

Investigation of an Acute Outbreak in the Long Term Care Setting

Welcome!

- All lines are muted, so please ask your questions in chat
- For technical issues, chat to the 'Technical Support' Panelist
- Please actively participate in the poll that will pop up on the lower righthand side of your screen at the end of the presentation



The Quality Improvement Services Group of
ALLIANT HEALTH SOLUTIONS

**We will get started
shortly!**

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INFECTION PREVENTION SPECIALIST

Amy is a registered nurse with a diverse background in acute care nursing, microbiology, epidemiology and infection control. She is passionate about leading and mentoring new and future infection preventionists in their career paths. Over the past several years, her focused efforts in C. difficile infection reduction lead to significant local improvements in patient outcomes, antimicrobial stewardship, and C. difficile rates.

Amy enjoys spending time with family. She loves all the time she can get outdoors cycling and running.

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Objectives

- Learn Today:
 - Identify and verify an outbreak is occurring
 - Create a working case definition and line listing
- Use Tomorrow:
 - Control the outbreak, prevent further infections and communicate effectively

IP Program and Competency

- An effective Infection Prevention program will perform surveillance to identify and report outbreaks within the facility
- A competent Infection Preventionist will be able to:
 - Investigate outbreaks and implement infection prevention interventions
 - Report outbreaks of communicable disease to local or state health departments and consult with their administration and medical director

Outbreaks versus Clusters

Outbreak

- An increase, often sudden, in the number of cases of a disease above what is normally expected in that population in that area

Cluster

- An aggregation of cases grouped in place and time that are suspected to be greater than the number expected, even though the expected number may not be known

Steps of an Outbreak Investigation

- Establish the existence of an outbreak
- Verify the diagnosis
- Construct a working case definition
- Find cases systematically and record information
- Perform descriptive epidemiology
- Develop, evaluate, and refine hypotheses
- Compare and reconcile with laboratory and environmental studies
- Implement control and prevention measures
- Initiate or maintain surveillance
- Communicate findings

Establish the Existence of an Outbreak

- How many cases make an outbreak?
- “an increase in cases above what is normally expected”
- What is normally expected in your area/facility for the following?
 - Norovirus
 - C. diff
 - MRSA
 - Invasive Group A Strep

Verify the Diagnosis

On 12/12, two residents report nausea and diarrhea, one of them additionally has vomiting. On 12/13, a third resident reports nausea and vomiting.



- *As the IP, what are you concerned about?*
- *What will your first step be?*

Construct a Working Case Definition

- Cast your net – this is a working definition so it will most likely be refined as you identify cases



- “Residents with acute onset of nausea, and diarrhea beginning 12/12/2020”
- “Residents or staff with acute onset of nausea, vomiting, or diarrhea beginning 12/10/20”

Line Listing

- Data collection should be systematic and include the following
 - Identifying information
 - Demographic information
 - Clinical information
 - Risk factor information
 - Reporter information



Example Line Listing

Initial cases identified:

| Name | DOB | Sex | Room | Hall | Symptom onset | Symptoms | Lab test result |
|------|---------|-----|-------|---------|---------------|----------|-----------------|
| Jane | 3/4/45 | F | 212 | B | 12/13/20 | N V | pending |
| Jack | 5/3/42 | M | 214 | B | 12/12/20 | N D | + |
| Sam | 8/13/92 | F | Staff | Kitchen | 12/11/20 | N V D | Not tested |
| Jill | 7/14/39 | F | 222 | B | 12/12/20 | N V D | Not tested |

Find Additional Cases Systematically

| Name | DOB | Sex | Room | Hall | Symptom onset | Symptoms | Lab test result |
|------|---------|-----|-------|---------|---------------|----------|-----------------|
| Jane | 3/4/45 | F | 212 | B | 12/13/20 | N V | pending |
| Jack | 5/3/42 | M | 214 | B | 12/12/20 | N D | + |
| Sam | 8/13/92 | F | Staff | Kitchen | 12/11/20 | N V D | Not tested |
| Jill | 7/14/39 | F | 222 | B | 12/12/20 | N V D | Not tested |

| Name | DOB | Sex | Room | Hall | Symptom onset | Symptoms | Lab test result |
|------|-----|-----|------|------|---------------|----------|-----------------|
| Lou | | M | 124 | A | 12/15/20 | N V | + |
| Lan | | M | 128 | A | 12/18/20 | N D | + |
| Lisa | | F | 116 | A | 12/16/20 | N V D | + |

Perform Descriptive Epidemiology

- Epidemic curve
- Summarize by person, time, and place
 - Who is affected?
 - Who is at risk?
 - When did the outbreak occur?
 - Was there seasonality?
 - What was the source?

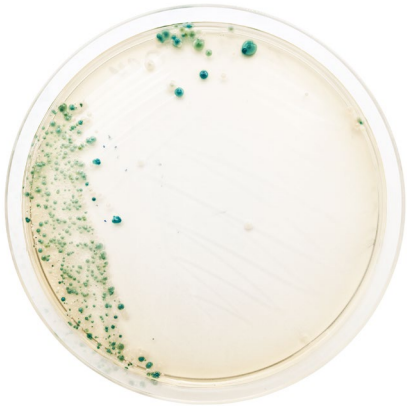


Develop, Evaluate, Refine Hypotheses

- Hypotheses typically will be derived from your gut feelings
 - What is the suspected agent?
 - What is the typical reservoir?
 - How is it usually transmitted?
- This step will likely be performed with public health epidemiologists – its ok to ask for help!



Compare and Reconcile with Lab and Environmental Results



- Lab evidence confirms the hypothesis, pathogen, and vehicle of spread
 - In this case, the kitchen staff member's positive test for norovirus confirms we have a point source for our outbreak
 - In the case of a reservoir, such as contaminated water, the positive lab results of that organism aids in controlling the current outbreak, confirming the hypothesis, and preventing future outbreaks.
 - These data will also help as you evaluate your epidemic curve
 - propagated or intermittent source – contaminated water or IV solution
 - point source or a propagated source – ill staff member or visitor

Implement Control and Prevention Measures

- Understand how the pathogen is spreading to develop control measures
 - Norovirus spreads via fecal-oral route
- Highly recommend the Control of Communicable Disease Manual as a reference for the IP in the facility
- Interventions
 - Ill staff do not come to work until 24-72 hours post symptom resolution
 - Strict contact enteric precautions
 - Hand hygiene – soap and water preferred
 - Disinfection of shared equipment
 - Routinely disinfect dining room with effective disinfectants
 - Cohorting confirmed infected residents



Control and Prevention Measures

- Utilize *Contact Enteric Precautions* for all who enter the resident room
 - Hand hygiene – preferentially use soap and water versus ABHR
 - Gown
 - Gloves

<https://spice.unc.edu/resources/nc-standardized-isolation-signage/>



CONTACT PRECAUTIONS



Visitors must report to Nursing Station before entering.

SPECIAL ENTERIC



Perform hand hygiene **before** entering room AND wash hands with **soap and water** before leaving room.
Lávese las manos con agua y jabón.



Wear gloves when entering room or cubicle, and whenever touching the patient's intact skin, surfaces, or articles in close proximity.



Wear gown when entering room or cubicle and whenever anticipating that clothing will touch patient items or potentially contaminated environmental surfaces.



Use patient-dedicated or single-use disposable shared equipment or clean and disinfect shared equipment (BP cuff, thermometers) between patients.

PRECAUCIONES DE CONTACTO

Los visitantes deben presentarse primero al puesto de enfermería antes de entrar. Lávese las manos. Póngase guantes al entrar al cuarto.

Initiate or Maintain Surveillance

- Did you begin performing active surveillance during case finding efforts?
 - Example of active surveillance– MRSA swabbing all new admissions and repeat testing every 7 days
- Are new cases slowing down/stopping?
- Do you need to review other areas in your facility for spread outside the initial outbreak zone?



Communicate Findings

- Nursing Home leadership
 - DON
 - Administrator
 - Medical Director
 - Risk Management
- Public Health
- Final written report



Thank You for Your Time!



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Questions?



References

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Heyman, D. 2015. Control of Communicable Diseases Manual. 20th Ed. American Public Health Association. Washington, D.C.

Objectives Check In!



- Learn Today:
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Complete this sentence in Chat: *I will...*

CMS 12th SOW Goals



Behavioral Health Outcomes & Opioid Misuse

- ✓ Promote opioid best practices
- ✓ Decrease high dose opioid prescribing and opioid adverse events in all settings
- ✓ Increase access to behavioral health services



Patient Safety

- ✓ Reduce risky medication combinations
- ✓ Reduce adverse drug events
- ✓ Reduce C. diff in all settings



Chronic Disease Self-Management

- ✓ Increase performance on ABCS clinical quality measures (i.e., aspirin use, blood pressure control, cholesterol management, cardiac rehab)
- ✓ Identify patients at high-risk for developing kidney disease & improve outcomes
- ✓ Identify patients at high risk for diabetes-related complications & improve outcomes



Quality of Care Transitions

- ✓ Convene community coalitions
- ✓ Identify and promote optimal care for super utilizers
- ✓ Reduce community-based adverse drug events



Nursing Home Quality

- ✓ Improve the mean total quality score
- ✓ Develop national baselines for healthcare related infections in nursing homes
- ✓ Reduce emergency department visits and readmissions of short stay residents

Making Health Care Better *Together*



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Upcoming Events

Learning and Action Webinars

Nursing Homes

Tuesdays, 2pm ET/1pm CT

Community Coalitions

Thursdays, 12:30 pm ET/11:30am CT

January 19th 2021: Avoiding the Medicare Readmissions Penalty

December 17th 2020: Gear up for the New Year! Positioning your Organization to Gather, Track, and Use Data in 2021

Please join us for:

Shop Talk For Data Submission into the NHSN COVID-19 Module

New News & Updates for the Resident and Staff Pathways

& Point of Care Testing

December 17th 2-3pm ET/1-2pm CT

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