olds (1.89 per 100,000), 15 to 19 year olds (1.17 per 100,000) and 20 to 24 year olds (0.77 per 100,000).<sup>1</sup>

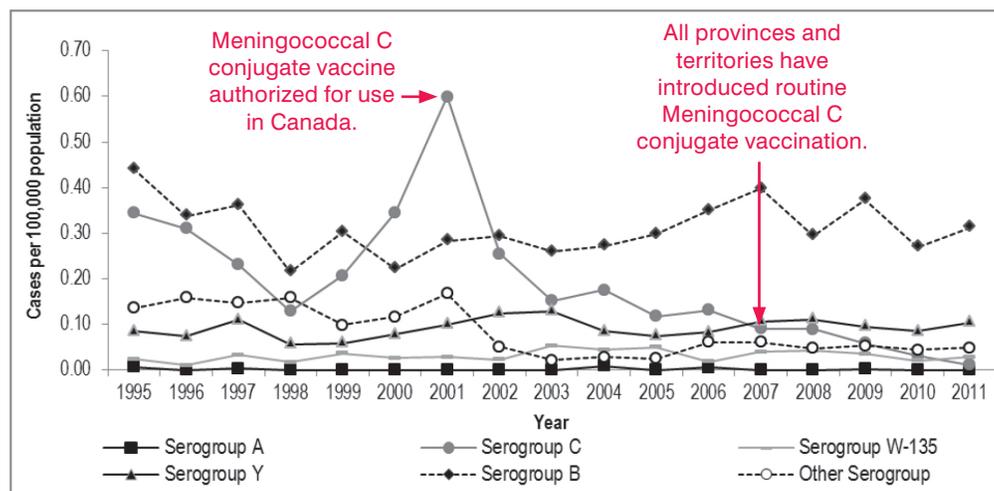
#### Disease

Although the risk of meningococcal disease is low relative to some other infectious diseases, fear caused by meningitis is high because of the speed of onset and severe morbidity.

- Invasive meningococcal disease is an acute and serious illness caused by the bacterium *Neisseria meningitidis*.<sup>1</sup>
- Overall mortality is approximately 10%.<sup>2</sup>
- 10-15% of survivors have long term sequelae which include hearing loss, permanent neurologic disabilities and amputations.<sup>2</sup>

See graph below for Canadian rates, 1995-2011.<sup>2</sup>

**Incidence of IMD (per 100,000 population) in Canada by serogroup and year, 1995 to 2011**



\*"Other" is defined as all serogroups other than those listed, ungroupable and unknown serogroup.

Adapted from National Advisory Committee on Immunization 'Update on Quadrivalent Conjugate Meningococcal Vaccines available in Canada'

Please note that the information in this document is provided for educational purposes only, is not intended to provide medical advice and should in no way replace clinical judgment of the healthcare professional.

<sup>1</sup> Canada Communicable Disease Report. Enhanced surveillance of invasive meningococcal disease in Canada, 2006-2011. Retrieved January 3, 2019 from: <https://doi.org/10.14745/ccdr.v40i09a0>

<sup>2</sup> Public Health Agency of Canada. Update on the use of quadrivalent conjugate vaccines available in Canada. Retrieved November 23, 2018 from: [http://publications.gc.ca/collections/collection\\_2015/aspc-phac/HP40-125-2014-eng.pdf](http://publications.gc.ca/collections/collection_2015/aspc-phac/HP40-125-2014-eng.pdf)



## Vaccines

Vaccines are effective in reducing the incidence of meningitis.

- Hib, pneumococcal and meningococcal C vaccines are examples of vaccines that have greatly reduced meningitis.<sup>3</sup>
- Meningococcal C vaccine has been publicly funded in BC for 12 month olds since 2003, and infants and grade 6 students since 2005.<sup>4</sup> The grade 6 vaccine was replaced with a quadrivalent vaccine for grade 9 students in 2016/2017.<sup>5</sup>
- Meningococcal A, C, Y, W quadrivalent (MCV4) vaccines protect against 4 types of meningococcal bacteria. As of the 2016/2017 school year MCV4 is publicly funded for grade 9 students.<sup>5</sup> Three MCV4 vaccines (Menveo<sup>®</sup>, Menactra<sup>®</sup> and Nimenrix<sup>™</sup>) are available but not funded for individuals not eligible for the grade 9 program. The BC Pediatric Society recommends that physicians consider a Meningococcal A, C, Y, W vaccine any time after 2 months of age.<sup>6</sup>
- Two meningococcal B vaccines are now available but not publicly funded in BC.<sup>7,8</sup>
- Non-publicly funded (NPF) vaccines for meningococcus may be available in three locations: pharmacies, travel clinics or offices of physicians. Please refer parents to the BC Pediatric Society resource [NPF Vaccines: Access](#) for the steps to follow to obtain NPF vaccines from their pharmacist for you to administer in your office.

The strength of your recommendation and perceptions of physician support strongly influence parent’s decisions to immunize their children.<sup>10</sup>



## TAKE-AWAY FOR PARENT DISCUSSION

There are five main types of *Neisseria meningitidis* that cause invasive meningococcal disease: Meningococcal A, B, C, Y and W.<sup>1</sup> There are now vaccines for each of these types:

- *Neisseria meningitidis* serogroup C is the **one** meningococcal vaccine that was funded (infants and Grade 6) in BC until 2016/2017. It is now offered to infants.
- Meningococcal quadrivalent vaccines (MCV4) protect against **four** types of meningococcal bacteria: types A, C, Y W. MCV4 immunization became publicly funded for BC Grade 9 students in the 2016/2017 school year.<sup>5</sup> MCV4 vaccine is available for purchase (NPF) for those not eligible for the grade 9 immunization program.<sup>6</sup>
- Two meningococcal B vaccines are now available as NPF vaccines. Meningococcal group B causes most of the meningococcal disease in Canada. The high risk age groups for meningococcal B disease are healthy infants under 1 year, followed by toddlers 1–4 years and teenagers and young adults 15–24 years old. Parents who request further information can be referred to: [Meningococcal B Vaccine: What Parents Need to Know](#).<sup>9</sup>

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<sup>3</sup> Snape MD & Pollard AJ, *The beginning of the end for serogroup B meningococcus*, *The Lancet*. 2013 March 9; 381:9869. Retrieved November 23, 2018 from: [http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(12\)62194-1/fulltext](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(12)62194-1/fulltext)

<sup>4</sup> Sui T, Tanq W, Dawar M, Patrick DM. *The Impact of Routine Immunization using Meningococcal C Conjugate Vaccine on Invasive Meningococcal Disease in British Columbia*. *Can J Public Health* 2008 Sept; 99(5):[380-382]. Retrieved November 23, 2018 from: [www.ncbi.nlm.nih.gov/pubmed/19009920](http://www.ncbi.nlm.nih.gov/pubmed/19009920)

<sup>5</sup> BC Centre for Disease Control BC Immunization Manual, Part 4 - Biological Products, Meningococcal Vaccines. Retrieved November 23, 2018 from: [http://www.bccdc.ca/resource-gallery/Documents/Guidelines%20and%20Forms/Guidelines%20and%20Manuals/Epid/CD%20Manual/Chapter%20-%20Imms/SectionVII\\_BiologicalProducts.pdf](http://www.bccdc.ca/resource-gallery/Documents/Guidelines%20and%20Forms/Guidelines%20and%20Manuals/Epid/CD%20Manual/Chapter%20-%20Imms/SectionVII_BiologicalProducts.pdf)

<sup>6</sup> BC Pediatric Society Immunization Schedule 2017. November 23, 2018 from: [http://www.bcpeds.ca/wp-content/uploads/2018/11/BCPS\\_2018\\_Routine\\_Immunization-Final.pdf](http://www.bcpeds.ca/wp-content/uploads/2018/11/BCPS_2018_Routine_Immunization-Final.pdf)

<sup>7</sup> An Advisory Committee Statement (ACS) National Advisory Committee on Immunization (NACI). *Advice for the use of the Multicomponent Meningococcal Serogroup B (4CMenB) Vaccine*: [http://publications.gc.ca/collections/collection\\_2014/aspc-phac/HP40-104-2014-eng.pdf](http://publications.gc.ca/collections/collection_2014/aspc-phac/HP40-104-2014-eng.pdf)

<sup>8</sup> Pfizer Vaccines. *Trumenba Product Monograph™*. Retrieved November 23, 2018 from: [https://www.pfizer.ca/sites/g/files/g10050796/ff/201808/Trumenba\\_PM\\_214857\\_24-Jul-2018\\_E.pdf](https://www.pfizer.ca/sites/g/files/g10050796/ff/201808/Trumenba_PM_214857_24-Jul-2018_E.pdf)

<sup>9</sup> BC Pediatric Society. *Meningococcal B Vaccine: What Parents Need to Know*. Retrieved November 23, 2018 from: [http://www.bcpeds.ca/wp-content/uploads/2018/08/Meningococcal\\_B\\_Vaccine\\_What\\_Parents\\_Need\\_to\\_Know.pdf](http://www.bcpeds.ca/wp-content/uploads/2018/08/Meningococcal_B_Vaccine_What_Parents_Need_to_Know.pdf)

<sup>10</sup> MacDonald N, Desai S, Gerstein B. *Working with vaccine-hesitant parents: An update*. *Canadian Pediatric Society Practice Point*. September 2018. Retrieved November 23, 2018 from: <https://www.cps.ca/en/documents/position/working-with-vaccine-hesitant-parents>