

Continuing Education Information - LIVE

Learning Outcome:

In the post-activity poll, learners will report what they intend to do differently as it pertains to encouraging residents to obtain the COVID vaccine or booster and what they did the last week as a result of the education they have received from both the educational events and the resources and technical assistance provided through the Give the Boost a Shot program.

Nursing Professional Development: ANCC Contact Hours & Accreditation Statement

This nursing continuing professional development activity was approved by the Ohio Nurses Association, an accredited approver by the American Nurses Credentialing Center's Commission on Accreditation. (OBN-001-91) This activity awards 0.75 contact hours and 0 hours of pharmacology.

Instructions for obtaining credit

At the conclusion of the event, learners will be invited to complete a closing poll. Those that complete the poll will receive a certificate for contact hours to the email address provided in the poll.

Disclosure of Relevant Relationships

No one in a position to control content has any relevant financial relationships with ineligible companies. Any relevant relationships are mitigated according to the Standards for Integrity and Independence in Accredited Continuing Education.

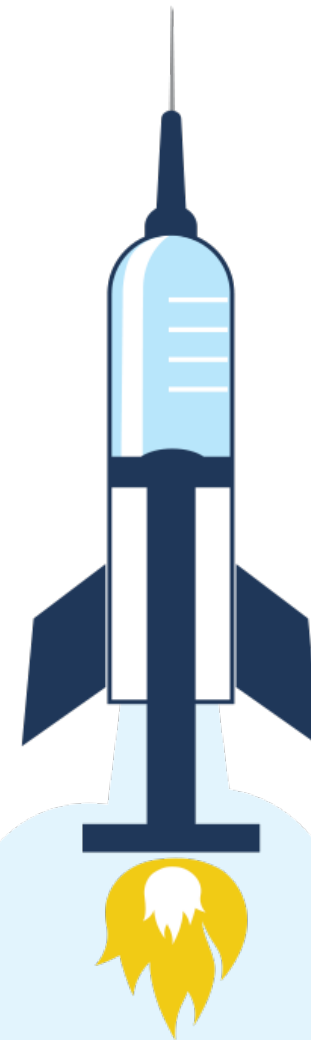
Boosting IPC Basics: The Importance of Infection Prevention and Control Strategies to Prevent & Control COVID-19 Outbreaks in Nursing Facilities

Erica Umeakunne, MSN, MPH, APRN, CIC

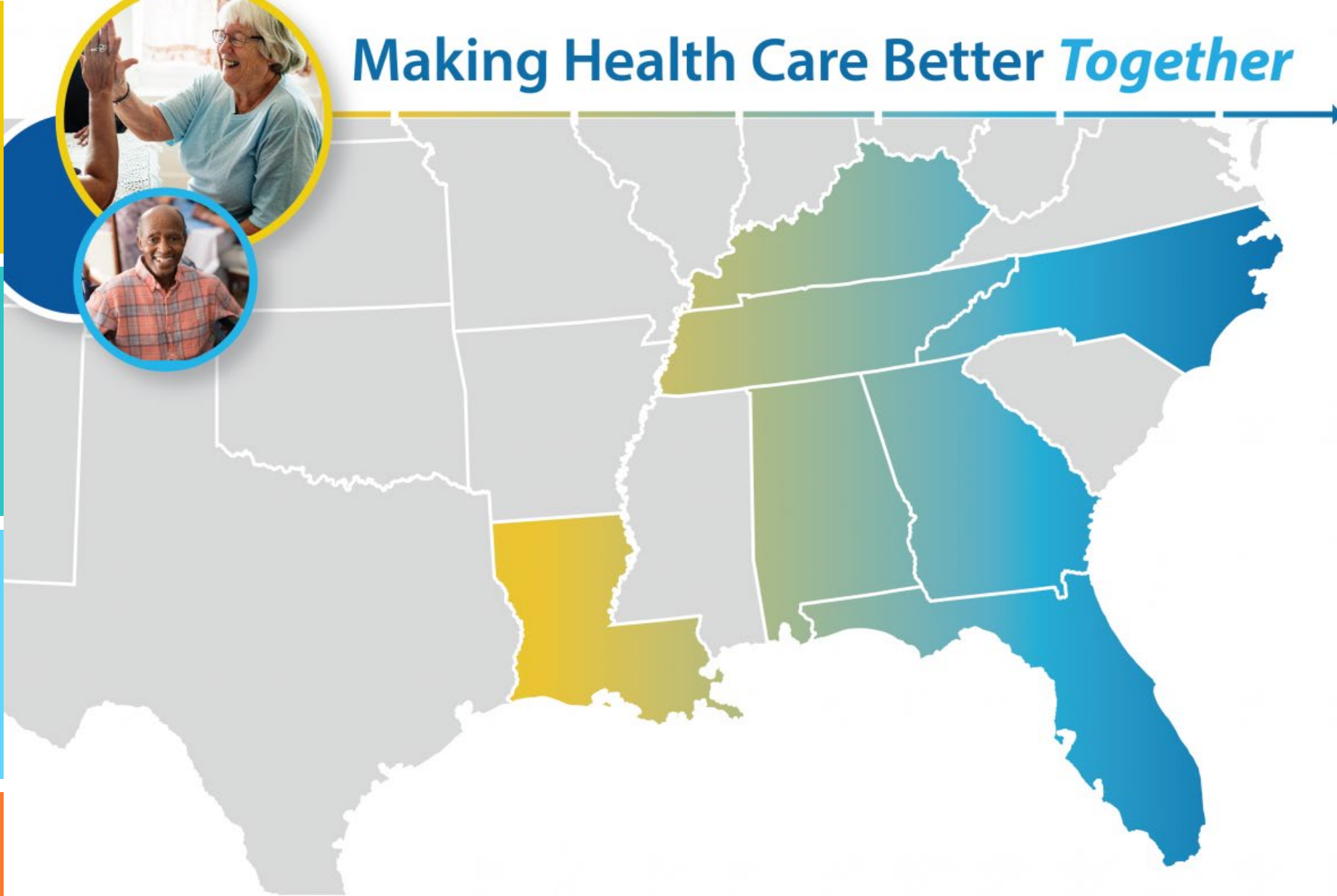
February 3, 2022



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Making Health Care Better *Together*



About Alliant Health Solutions

 **ALLIANT**
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Erica Umeakunne, MSN, MPH, APRN, CIC

INFECTION PREVENTION SPECIALIST

Erica Umeakunne is an adult-gerontology nurse practitioner and infection preventionist with experience in primary care, critical care, health care administration and public health.

She previously served as the interim hospital epidemiology director for a large health care system in Atlanta and as a nurse consultant in the Centers for Disease Control and Prevention's (CDC) Division of Healthcare Quality Promotion. While at the CDC, she served as an infection prevention and control (IPC) subject matter expert for domestic and international IPC initiatives and emergency responses, including Ebola outbreaks and, most recently, the COVID-19 pandemic.

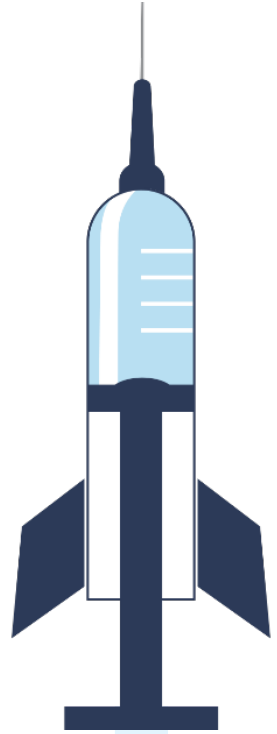
Erica enjoys reading, traveling, family time, and outdoor activities.

Contact: Erica.Umeakunne@allianthealth.org



Objectives

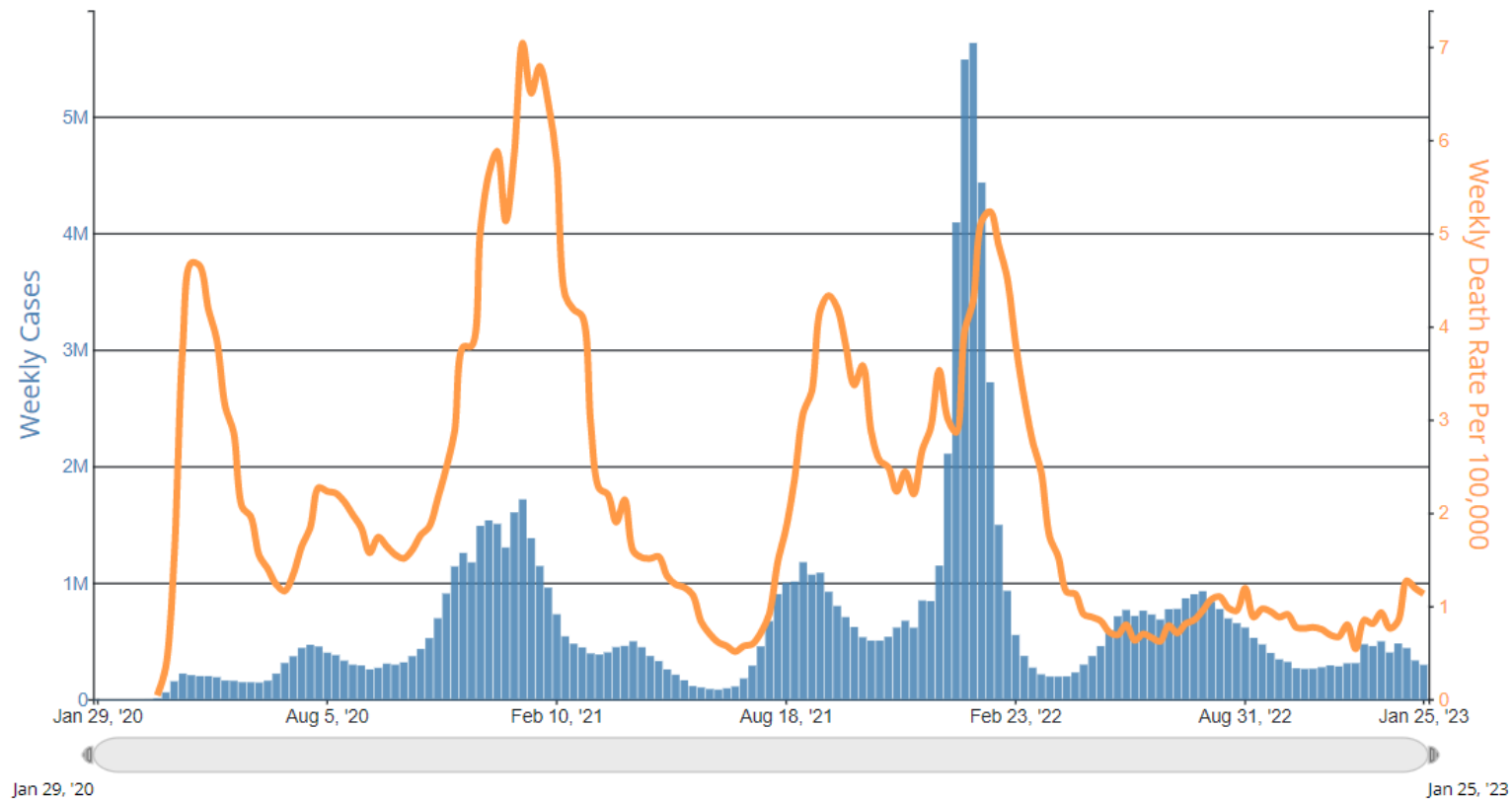
- Provide an update on COVID-19 and influenza epidemiology
- Review essential infection prevention & control (IPC) strategies to prevent and control a COVID-19 outbreak in a nursing home
- Highlight ways to implement practice IPC interventions based on facility-specific COVID-19 data and COVID-19 community transmission level data
- Provide a COVID-19 outbreak investigation example
- Share Alliant Health Solutions resources to support COVID-19 IPC activities



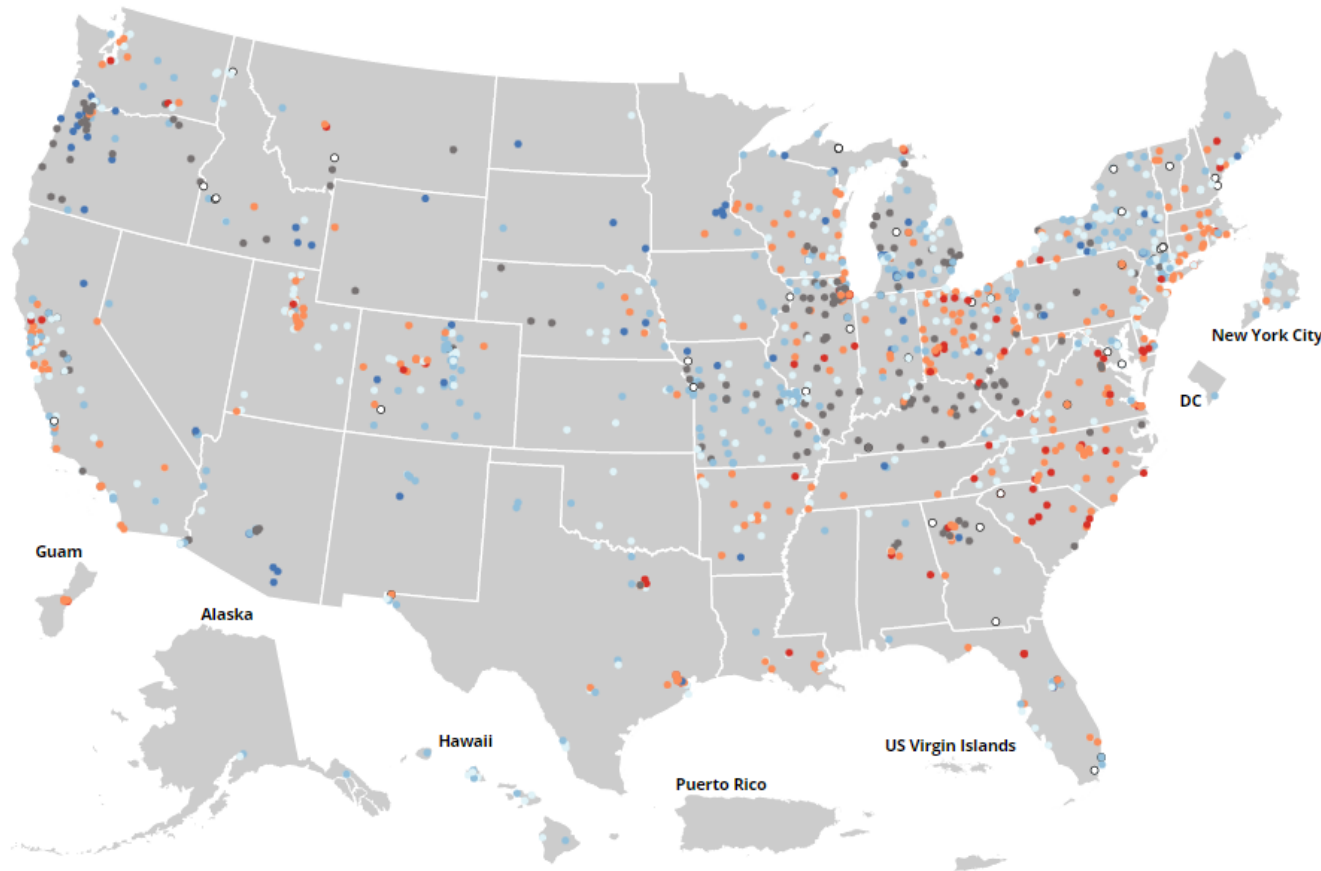
COVID-19 Cases & Deaths

The blue bars show weekly cases. The orange line represents the weekly death rate per 100,000, allowing for comparisons between areas with different population sizes.

Weekly Trends in Number of COVID-19 Cases and Weekly Death Rate in The United States Reported to CDC, per 100,000 population.



Wastewater COVID-19 Surveillance



Current SARS-CoV-2 virus levels by site,
United States

| Current virus levels category | Num. sites | % sites | Category change in last 7 days |
|-------------------------------|------------|---------|--------------------------------|
| New Site | 45 | 4 | 10% |
| 0% to 19% | 71 | 6 | - 3% |
| 20% to 39% | 280 | 24 | 11% |
| 40% to 59% | 385 | 33 | - 1% |
| 60% to 79% | 313 | 27 | - 14% |
| 80% to 100% | 75 | 6 | - 29% |

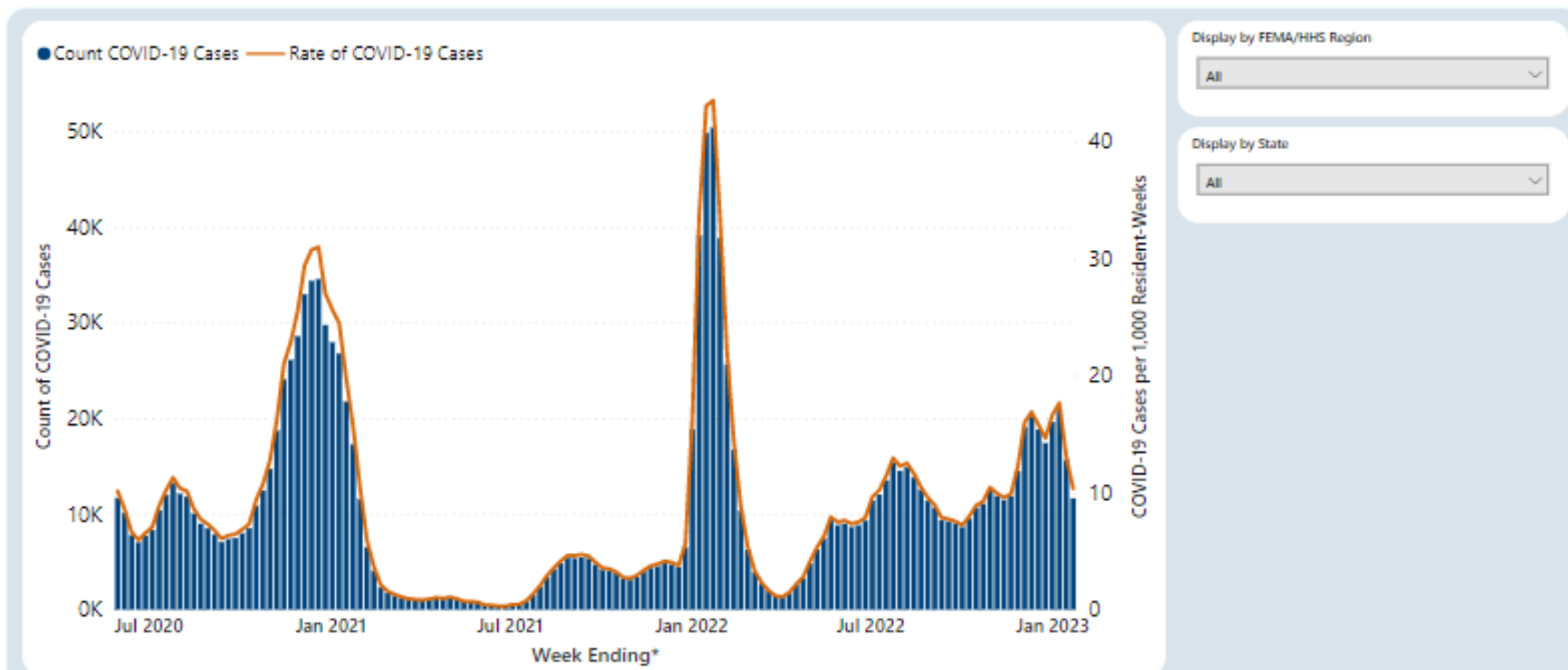
Total sites with current data: 1169

Total number of wastewater sampling sites: 1351

Confirmed COVID-19 Cases among Residents and Rate per 1,000 Resident-Weeks in Nursing Homes, by Week—United States



Confirmed COVID-19 Cases among Residents and Rate per 1,000 Resident-Weeks in Nursing Homes, by Week—United States




https://www.cdc.gov/nhsn/covid19/ltr-report-overview.html#anchor_1594393306

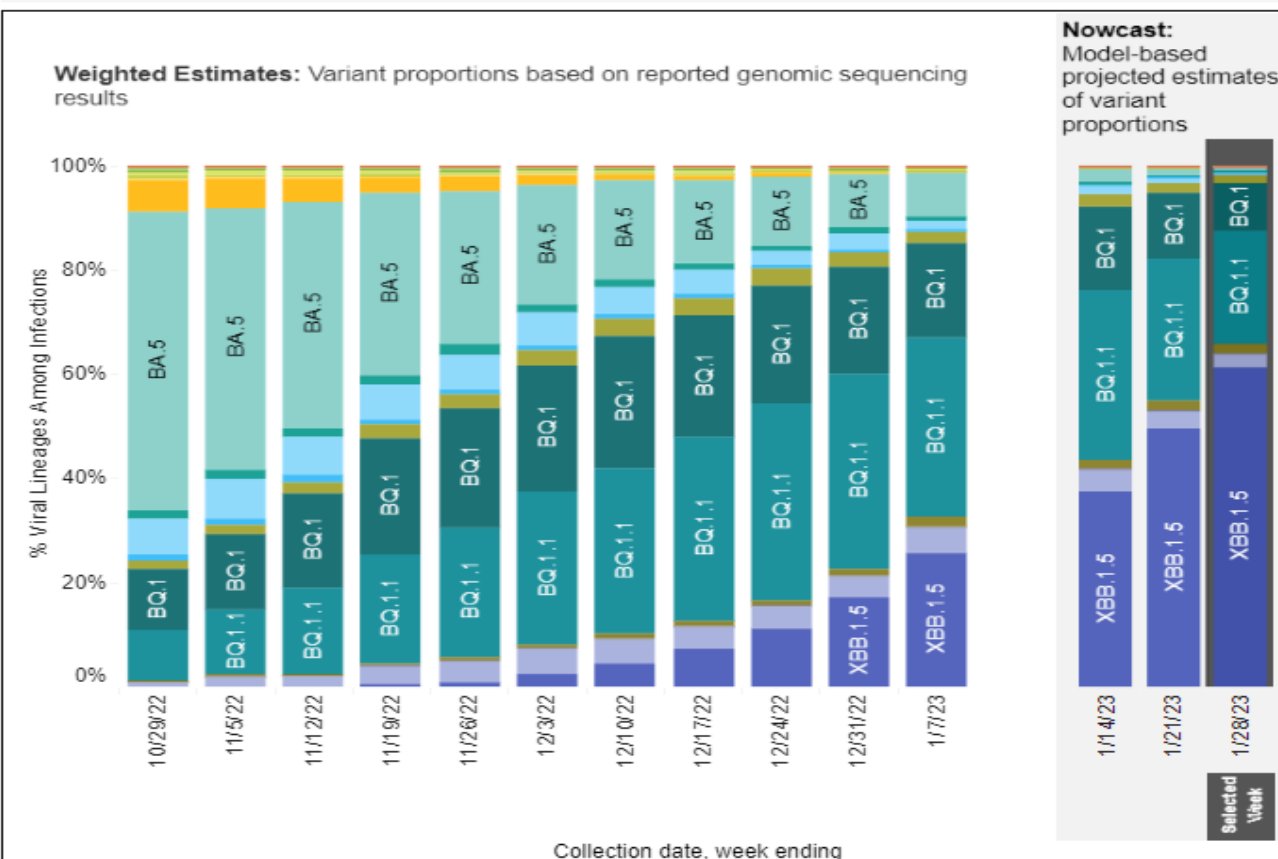
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



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Weighted and Nowcast Estimates in United States for Weeks of 10/23/2022 – 1/28/2023

Nowcast Estimates in United States for 1/22/2023 – 1/28/2023

 Hover over (or tap in mobile) any lineage of interest to see the amount of uncertainty in that lineage's estimate.



| USA | | | | | |
|-----------|-----------|----------|--------|------------|---|
| WHO label | Lineage # | US Class | %Total | 95%PI | |
| Omicron | XBB.1.5 | VOC | 61.3% | 51.5-70.3% |  |
| | BQ.1.1 | VOC | 21.8% | 16.6-27.9% |  |
| | BQ.1 | VOC | 9.3% | 6.9-12.3% |  |
| | XBB | VOC | 2.8% | 2.2-3.5% |  |
| | CH.1.1 | VOC | 1.5% | 1.1-2.1% |  |
| | BN.1 | VOC | 1.4% | 1.0-1.8% |  |
| | BA.5 | VOC | 0.7% | 0.5-1.0% |  |
| | BF.7 | VOC | 0.6% | 0.5-0.9% |  |
| | BA.5.2.6 | VOC | 0.2% | 0.2-0.3% |  |
| | BA.2 | VOC | 0.1% | 0.1-0.2% |  |
| | BF.11 | VOC | 0.1% | 0.1-0.2% |  |
| | BA.2.75 | VOC | 0.1% | 0.0-0.1% |  |
| | BA.4.6 | VOC | 0.0% | 0.0-0.0% |  |
| | BA.2.75.2 | VOC | 0.0% | 0.0-0.1% |  |
| | B.1.1.529 | VOC | 0.0% | 0.0-0.0% |  |
| | BA.4 | VOC | 0.0% | 0.0-0.0% |  |
| | BA.1.1 | VOC | 0.0% | 0.0-0.0% |  |
| | BA.2.12.1 | VOC | 0.0% | 0.0-0.0% |  |
| Delta | B.1.617.2 | VBM | 0.0% | 0.0-0.0% |  |
| Other | Other* | | 0.0% | 0.0-0.1% |  |

* Enumerated lineages are US VOC and lineages circulating above 1% nationally in at least one week period. "Other" represents the aggregation of lineages which are circulating <1% nationally during all weeks displayed.

** These data include Nowcast estimates, which are modeled projections that may differ from weighted estimates generated at later dates

BA.1, BA.3 and their sublineages (except BA.1.1 and its sublineages) are aggregated with B.1.1.529. Except BA.2.12.1, BA.2.75, XBB and their sublineages, BA.2 sublineages are aggregated with BA.2. Except BA.2.75.2, CH.1.1 and BN.1, BA.2.75 sublineages are aggregated with BA.2.75. Except BA.4.6, sublineages of BA.4 are aggregated to BA.4. Except BF.7, BF.11, BA.5.2.6, BQ.1 and BQ.1.1, sublineages of BA.5 are aggregated to BA.5. Except XBB.1.5, sublineages of XBB are aggregated to XBB. For all the other lineages listed, their sublineages are aggregated to the listed parental lineages respectively. Previously, CH.1.1 was aggregated to BA.2.75. Lineages BA.2.75.2, XBB, XBB.1.5, BN.1, BA.4.6, BF.7, BF.11, BA.5.2.6 and BQ.1.1 contain the spike substitution R346T.

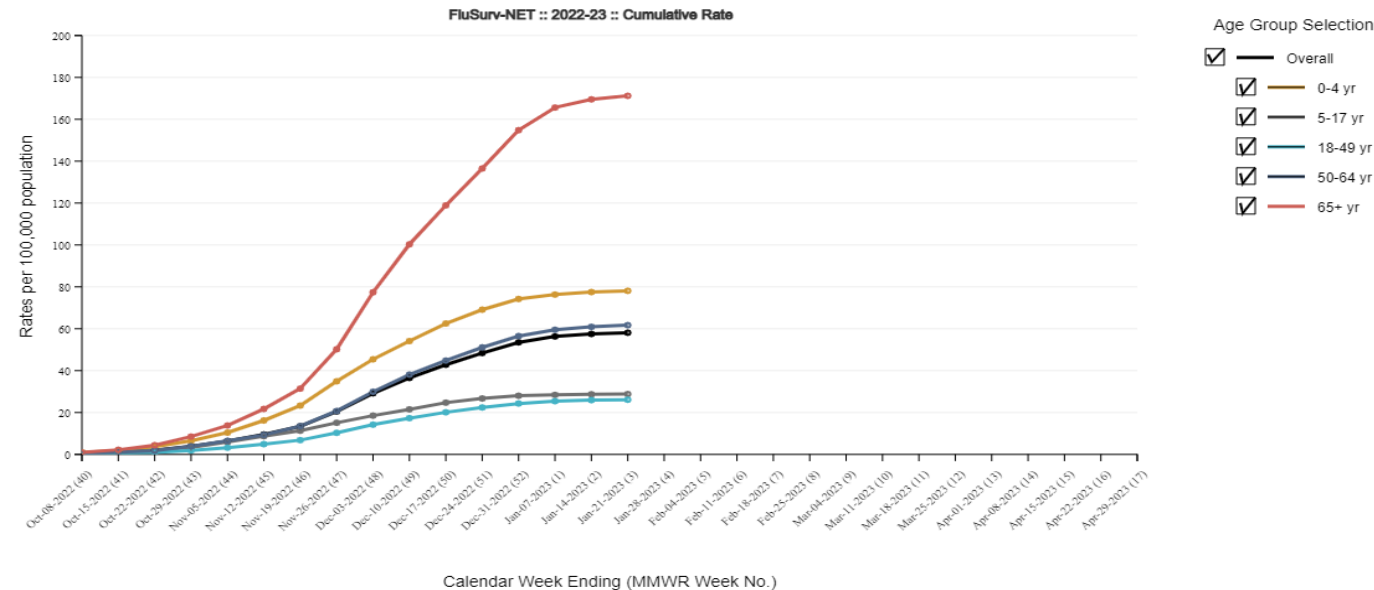
Influenza Hospitalizations

FLUVIEW
interactive



Laboratory-Confirmed Influenza Associations, FluSurv-NET, 2022-23

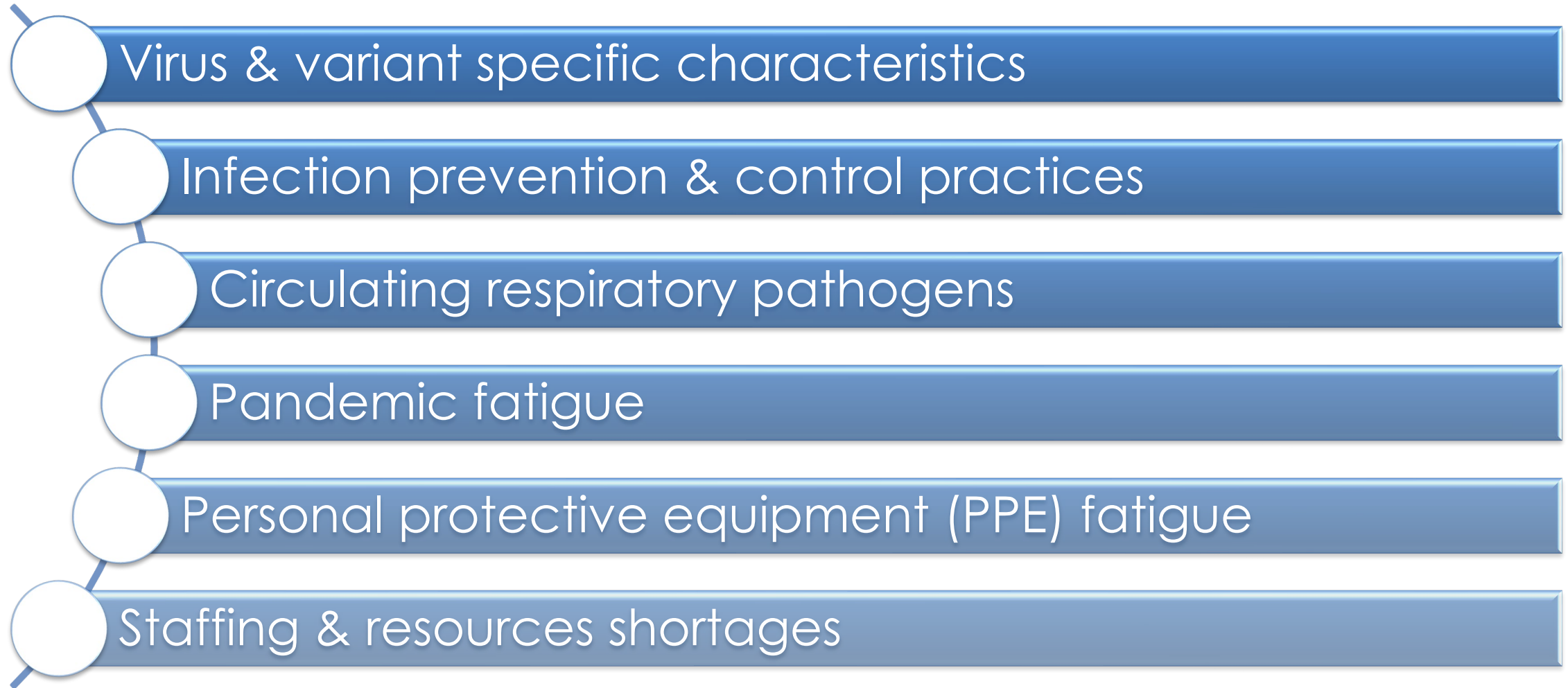
Preliminary cumulative rates as of Jan 21, 2023



The Influenza Hospitalization Surveillance Network (FluSurv-NET) data are preliminary and subject to change as more data become available. In particular, case counts and rates for recent hospital admissions are subject to reporting delays. As data are received each week, prior case counts and rates are updated accordingly. FluSurv-NET conducts population-based surveillance for laboratory-confirmed influenza-associated hospitalizations in children <18 years of age and adults. The FluSurv-NET catchment area includes selected counties in California, Colorado, Connecticut, Georgia, Maryland, Michigan, Minnesota, New Mexico, New York, Ohio, Oregon, Tennessee, and Utah. Additional counties in Idaho (2010 to 2011), Iowa (2012 to 2013, 2020-2022), Oklahoma (2010 to 2011), and Rhode Island (2010 to 2013) have also contributed to the network. Incidence rates (per 100,000 population) are calculated using the National Center for Health Statistics' (NCHS) vintage bridged-race postcensal population estimates for the counties included in the surveillance catchment area. The rates provided are likely to be underestimated as influenza-associated hospitalizations might be missed due to test availability and provider or facility testing practices. In all influenza seasons except 2009-10 and 2021-22, rates reflect cases hospitalized during October 1 - April 30 of each influenza season. Cases hospitalized during MMWR Week 39 are included in the totals for MMWR Week 40, while cases hospitalized during MMWR Week 18 are included in the totals for MMWR Week 17. In 2009-10, rates reflect cases hospitalized during Sept 1 2009 through April 30 2010 (MMWR Week 35 - MMWR Week 17). In 2021-22, rates reflect cases hospitalized beginning October 1 2021 (MMWR Week 39), but given late influenza season activity, the season was extended to June 11, 2022 (MMWR Week 23).

OUTBREAK INVESTIGATION

COVID-19 Outbreak Factors



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

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Implement control and prevention measures

Initiate or maintain surveillance

Communicate findings

Establish the Existence of an Outbreak

Outbreak

- Represents an increase in what is normally expected (for a specific pathogen or clinical condition)
- Sometimes identified by a single case

Questions to consider:

- *What factors increase the likelihood of your facility having an outbreak?*
- *How many cases make an outbreak?*
- *What is normally expected in your area/facility for the following?*
- *What data sources should I use to inform the existence of an outbreak?*

Data Sources

IPC Program
Policies &
Procedures

IPC Risk
Assessments

Facility-specific
IPC data

Regulatory
Guidance

Community
Level
Epidemiology &
Transmission

Public Health
communications

Establish the Existence of an COVID-19 Outbreak

COVID-19 Outbreak is defined as:

- A single new case of COVID-19 occurs among residents or staff

An outbreak investigation would **NOT** be triggered when:

- A resident with known COVID-19 is admitted directly into TBP
- When a resident known to have close contact with someone with COVID-19 is admitted directly into transmission-based precautions (TBP) and develops COVID-19 before TBP is discontinued

Data Sources

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Establish the Existence of a COVID-19 Outbreak: Data Sources

IPC Program & Procedures

- COVID-19 policies & procedures
- [COVID-19 Infection Prevention Practices Decision Tool](#)

IPC Risk Assessments

- COVID-19 risk assessments
- Emergency preparedness assessments & plans

Facility-Specific IPC Data

- Standard precautions practices & compliance
- Influenza-illness-like (ILI) syndrome surveillance

Regulatory Guidance

- [CMS Interim Final Rule \(IFC\), CMS-3401-IFC \(9/23/2022\)](#)
- [CDC Interim IPC Recommendations for Healthcare Personnel](#)

Community-Level Epidemiology

- [CDC Transmission Levels](#)
- [CDC Wastewater surveillance](#)

Public Health Communications

- Advisory alerts
- Local regulatory updates

Verify Diagnosis (And That an Outbreak Is Occurring)

- Single case
 - One incident case triggers an outbreak
 - COVID-19, Legionella, Bacterial meningitis, etc.
 - May be determined by your local public health department
 - Notifiable disease condition reporting
- Cluster
 - A group of cases in a certain place and time suspected to be greater than expected (may represent an outbreak)
- Pseudo-outbreak
 - Increase in incidence related to something other than an increase in true disease
 - Increased surveillance
 - Laboratory contamination
 - Misdiagnosis
 - May still be important for evaluations of processes or products

Verify That a COVID-19 Outbreak Is Occurring

COVID-19 outbreak is defined as:

- A single new case of COVID-19 occurs among residents or staff
 - Positive viral test for SARS-CoV-2

Prioritize testing for outbreak verification:

- Residents or staff with symptoms of COVID-19
- A higher-risk exposure to someone with SARS-CoV-2 infection

Considerations:

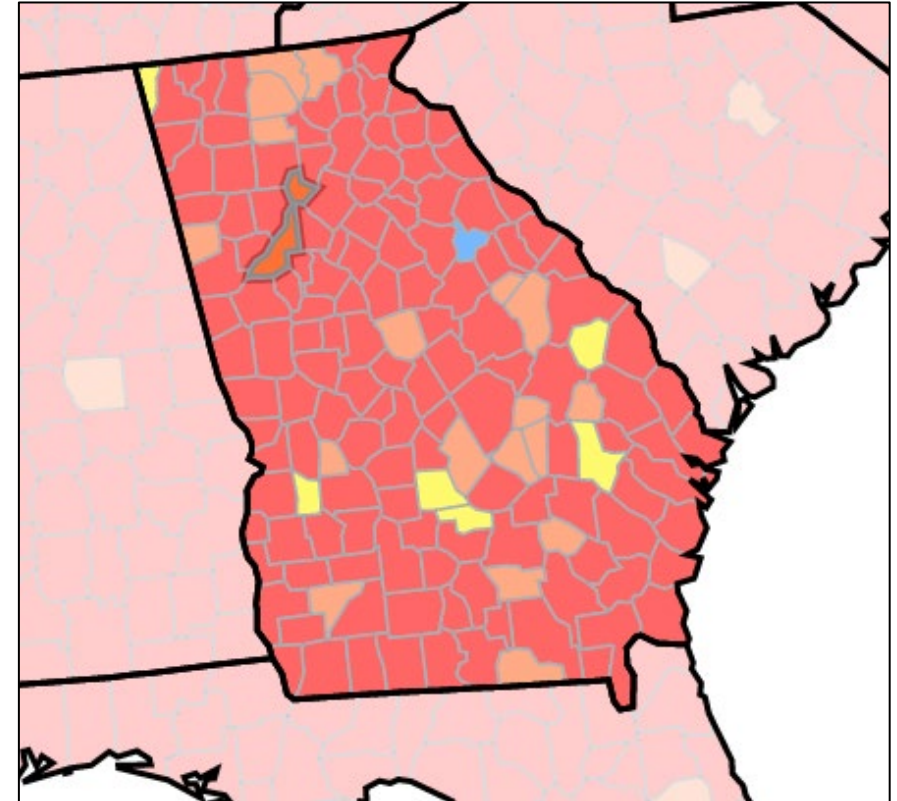
- Encourage staff to report positive tests to administrators or occupational health
- Ensure testing supplies are up to date and available
 - Check expiration dates
- Follow the testing procedure as instructed
- Resources/guidance
 - [Interim Final Rule \(IFC\), CMS-3401-IFC, Additional Policy and Regulatory Revisions in Response to the COVID-19 Public Health Emergency related to Long-Term Care \(LTC\) Facility Testing Requirements \(9/23/2022\)](#)

Case Example: COVID-19 Outbreak

Transmission levels within Fulton County, Georgia, have been at the substantial level for three weeks (substantial as of 1/2/2023). There are high COVID-19 transmission levels in the surrounding counties. Today, a CNA reported a positive COVID-19 result from a viral SARS-CoV-2 PCR test taken two days ago. The last shift and only shift he worked in the past week was on 1/21/2023 from 7 a.m. - 3 p.m., and he was sent home early for not feeling well (reporting a runny nose, sore throat, fatigue, and headache).

Does this constitute a COVID-19 outbreak and require an outbreak investigation?

- A. Yes**
- B. No**



[CDC Transmission Levels](#)

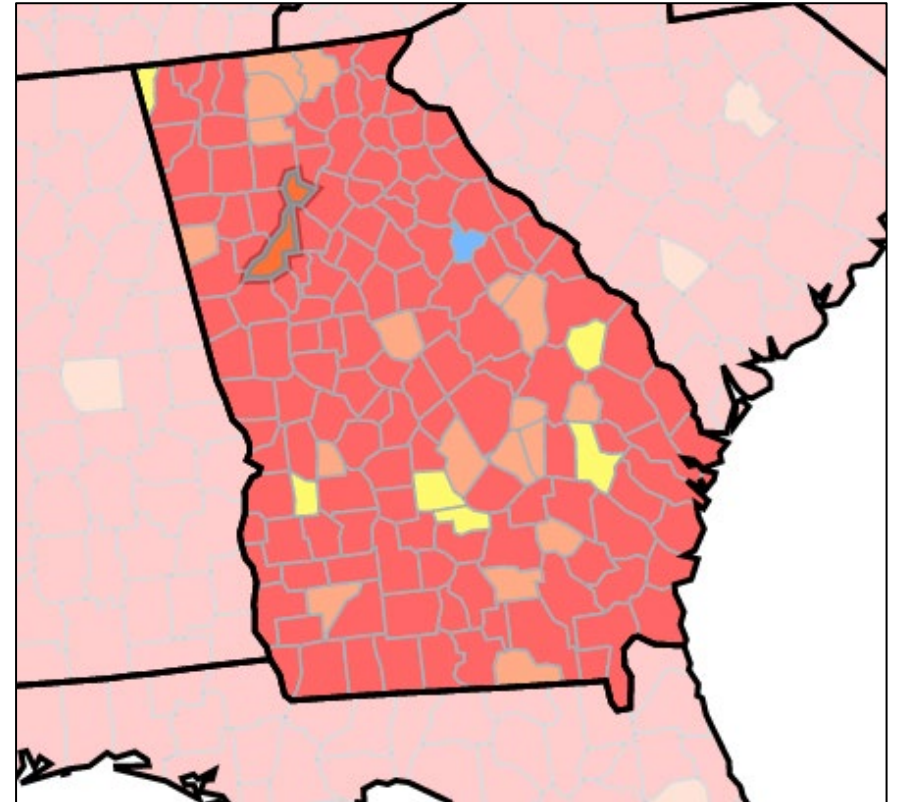
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[CDC Transmission Levels](#)

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Construct a Working Case Definition

Case definition

- Specific criteria for defining the illness/infection you are investigating
- Should be narrow enough to guide your investigation focus but broad enough to capture the majority of cases
- Guides our diagnostic testing strategy

Example:

- “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.”



COVID-19 Outbreak Investigation Example:

Case Definition

Case definition

- Residents or staff with asymptomatic or symptomatic (fever or chills, cough, sore throat, shortness of breath, fatigue, headache, congestion, nausea or vomiting, loss of taste or smell) SARS-CoV-2 infection beginning 1/22/2023.



Systematically Find and Record Cases

Review your Facility IPC Plan & Outbreak Investigation Plan

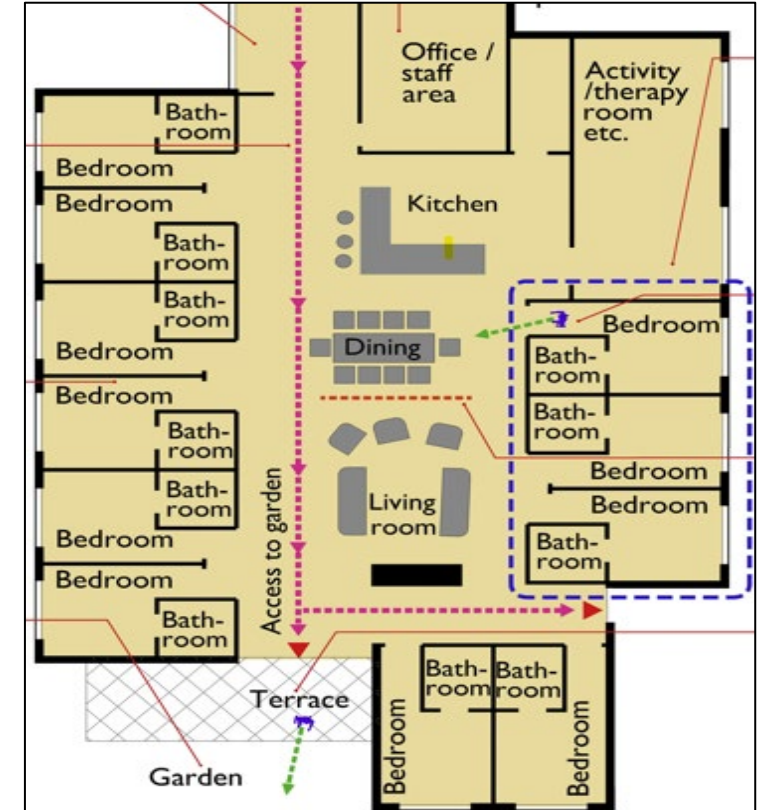
- Internal and external collaboration for resources and support
- Implement outbreak IPC practices (may vary by pathogens & clinical presentation)
 - Strict hand hygiene
 - Source control
 - Transmission-based precautions (TBP)
 - Environmental cleaning & disinfection
 - Ventilation improvements

Consider how you can systematically find cases

- **Map out your cases**
- Cases may not occur in isolation

Create a line list of cases

- Table that contains information about each case in an outbreak
- Data collection should be systematic and include the following
 - Identifying information
 - Demographic information
 - Clinical information
 - Risk factor information
 - Reporter information



[Anderson, D. C., Grey, T., Kennelly, S., & O'Neill, D. \(2020\). Nursing home design and COVID-19: balancing infection control, quality of life, and resilience. *Journal of the American Medical Directors Association*, 21\(11\), 1519-1524.](#)

COVID-19 Outbreak Investigation Example: Systematically Identifying Cases

CDC guidance:

- Perform testing for all residents and HCPs identified as close contacts or on the affected unit(s) if using a broad-based approach, **regardless of vaccination status**

CMS guidance

- Upon identification of a single new case of COVID-19 infection in any staff or residents, testing should begin immediately (but not earlier than 24 hours after the exposure, if known).
 - Table 1: Testing Summary (see image)

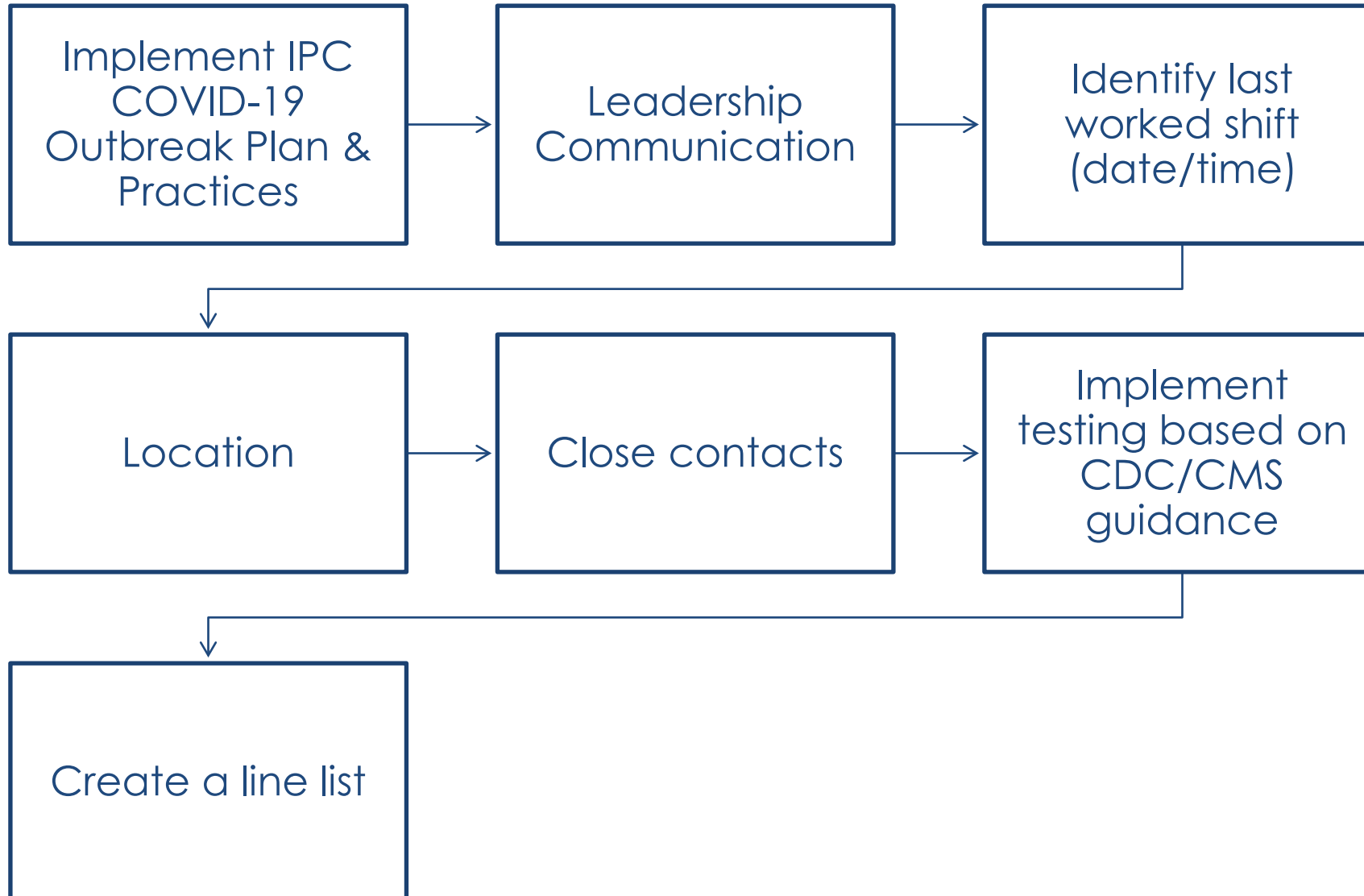
Table 1: Testing Summary

| Testing Trigger | Staff | Residents |
|--|--|---|
| Symptomatic individual identified | Staff, regardless of vaccination status, with signs or symptoms must be tested. | Residents, regardless of vaccination status, with signs or symptoms must be tested. |
| Newly identified COVID-19 positive staff or resident in a facility that can identify close contacts | Test all staff, regardless of vaccination status, that had a higher-risk exposure with a COVID-19 positive individual. | Test all residents, regardless of vaccination status, that had close contact with a COVID-19 positive individual. |
| Newly identified COVID-19 positive staff or resident in a facility that is unable to identify close contacts | Test all staff, regardless of vaccination status, facility-wide or at a group level if staff are assigned to a specific location where the new case occurred (e.g., unit, floor, or other specific area(s) of the facility). | Test all residents, regardless of vaccination status, facility-wide or at a group level (e.g., unit, floor, or other specific area(s) of the facility). |
| Routine testing | <i>Not generally recommended</i> | Not generally recommended |

COVID-19 Outbreak Investigation Example: Systematically Identifying Cases

- Either contact tracing or a broad-based approach
 - A broad-based (e.g., unit, floor, or other specific area(s) of the facility) approach is preferred if all potential contacts cannot be identified or managed with contact tracing or if contact tracing fails to halt transmission.
- Perform testing for all residents and HCP identified as close contacts or on the affected unit(s) if using a broad-based approach, regardless of vaccination status.
 - Testing is recommended immediately (but not earlier than 24 hours after the exposure), and:
 - If negative again 48 hours after the first negative test
 - If negative again 48 hours after the second negative test
 - This will typically be on Day 1 (where the day of exposure is day 0), Day 3, and Day 5
- Testing is generally not recommended for asymptomatic people who have recovered from SARS-CoV-2 infection in the last 30 days.
 - It should be considered for those who have recovered in the last 31-90 days; however, an antigen test is recommended instead of a nucleic acid amplification test (NAAT).

COVID-19 Outbreak Investigation Example: Systematically Identifying Cases



COVID-19 Outbreak Investigation Example: Line List

Cases identified

| Name | DOB | Sex | Room | Hall/Area Worked | Symptom onset | Symptoms | Lab test result |
|-----------------|---------|-----|------|------------------|---------------|----------------------|---|
| Nurse (staff) | 3/4/89 | M | * | Hall B | 1/21/23 | Sore throat, fatigue | Positive |
| Mr. Resident 1 | 5/3/42 | M | 214 | Hall B | 1/24/23 | Sore throat | Positive |
| Ms. Resident 2 | 8/13/53 | F | 212 | Hall B | 1/24/20 | Fever | 2 nd test, pending |
| Mrs. Resident 3 | 7/14/62 | F | 218 | Hall A | 1/25/20 | Congestion | 1 st test, negative 2 nd test, pending |

| Name | DOB | Sex | Room | Hall/Area Worked | Symptom onset | Symptoms | Lab test result |
|-----------------|---------|-----|------|------------------|---------------|----------------------|---|
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Based on the line list above, where should I promptly implement COVID-19 outbreak testing to maximize my resources and systematically find cases?

- A. Hall A only
- B. Hall B only
- C. Halls A & B
- D. No additional testing is needed

| Name | DOB | Sex | Room | Hall/Area Worked | Symptom onset | Symptoms | Lab test result |
|-----------------|---------|-----|------|------------------|---------------|----------------------|---|
| Mr. CNA (staff) | 3/4/89 | M | * | Hall B | 1/21/23 | Sore throat, fatigue | Positive |
| Mr. Resident 1 | 5/3/42 | M | 214 | Hall B | 1/24/23 | Sore throat | Positive |
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A. Hall A only

B. Hall B only

C. Halls A & B

D. No additional testing is needed

Epidemic Curve

Shows the frequency of new cases over time based on the date of disease onset and can shed light on the following:

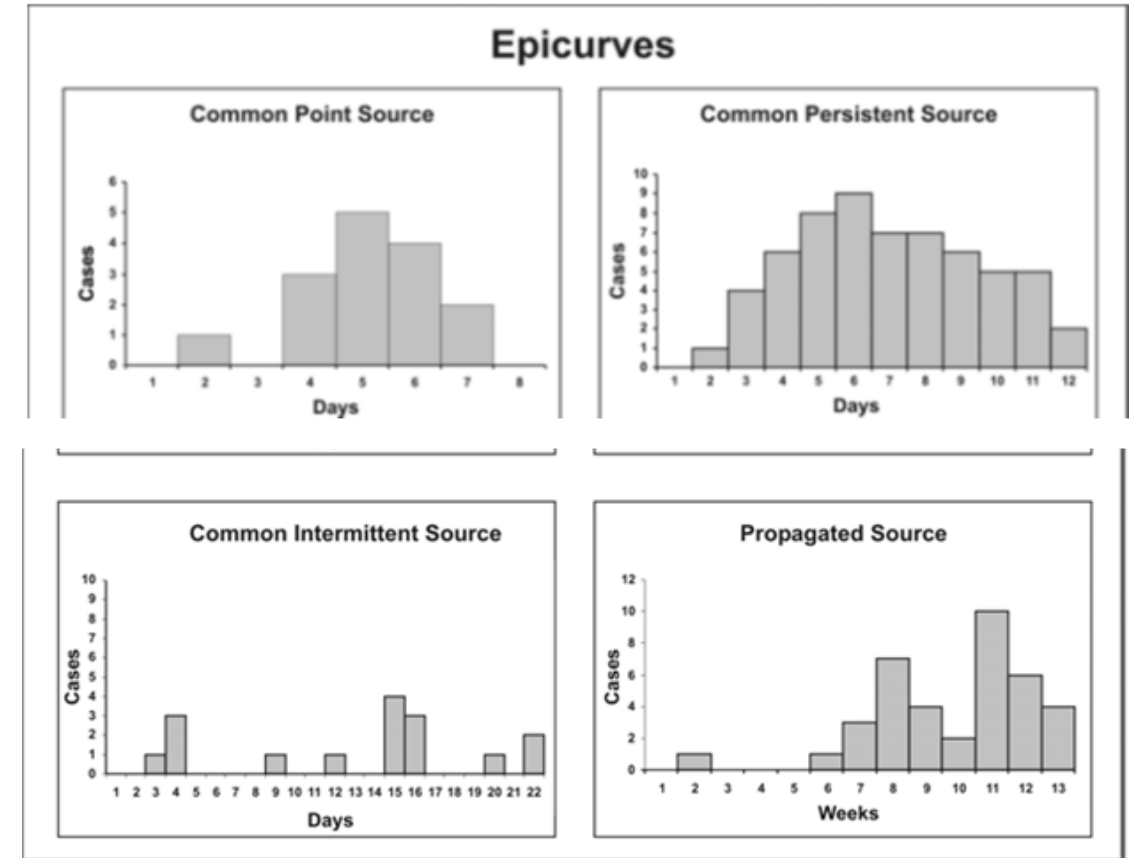
- A point source or person-to-person transmission
- If the outbreak is increasing or waning
- If the pathogen has a long or short incubation period

Helps you with data visualization to summarize by person, time and place

- Persons at risk or affected
- When the outbreak started
- Seasonal or other patterns
- Potential source

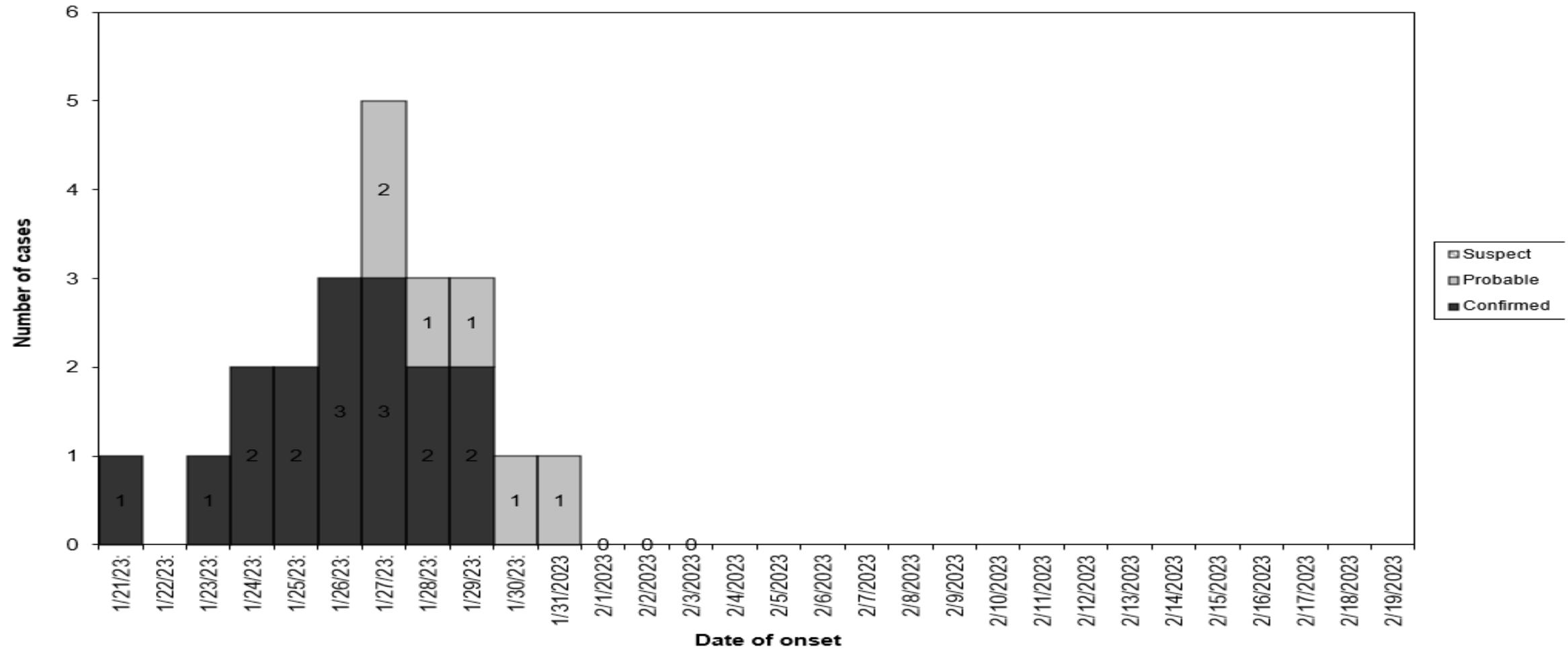
CDC Epi Curve Tutorials & Template

- [Epidemiological Curve](#)
- [Generate an Epi Curve excel](#) template
- [Quick-Learn Lesson: Create an Epi Curve](#)
- [Quick-Learn Lesson: Using an Epi Curve to Determine Mode of Spread](#)



Typical Epi Curves for Different Types of Spread, Figure 6.3, Adapted from: European Programmer for Intervention Epidemiology Training

Figure: Epi Curve Template for COVID-19 Outbreak



COVID-19 Outbreak Investigation Example: Epi Curve

<https://www.cdc.gov/urdo/downloads/epicurve.xls>

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Communicate findings

Develop, Evaluate, Refine Hypothesis

- Hypothesis development, evaluation, & testing
 - Literature review
 - Data collection & analysis
 - Infection preventionist's intuition
- Collaboration
 - With public health epidemiologists leading the investigation
 - It's ok to ask for help!



Compare and Reconcile With Lab and Environmental Results

Lab evidence

- Diagnostic tests
- Environmental testing
- Confirms the hypothesis, pathogen, and mode of transmission
- Helps evaluate your epidemic curve
 - Propagated or intermittent source
 - Contaminated water or IV solution
 - Point source or a propagated source
 - Ill staff member or visitor



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Communicate findings

Implement Control and Prevention Measures

Mode of transmission determines IPC measures

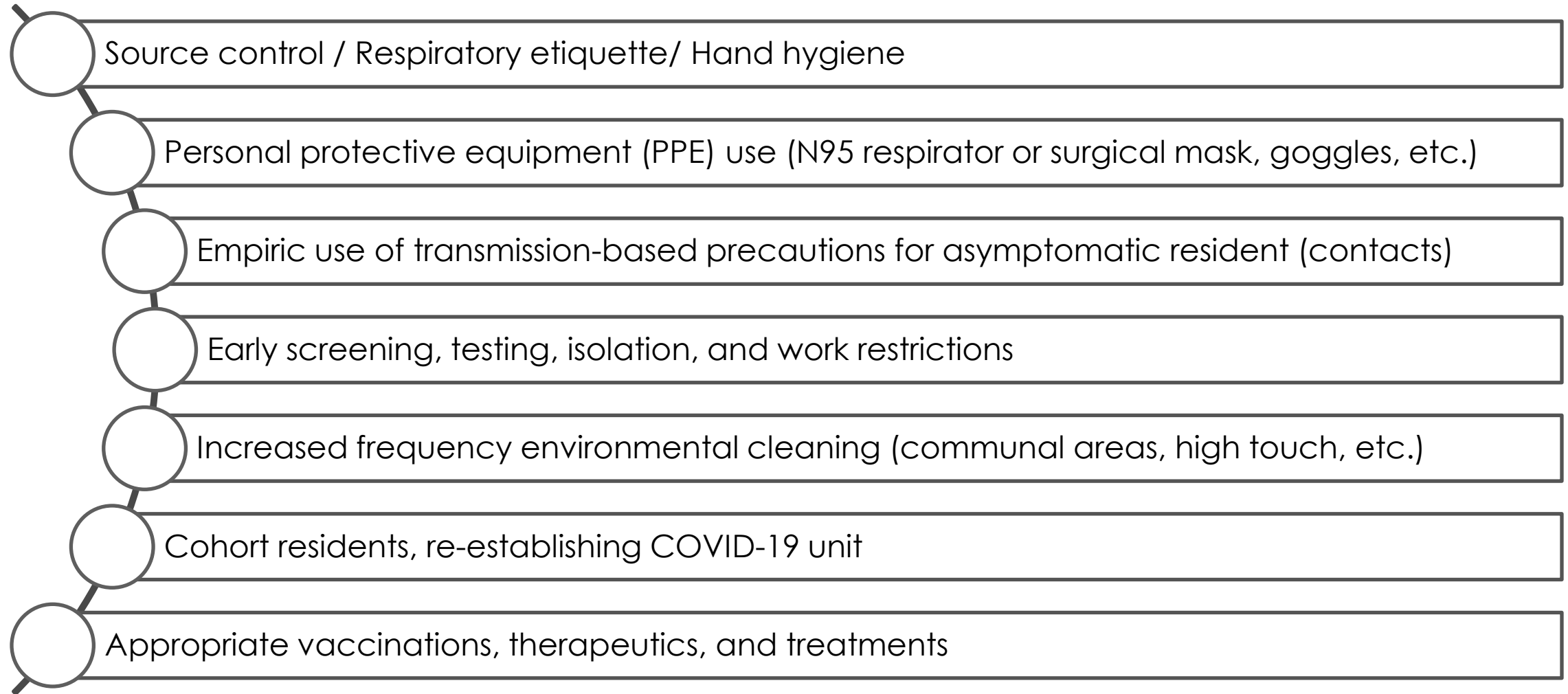
- Resources
 - [Control of Communicable Disease Manual](#) (American Public Health Association)
 - [CDC Infection Control Guidelines & Guidance Library](#)

IPC Interventions (examples)

- Employee work restrictions
- TBP implementation
 - [PPE Burn Rate Calculator](#)
- Strict Hand hygiene
- Increased cleaning & disinfection
- Source control for visitors
- Limited activities
- Cohorting sick residents

COVID-19 Outbreak Investigation Example:

COVID-19 IPC Practices



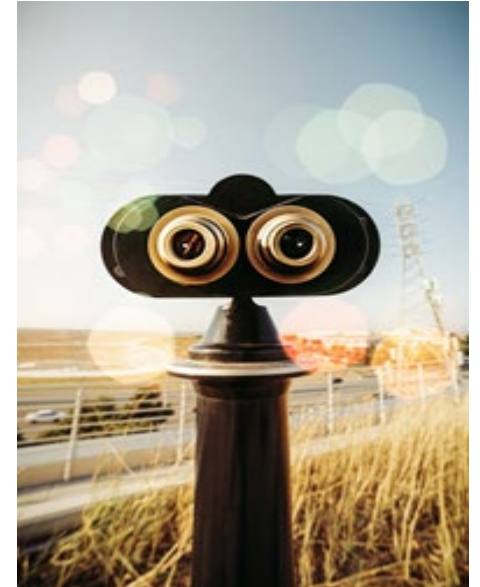
Initiate or Maintain Surveillance

“the ongoing, systematic collection, analysis, and interpretation of health-related data essential to planning, implementation, and evaluation of public health practice.” — *Field Epidemiology*

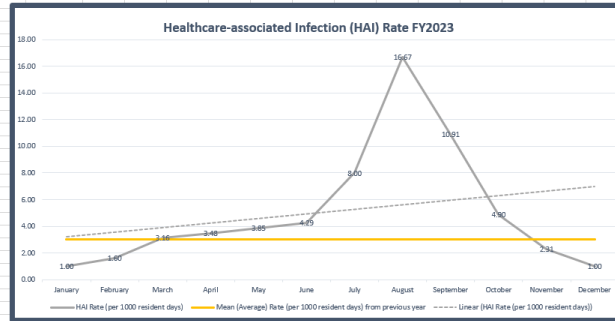
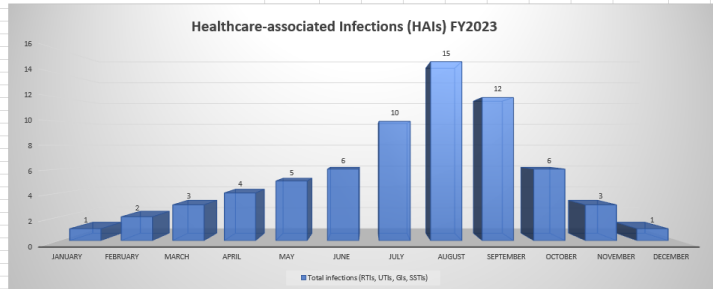
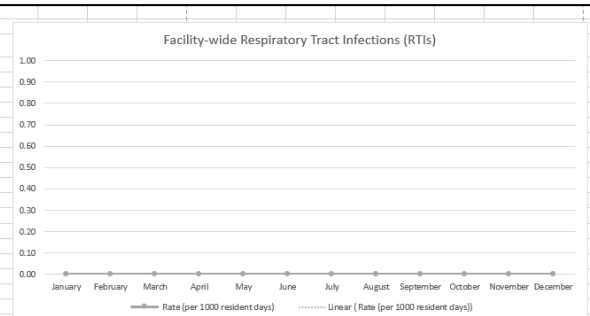
- Active surveillance
 - Actively looking for the infection or condition
 - Ensures more complete reporting
 - Used for specific epidemiologic investigations
- Passive surveillance
 - Infection found during routine, ongoing data collection
 - Often limited by incomplete data or report quality

Surveillance (case) definitions

- Ensure the same thing is counted
- Enable meaningful comparison with others
- Ensure correctly interpret changes over time
 - *Are new cases slowing down/stopping?*
- Identify factors associated with an infection or outbreak
 - *Do you need to review other areas in your facility for spread outside the initial outbreak zone?*
- Inform infection prevention efforts and targeted interventions
 - MRSA swabbing all new admissions and repeat testing every seven days
 - **Actively testing for asymptomatic and symptomatic residents for SARS-CoV-2 infection**



Maintain Surveillance: HAI Surveillance & Dashboard

[illegible][illegible][illegible]

- [AHS HAI Surveillance & Dashboard Tool](#)
 - Track & visualize healthcare-associated infections (HAIs)
 - Respiratory tract infections
 - Urinary tract infections
 - Gastrointestinal tract infections
 - Skin and soft tissue infections
 - Multi-drug resistant organisms (MDRO)
 - Modifiable spreadsheet (with automated formulas) designed to support nursing facility infection prevention and control (IPC) surveillance
 - Line lists
 - Data tables
 - Graphs

Communicate & Report Findings

- Report outbreak investigation findings & follow-up
 - [Root Cause Analysis \(RCA\)](#)
 - [COVID-19 Infection Prevention Practices Tool & SBAR](#)
- Facility Leadership
 - Director of Nursing (DON)
 - Administrator
 - Medical Director
 - Risk Management
- Public Health
 - Local health department
 - National Healthcare Safety Network (NHSN) reporting
- Quality meetings
 - Quality Assurance & Performance Improvement (QAPI) Plans
- Internal Committees
 - IPC/Antimicrobial Stewardship Committee



Fishbone Diagram Worksheet



QUALITY IMPROVEMENT INITIATIVE

Introduction

The fishbone diagram is a tool to help the RCA team identify the causes and effects of an event and get to the root cause. The problem or effect is identified at the head or mouth of the fish. Contributing causes are listed on the smaller "bones" under various cause categories. A fishbone diagram can be helpful in identifying all causes for a problem. The team looks at the categories and thinks of all the factors affecting the problem or event. Use the fishbone diagram to keep the team focused on the causes of the problem, rather than the symptoms or the solutions.

How To Use

Use this worksheet to identify possible causes of a problem and to sort ideas into useful categories. The team should include members who have personal knowledge of the processes and systems involved in the problem or event being investigated and follow these steps:

1. Agree on the problem statement, also referred to as the effect. This is written at the mouth of the "fish." Be as clear and specific as you can about defining the problem. Be aware of the tendency to define the problem in terms of a solution. For example, "We need more of something." The problem is what happened.
2. Agree on the major categories of causes of the problem, written as branches or "bones" from the main arrow. Major categories in health care settings often include: equipment/supply factors, environmental factors, rules policy/procedure factors, and people/staff factors.
3. Brainstorm all the possible causes of the problem. Ask, "Why does this happen?" As each idea is given, the facilitator writes on the fishbone diagram under the appropriate category. These are contributing or causal factors leading to the problem. Causes can be written in more than one place if they relate to several categories.
4. The team again asks, "Why does this happen?" about each cause. Write sub-causes branching off the cause bones as they are identified.
5. The team continues to ask, "Why?" and generate deeper levels of causes and organizes them under the related categories. This will help identify and then address root causes to prevent future problems.

Tips

- Consider drawing your fishbone diagram on a flip chart or large dry erase board.
- Make sure to leave enough space between the major categories on the diagram so that you can add minor detailed causes later.
- When you are brainstorming causes, consider having team members write each cause they can identify on a sticky note and place it on the diagram. Continue going through the group and identifying more factors until all ideas are exhausted. This encourages each team member to participate in the brainstorming activity and voice their opinions.
- Note that the "five-whys" technique is often used in conjunction with the fishbone diagram. Keep asking why until you get to the root cause.
- Another way to help identify the root causes from all the ideas generated is to consider a multi-voting technique. Have each team member identify the top three causes of the problem or event. Ask each team member to place three tally marks or colored sticky dots on the fishbone next to what they believe are the root causes that could be addressed.

Problem Statement

Environmental

Staff/People

Equipment/Supplies

Rules/Policies/Procedures

Facility Name: _____ CCN: _____



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COVID-19 Outbreak Investigation: Root Cause Analysis (RCA)

Problem Statement
COVID-19 Facility Outbreak: January-February 2023

Environmental

Staff/People

Equipment/Supplies

Rules/Policies/Procedures

Facility Name: _____ CCN: _____

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Which factors may have contributed to the rapid spread of COVID-19 in the facility?

- A. Discontinuation of symptom screenings for staff, vendors & visitors
- B. Lack of hand hygiene supplies and masks
- C. Non-compliance with source control recommendations
- D. Delay in reporting COVID-19-like symptoms or positive test results
- E. All of the above

COVID-19 Outbreak Investigation: Root Cause Analysis (RCA)

Problem Statement
COVID-19 Facility Outbreak: January-February 2023

Environmental

Staff/People

Equipment/Supplies

Rules/Policies/Procedures

Facility Name: _____ CCN: _____

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Which factors may have contributed to the rapid spread of COVID-19 in the facility?

- A. Discontinuation of symptom screenings for staff, vendors & visitors
- B. Lack of hand hygiene supplies and masks
- C. Non-compliance with source control recommendations
- D. Delay in reporting COVID-19-like symptoms or positive test results
- E. All of the above**



COVID-19 Infection Prevention Practices DECISION TOOL

This resource is intended to assist in making COVID-19 infection prevention and control (IPC)-related decisions in your facility. The highest level of recommended IPC practices are listed below and reflects the current Centers for Disease Control and Prevention (CDC) [guidance](#) as of this publication. Facilities are encouraged to use their discretion and any additional information from local/state health departments and regulatory entities when considering COVID-19 IPC implementation. Also, facilities are encouraged to stay up-to-date on current COVID-19 guidance from the CDC and Centers for Medicare and Medicaid Services (CMS).

When modifying IPC policies to reflect local community transmission, please consider the following:

1. **CDC Transmission Levels** - This metric (also known as community transmission) is used to guide select IPC practices in health care settings to allow for earlier intervention before there is a strain on the health care system and to protect the individuals receiving care in these settings. Use the county transmission level (high, substantial, moderate or low) to determine the level of SARS-CoV-2 infections in your community and the risk to your facility. Implement the recommended practices listed below based on your local transmission level.
2. **Interim Infection Prevention and Control Recommendations for Healthcare Personnel During the Coronavirus Disease 2019 (COVID-19) Pandemic** - This guidance applies to all U.S. health care settings, including nursing homes and home health. Also, note that vaccination status no longer informs COVID-19-specific IPC interventions (i.e., source control, testing, post-exposure recommendations)
3. **Your Facility Data** – Consider the status of the IPC program and the impact of current interventions, like hand hygiene compliance rates, cleaning and disinfection practices, vaccination rates (COVID-19, Influenza, Pneumococcal), safe cohorting plans, emergency/outbreak plans, etc. If the facility has a history of a COVID-19 outbreak, consider how previous outbreaks developed and were controlled. If an outbreak occurs, the highest levels of precautions should be immediately implemented until the outbreak is controlled and transmission rates in the county fall.
4. **Your Facility COVID-19 Plan updates/changes** - Document decisions made, including supporting data and information discussed in considerations 1. and 2. above, using the Situation, Background, Assessment and Recommendation (SBAR) format (See page 3), including date and responsible parties.

TRANSMISSION LEVEL

RECOMMENDED PRACTICES:

HIGH

- Universal source control using NIOSH Approved N-95 or higher respirator in all areas of the facility where resident encounters could occur
- Eye protection in all areas where resident encounters could occur
- Optimize indoor air quality by limiting crowding in communal spaces, and consulting with facility engineers to improve ventilation
- Perform SARS-CoV-2 Testing for suspected cases and close contacts
- Consider screening testing to identify asymptomatic infections
- Establish process to identify and manage individuals with suspected or confirmed SARS-CoV-2 Infection
- Encourage everyone to practice infection prevention behaviors (i.e. hand hygiene, respiratory etiquette/cover your cough, avoiding sick people, reporting symptoms) and to remain up to date with all vaccine doses
- Maintain infection prevention and control practices (i.e. hand hygiene, cleaning and disinfection, standard precautions)
- Implement facility wide screening testing if newly identified COVID-19 case in resident or staff

SUBSTANTIAL

- Universal source control recommended for those who have had recent exposure to COVID-19, respiratory-infection symptoms (i.e. cough, runny nose, congestion, sore throat), reside or work in an area with active outbreak or based on personal preference
- Establish process to identify and manage individuals with suspected or confirmed SARS-CoV-2 Infection
- Consider screening testing to identify asymptomatic infections
- Encourage everyone to practice infection prevention behaviors (i.e. hand hygiene, respiratory etiquette/cover your cough, avoiding sick people, reporting symptoms) and to remain up to date with all vaccine doses
- Establish process to identify and manage individuals with suspected or confirmed SARS-CoV-2 Infection
- Optimize indoor air quality by limiting crowding in communal spaces, and consulting with facility engineers to improve ventilation
- Maintain infection prevention and control practices (i.e. hand hygiene, cleaning and disinfection, standard precautions)
- Implement facility wide screening testing if newly identified COVID-19 case in resident or staff

MODERATE

- Encourage everyone to practice infection prevention behaviors (i.e. hand hygiene, respiratory etiquette/cover your cough, avoiding sick people, reporting symptoms) and to remain up to date with all vaccine doses
- Establish process to identify and manage individuals with suspected or confirmed SARS-CoV-2 Infection
- Universal source control recommended for those who have had recent exposure to COVID-19, respiratory-infection symptoms (i.e. cough, runny nose, congestion, sore throat), reside or work in an area with active outbreak, or based on personal preference
- Optimize indoor air quality by limiting crowding in communal spaces, and consulting with facility engineers to improve ventilation
- Maintain infection prevention and control practices (i.e. hand hygiene, cleaning and disinfection, standard precautions)
- Implement facility wide screening testing if newly identified COVID-19 case in resident or staff

LOW

- Encourage everyone to practice infection prevention behaviors (i.e. hand hygiene, respiratory etiquette/cover your cough, avoiding sick people, reporting symptoms) and to remain up to date with all vaccine doses
- Establish process to identify and manage individuals with suspected or confirmed SARS-CoV-2 Infection
- Universal source control recommended for those who have had recent exposure to COVID-19, respiratory-infection symptoms (i.e. cough, runny nose, congestion, sore throat), reside or work in an area with active outbreak, or based on personal preference
- Optimize indoor air quality by limiting crowding in communal spaces, and consulting with facility engineers to improve ventilation
- Maintain infection prevention and control practices (i.e. hand hygiene, cleaning and disinfection, standard precautions)
- Implement facility wide screening testing if newly identified COVID-19 case in resident or staff

| SBAR Template | |
|---------------------|---|
| Team Members: _____ | |
| Date: _____ | |
| S | Situation: <ul style="list-style-type: none"> Reviewing COVID IPC strategies New COVID-19 case identified (outbreak) Updating COVID-19 IPC policy Increase or decrease in community transmission levels Increase or decrease in facility influenza-like illness (ILI) cases |
| B | Background: (Things to consider – community transmission levels, vaccination rates, cases of influenza-like illness, outbreak status, etc.) <ul style="list-style-type: none"> CDC Transmission Level is currently _____ Newly COVID-19 case identified on _____ Number of residents with influenza-like illness (ILI): _____ Number of staff with influenza-like illness (IU): _____ Current Vaccination rates: _____ Last known COVID outbreak: _____ |
| A | Assessment: <ul style="list-style-type: none"> Current compliance with IPC practices (HH rates, cleaning/disinfection, transmission-based precautions, etc) Number of suspected cases (COVID-19, influenza-like illness, RSV, etc.): _____ Number of contacts/exposed residents or staff: _____ |

| | |
|----------|---|
| R | Recommendation: (Practices to adjust: screening testing, personal protective equipment (PPE) requirements, cohorting, visitation, admissions testing, clinical symptom monitoring, etc.) In addition to the recommendations provided in the COVID-19 Infection Prevention Practices Decision Tool consider the following: <ul style="list-style-type: none"> Update visitation policy Cohort residents Communicate with state/local public health authorities |
|----------|---|

REFERENCES:

- [Interim Final Rule \(IFC\), CMS-3401-IFC, Additional Policy and Regulatory Revisions in Response to the COVID-19 Public Health Emergency related to Long-Term Care \(LTC\) Facility Testing Requirements](#)
- [Interim Infection Prevention and Control Recommendations for Healthcare Personnel During the Coronavirus Disease 2019 \(COVID-19\) Pandemic](#)

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 QUALITY IMPROVEMENT & INNOVATION GROUP

Steps of an Outbreak Investigation: COVID-19 Example

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

References

- Centers for Disease Control and Prevention. 2011. Outbreak Investigation: A Cheat Sheet. Public Health Matters Blog. Retrieved from <https://blogs.cdc.gov/publichealthmatters/2011/09/outbreak-investigation-a-cheat-sheet/>
- Franck, J., Bodily-Bartrum, M. Infection Prevention Guide to Long Term Care. 2019. 2nd Ed. APIC. Arlington, VA. U.S. Department of Health and Human Services and Centers for Disease Control and Prevention. 2011. An Introduction to Applied Epidemiology and Biostatistics. Principles of Epidemiology in Public Health Practice. 3rd Ed. Retrieved from <https://www.cdc.gov/csels/dsepd/ss1978/index.html#Acknowledgments>

CDC COVID-19 Infection Prevention and Control Guidance Resources



[Interim IPC Recommendations for Healthcare Personnel](#)

[Interim Guidance for Managing Healthcare Personnel with Infection or Exposure](#)

[Strategies to Mitigate Healthcare Personnel Staffing Shortages](#)

Thank You for Your Time!

Contact the Patient Safety Team



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Questions?



Complete the Post-Event Assessment to Receive Credit

Please use the following responses for questions Q1-Q3:

Q1: LIVE

Q2: BOOST

Q3: Select correct date of event attended

https://bit.ly/NABANCC_ClaimCredit



Nursing Home and Partnership for Community Health: CMS 12th SOW GOALS



OPIOID UTILIZATION AND MISUSE

- Promote opioid best practices
-
- Reduce opioid adverse drug events in all settings



PATIENT SAFETY

- Reduce hospitalizations due to c. diff
-
- Reduce adverse drug events
-
- Reduce facility acquired infections



CHRONIC DISEASE SELF- MANAGEMENT

- Increase instances of adequately diagnosed and controlled hypertension
-
- Increase use of cardiac rehabilitation programs
-
- Reduce instances of uncontrolled diabetes
-
- Identify patients at high-risk for kidney disease and improve outcomes



CARE COORDINATION

- Convene community coalitions
-
- Reduce avoidable readmissions, admissions to hospitals and preventable emergency department visits
-
- Identify and promote optimal care for super utilizers



COVID-19

- Support nursing homes by establishing a safe visitor policy and cohort plan
-
- Provide virtual events to support infection control and prevention
-
- Support nursing homes and community coalitions with emergency preparedness plans



IMMUNIZATION

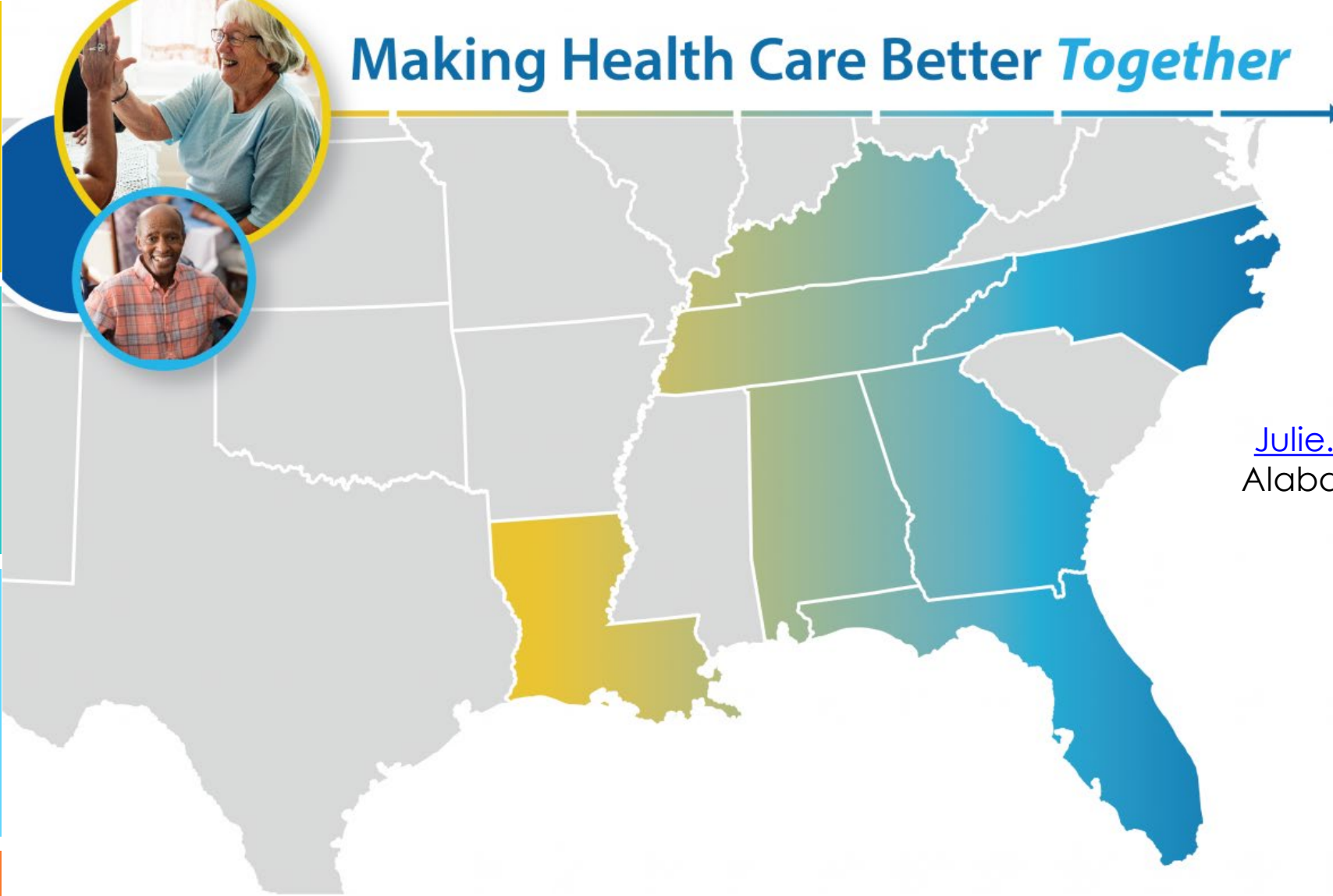
- Increase influenza, pneumococcal, and COVID-19 vaccination rates



TRAINING

- Encourage completion of infection control and prevention trainings by front line clinical and management staff

Making Health Care Better *Together*



Julie Kueker

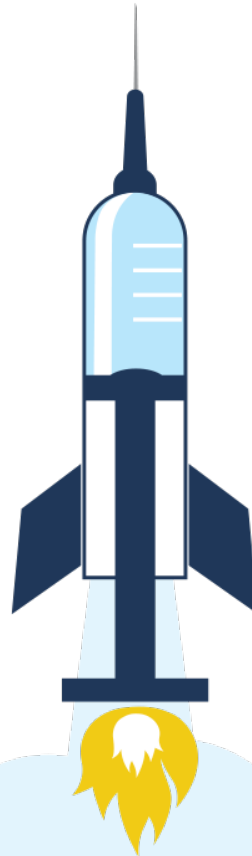
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Making Health Care Better Together



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