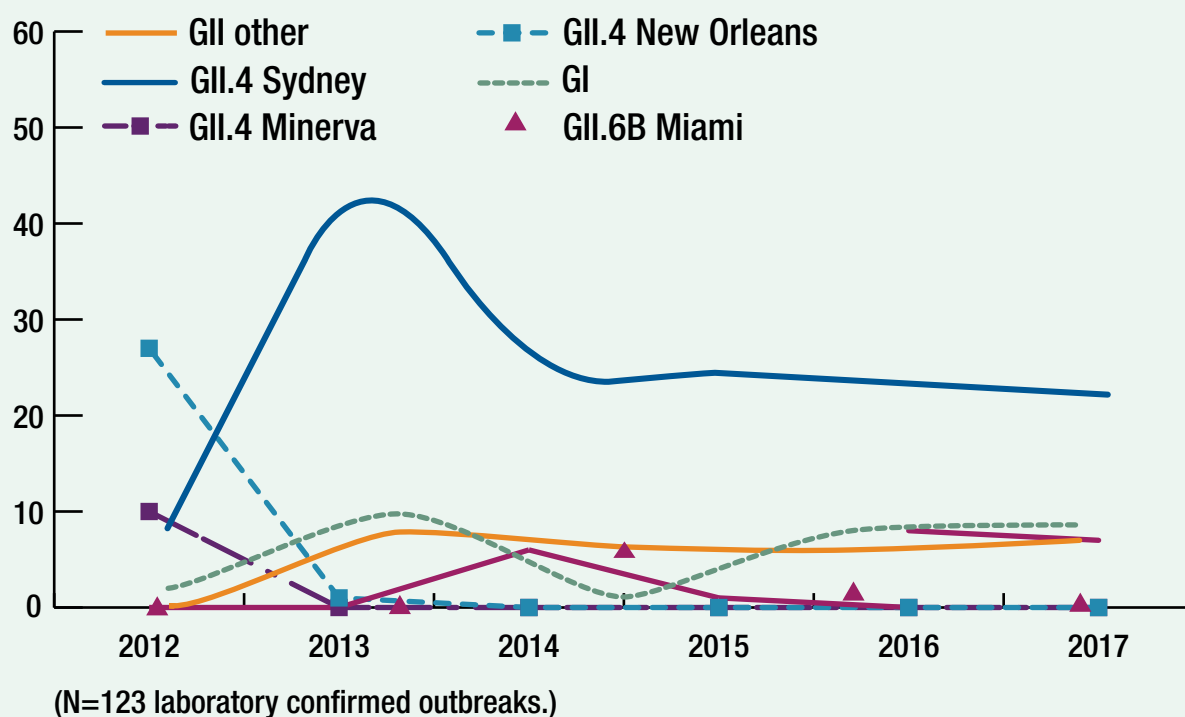# Norovirus outbreaks in long-term care facilities

Norovirus infection causes nausea, vomiting, diarrhea, muscle aches, fever and abdominal cramps, which can result in dehydration. Symptoms typically resolve within a day but can remain for up to three days. Norovirus is highly transmissible and persons typically get norovirus by eating contaminated food containing infected stool or vomit particles.

The Oregon State Public Health Laboratory (OSPHL) began genotyping specimens associated with gastrointestinal outbreaks in late 2012. As shown in the figure, norovirus genogroup GII genotype 4 New Orleans was predominant in 2011 and 2012, accounting for 31 (25%) of 123 total confirmed norovirus outbreaks among Oregon LTCFs. In late 2012, a new norovirus strain of genogroup GII, genotype 4 originating in Sydney, Australia (GII.4 Sydney 2012), became the predominant norovirus strain and caused a severe norovirus season globally and in the United States. In 2013, GII.4 Sydney was responsible for 42 (48%) of 87 confirmed norovirus outbreaks among Oregon LTCFs. GII.4 Sydney has remained the dominant outbreak strain since 2013 and accounted for 23 (32%) of 71 confirmed norovirus LTCF outbreaks in 2016. In 2015, we saw an increase in other GI genotype outbreaks. Other GI genotypes accounted for eight (11%) of 71 confirmed norovirus LTCF outbreaks in 2016 and 16% in 2017.

Norovirus sequences in Oregon LTCFs, 2012–2017

(N=123 laboratory confirmed outbreaks.)

Norovirus outbreaks in LTCFs by county of occurrence and year of investigation, 2007–2017

County	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Total
Baker	0	0	0	0	0	2	1	0	0	0	1	4
Benton	2	3	1	1	1	0	5	0	1	0	0	14
Clackamas	11	10	3	14	3	4	4	2	3	11	4	69
Clatsop	3	1	2	5	1	2	1	1	2	2	2	22
Columbia	0	1	1	1	0	0	2	1	0	0	4	10
Coos	2	2	2	2	0	1	2	2	0	1	1	15
Crook	0	1	1	0	0	0	2	0	0	0	0	4
Curry	0	0	0	0	0	0	1	0	1	0	0	2
Deschutes	4	5	5	3	3	10	3	1	7	2	6	49
Douglas	3	3	0	4	2	1	4	1	1	1	6	26
Grant	0	1	0	0	0	0	0	1	0	0	0	2
Harney	1	0	0	0	0	0	0	0	0	0	0	1
Hood River	1	1	2	1	1	2	2	2	1	0	2	15
Jackson	7	4	6	3	2	3	2	5	3	5	1	41
Jefferson	0	0	0	0	0	0	0	0	0	0	0	0
Josephine	2	2	0	0	0	0	1	0	0	0	1	6
Klamath	2	2	0	2	4	1	1	1	1	3	0	17
Lake	0	0	0	0	0	0	0	0	0	0	0	0
Lane	10	6	8	10	3	8	6	14	6	10	15	96
Lincoln	0	1	0	1	1	0	1	1	0	1	1	7
Linn	1	7	0	4	3	3	3	8	3	2	4	38
Malheur	0	1	0	0	0	0	0	0	0	2	0	3
Marion	12	12	5	9	4	10	8	12	3	7	5	87
Morrow	1	0	0	0	0	0	0	0	0	0	0	1
Multnomah	12	11	11	8	12	15	22	16	10	13	13	143
Polk	2	3	2	2	1	1	2	1	1	0	1	16
Tillamook	0	1	1	1	1	0	0	0	0	0	0	4
Umatilla	2	1	0	2	3	2	1	2	2	0	0	15
Union	1	1	0	0	1	0	0	2	0	1	0	6
Wasco	0	1	2	2	1	1	2	3	2	2	1	17
Washington	8	7	8	8	3	12	8	5	7	6	9	81
Yamhill	6	6	1	6	4	4	4	4	6	2	6	49
Total	**93**	**94**	**61**	**89**	**54**	**82**	**88**	**85**	**60**	**71**	**83**	**789**

*Data as of 12/31/2018