WIPAG

WY Infection Prevention Orientation Manual

Section #6, Outbreak Management

Clay Van Houten, MS
October 2014

Table of Contents

Section #6: Outbreak Management

Clay Van Houten, MS

Objectives

At the completion of this section the Infection Preventionist (IP) will demonstrate a basic knowledge of outbreak management by completing the exercises associated with the case study provided, and specifically to be able to:

- define an outbreak
- identify ways in which an outbreak might be identified
- explain how to confirm the existence of an outbreak
- identify the purpose of a case definition and how to find/create a case definition
- identify strategies for finding additional cases
- identify stakeholders who will need information and the type of information they need
- outline the steps in outbreak investigation and management, illustrating each step with an example
- outline the key points to include in an outbreak report

Number of hours

- Key Concepts - 1 hour
- Methods – 2 hours

Required Readings:

- Mayhall CG, ed. Hospital Epidemiology and Infection Control (4th Edition). Philadelphia, PA: Lippincott Williams & Wilkins, a Wolters Kluwer Business; 2011.
    - Chapter 8, Investigation of Outbreaks, by WR Jarvis
    - Chapter 9, Pseudoinfections and Pseudo-Outbreaks, by CB Cunha and BA Cunha
- Wyoming Infection Prevention Orientation Manual Sections #10 Microbiology, #11 Laboratory and #7 Standard & Transmission-Based Precautions.
- Grota P, Allen V, Boston KM, et al, eds. *APIC Text of Infection Control & Epidemiology. 4th Edition.* Washington, D.C.: Association for Professionals in Infection Control and Epidemiology, Inc.; 2014.
    - Chapter 10, General Principles of Epidemiology, by SM Tweeten
    - Chapter 12, Outbreak Investigations, by EA Campbell

Overview

Outbreaks are defined as an increase over the expected occurrence of an event. A small rise in events may be referred to as a cluster, and both clusters and outbreaks require prompt investigation and management. To identify an outbreak, baseline endemic rates (a rate of a disease that is regularly found among a population) must be available for comparison. This is the reason for conducting surveillance. Any significant increase over baseline endemic rates should result in an investigation. Outbreaks may occur for a number of reasons including: introduction and transmission of an infectious disease within the healthcare site, lapses in infection control practices, contaminated or defective products or devices, and establishment of a reservoir for a pathogen somewhere in the healthcare facility. The reason for conducting a thorough investigation is to find the source of the outbreak and implement both

immediate and long-term control measures. While the source of the outbreak may seem obvious by casual observation, initial assumptions are often wrong. Outbreak investigations will eliminate bias and assumptions and will help identify a source using scientific methods. While outbreaks will continue to occur, many can be prevented or have their impact reduced through intentional, knowledgeable, and rapid management.

Key Concepts

Key Terms

It is important for the IP to understand basic terminology of surveillance and epidemiology and the basic steps of outbreak investigations and management. In this section the IP will be introduced to important terminology and concepts.

Exercise #1: Using the APIC Text of Infection Control and Epidemiology (http://text.apic.org/table-of-contents), define the key terms listed in Table 1.

Table 1. Key terms in outbreak management.

Term	Definition
Outbreak	
Epidemic	
Endemic	
Pandemic	
Cluster	
Sporadic	
Outbreak	
Pseudo-Outbreak	
Line List	
Case Definition	

Term	Definition
Epidemic Curve	
Common Source	
Propagated Outbreak	
Attack Rate	
Reservoir	

Exercise #2: Using the required readings, list three reasons for investigating a presumed outbreak.

1.

2.

3.

Pre-Outbreak Prevention and Preparedness

Organizational leadership is critical in all healthcare settings to ensure effective outbreak prevention and control. Ideally, all facilities should have a designated outbreak prevention and management team which usually consists of or is termed the Infection Prevention and Control Committee (IPCC). For more information on the responsibilities of the IPCC, please see the Wyoming Infection Prevention Orientation Manual Section #4. This group is responsible for ensuring that measures for preventing outbreaks are in place and for directing and overseeing the management of all aspects of any outbreak. IPCC members should have decision making authority for their discipline within the facility or unit. A lead person from this group should be appointed to coordinate meetings at least once daily during an outbreak. A written process for outbreak management, including current membership of the IPCC with contact information, should be available to all healthcare professionals. All care providers should have a basic understanding of and be alert to the possibility of an outbreak. They should also be able to locate outbreak control information so that they can initiate control steps at any time or day of week (e.g., long weekend).

The membership of an IPCC will depend upon the facility's location, size, and contractual status, and may include the following people:

- A medical advisor (if available)
- Infectious disease physician (if available)
- A Wyoming Department of Health representative
- An administrator

- A Director of Care
- Director of Nursing
- An IP or person responsible for infection prevention of that site
- An Occupational Health Nurse or person responsible for occupational health
- An Environmental Health Officer or alternate (e.g., Community Care Facility Licensing Officer)
- A laboratory manager or representative
- A person responsible for support services such as housekeeping and laundry
- A foods services supervisor
- Communications coordinator
- Front line healthcare provider representative (e.g. charge nurse)

Recognizing an Outbreak

Outbreaks may occur as a sudden increase in a known infection or symptoms (typically without a known infectious agent) or the increase may be gradual over time. Sources of information that can be utilized to detect an outbreak include surveillance data, clinical information, and laboratory reports.

Surveillance information

Potential outbreaks may be suspected when infections occur above the baseline rate or when an unusual microorganism is recognized. There are several avenues for identifying outbreaks.

Exercise #3: Using the required readings, complete Table 2. Provide information you can obtain through the various avenues that may identify an outbreak.

Table 2. Sources of surveillance information.

Avenue	Information that may identify an outbreak (for example, an increase in laboratory diagnosis of an organism from one unit may indicate a problem)
Laboratory	
Patient Care Unit	
Admissions Form	
Media	
Daily Rounds	
Resident Census (Daily or Weekly)	

Clinical information

Although it is often not initially clear what the source of the outbreak may be, it is important to think about all possibilities from the beginning of an investigation. The type of specimens to collect and send to the laboratory for testing may depend upon the clinical presentation of the patients.

To determine the source of the outbreak, it is imperative that the IP understand the possible common sources for outbreaks in healthcare settings (e.g., inadequate infection control practices by staff), potential modes of transmission, usual reservoirs, incubation periods, and the microbiological traits of the pathogen of concern. Please refer to the Wyoming Infection Prevention Orientation Manual Section #11 Microbiology for details on common pathogens, and Section #10 Laboratory for details on proper specimen collection, transportation, and storage. This information will enable the IP to formulate a hypothesis to initiate the appropriate observation strategy and ensure the correct specimens are collected and sent to the lab for testing. The ability to identify the source will provide information that will be helpful in bringing the outbreak under control.

Exercise #4: Using the required readings, complete Table 3. List the possible sources for an outbreak causing the stated clinical symptoms.

Table 3. Clinical guidance used for detecting possible sources of presumed outbreaks.

Clinical symptoms	Possible sources
Fever, cough, dyspnea in several patients	
Vomiting, diarrhea in several patients	
Infected surgical wounds in several patients (same surgery) in the same week	
Variety of non-incisional post-op infections caused by the same organism	
Several patients with itchy skin rashes	

Steps in Outbreak Management

The steps for outbreak management vary slightly depending on the source of the information. However, any article, text, or website related to outbreak management will discuss the importance of having an organized approach to outbreak management. The steps do not happen in a completely linear fashion, and multiple steps often occur simultaneously.

Exercise #5: Using the required readings, and referring to the Outbreak Management policy of your own facility, list at least 8 steps for outbreak management.

1.
2.
3.
4.
5.
6.
7.
8.

Reflect on the actions that you would consider if you were called to investigate an increase in the number of cases of an infectious nature.

Methods

Case Studies

In this section the IP will have an opportunity to apply the knowledge learned to scenarios which may be encountered on the job. An example outbreak scenario is provided below and is accompanied with a set of exercises to help the IP practice outbreak management. An additional scenario and exercises are available in Appendix A. An example template line list is provided in Appendix B. It is important for the IP to reflect on the information provided in this chapter and the required readings, and to discuss difficult situations with a mentor in order to be better prepared for real life outbreaks.

Exercise #6: Read the case study provided below and answer the questions in each of the following nine tables. Work through this study with your mentor or supervisor, answering the questions and using them to stimulate conversation around control methods, communication to patients, staff, and public, education for patient's staff and public, and the roles and responsibilities of the various people at your site.

Case Study

On September 1, Nurse Marion noted that Mr. Jones in Ward A on Unit B had 3 loose stools during the 12 hour night shift. It was a very busy surgical unit working at full capacity of 20 beds. Marion noted the following information about Mr. Jones:

- 60 year old married male
- History of cancer of the bowel

- Abdominal surgery 5 days earlier
- Nasogastric tube removed on August 31
- Started on clear fluids today
- Poor hygienic practices
- Mrs. Jones providing help with his care

On September 2, Mrs. Jones helped her husband with his care including helping him to the bathroom several times during the day and evening. She forgot to mention this to his nurse as it was normal for him to have several stools per day prior to his surgery.

On September 3, Nurse Marion was on day duty and was assigned to Ward A. On entering the Unit she remembered that she had forgotten to report that Mr. Jones had had 3 loose stools on September 1when she did the night shift. When she asked Mr. Jones how he was doing he told her of his continuing problem with loose stools which he thought the surgery was going to remedy. He told her of having to go to the bathroom 5 times since midnight. A stool from Mr. Jones was sent to the laboratory for culture. On September 1, three patients had been discharged and three new patients were admitted to the unit; 2 admitted on September 2, during the day shift and one during the night shift. During the day (Sept. 3) two of the patients admitted on September 2 complained of nausea.

On September 4, the two patients with nausea were now having diarrhea. The IP (you) was notified.

You are the IP that is notified of this situation. Let's assume that your office is at this facility.

Step 1 - Determine if an outbreak exists	
What is the first thing you should do?	
Who would be sources of information about the cases?	
How would you rule out alternative causes?	
Consider the possible diagnosis and think of the possible causes, the incubation periods, and the typical signs and symptoms.	
What specimens would you send (if any)?	
If this event occurred during the weekend or holidays, how would you arrange for specimens transfer to the laboratory?	
What information would you collect on the line list?	
What would you tell staff about monitoring their own health?	
What would you advise the staff regarding working in other units/facilities?	
Any other things you would suggest?	
Look at your surveillance data and see if this is normal trend for this unit. Would you expect this number of cases on this Unit?	

Step 2 - Implement immediate prevention measures	
What infection prevention measures would you recommend?	
Is there signage available?	
Is there a fact sheet about gastrointestinal infections?	
Where would you get extra gowns and gloves for this situation?	
Who will notify the patient, family, and others of this event?	
Who will notify the State of Wyoming Department of Health (WDH)?	
When should they notify the WDH?	
How will you determine if there is a need for education sessions relating to this outbreak?	
Who gives this educational session?	

Step 3 - Confirm the existence of an outbreak/establish a case definition	
What would you consider the case definition?	
How long does it take to get the results of the tests that you requested?	Local lab: State lab:

Step 4 - Assemble the team	
Does your facility have an outbreak management team?	
Who should be on this team?	
What would be the responsibility of the communications expert?	
Who needs to know about this outbreak?	
When will you close the ward/facility to visitors/admissions?	
How often should you meet?	
Is there a sample agenda ready for outbreak meetings?	
Explore with your mentor the process for assembling a team if an outbreak occurs on a weekend.	

Step 5 - Ongoing monitoring communication	
Who is at risk of becoming ill on the Unit?	
Are you responsible for analyzing and interpreting the data?	
Evaluate the overall investigation and response. Is there anything else you should do now?	
Who else might you communicate with as the outbreak continues? (external & internal)	
How do you communicate to other employees, the community, and family members regarding this outbreak?	
Is there legislation in Wyoming regarding the reporting of outbreaks?	

Step 6 - Declaring the outbreak over	
What criteria could be used to indicate that the outbreak is over?	
Who can declare the outbreak over in your facility?	

Step 7 - Debriefing the staff	
Who is responsible for doing this at your facility?	
How will you do this?	
Do you have an outline of activities to discuss?	

Step 8 - Writing the report and recommendations	
Why write a report?	
What are the key elements of a report?	
Why is it important to include a recommendations section?	
Who should get the report?	

Documentation and Reporting

It is very important for the IP to determine the roles and responsibilities for outbreak management among personnel of the facility. What is required for documentation and reporting of outbreaks is often also institution specific. Additionally, Wyoming State Statutes mandate that any unusual illness of public health importance and clusters/outbreaks (GI, respiratory, and other illness) be reported to the Wyoming Department of Health (WDH) by phone or fax within 24 hours of identification. Please see the WD Notifiable Disease List shown in Appendix D. For details on how to report such outbreaks to the Wyoming Department of Health, visit the WDH Infectious Disease Epidemiology Unit website www.health.wyo.gov/phsd/epiid/epiid.html or call the daytime hotline number 877-996-9000.

For facilities that are accredited by The Joint Commission, an IP must develop a specific written procedure based on the principles of this section and include it in the Infection Prevention Manual for the specific facility. Failure to have such a policy/procedure will result in a finding of non-compliance.

Resources

Helpful/Related Readings

- Healthcare Infection Control Practices Advisory Committee General

Guidelines: www.cdc.gov/hicpac/pubs.html

- Influenza Infection Control in Healthcare Facilities: www.cdc.gov/flu/professionals/infectioncontrol/
- Lautenbach E, Woeltje KF, and Malani PN, eds. SHEA Practical Healthcare Epidemiology (3rd Edition). Chicago, IL: University of Chicago Press; 2010
    - Chapter 12, Outbreak Investigations, by A Srinivasan and WR Jarvis

Helpful Contacts (in WY or US)

- Emily Thorp, MS, Infectious Disease Surveillance Epidemiologist and HAI Prevention Coordinator, Wyoming Department of Health, 307-777-8634, emily.thorp@wyo.gov
- Clay Van Houten, MS, Infectious Disease Epidemiology Program Manager, Wyoming Department of Health, 307-777-5596, clay.vanhouten@wyo.gov
- Tracy Murphy, MD, State Epidemiologist, Wyoming Department of Health, 307-777-7716, tracy.murphy@wyo.gov

Related Websites/Organizations

- Wyoming Department of Health, Infectious Disease Epidemiology Unit: www.health.wyo.gov/phsd/epiid/
- Mountain-Pacific Quality Health – Wyoming: www.mpqhf.com/wyoming/index.php
- Association for Professionals in Infection Control and Epidemiology: www.apic.com

My Facility/City/County Contacts in this Area

Role/Position	Name	Organization	Phone	E-mail
Outbreak Prevention and Management Team (OPMT) Leader				
Laboratory manager				
Medical advisor to the OPMT				
Administrator representative for the OPMT				
Director of Care				
Director of Nursing				
Occupational health nurse				
Environmental Services Manager				
Food services supervisor				
Communications Coordinator				

Role/Position	Name	Organization	Phone	E-mail
Infectious Disease Physician				
Frontline healthcare provider representative for the OPMT				
Environmental Health Officer or community care facility licensing officer				
Director of Quality				
County Health Officer				

Appendices

Appendix A: Example Outbreak Case Study

If you would like to have further practice on outbreak management, **work through this case study with your mentor**. Answer the following questions and use them to stimulate conversation about prevention methods, communication to and education for patients, staff, and public, and the roles and responsibilities of the various people at your site.

Case Study – Respiratory Illness

You are an IP whose office is within an acute care site but who also provides support to the nearby long term care facility. This morning (November 10th) you receive a call from the Director of Care from the LTC site:

She tells you that on November 7th they had 3 residents with varying degrees of fever and productive cough and on November 8th they had 4 more residents with similar symptoms. Two of the residents had fever of 38.9 C, and one of them was hospitalized this morning with pneumonia. The hospitalized patient also has a history chronic obstructive pulmonary disease. No ill residents are in the assisted living unit. In the past week she has had 2 staff members call in sick with respiratory symptoms.

You are the IP that is notified of this situation.

Step 1 - Determine if an outbreak exists
What is the first thing you should do? Who would be sources of information about the cases? How would you rule out alternative causes? Consider the possible diagnosis and think of the possible causes, the incubation periods, and the typical signs and symptoms. What specimens would you send (if any)? What information would you collect on the line list? What would you tell staff about monitoring their own health? What would you advise staff regarding working on other units/facilities? Any other things you would suggest? Look at your surveillance data and see if this is a normal trend for this facility? Would you expect this number of cases in the particular area? How would you determine if the residents were vaccinated? How would you determine if the staff were vaccinated? If this is influenza, is there a recommendation for staff who have not been vaccinated? Can they work? Answers?

Step 2 - Implement immediate prevention measures
What infection control measures would you recommend? Is there signage available? Is there a fact sheet about respiratory infections? Where would you get extra facial protection materials, gowns, and gloves for this situation? Who will notify the patient, family, and others of the event? Who will notify the WDH? When will you notify the WDH? How will you determine if there is a need for education sessions relating to this outbreak? Answers?

Step 3 - Establish a working diagnosis
What would you consider the case definition? How long does it take to get the results of the tests that you requested?

Step 4 - Assemble the team
Does your facility have an outbreak management team? Who should be on this team? What would be the responsibility of the communications expert? Who needs to know about this outbreak? When will you close the ward/facility to visitors/admissions? How often should you meet? Is there a sample agenda ready for outbreaks? Explore with your mentor the process for assembling a team if the outbreak occurs on a week-end.

Step 5 - Ongoing monitoring communication
Who is at risk of becoming ill in the facility? Are you responsible for analyzing and interpreting the data? If not, who is? Evaluate the overall investigation and response. Is there anything else you should do now? Who else might you communicate with as the outbreak continues? (external & internal) How do you communicate to other employees, the community, and family members regarding this outbreak? Answers?

Step 6 - Declaring the outbreak over
What criteria could be used to indicate that the outbreak is over? Who can declare the outbreak over in your facility? Answers?

Step 7 -Debriefing the staff
Who is responsible for doing this at your facility? How will you do this? Do you have an outline of activities to discuss?

Step 8 - Writing the outbreak summary report and recommendations
Why write a report? What are the key elements of a report? Why is it important to include a section listing recommendations for future prevention measures? Who should get a copy of the report? Answers?

Appendix B: Example/Template Line List for a Presumed Outbreak.

Patient/Resident/Client Information					**Clinical Presentation**			**Specimen(s) sent**	
Name	DOB dd/mm/yyyy	Unit	Room #	Room type	Date of onset of symptoms	Symptoms	Duration of symptoms	Collection Date/Date Submitted	Result

SYMPTOMS:
V=Vomiting
D=Diarrhea
C=Cramps
N=Nausea
F=Fever
H=Headache
A=Abdominal Pain
M=Myalgia
Co =Cough
ST=Sore Throat

ROOM TYPE:
P=Private
S=Semi-private
M=Multi-bed

Appendix C: Example/Template Outbreak Summary Report

Date of onset of breakout		Date outbreak declared over	
Micro-organism identified		Laboratory Confirmed? Y/N	
Number of positive specimens		Suspected source	
Number of patients exposed		Total number of cases (patients)	
Attack rate for patients (# of exposed divided by # of cases, multiply by 100)			
Number of HCPs exposed		Total number of cases (HCPs)	
Attack rate for HCPs (# of exposed divided by # of cases, multiply by 100)			
Number of cases requiring higher level of care (e.g. transfer to hospital, transfer to ICU)			
Number of deaths			
Unusual situations			

Appendix D: List of Reportable Communicable Diseases in Wyoming

The most current list is available at http://www.health.wyo.gov/phsd/epiid/reporting.html

Commit to your health.

Wyoming Department of Health Reportable Diseases and Conditions

A report is required by law (State Statute § 35-4-107) from **both** the **attending healthcare provider/hospital and the laboratory performing diagnostic testing.**
Wyoming laboratories are responsible for reporting results when a reference laboratory is used.
Mail reports to: Wyoming Department of Health, 6101 Yellowstone Road Suite 510, Cheyenne, WY 82002 OR
Fax reports to our secure fax machine at **(307) 777-5573** OR
*electronic reporting at https://prismdata.health.wyo.gov is preferred for diseases marked with *
For all LABORATORY questions please call (307) 777-7431; REPORTING please call (307) 777-7953

DISEASES IN RED: Immediate Notification at 1-888-996-9104
Diseases in Black: Reportable within **24 hours** of diagnosis by fax or telephone
Diseases in Green: Reportable within 7 days of diagnosis by fax, phone, or mail
LAB: In addition to reporting, **submit an isolate or other appropriate material,** in accordance with IATA Dangerous Goods Regulations to: State Public Health Laboratory, Combined Laboratories Facility, 208 S College Dr., Cheyenne, WY 82002

- Amoebiasis (*Entamoeba histolytica*)
- Anaplasma/Ehrlichiosis
- ANTHRAX (*Bacillus anthracis*)
- Babesiosis (*Babesia* sp)
- Bartonellosis (*Bartonella* sp)
- BOTULISM (*Clostridium botulinum*)
- LAB Brucellosis (*Brucella* sp)
- California Serogroup Virus (Jamestown Canyon, La Crosse, others); neuro- and non-neuro invasive
- LAB Campylobacteriosis (*Campylobacter* sp)

Cancer

- *Chancroid (*Haemophilus ducreyi*)*
- **Chlamydia trachomatis* Infection*
- LAB Cholera (*Vibrio cholerae*)
- Coccidioidomycosis (*Coccidioides immitis*)
- Colorado Tick Fever
- Creutzfeldt-Jacob Disease (including classic CJD and variant CJD)
- Cryptosporidiosis (*Cryptosporidium* sp)
- Cyclosporiasis (*Cyclospora cayetanensis*)
- Dengue Fever
- DIPHTHERIA (*Corynebacterium diphtheriae*)
- Eastern Equine Encephalitis Virus (neuro- and non-neuro invasive)
- Ehrlichiosis/Anaplasma
- Encephalitis
- LAB *Escherichia coli*, shiga toxin-producing (0157:H7, non-0157:H7, or untyped)
- Giardiasis (*Giardia lamblia*)
- LAB Glanders (*Burkholderia mallei*)
- *Gonorrhea (*Neisseria gonorrhoeae*)*
- LAB *Haemophilus influenzae* (sterile site)
- Hantaviral Disease
- HEMORRHAGIC FEVER VIRUSES
- Hemolytic Uremic Syndrome
- Hepatitis A, B*, D, E

Hepatitis C
HIV/AIDS (Positive/reactive detection tests, All CD4's, and all viral loads)

- Influenza (lab confirmed, including rapid test positives)
- Influenza-Associated Deaths
- Kawasaki Syndrome
- Legionellosis (*Legionella* sp)
- Leprosy (*Mycobacterium leprae*)
- Leptospirosis (*Leptospira interrogans*)
- LAB Listeriosis (*Listeria monocytogenes*)
- Lyme Disease (*Borrelia burgdorferi*)
- LAB Malaria (*Plasmodium* sp)
- Measles
- LAB Melioidosis (*Burkholderia pseudomallei*)
- Meningitis (all types)
- LAB Meningococcal Disease (*Neisseria meningitidis*)
- Methicillin-Resistant *Staphylococcus aureus* (MRSA) Related Cases, Clusters, and Outbreaks ONLY
- Mumps
- LAB Pertussis (*Bordetella pertussis*)
- PLAGUE (*Yersinia pestis*)
- Poliomyelitis/Poliovirus Infection
- Powassan Virus (neuro- and non-neuro invasive)
- Psittacosis (*Chlamydophila psittaci*)
- Q-Fever (*Coxiella burnetii*)
- Rabies (human and animal)
- Relapsing Fever (*Borrelia* sp)
- Reyes Syndrome
- Rocky Mountain Spotted Fever (*Rickettsia rickettsii*)
- Rubella
- LAB Salmonellosis (*Salmonella* sp)
- SEVERE ACUTE RESPIRATORY SYNDROME (SARS)
- St. Louis Encephalitis Virus (neuro- and non-neuro invasive)
- LAB Shiga toxin (stool, broth, isolate, etc.)
- LAB Shigellosis (*Shigella* sp)
- SMALLPOX
- Streptococcal Disease, sterile site only
- *Syphilis (*Treponema pallidum*)*
- Tetanus (*Clostridium tetani*)
- Toxic-Shock Syndrome (Streptococcal, Staphylococcal)
- Trichinellosis (*Trichinella* sp)
- LAB Tuberculosis (*Mycobacterium tuberculosis* complex)
- TULAREMIA (*Francisella tularensis*)
- LAB Typhoid Fever (*Salmonella typhi*)
- Typhus (*Rickettsia* sp)
- LAB Vancomycin-Intermediate *Staphylococcus aureus* (VISA)
- LAB Vancomycin-Resistant *Staphylococcus aureus* (VRSA)
- Vancomycin-Resistant Enterococcus (VRE) Related Cases, Clusters, and Outbreaks ONLY

Varicella (chickenpox only)

- LAB Vibrio sp (including non-cholera)
- West Nile Virus (neuro- and non-neuro invasive)
- Western Equine Encephalitis Virus (neuro- and non-neuro invasive)
- Yellow Fever
- LAB Yersiniosis (*Y. enterocolitica, Y. pseudotuberculosis*)

Other Reportable Conditions

- Animal Bites
- Exposures Requiring Rabies Prophylaxis

Blood Lead (All levels)

- Clusters/Outbreaks (GI, respiratory, other illness)
- Methemoglobinemia/Nitrate Poisoning
- SUSPECTED BIOLOGICAL, CHEMICAL, OR RADIOLOGICAL INCIDENT
- TOXIN-ASSOCIATED ILLNESS
- UNEXPLAINED DEATH
- UNUSUAL ILLNESS OF PUBLIC HEALTH IMPORTANCE

Updated 1/2014

WIPAG welcomes your comments and feedback on these sections.
For comments or inquiries, please contact:

Emily Thorp, MS, Healthcare-Associated Infection (HAI) Prevention Coordinator
Infectious Disease Epidemiology Unit,
Public Health Sciences Section, Public Health Division
Wyoming Department of Health
6101 Yellowstone Road, Suite #510
Cheyenne, WY 82002
Tel: 307-777-8634 Fax: 307-777-5573
Email: emily.thorp@wyo.gov
Website: www.health.wyo.gov/phsd/epiid/HAIgeneral.html

October 2014