

Contact with Live Poultry Causes Salmonella Outbreaks

This year, Vermonters and residents of many other states were sickened in two separate Salmonella outbreaks due to contact with live poultry. When outbreaks occur, the Vermont Department of Health (VDH) collaborates with the Vermont Department of Agriculture, the Centers for Disease Control and Prevention (CDC), the United States Department of Agriculture (USDA) and public health departments from other states to find the source of the illnesses.

The first outbreak included three different serotypes of *Salmonella*: Infantis, Lille and Newport. A total of 144 people in 26 states fell ill in this outbreak, 32 people were hospitalized and one person died. Vermont had one resident linked to this outbreak who purchased ducklings from a farm supply store as pets for her children. This outbreak was eventually linked back to a hatchery in Ohio – the same hatchery that caused an outbreak of *Salmonella* Altona and Johannesburg last year that sickened 96 in 24 states, including three Vermonters.

The second outbreak this year was caused by *Salmonella* Montevideo. Twenty states were involved in this outbreak and 66 people fell ill, including 16 who were hospitalized and one who died. Once again, one Vermont resident was associated with this outbreak, but this person had purchased chicks from both a farm store and a mail order hatchery as a source of eggs. In addition to interviewing this patient, VDH was able to collect fecal samples from the chicks, isolate *Salmonella* Montevideo and match it to the strain causing human illness. This helped link the outbreak back to chicks and ducklings from a hatchery in Missouri.

Although the source of the illness is different, outbreaks linked to live poultry are investigated in much of the same manner as those caused by a foodborne pathogen. Isolates collected from *Salmonella* cases are forwarded from clinical laboratories to the VDH Lab where they undergo serotyping and pulse field gel electrophoresis (PFGE), a technique used to identify the DNA “fingerprint” of the pathogen. The serotype and PFGE results are then uploaded to the nationwide network of public health laboratories called PulseNet where the DNA “fingerprints” of isolates are compared. Pathogens that have matching DNA “fingerprints” are then considered part of a cluster and the epidemiological investigation begins.

Patients in the PFGE cluster are interviewed about recent food, travel and animal exposures, and then responses among the cases are compared and a hypothesis is generated. In the case of live poultry outbreaks, patients are then re-interviewed using a questionnaire focused on the details of their animal contact such as what type and how many poultry they have, when and where they were purchased and where the poultry are kept at their home.

Vermont – Selected Reportable Diseases – 2012

(Data through MMWR Week 26 6/30/2012) – 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	6	3	3	3	1	0	0	0	0	0	0	0	2	1	11	4	0	0	27	
5-14	8	6	2	3	0	0	0	1	0	0	0	0	27	0	119	1	0	0	66	
15-24	12	6	0	7	1	0	0	0	2	42	0	0	12	0	16	5	1	1	7	
25-39	8	1	0	9	0	0	1	2	1	145	0	0	13	0	3	5	0	0	3	
40-64	15	5	1	14	6	0	1	11	0	171	1	0	84	0	9	16	0	0	2	
65+	4	2	0	3	4	0	0	0	0	10	2	0	31	0	0	10	0	0	0	
Unknown	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total (YTD)	53	23	6	39	12	0	2	14	3	368	3	0	169	1	158	41	1	1	105	
5-yr Median (YTD)	67	24	5	60	12	1	1	†	1	†	3	1	91	1	5	37	1	1	65	
County of Residence																				
Addison	7	7	0	3	0	0	1	2	1	20	0	0	10		43	4			1	
Bennington	1	0	1	3	1	0	0	0	0	11	0	0	45		6	3			3	
Caledonia	2	3	0	0	0	0	0	0	1	22	0	0	0		4	0			3	
Chittenden	8	3	0	17	5	0	1	9	0	129	0	0	18		69	12			15	
Essex	1	0	0	0	0	0	0	0	0	4	0	0	0		0	0			0	
Franklin	4	0	0	0	0	0	0	0	0	22	1	0	1		2	1			7	
Grand Isle	0	2	0	1	0	0	0	0	0	2	0	0	0		8	0			0	
Lamoille	1	1	0	2	0	0	0	0	0	9	0	0	1		0	5			4	
Orange	3	1	0	2	0	0	0	0	0	19	0	0	5		0	0			3	
Orleans	4	1	0	2	0	0	0	0	0	11	0	0	0		3	2			7	
Rutland	5	1	1	1	2	0	0	1	0	24	0	0	25		5	5			9	
Washington	3	1	4	4	2	0	0	0	1	15	0	0	5		9	0			12	
Windham	7	2	0	0	1	0	0	2	0	45	0	0	31		2	5			36	
Windsor	7	1	0	4	1	0	0	0	0	35	2	0	28		7	4			5	
Unknown	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0			0	
Total (YTD)	53	23	6	39	12	0	2	14	3	368	3	0	169	1	158	41	1	1	105	
(802)863-7240			1(800)640-4374 (VT)									FAX: (802)865-7701								

*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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In response to these outbreaks VDH, CDC and the USDA have all posted educational materials on their respective websites for poultry owners. These materials include illness prevention tips such as hand-washing after poultry contact, housing chicks and ducklings outside the home and refraining from eating around live poultry. Parents are also discouraged from purchasing chicks and ducklings as pets for children younger than 5 years old. People with weakened immune systems should also avoid handling live poultry. In recent years, *Salmonella* outbreaks have also been caused by contact with turtles, frogs and hamsters. It is important to consider animal exposures in patients with enteric illnesses.

Find more information at www.cdc.gov/salmonella or healthvermont.gov/prevent/salmonella/Salmonella.aspx