

## Surveillance for Influenza and Influenza-Like Illness

The VDH Epidemiology Field Unit (EFU) tracks the burden of influenza and influenza-like illness using both national and state-specific tools. The VDH works in partnership with the Centers for Disease Control and Prevention (CDC) Influenza Division to meet the following goals for national influenza surveillance:

- Find out when and where influenza activity is occurring
- Track influenza-related illness
- Determine what influenza viruses are circulating
- Detect changes in influenza viruses
- Measure the impact influenza is having on deaths in the United States.

Our flu surveillance program uses numerous data sources and includes information from laboratory tests, clinical diagnoses, emergency room visit trends, death certificates, and outbreak reports. This information provides useful background information on the burden of influenza. From a clinical standpoint, VDH recommends that providers treat patients empirically based on suspicion of flu.

Laboratory-confirmed influenza. The Vermont Department of Health Laboratory (VDHL) receives specimens from providers, clinics, and hospitals around the state, and tests these specimens for the presence of influenza viruses and for Influenza A subtype using real time reverse-transcriptase polymerase chain reaction (rtRT-PCR). The VDHL then submits a subset of positive influenza specimens to the CDC for further testing. CDC performs antigenic characterization, genetic analysis (sequencing) and antiviral resistance testing on these specimens in order to monitor the currently circulating influenza virus strains, to determine vaccine strain selection, and evaluate antiviral resistance.

ILINet-Physician-diagnosed influenza-like illness. VDH recruits and collaborates with private practice physicians and health clinics in each of the five flu surveillance regions in the state, on participation in a CDC-sponsored program called ILINet. These “sentinel physicians” report the number of outpatients they see each week with influenza-like illness (fever plus cough or sore throat) through a web site; this information allows VDH to assess the spread of flu-like illness geographically and over time.

Hospital visits for respiratory illness. VDH conducts “syndromic” (pre-diagnosis) surveillance for clusters of illness at seven VT hospitals and one urgent care clinic. De-identified records of emergency room visits and resulting admissions are collected and analyzed electronically on a daily basis using EARS (Early Aberration Reporting System). The EARS system has two illness grouping categories that serve as proxies for influenza-like illness. Through EARS, VDH can assess trends across regions and age groups and compare those trends to historic baselines.

Deaths due to influenza. In 2008, VDH launched its Electronic Death Registration System (EDRS), a secure web-based application for reporting deaths and producing death certificates. The EDRS team provides the EFU with records of influenza-related deaths. Pediatric influenza-related deaths are reported directly to the EFU under Vermont’s Communicable Disease regulations.

Outbreak reports. Influenza outbreaks in institutional settings, such as long-term care facilities, are also reportable under Vermont regulation. Gathering these reports and communicating with the affected facilities allows VDH to provide guidance on infection control that will help to protect seniors, who are at high risk for complications or death from influenza.

Findings from our influenza surveillance may be monitored on the VDH web site at <http://healthvermont.gov/prevent/flu/flusurveillance.aspx>. The CDC web site <http://www.cdc.gov/flu> has information about flu surveillance at the national level.

# Vermont – Selected Reportable Diseases – 2010

(Data through MMWR Week 43 – 10/30/10) – 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 §	
<b>Age</b>																				
<5	20	18	7	20	0	0	0	1	0	5	0	0	8	3	2	7	0	0	23	
5-14	10	10	6	32	3	0	0	1	0	1	0	0	40	0	7	7	0	0	56	
15-24	36	21	1	15	0	0	0	2	0	42	0	0	22	0	4	16	0	0	5	
25-39	29	6	1	31	3	0	0	23	1	116	0	1	42	0	0	10	0	1	3	
40-64	52	10	0	50	4	0	2	20	0	245	3	1	143	2	0	16	1	1	1	
65+	16	0	2	19	13	0	0	0	0	12	6	2	52	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	
<b>Total (YTD)</b>	<b>163</b>	<b>65</b>	<b>17</b>	<b>167</b>	<b>23</b>	<b>0</b>	<b>2</b>	<b>47</b>	<b>1</b>	<b>421</b>	<b>9</b>	<b>4</b>	<b>307</b>	<b>5</b>	<b>13</b>	<b>66</b>	<b>1</b>	<b>2</b>	<b>88</b>	
<b>5-yr Median (YTD)</b>	<b>134</b>	<b>57</b>	<b>19</b>	<b>168</b>	<b>16</b>	<b>2</b>	<b>1</b>	<b>†</b>	<b>1</b>	<b>†</b>	<b>7</b>	<b>2</b>	<b>†</b>	<b>2</b>	<b>13</b>	<b>66</b>	<b>3</b>	<b>3</b>	<b>240</b>	
<b>County of Residence</b>																				
Addison	16	22	2	12	3	0	0	1	0	20		0	18	1	0	4	0		2	
Bennington	4	0	0	2	0	0	0	2	0	18		1	78	1	0	2	0		2	
Caledonia	10	5	1	6	1	0	0	1	0	34		0	2	0	0	1	0		2	
Chittenden	34	1	1	47	9	0	0	25	0	143		0	25	0	6	14	1		47	
Essex	0	0	0	4	0	0	0	0	0	1		0	0	0	0	1	0		1	
Franklin	16	2	3	9	0	0	0	1	0	26		0	6	1	1	7	0		0	
Grand Isle	2	0	0	0	0	0	0	0	0	0		0	1	0	0	1	0		1	
Lamoille	8	1	1	9	1	0	0	1	0	12		1	4	0	0	2	0		4	
Orange	11	10	2	12	2	0	0	0	0	10		0	7	0	1	6	0		5	
Orleans	4	7	1	3	1	0	0	0	0	16		0	1	0	0	5	0		2	
Rutland	14	2	1	14	2	0	1	2	0	37		1	65	0	0	7	0		4	
Washington	13	13	3	20	1	0	0	5	0	34		0	7	1	4	4	0		10	
Windham	11	0	0	13	0	0	1	5	1	38		0	52	1	0	7	0		3	
Windsor	20	2	2	16	3	0	0	4	0	32		1	41	0	1	5	0		5	
Unknown	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0		0	
<b>Total (YTD)</b>	<b>163</b>	<b>65</b>	<b>17</b>	<b>167</b>	<b>23</b>	<b>0</b>	<b>2</b>	<b>47</b>	<b>1</b>	<b>421</b>	<b>9</b>	<b>4</b>	<b>307</b>	<b>5</b>	<b>13</b>	<b>66</b>	<b>1</b>	<b>2</b>	<b>88</b>	
<b>VDH District Office</b>																				
Barre	15	14	3	24	1	0	0	2	0	0		0	0	1	4	5	0		11	
Bennington	4	0	0	2	0	0	0	2	0	0		1	0	1	0	2	0		2	
Brattleboro	9	0	0	13	0	0	0	4	0	0		0	1	1	0	6	0		3	
Burlington	32	1	1	47	0	0	0	20	0	0		0	0	0	5	13	1		47	
Middlebury	16	22	2	15	3	0	0	1	0	0		0	0	1	0	4	0		2	
Morrisville	8	4	1	11	1	0	0	1	0	0		1	0	0	0	2	0		5	
Newport	4	4	1	5	0	0	0	0	0	0		0	0	0	0	5	0		2	
Rutland	14	2	1	11	2	0	1	2	0	0		0	0	0	0	7	0		4	
St. Albans	18	2	3	9	0	0	0	1	0	0		0	0	0	1	8	0		1	
St. Johnsbury	9	5	1	7	0	0	0	1	0	0		0	0	0	0	2	0		2	
Springfield	9	0	1	9	1	0	0	1	0	0		0	0	0	1	2	0		2	
White River	22	11	3	14	1	0	0	2	0	0		1	0	0	1	8	0		7	
Central Office	3	0	0	0	14	0	1	10	1	421		1	306	1	1	2	0		0	
<b>Total (YTD)</b>	<b>163</b>	<b>65</b>	<b>17</b>	<b>167</b>	<b>23</b>	<b>0</b>	<b>2</b>	<b>47</b>	<b>1</b>	<b>421</b>	<b>9</b>	<b>4</b>	<b>307</b>	<b>5</b>	<b>13</b>	<b>66</b>	<b>1</b>	<b>2</b>	<b>88</b>	

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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