

Outbreaks

Foodborne

During 2011, 19 foodborne outbreaks were reported in Virginia (Table 8), which was similar to the 20 outbreaks reported in 2010. The average number of ill persons per outbreak was 19 and ranged from two to 152 individuals. The etiologic agent was confirmed or suspected as bacterial for more than two-thirds (68%) of the outbreaks. Ten of the foodborne outbreaks were attributed to *Salmonella* and six were attributed to norovirus. Of the remaining outbreaks, two were suspected to be attributed to *Bacillus cereus* and one was confirmed to be attributed to *Campylobacter*. As in 2010, three outbreaks were multi-state and all were attributed to *Salmonella*. Most foodborne outbreaks (37%) occurred in a restaurant, followed closely by those occurring in a private home (32%). The remaining outbreak settings included a workplace, a winery, and a school. Factors that contributed to the outbreak were identified in 37% of the outbreaks. They included contaminated raw product, cross-contamination of ingredients, infected food handlers, failure to control temperature or the length of time food was out of temperature control, improper cold holding, improper/slow cooling, and insufficient time and/or temperature control during initial cooking/heat processing or during reheating. The foodborne outbreaks were spread fairly evenly throughout the year, although September was the most frequently reported month of illness onset (21%).

Table 8. Foodborne Outbreaks Reported in Virginia, 2011

Onset Date	Health District	Number of Cases	Etiologic Agent	Vehicle	Place Where Outbreak Occurred
12/31/2010	Mount Rogers	23	Norovirus	Food handlers implicated	Restaurant
1/4/2011	Fairfax	7	Norovirus	Food vehicle undetermined	Restaurant
1/20/2011	Richmond	16	Norovirus	Food handlers implicated	Restaurant
2/11/2011	New River	152	Norovirus	Food handlers implicated	Restaurant
3/7/2011	Henrico	4	<i>Salmonella</i> ser. Enteritidis	Food vehicle undetermined	School (K-12)
4/26/2011	Multi-state	2 VA 106 US	<i>Salmonella</i> ser. Agona	Papayas	Private Home
5/5/2011	Chesterfield	20	<i>Salmonella</i> suspected	Club sandwich	School (K-12)
6/21/2011	Rappahannock	13	Norovirus	Food handler implicated	Winery
6/26/2011	Piedmont	35	<i>Salmonella</i> ser. Infantis	Food vehicle undetermined	Private Home
7/1/2011	Chesterfield	9	<i>Salmonella</i> ser. Typhimurium	Pork suspected	Workplace
7/7/2011	Arlington	30	<i>Salmonella</i>	Pork suspected	Private Home
8/20/2011	Multi-state	4 VA 43 US	<i>Salmonella</i> ser. Enteritidis	Turkish pine nuts	Private Home

Table 8. Foodborne Outbreaks Reported in Virginia, 2011 (continued)

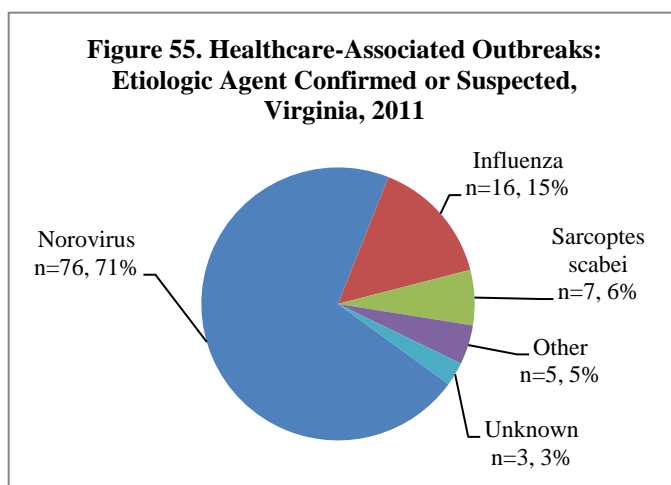
Onset Date	Health District	Number of Cases	Etiologic Agent	Vehicle	Place Where Outbreak Occurred
9/1/2011	Multi-state	3 VA 23 US	<i>Salmonella ser. Bovismorbificans</i>	Sesame seed paste	Private Home
9/8/2011	Prince William	6	<i>Salmonella</i>	Food vehicle undetermined	Private Home
9/13/2011	Thomas Jefferson	9	<i>Salmonella ser. Newport</i>	Food vehicle undetermined	Restaurant
9/29/2011	Chesterfield	7	<i>Bacillus cereus</i> suspected	Food vehicle undetermined	Workplace
11/26/2011	Chickahominy	8	<i>Campylobacter</i>	Turkey/stuffing	Private Home
12/3/2011	Lord Fairfax	11	Norovirus suspected	Food vehicle undetermined	Restaurant
12/7/2011	Crater	2	<i>Bacillus cereus</i> suspected	Fried rice suspected	Restaurant

Healthcare-Associated

A healthcare-associated outbreak is a group of illnesses with a common etiology among patients or residents in a healthcare setting (hospital, medical center, nursing home, dialysis center, or other healthcare facility), where the patients or residents acquired the illness while confined to that facility. Note that prior to 2008, only outbreaks occurring in hospitals and nursing homes (facilities meeting the definition of a medical care facility in 12VAC5-90-10) were included in statistics.

During 2011 there were 107 healthcare-associated outbreaks reported in Virginia. This is a 32% increase from the 81 outbreaks reported in 2010. The average number of ill persons per outbreak was 38 and ranged from two to 120. The majority of healthcare-associated outbreaks occurred in nursing homes (86%) and the remaining events occurred in medical facilities such as hospitals, psychiatric facilities, or inpatient rehabilitation facilities. All of the healthcare-associated outbreaks were attributed to person-to-person transmission.

Etiologic agents were confirmed in 77% of the outbreaks, suspected in 21% and unknown in 3%. Norovirus was suspected or confirmed as the agent in 71% of the outbreaks in healthcare facilities (Figure 55). Influenza (15%) and *Sarcoptes scabiei* (scabies) (6%) were each suspected or confirmed in multiple outbreaks. *Acinetobacter*, human parainfluenza virus type 3, respiratory syncytial virus, rhinovirus, and *Salmonella ser. Rubislaw* were each responsible for one outbreak.

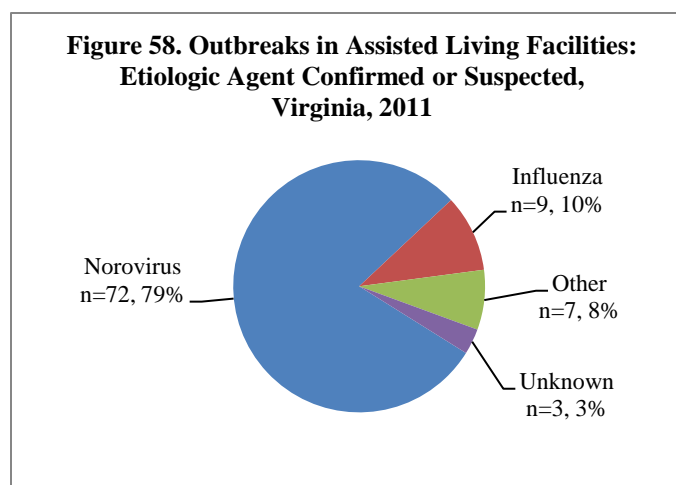
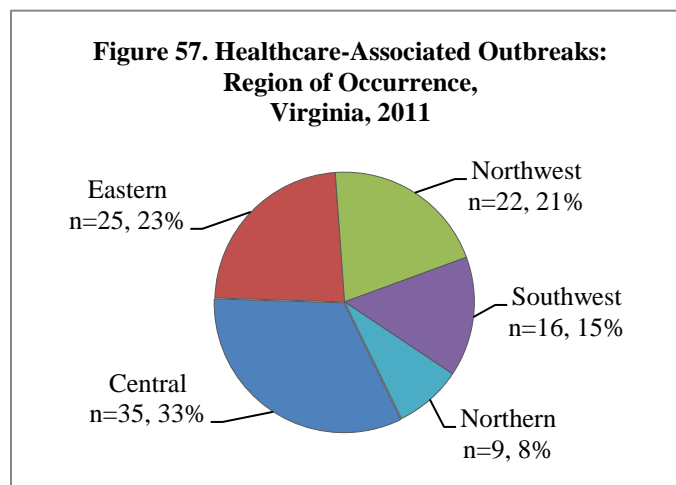
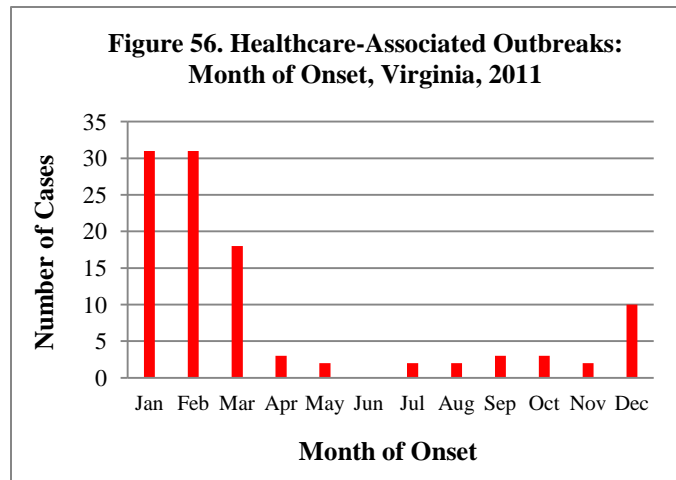


Although healthcare-associated outbreaks were reported throughout the year, 75% of the outbreaks had onsets during the first quarter of the year with a peak in the months of January and February (Figure 56). Healthcare-associated outbreaks occurred throughout the state. However, during 2011, the largest proportion (33%) occurred in the central health planning region and the smallest proportion (8%) occurred in the northern region (Figure 57).

Assisted Living Facilities

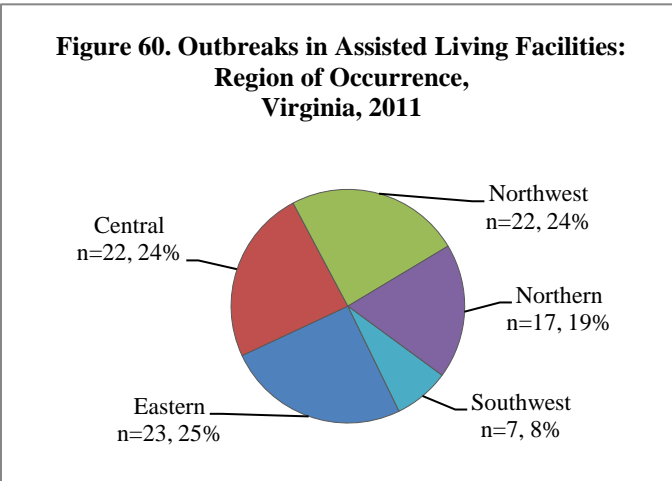
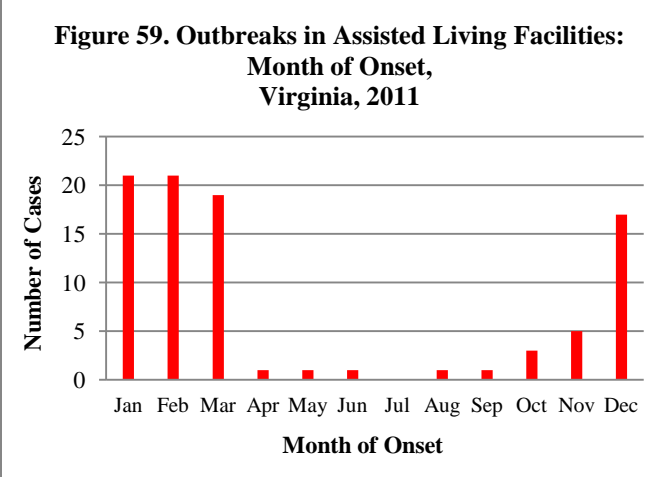
During 2011 there were 91 outbreaks in assisted living facilities reported in Virginia, similar to the 93 outbreaks reported in 2010. Since 2008, assisted living facilities have been required by law to report outbreaks. 2011 is the second year the outbreaks in this setting are reported separately from the “Other” outbreaks section. The average number of ill persons per outbreak was 26, and ranged from 4 to 163. All of the outbreaks in assisted living facilities were attributed to person-to-person transmission.

Etiologic agents were confirmed in 71% of the assisted living facility outbreaks, suspected in 25% and unknown in 3%. Norovirus was suspected or confirmed as the agent in 79% of the outbreaks, followed by influenza (10%), and other (8%) agents including scabies, rotavirus, human herpesvirus1, and hepatitis B virus (Figure 58).



Although outbreaks occurred throughout the year in assisted living facilities, outbreaks in 2011 followed the pattern observed in previous years. This pattern shows more outbreaks occur during the colder months when persons spend more time indoors and in closer contact with others (Figure 59).

Outbreaks in assisted living facilities occurred throughout the state, but during 2011 the largest proportion (25%) occurred in the eastern region, followed closely (24% each) by the central and northwest regions (Figure 60).



Waterborne

No waterborne outbreaks were reported during 2011.

Zoonotic

In 2011, four zoonotic outbreaks that involved residents of Virginia were reported. Three were multi-state outbreaks and one occurred in the Eastern region. All were attributed to *Salmonella*. Vehicles included turtles, chicks and ducklings, rodents used as pet food, and frogs. The number of Virginia cases in these outbreaks ranged from one to nine (Table 9).

An additional multi-state zoonotic outbreak of *Salmonella* ser. Typhimurium associated with African dwarf frogs was initially reported in 2010 (3 Virginia cases) and extended into 2011, with eight Virginia cases identified in 2011.

Table 9. Zoonotic Outbreaks Reported in Virginia, 2011

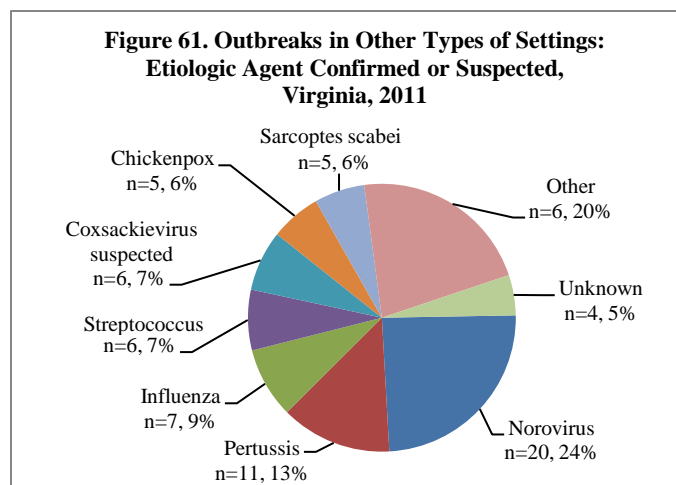
Onset Date	Health District	Number of Cases	Etiologic Agent	Vehicle	Place Where Outbreak Occurred
7/13/2009*	Multi-state	11 VA 241 US	<i>Salmonella</i> ser. Typhimurium	African Dwarf Frogs	PFGE Cluster
4/14/2011	Multi-state	1 VA 132 US	<i>Salmonella</i> ser. Paratyphi B var L(+) tartrate + (Java)	Turtles	PFGE Cluster
5/11/2011	Multi-state	7 VA 68 US	<i>Salmonella</i> Altona	Chicks and Ducklings	Private Home
9/19/2011	Multi-state	9 VA 46 US	<i>Salmonella</i> ser. I 4,[5],12:i:-	Feeder Rodents	PFGE Cluster
9/29/2011	Chesapeake	3	<i>Salmonella</i> ser. Javiana	Frogs	Daycare / Pre-K

*This outbreak was initially reported in 2010 (3 cases) but 8 additional cases were identified in 2011, for a total of 11 cases among Virginia residents.

Other

Among the outbreaks reported in Virginia during 2011, 82 were not foodborne, healthcare-associated, waterborne, or zoonotic, and did not occur in an assisted living facility. This is a 46% increase from the 56 reported in 2010. The three most common settings for these outbreaks were schools (K-12) (28%); daycare/pre-K (18%); and correctional facilities (7%). The average number of ill persons per outbreak was 25 and ranged from 2 to 263. Nearly all of the outbreaks in other settings (96%) were attributed to person-to-person transmission. Two were attributed to environmental exposures and one was unknown.

Etiologic agents were confirmed in 58% of the outbreaks, suspected in 37%, and unknown in 5%. A diverse array of agents was responsible for these outbreaks. Norovirus was suspected or confirmed as the agent in 24% of the outbreaks. Pertussis (13%), influenza (9%), *Streptococcus* (7%), coxsackievirus (7%), chickenpox (6%), and scabies (6%) were also suspected or confirmed in multiple outbreaks. Among the remaining outbreaks, *Staphylococcus* (4%), *Pediculus* (2%), rotavirus (2%), *Salmonella* ser. Paratyphi B (2%), and *Tinea corporis* (2%) were suspected or confirmed in 2-3 outbreaks each, while Echovirus 11, *Escherichia coli* O157, *Histoplasma*, lead, measles virus, mumps virus and *Mycobacterium pneumoniae* were each suspected or confirmed to be responsible for one outbreak (Figure 61).



Although outbreaks in other types of settings occurred throughout the year, 20% of the outbreaks had an illness onset in January (Figure 62). Outbreaks were reported from other settings throughout the state, but the largest proportion (28% each) was reported from the central and northwest regions and the smallest proportion (7%) was from the southwest region (Figure 63). One outbreak crossed multiple regions.

