



## **West Virginia Outbreak Report 2024**

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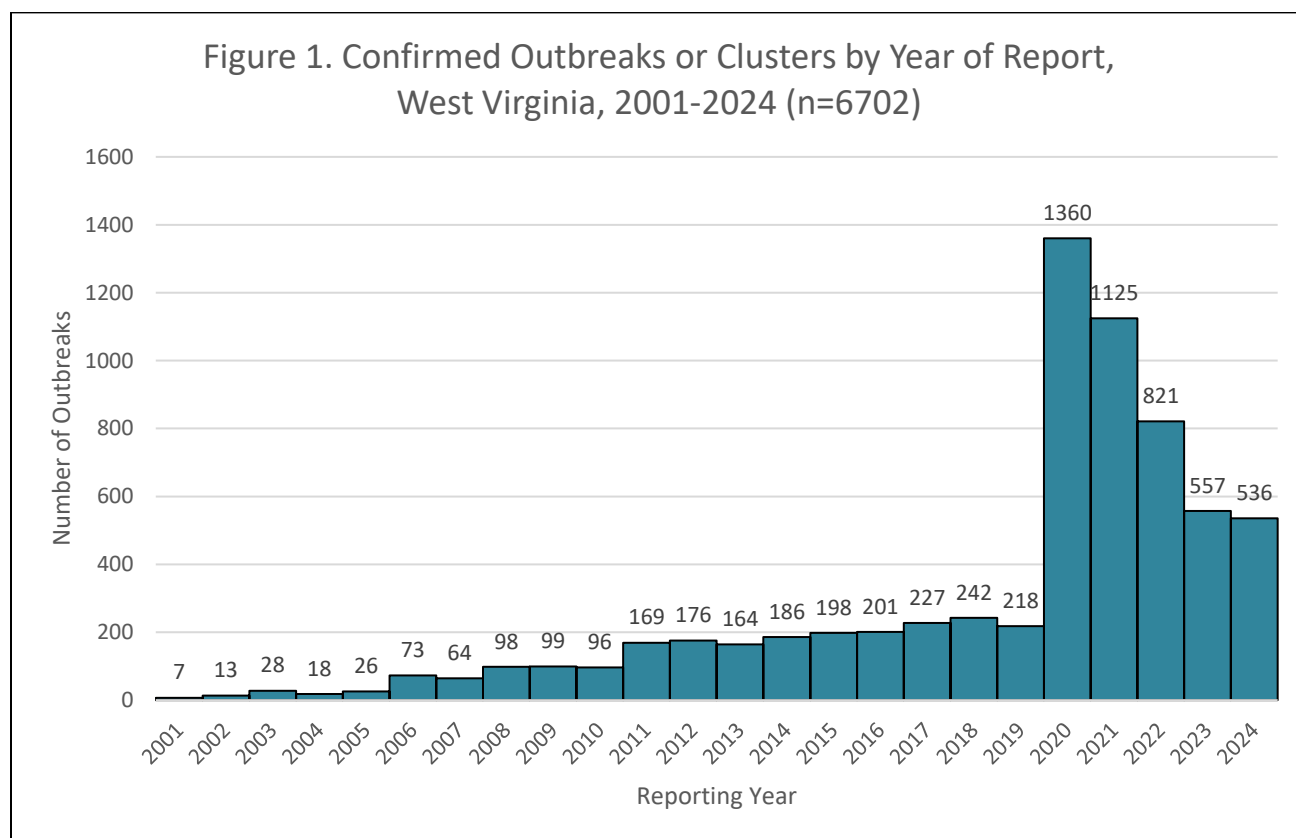
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## Introduction

In West Virginia, outbreaks and clusters of any disease or illness in any setting are immediately reportable to the Local Health Department (LHD) pursuant to *Reportable Diseases, Events and Conditions* (64CSR7). LHDs investigate and report outbreaks in collaboration with regional epidemiologists and the West Virginia Department of Health (DH), Bureau for Public Health (BPH), Division of Healthcare Quality Promotion, Prevention, and Response (DHQPPR). The results of these investigations were compiled by DHQPPR and are summarized in this report.

The number of confirmed outbreaks or clusters of disease reported in West Virginia increased more than 500% from 2019 to 2020 due to the COVID-19 pandemic. Although the number of outbreaks has consistently decreased since that peak in 2020, it remains significantly elevated compared to pre-pandemic levels.

In 2024, there were 567 infectious disease outbreaks identified and reported LHD. Of these reports, 536 (95%) were confirmed as outbreaks or clusters of disease and the remainder were investigated and determined not to be outbreaks.



## **Methods**

Outbreak data was collected in the Outbreak Reporting System (ORS). This system is a custom developed internal web application for outbreak investigation management, which utilizes a SQL Server database backend. Data collected includes information on outbreak type and setting, reporting county and region, time of reporting to LHD and BPH, clinical diagnosis, laboratory testing information, pathogens, mode of transmission, completion of final report, and lead investigator. Data was analyzed in Microsoft Excel and Epi Info™.

## **Results**

### **Jurisdiction:**

In 2024, 525 (98%) confirmed outbreaks were limited to West Virginia residents, and 11 (2%) outbreaks involved residents of other states. The Centers for Disease Control and Prevention (CDC) led the investigations of ten multi-state outbreaks and BPH led the remaining investigation.

### **Type of Outbreaks:**

The most common type of outbreaks involved respiratory illness, followed by enteric illness, and rash illness (Table 1).

Table 1. Confirmed Outbreaks by Type, West Virginia, 2024

Outbreak Type	Number of Outbreaks (n=536)	Percent
Respiratory	433	81%
Enteric	78	15%
Rash	18	3%
Other	4	<1%
Multidrug-Resistant Organisms (MDRO)	3	<1%

## **Outbreak Performance Measures**

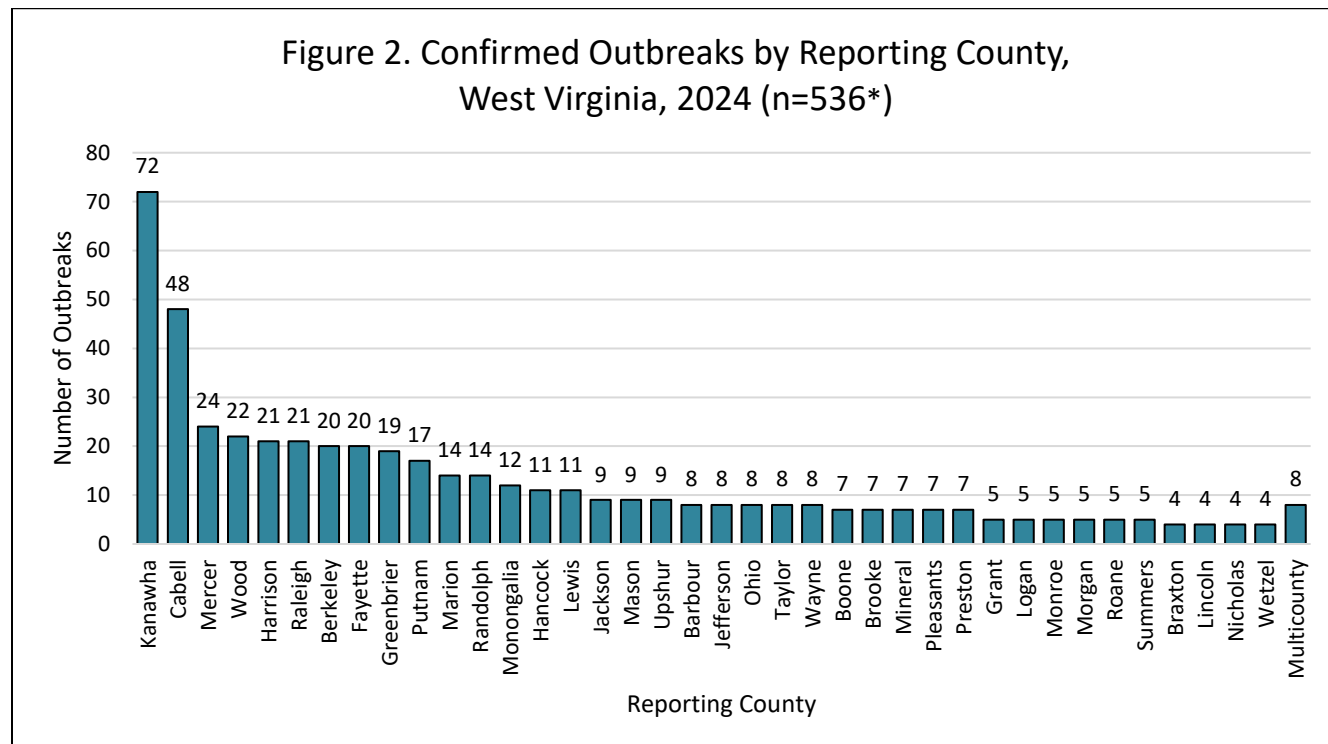
To improve outbreak response at the State, regional and local levels and to meet several grant requirements, DHQPPR has implemented outbreak performance measures. These measures include:

- Number of outbreaks reported by each county and region
- Proportion of outbreaks with complete and appropriate laboratory confirmation
- Timeliness of notification between LHD and BPH/DHQPPR
- Number of final outbreak reports generated by each county

## Outbreaks by Reporting Counties/Regions:

In 2024, 53 (96%) counties reported outbreaks (Table 2).

Kanawha County had the highest number of outbreaks reported with 72 (13%) followed by Cabell with 48 (9%, Figure 2). Eight outbreaks were multi-jurisdictional outbreaks (Table 3). Individual outbreaks will be reported by surveillance region, rather than by reporting county, to maintain confidentiality of the reporting entities.



\*15 Counties reported less than four outbreaks accounting for 34 outbreaks that are not shown.

Table 2. Confirmed Outbreaks by Reporting County, West Virginia, 2024

County	Number of Outbreaks
Barbour	8
Berkeley	20
Boone	7
Braxton	4
Brooke	7
Cabell	48
Calhoun	2
Clay	3
Doddridge	0
Fayette	20
Gilmer	2
Grant	5

Greenbrier	19
Hampshire	2
Hancock	11
Hardy	3
Harrison	21
Jackson	9
Jefferson	8
Kanawha	72
Lewis	11
Lincoln	4
Logan	5
Marion	14
Marshall	3
Mason	9
McDowell	1
Mercer	24
Mineral	7
Mingo	3
Monongalia	12
Monroe	5
Morgan	5
Nicholas	4
Ohio	8
Pendleton	1
Pleasants	7
Pocahontas	2
Preston	7
Putnam	17
Raleigh	21
Randolph	14
Ritchie	2
Roane	5
Summers	5
Taylor	8
Tucker	0
Tyler	2
Upshur	9
Wayne	8
Webster	3
Wetzel	4
Wirt	3
Wood	22
Wyoming	2
Multicounty*	8
Total	536

\*See Table 3 for details

Table 3. Multi-County Outbreaks, West Virginia, 2024 (n=8)

Investigation Lead	Region	Counties with Cases
CDC	Central	Tucker, Lewis
CDC	Multiregional	Mineral, Ohio
CDC	Central	Lewis, Upshur
CDC	Multiregional	Cabell, Marion
CDC	Multiregional	Ohio, Preston, Upshur
CDC	Multiregional	Harrison, Jackson, Kanawha, Mason, Raleigh, Wood
CDC	Multiregional	Monongalia, Berkeley
WV	Multiregional	Brooke, Kanawha, Lewis

### **Surveillance Regions:**

There were changes to the surveillance regions beginning on July 1, 2024. For this report, the configuration for the second half of the year was used to summarize outbreak data. All surveillance regions in the state reported outbreaks in 2024 (Figure 3). A map of outbreaks by surveillance regions is shown in Figure 4.

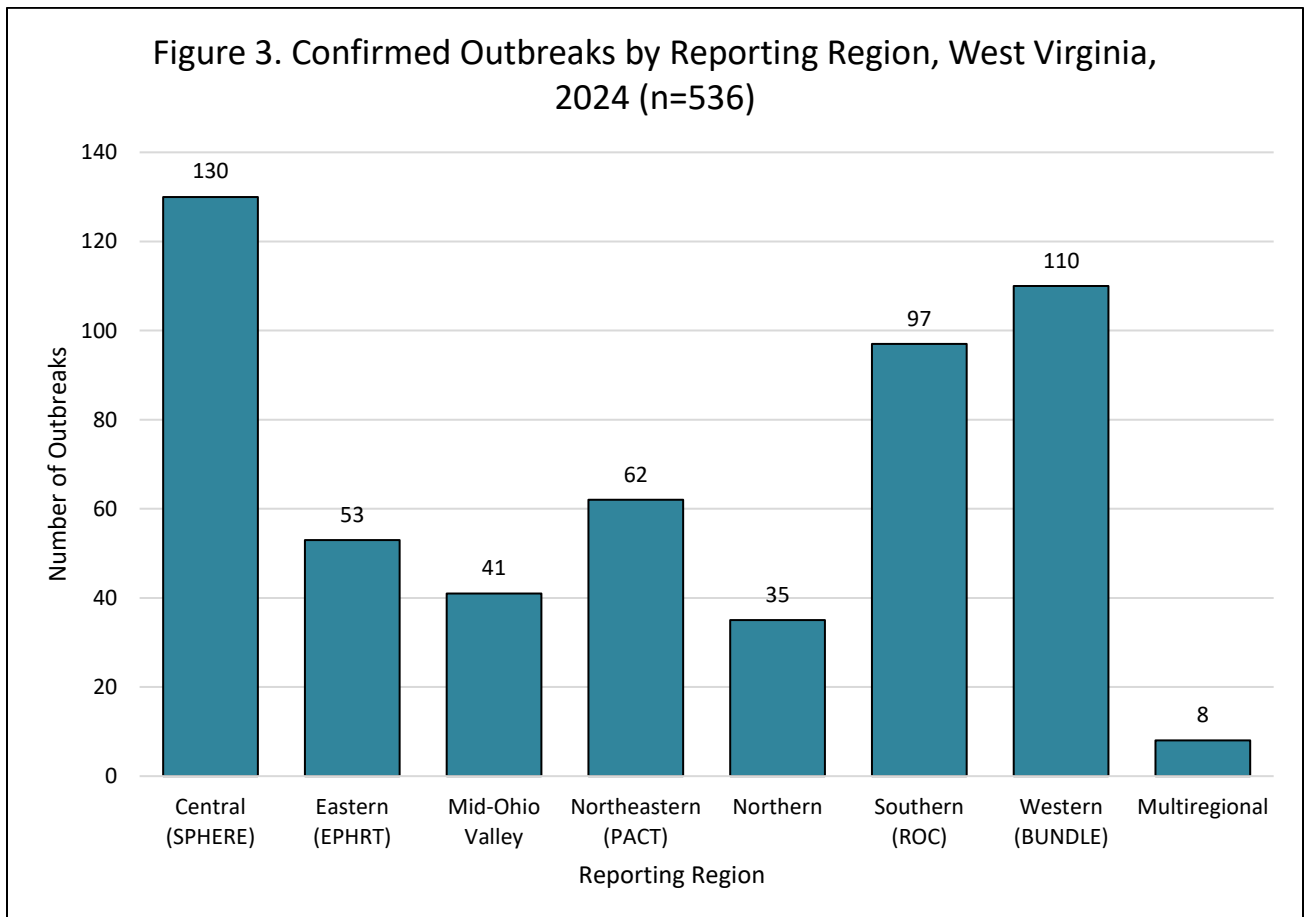
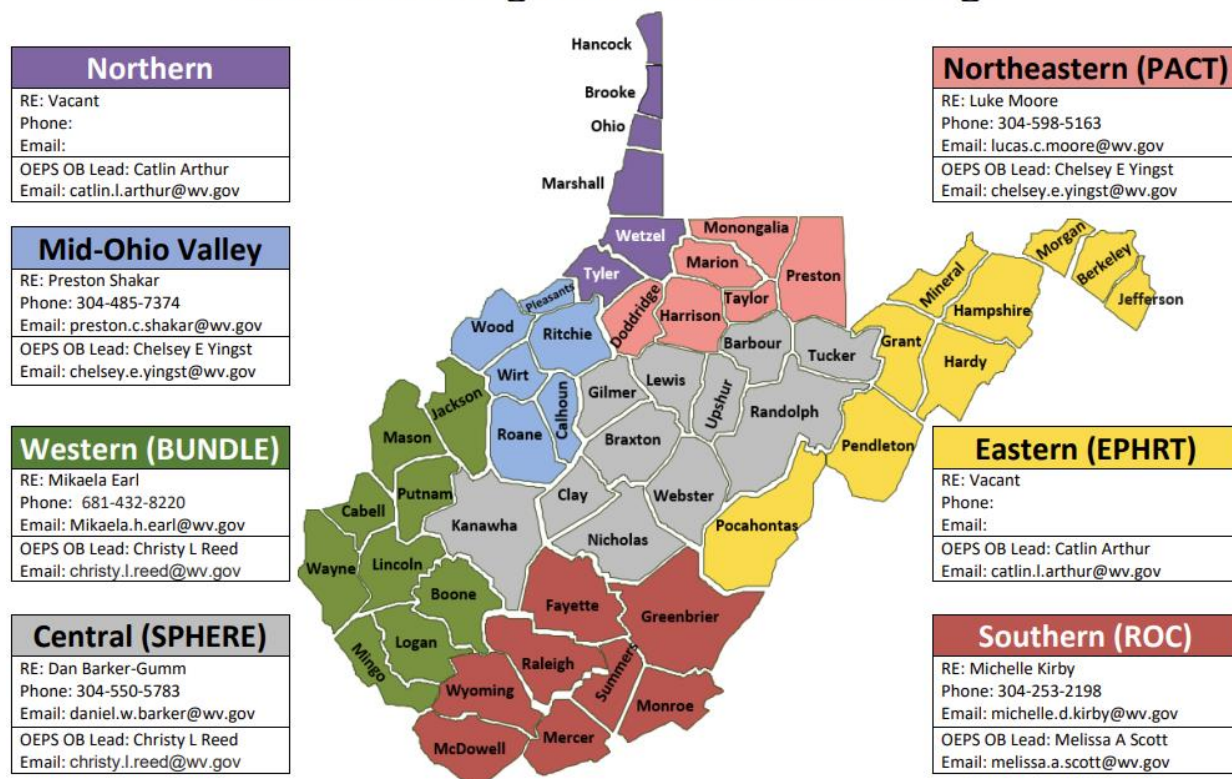


Figure 4. Outbreak Surveillance Regions

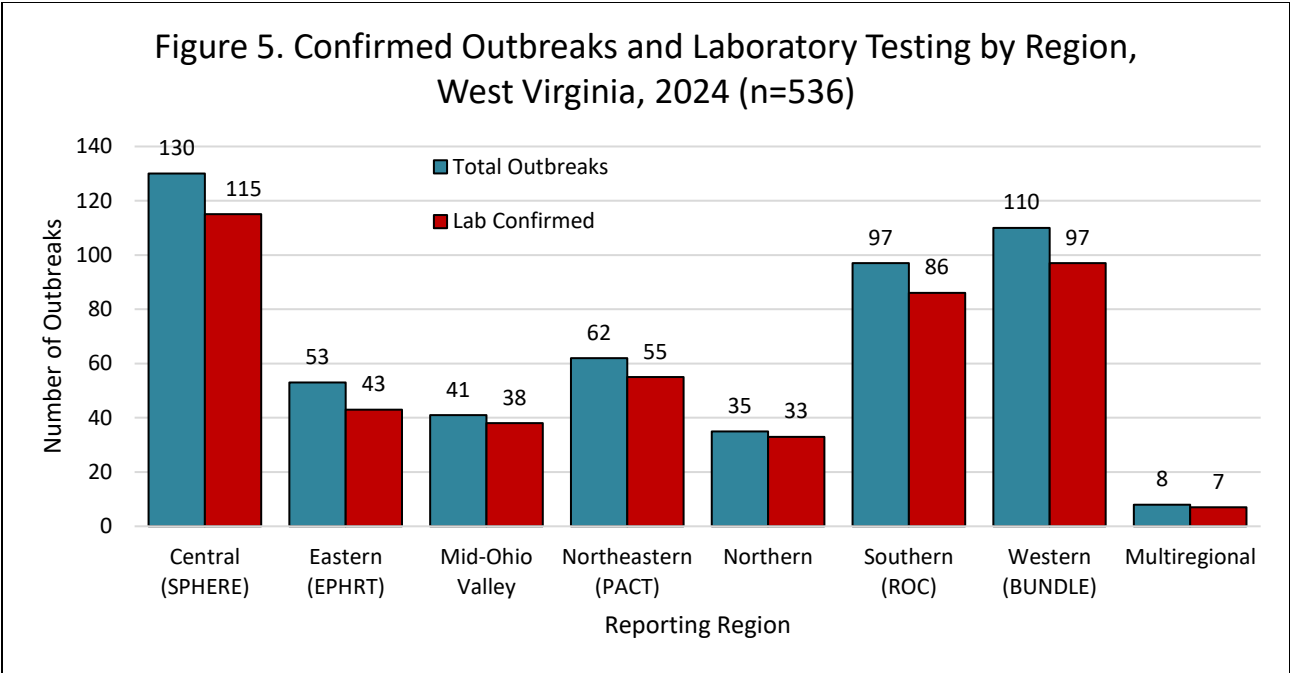
## Surveillance Regions and Current Coverage



### Proportion of Outbreaks with Laboratory Testing:

Laboratory testing is crucial in outbreak management. Timely collection of specimens facilitates diagnosis and institution of appropriate control measures. Laboratory confirmation of outbreaks is one of the surveillance indicators and considered a performance measure for LHD. As shown in Figure 5, the percentage of outbreaks with laboratory testing varied by region from 81% to 94%. Of the 536 confirmed outbreaks, 474 (88%) had laboratory testing.





Some outbreaks do not require laboratory testing. Scabies as well as hand, foot, and mouth disease outbreaks are often confirmed by clinical diagnosis and/or symptom presentation and lab testing is not required. However, all respiratory and enteric outbreaks are recommended to have laboratory testing.

Figure 6 depicts laboratory confirmation of respiratory disease outbreaks by surveillance region. Of the 433 confirmed respiratory outbreaks, 432 (99.8%) had laboratory testing performed.

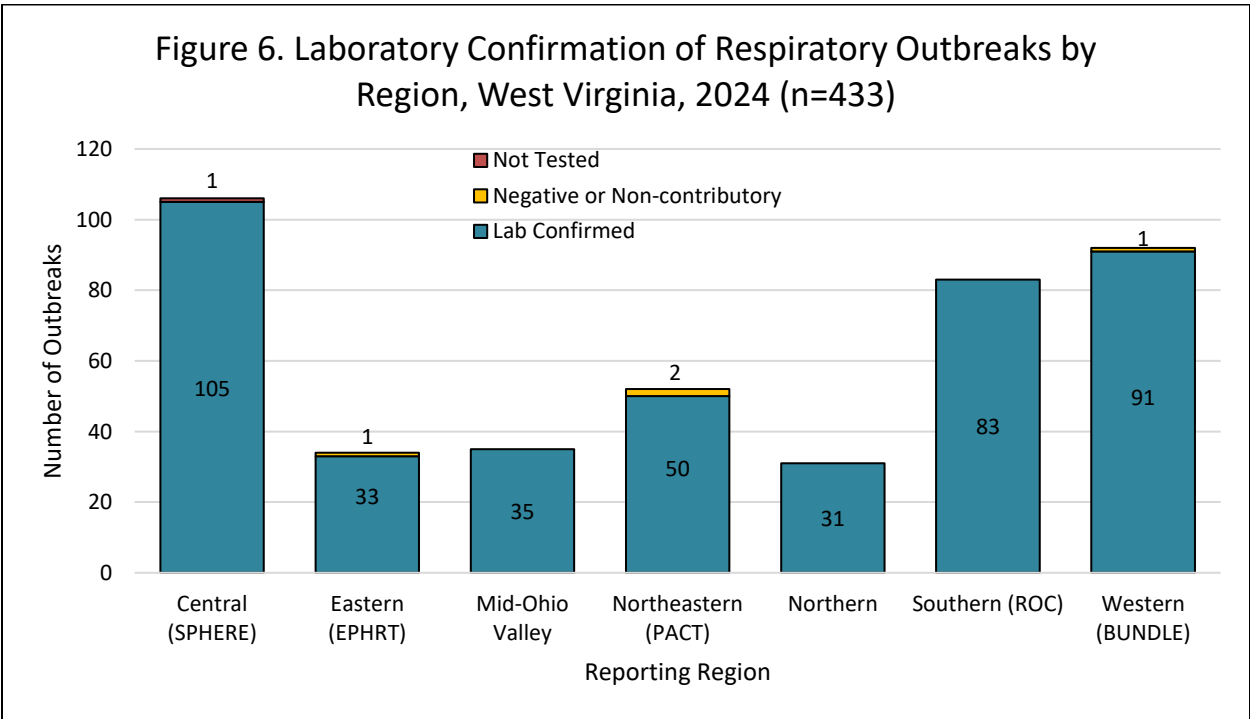
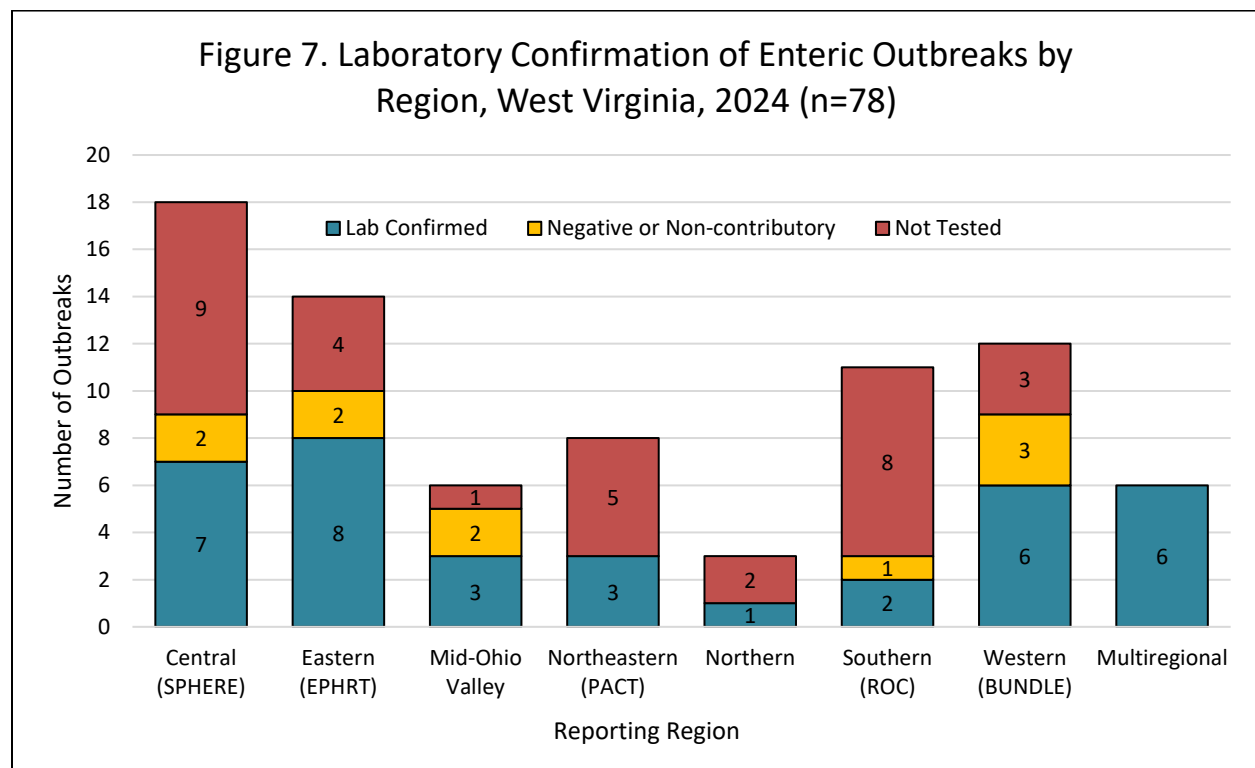


Figure 7 illustrates laboratory confirmation of enteric outbreaks by regions. Of the 78 confirmed enteric disease outbreaks, 36 (46%) had laboratory testing.



#### **Outbreak Setting:**

The majority of all outbreaks were reported from nursing homes, followed by schools and assisted living facilities (Table 4).

Table 4. Confirmed Outbreaks by Transmission Setting, West Virginia, 2024

Facility Type	Number of Outbreaks (n=536)	Percent
Nursing Home	337	63%
School	42	8%
Assisted Living	40	7%
Daycare	35	7%
Community-Based	24	4%
Hospital	20	4%
Psychiatric Hospital	16	3%
Other Residential	8	1%
Child Residential	6	1%
Other Healthcare	6	1%
Correctional Facility	2	<1%

### Outbreak Leadership:

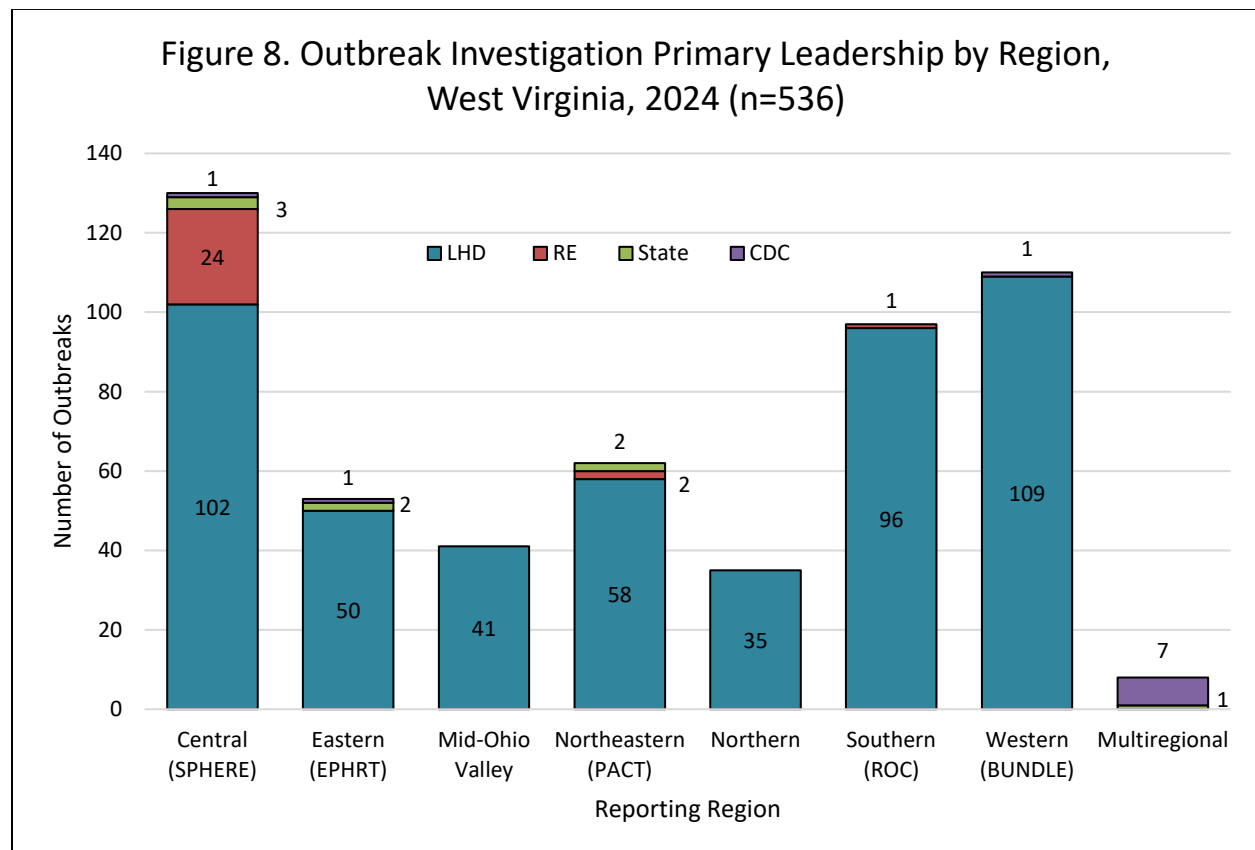
As part of Epidemiology and Laboratory Capacity (ELC) funding, the State and LHD are required to verify outbreak investigation leadership.

In 2024, LHD led the investigation in 491 (92%) outbreaks, followed by regional epidemiologists with 27 (5%) and OEPS with eight (1.5%). CDC led the investigations in ten (1.9%) multi-state outbreaks (Table 5).

Table 5. Confirmed Outbreaks by Primary Leadership, West Virginia, 2024

Primary Leadership	Number of Outbreaks (n=536)	Percent
Local Health Departments (LHD)	491	92%
Regional Epidemiologists (RE)	27	5%
BPH/DHQPPR	8	1.5%
CDC	10	1.6%

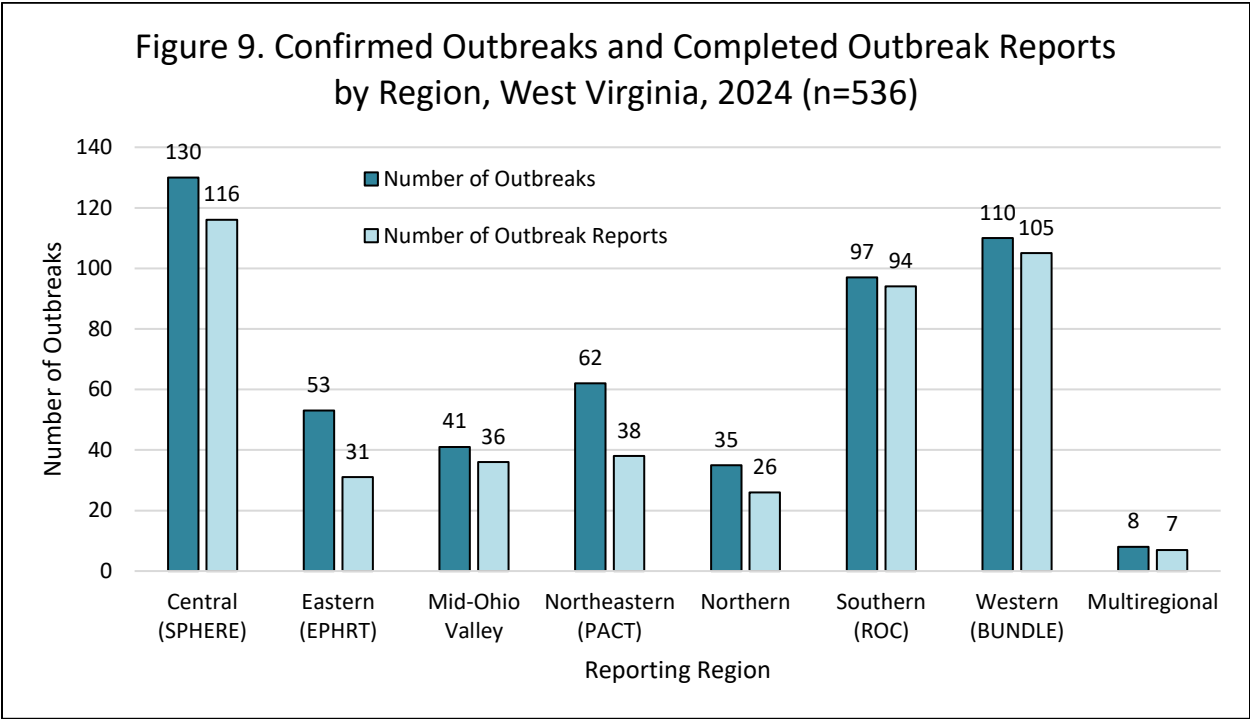
Primary leadership of outbreak investigation varies by surveillance region. In most regions, primary leadership is collaboratively assigned between regional epidemiologists and the LHD. Figure 8 illustrates outbreak investigation leadership by region.



### Outbreak Investigation Reports:

All outbreak investigations should have a final report pursuant to *Reportable Diseases, Events and Conditions* (64CSR7). The number of final outbreak reports generated by LHD and shared with stakeholders is tracked annually. OEPS created outbreak report templates and provided them online for most types of outbreaks in a fillable format to assist LHD staff and regional epidemiologists in completing the outbreak reports within 90 days of outbreak closure.

In 2024, a final outbreak report was completed in 453 (85%) outbreaks. This is an increase from 55% in 2023. The percentage of final outbreak reports completed by region varied from 58% to 95%.



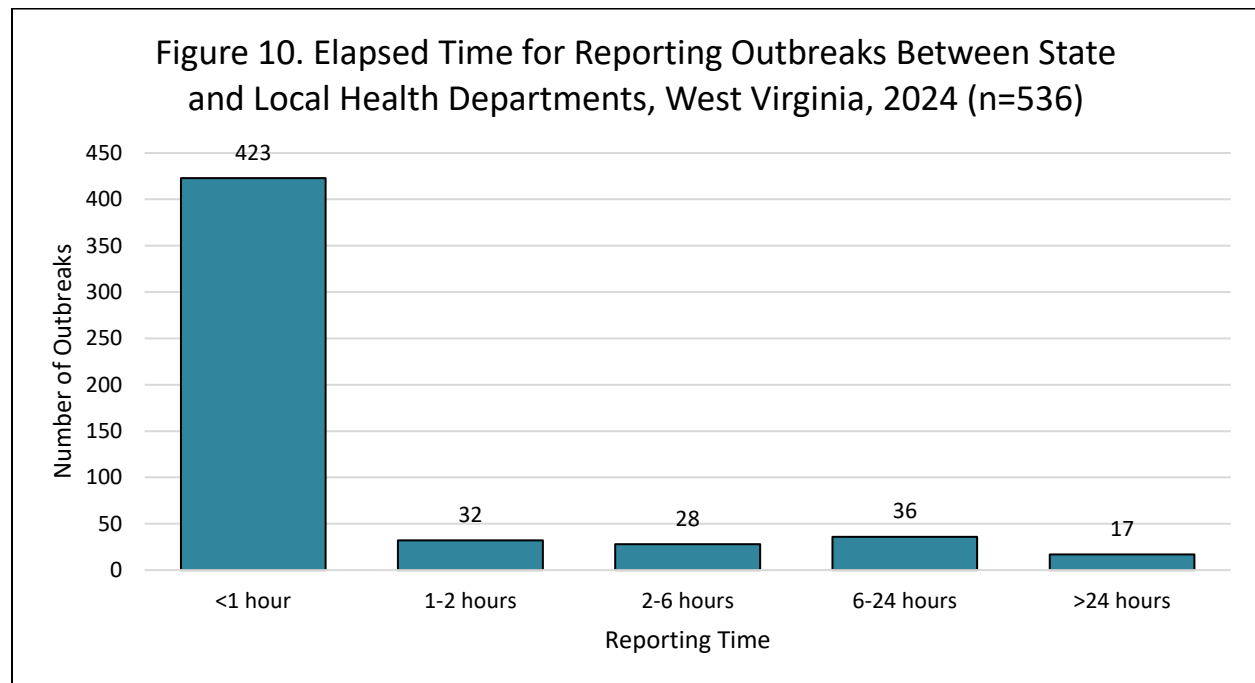
**Outbreak Reporting Time:**

According to *Reportable Diseases, Events and Conditions* (64CSR7), outbreaks or clusters of any illness or condition in any setting are immediately reportable to the LHD. As a condition of grant funding, LHD are required to report suspected outbreaks or clusters to BPH, OEPS within 60 minutes.

To measure adherence to this requirement, date and time of report to the LHD and to OEPS are recorded on a standardized form in WVORS so that elapsed reporting time can be calculated.

In 2024, the date and time of reporting to the LHD and BPH were collected in all 536 (100%) outbreaks. The mean and median of time elapsed between reporting to the LHD and reporting to the BPH was 270 and 28 minutes respectively. The range of time between the time the outbreak was reported to the LHD

and the time the outbreak was reported to the BPH was zero to 22,920 minutes. Of the 536 confirmed outbreaks, same-day notification occurred for 519 (97%) outbreaks and 423 (79%) were within 60 minutes (Figure 10).



**Summary of Outbreak Performance Measures by Region/County**  
**West Virginia, 2024**

Tables 6 through 14 summarize performance measures by county and region.

Table 6. Outbreak Performance Measures by Region, West Virginia, 2024

Region	Number of Outbreaks	Outbreaks with Completed Reports: No. (%)	Outbreaks with Laboratory Testing: No. (%)	Median Report Time in Minutes (Range)
Central Region (SPHERE)	130	116 (89%)	118 (91%)	20 (0-1485)
Eastern Region (EPHRT)	53	31 (58%)	46 (87%)	34 (0-2910)
Mid-Ohio Valley	41	36 (88%)	40 (98%)	0 (0-6924)
Northeastern Region (PACT)	62	38 (61%)	57 (92%)	33 (0-8695)
Northern Region	35	26 (74%)	33 (94%)	15 (0-1382)
Southern Region (ROC)	97	94 (97%)	87 (90%)	39 (0-5635)
Western Region (BUNDLE)	110	105 (95%)	101 (92%)	24 (3-4089)
Multiple Regions	8	7 (88%)	8 (100%)	112 (5-22920)
<b>All Regions</b>	<b>536</b>	<b>453 (85%)</b>	<b>490 (91%)</b>	<b>28 (0-22920)</b>

Table 7. Outbreak Performance Measures by County, Central Region (SPHERE), West Virginia, 2024

Central Region	Number of Outbreaks	Outbreaks with Completed Reports: No. (%)	Outbreaks with Laboratory Testing: No. (%)	Median Report Time in Minutes (Range)
Barbour	8	4 (50%)	8 (100%)	13 (0-30)
Braxton	4	4 (100%)	3 (75%)	16 (15-41)
Clay	3	3 (100%)	3 (100%)	0 (0-225)
Gilmer	2	2 (100%)	2 (100%)	559 (125-992)
Kanawha	72	63 (88%)	65 (90%)	23 (0-1339)
Lewis	11	11 (100%)	11 (100%)	31 (5-1103)
Nicholas	4	3 (75%)	4 (100%)	50 (8-55)
Randolph	14	14 (100%)	12 (86%)	13 (0-60)
Tucker	0			
Upshur	6	6 (100%)	6 (100%)	28 (5-76)
Webster	2	2 (100%)	2 (100%)	10 (5-15)
<b>Central Region (SPHERE)</b>	<b>130</b>	<b>116 (89%)</b>	<b>118 (91%)</b>	<b>20 (0-1485)</b>

Table 8. Outbreak Performance Measures by County, Eastern Region, West Virginia, 2024

Eastern Region	Number of Outbreaks	Outbreaks with Completed Reports: No. (%)	Outbreaks with Laboratory Testing: No. (%)	Median Report Time in Minutes (Range)
Berkeley	20	18 (90%)	16 (80%)	31 (1-60)
Grant	5	0 (0%)	5 (100%)	306 (10-2667)
Hampshire	2	1 (50%)	2 (100%)	40 (39-40)
Hardy	3	0 (0%)	2 (67%)	29 (2-936)
Jefferson	8	3 (38%)	13 (93%)	39 (6-1420)
Mineral	7	5 (71%)	8 (100%)	31 (0-1248)
Morgan	5	3 (60%)	4 (80%)	41 (15-90)
Pendleton	1	0 (0%)	1 (100%)	60 (60)
Pocahontas	2	1 (50%)	2 (100%)	20 (15-25)
<b>Eastern Region</b>	<b>53</b>	<b>31 (58%)</b>	<b>46 (87%)</b>	<b>34 (0-2910)</b>

Table 9. Outbreak Performance Measures by County, Northeastern Region, West Virginia, 2024

Northeastern Region	Number of Outbreaks	Outbreaks with Completed Reports: No. (%)	Outbreaks with Laboratory Testing: No. (%)	Median Report Time in Minutes (Range)
Doddridge	0			
Harrison	21	15 (71%)	20 (95%)	46 (0-1080)
Marion	14	11 (79%)	14 (100%)	54 (11-1155)
Monongalia	12	2 (17%)	10 (100%)	25 (0-37)
Preston	7	6 (100%)	6 (100%)	31 (5-75)
Taylor	8	0 (0%)	7 (100%)	210 (5-8695)
<b>Northeastern Region (PACT)</b>	<b>62</b>	<b>38 (61%)</b>	<b>57 (92%)</b>	<b>33 (0-8695)</b>

Table 10. Outbreak Performance Measures by County, Mid-Ohio Valley Region, West Virginia, 2024

Mid-Ohio Valley Region	Number of Outbreaks	Outbreaks with Completed Reports: No. (%)	Outbreaks with Laboratory Testing: No. (%)	Median Report Time in Minutes (Range)
Calhoun	2	2 (100%)	2 (100%)	0 (0)
Pleasants	7	6 (86%)	7 (100)	31 (0-114)
Richie	2	2 (100%)	2 (100%)	2630 (0-5259)
Roane	5	5 (100%)	5 (100%)	16 (0-97)
Wirt	3	3 (100%)	3 (100%)	0 (0-36)
Wood	22	18 (82%)	21 (95%)	20 (0-6924)
<b>Mid-Ohio Valley Region</b>	<b>41</b>	<b>38 (88%)</b>	<b>40 (98%)</b>	<b>0 (0-6924)</b>

Table 11. Outbreak Performance Measures by County, Northern Region, West Virginia, 2024

Northern Region	Number of Outbreaks	Outbreaks with Completed Reports: No. (%)	Outbreaks with Laboratory Testing: No. (%)	Median Report Time in Minutes (Range)
Brooke	7	7 (100%)	7 (100%)	11 (3-1095)
Hancock	11	10 (91%)	9 (82%)	25 (0-1152)
Marshall	3	0 (0%)	3 (100%)	6 (6-15)
Ohio	8	3 (38%)	8 (100%)	41 (0-1560)
Tyler	2	2 (100%)	2 (100%)	19 (15-22)
Wetzel	4	4 (100%)	4 (100%)	0 (0-310)
<b>Northern Region</b>	<b>35</b>	<b>26 (74%)</b>	<b>33 (94%)</b>	<b>15 (0-1382)</b>

Table 12. Outbreak Performance Measures by County, Southern Region, West Virginia, 2024

Southern Region	Number of Outbreaks	Outbreaks with Completed Reports: No. (%)	Outbreaks with Laboratory Testing: No. (%)	Median Report Time in Minutes (Range)
Fayette	20	19 (95%)	16 (80%)	57 (10-5635)
Greenbrier	19	19 (100%)	18 (95%)	28 (0-2900)
McDowell	1	1 (100%)	1 (100%)	43 (43)
Mercer	24	22 (92%)	21 (88%)	45 (0-2805)
Monroe	5	5 (100%)	4 (80%)	30 (13-49)
Raleigh	21	21 (100%)	21 (100%)	30 (0-1040)
Summers	5	5 (100%)	5 (100%)	45 (11-975)
Wyoming	2	2 (100%)	1 (50%)	173 (32-314)
<b>Southern Region</b>	<b>97</b>	<b>94 (97%)</b>	<b>87 (90%)</b>	<b>39 (0-5635)</b>

Table 13. Outbreak Performance Measures by County, Western Region, West Virginia, 2024

Western Region	Number of Outbreaks	Outbreaks with Completed Reports: No. (%)	Outbreaks with Laboratory Testing: No. (%)	Median Report Time in Minutes (Range)
Boone	7	7 (100%)	7 (100%)	35 (12-1079)
Cabell	48	44 (92%)	42 (88%)	26 (3-4089)
Jackson	9	9 (100%)	9 (100%)	20 (5-43)
Lincoln	3	3 (100%)	3 (100%)	12 (10-23)
Logan	5	4 (80%)	5 (100%)	32 (28-999)
Mason	9	9 (100%)	4 (100%)	16 (5-85)
Mingo	3	3 (100%)	3 (100%)	23 (14-29)
Putnam	17	17 (100%)	15 (88%)	34 (7-54)
Wayne	8	8 (100%)	8 (100%)	25 (20-267)
<b>Western Region (BUNDLE)</b>	<b>110</b>	<b>105 (95%)</b>	<b>101 (92%)</b>	<b>24 (3-4089)</b>

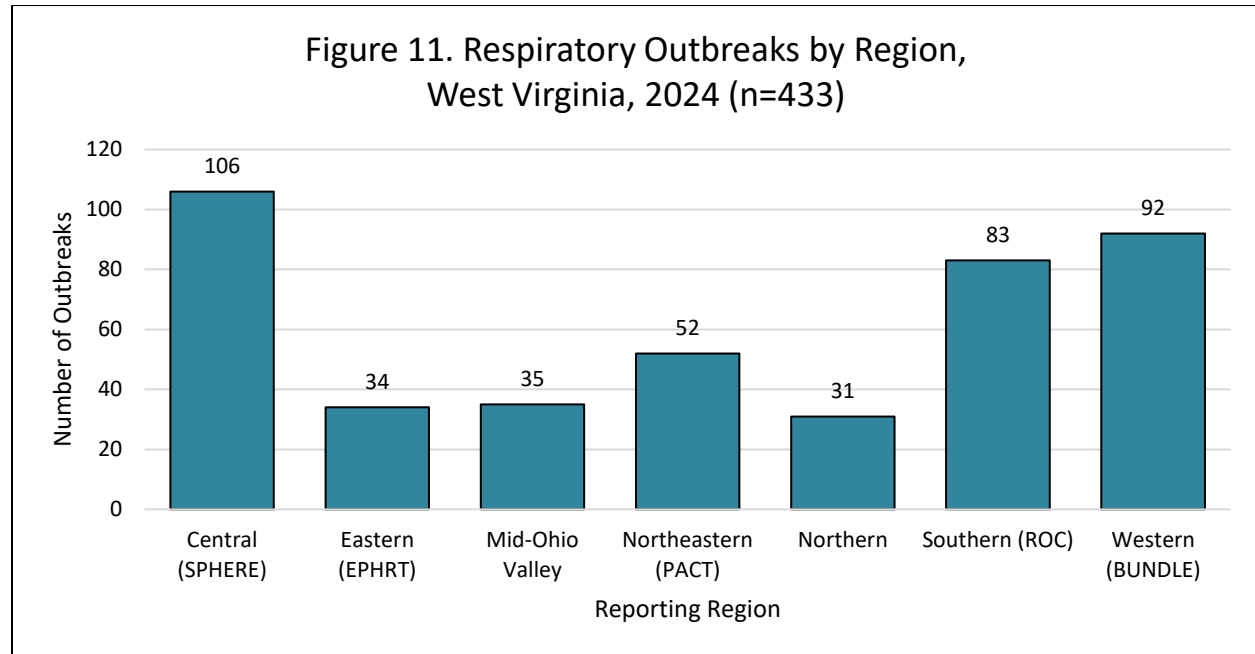
Table 14. Outbreak Performance Measures, Multiple Counties/Regions, West Virginia, 2024

Multiple Regions	Number of Outbreaks	Outbreaks with Completed Reports: No. (%)	Outbreaks with Laboratory Testing: No. (%)	Median Report Time in Minutes (Range)
Multiple Regions	8	7 (88%)	8 (100%)	312 (5-22920)



### **Respiratory Disease Outbreaks, West Virginia, 2024 (n=433)**

Outbreaks of respiratory illness were the most common type of disease outbreak reported in 2024, accounting for 81% of confirmed outbreaks (Table 1). Respiratory illness outbreaks were reported by 53 (96%) counties from all seven surveillance regions (Figure 11).

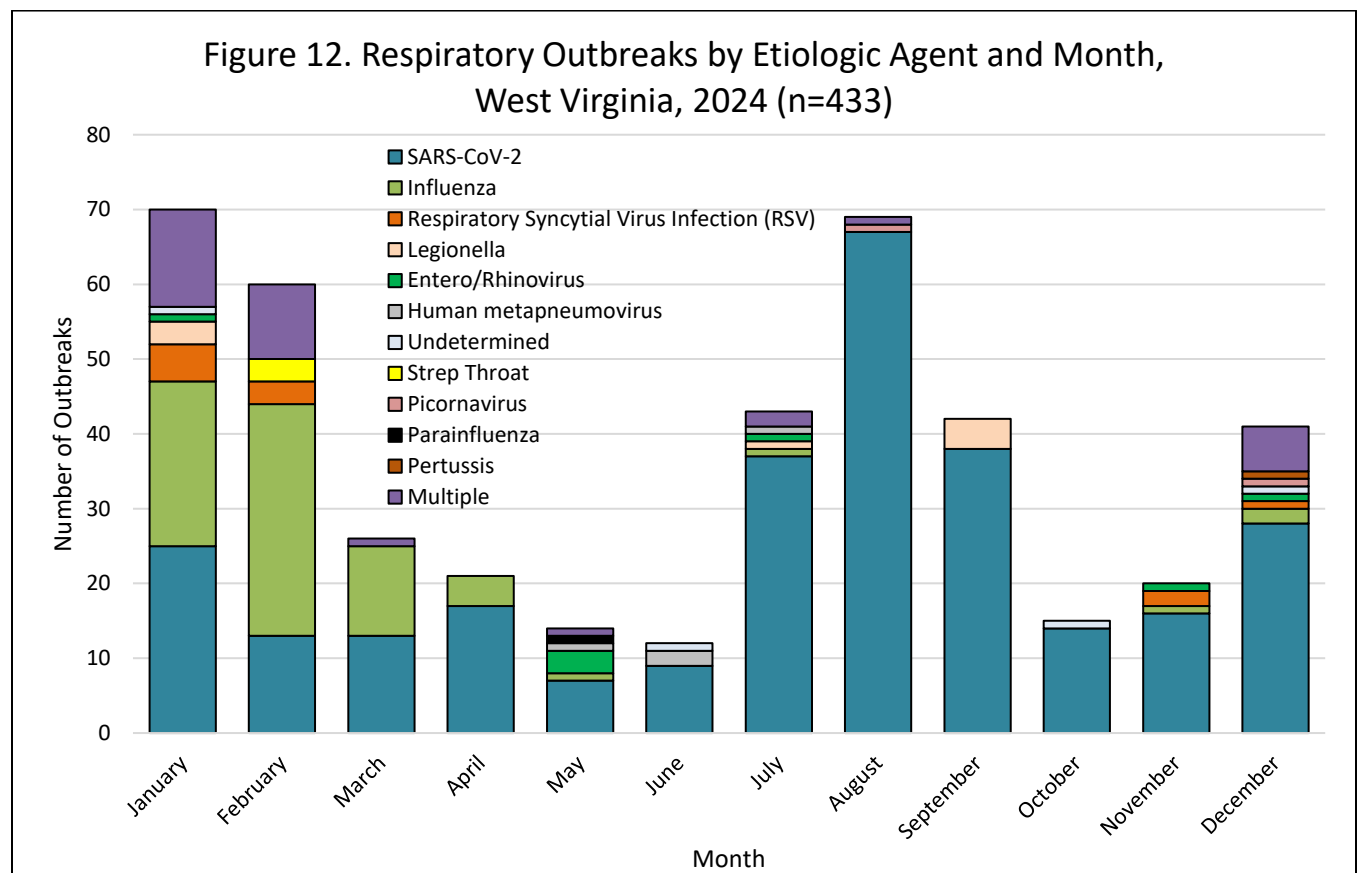


COVID-19 outbreaks were the most frequently reported respiratory disease outbreak followed by influenza. (Table 15).

Table 15. Respiratory Disease Outbreaks by Etiology/Clinical Diagnosis, West Virginia, 2024

Clinical Syndrome/Etiologic Agent	Number of Outbreaks (n=433)	Percent	Mean Number of Cases (Range)
COVID-19	284	66%	22 (3-131)
Influenza	74	17%	17 (2-103)
Respiratory Syncytial Virus Infection (RSV)	11	3%	11 (4-28)
Legionella	8	2%	1 (1-3)
Enterovirus/Rhinovirus	7	2%	8 (4-13)
Human metapneumovirus	4	1%	16 (9-20)
Undetermined	4	1%	9 (6-13)
Streptococcal Pharyngitis	3	1%	11 (8-13)
Picornavirus	2	<1%	13 (6-19)
Parainfluenza	1	<1%	4 (4)
Pertussis	1	<1%	5 (5)
Multiple Etiologies	34	8%	40 (3-183)

Figure 12 illustrates respiratory disease outbreaks by etiologic agent and month of onset. Respiratory outbreaks are listed by etiologic agents including other pathogens in table 14.



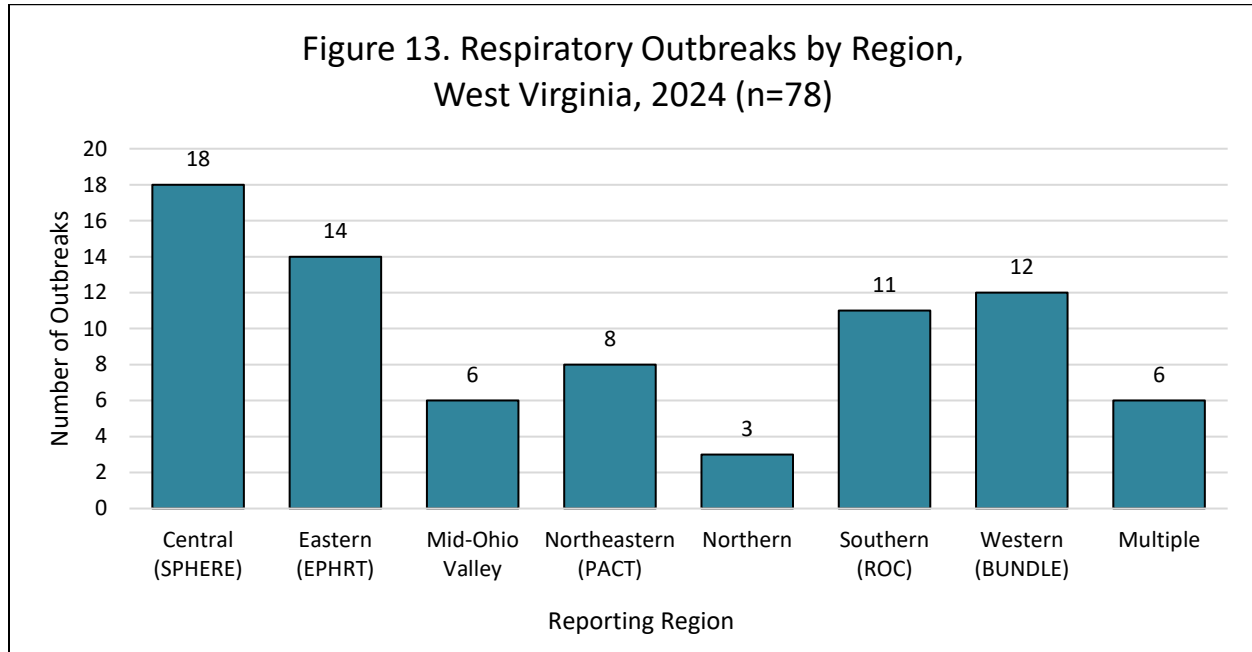
The majority of respiratory disease outbreaks were reported from nursing homes followed by assisted living facilities (Table 16).

Table 16. Respiratory Disease Outbreaks by Transmission Setting, West Virginia, 2024

FACILITY TYPE	Frequency	Percent
Nursing Home	289	65%
Assisted Living	36	8%
School	32	7%
Daycare	24	5%
Psychiatric Hospital	15	3%
Hospital	13	3%
Other Residential	13	3%
Other Healthcare	6	1%
Community-Based	3	<1%
Correctional Facility	2	<1%

### Enteric Disease Outbreaks, West Virginia, 2024 (n=78)

Outbreaks of enteric illness were the second most common type of disease outbreak in 2024, accounting for 15% of all outbreaks (Table 1). Seventy-eight enteric disease outbreaks were reported by 28 (53%) counties. All seven surveillance regions reported enteric disease outbreaks (Figure 13). Six enteric illness outbreaks reported in West Virginia were part of multi-state outbreak investigations led by CDC.



Fifty-three (68%) enteric disease outbreaks were reported from healthcare facilities, including 45 from nursing homes (Table 17).

Table 17. Enteric Disease Outbreaks by Transmission Setting, West Virginia, 2024

Transmission Setting	Number of Outbreaks (n=78)	Percent
Nursing Home	45	58%
Community	12	15%
Food and Hospitality	6	8%
School	4	5%
Assisted Living Facility	4	5%
Hospital	3	4%
Daycare	2	3%
Psychiatric Hospital	1	1%
Residential	1	1%

Outbreaks of acute gastroenteritis with undetermined etiology were the most common type of enteric disease outbreak, accounting for 42 (54%) outbreaks, followed by norovirus gastroenteritis (22, 28%) outbreaks (Table 18). Acute gastroenteritis outbreaks were defined as outbreaks of illness characterized by acute onset of vomiting and/or diarrhea without laboratory confirmation. An outbreak of norovirus gastroenteritis is defined as an outbreak of acute gastroenteritis with laboratory confirmation of norovirus.

Among the 42 outbreaks characterized as acute gastroenteritis, laboratory tests were negative or noncontributory in 10 outbreaks and no testing was done in the remaining 32 outbreaks. The outbreaks followed a pattern of transmission consistent with norovirus gastroenteritis outbreaks, suggesting that many of these outbreaks were likely caused by norovirus.

All norovirus outbreaks were confirmed by PCR testing.

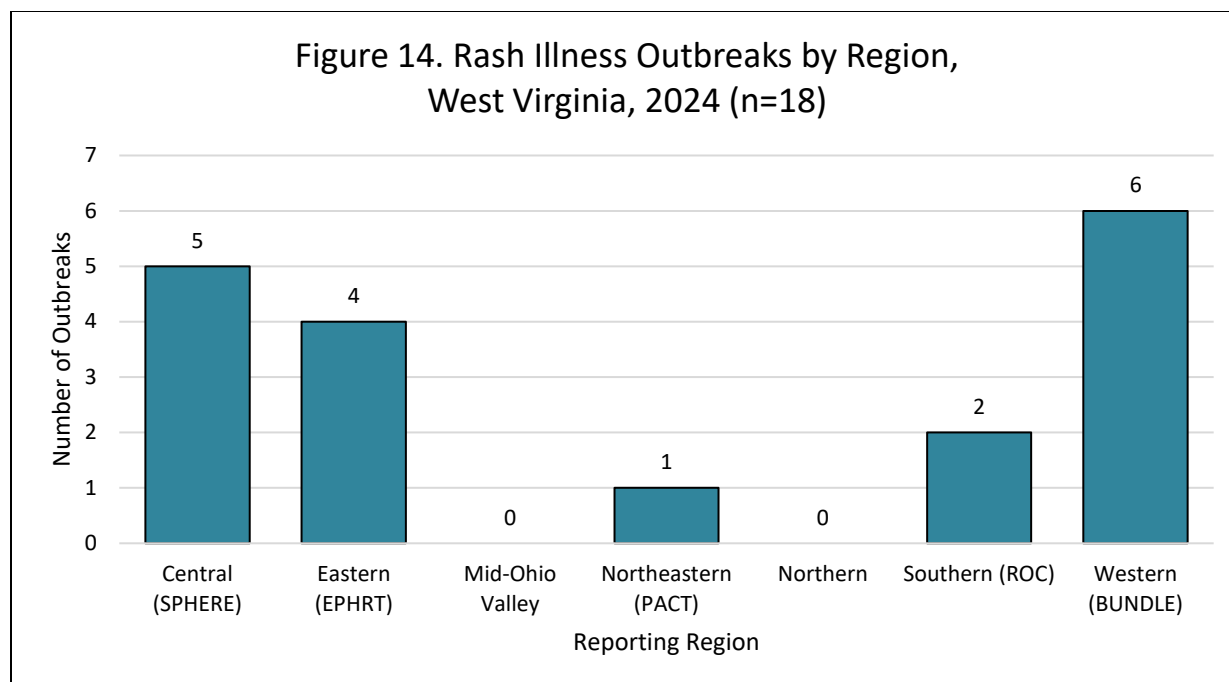
Table 18. Outbreaks of Enteric Disease by Clinical Syndrome/Etiologic Agent, West Virginia, 2024

Clinical Syndrome/Etiologic Agent	Number of Outbreaks (n=78)	Percent	Mean Number of Cases (Range)
Acute Gastroenteritis	42	54%	23 (2-85)
Norovirus Gastroenteritis	22	28%	31 (4-86)
Salmonellosis	8	10%	3 (1-7)
Campylobacteriosis	2	3%	3 (2-4)
Botulism	1	1%	1 (1)
Listeriosis	1	1%	1 (1)
Sapovirus Gastroenteritis	1	1%	7 (7)
Shigellosis	1	1%	2 (2)

Most enteric disease outbreaks (59, 76%) were due to person-to-person transmission followed by foodborne illness (six, 11%), and animal contact (two, 2%). The source of illness was not determined in the remaining enteric disease outbreaks (11, 14%).

#### **Rash Illness Outbreaks, West Virginia, 2024 (n=18)**

Rash illness outbreaks were the third most common outbreak type in 2024, with 18 (3%) confirmed outbreaks (Table 1). Eight (15%) counties from five of the seven surveillance regions reported rash illness outbreaks (Figure 14).



**Table 19. Rash Illness Outbreaks by Transmission Setting, West Virginia, 2024**

Transmission Setting	Number of Outbreaks (n=18)	Percent
Daycare	9	50%
School	4	22%
Nursing Home	3	17%
Community	1	6%
Hospital	1	6%

The most common type of rash illness outbreak reported was hand, foot, and mouth disease (HFMD) as shown in Table 20.

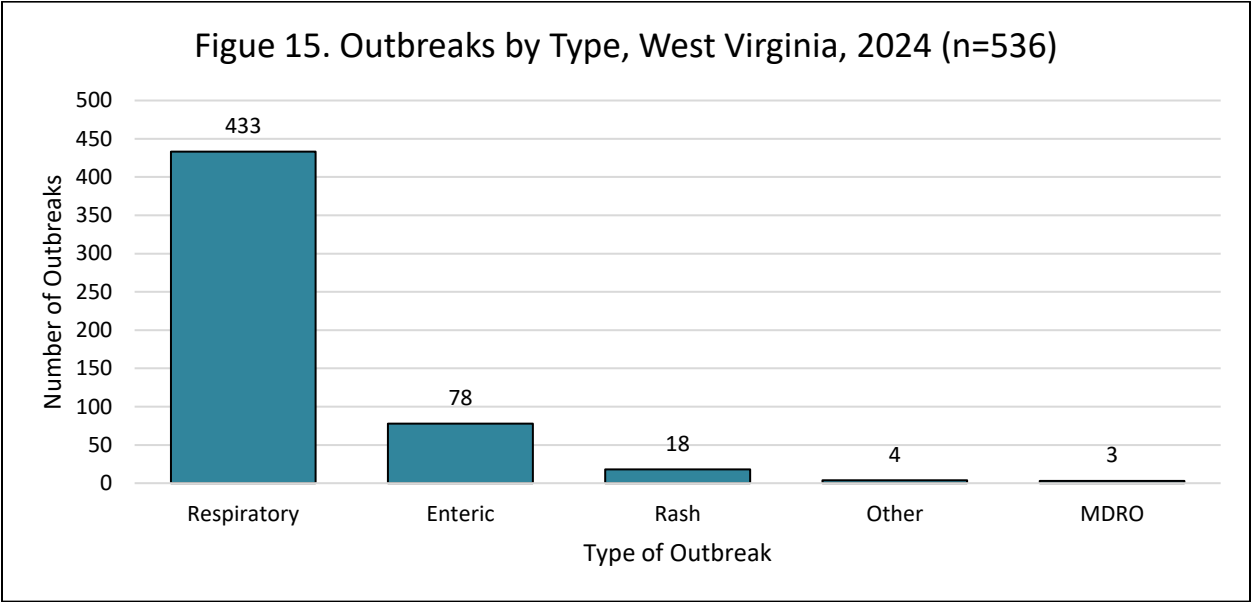
**Table 20. Outbreaks of Rash Illness by Clinical Syndrome/Etiologic Agent, West Virginia, 2024**

Clinical Diagnosis	Number of Outbreaks (n=18)	Percent	Mean Number of Cases (Range)
HFMD	11	61%	8 (3-21)
Scabies	2	11%	7 (2-12)
Impetigo	1	5.5%	4 (4)
Measles	1	5.5%	1 (1)
Ringworm	1	5.5%	4 (4)
Varicella	1	5.5%	5 (5)
Undetermined Rash Illness	1	5.5%	7 (7)

The measles outbreak involved a single laboratory confirmed case, however the associated investigation involved significant resources from DH, RE, LHD, and healthcare workers. There were more than 130 contacts identified. Prompt public health action led to no secondary cases.

**“Other” Outbreaks, West Virginia, 2024 (n=4)**

In 2024, there were four (0.75%) outbreaks categorized as “Other.” (Figure 15).



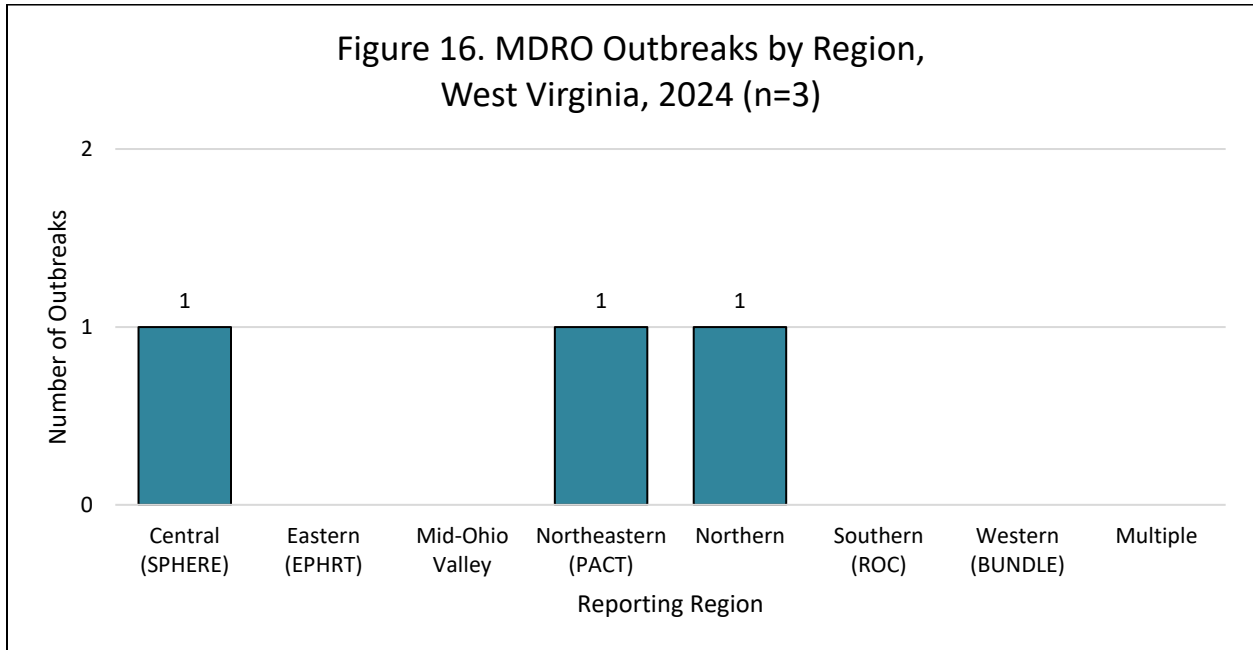
Outbreaks categorized as “Other” outbreaks included one outbreak of conjunctivitis, one outbreak of mumps, one outbreak of mpox, and one outbreak of severe illness associated with consumption of a product which was a nationwide investigation.

Table 24. Outbreaks Categorized as “Other” Clinical Syndrome/Etiologic Agent, West Virginia, 2024

Clinical Diagnosis	Number of Outbreaks (n=4)	Percent	Mean Number of Cases (Range)
Conjunctivitis	1	25%	5 (5)
Mumps	1	25%	1 (1)
Mpox	1	25%	2 (2)
Illness associated with consuming a product	1	25%	1 (1)

### **MDRO Outbreaks, West Virginia, 2024 (n=3)**

There were three (0.56%) outbreaks categorized as MDRO (Figure 16).



There were three outbreaks classified as MDRO in 2024. All were outbreaks of *Candida auris* (C. auris) in hospitals.

Table 25. MDRO Outbreaks by Clinical Syndrome/Etiologic Agent, West Virginia, 2024

Clinical Diagnosis	Number of Outbreaks (n=3)	Percent	Mean Number of Cases (Range)
Candida auris (C. auris)	3	100%	6 (4-8)

### **Infection Control Assessment and Response (ICAR), West Virginia, 2024**

The basic elements of an infection prevention program are designed to prevent the spread of infection in health care and other congregate settings, such as youth residential and correctional settings. When these elements are present and practiced consistently, the risk of infection among patients and health care personnel is reduced. The ICAR program is a consultative non-punitive assessment used to systematically assess infection prevention and control practices within a facility. Assessments may be performed:

- At the request of a facility
- When an outbreak occurs
- When an infection control breach has been reported
- As a preventive measure, OR
- Based upon data analysis.

In 2024, there were 254 ICAR assessments completed. Of those, 69 (27%) were in response to an outbreak investigation and the remainder were completed as a preventative measure. ICAR consultations by facility type can be seen in Table 26 below.

Table 26. ICAR Consultations by Facility Type, West Virginia, 2024

Facility Type	Preventative	Response	Total
Nursing Home	106	58	164
Dialysis	36	0	36
Acute	22	3	25
Long-term Acute Care	5	4	9
Psyche	6	2	8
Outpatient	6	0	6
Rehab	4	0	4
Assisted Living	0	2	2
Totals	185	69	254

### **Findings and Recommendations**

In 2024, outbreak recognition and reporting has continued to improve as seen over the last several years. This improvement can be attributable to strengthened public health infrastructure and increased awareness of reporting requirements among healthcare providers and public health staff. Despite this progress, there are still opportunities for improvement. The following summarizes the findings of this report and provides recommendations.

#### **Findings and Recommendations for LHD:**

1. According to the West Virginia Reportable Disease Rule, outbreaks are immediately reportable in West Virginia to LHD regardless of outbreak setting.
2. In 2024, 53 (96%) of the 55 West Virginia counties reported outbreaks. DHQPPR encourages LHD to continue to strengthen relationships and maintain an open dialogue with healthcare facilities, schools, and other institutions and their staff, particularly infection preventionists (IPs) and school nurses.
3. The range of the number of outbreaks reported among different surveillance regions in 2024 was 35 to 130 outbreaks. DHQPPR encourages LHD, with assistance from regional epidemiologists, to provide regular training on outbreak identification and reporting to stakeholders.
4. In 2024, 423 (79%) outbreaks were reported to DHQPPR within one hour, and 519 (97%) were reported within 24 hours. LHD are required to report 100% of outbreaks to DHQPPR within one hour. Immediate reporting improves the outbreak response by facilitating laboratory testing for



diagnosis, implementing control measures in a timely manner, and preventing further illnesses or deaths. It also facilitates communication with the CDC and other partners on critical health issues.

5. LHD should consult with the regional epidemiologists and DHQPPR during outbreak investigations. Collaboration with RE and DHQPPR can ensure appropriate mitigation measures are in place and laboratory testing is completed to decrease morbidity and mortality during an outbreak.
6. DHQPPR recommends using disease-specific outbreak toolkits. DHQPPR has developed several outbreak toolkits for the most commonly encountered outbreaks. Toolkits can be accessed online at: <https://oeeps.wv.gov/toolkits/pages/default.aspx>
7. As per *Reportable Diseases, Events and Conditions* (64CSR7), the LHD are required to complete a final outbreak report for each outbreak. Consider using outbreak specific templates provided by DHQPPR. Templates can be accessed at: [https://oeeps.wv.gov/toolkits/Pages/toolkits\\_reports.aspx](https://oeeps.wv.gov/toolkits/Pages/toolkits_reports.aspx)
8. Outbreak reports should be shared with DHQPPR and other stakeholders, including the reporting facility, within 90 days of closing the outbreak. The reports serve as a record of events, identifies areas for improvement to prevent similar outbreaks in the future, and can be used to institute change within the reporting facility.
9. Respiratory disease outbreaks accounted for 81% of all outbreaks reported in 2024. LHD should be prepared for respiratory outbreaks in schools and nursing homes. Consider the following recommendations:
  - Recruit and maintain a functional sentinel provider.
  - Identify a healthcare provider/facility to assist in collecting specimens from schools in outbreak situations.
  - COVID-19 and influenza vaccinations are the best preventive measures.
  - Keep a minimum of five unexpired respiratory testing kits in the local health department throughout the year.
  - Consider communicating with and educating school nurses and nursing home IPs about respiratory disease during the pre-influenza season.
10. The role of laboratory testing is crucial in outbreak management. Timely collection of specimens facilitates diagnosis and institution of control measures. One of the outbreak performance measures for LHD is to attempt to collect appropriate specimens during all respiratory and foodborne outbreaks. In 2024, 99% of all respiratory outbreaks were laboratory confirmed and 46% of enteric outbreaks. LHD should consider assisting healthcare facilities with testing at the West Virginia Office of Laboratory Services (WVOLS) during routine enteric outbreaks to direct infection control measures and maintain ongoing surveillance.

#### **Findings and Recommendations for Nursing Homes:**

1. Outbreaks should be reported immediately to LHD, according to the West Virginia Reportable Disease Rule.

2. Nursing homes continue to account for many of the outbreaks (337, 63%) reported in the state. These outbreaks are occasionally severe and associated with high morbidity and mortality. Nursing homes should dedicate, train, and maintain a designated IP in the facility at all times.
3. Nursing homes should maintain an open dialogue with their LHD and regional epidemiologist. Consider contacting your LHD after hiring a new IP for orientation on reportable diseases and outbreaks.
4. Provide facility-wide education on hand hygiene and transmission-based precautions. Routinely monitor for compliance. Useful resources can be found at:  
<https://oepps.wv.gov/hai/pages/default.aspx>
5. Provide facility-wide education on antimicrobial resistance and appropriate use at least once a year. DHQPPR is available to assist with materials to facilitate this training.
6. For COVID-19, influenza, and other respiratory outbreaks:
  - a. Use the disease specific outbreak toolkits available online at:  
<https://oepps.wv.gov/toolkits/pages/default.aspx>
  - b. Maintain standing orders for influenza vaccination, testing, and prophylaxis.
  - c. Laboratory testing is crucial for the management of respiratory outbreaks. WVOLS can provide testing at no charge during outbreaks to confirm the outbreak. Work with your LHD to collect three to five laboratory specimens on recently ill persons.

#### **Findings and Recommendations for Acute Care Hospitals and Outpatient Clinics:**

1. Outbreaks should be reported immediately to the LHD according to the West Virginia Reportable Disease Rule. In 2024, 42 (8%) outbreaks were reported from acute care facilities, which likely represents under reporting. Facilities should educate their providers and staff on outbreak recognition and reporting.
2. Maintain an open dialogue with their LHD and regional epidemiologist.
3. DHQPPR can provide assistance, expertise, and laboratory support, if needed, to investigate outbreaks in acute care facilities. DHQPPR also works closely with the CDC in investigating complicated healthcare associated outbreaks.
4. Develop a multidisciplinary approach for outbreak investigations.
5. Maintain an up-to-date vaccination record, including influenza, of all healthcare workers, including those who are not employed by but have privileges in the facility.
6. Provide routine education on appropriate infection control practices, including hand hygiene and transmission-based precautions and monitor for compliance.
7. Provide facility-wide education on safe injection practice, antimicrobial resistance, and appropriate antibiotics use at least once per year.

### **DHQPPR's Objectives:**

The following are ongoing and new objectives for 2025 and beyond:

1. DHQPPR continues to provide feedback on outbreaks and outbreak investigations. In addition to the yearly outbreak report, DHQPPR plans to resume distribution of a monthly outbreak report. These reports will be shared with LHD, Regional Epidemiologists, and other stakeholders and posted on the website to monitor and improve the outbreak investigation process.
2. DHQPPR will continue to participate in electronic reporting of all enteric outbreaks in the National Outbreak Reporting System (NORS).
3. DHQPPR will work closely with the regional epidemiologists to assist under reporting regions and counties to identify their training needs and provide training as necessary.
4. Provide training on outbreak investigation and management to public health partners.
5. Utilize additional data sources to identify and monitor outbreaks including the National Healthcare Safety Network (NHSN) and syndromic surveillance.
6. Create new outbreak toolkits and update existing toolkits to ensure the most up to date information is available for use during investigations.
7. DHQPPR continues to make resources available for state and regional epidemiologists to attend national trainings and conferences on healthcare-associated infections (HAI) and healthcare-associated organisms.
8. Healthcare-associated outbreaks:
  - According to CDC, West Virginia continues to be among the states with the highest antibiotic prescribing rates. DHQPPR will continue to work with CDC to provide education and training materials on antimicrobial resistance and appropriate use.
  - The findings from this report will be presented to the HAI Multidisciplinary Advisory Group and other partner organizations.
  - DHQPPR will continue to provide annual MDRO surveillance reports.