

SUPPLEMENTARY MATERIAL

Long-term impacts of invasive meningococcal disease on survivors and their caregivers in the United States and Canada

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Supplementary tables

Table S1. Search terms for Embase (searched from Embase.com [Elsevier])

Concept	#	Search syntax	Number of hits
Population	1	'meningitis'/exp OR meningitis OR (inflammation AND mening*) OR 'meningeal inflammation' OR 'meningitis, recurrent' OR 'perimeningeal infections' OR 'recurrent meningitis'	154,017
	2	'meningococcosis'/exp OR 'meningococcosis':ti,ab OR 'n. meningitidis':ti,ab OR 'n meningitidis':ti,ab OR 'meningococcal disease':ti,ab OR 'meningococcal cond*':ti,ab OR 'neisseria meningitidis':ti,ab	23,229
	3	'disease by meningococcus' OR 'disease by neisseria meningitidis' OR 'disease caused by meningococci' OR 'disease caused by meningococcus' OR 'disease caused by n. meningitidis' OR 'disease caused by neisseria meningitidis' OR 'disease due to n. meningitidis' OR 'disease due to neisseria meningitidis' OR 'infection by meningococci' OR 'infection by meningococcus' OR 'infection by n. meningitidis' OR 'infection by neisseria meningitidis' OR 'infection due to n. meningitidis' OR 'infection due to neisseria meningitidis' OR 'meningococcal disease' OR 'meningococcal infection' OR 'meningococcal infections' OR 'meningococcal disease' OR 'meningococcal infection' OR 'meningococci infection' OR 'meningococcic infection' OR 'meningococcus infection' OR 'n. meningitidis infection' OR 'neisseria meningitidis infection' OR 'meningococcosis'	12,125
Outcomes	4	'long-term sequelae' OR (long AND term AND sequelae) OR 'late sequelae' OR ('post-acute' AND complication*) OR 'long-term outcom*' OR 'long-term consequence*' OR 'post-acute consequence*' OR 'post-acute outcom*' OR 'late outcom*' OR 'long-term impact*' OR (long AND term AND outcome*) OR 'post-acute outcome*' OR survivor*	764,813
Geography	5	'united states'/exp OR 'united states':ti,ab OR 'usa':ti,ab OR 'canada'/exp OR 'canada':ti,ab OR 'n america':ti,ab OR 'north america*':ti,ab	2,165,155
Combination terms	6	#1 OR #2 OR #3	167,782
	7	#6 AND #4	4,649
Final	8	#5 AND #7	263

Table S2. Search terms for Medline and Medline-In Process (searched from PubMed [NCBI])

Concept	#	Search syntax	Number of hits
Population	1	"meningitis"[MeSH Terms] OR meningitis[Title/Abstract] OR (inflammation[Title/Abstract] AND mening*[Title/Abstract]) OR "meningeal inflammation"[Title/Abstract] OR "recurrent meningitis"[Title/Abstract] OR "recurrent meningitis"[Title/Abstract]	87,804
	2	"meningitis, meningococcal"[MeSH Terms] OR "meningococcosis"[Title/Abstract] OR "neisseria meningitidis"[Title/Abstract] OR "n meningitidis"[Title/Abstract] OR "meningococcal disease"[Title/Abstract]	15,269
	3	("infection due to neisseria meningitidis"[Title/Abstract] OR "meningococcal disease"[Title/Abstract] OR "meningococcal infection"[Title/Abstract] OR "meningococcal infections"[Title/Abstract] OR "meningococci infection"[Title/Abstract] OR "meningococcic infection"[Title/Abstract] OR "meningococcus infection"[Title/Abstract] OR "n. meningitidis infection"[Title/Abstract] OR "neisseria meningitidis infection"[Title/Abstract] OR "meningococcosis"[Title/Abstract]) OR meningococcal disease[MeSH Terms]	13,325
Outcomes	4	"long-term sequelae"[Title/Abstract] OR (long[Title/Abstract] AND term[Title/Abstract] AND sequelae[Title/Abstract]) OR "late sequelae"[Title/Abstract] OR ("post-acute"[Title/Abstract] AND complication*[Title/Abstract]) OR "long-term outcome*"[Title/Abstract] OR "long-term consequence*"[Title/Abstract] OR "post-acute consequence*"[Title/Abstract] OR "post-acute outcome*"[Title/Abstract] OR "late outcome*"[Title/Abstract] OR "long-term impact*"[Title/Abstract] OR (long[Title/Abstract] AND term[Title/Abstract] AND outcome*[Title/Abstract]) OR "post-acute outcome*"[Title/Abstract] OR survivor*[Title/Abstract]	442,772
Geography	5	"United States"[MeSH Terms] OR "united states"[Title/Abstract] OR "usa"[Title/Abstract] OR "Canada"[MeSH Terms] OR "canada"[Title/Abstract] OR "n america"[Title/Abstract] OR "north america*"[Title/Abstract]	2,028,522
Combination terms	6	#1 OR #2 OR #3	97,760
	7	#6 AND #4	2,000
Final	8	#5 AND #7	133

Abbreviations: NCBI: National Center for Biotechnology Information.

Table S3. Supplementary sources of evidence

Source	Search date
Canadian Immunization Conference	February 14–25, 2025
Centers for Disease Control and Prevention	February 13–17, 2025
American Academy of Neurology	February 18–26, 2025
American Academy of Pediatrics	February 13–26, 2025
Pan American Health Organization	February 18–26, 2025
Infectious Diseases Society of America	February 24, 2025
Canadian Association for Clinical Microbiology and Infectious Diseases	February 24, 2025
National Meningitis Association	February 24, 2025
American Society for Meningitis Prevention	February 25, 2025
Meningitis Foundation of America	February 25, 2025
Confederation of Meningitis Organizations – The Americas Region	February 24, 2025
UNITY™ Consortium	February 25, 2025
Canada.ca	February 24, 2025

Note: Some congress abstracts (e.g., IDWeek) are indexed within electronic databases and were therefore not searched separately.

Table S4. Publications for which bibliographies were screened

Citation
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Chung GS, Hutton DW. Epidemiological impact and cost-effectiveness of universal meningitis B vaccination among college students prior to college entry. <i>PLoS One</i> . 2020 Oct 9;15(10):e0239926. doi: 10.1371/journal.pone.0239926.
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De Wals P, Coudeville L, Trottier P, Chevat C, Erickson LJ, Nguyen VH. Vaccinating adolescents against meningococcal disease in Canada: a cost-effectiveness analysis. <i>Vaccine</i> . 2007 Jul 20;25(29):5433-40. doi: 10.1016/j.vaccine.2007.04.071.
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Huang L, Mauskopf J, Farkouh R, Masaquel C. Use of cost-effectiveness analyses for decisions about vaccination programs for meningococcal disease in the United States, United Kingdom, the Netherlands, and Canada. <i>Expert Rev Vaccines</i> . 2021 Jan;20(1):59-72. doi: 10.1080/14760584.2021.1878030.
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Kauf TL. Methodological concerns with economic evaluations of meningococcal vaccines. <i>Pharmacoeconomics</i> . 2010;28(6):449-61. doi: 10.2165/11535280-000000000-00000.
Leeds IL, Namasivayam V, Bamogo A, Sankhla P, Thayer WM. Cost effectiveness of meningococcal serogroup B vaccination in college-aged young adults. <i>Am J Prev Med</i> . 2019 Feb;56(2):196-204. doi: 10.1016/j.amepre.2018.09.020.
Marshall GS, Fergie J, Presa J, Peyrani P. Rationale for the development of a pentavalent meningococcal vaccine: a US-focused review. <i>Infect Dis Ther</i> . 2022 Jun;11(3):937-951. doi: 10.1007/s40121-022-00609-9.
Martinón-Torres F. Deciphering the burden of meningococcal disease: conventional and under-recognized elements. <i>J Adolesc Health</i> . 2016 Aug;59(2 Suppl):S12-20. doi: 10.1016/j.jadohealth.2016.03.041.
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