

# Infectious Disease Epidemiology for Local Health Administrators



# Objectives

- **Explain ...**
  - Epidemiology
  - Legal basis for local health epidemiology activities
  - Surveillance and outbreak investigation
    - Legal basis
    - Protocols and support documents
    - Data
    - Evaluation
  - Recommendations for training and support

# What is Epidemiology?

- **Basic science of public health ...**
- **Epidemiologists ask:**
  - **Who is getting ill?**
  - **What is the illness?**
  - **When do people get ill?**
  - **Where are people getting ill?**
  - **Why are people getting ill?**
  - **How can we stop people from getting ill?**

# Epidemiology Specialties

- **Chronic disease**
  - Cancer
  - Heart disease
- **Environmental health**
  - Contaminated air, water ...
- **Injury**
- **Infectious diseases**
  - HIV, STD
  - Tuberculosis
  - Other

## “Surveillance, prevention and control of infectious disease in West Virginia”

- Foodborne diseases
- Invasive bacterial disease
- Vaccine preventable disease
- Hepatitis
- Zoonotic diseases
- Healthcare associated infections

[www.dide.wv.gov](http://www.dide.wv.gov)

Understand disease occurrence in our state ...



## Who?

- Age, sex, race, ethnicity?
- Occupation? Risk factors?

## What?

- Case definition
- Signs, symptoms, lab results?
- Hospitalization? Death?

## When?

- Onset date?
- Diagnosis date?

## Where?

- County?
- School, workplace?
- Health facility?

Keep illness from occurring ...



- Immunization
- Hand hygiene
- Respiratory hygiene / cough etiquette
- Infection prevention in health facilities
- Mosquito, tick and rodent control
- Food safety
- Clean indoor air

After illness has occurred, keep it from spreading ...



- Isolation
- Furlough or quarantine
- Effective treatment of case
- Prophylaxis or immunization of contacts
- Infection control in health facilities

# Legal Basis for LHD Activities

**Definition:**

**64CSR7-2.34**

**Local Health Officer – The individual who fulfills the duties and responsibilities of the health officer for a local board of health, or his or her designee.**

## 64CSR7-16 “Responsibilities of Local Health Officers”

### 16.2 Annually notify reporting sources of reporting requirements:

- Health care providers
- Facilities
- Laboratories
- Potential rabies exposures and animal bites: veterinarians, animal control officers, humane shelters

# Legal Basis for LHD Activities (2)

## **64CSR7-16 “Responsibilities of Local Health Officers”**

**16.3 Maintain a record ... according to the record retention schedule for the local health department ... give the information ... to their successor**

# Legal Basis for LHD Activities (3)

## **64CSR7-16 “Responsibilities of Local Health Officers”**

**16.4.a ... investigate the source of the disease or condition, identify contacts, look for undetected and unreported cases, and implement the prevention and control methods specified by the ... West Virginia Reportable Disease Protocol Manual ... or developed in consultation with the Commissioner**

# Legal Basis for LHD Activities (4)

## **64CSR7-16 “Responsibilities of Local Health Officers”**

**16.4.e Report any disease or condition listed in this rule to the Bureau within the time frame specified in each category.**

# Legal Basis for LHD Activities (4)

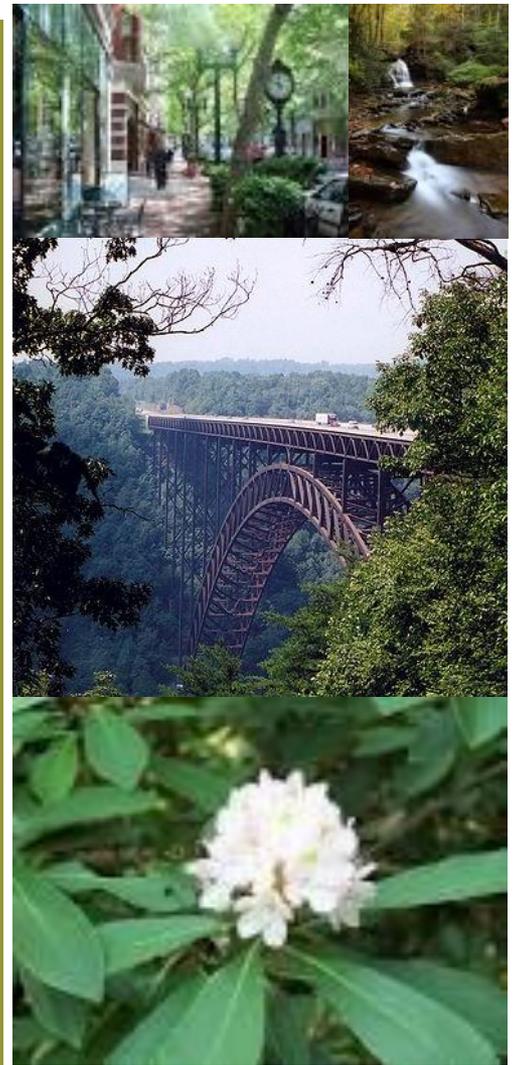
## **64CSR7-16 “Responsibilities of Local Health Officers”**

**16.7. If ... a health care provider, health care facility, laboratory ... failed to report a reportable disease, outbreak ... the local health officer shall notify the responsible individual or facility and shall request an explanation ...**

**16.8 The local health officer shall report to the Commissioner ... reason for failure to comply ...**

# Disease Surveillance for Local Health Administrators

Maria del Rosario, MD, MPH  
Division of Infectious Disease Epidemiology (DIDE)



- **Reportable disease rule and**
  - Category of reporting
  - West Virginia Electronic Disease Surveillance System (WVEDSS)
  - Electronic laboratory reporting (ELR)
- **Protocols, quick surveillance guide, other tools**
- **Website**
- **Surveillance data**
- **Indicator data**

# Disease Reporting - Requirements

## West Virginia Reportable Infectious Diseases Facilities and Providers (WV Code 16-3-1; 64CSR7)

Reporting of the following communicable diseases is required by law as follows:

August, 2013

Category I Report suspect or confirmed cases immediately to the Local Health department	Category II Report within 24 hours to the Local Health Department	Category III Report within 72 hours to the Local Health Department	Category IV Report within 1 week to the Local Health Department	Category V Report within 1 week to the state health department
<ul style="list-style-type: none"> <li>• Anthrax</li> <li>• Bioterrorist event</li> <li>• Botulism</li> <li>• Foodborne outbreak</li> <li>• Intentional exposure to an infectious agent or biological toxin</li> <li>• Novel influenza infection, animal or human</li> <li>• Orthopox infection, including smallpox and monkeypox</li> <li>• Outbreak or cluster of any illness or condition<sup>1</sup></li> <li>• Plague</li> <li>• Rubella</li> <li>• Rubella, congenital syndrome</li> <li>• Rubeola (Measles)</li> <li>• SARS coronavirus infection</li> <li>• Smallpox</li> <li>• Tularemia</li> <li>• Viral hemorrhagic fevers<sup>2</sup></li> <li>• Waterborne outbreak</li> </ul>	<ul style="list-style-type: none"> <li>• Animal bites</li> <li>• Brucellosis</li> <li>• Cholera</li> <li>• Dengue fever</li> <li>• Diphtheria</li> <li>• <i>Hemophilus influenzae</i>, invasive disease<sup>3</sup></li> <li>• Hemolytic Uremic Syndrome, postdiarrheal</li> <li>• Hepatitis A, acute<sup>4</sup></li> <li>• Hepatitis B, acute, chronic or perinatal<sup>4</sup></li> <li>• Hepatitis D<sup>4</sup></li> <li>• Meningococcal disease, invasive</li> <li>• Mumps, acute infection</li> <li>• Pertussis (whooping cough)</li> <li>• Poliomyelitis</li> <li>• Q-fever (<i>Coxiella burnetii</i>)</li> <li>• Rabies; human or animal</li> <li>• Shiga toxin-producing <i>Escherichia coli</i> (STEC)<sup>5</sup></li> <li>• <i>Staphylococcus aureus</i> with glycopeptide-intermediate (GISA/VISA) or glycopeptide-resistant (GRSA/VRSA) susceptibilities<sup>3</sup></li> <li>• Tuberculosis; all forms<sup>3</sup></li> <li>• Typhoid fever (<i>Salmonella typhi</i>)</li> <li>• Yellow fever</li> <li>• Any other unusual condition or emerging infectious disease</li> </ul>	<ul style="list-style-type: none"> <li>• Campylobacteriosis</li> <li>• Cryptosporidiosis</li> <li>• Cyclospora</li> <li>• Giardiasis</li> <li>• Listeriosis</li> <li>• Salmonellosis (except Typhoid fever)<sup>3</sup></li> <li>• Shigellosis<sup>3</sup></li> <li>• Trichinosis</li> <li>• Vibriosis</li> </ul>	<ul style="list-style-type: none"> <li>• Anaplasmosis</li> <li>• Arboviral infection</li> <li>• Babesiosis</li> <li>• Chickenpox (numerical totals only)</li> <li>• Ehrlichiosis</li> <li>• Hantavirus pulmonary syndrome</li> <li>• Influenza-like illness (numerical totals only)</li> <li>• Influenza-related death in an individual less than 18 years of age</li> <li>• Legionellosis</li> <li>• Leptospirosis</li> <li>• Lyme disease</li> <li>• Malaria</li> <li>• Psittacosis</li> <li>• Rocky Mountain spotted fever</li> <li>• Streptococcal disease, invasive Group B</li> <li>• Streptococcal toxic shock syndrome</li> <li>• <i>Streptococcus pneumoniae</i>, invasive<sup>3</sup></li> <li>• Tetanus</li> <li>• Toxic Shock Syndrome</li> <li>• Tuberculosis, latent infection<sup>6</sup></li> </ul>	<ul style="list-style-type: none"> <li>• AIDS</li> <li>• Chancroid</li> <li>• Chlamydia</li> <li>• Gonococcal conjunctivitis of the newborn (within 24 hours)</li> <li>• Gonococcal disease, drug resistant (within 24 hours)</li> <li>• Gonococcal disease, all other</li> <li>• Hepatitis C, acute<sup>4</sup></li> <li>• HIV</li> <li>• Pelvic inflammatory disease</li> <li>• Syphilis (late)</li> <li>• Syphilis, primary, secondary or early latent (less than 1 year duration) or congenital (within 24 hours)</li> </ul>
<p><sup>1</sup>In any setting <sup>2</sup>Including filoviruses such as Ebola and Marburg and arenaviruses such as Lassa fever</p>	<p><sup>3</sup>Including results of susceptibility testing <sup>4</sup>Including results of hepatitis A and B serologies, transaminase levels and bilirubin</p>	<p><sup>5</sup>Including but not limited to <i>E coli</i> O157:H7 <sup>6</sup>(limited to persons with a positive Mantoux tuberculin skin test conversion in the last two years or any positive Mantoux tuberculin skin test in a child less than 5 years of age)</p>		
<p>Report name, address, telephone number, date of birth, sex, race, ethnicity and the physician's name, office address, office phone and fax numbers, using the appropriate disease reporting form in the West Virginia Reportable Disease Protocol Manual: <a href="http://www.dide.wv.gov">www.dide.wv.gov</a></p>			<p>West Virginia Department of Health &amp; Human Resources Bureau for Public Health 350 Capitol Street, Room 125 Charleston, WV 25301 Phone: 304.558.5358, ext 1 In WV: 800.423.1271, ext 1 Fax: 304.558.8736</p>	

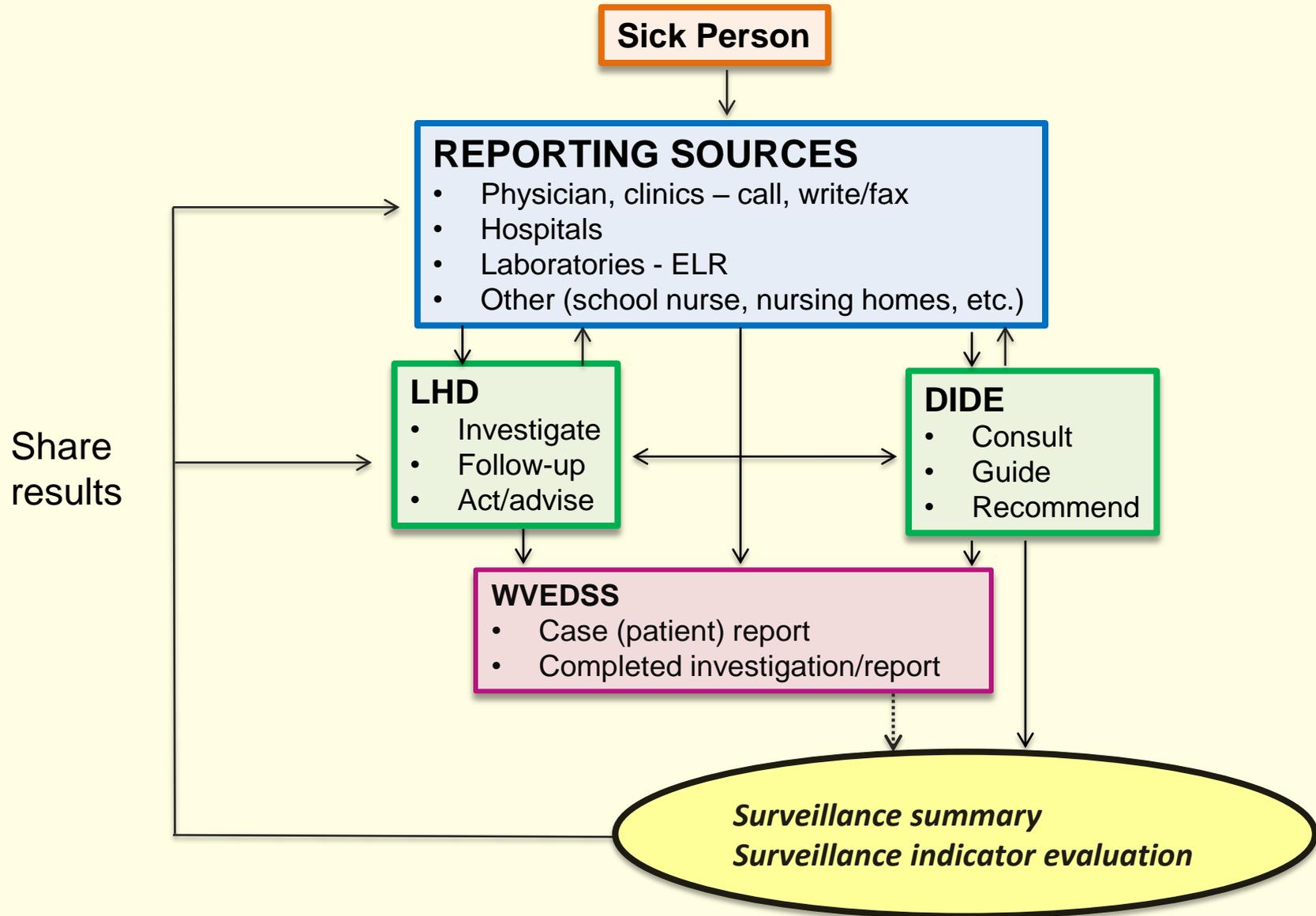
<http://www.dhhr.wv.gov/oeps/disease/Reporting/Pages/default.aspx>

# Disease Reporting - Methods

Healthcare Providers (HCPs) report:

- By telephone call to local health department (LHD) followed by written report
  - Category I (immediately notify)
  - Category II (notify within 24 hours)
- To LHD
  - Category III (within 72 hours)
  - Category IV (within 1 week)
- To state health department, e.g. DIDE
  - Category V (within 1 week)

# Pathway of Surveillance and Feedback



# Disease Reporting - Methods

- ELR
- WVEDSS

Home | Data Entry | **Open Investigations** | Reports | System Management

Release 4.4.1.4 Dashboard

### Patient Search

Search by:  Demographics  Event

Last Name:

First Name:

DOB:  

Current Sex:  

Patient ID(s):

*(Separate IDs by commas, semicolons, or spaces)*

### My Queues

- [Approval Queue for Initial Notifications \(139\)](#)
- [Updated Notifications Queue \(0\)](#)
- [Rejected Notifications Queue \(0\)](#)
- [Documents Requiring Security Assignment \(0\)](#)
- [Documents Requiring Review \(99\)](#)

### Cases created - Last 7 Days

Case ID	Case Name	Created Date
70		
65		

## 1. Disease Protocol Manual

- Provider, laboratory, public health responsibilities
- Disease and agent information
- Prevention and treatment

[WVDHHR > Office of Epidemiology and Prevention Services > Infectious Disease Epidemiology > Invasive Bacterial and Vaccine Preventable Diseases > Vaccine Preventable Diseases > Rubeola \(Measles\)](#)

### **Rubeola (Measles)**

#### **Reporting Guidelines**

- [Suspect or confirmed cases immediately to local health department by phone and follow up with written report](#)

#### **Protocol**

- [Measles Protocol](#)
- [CDC Surveillance Manual for Measles](#)

#### **Current Case Definition**

- [CDC Case Definition](#)

#### **Required Forms**

## 2. Website – [www.dide.wv.gov](http://www.dide.wv.gov)

WVDHHR > Office of Epidemiology and Prevention Services > Infectious Disease Epidemiology > Surveillance Data

**A to Z List of Diseases**

- Resources For Reporting Diseases
- Food and Water-borne Diseases
- Healthcare Associated Infections
- Influenza
- Invasive Bacterial and Vaccine Preventable Diseases
- Outbreaks
- Zoonotic Diseases
- WVEDSS
- WV Law Related To Reporting and Confidentiality
- WV Reportable Disease Manual
- Surveillance Data**
- 2014 Surveillance Evaluation
- Training Resources

# SURVEILLANCE DATA

Public health surveillance is the systematic collection, consolidation and use of epidemiologic information to monitor health problems to facilitate disease prevention or control.

In West Virginia, the Reportable Disease Rule (64CSR-7) mandates which diseases and conditions must be reported to public health authorities. It also defines the responsibilities of different individuals and facilities in disease control and prevention.

Surveillance data, findings, and results of the evaluation (of surveillance data) are valuable in setting priorities, program planning and implementation, and assessing program effectiveness.

**1** →

**2** →

**3** →

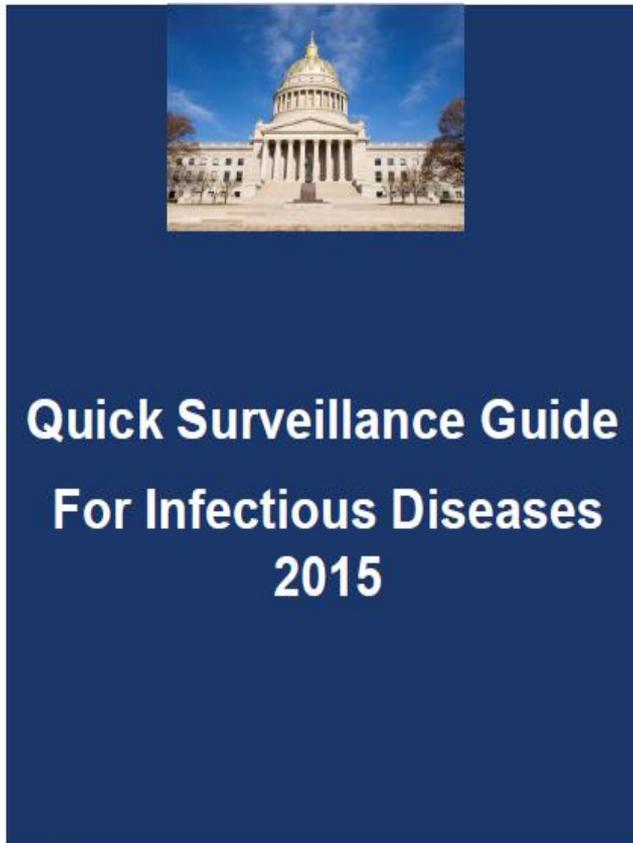
**WEEKLY REPORT**   **ANNUAL REPORT**   **EVALUATION**   **RESOURCES**

**Surveillance Data Evaluation**

- Quick Surveillance Guide** → A essential info only document to help handle an investigation of a given condition.
- 2014 Results** → Results of evaluation for timeliness and completeness of surveillance data from 2014.

**Surveillance Data Evaluations (Previous Years)**

## 3. Quick Surveillance Guide



### Table of Contents

<a href="#">It's Your Call – Getting in Contact with Patients</a>	4
<a href="#">It's Your Call – Getting Clinical Information</a>	5
<a href="#">At Your Fingertips – Resources for Disease Reporting and Investigation</a>	6-7
<a href="#">Food and Water-Borne Diseases</a>	8-20
<a href="#">Hepatitis B and C</a>	21-24
<a href="#">Vaccine Preventable Diseases</a>	25-31
<a href="#">Invasive Bacterial Disease</a>	32-33
<a href="#">Zoonotic Diseases</a>	34-45

# Disease Surveillance Data

WDHHR > Office of Epidemiology and Prevention Services > Infectious Disease Epidemiology > Surveillance Data

## SURVEILLANCE DATA

Public health surveillance is the systematic collection, consolidation and use of epidemiologic information to monitor health problems to facilitate disease prevention or control.

In West Virginia, the Reportable Disease Rule (64CSR-7) mandates which diseases and conditions must be reported to public health authorities. It also defines the responsibilities of different individuals and facilities in disease control and prevention.

Surveillance data, findings, and results of the evaluation (of surveillance data) are valuable in setting priorities, program planning and implementation, and assessment of program effectiveness.

<b>WEEKLY REPORT</b>	<b>ANNUAL REPORT</b>	<b>EVALUATION</b>	<b>RESOURCES</b>
----------------------	----------------------	-------------------	------------------

### West Virginia Provisional Weekly Infectious Disease Surveillance Report\* As of Week Ending September 26, 2015

	Last Week	2015 YTD Total	2014 Comparable YTD Period	2014 Total for Year
<b>Beginning Date</b>	9/20/2015	1/4/2015	12/28/2013	12/28/2013
<b>Ending Date</b>	9/26/2015	9/26/2015	9/20/2014	1/3/2015
Reportable Condition				
Anaplasmosis				3
Anthrax				
Babesiosis				
Botulism				
Brucellosis			3	3
Campylobacteriosis		199	194	270

#### A to Z List of Diseases

#### Resources For Reporting Diseases

#### Food and Water-borne Diseases

#### Healthcare Associated Infections

#### Influenza

#### Invasive Bacterial and Vaccine Preventable Diseases

#### Outbreaks

#### Zoonotic Diseases

#### WVEDSS

#### WV Law Related To Reporting and Confidentiality

#### WV Reportable Disease Manual

#### Surveillance Data

#### 2014 Surveillance Evaluation

#### Training Resources

#### All News and Announcements

#### Emergency Contact and Other Information

Contact Us (24/7/365)  
Phone: (304) 558-5358  
Full Fax: (800) 422-1274 in WV



# Disease Surveillance Data

WDHHR > Office of Epidemiology and Prevention Services > Infectious Disease Epidemiology > Surveillance Data

## A to Z List of Diseases

Resources For Reporting Diseases

Food and Water-borne Diseases

Healthcare Associated Infections

Influenza

Invasive Bacterial and Vaccine Preventable Diseases

Outbreaks

Zoonotic Diseases

WVEDSS

WV Law Related To Reporting and Confidentiality

WV Reportable Disease Manual

Surveillance Data

2014 Surveillance Evaluation

Training Resources

All News and Announcements

Emergency Contact and Other Information

Contact Us (24/7/365)  
Phone: (304) 558-5358  
Toll Free: (800) 423-1271 in WV

## SURVEILLANCE DATA

Public health surveillance is the systematic collection, consolidation and use of epidemiologic information to monitor health problems to facilitate disease prevention or control.

In West Virginia, the Reportable Disease Rule (64CSR-7) mandates which diseases and conditions must be reported to public health authorities. It also defines the responsibilities of different individuals and facilities in disease control and prevention.

Surveillance data, findings, and results of the evaluation (of surveillance data) are valuable in setting priorities, program planning, implementation, and assessment of program effectiveness.



### Annual Reports

NOTE: Surveillance data is subject to change as additional information becomes available.

2014 Infectious Disease Report	Counts of 2014 WV cases per condition and broken down by county, race, etc.
7 Year Case Report by Year of Onset (2007-2013)	Counts of WV cases per condition and broken down by county, race, etc. for the years from 2007 to 2013
2013 Infectious Disease Report	Counts of 2013 WV cases per condition and broken down by county, race, etc.
2012 Infectious Disease Report	Counts of 2012 WV cases per condition and broken down by county, race, etc.
2011 Infectious Disease Report	Counts of 2011 WV cases per condition and broken down by county, race, etc.
ANNUAL REPORTS ARCHIVED	Individual reports for years prior to 2011.

1



2



3



# Disease Surveillance Data

## 2014 Annual Report

Condition	Barbour	Berkeley	Boone	Braxton	Brooke	Cabell	Calhoun	Clay
Anaplasmosis		1	1					
Animal bites	Not available							
Arboviral infection	See <a href="http://www.dhhr.wv.gov/oeps/disease/zoonosis/">www.dhhr.wv.gov/oeps/disease/zoonosis/</a>							
Brucellosis								
Campylobacteriosis	1	30	5		2	4		1
Chickenpox	1	2			4	19		1
Cryptosporidiosis		1						
Dengue Fever								
Ehrlichiosis, chaffeensis								
Foodborne outbreak**								
Giardiasis	1	3	1	1		1	1	
Group B Streptococcus, invasive		8	3		3	7		
<i>Haemophilus influenzae</i> , invasive		5	1	1	1	4		
Hepatitis A, acute			1					
Hepatitis B, acute	1	11	3	2	1	10		
Hepatitis B, chronic		19	11	3	4	14		
Hepatitis C, acute		1			1	1		2
Hepatitis C, chronic or resolved (Prevalence)	82	268	83	79	47	618	10	38

# Disease Surveillance Indicator

Surveillance indicators are surveillance information that....**measures adequacy of case investigations, timeliness of notification, timeliness of response, etc.**

(CDC)

2014 Infectious Disease Surveillance  
Data Evaluation

## COMPLETENESS AND TIMELINESS

Division of Infectious Disease Epidemiology  
Revised July 16, 2015

### Objectives:

- Improve data quality
- Data feedback
- Identify areas for improvement
- Comply with funding requirements

# Disease Surveillance Indicator - Methods

Notifiable Infectious Disease	Completeness of Disease Data	Timeliness of Disease Report	Timeliness of Public Health Action
<b>VACCINE-PREVENTABLE DISEASES</b>			
Invasive Hemophilus influenza disease	YES	YES	N/A
Measles	YES	YES	Yes
Invasive pneumococcal infection	YES	YES	N/A
Pertussis	YES	YES	Yes
Invasive meningococcal disease	YES	YES	Yes
Mumps	YES	YES	Yes
<b>VIRAL HEPATITIS</b>			
Hepatitis B, Acute	YES	YES	Yes
Hepatitis C, Acute	YES	YES	N/A
<b>FOOD and WATERBORNE DISEASES</b>			
Botulism	YES	YES	Yes
Hepatitis A	YES	YES	Yes
STEC	YES	YES	Yes
Campylobacteriosis	YES	YES	N/A
Giardiasis	YES	YES	N/A
Salmonellosis	YES	YES	N/A
Shigellosis	YES	YES	N/A
<b>ZOONOTIC DISEASES</b>			
Lyme Disease	YES	N/A	N/A
LaCrosse Encephalitis	YES	N/A	N/A
Tularemia	YES	YES	Yes

## EVALUATE COMPLETENESS OF DEMOGRAPHIC INFORMATION

- Age
- Date of birth
- Gender
- Ethnicity
- Race
- First name
- Last name
- Address
- City
- County
- State
- Zip code

## EVALUATE TIMELINESS

- **Reporting to WVEDSS (*Time to Report*)**
  - Measures timeliness of notification to WVEDSS regardless of case status
  - *Date of Laboratory Report* or *Date of Diagnosis to PHC Add Time* (date entered in WVEDSS)
  - Data used: All Investigations (includes Not a Case records)
  - Benchmark: by disease category per WV reportable disease rule
- **Reporting to CDC (*Time to Close/Completion*)**
  - Measures timeliness of completion of case report
  - *PHC Add Time to 1<sup>st</sup> Notification Sent Date* (date report submitted to CDC)
  - Data used: All Investigations except La Crosse and Lyme Disease
  - Benchmark: 30 days
- **Public Health Action (PHA) Time**
  - Measures timeliness of public health response to a case following notification
  - *PHC Add Time to Date of Public Health Action*
  - Data used: All Cases requiring Public Health Action
  - Benchmark: disease-specific per protocol

**A TIMELY investigation/report/action must have a date reported in the field with a timeframe that is equal to or less than the benchmark.**

# Disease-specific Indicators

## VACCINE-PREVENTABLE DISEASES

### Invasive *Hemophilus influenzae* disease

1. Proportion of *H. influenzae* cases reported with complete information (clinical, demographic, vaccine history, and serotype testing).
2. Proportion of Hib cases among children younger than 5 years of age with complete vaccination history.
3. Proportion of *H. influenzae* cases among children younger than 5 years of age with serotyped isolate.
4. Proportion of cases reported to public health within the required timeframe.

### Measles

1. Proportion of confirmed cases reported with complete demographic and clinical information.
2. Proportion of confirmed cases that are laboratory confirmed.
3. Proportion of cases that have an imported source.
4. Proportion of cases for which at least one clinical specimen is available for virus isolation.
5. Proportion of cases reported in a timely manner.
6. Proportion of cases with timely initiation of control measures.

### Invasive pneumococcal infection

1. Proportion of children under 5 years of age who have with:
  - a) Complete vaccination history
  - b) Isolates serotyped
  - c) Isolates tested for antimicrobial resistance

Surveillance indicators are found at:

1. Quick Surveillance Guide
2. Specific disease protocols

## VIRAL HEPATITIS

### Hepatitis B, Acute

1. Proportion of acute cases with complete demographic information.
2. Proportion of acute cases with complete clinical information.
3. Proportion of acute cases with complete risk factor/exposure information.
4. Proportion of acute cases with complete vaccination history.
5. Proportion of acute cases that have received education and the date they were educated.
6. Proportion of acute cases reported to public health within the required timeframe.

### Hepatitis C, Acute

1. Proportion of acute cases of hepatitis C with complete demographic information
2. Proportion of acute cases of hepatitis C with complete information on risk factors
3. Proportion of acute cases of hepatitis C who have been educated.

## FOOD and WATERBORNE (ENTERIC) DISEASES

### Botulism

1. Proportion of cases with complete demographic information.
2. Proportion of cases with complete clinical severity information (hospitalization and death).
3. Proportion of cases with treatment information (administration of antitoxin).

# Disease-specific Indicators – 2014 Results

Found at <http://www.dhhr.wv.gov/oeps/disease/Surveillance/Pages/Data-Feedback.aspx>

## SURVEILLANCE INDICATOR EVALUATION-COMPLETENESS OF CASES REPORTED 2014

	Salmonellosis			
	Number of Cases	Complete Risk Factor Investigation	Hospitalization	Death
<b>STATEWIDE</b>	<b>180</b>	<b>71%</b>	<b>98%</b>	<b>97%</b>
<b>CENTRAL REGION</b>	<b>29</b>	<b>83%</b>	<b>97%</b>	<b>97%</b>
Braxton	2	100%	100%	100%
Kanawha	14	100%	100%	100%
Lewis	1	0%	100%	100%
Putnam	8	75%	100%	100%
Upshur	3	100%	100%	100%
Webster	1	100%	100%	100%

## Percentage of Acute Confirmed Hepatitis B Cases with Complete Information — WV, 2014 By Region (Percent represents the proportion of cases with a complete (yes or no) answer)

Indicator	West Virginia	Southern	Western	Eastern	Northeastern	Northwestern	Central
<b>Total Cases</b>	186	50	35	15	10	15	61
<b>Demographic</b>							
County	100%	100%	100%	100%	100%	100%	100%
Age	100%	100%	100%	100%	100%	100%	100%
Gender	100%	100%	100%	100%	100%	100%	100%
Ethnicity	82%	84%	91%	80%	50%	73%	82%
Race	92%	98%	94%	100%	60%	87%	90%
<b>Clinical</b>							
Symptomatic (yes)	100%	100%	100%	100%	100%	100%	100%
Jaundice	100%	100%	100%	100%	100%	100%	100%
Was the patient a contact of a person with confirmed or suspected acute or chronic HBV infection?	94%	100%	86%	87%	90%	80%	98%

# LHD Program Plan

Activity	Indicator	Target
Investigate and respond to reports of reportable infectious disease conditions according to the Reportable Disease Rule (WV 64 CSR-7) and disease protocol manual	Proportion of disease investigations that were lost to follow-up	TBD
	Proportion of disease cases reported to WVEDSS from January 1 to December 31 of the previous year with complete demographic data	100%
	Proportion of disease cases reported to WVEDSS from January 1 to December 31 of the previous year with complete risk factor data for viral hepatitis, food and waterborne diseases, and vaccine-preventable diseases	TBD
	Proportion of disease cases reported to WVEDSS from January 1 to December 31 of the previous year with complete vaccine information for vaccine preventable diseases including hepatitis B	100%
Submit reports in WVEDSS	Proportion of disease investigations submitted to CDC within 30 days of report	TBD
Educate community partners to recognize and report outbreaks and share the reportable disease rule	Number of outbreaks reported from January 1 to December 31 of the previous year	TBD
LHD reporting outbreaks to DIDE within 60 minutes	Proportion of outbreaks reported within 1 hour of notification from January 1 to December 31 of the previous year	90%
LHDs investigate outbreaks and prepare a written report at the outbreak completion	Proportion of outbreaks with an outbreak report from January 1 to December 31 of the previous year	90%
Educate staff and partners on the importance of lab testing and the timely collection of appropriate specimen	Proportion of the following outbreak types with clinical laboratory testing from January 1 to December 31 of the previous year: a. Respiratory b. Foodborne	a. 90% b. 100%
LHD recruit and maintain actively reporting influenza sentinel provider.	Percent of time an Influenza Sentinel Provider reports to the ILINet during the influenza surveillance period October (previous year) through May (current year).	50%

# Results of LHD Program Plan Evaluation

## Evaluation of 2014 Surveillance Data Indicators in WVEDSS

County	Region	#Lost to follow-up		Demographic information complete		Risk factor information complete		**Vaccine information complete		Reporting to CDC		Outbreak (OB) Reporting			OB with Resp test		OB with FB test		ILI SP report, target=50%
		count	%	total #	% complete	count	%	count	%	total # cases	% timely reported (reported within 30 days)	total #	% reporting within 1 hour of notification	% with report completed	count	%	count	%	
Barbour	NE	0	0%	4	100%	3	75%	1	100%	4	50%	0	0%	0					100%
Berkeley	E	15	19%	133	66%	69	77%	28	80%	107	72%	2	0%	100	1/1	100%			94%
Boone	W	3	14%	20	85%	14	70%	8	89%	31	42%	1	100%	100	1/1	100%			97%
Braxton	C	0	0%	7	43%	4	67%	1	33%	7	14%	0	0%	0					0%
Brooke	NW	1	17%	9	78%	8	89%	4	100%	10	70%	3	100%	100	1/1	100%			97%
Cabell	W	15	31%	45	89%	36	84%	25	76%	74	15%	4	75%	100	2/2	100%			100%
Calhoun	NW	0	0%	3	67%	3	100%	2	100%	3	67%	1	100%	100	1/1	100%			106%
Clay	NW	2	29%	6	50%	3	60%	0	0%	7	86%	1	100%	100					61%
Doddridge	NE	1	17%	6	50%	4	100%	3	100%	9	56%	0	0%	0					0%
Fayette	S	1	4%	23	91%	13	57%	9	90%	31	16%	3	67%	67	0/1	0%			0%
Gilmer	NW	0	0%	4	50%	4	100%	1	100%	5	20%	1	0%	100					0%
Grant	E	1	13%	8	100%	8	100%	1	100%	10	100%	2	100%	100	1/1	100%			91%
Greenbrier	S	1	5%	17	88%	15	94%	2	50%	27	37%	10	90%	100	9/10	90%			100%

Found at:

<http://www.dhhr.wv.gov/oeps/disease/Surveillance/documents/evaluation/Surveillance-Indicators-2014.pdf>

# Outbreak Investigation for Local Health Administrators



# Legal Basis for Outbreak Investigation

**64CSR7-7.1 Outbreaks are immediately reportable regardless of setting**

**64CSR7-7.2 ...Local Health Officer ... shall notify the Bureau immediately ...**

**64CSR7-7.3 ... Local Health Officer shall collaborate in investigation of the outbreak or cluster ...**

**64CSR7-7.4 (outlines the process for outbreak investigation)**

**64CSR7-7.5 (epidemiological studies)**

**64CSR7-7.6 (laboratory studies)**

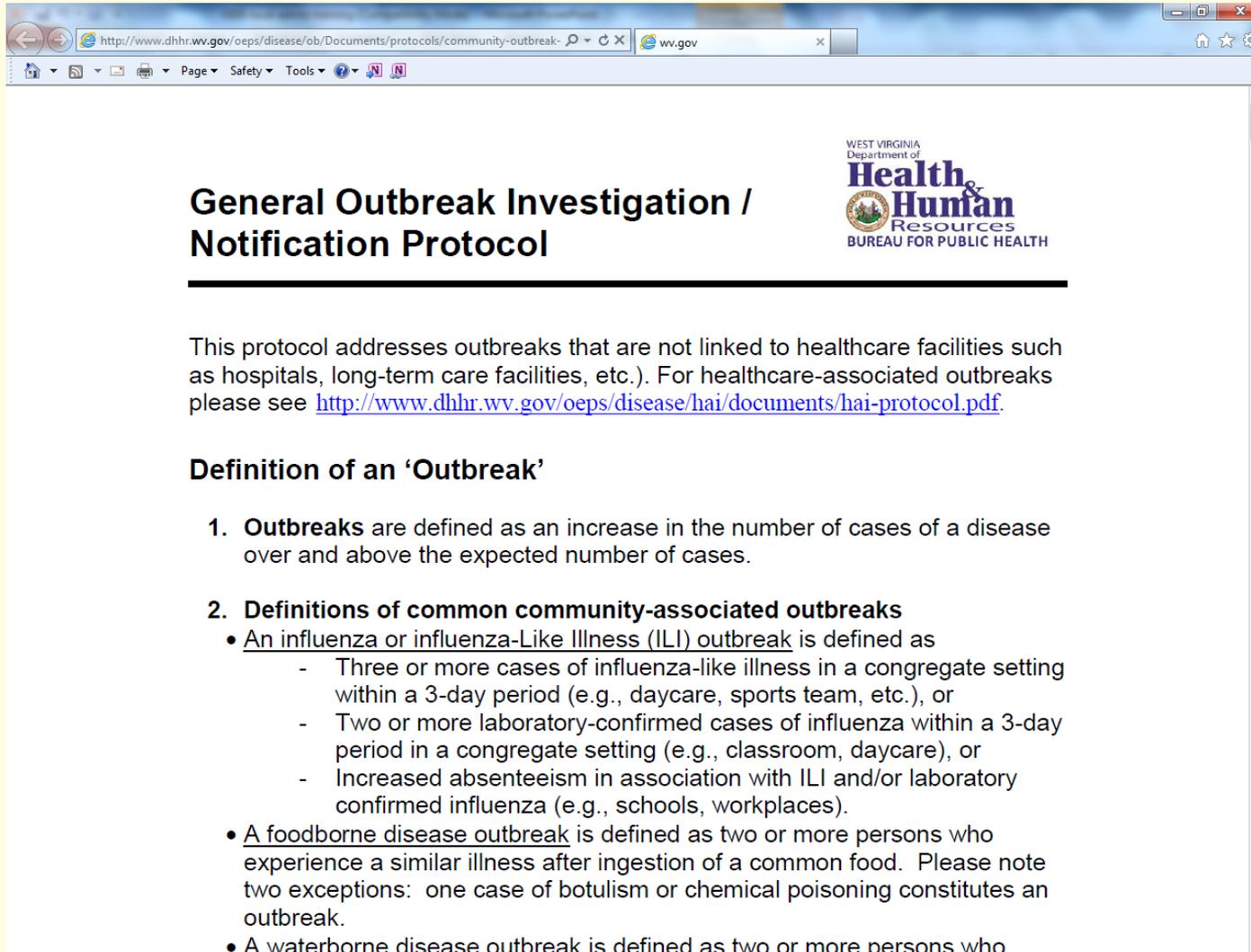
**64CSR7-7.7 (confidentiality protections for individuals, facilities, restaurants, etc.)**

**64CSR7-7.8 (complaint to OHFLAC or licensing board IF ongoing risk to public health AND failure to take corrective action)**

**64CSR7-7.9 (patient notification of potential bloodborne pathogen exposure)**

# Outbreak Protocol

<http://www.dhhr.wv.gov/oeps/disease/ob/Documents/protocols/community-outbreak-protocol.pdf>



**General Outbreak Investigation / Notification Protocol**

WEST VIRGINIA  
Department of  
**Health &  
Human  
Resources**  
BUREAU FOR PUBLIC HEALTH

This protocol addresses outbreaks that are not linked to healthcare facilities such as hospitals, long-term care facilities, etc.). For healthcare-associated outbreaks please see <http://www.dhhr.wv.gov/oeps/disease/hai/documents/hai-protocol.pdf>.

**Definition of an 'Outbreak'**

- 1. Outbreaks** are defined as an increase in the number of cases of a disease over and above the expected number of cases.
- 2. Definitions of common community-associated outbreaks**
  - An influenza or influenza-Like Illness (ILI) outbreak is defined as
    - Three or more cases of influenza-like illness in a congregate setting within a 3-day period (e.g., daycare, sports team, etc.), or
    - Two or more laboratory-confirmed cases of influenza within a 3-day period in a congregate setting (e.g., classroom, daycare), or
    - Increased absenteeism in association with ILI and/or laboratory confirmed influenza (e.g., schools, workplaces).
  - A foodborne disease outbreak is defined as two or more persons who experience a similar illness after ingestion of a common food. Please note two exceptions: one case of botulism or chemical poisoning constitutes an outbreak.
  - A waterborne disease outbreak is defined as two or more persons who

# Outbreak Toolkits

<http://www.dhhr.wv.gov/oeps/disease/ob/Pages/OutbreakToolkits.aspx>

WVDHHR > Office of Epidemiology and Prevention Services > Infectious Disease Epidemiology > Outbreaks > Outbreak Toolkits

**Outbreak Toolkits**

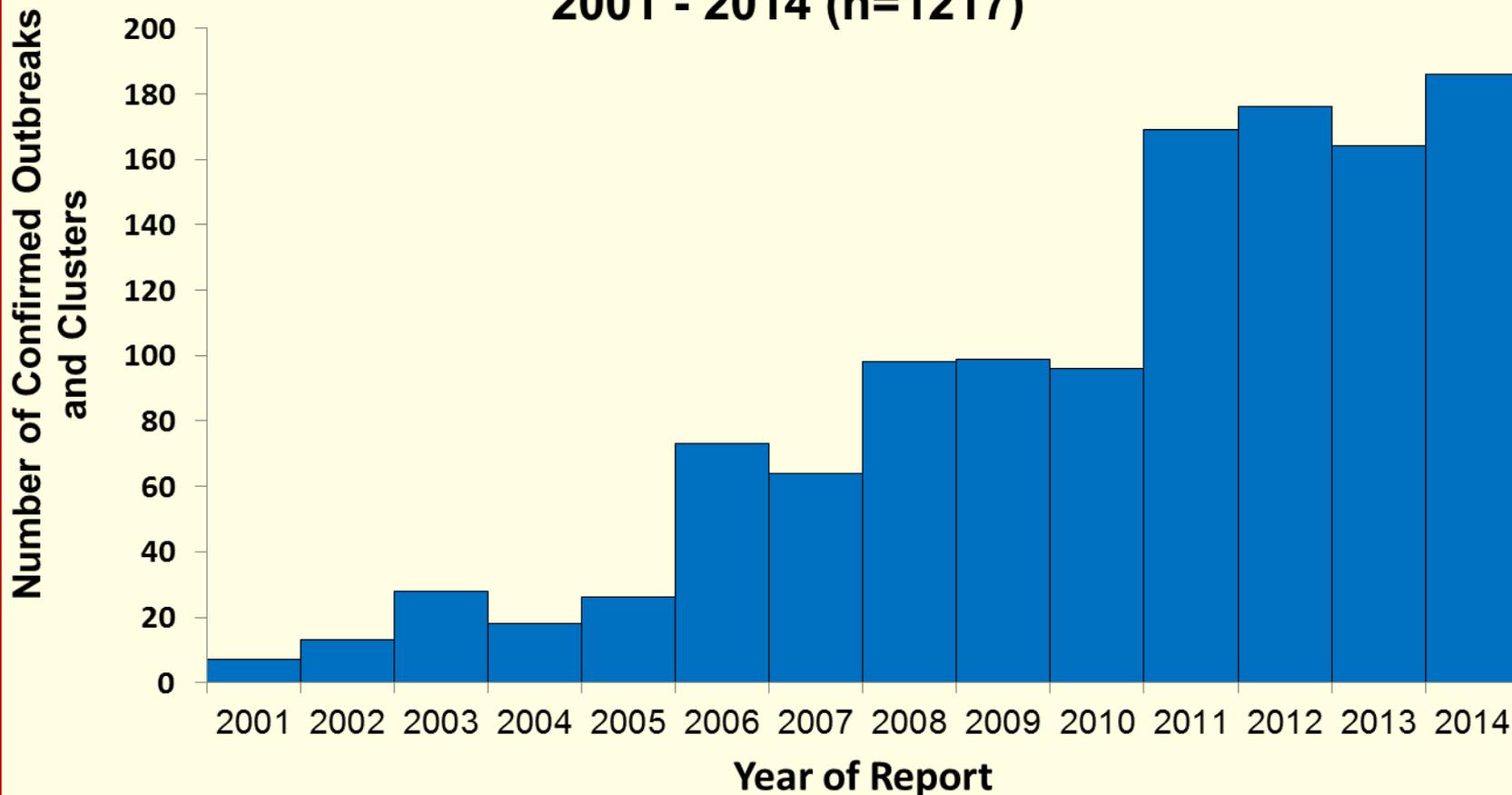
- Acute Respiratory Illness Outbreaks in Long-Term Care Facilities
- Clostridium difficile* Infections
- Foodborne and Waterborne Diseases
- Hand, Foot, and Mouth Disease Outbreaks
- Influenza
- Multi-drug Resistant Organisms (MDROs) Outbreaks in Long-term Care Facilities
- Meningitis
- Methicillin Resistant Staphylococcus Aureus (MRSA)
- Norovirus
- Observational
- Pertussis (Whooping Cough)
- Scabies
- Skin Infections in Sports Teams
- Streptococcus* Pharyngitis Line List - **PDF Version**
- Varicella (Chickenpox)

**Outbreak Report Forms**

Outbreak Toolkits

# Outbreak Data

**Confirmed Outbreaks or Clusters, West Virginia,  
2001 - 2014 (n=1217)**



# Outbreak Data (2)

<b>Outbreak Type</b>	<b>Number of Outbreaks n=186</b>	<b>Percent</b>
<b>Enteric</b>	71	38
<b>Respiratory</b>	65	35
<b>Rash</b>	39	21
<b>MDROs</b>	9	5
<b>Other</b>	2	1

<http://www.dhhr.wv.gov/oeps/disease/ob/Pages/default.aspx>

# Outbreak Performance Measures

http://www.dhhr.wv.gov/oeps/disease/Surveillance/documents/evaluation/Surveillance-Indicators-2014.pdf

ww.gov ww.gov 2014 Surveillance... ww.gov

Page Safety Tools

### Evaluation of 2014 Surveillance Data Indicators in WV EDS

County	Region	*Lost to follow-up		Demographic information complete		Risk factor information complete		**Vaccine information complete		Reporting to CDC		Outbreak (OB) Reporting			OB with Resp test		OB with FB test		ILI SP report, target=50%
		count	%	total #	% complete	count	%	count	%	total # cases	% timely (reported within 30 days)	total #	% reporting within 1 hour of notification	% with report completed	count	%	count	%	% reporting by Sentinel Provider
Barbour	NE	0	0%	4	100%	3	75%	1	100%	4	50%	0	0%	0				100%	
Berkeley	E	15	19%	133	66%	69	77%	28	80%	107	72%	2	0%	100	1/1	100%		94%	
Boone	W	3	14%	20	85%	14	70%	8	89%	31	42%	1	100%	100	1/1	100%		97%	
Braxton	C	0	0%	7	43%	4	67%	1	33%	7	14%	0	0%	0				0%	
Brooke	NW	1	17%	9	78%	8	89%	4	100%	10	70%	3	100%	100	1/1	100%		97%	
Cabell	W	15	31%	45	89%	36	84%	25	76%	74	15%	4	75%	100	2/2	100%		100%	
Calhoun	NW	0	0%	3	67%	3	100%	2	100%	3	67%	1	100%	100	1/1	100%		106%	
Clay	NW	2	29%	6	50%	3	60%	0	0%	7	86%	1	100%	100				61%	
Doddridge	NE	1	17%	6	50%	4	100%	3	100%	9	56%	0	0%	0				0%	
Fayette	S	1	4%	23	91%	13	57%	9	90%	31	16%	3	67%	67	0/1	0%		0%	
Gilmer	NW	0	0%	4	50%	4	100%	1	100%	5	20%	1	0%	100				0%	
Grant	E	1	13%	8	100%	8	100%	1	100%	10	100%	2	100%	100	1/1	100%		91%	
Greenbrier	S	1	5%	17	88%	15	94%	2	50%	27	37%	10	90%	100	9/10	90%		100%	
Hampshire	E	3	21%	46	67%	14	78%	3	50%	21	95%	3	33%	100	1/1	100%		100%	
Hancock	NW	5	29%	20	55%	15	83%	6	100%	23	87%	2	50%	100	1/1	100%		42%	
Hardy	E	3	25%	19	89%	13	76%	3	60%	18	89%	3	67%	100	1/1	100%		0%	
Harrison	NE	4	21%	34	88%	25	78%	12	80%	36	83%	2	100%	100				0%	
Jackson	W	1	8%	14	93%	11	79%	2	50%	16	31%	4	50%	100	1/1	100%	1/2	50%	100%
Jefferson	E	7	30%	64	70%	16	64%	8	67%	33	30%	3	67%	100	1/1	100%		73%	
Kanawha	C	7	5%	149	87%	134	96%	87	94%	211	81%	35	100%	97	15/15	100%		6%	
Lewis	C	0	0%	5	0%	3	60%	1	33%	6	17%	0	0%	0				0%	
Lincoln	W	13	62%	18	89%	13	76%	7	78%	28	36%	2	50%	50				91%	
Logan	W	6	13%	39	100%	34	87%	13	93%	56	71%	1	0%	100				94%	
Marion	NE	2	20%	16	63%	13	81%	6	75%	16	63%	5	80%	100				100%	
Marshall	NW	1	13%	15	73%	9	69%	4	67%	17	0%	2	100%	100				0%	
Mason	W	2	13%	13	77%	11	85%	7	78%	24	50%	0		0				58%	

<http://www.dhhr.wv.gov/oeps/disease/Surveillance/documents/evaluation/Surveillance-Indicators-2014.pdf>

# Conclusions and Recommendations



# Staffing and Funding

- 1. Staff primary responsibility and backup**
  - a. Disease investigation
  - b. Outbreak team
  - c. Outreach and communication with reporting sources
  - d. 24/7/365 on-call
  
- 2. Call for reinforcements**
  - a. Regional epidemiologist
  - b. DIDE: (800) 423-1271, extension 1  
(answering service: (304) 925-9946)

# Regional Epidemiologists

## Surveillance Regions and Current Coverage by Regional Epidemiologists

### NORTHWESTERN REGION

#### Frances Nicholson

Mid-Ohio Valley Health Dept.  
211 6th St.  
Parkersburg, WV 26101  
Phone: 304.485.7374 Ext.177  
Fax: 304.485.7499  
E-mail: Frances.M.Nicholson@wv.gov

### WESTERN REGION

#### Debra Ellison

Cabell-Huntington Health Dept.  
703 7th Avenue  
Huntington, WV 25701  
Phone: 304.523.6483  
Work Mobile 304.972.3033  
Fax: 304.523.6403  
E-mail: Debra.C.Ellison@wv.gov

### CENTRAL REGION

#### Lindsey Mason

Kanawha-Charleston Health Dept.  
108 Lee Street  
Charleston, WV 25323  
Phone: 304.348.1088  
Mobile: 724.570.1064  
Fax: 304.348.8149  
E-mail: Lindsey.J.Mason@wv.gov



### NORTHEASTERN REGION

#### Bob White

Monongalia Co. Health Dept.  
453 Van Voorhis Road  
Morgantown, WV 26505  
Phone: 304.598.5100  
Office Phone: 304.598.5132  
Mobile: 304.685.8839  
Fax: 304.598.5122  
E-mail: Bob.W.White@wv.gov

### EASTERN REGION

#### Kimberly Kline

Pendleton Co. Health Dept.  
PO Box 520  
273 Mill Road  
Franklin, WV 26807-0520  
Phone: 304.358.7882  
Mobile: 304.358.8328  
Fax: 304.358.2471  
E-mail: Kimberly.S.Kline@wv.gov

### SOUTHERN REGION

#### Michelle Kirby

Beckley-Raleigh Co. Health Dept.  
1602 Harper Road  
Beckley, WV 25801  
Phone: 304.253-2198  
Mobile: 304.575.9994  
Fax: 304.252.1471  
E-mail: Michelle.D.Kirby@wv.gov

### REGIONAL EPIDEMIOLOGIST LIAISON

#### Sheriff Ibrahim

Division of Infectious Disease Epidemiology  
WVDHHR/BPH/OEPS

350 Capitol St. Room 125  
Charleston, WV 25301-3715  
Office: 304-558-5358 Mobile: 304-553-9165  
Fax: 304-558-8736  
Email: Sherif.M.Ibrahim@wv.gov

Last Updated: August 2015

# Staffing and Funding (2)

## 3. Training and support

- a. Mileage
- b. Training – protected time and expenses
- c. Phone, FAX, email and internet access
- d. Printing expenses

## 4. Laboratory support

- a. Stock unexpired collection kits
  - i. Respiratory virus testing
  - ii. Stool testing
- b. Reserve funding for shipping

# Upcoming Training

- **Public Health Symposium (Office of Epidemiology and Prevention Services)**
  - November 19-20, 2015
  - ‘Best Outbreak’ competition
- **Hepatitis regional training ... 2015-2016**
- **Foodborne outbreak training**
  - Regional, TBD, 2016
- **Lyme disease training, TBD, 2016**
- **VPD training, statewide, TBD, 2016**