

COMMUNICABLE DISEASE REPORT- QUARTERLY

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Enteric Diseases

Reporting

In Newfoundland and Labrador 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 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 2011, Newfoundland and Labrador

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

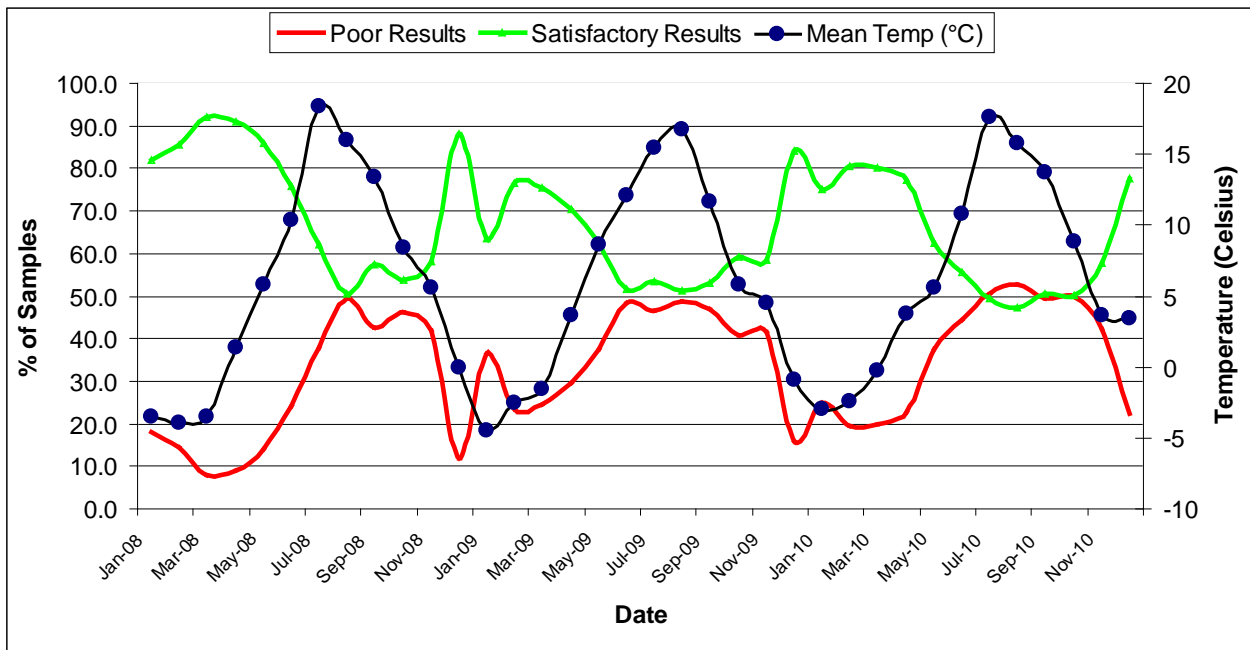
Private Drinking Water Quality

Homeowners with their own drinking water supply (i.e., a dug or drilled well) should have the bacteriological quality of their well water tested regularly throughout the year. The testing service is provided by the Newfoundland and Labrador Public Health Laboratory.

Total coliform and *Escherichia coli* (*E. coli*) are tested as indicators of well water bacteriological quality. The presence of coliform bacteria in well water is used as indicator of well integrity. A properly maintained and constructed well will block potentially contaminated surface and be free of total coliform bacteria. 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>

Figure 1 compares bacteriological water quality results from eastern Newfoundland (Avalon and Burin Peninsulas) for a three year period to the mean ambient (outdoor) temperature¹. Drilled and dug well samples results are combined. Satisfactory results are those with 10 or less total coliforms and no *E. coli* present per 100 ml sample. Poor results are those with total coliform levels greater than 10 and/or the presence of any *E. coli* per 100 ml sample.

Table 2: Private Water Sample Results Compared to Ambient (Outdoor) Temperature, Eastern NL, 2008-2010



Poor results positively correlate to the trends of ambient temperature ($r = 0.77$). In colder months, when the average ambient temperature is below zero, the proportion of poor results is low. As

¹The environmental data used in this analysis was retrieved from Environment Canada at www.weatheroffice.gc.ca

temperatures rise, the proportion of poor results increases. This finding is of interest because the fluctuation of groundwater temperature is generally minimal with the change of seasons. Shallow wells are known to be common in the province and ambient temperature may have a greater impact on water quality than with deeper drilled wells. Results may be explained by poor well construction and maintenance practices. Wells with surface water intrusion may follow seasonal patterns of surface water bacterial loads and may be vulnerable to contamination.

Poor water sample results were not associated with periods of high rainfall ($r = .03$). Further analysis of private water sample data will be carried out in the future.

Food Premises Inspection Summary - 2011

Food establishments (i.e., restaurants, takeouts, 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 carried 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. 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 additional inspections may be necessary.

In 2011, 3478 licensed food premises in Newfoundland and Labrador were assessed and categorized as follows:

- 179 high risk food premises
- 1860 moderate risk food premises
- 1439 low risk food premises

Environmental Health Officers:

- Conducted 6066 food premises inspection of 3965 licensed food premises; and
- Identified 1427 critical items during the inspections.

Contraventions of the *Food Premises Regulations* which may lead to foodborne illness, if not corrected immediately, are known as critical items. If a critical item cannot be corrected at the time of inspection, the inspector may close an establishment due to the risk to public health.

The most common critical items identified in 2011 were:

- Potentially hazardous food items not stored at or below 4°C (19.7%)
- Inadequate separation and protection of raw and cooked foods (16.4%)
- Inadequate hand washing facilities/supplies (15.3%)
- Improper monitoring of temperatures (7.9%)

For more information on the food premises inspection program, visit the Department's 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 24th, 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 multi-regional 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.