

Clinical Presentation of Recent Meningococcal Disease Cases

Five cases of meningococcal disease have been reported to the Vermont Department of Health during the first seven months of 2011. The 5-year median (year-to-date) number of reports is three. The Vermont cases occurred in four adults aged 20-40 years and one child. The cases were from Chittenden (3), Addison (1) and Washington (1) counties and had no known common exposures. Four were characterized as serogroup C and one was serogroup B.

While it is unusual to experience five cases relatively close together in time, this burden of disease is not considered a community outbreak since the incidence rate is well below the accepted threshold of 10 per 100,000 population. There is also not a well-defined population at risk and no community-level interventions are being considered. The following review of the Vermont cases' clinical presentations is aimed at raising healthcare providers' awareness of this disease.

Case A – meningococcal pneumonia – organism isolated from lung tissue on autopsy (*day 1 - reported to have had cough, looked "different" "not feeling well," day 2 - developed bloody nose*) Found dead the next day, four hours after last seen alive; did not seek care.

Case B – classic meningococcal meningitis with petechiae – organism isolated from CSF (*day 1 - developed nausea & vomiting, stiff neck, eye pain, lower back pain, headache, myalgia, petechiae on lower legs, fever, day 2 – presented to ED & admitted*) Discharged after nine days; sequelae include deafness in right ear and equilibrium problems.

Case C – meningococemia – organism isolated from blood (*day 1 - developed nausea, myalgia, headache, sore throat, fever - presented day 3 to ED & admitted*). Died after many complications on day 81.

Case D – meningococemia – organism isolated from blood (*day 1 - developed nausea, vomiting & diarrhea, malaise, irritability, earache, fever- presented day 3 to ED & admitted*). Discharged well after five days.

Case E – meningococemia – organism isolated from blood during autopsy (*day 1 - reported malaise, diarrhea, abdominal pain – day 2 - presented at ED, hydrated and sent home, reappeared to ED day 3 with purpura, cc: numb hands & feet. Experienced rapid decline; died despite resuscitation efforts less than six hours after presentation*).

Neisseria meningitidis colonizes mucosal surfaces of the nasopharynx and is transmitted through direct contact with large droplet respiratory secretions from patients or asymptomatic carriers. Invasive meningococcal disease occurs in three common clinical forms: meningitis (50% of cases), blood infection (30%) and pneumonia (10%); other forms account for the remainder (10%) of the cases. Onset can be abrupt and course of disease rapid. Clinical features of infection with *N. meningitidis* include fever, headache and stiff neck in meningitis cases, and sepsis and rash in meningococemia. Initial symptoms can be nonspecific. The case fatality rate is 10%-14%. Of patients who recover, 11%-19% have permanent hearing loss, mental retardation, loss of limbs, or other serious sequelae.

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Vermont – Selected Reportable Diseases – 2011
(Data through MMWR Week 26 – 7/2/2011) – Provisional

	Campylobacter	Cryptosporidium	E. coli*	Giardia	Group A Strep Inv	Hepatitis A	Hepatitis B - Acute	Hepatitis B - Chronic	Hepatitis C - Acute	Hepatitis C - Chronic	Legionellosis**	Listeriosis	Lyme §	Meningococcal Inf.	Pertussis**	Salmonella	Shigella	Tuberculosis**	Varicella §
Age																			
<5	13	6	3	11	0	1	0	0	0	2	0	0	11	1	2	2	0	0	29
5-14	12	3	1	20	2	0	0	0	0	2	0	0	40	0	2	4	0	1	34
15-24	27	10	1	11	1	2	0	4	3	23	0	0	14	1	2	8	0	1	6
25-39	24	3	1	8	1	0	0	9	1	101	0	0	20	2	0	4	1	1	1
40-64	49	5	0	22	3	2	0	9	0	209	1	0	123	1	4	13	1	0	1
65+	14	0	0	5	7	0	0	1	0	9	4	0	43	0	1	4	1	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total (YTD)	139	27	6	77	14	5	0	23	4	346	5	0	251	5	11	35	3	3	71
5-yr Median (YTD)	85	32	6	79	15	2	1	†	1	†	5	1	†	3	8	43	2	2	71
County of Residence																			
Addison	27	9	0	8	1	0	0	0	1	11		0	15	1	1	2	0		4
Bennington	6	0	0	4	1	1	0	0	0	5		0	80	0	0	2	0		2
Caledonia	2	2	0	1	0	0	0	0	0	23		0	3	0	0	1	0		2
Chittenden	24	1	0	35	2	1	0	14	1	123		0	16	3	1	10	1		26
Essex	2	0	0	0	0	0	0	0	0	3		0	0	0	0	0	0		0
Franklin	13	0	1	3	1	0	0	0	0	15		0	3	0	1	6	0		4
Grand Isle	1	0	0	0	0	0	0	0	0	2		0	3	0	0	1	0		0
Lamoille	7	4	0	2	1	1	0	4	0	10		0	4	0	0	1	0		5
Orange	7	1	3	1	0	0	0	0	0	10		0	6	0	2	0	0		0
Orleans	6	4	0	1	0	0	0	2	0	17		0	0	0	0	2	0		3
Rutland	9	0	1	2	1	0	0	1	0	26		0	48	0	0	3	0		3
Washington	16	4	1	10	3	1	0	2	0	30		0	4	1	1	1	0		1
Windham	10	1	0	4	1	1	0	0	1	32		0	40	0	0	4	2		18
Windsor	9	1	0	6	3	0	0	0	1	39		0	29	0	5	2	0		3
Unknown	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0		0
Total (YTD)	139	27	6	77	14	5	0	23	4	346	5	0	251	5	11	35	3	3	71

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*Shiga toxin-producing Escherichia coli (STEC)

**This column partially obscured to protect patient confidentiality

§ Includes both confirmed & probable cases

†Data captured differently in previous years; no 5-year median available

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The Department of Health requires that isolates of *Neisseria meningitidis* (from a normally sterile site) be sent to the Vermont Department of Health Laboratory for subtyping. The VDHL (802/863-7335 or 800/660-9997) will provide transport containers and instructions on how to submit isolates.

Meningococcal Conjugate Vaccine (MCV4) is now licensed in the United States for persons aged 9 months through 55 years of age. The vaccine covers serogroups A, C, Y and W-135. The Department of Health provides meningococcal vaccine through the Vaccines for Children (VFC) and Vaccines for Adults Programs for children 9 months – 10 years with high-risk conditions and individuals 11–21 years as recommended by the Advisory Committee on Immunization Practices.