



DISCLOSURES + DISCLAIMERS

Rebecca is employed by Diversey—A Solenis Company. The company pays her expenses to attend this meeting & create educational content (salary). The company has had no input into this presentation from a commercial interest.

The following material does not replace your existing facility policies & procedures. Always consult national/regional public health partners for most up-to-date recommendations.

Lastly, this session is intended to provide an overview of outbreak response & does not address every single element of a healthcare outbreak in detail.



SESSION OBJECTIVES


- 01** **DEFINE + IDENTIFY AN OUTBREAK**
Definitions can depend on pathogens, settings
- 02** **OUTLINE IMMEDIATE, FOLLOW-UP AND SUMMARY ACTIONS**
Interactive case studies will help us prepare for the unexpected
- 03** **REVIEW OUTBREAK RESOURCES**
Describe the tools most commonly used in outbreak management & learn where to turn when disaster strikes



01

WHAT IS AN OUTBREAK?

Before you can successfully manage an outbreak, you need to know what it is . . . and what it is not.



DEFINING AN OUTBREAK

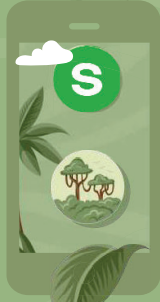
- An outbreak is “an **increase, often sudden**, in the number of cases of a disease **above what is normally expected in that population in that area.**” (APIC 2019)
- The definition of an outbreak may **depend on the disease, the healthcare setting, and/or federal/local/state definitions**
 - For example, CMS QSO-20-39-NH instructs LTC to initiate outbreak investigation when a single new case of C19 occurs among residents or staff

CASE STUDY #1



GET YOUR SMARTPHONE READY!


- Scan the QR code with camera app.
- Click the link.
- Answers are **anonymous**.
- Select your answer.
- You will not need to rescan QR codes if browser is kept open.



IT'S THE LAST FRIDAY BEFORE YOUR HARD-EARNED VACATION . . .

6AM	1PM	3PM	4PM
TWO RESIDENTS	SEVEN MORE RESIDENTS	ONE C.N.A.*	YOUR DESK PHONE RINGS
in adjoining rooms become abruptly ill with vomiting and loose stools, without fever	on the same wing start to vomit	leaves work mid-shift due to vomiting. He works on the same wing as the sick residents	The Director of Nursing (DON) calls to inform you of the day's events

*Certified nurse assistant



As the long-term care (LTC) IP, would you initiate an outbreak investigation?

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IT'S AN OUTBREAK! ACT FAST— CHEETAH FAST!

Quick assessment/triage:

- 9 residents, 1 direct resident care employee
- Same wing/location
- All w/ nausea & vomiting
- Fast incubation period (approx. 36 hours)

<http://publichealth.lacounty.gov/acd/docs/NorovirusEducationalPresentation.pdf>







Given setting, incubation period and symptoms, what pathogen is the most likely cause of the outbreak?

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NOROVIRUS FAST FACTS

-  Norovirus is a small, nonenveloped virus which are considered **more difficult to eradicate** in the environment compared to enveloped viruses (e.g., influenza)
-  Considered to be the **most common cause** of acute gastroenteritis in LTC facilities & in the US
-  Commonly affects **residents AND healthcare personnel**
-  Symptoms = acute-onset nausea, vomiting & diarrhea

APIC 2019



After quickly assessing the situation, what is your next immediate move?

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Other Mandatory Reportable Conditions
If highlighted red, report immediately; 701-328-2372
Report all other conditions within seven days

- Autism*
- Cancer+
- Cluster of severe or unexplained illnesses or deaths
- Critical congenital heart disease (CCHD)
- Fetal alcohol syndrome (FAS)
- Lead level results (all)
- Neonatal abstinence syndrome (NAS)
- Overdoses
- Suicide and suicide attempts
- Tumors of the central nervous system+
- Violent deaths^
- Visible congenital deformity

[Reportable Conditions - Dec 2023.pdf](#)

North Dakota Online Reporting Tool

What type of illness outbreak are you reporting?
 Respiratory illness
 Gastrointestinal illness
 Healthcare-Associated illness



CREATE A CASE DEFINITION

HOST



ANY SYMPTOMATIC HCP, INCLUDING FOOD HANDLERS, + RESIDENTS!

AGENT (NORA)



ACUTE ONSET NAUSEA OR VOMITING



DIARRHEA

ENVIRONMENT



EXPOSURE TO UNIT/DEPARTMENT (MAY EXPANDED TO ENTIRE FACILITY)

NORO NEXT STEPS: BRIEF OVERVIEW



ENVIRONMENTAL HYGIENE

- Clarify roles & responsibilities
- Availability of disinfectants
- Increased C&D to 3X daily
- Ensure noro claim/EPA List G
- Bleach is NOT your only option!!!



NOTIFICATIONS

- Residents, family, visitors entering & staff
- Expectations for sick HCP & residents
- Signage, phone calls, letters
- Restrict nonessential HCP from entering affected areas



DETERMINE CLOSURE NEEDS

- Leadership to determine a temporary pause on new admissions
- **Generally, not the IP's responsibility**



LAB SPECIMENS

- HD will request samples
- Collecting fecal samples will be a challenge
- HD can perform whole genome sequencing (WGS)
- Lab confirmation isn't always feasible; apply case definition!

County of Los Angeles Norovirus Outbreak Prevention Toolkit, 2023



Big question: are you cancelling your vacation?

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DON'T CANCEL!

If you are the *only* person who can manage an outbreak, your IPC program is **NOT RESILIENT!**

Ensure policies & procedures are clear & available. Always have a **backup plan**, and a backup for your backup!

Include outbreak scenarios in mandatory **emergency response exercises**.

Golden Poison Dart Frog—the rarest jungle creature!
(*Phylllobates terribilis*)

CASE STUDY #2: A DIFFERENT DIARRHEA

YOU ARE THE NEW ACUTE CARE IP ASSIGNED TO HOSPITAL-ONSET C. DIFFICILE SURVEILLANCE . . .



FACILITY DETAILS

600-bed acute care hospital
5 floors, ED, L&D, peds, OR, ICUs, etc



NHSN HO-CDI SIR INCREASING OVER LAST 3 QUARTERS

While cases are increasing, no obvious commonalities noted & SIR has been below the health system's goal



CURRENT MONTH HAS 2X HO-CDI CASES THAN THE PRIOR MONTH

While performing monthly surveillance, you note 6 HO CDI cases in one month, compared to 3 last month



As the ACH IP, would you initiate an outbreak investigation?

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Some chameleons change color to camouflage themselves to avoid detection.

IT DEPENDS!
WHAT YOU SEE ISN'T ALWAYS WHAT YOU GET.

Quick assessment/triage:

- Symptoms of all positive cases not yet known—validate first!
- Pay close attention to symptom onset date
 - Many persons admit w/ symptoms, but are not tested immediately
- No identified location commonality (yet)
- *C. difficile* is a common gut colonizer, so a positive test does not always equal clinical infection

TAKE CAUTION WITH THE *C. DIFFICILE* CHAMELEON!

LAB PRACTICES

- Ensure lab testing tools & protocols have not changed
- PCR panels increase likelihood of false positives
- Are improper specimens being tested? **"If it ain't loose, it's of no use!"**

ANTIMICROBIAL STEWARDSHIP

- Antibiotic exposure is the most important modifiable risk factor for CD!!
- Review usage patterns with Antimicrobial Stewardship (AS) committee
- Engage ID and AS pharmacist

<https://www.cdc.gov/cdiff/risk.html>

DIAGNOSTIC STEWARDSHIP

- Can anyone order a CD test? RN, MD, etc?
- Are tests based on smell or appearance, not signs & symptoms?
- Are any hard stops or symptom validation tools in place?
- Does the facility have a CD testing policy?

CASE STUDY #3

YOU ARE AN AMBULATORY SURGERY CENTER IP . . .

FACILITY DETAILS

- Outpatient surgery center (no ED, no overnight stays)
- 4 active fully functioning procedure rooms
- Similar case mix (hand, eye, podiatry cases)

ONE OF THE HAND SURGEON'S OFFICE MANAGERS CALLS

She reports 4 post-surgical patients have had follow-up appointments, all with similar complaints at the surgical site (redness, pain, purulence, etc)

ALL 4 POST-OP WOUND CULTURES HAVE GROWN STAPH AUREUS

You hadn't received these results, as they were collected & processed by the surgeon's clinic, not your ASC.

As the ASC IP, would you initiate an outbreak investigation?

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YES—YOUR IP SPIDEY SENSE SHOULD BE TINGLING!

Quick assessment/triage:

- 4 patients with similar surgical site complaints
- Commonalities:
 - Surgeon
 - Procedure
 - Facility, possibly same procedure room
 - Pathogen (possibly)

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After starting a line list, what is your next step?

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SSI OUTBREAKS MAY UNFOLD AT A DIFFERENT PACE

VALIDATE!
Word of mouth is not enough. Collect micro results, ABX prophylaxis, clinical data/office notes, procedure locale.

INFORM INTERNAL
Once validated, contact direct supervisor & medical director

INFORM EXTERNAL?
Unusual clusters & outbreaks are reportable in most states, but IPs may not engage local public health in device or procedural HAIs

OBSERVE
Perform surgical observations ASAP. Inform teams prior (no surprises), pay attention to skin prep, sterile technique, hand hygiene & environmental cleaning/disinfection.

COMMUNICATE
Talk to the team—including the surgeon! Ask about process or product changes, concerns, etc.

NOTABLE OR OBSERVATIONS

ENVIRONMENTAL HYGIENE

- Inconsistent cleaning & disinfection
- Roles & responsibilities unclear
- Contact time achievement
- Anesthesia workstation & equipment

SKIN PREP

- Multi-use gallon jug stored in procedure room
- CHG immediately rinsed off the hand—needed to review label IFUs

ASEPSIS BREACHES

- Surgical tech w/untied gown
- Back turned to sterile field
- Hand hygiene opportunities

Operation IPC in Ambulatory Surgery Centers

03 TOOLS + RESOURCES

U of Nebraska IPC Innovate Outbreak Investigation Process & Documentation!

KAT& COMPANY

ND Infection Prevention

The North Dakota Infection Prevention and Control app is designed by the North Dakota Department of Health and Human Services to raise awareness of and best practices for infection prevention in the state. This app includes a variety of resources, videos, interactive content, games and trainings for health care individuals across the state to implement in their organizations.

Available on the **Google Play** and **App Store**.

Scan me!

Dakota In-Residence Infection Prevention and Control

ND Infection Prevention

THANKS! QUESTIONS?

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REFERENCES

Most references & weblinks are on individual slides!

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