



# Infectious Disease Epidemiology Report

## Norovirus Outbreaks – Maine, 2010-2013



### Background

Noroviruses are a group of viruses that cause acute gastroenteritis. What is often referred to as the “stomach flu” is not flu at all and may actually be illness from norovirus infection. Noroviruses are highly contagious, and only a small number of viral particles can cause an infection. Transmission occurs in several ways: the most common is the fecal-oral route, but foodborne transmission, environmental or fomite contamination, and secondary person-to-person transmission also occur. The multiple routes of transmission make it difficult to determine the source of infection during outbreaks. There are several strains of noroviruses. Genogroups I, II, and IV infect humans. Genogroup II (GII) is the most prevalent human genogroup. Immunity to norovirus lasts only a few months and is strain-specific, so individuals may be infected repeatedly throughout their life.

Nationwide, over half of all reported norovirus outbreaks occur in long term care facilities, according to federal CDC. Norovirus is the primary cause of foodborne disease outbreaks in the nation. Norovirus outbreaks usually occur between November and April, but outbreaks do occur in the summer also.

### Methods

Maine’s Infectious Disease Epidemiology Program monitors outbreaks of gastrointestinal illness. All instances of increased incidence or clusters of gastrointestinal illness are reportable, but individual cases of norovirus illness are not. Reports of clusters of gastrointestinal illness are evaluated to determine if there is an outbreak and a need for additional investigation. Symptomatic individuals are asked to submit stool or vomit specimens to confirm norovirus as the cause of illness.

Maine’s Health and Environmental Testing Laboratory (HETL) performs norovirus testing using polymerase chain reaction (PCR) and determines the genogroup of norovirus, reporting either genogroup I or genogroup II.

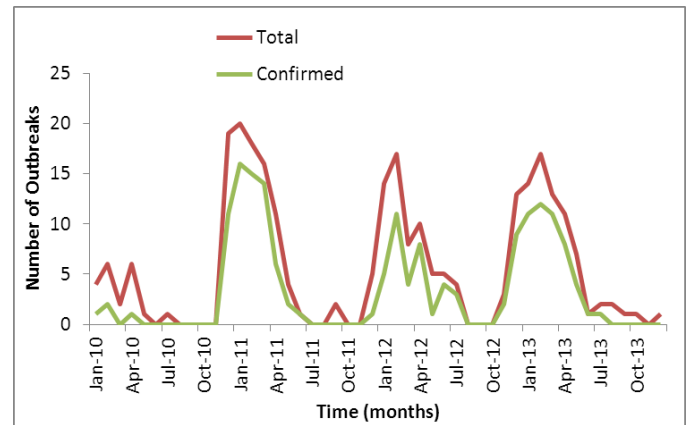
An outbreak is considered laboratory confirmed if there is at least one case that tests positive for norovirus. Other outbreaks are considered to be

suspect for norovirus if the symptoms, incubation period, and possible routes of transmission are consistent with norovirus infection and there is no laboratory confirmation.

### Results

During the previous norovirus season (November 2012 - April 2013), there were 53 laboratory confirmed norovirus outbreaks and 17 suspect outbreaks in Maine (Figure 1).

Figure 1. Norovirus Outbreaks\*, Maine, January 2010 - December 2013



\*Includes confirmed and suspect outbreaks

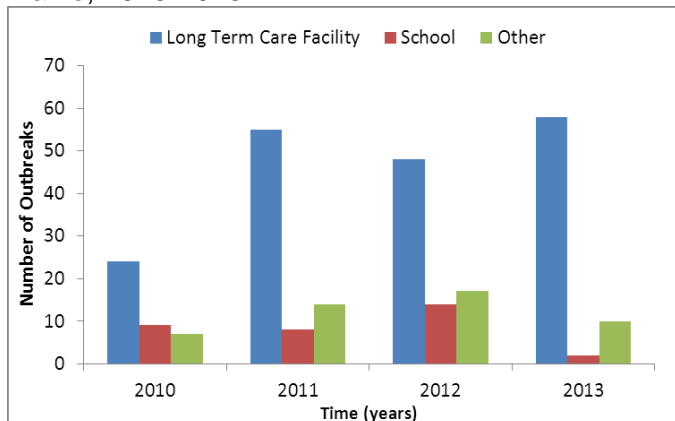
During November - December 2013, there was only one report of a norovirus outbreak, which was not laboratory confirmed. This is fewer than the number reported during November - December 2012 when 16 norovirus outbreaks were reported. Eleven (69%) of those were laboratory confirmed.

Outbreaks are most often reported by long term care facilities. Schools, day care centers, hospitals, restaurants, and summer camps have also reported outbreaks (Figure 2). Outbreaks occur throughout the state but are more frequent in the highly populated counties in Maine (Table 1).

Nineteen (40%) of laboratory confirmed outbreaks reported in 2013 had additional laboratory testing (DNA sequencing) performed. Eighteen were outbreaks caused by norovirus GII.4 Sydney, an emerging strain of norovirus that is circulating. These outbreaks occurred in long term care facilities throughout the state.

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Figure 2. Norovirus Outbreaks\* by Type of Facility, Maine, 2010-2013



\*Includes confirmed and suspect outbreaks

Table 1. Norovirus Outbreaks\* Reported to Maine CDC by County, Maine, 2010-2013

County	2010	2011	2012	2013
Androscoggin	5	4	7	4
Aroostook	0	0	7	5
Cumberland	14	17	12	15
Franklin	1	2	3	1
Hancock	1	4	6	2
Kennebec	2	11	8	3
Knox	1	0	1	7
Lincoln	0	2	2	4
Oxford	4	3	4	4
Penobscot	2	12	12	8
Piscataquis	3	1	1	1
Sagadahoc	0	1	0	0
Somerset	4	3	0	3
Waldo	1	2	1	2
Washington	1	4	1	2
York	0	11	14	9
<b>Total</b>	<b>39</b>	<b>77</b>	<b>79</b>	<b>70</b>

\*Includes confirmed and suspect outbreaks

### Discussion

Increasing knowledge about norovirus among the public and implementing disease control measures at the facility level are essential for controlling the spread of norovirus. Prevention measures for norovirus include but are not limited to the following:

- Wash hands with soap and water before and after eating or preparing food, after using the toilet, and after changing diapers
  - Using alcohol based hand sanitizers may provide some benefit, but should

not be used as a substitute for thorough hand washing

- Rinse all fresh fruits and vegetables with clean running water
- Cook all foods, including oysters and other shellfish, thoroughly before eating
- Do not prepare food for others while symptomatic and for at least 48-72 hours after recovering. See the Maine Food Code for more information on exclusions.
- Immediately clean and disinfect contaminated surfaces by using a bleach-based household cleaner
- Immediately remove clothing or linens that may be contaminated with vomit or feces, wash on the longest cycle setting, and dry on the hottest setting

Long term care facilities continue to report more norovirus outbreaks than other facilities in Maine. Guidance to control norovirus outbreaks in healthcare settings, including long term care facilities, is available from federal CDC and Maine CDC. These control measures include but are not limited to:

- Isolate symptomatic individuals or cohort cases
- Consider closing the facility to new admissions or limiting new admissions
- Post signs notifying visitors of the outbreak or limit visitors, to prevent spread of illness
- Exclude symptomatic staff from work for at least 48 hours after symptoms have resolved
- Wear surgical masks and gloves when cleaning vomit or feces
- Use EPA approved disinfectants for cleaning

Increased incidence or suspect outbreaks of gastrointestinal illness should be reported to Maine CDC by calling 1-800-821-5821. Specimens collected in an outbreak setting can be sent to HETL for norovirus testing.

For more information on norovirus:

- Maine CDC norovirus website [www.maine.gov/idepi](http://www.maine.gov/idepi)
- HETL website [www.mainepublichealth.gov/lab](http://www.mainepublichealth.gov/lab)
- Federal CDC norovirus website <http://www.cdc.gov/norovirus/>