

COMMUNICABLE DISEASE REPORT

Quarterly Report

Volume 30, Number 2

June 2013

Enteric Diseases

Reporting

In Newfoundland and Labrador (NL), all lab confirmed cases of food and water borne illness are reportable to the Regional Medical Officer of Health or designate. The list of reportable diseases includes those listed in the table below.

For information on reporting of enteric illness please refer to the NL Disease Control manual:http://www.health.gov.nl.ca/health/publications/diseasecontrol/s2_enteric_food_and_waterborne_diseases.pdf

Table 1: Cases of Enteric Illness by year, 2002 to 2012, Newfoundland and Labrador

Disease	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Amoebiasis	3	2	0	0	1	0	0	1	0	0	0
Botulism	0	0	0	0	0	0	1	0	0	0	0
Campylobacteriosis	44	55	53	80	43	48	33	32	39	61	42
Cryptosporidiosis	3	1	0	0	2	1	2	2	1	3	5
Cyclosporidiosis	0	0	0	0	0	0	0	0	0	0	0
Cytomegalovirus	0	1	1	0	5	4	2	5	3	6	7
Giardiasis	35	28	29	22	35	23	45	24	35	43	32
Hepatitis A	1	4	2	0	0	0	0	0	0	6	0
Listeriosis	1	1	1	1	1	1	2	0	0	0	0
Norovirus Infection	9	54	40	42	17	149	118	44	163	57	101
Paratyphoid fever	0	0	0	0	0	0	0	0	0	0	0
Salmonellosis	50	27	34	39	30	39	57	35	46	64	74
Shigellois	1	3	2	4	3	0	1	1	2	0	0
Typhoid fever	0	0	0	0	0	0	0	0	0	0	0
Verotoxigenic E. coli	8	5	2	3	0	10	4	4	0	6	2
Yersiniosis	1	0	3	0	0	2	1	0	1	0	0

Drinking Water Bacteriological Quality

Private Drinking Water Quality

Homeowners with their own drinking water supply (i.e., a dug or drilled well) typically do not disinfect their water supply prior to consumption. Therefore, it is important to have the bacteriological quality of their well water tested regularly throughout the year. Once per year is not sufficient.

The testing service is provided throughout the province at five regional hospital testing sites and the Newfoundland and Labrador Public Health laboratory in St. John's. Total coliform and *Escherichia coli* (*E. coli*) are tested as indicators of well water bacteriological quality. A properly located, constructed and maintained well will be free of total coliform bacteria and *E. coli*. The presence of coliform bacteria in well water is used as indicator of well integrity. The presence of *E. coli* is an indication of recent fecal contamination of well water and is an immediate health concern. Water with *E. coli* present should not be consumed without boiling. Water quality information and procedures for boiling are available at:

<http://www.health.gov.nl.ca/health/publichealth/envhealth/drinkingwater.html>.

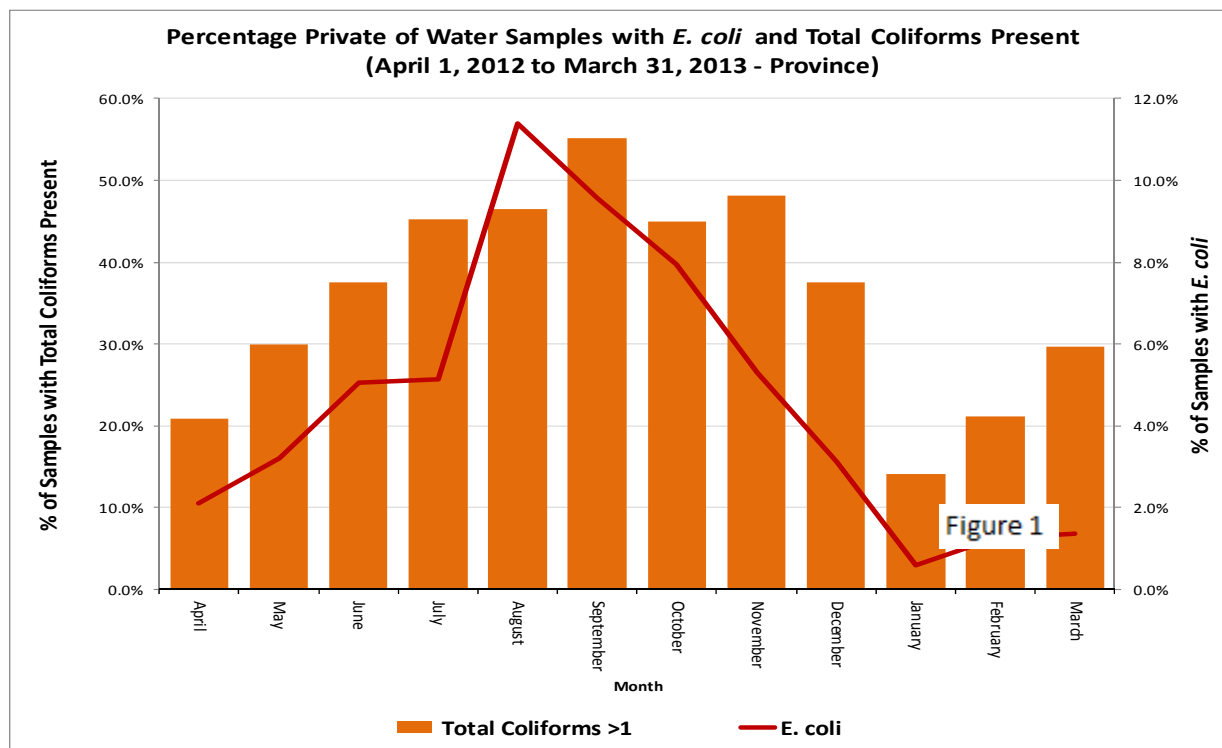
The table below presents the results of private water quality testing carried out by the five regional test sites and the Public Health laboratory from April 1, 2012 to March 31, 2013.

Table 2: Private water quality testing results

Testing Site	# of Samples Tested	# of Samples with <i>E. coli</i> Present	# of Samples with Total Coliform Present
Labrador	1	0	0
Grand Falls-Windsor	1,814	76	508
Clarenville	1,023	53	284
Corner Brook	1,128	2	302
St. Anthony	72	11	32
Public Health laboratory	1,906	179	1115
Total	5,944	321	2241
% Positive (Province)		5.4%	37.7%

Province-wide, 5,944 private water samples were submitted for bacteriological testing. 5.4% of the samples tested positive for *E. coli* and 37.7 % tested positive for total coliforms. The following figure provides monthly variation of private water supply samples with *E. coli* and total coliforms present.

Figure 1: Percentage of Private Water Supply Tests with E.coli and Total Coliforms



Public Water Supplies

Service NL carries out monthly bacteriological water quality monitoring of public water supplies throughout Newfoundland and Labrador. As with private water supply testing, the public water supply monitoring program looks for the presence total coliforms, an indicator of the adequacy of drinking water disinfection, and *E. coli*, an indicator of recent fecal contamination of drinking water.

The table below presents the results of public water quality bacteriological tests carried out by the five regional test sites and the public laboratory from April 1, 2012 to March 31, 2013.

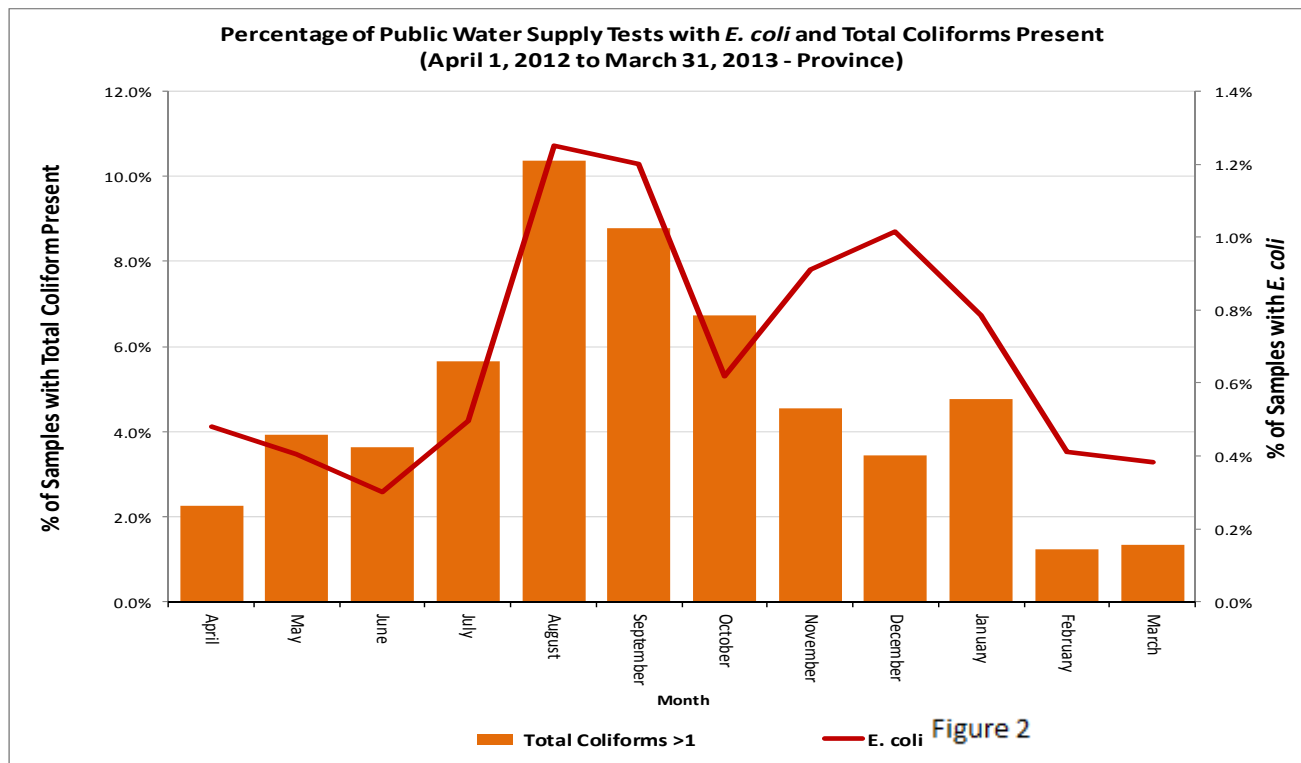
Table 3: Public Water Quality Bacteriological Tests

Testing Site	# of Samples Tested	# of Samples with <i>E. coli</i> Present	# of Samples with Total Coliform Present
Labrador	1,679	3	109
Grand Falls-Windsor	3,703	34	246
Clarenville	1,300	9	59
Corner Brook	3,552	2	175
St. Anthony	662	22	94
Public Health laboratory	8,225	63	247
Total	19,121	133	930
% Positive (Province)		0.7%	4.9%

Province-wide, 19,121 public water samples were submitted for bacteriological testing, 0.7% of the samples tested positive for *E. coli* and 4.9 % tested positive for total coliforms.

The figure below provides monthly variation of public water supply samples with *E. coli* and total coliforms present

Figure 2: Percentage of Private Water Supply Tests with E.coli and Total Coliforms



Food Premises Inspections

Fiscal Year 2012- 2013

Food establishments (i.e., restaurants, grocery stores, take-outs, and convenience stores) in Newfoundland and Labrador are inspected for compliance with the *Food Premises Regulations* under the *Food and Drug Act*. The inspections are conducted by Environmental Health Officers with Service NL.

The number of inspections of an establishment is determined by a risk assessment which categorizes most establishments as high, moderate or low risk. Risk assessment measures the likelihood of the premises being involved in a food borne illness outbreak. High risk establishments are inspected four times annually, moderate risk premises are inspected twice annually and low risk premises are inspected once every two years. When non-compliance is observed during inspections additional follow-up inspections may be necessary. Some food premises do not undergo a risk assessment, such as seasonal food premises which are inspected during the season of operation.

Food Premises

In fiscal year 2012-2013, 3414 licensed food premises in Newfoundland and Labrador were assessed and categorized into low, moderate or high risk food premises. The regional breakdown is provided in the table below.

Table 4: Categorization of food premises by region

Category of Food Premises	# of High, Moderate and Low Risk Food Premises by Region					Total
	Avalon	Eastern	Central	Western	Labrador	
Low Risk	488	140	368	230	96	1322
Moderate Risk	948	203	304	336	98	1889
High Risk	117	16	25	29	16	203
Total	1553	359	697	595	210	3414

Most food premises in the province fall in the low or moderate risk categories. In 2012-2013, 203 of the 3414 food premises assessed were high risk food premises. In addition to the food premises that undergo the risk assessment there were 574 other food premises licensed in the province in 2012-2013 for a total of 3988 food premises.

Inspections

During the year a total of 6139 food premises inspections were conducted by Environmental Health Officers.

Table 5: Food premises inspection by region

	Region					Total
	Avalon	Eastern	Central	Western	Labrador	
# of Inspections	2828	766	1080	1168	297	6139

Inspection Results – Critical Items

Critical items are food safety practices observed during an inspection that, if not corrected and allowed to continue, may result in the contamination of food and foodborne illness. If identified during an inspection, critical items must be corrected immediately. If a critical item cannot be corrected at the time of the inspection, the inspector may close an establishment due to the risk to public health.

In 2012-2013 Environmental Health Officers identified 1632 critical items during the 6139 inspections.

The most common critical items identified in fiscal year 2012-2013 were:

- Potentially hazardous food items not appropriately separated and protected from contamination (18.3%)
- Potentially hazardous food items held at temperatures in excess of 4°C (18.0%)
- Inadequate hand washing facilities and supplies (16.9%)
- Food contact surfaces not cleaned or sanitized properly (10.5%)

For more information on the food premises inspection program, visit the Department of Health and Community Services website at:

www.health.gov.nl.ca/health/publichealth/envhealth/foodsafetyinfo.html

Environmental Health Review

The Canadian Institute of Public Health Inspectors has redeveloped the Environmental Health Review and launched it on February 24, 2012. The Environmental Health Review covers the continuum of environmental health topics including food protection, drinking water quality, on-site wastewater disposal, indoor air quality, epidemiology, tobacco reduction, and many more environmental health issues. The Journal is published quarterly in an electronic format and delivered to 1500 members across Canada in addition to other subscribers.

For more information about the journal please visit www.ciphi.ca/members-centre

Specimen Collection and Identifying Cases of Enteric Illness

The identification and subsequent notification to public health, of people with enteric illness is critical to ensuring that appropriate interventions are in place to prevent and control future cases and outbreaks. Specimen (i.e., stool specimen) collection and testing are integral to outbreak identification, investigation and mitigation. Confirming an illness can only be done by isolating the pathogen in a clinical specimen of an ill person. Laboratory confirmed illness provides investigators with greater opportunities to identify the source and mode of contamination. Medical professionals examining and treating people with enteric illness can help identify outbreaks by facilitating specimen collection.

For more information on enteric illnesses, please view the Water/Food/Enteric Diseases Section of the Newfoundland and Labrador Disease Control Manual at

www.health.gov.nl.ca/health/publications/diseasecontrol/dcenterics.pdf.

PFGE and Enteric Illness

The implementation of PFGE testing at the PHL has contributed to the early detection of multiregional clusters of *Salmonella* Heidelberg and *Salmonella* Enteritidis cases in Newfoundland and Labrador. Investigations have not identified sources or modes of transmission, to date.

Giardiasis 2012

Western Regional Health Authority noted an increase in the cases of Giardiasis from January to March. On investigation, two of these cases were epidemiologically linked and two cases were in one individual. This individual had distinct illnesses, having had a negative test after initial treatment with Flagyl in January, the person tested positive again in March. An inter-provincial follow-up was initiated for this individual with illnesses likely related to a work camp in another province. This person was also positive for cryptosporidium.

Noravirus infection

Noravirus infection shows slight increase in the year 2012. There were 37 outbreaks reported up to December 31, 2012 as posted in Canadian Network Public Health Intelligence (CNPHI) outbreak summaries application. There were 9 outbreaks in Western Health, 2 outbreaks in Grenfell Health, 10 outbreaks in Central Health and 14 outbreaks in Eastern Health reported.

Generally these outbreaks occurred in long term care facilities, personal care homes or acute care facilities.

Salmonella

Salmonella is an enteric infection. *Salmonella* is different from the other enterics because it lives in the gastrointestinal tracts of animals and infects humans when there is contamination of food or water with animal feces. *Salmonella* infections are zoonotic and can be transferred between humans and non-humans animals. Many infections are due to ingestion of contaminated food.

There are over 2000 salmonella serotypes. Salmonella serotypes are often still divided into three groups: *Salmonella typhi*, *Salmonella cholera –suis* and *Salmonella enteritidis*. *Salmonella enteritidis* is the most common type found in the Newfoundland and Labrador.

Table 6: Number of Salmonella cases by Health Region and Salmonella Type 2012

Salmonella Type	ICD-9 Code	Regional Total	Eastern Health	Central	Western	Labrador Grenfell Health
1,9,12:-:1,5	003.9DC	1	1			
Paratyphi B	003.9CS	2	2			
Agona	003.9AA	1			1	
Enteritidis	003.9AG	30	15	6	6	3
Heidleberg	003.9AJ	16	4	6	2	4
1 4, [5], 12:i:-	003.9CU	1	1			
Infantis	003.9AK	1	1			
Saint Paul	003.9AT	6	4	2		
San Diego	003.9BD	1			1	
Thompson	003.9AW	2				2
Typhimurium	003.9AX	2	1	1		
Unspecified	3.9	10	7	1		2
Totals for Period		73	36	16	10	11

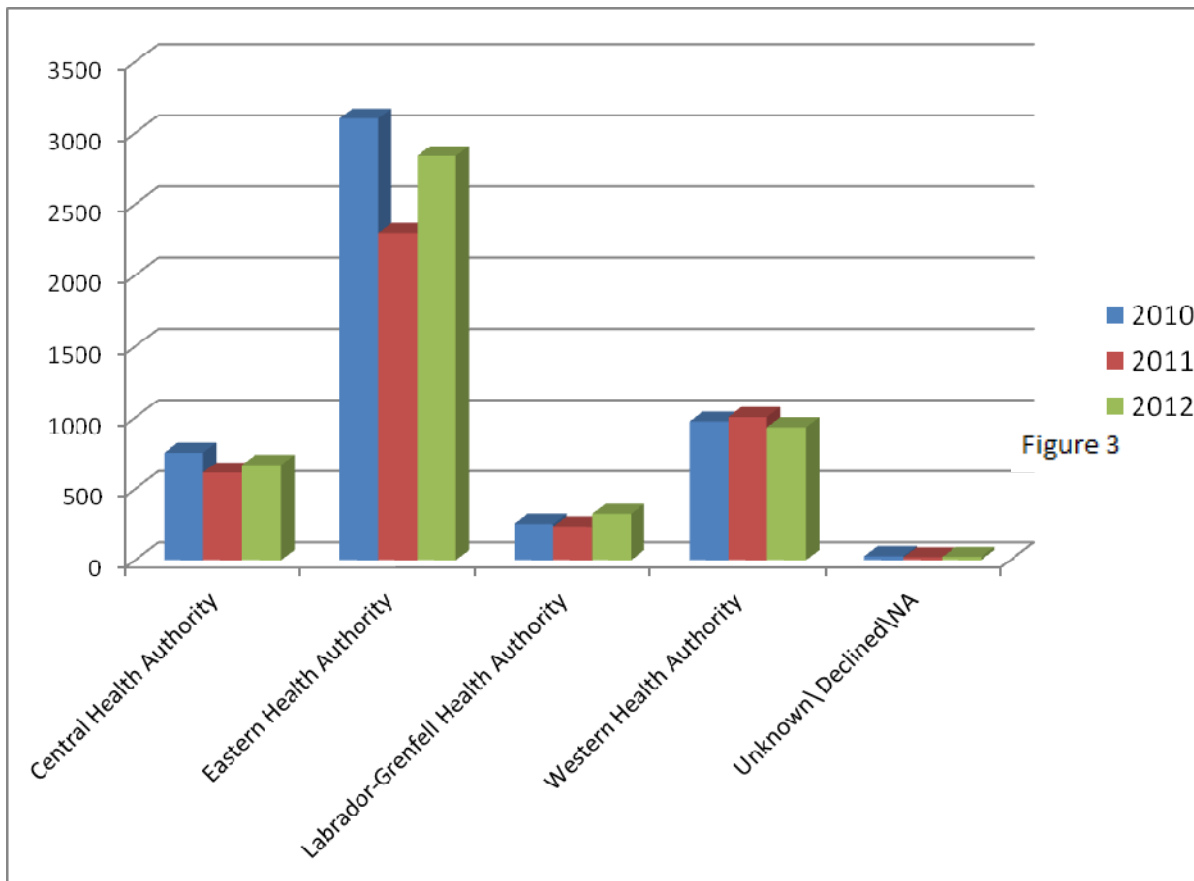
Campylobacteriosis

Campylobacteriosis is an acute zoonotic bacterial infection of the gastrointestinal tract (enteric) or blood (extra-intestinal) caused by *Campylobacter* species. Enteric infections are most commonly associated with *Campylobacter jejuni* and extra-intestinal infections by *Campylobacter fetus*. Extra-intestinal infection occurs in fewer than 1% of cases. There are over 90 biotypes and serotypes. The mode of transmission is fecal oral route via contaminated water. This organism can also be acquired by drinking unpasteurized milk.

In NL, five year monthly rates fluctuated between 0.3 and 0.9 cases per 100,000 population (average of 39 cases per year). In 2011, this rate increased to an average of 1.0 campylobacteriosis cases per month per 100,000 population in NL (61 cases total). In 2012, there were 42 cases reported. The highest range was between ages 40-59 years (19 cases were reported).

Typically, the highest rates of campylobacteriosis occurred between July and September, the lowest rates occur between January to March.

Figure 3: Healthline data for calls from persons symptomatic with enteric \ illness in NL, 2010-2012



Newfoundland and Labrador Communicable Disease Surveillance

Monthly Disease Report: June 2013



DISEASE CLASS	DISEASE NAME	TOTAL			EASTERN			CENTRAL			WESTERN			LABRADOR GRENELL		
		June	YTD 13	YTD 12	June	YTD 13	YTD 12	June	YTD 13	YTD 12	June	YTD 13	YTD 12	June	YTD 13	YTD 12
	Tuberculosis, non-respiratory	0	2	0	0	0	0	0	0	0	1	0	0	1	0	
	Tuberculosis, respiratory	1	6	2	0	1	0	0	0	0	0	1	1	5	1	
Sexually Transmitted and Bloodborne Pathogens	Chlamydia	61	403	439	37	239	239	3	25	34	3	66	54	18	73	112
	Gonorrhoea	2	8	7	2	8	2	0	0	0	0	0	0	0	0	5
	Hepatitis C	4	55	38	3	40	30	1	5	2	0	10	6	0	0	0
	HIV Infection	0	1	2	0	1	2	0	0	0	0	0	0	0	0	0
	Syphilis, infectious	0	4	3	0	3	3	0	0	0	0	1	0	0	0	0
	Syphilis, non-infectious	0	1	2	0	0	2	0	0	0	0	0	0	0	1	0
Vectorborne & Other Zoonotic Diseases	Lyme disease	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Malaria	0	1	1	0	0	1	0	0	0	0	1	0	0	0	0
	Q Fever	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Rabies	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Toxoplasmosis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Trichinellosis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	West Nile Virus Infection	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vaccine Preventable	Chickenpox	11	94	330	5	50	73	6	36	162	0	5	92	0	3	3
	Congenital Rubella Syndrome	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Hepatitis B	2	12	8	1	5	8	0	3	0	0	1	0	1	3	0
	Invasive Haemophilus Influenza type B (Hib)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Measles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Mumps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pertussis	3	12	0	2	6	0	0	0	0	0	0	0	1	6	0
	Rubella	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Tetanus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Source: Communicable Disease Control System, Department of Health and Community Services, Government of Newfoundland and Labrador

Date verified: 30-Jul-2013

Disclaimer: Data are subject to continuous updates; small variations in numbers may occur.

Note: Prior to January 2011, "Invasive Meningococcal Disease, Probable" was included under the heading "Invasive Meningococcal Disease"

The majority of chickenpox cases meet the probable case 'definition'