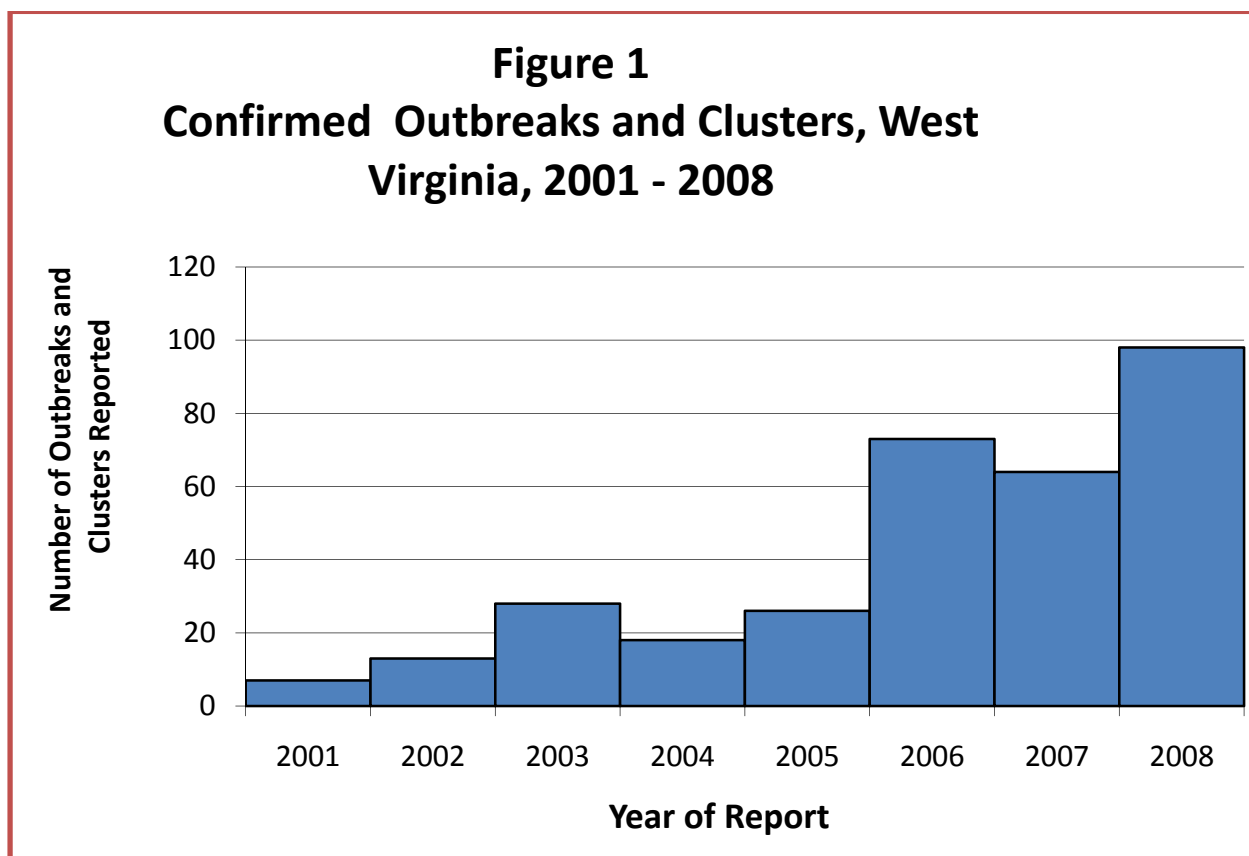


2008 Outbreak Report State of West Virginia

In 2008, a total of 118 outbreaks were identified and reported to local health departments. Of these reports, 98 (83%) were confirmed as outbreaks or clusters of disease (Appendix). Local health departments investigate and report outbreaks with assistance from their regional epidemiologist and the Bureau for Public Health. Results of the investigation are compiled by the Bureau for Public Health and summarized in this report.

The number of outbreaks recognized in West Virginia continued to rise during 2008. In 2001, 7 outbreaks were reported. In 2008, 98 outbreaks were confirmed, representing a 13-fold increase in recognized outbreaks (Figure 1).



In 2008, 92 (94%) of reported outbreaks were limited to West Virginia residents, and 6 (6%) outbreaks involved residents of other states. The most common type of outbreak involved enteric illness, followed by outbreaks of respiratory illness (Table 1)

**Table 1 Types of Outbreaks Reported
In West Virginia, 2008**

Type of outbreak	Frequency	Percent
Enteric illness	56	57.1%
Rash illness	15	15.3%
Respiratory illness	24	24.5%
Skin infection	3	3.1%
Total	98	100.0%

Thirty-five (64%) of 55 counties had outbreak-related cases of disease in 2008. One multi-state outbreak involved residents of two counties. The number of outbreaks reported by county is shown in Table 2.

Table 2 Reported Outbreaks by County, West Virginia, 2008

West Virginia Counties with Outbreaks	Frequency	Percent
Berkeley	1	1.0%
Brooke	1	1.0%
Cabell	2	2.0%
Fayette	7	7.1%
Grant	1	1.0%
Greenbrier	1	1.0%
Hampshire	2	2.0%
Hancock	3	3.1%
Hardy	1	1.0%
Harrison	4	4.1%
Jackson	2	2.0%
Jefferson	3	3.1%
Kanawha	14	14.3%
Lewis	1	1.0%
Logan	2	2.0%
Marion	1	1.0%
Marshall	1	1.0%
Mason	1	1.0%
Mercer	8	8.2%
Mingo	2	2.0%
Monongalia	9	9.2%
Ohio	4	4.1%
Pleasants	2	2.0%
Pocahontas	1	1.0%
Preston	5	5.1%
Randolph	2	2.0%
Ritchie	2	2.0%
Roane	2	2.0%
Summers	2	2.0%
Taylor	3	3.1%
Tyler	1	1.0%
Upshur	1	1.0%
Wayne	1	1.0%
Wood	4	4.1%
Wood, Mineral	1	1.0%
Total	98	100.0%

Outbreaks of enteric illness were the most common type of outbreak in 2008, accounting for 57.1% of all outbreaks. The most common enteric outbreaks were outbreaks of acute gastroenteritis and norovirus, accounting for a total of 44 (79%) of the enteric outbreaks (Table 3). Acute gastroenteritis outbreaks were defined as outbreaks of illness with short duration (2-3 or fewer days) and characterized by vomiting or diarrhea or both. In 18 (86%) outbreaks characterized as acute gastroenteritis, no laboratory testing was done. All norovirus outbreaks were laboratory confirmed; 5 (22%) were norovirus type G1 and 10 (43%) were norovirus type G2. The remaining 8 (35%) norovirus outbreaks were not characterized by type.

Healthcare and assisted living facilities reported 15 (71%) of 21 outbreaks due to acute gastroenteritis; 13 (62%) of these occurred in nursing homes. Twenty (87%) of 23 norovirus outbreaks were reported from health care facilities; with 16 (70%) from nursing homes.

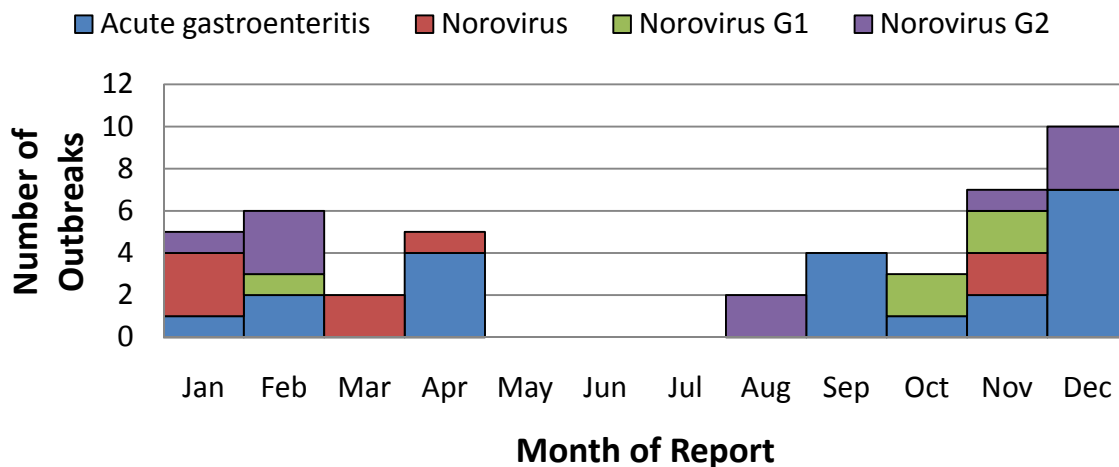
Table 3 Etiology of Enteric Outbreaks, West Virginia, 2008

Etiologic Agent or Clinical Syndrome	TOTAL	PERCENT
Acute gastroenteritis	21	37.5%
Campylobacter	3	5.4%
Clostridium difficile	1	1.8%
Diarrhea, unknown etiology	2	3.6%
Norovirus	23	41.1%
Salmonella Species	5	8.9%
Shigella species	1	1.8%
TOTAL	56	100.00%

Ten (48%) outbreaks of acute gastroenteritis and 16 (70%) outbreaks of norovirus were due to person-to-person transmission. In October, 2008, a large outbreak was investigated at a school in Randolph County. That outbreak was associated with eating school lunch; however person-to-person transmission likely also played a role.

Seasonality of outbreaks of acute gastroenteritis and norovirus was similar (Figure 2).

Figure 2 Outbreaks of Norovirus and Acute Gastroenteritis by Month of Report, West Virginia, 2008; N=44 outbreaks



Three outbreaks of *Campylobacter* were reported during 2008. One outbreak occurred during a family reunion and was associated with consumption of French toast. Eggs were thought to be the most likely source. One outbreak in Monongalia County was identified in two people who both patronized the same two restaurants. The exact source could not be pinpointed. A third outbreak occurred in an extended family and the source could not be determined; however waterborne transmission from a contaminated well was one possibility.

Five outbreaks due to Salmonellosis impacted West Virginia residents in 2008. A Mercer County resident was sickened in April as part of a multi-state outbreak of *Salmonella Saintpaul*. A Preston County resident was part of a multi-state outbreak of *Salmonella Muenchen*. Two Tyler County residents had *Salmonella Newport* isolates that matched one case each in Connecticut and Illinois and 2 cases in New York. One of the West Virginia cases did not return multiple calls requesting information; thus this outbreak could not be further investigated. Three members of an extended family in Mercer County were sickened by *Salmonella Blankenship* beginning in November, 2008. Beginning in November, 2008, two West Virginia residents developed salmonellosis due to a multi-state outbreak of *Salmonella Typhimurium*. This salmonella outbreak was traced to contaminated peanut products including peanut butter.

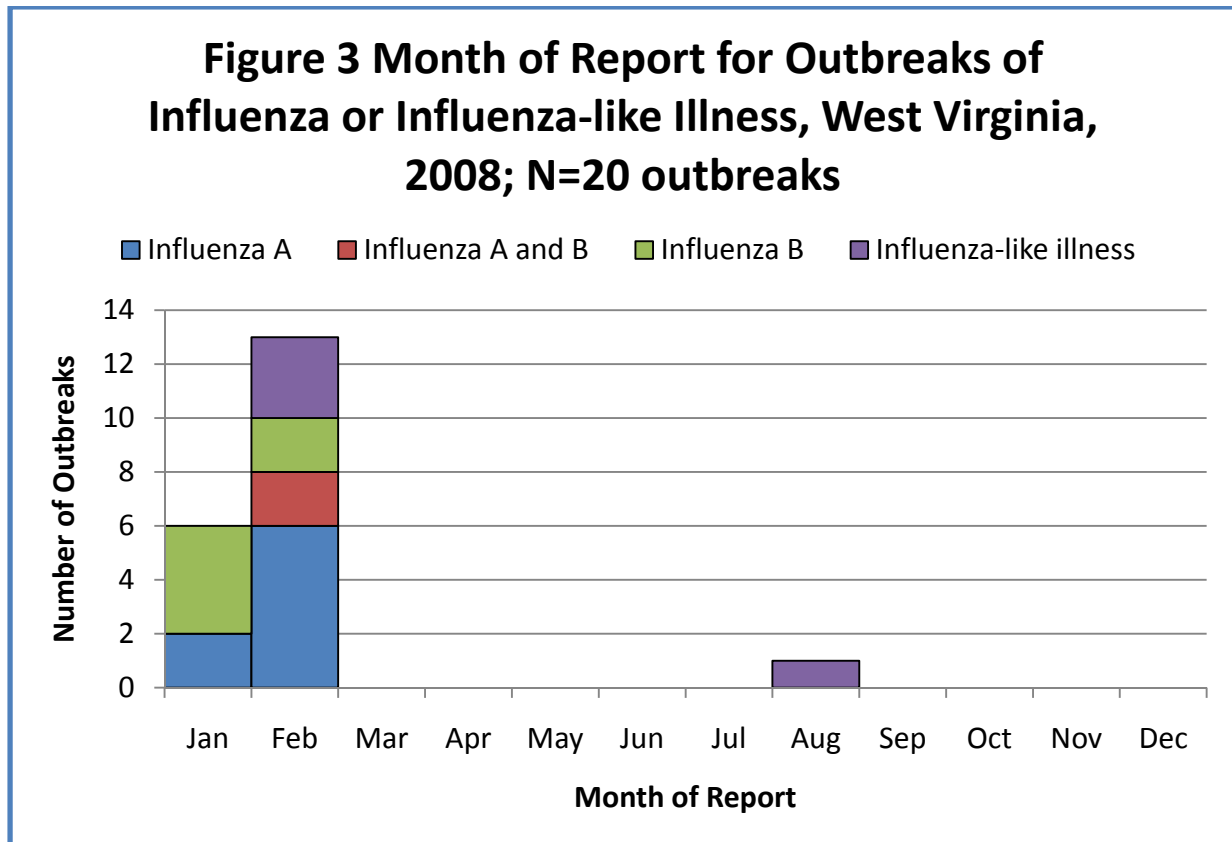
Outbreaks of respiratory illness were the second most common type of outbreak reported in 2008 (Table 4). Laboratory-confirmed influenza accounted for 16 (70%) respiratory outbreaks. Seven (44%) influenza outbreaks were culture-confirmed and

the remaining 9 (56%) were confirmed only by rapid test results. Thirteen (81%) outbreaks of influenza and 20 (83%) of all outbreaks of respiratory illness were reported from nursing homes.

Table 4 Respiratory Disease Outbreaks in West Virginia, 2008

Etiologic Agent or Clinical Syndrome	Total Outbreaks Reported	Percent
Influenza A	8	34.8%
Influenza A and B	2	8.7%
Influenza B	6	26.1%
Influenza-like illness	4	17.4%
Possible parainfluenza type 3	1	4.3%
Other respiratory illness	2	8.7%
TOTAL	23	100.0%

Outbreaks of influenza and influenza-like illness displayed marked seasonality (Figure 3).



The third most common type of outbreak was rash illness (Table 5). All outbreaks of rash illness were reported from schools or daycares. The most common type of rash illness outbreaks were varicella outbreaks reported from schools.

Table 5 Outbreaks of Rash Illness by Location of Outbreak, West Virginia, 2008

Etiologic Agent or Clinical Syndrome	Number of Outbreaks Reported by Location			Percent
	Daycare	School	TOTAL	
Erythema infectiosum (fifth Disease)	0	3	3	20.0%
Hand foot and mouth disease	1	0	1	6.7%
Rash illness, etiology unknown	1	1	2	13.3%
Varicella	0	9	9	60.0%
TOTAL	2	13	15	100.0%

Local health departments identified 3 outbreaks due to skin infections in 2008. One outbreak of pseudomonas folliculitis was associated with exposure to a hot tub. Two outbreaks of methicillin-resistant Staphylococcus aureus occurred among members of high school athletic teams.

Twenty-five (25%) outbreaks were classified as vaccine-preventable in 2008. Nine were due to varicella and 16 were due to influenza.

In West Virginia, outbreaks are immediately reportable to the local health department. As a condition of receiving threat preparedness funding local health departments are required to report immediately reportable conditions to the Bureau for Public Health within 60 minutes. To measure adherence to this requirement, date and time of report to the local health department and date and time of report to Infectious Disease Epidemiology are recorded on a standard intake form so that elapsed reporting time can be calculated. For 2008, 43 (44%) outbreaks were missing date or time of report to the local health department or the state health department or both. Of the remaining 55 (56%) outbreaks, a mean (median) of 858 (46) minutes elapsed between the time the outbreak was reported to the local health department and the time the outbreak was reported to the state health department. Of the 79 (81%) outbreaks where date of notification was known for both the state and local health department, same-day notification occurred for 55 (70%) outbreaks.

Conclusions and Recommendations

Outbreak recognition and reporting has improved tremendously in West Virginia during the last decade; however improvements should continue in the following areas:

1. Rapid reporting facilitates laboratory confirmation and communication with CDC on critical health issues. Outbreaks are immediately notifiable in West Virginia and should ideally be reported within 60 minutes to the Bureau for Public Health.
2. Continued improvements in laboratory testing are important. Timely collection of specimens facilitates diagnosis and institution of control measures. Improvements are needed in laboratory confirmation, especially for respiratory outbreaks.
3. Use of standard protocols greatly facilitates outbreak control. Norovirus and influenza outbreak toolkits have been developed for nursing homes. A varicella outbreak toolkit will be developed by the Bureau for Public Health for schools in 2009. The Bureau will evaluate the new CDC web-based resource for investigation of respiratory outbreaks during 2009. The website is available at: <http://www.bt.cdc.gov/urdo/>
4. Infectious Disease Epidemiology will evaluate electronic reporting of all enteric outbreaks in the National Outbreak Reporting System (NORS) to determine if additional data should be systematically collected and analyzed for all enteric outbreaks.
5. Infectious Disease Epidemiology will improve feedback of information on outbreaks and outbreak investigation during 2009 and beyond. Training of new state, local and regional public health personnel continues to be a priority now and into the future.
6. Since many outbreaks occur in nursing homes, Infectious Disease Epidemiology will evaluate the possibility of extending training to nursing home personnel in 2009.

Appendix Summary Outbreak Tables for 2008, West Virginia

Date of First onset	notification of IDEP	notification of LHD	Elapsed time (minutes)	jurisdiction	West Virginia Counties with cases	Final case count	Etiologic Agent or Clinical Syndrome	Laboratory status	transmission setting	Mode of transmission
1/5/2008	1/7/2008 10:45	1/7/2008		West Virginia	Preston	7 of 9 persons	<i>Pseudomonas aeruginosa</i> folliculitis	confirmed	hot tub	waterborne
1/4/2008	1/7/2008 16:25	1/7/2008 15:30	55	West Virginia	Monongalia	11	Influenza B	rapid test positive; not culture confirmed	nursing home	person to person
Missing	1/14/2008 10:56	1/13/2008 10:30	1466	West Virginia	Fayette	18	Influenza B	confirmed	nursing home	person to person
1/11/2008	1/15/2008 10:40	1/15/2008 11:10	30	West Virginia	Brooke	22	Norovirus	confirmed	Long Term Care Unit	person to person
1/11/2008	1/15/2008 14:45	1/14/2008		West Virginia	Wood	56	Norovirus G2	confirmed	Rehabilitation center	person to person
1/10/2008	1/16/2008 11:45	1/14/2008		West Virginia	Taylor	34	Norovirus	confirmed	nursing home	person to person
1/17/2008	1/18/2008 11:30	1/18/2008 10:45	45	West Virginia	Kanawha	26	Norovirus	confirmed	nursing home	person to person
1/16/2008	1/22/2008 13:45	1/21/2008 13:30	1455	West Virginia	Kanawha	46	Acute gastroenteritis	test not done	Assisted living facility	unknown
1/22/2008	1/23/2008 16:04	1/23/2008 15:30	34	West Virginia	Monongalia	44	Influenza B	confirmed	Nursing home	person to person
1/21/2008	1/24/2008 10:46	1/24/2008 10:00	46	West Virginia	Fayette	8	Influenza B	rapid test positive; not culture confirmed	Nursing home	person to person

Date of First onset	notification of IDEP	notification of LHD	Elapsed time (minutes)	jurisdiction	West Virginia Counties with cases	Final case count	Etiologic Agent or Clinical Syndrome	Laboratory status	transmission setting	Mode of transmission
Missing	1/28/2008 11:55	1/28/2008 11:30	25	West Virginia	Taylor	23	Influenza A	confirmed	Nursing home	person to person
1/29/2008	1/30/2008 14:45	1/30/2008 14:00	45	West Virginia	Jefferson	89	Influenza A	confirmed	Residential facility	person to person
12/26/2007	2/4/2008 9:15	2/4/2008 8:10	65	West Virginia	Kanawha	22	Varicella	test not done	School	person to person
1/28/2008	2/4/2008 15:45	2/4/2008		West Virginia	Monongalia	11	Influenza-like illness	test not done	Nursing home	person to person
1/29/2008	2/4/2008 16:00	2/4/2008 8:30	450	West Virginia	Hampshire	48	Norovirus G2	confirmed	Nursing home	person to person
2/2/2008	2/6/2008 15:45	2/6/2008 15:00	45	West Virginia	Kanawha	49 of 160 residents	Acute gastroenteritis	test not done	Nursing home	Likely person to person
2/4/2008	2/7/2008 12:30	2/6/2008		West Virginia	Mason	3 residents and 6 employees	Influenza A	rapid test positive; not culture confirmed	Nursing home	person to person
2/4/2008	2/7/2008 12:30	2/7/2008		West Virginia	Pleasants	4 of 442 residents	Influenza A	confirmed	Correctional facility	person to person
1/23/2008	2/11/2008 8:50	2/8/2008		West Virginia	Upshur	8	Varicella	test not done	School	person to person
2/10/2008	2/13/2008 16:36	Missing		West Virginia	Mercer	10 of 120 residents; 2 staff	Influenza B	rapid test positive; not culture confirmed	Nursing home	person to person
2/1/2008	2/14/2008 11:00	Missing		West Virginia	Mercer	10 of 16 residents; 4 of 12 staff	Influenza A	rapid test positive; not culture confirmed	Nursing home	person to person

Date of First onset	notification of IDEP	notification of LHD	Elapsed time (minutes)	jurisdiction	West Virginia Counties with cases	Final case count	Etiologic Agent or Clinical Syndrome	Laboratory status	transmission setting	Mode of transmission
1/14/2008	2/14/2008 13:00	Missing		West Virginia	Hancock	5	Varicella	test not done	School	person to person
Missing	2/15/2008 8:50	Missing		West Virginia	Lewis	3	Influenza B	confirmed	Hospital	person to person
2/14/2008	2/19/2008 9:00	2/14/2008		West Virginia	Kanawha	8 of 99 residents	Influenza A and B	rapid test positive; not culture confirmed	Nursing home	person to person
2/15/2008	2/19/2008 9:30	2/19/2008 9:00	30	West Virginia	Ritchie	40	Norovirus G2	confirmed	Nursing home	person to person
2/18/2008	2/19/2008 12:30	2/19/2008 12:00	30	West Virginia	Logan	6	influenza-like illness	test not done	Nursing home	Likely person to person
2/16/2008	2/19/2008 15:30	2/19/2008 15:15	15	West Virginia	Mercer	4	Influenza A	rapid test positive; not culture confirmed	Nursing home	person to person
1/24/2008	2/22/2008 14:40	2/21/2008		West Virginia	Kanawha	11 staff; 14 of 110 patients	Influenza A and B	rapid test positive; not culture confirmed	Nursing home	person to person
2/21/2008	2/25/2008 10:20	2/25/2008 9:00	80	West Virginia	Taylor	10	Norovirus G2	confirmed	Nursing home	unknown
2/19/2008	2/21/2008 10:00	2/20/2008 15:00	1140	West Virginia	Harrison	20 of 89 residents	Acute gastroenteritis	test negative or noncontributory	Nursing home	person to person
2/21/2008	2/25/2008 13:50	Missing		West Virginia	Preston	27 of 120 residents	Norovirus G1	confirmed	Nursing home	Person to person

Date of First onset	notification of IDEP	notification of LHD	Elapsed time (minutes)	jurisdiction	West Virginia Counties with cases	Final case count	Etiologic Agent or Clinical Syndrome	Laboratory status	transmission setting	Mode of transmission
2/18/2008	2/26/2008 12:15	2/26/2008		West Virginia	Summers	19% absentee rate	Influenza-like illness	test not done	School	person to person
Missing	2/26/2008 12:15	2/25/2008		West Virginia	Marion	4	Influenza A	confirmed	Nursing home	person to person
2/11/2008	2/26/2008 14:30	2/26/2008		West Virginia	Berkeley	8	Varicella	test not done	School	person to person
2/24/2008	2/26/2008 15:55	2/26/2008		West Virginia	Jefferson	16 residents and 19 staff	Influenza A	rapid test positive; not culture confirmed	Nursing home	person to person
2/22/2008	2/29/2008 16:00	Missing		West Virginia	Fayette	11	Varicella	test not done	School	person to person
2/23/2008	3/4/2008 13:25	2/26/2008 10:15	10270	West Virginia	Monongalia	14 residents and 5 staff	Norovirus	confirmed	Nursing home	person to person
3/8/2008	3/11/2008 9:15	3/11/2008	555	West Virginia	Ohio	7 of 145 residents	Norovirus	confirmed	Rehabilitation Center	Unknown
3/31/2008	4/2/2008 9:20	Missing		West Virginia	Jackson	18 of 150 students	Varicella	test not done	School	Person to person
4/5/2008	4/9/2008 10:30	Missing		West Virginia	Mingo	21	Acute gastroenteritis	test negative or noncontributory	Extended family	Unknown
4/3/2008	4/9/2008 11:00	4/9/2008 10:45	15	West Virginia	Monongalia	26 patients and 2 staff	Norovirus	confirmed	Nursing home	person to person
4/5/2008	4/10/2008 9:15	4/8/2008 16:00	2475	West Virginia	Hancock	14 patients and 12 staff	Acute gastroenteritis	test not done	Assisted living facility	person to person

Date of First onset	notification of IDEP	notification of LHD	Elapsed time (minutes)	jurisdiction	West Virginia Counties with cases	Final case count	Etiologic Agent or Clinical Syndrome	Laboratory status	transmission setting	Mode of transmission
3/25/3008	4/21/2008 16:58	4/21/2008 11:02	356	West Virginia	Fayette	26	Upper respiratory infection	test not done	Nursing home	Likely person to person
2/19/2008	4/21/2008 16:58	4/21/2008 11:02	356	West Virginia	Fayette	18	Acute gastroenteritis	test not done	Nursing home	person to person
4/17/2008	4/22/2008 15:15	4/22/2008 14:30	45	West Virginia	Mingo	9 of 60 patients and 11 workers	Acute gastroenteritis	test not done	Nursing home	unknown
4/19/2008	5/2/2008 8:50	5/2/2008 8:15	35	West Virginia	Preston	10 of 239 students	Varicella	test not done	School	person to person
3/27/2008	5/15/2008 9:45	Missing		West Virginia	Preston	45	Erythema infectiosum (fifth Disease)	test not done	School	person to person
Missing	5/20/2008 8:00	Missing		West Virginia	Randolph	63	<i>Clostridium difficile</i>	confirmed	Community	person to person
Missing	Missing	6/9/2008 14:30		West Virginia	Monongalia	13 of 94 patients	Diarrhea, unknown etiology	test negative or noncontributory	Nursing home	unknown
5/18/2008	6/17/2008 15:00	Missing		West Virginia	Roane	4 of 8 persons	<i>Campylobacter</i>	confirmed	Extended family	Unknown; possibly waterborne
6/26/2008	7/7/2008 13:45	7/3/2008		West Virginia	Kanawha	12 of 112 residents	possible parainfluenza type 3	confirmed	Nursing home	person to person
4/1/2008	7/3/2008 16:00	7/7/2008 8:00	5280	Multi-state	Mercer	1	<i>Salmonella Saintpaul</i>	confirmed	Multi-state	foodborne (peppers)

Date of First onset	notification of IDEP	notification of LHD	Elapsed time (minutes)	jurisdiction	West Virginia Counties with cases	Final case count	Etiologic Agent or Clinical Syndrome	Laboratory status	transmission setting	Mode of transmission
Missing	6/30/2008 15:15	7/1/2008 8:00	1005	Multi-state	Preston	1	<i>Salmonella Muenchen</i>	confirmed	Multi-state	foodborne (vehicle unknown)
8/2/2008	8/7/2008 9:58	8/7/2008 9:00	58	West Virginia	Summers	26 of 96 residents; 4 staff	Influenza-like illness	test negative or noncontributory	Nursing home	Likely person to person
7/28/2008	8/8/2008 15:45	8/15/2008 12:35	9890	Multi-state	Grant	9 of 15	<i>Campylobacter</i>	confirmed	Extended family	Foodborne (likely eggs)
6/18/2008	7/29/2008	Missing		Multi-state	Tyler	2 in West Virginia; 6 total	<i>Salmonella Newport</i>	confirmed	Multi-state	Unknown; likely foodborne
7/30/3008	8/12/2008 15:10	8/12/2008 14:55	15	West Virginia	Kanawha	26 staff and 71 residents	Norovirus G2	confirmed	Nursing home	person to person
7/27/2008	8/15/2008 14:55	Missing		West Virginia	Monongalia	2	<i>Campylobacter</i>	confirmed	Community	Unknown; possibly foodborne
7/29/2008	8/26/2008 15:30	8/26/2008 15:00	30	West Virginia	Greenbrier	6	<i>Shigella</i>	confirmed	extended family	person to person
8/4/2008	8/15/2008 15:00	8/15/2008		West Virginia	Pocahontas	16	Norovirus G2	confirmed	Nursing home	person to person
8/14/2008	8/21/2008 13:15	8/21/2008 13:00	15	West Virginia	Kanawha	11	Hand foot and mouth disease	test not done	Daycare	person to person
8/20/2008	9/3/2008 16:00	9/3/2008 15:50	10	West Virginia	Pleasants	3	Methicillin resistant <i>Staphylococcus aureus</i>	confirmed	School football team	person to person

Date of First onset	notification of IDEP	notification of LHD	Elapsed time (minutes)	jurisdiction	West Virginia Counties with cases	Final case count	Etiologic Agent or Clinical Syndrome	Laboratory status	transmission setting	Mode of transmission
9/8/2008	9/10/2008 15:00	9/10/2008 14:35	25	West Virginia	Kanawha	6	Respiratory illness	test negative or noncontributory	Nursing home	Likely person to person
8/15/2008	9/16/2008 12:00	9/16/2008 11:40	20	West Virginia	Wood	12	rash illness, etiology unknown	test not done	Daycare	unknown
9/18/2008	9/22/2008 10:20	9/19/2008		West Virginia	Hampshire	38 of 380 (10%)	Acute gastroenteritis	test not done	School	Likely person to person
9/21/2008	9/22/2008 15:55	9/22/2008 11:30	265	West Virginia	Harrison	12	Acute gastroenteritis	test negative or noncontributory	Correctional facility	unknown
9/20/2008	9/23/2008 15:20	9/23/2008 15:00	20	West Virginia	Harrison	13	Acute gastroenteritis	test not done	Nursing home	person to person
09-18-1008	9/24/2008 9:50	9/18/2008 16:15	8255	West Virginia	Jefferson	4	Acute gastroenteritis	test not done	Restaurant	Foodborne (vehicle unknown)
10/8/2009	10/15/2008 8:20	10/14/2008		West Virginia	Jackson	12	Rash illness, etiology unknown	test not done	School	Unknown
10/20/2008	10/21/2008 10:00	10/21/2008 9:30	30	West Virginia	Ohio	22	Norovirus G1	confirmed	Restaurant	Foodborne (vehicle unknown)
10/23/2008	10/24/2008 9:05	10/24/2008 8:15	50	West Virginia	Randolph	111/237 students	Norovirus G1	confirmed	School	likely foodborne and person to person
10/28/2009	10/30/2008 14:30	10/30/2008 14:00	30	West Virginia	Ritchie	14	Varicella	test not done	School	person to person

Date of First onset	notification of IDEP	notification of LHD	Elapsed time (minutes)	jurisdiction	West Virginia Counties with cases	Final case count	Etiologic Agent or Clinical Syndrome	Laboratory status	transmission setting	Mode of transmission
10/5/2008	10/31/2008 10:50	10/31/2008 9:00	110	West Virginia	Logan	6 of 800 students	Varicella	test not done	School	person to person
10/31/2008	10/31/2008 11:00	10/31/2008 10:30	30	West Virginia	Roane	77 of 549 students	Acute gastroenteritis	test not done	School	Likely person to person
Missing	11/3/2008 10:30	Missing		Multi-state	Cabell	7	Norovirus	confirmed	Meeting	Unknown
10/31/2008	11/7/2008 11:25	11/7/2008 10:00	85	West Virginia	Monongalia	12 patients; 6 staff	Acute gastroenteritis	test not done	Nursing home	person to person
11/2/2008	11/7/2008 15:15	11/7/2008 14:30	45	West Virginia	Kanawha	41 of 83 residents; 28 of 120 staff; 8 secondary cases in family	Norovirus G1	confirmed	Nursing home	person to person
11/13/2008	11/13/2008 13:10	11/13/2008 12:55	15	West Virginia	Wood	7 of 280	Erythema infectiosum (fifth disease)	confirmed	School	person to person
11/15/2008	11/17/2008 15:52	Missing		West Virginia	Ohio	53	Norovirus G1	confirmed	Nursing home	person to person
11/15/2008	11/21/2008 10:15	11/20/2008 14:30	1185	West Virginia	Mercer	24	Norovirus	confirmed	Nursing home	person to person
11/19/2008	11/24/2008 14:00	11/24/2008		West Virginia	Fayette	27 of 57 residents	Upper respiratory infection	test not done	Nursing home	person to person

Date of First onset	notification of IDEP	notification of LHD	Elapsed time (minutes)	jurisdiction	West Virginia Counties with cases	Final case count	Etiologic Agent or Clinical Syndrome	Laboratory status	transmission setting	Mode of transmission
Missing	11/25/2008 13:30	11/25/2008 13:00	30	West Virginia	Cabell	26 patients and 31 staff	Norovirus G2	confirmed	Hospital	person to person
11/21/2008	11/25/2008 14:30	11/24/2008 16:00	1350	West Virginia	Marshall	64 of 125 residents and 30 of 176 employees	Acute gastroenteritis	test not done	Nursing home	person to person
Missing	12/2/2009 14:45	12/2/2009 12:00	165	West Virginia	Monongalia	24 of 86	Acute gastroenteritis	test not done	Nursing home	Unknown
12/1/2008	12/3/2008 9:40	12/3/2008 8:35	65	West Virginia	Kanawha	33	Acute gastroenteritis	test not done	Nursing home	person to person
12/1/2008	12/10/2008 11:50	12/3/2008		West Virginia	Fayette	10 patients and 2 staff	Acute gastroenteritis	test not done	Nursing home	person to person
Missing	12/10/2008 12:10	12/10/2008 9:00	190	West Virginia	Mercer	60	Acute gastroenteritis	test not done	School	person to person
12/11/2008	12/15/2008 10:15	12/15/2008 10:30	15	West Virginia	Kanawha	59	Acute gastroenteritis	test not done	Nursing home	unknown
Missing	12/15/2008 16:00	12/15/2008 13:30	150	West Virginia	Mercer	25	Acute gastroenteritis	test not done	Nursing home	unknown
Missing	12/16/2008 12:58	12/11/2008		West Virginia	Hancock	2	Methicillin resistant <i>Staphylococcus aureus</i>	confirmed	School wrestling team	person to person

Date of First onset	notification of IDEP	notification of LHD	Elapsed time (minutes)	jurisdiction	West Virginia Counties with cases	Final case count	Etiologic Agent or Clinical Syndrome	Laboratory status	transmission setting	Mode of transmission
12/13/2008	12/16/2008 15:55	12/16/2008 15:45	10	West Virginia	Kanawha	17	Acute gastroenteritis	test not done	Nursing home	person to person
12/11/2008	12/15/2008 15:25	12/15/2008		West Virginia	Wayne	15	Norovirus G2	confirmed	Nursing home	unknown
12/2/2008	12/12/2008 16:00	Missing		West Virginia	Wood	110-120	Erythema infectiosum (fifth disease)	test not done	School	person to person
12/17/2008	12/19/2008 13:44	12/19/2008 11:00	164	West Virginia	Hardy	25 of 55 residents	Norovirus G2	confirmed	Nursing home	person to person
12/21/2008	12/23/2008 10:45	12/23/2008		West Virginia	Harrison	5 of 11 persons	diarrhea, unknown etiology	test not done	Private party	unknown
11/27/2008	12/26/2008	Missing		West Virginia	Mercer	3 of 6 persons	<i>Salmonella Blankenship</i>	confirmed	extended family	person to person
Missing	12/31/2008 9:25	12/24/2008		West Virginia	Ohio	> 10	Norovirus G2	confirmed	3 nursing homes and community	Unknown; likely person to person
11/6/2008	Missing	Missing		Multi-state	Wood, Mineral	2	<i>Salmonella Typhimurium</i>	confirmed	multi-state	foodborne (peanut products)