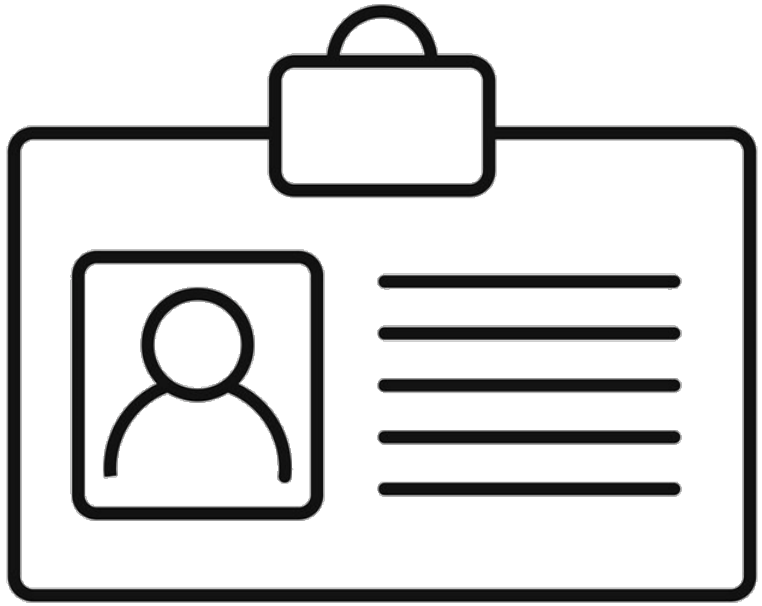
ALLIANT HEALTH SOLUTIONS

Georgia Department of Public Health:
Nursing Home Infection Prevention Infrastructure and Training

May 24, 2022

Meet the Team



Presenters:

Amy Ward, MS, BSN, RN, CIC
Infection Prevention Specialist
Alliant Health Solutions

Donald Chitanda, MPH, CIC
Infection Prevention Technical Advisor
Alliant Health Solutions

Linda Kluge, RD, LD, CPHQ
Executive Director
Alliant Health Solutions

Melody Brown, MSM
Patient Safety Manager
Alliant Health Solutions

Thank You to Our Partners

- Georgia Department of Public Health
- University of Georgia

Trainings

- There will be two training sessions per year focused on relevant infection prevention topics, updates and best practices shared.

- Stay tuned for dates in:
  - October 2022

Infection Prevention Plan

ALLIANT
HEALTH SOLUTIONS

Infection Prevention (IP) Role

- Infection prevention is a specialty and requires specific training and competencies
  - Application of scientific principles and methods in the collection and analysis of data
  - Surveillance is conducted according to approved definitions and methodologies
  - Reports and presents to appropriate committees
  - Investigates outbreaks and implements prevention efforts
  - Reports outbreaks of communicable diseases to local health jurisdictions as needed in consultation with administration and medical director
  - Plans and conducts educational programs for staff and residents
  - Develops and reviews policies and procedures, monitors for adherence and supports staff and resident safety
  - Ensures compliance with local, state and federal standards and regulations for infection prevention

IP Training Roadmap

- Moving from a new, novice IP to a proficient or expert level takes time and experience.
- Having a roadmap and milestones ensures the new IP gets the training and experience they need.
- Memberships to professional organizations like APIC are helpful for new IPs to learn and grow in their role.

The Infection Prevention Program

- IP programs in long-term care are intended to decrease the risk of infection transmission and acquisition.
- IP programs are complex and require facility-specific risk assessments, historical data, and consideration of resident population and local setting.
- The success of the IP program depends on having a trained IP and access to IPC resources.

Regulation Versus Guidelines

- Regulations - Laws and practices not dictated, but the facility must be able to show how they are meeting the regulatory requirements with policy, procedures, data and processes.
- Guidelines - Evidence-based practices used to inform policy and procedures. Often consensus statements from professional organizations or societies such as CDC, APIC, SHEA, IDSA.

Infection Prevention Risk Assessment

- Completed annually and when risks change
- Completed by the multidisciplinary team
- Use a template (add or delete items!)
- Used to develop priorities and goals for the upcoming year
- Regulatory requirement

Infection Prevention Risk Assessment

- Considerations and data-gathering
- Facility
- Services provided, care and treatment
- Data analysis
  - incident reports
  - hand hygiene compliance
  - infection rates
  - TB rates
- Patients/residents/personnel

Facility

- Location
- Community
- Population
- Care/services provided
- Personnel

Services/Treatments/Procedures

- Intravenous infusions or central lines
- Indwelling urinary catheters
- Intubation/ventilation
- Wound care/hyperbaric

Equipment

- Disposable versus Reusable
  - Are single-use disposable items reused?
- Re-usable equipment
  - Cleaning and disinfection between uses
  - Are the instructions for use followed?
  - How is cleaning or disinfection evaluated?
  - When is cleaning required?
  - When is disinfection required?

Environmental Rounds

- What do you see during rounds?
  - Cleanliness
  - Ventilation
  - Space (clean separated from dirty, storage of supplies and equipment – away from outside walls, off the floor, etc.)
- Construction/Renovation
- Furnishings and mattresses in good repair?

Residents

- Age - young, elderly or both
- Lifestyle risks
- Migrant or ethnic groups
- Immunocompromised or oncology
- Post-surgical or rehab
- Drug-resistant organisms
- Respiratory infections/trach unit
- UTI risks

Personnel

- Compliance with:
  - Work restrictions
  - Health screenings (TB, COVID-19, etc.)
- Vaccinations
- Workplace exposures

Surveillance Data

- Hand hygiene trends
- Outbreaks - GI infections, COVID-19, influenza
- Compliance with precautions (standard and transmission-based)
- Compliance with sharps safety program
- Environmental cleaning - rooms, common areas, shared equipment
- Education and competency completion

IP Risk Assessment Activity

- Discuss these main topics – please participate via chat!
  - Community risks
  - Patient/Admission risks
  - Human hazards
  - Environmental risks
- Fill out the IP risk assessment as a group

Risk Assessment Activity

- Rate each risk for:
  - Likelihood of event occurring (3=high likelihood, 1= low)
  - Current systems or preparedness in place
  - Impact if an event were to occur
  - Add rows if needed for events that may occur as suggested by team members
  - Delete rows or events that are not a risk in your facility (e.g., If no vents, then VAP can be removed)

Example

Infection Prevention Risk Assessment

Patient/Admission Risk

EVENT	PROBABILITY	SEVERITY = (MAGNITUDE - MITIGATION)						RISK	Infection Prevention	Acti
		HUMAN	PROPERTY	BUSINESS	PREPARED-	INTERNAL	EXTERNAL			
	Likelihood this will occur	*Possibility of death or injury*	*Physical losses and damages*	*Interuption of services*	*Preplanning*	*Time, effectiveness, resources*	*Community/ Mutual Aid staff and supplies*	*Relative threat**		
SCORE	*0 = N/A 1 = Low 2 = Moderate 3 = High*	*0 = N/A 1 = Low 2 = Moderate 3 = High*	*0 = N/A 1 = Low 2 = Moderate 3 = High*	*0 = N/A 1 = Low 2 = Moderate 3 = High*	*0 = N/A 1 = High 2 = Moderate 3 = Low or none*	*0 = N/A 1 = High 2 = Moderate 3 = Low or none*	*0 = N/A 1 = High 2 = Moderate 3 = Low or none*	*0 - 100%*		
C. difficile infection								0%		
MDRO								0%		
CLABSI								0%		
CAUTI								0%		
SSI								0%		
VAP								0%		
AVERAGE SCORE	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0%**		

**Threat increases with percentage.*

RISK = PROBABILITY * SEVERITY		
0.00	0.00	0.00

Performed by: **Approval:**

Date:

Risk Mitigation

- Now that risks have been identified, they should be mitigated according to priority.
  - Look to the relative risk column and create an action plan for the top 2-3 items in each tab.
- The action plans for high-risk items will be included in surveillance, planning, policies, education, etc., in the IP plan.

CMS Infection Prevention Standards

- F880
- The facility must establish and maintain an infection prevention and control program designed to provide a safe, sanitary and comfortable environment and to help prevent the development and transmission of communicable diseases and infections.

CMS Infection Prevention Standards

- Infection prevention and control program
  - The facility must establish an IPCP that must include, at a minimum, the following elements
  - A system for reporting, identifying, reporting, investigating, and controlling infections and communicable diseases for all residents, staff, volunteers, visitors, and other individuals providing services under a contractual arrangement based upon the facility assessment conducted according to 483.70(e) and following accepted national standards
  - Written standards, policies, and procedures for the program which must include but are not limited to:
    - System for surveillance designed to identify possible communicable diseases or infections before they can spread to other persons in the facility
    - When and to whom possible incidents of communicable disease or infections should be reported
    - Standard and transmission-based precautions to be followed to prevent the spread of infections
    - When and how isolation should be used for a resident (type, duration, agent or organism)
  - The circumstances under which the facility must prohibit employees with a communicable disease or skin lesion from direct contact with residents or their food
  - The hand hygiene procedures to be followed by staff involved in direct resident contact

CMS Infection Prevention Standards

- A system for recording incidents identified under the facility's IPCP and the corrective actions taken by the facility
- Linens - personnel must handle, store and transport linens to prevent the spread of infection
- Annual Review - facility will conduct an annual review of its IPCP and update the program as necessary

Unpacking the CMS Standards

- You need to address all of the elements in some way
- Policies and procedures
- Meeting minutes
- Data analysis
- Performance improvement projects
- Staff education objectives and content

The Infection Prevention Plan

- The IP plan outlines your overall program.
  - Description of the IP program
  - Statement of authority
  - Personnel – who is the IP, and what are their training/education/qualifications?
  - Goals and objectives (SMART format)
  - System for preventing, identifying, reporting, investigating and controlling communicable diseases

IP Program Binder

- Helpful tool to organize the IP program and for when surveyors are on site
- Create a binder each year with sections that include updated
  - IP plan
  - Risk assessment
  - TB Risk assessment
  - IP staff competencies/CE certificates, certification, etc.
  - IP/Antibiotic Stewardship committee minutes
  - IP surveillance data with rates
  - SMART goals/program objectives for the year (include a section for each goal)
    - Progress (data trends) and meeting minutes that support the work you are doing

Other Items

- In addition to being the "owner" of the IP plan and reviewing annually, the IP should also review other policies and be included in processes for the facility, using their expertise to provide evidence-based practices.
  - Invasive device management policies (e.g., Foley catheter, tracheostomy care, etc.)
  - Cleaning and disinfection
  - Linen and laundry
  - Selection of supplies and equipment (PPE, bed surfaces, disinfectant products, etc.)

References

- Bodily-Bartrum, Mandy, Frank, Janet, Spaulding, Linda, and Zeller, Jolynn. Long-Term Care. In: Boston K.M., et al, eds. APIC Text. 2014. Available at 62. Long-Term Care | Infection Prevention for Practice Settings and Service-Specific Patient Care Areas | Table of Contents | APIC . Accessed May 8, 2022.
- Franck, J., Bodily-Bartrum, M. Infection Prevention Guide to Long Term Care. 2019. 2nd Ed. APIC. Arlington, VA.
- Holmes, Kelly, Infection Prevention and Control Programs. In: Boston K.M., et al, eds. APIC Text. 2014. Available at 1. Infection Prevention and Control Programs | Overview of Infection Prevention Programs | Table of Contents | APIC. Accessed May 8, 2022.

Hand Hygiene: Back to Basics

ALLIANT HEALTH SOLUTIONS

Learning Objectives

- Understand hand hygiene recommendations
- Verbalize the differences between competency and adherence
- Understand how to evaluate hand hygiene competency
- Develop a hand hygiene adherence monitoring program

Basic Principles

- General knowledge
- Routine handwashing
- Staff education and effective interventions
- Monitoring for adherence

Hand Hygiene

- Hand hygiene means cleaning your hands using handwashing (soap and water), antiseptic hand wash, antiseptic hand rub (alcohol-based foam or gel) or surgical hand antisepsis.

General Knowledge

- Hand hygiene can be performed using soap and water or an alcohol-based hand rub (ABHR).
- ABHR is the preferred method for hand hygiene unless hands are visibly soiled.
- So, how many times a day do you wash your hands throughout each workday?

Routine Handwashing

- When developing a hand hygiene program, we must consider
- Product selection
- Dispenser location
- Indications
- Technique

Product Selection

- How much alcohol content is necessary?
  - 60-95% is the normal range
  - Higher alcohol content can dry the skin
  - Many products contain emollients to moisturize the skin
- Should hand soap be antimicrobial?
  - This is not necessary; hand soaps should be fragrance-free lotion soap in most settings

Product Selection

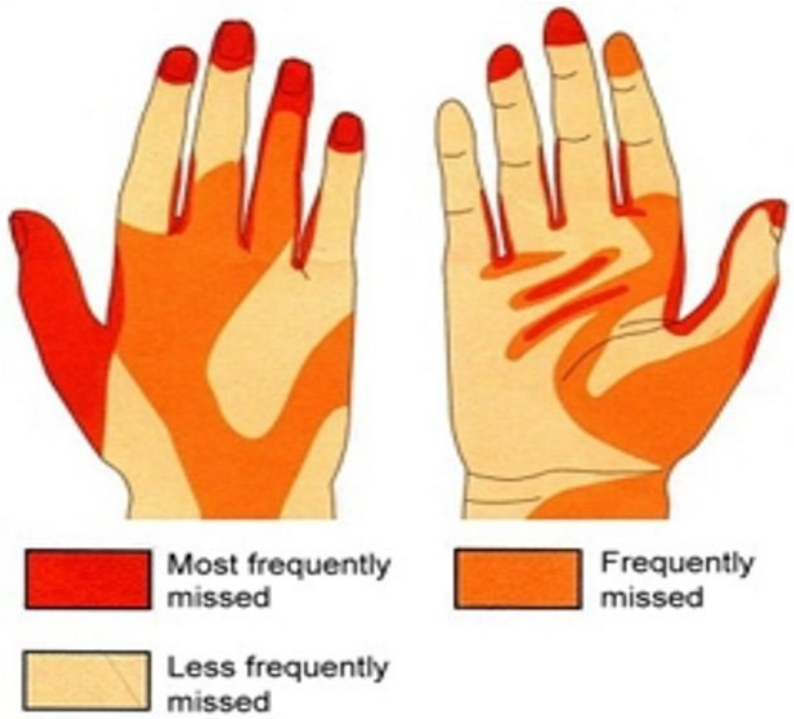
- CDC guidelines state that cost should not be a primary consideration for product selection.
- Consider employee feedback and participation in trials and final selection.
- Due to the probability of skin dryness due to frequent hand hygiene, lotions should also be provided for staff.
  - If using antimicrobial soap (CHG), be sure lotions do not inactivate the antimicrobial ingredients.

Technique and Competency

- ABHR
  - Volumen dispensed should take 15-20 seconds to rub in and dry
  - Some dispensers have adjustments for volume dispensed
- Soap and water
  - Wet hands
  - Apply soap and lather for 20 seconds, covering all surfaces and under rings
  - Rinsed thoroughly
  - Dry using a disposable towel
  - Turn off the faucet with a dry towel

Tools for HH Technique Competency

- Training Tools - Fluorescent "Glow Germ"
  - Look forward to receiving this tool later this summer!
  - Helps learners to find commonly missed areas when performing hand hygiene

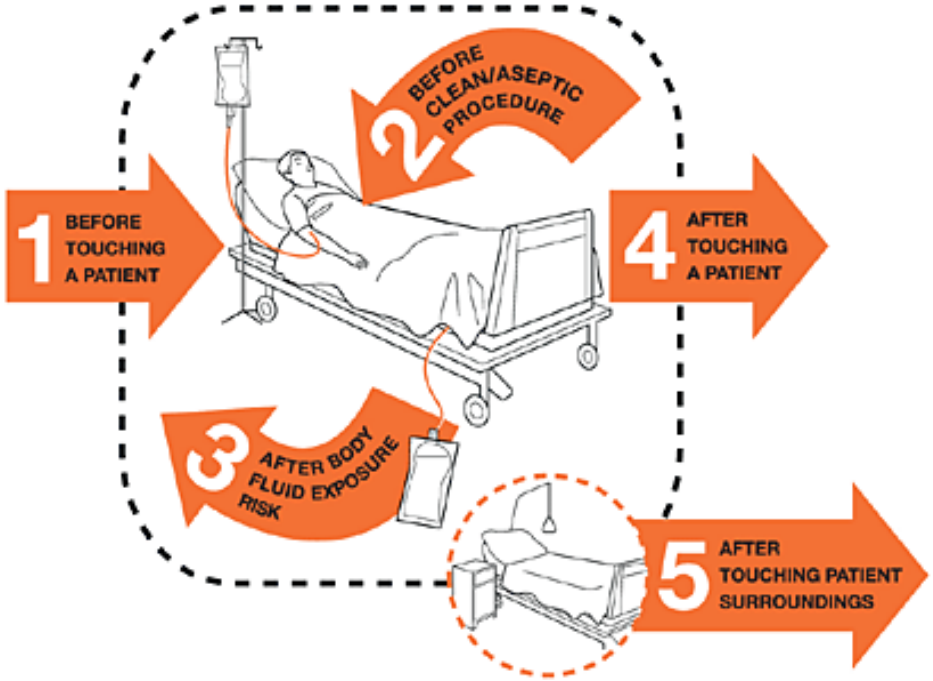


Dispenser Location

- Conveniently located at the entrance to each room, exam room and similar areas
- Within rooms near the door or adjacent to the bed
- Maximum volume in single fire compartment is10 gallons
  - Check with local authorities regarding specific restrictions

Indications for Hand Hygiene

- WHO five moments for hand hygiene
- Soap and water is recommended
  - When hands are visibly soiled
  - Before eating
  - After using the bathroom
  - After exposure to spore-forming bacteria or during GI outbreaks (C. difficile or Norovirus)



Staff Education

- Staff education about the role of hand hygiene in preventing infections is a priority for healthcare organizations
- Free training and promotional materials
  - www.cdc.gov/handhygiene/traning.html
- Education does not ensure adherence

Adherence Considerations

- Multimodal and multidisciplinary strategies must be used to improve adherence to hand hygiene.
  - Administrative support
  - Convenient and acceptable products and dispensers
  - Monitoring and feedback
  - Role modeling of desired HH practices
  - Motivational or incentive programs
  - Behavioral and motivational components

Monitoring for Adherence

- CDC, WHO and the Joint Commission require monitoring programs with performance feedback
- Direct observation
- Product volume monitoring
- Automated monitoring

Direct Observation

- Person observes a sample of hand hygiene opportunities and calculates the rate of adherence.
  - Number of episodes performed/number of opportunities to perform x 100 = percent compliance
  - Quick and easy to monitor
  - Include in the IP plan the number of observations per month that will be collected
  - Include date, time, unit and role (PT, MD, RN, aide) for more actionable data

Direct Observation Example

Date/Time: _____ Location:	Role	HH Before (Y/N)	HH After (Y/N)	Comments
1 East	RN	Y	N	Feedback provided
1 East	CNA	N	N	Unable to provide feedback
1 East	CNA	Y	Y	

Analysis: 3/6 = 50% compliance rate OR 1/3= 33% compliance depending on how you are defining adherence
Aides compliant 50% (2/4)of the time and RN's compliant 50% (½)of the time

Pros and Cons of Direct Observation

- Pros
  - Considered the gold standard for HH monitoring
  - Real-time feedback can be given, encouraging behavior change
  - Barriers can be identified and addressed
- Cons
  - Time-consuming
  - Difficult to recruit observers
  - Sample may have inherent bias and subjectivity
  - Subject to Hawthorne effect – people will perform better when they know they are being observed

Product Volume Monitoring

- Monitors volume of product (soap and/or hand rub) used per 1,000 resident or patient days
- Pros
  - Less time consuming and resource-dependent
  - Captures overall usage and is not dependent on the time when the observer is available
  - Data may correlate with lower MDRO rates when more volume of product is used.
- Cons
  - Need accurate supply inventory and distribution information
  - Not possible to identify techniques or opportunities for HH
  - Not possible to offer real-time feedback on opportunities missed or barriers to performance

Conclusions

- Hand hygiene is foundational to preventing the spread of infection in health care settings.
- Hand hygiene is complex - achieving and sustaining adherence can be an ongoing challenge.
- Understanding culture, behaviors, motivation, systems, and process monitoring in the individual facility will aid in improvement efforts.

Personal Reflection

- How is your hand hygiene practice after today's lesson?
  - Do you find it easy to practice good hand hygiene consistently?
  - Are there barriers or areas in the facility where it is more difficult to practice good hand hygiene?
  - Can you identify areas or opportunities for improvement?
  - What could you do to make hand hygiene easier in these instances?

References

- APIC Text Chapter 27 Hand Hygiene
- CDC Hand Hygiene in Health Care Settings
- CDC Clean Hands Count Campaign

Standard and Transmission-Based Precautions

Standard Precautions

- Established for the safety of healthcare personnel and is a basic practice that all employees in the health care setting should adhere to.
- Assume that every person is potentially infected or colonized. Therefore, protect yourself when anticipating contact with blood, body secretions and excretions, non-intact skin or lesions and mucous membranes.

Standard Precautions

- **Includes:**
  - Hand hygiene
  - Proper use of Personal Protective Equipment (PPE) such as gloves, gown, mask and eye protection
  - Safe injection practices
  - Respiratory hygiene/cough etiquette

Standard Precautions

- **Hand Hygiene**
  - After contact with blood, body fluids, secretions, excretions, contaminated items
  - Immediately after removing gloves
  - Between resident contacts
  - Before and after food preparation and service

Standard Precautions

- **Personal Protective Equipment (PPE)**
  - Gloves
    - For anticipated contact with blood, body fluids, secretions and excretions, contaminated items
    - When touching mucous membranes and non-intact skin as well as intact skin when infection risks are identified

Standard Precautions

- **Personal Protective Equipment (PPE)**
  - Gown
    - During procedures and resident care activities when clothing or uniforms may contact blood/body fluids, secretions and excretions

Standard Precautions

- **Personal Protective Equipment (PPE)**
  - Mask, eye protection
    - During procedures and resident care activities likely to generate splashes or sprays of blood, body fluids and secretions

Standard Precautions

- **Needles and other sharps**
  - "One needle-one syringe-only one vial" rule
  - Use safety engineered products
  - Dispose of used needles and other contaminated sharps per OSHA requirements (OSHA's Bloodborne Pathogens Standard (29 CFR 1910.1030)

Standard Precautions

- **Respiratory hygiene/cough etiquette**
  - Cover mouth/nose when sneezing or coughing.
  - Use a tissue and dispose in no-touch receptacle.
  - Perform hand hygiene on hands contaminated with respiratory secretions.
  - Wear a surgical mask if unable to follow basic respiratory hygiene practices.
  - Maintain separation between residents' beds if possible.

Transmission-Based Precautions (TBP)

- Implemented for residents with a known or suspected infectious agent
- Initiated according to facility policy and state guidelines
- Typically initiated according to facility policies

Transmission-Based Precautions

- Three main types of TBPs:
  - Contact precautions
  - Droplet precautions
  - Airborne precautions

Transmission-Based Precautions

- Other types of TBPs:
  - Enhanced barrier precautions
  - Enteric precautions
  - Special droplet contact*
  - Droplet contact & airborne contact

*Could be named differently at each facility

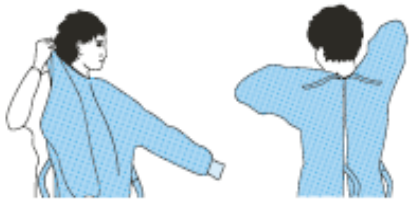
Transmission-Based Precautions

SEQUENCE FOR *DONNING* PERSONAL PROTECTIVE EQUIPMENT (PPE)

The type of PPE used will vary based on the level of precautions required; e.g., Standard and Contact, Droplet or Airborne Infection Isolation.

1. Gown

- Fully cover torso from neck to knees, arms to end of wrists, and wrap around the back
- Fasten in back of neck and waist



2. Mask or Respirator

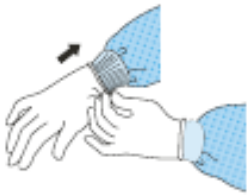
- Secure ties or elastic bands at middle of head and neck
- Fit flexible band to nose bridge
- Fit snug to face and below chin
- Fit-check respirator

3. Goggles or Face Shield

- Place over face and eyes and adjust to fit

4. Gloves

- Extend to cover wrist of isolation gown



Use Safe Work Practices to Protect Yourself and Limit the Spread of Contamination

- Keep hands away from face
- Limit surfaces touched
- Change gloves when torn or heavily contaminated
- Perform hand hygiene

Adapted from Centers for Disease Control and Prevention. Available at: http://www.cdc.gov/HAI/pdfs/ppe/ppeposter148.pdf.

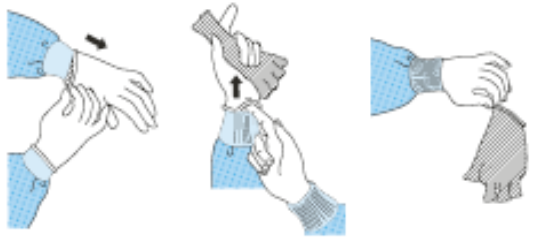
Transmission-Based Precautions

SEQUENCE FOR *REMOVING* PERSONAL PROTECTIVE EQUIPMENT (PPE)

Except for respirator, remove PPE at doorway or in anteroom.
Remove respirator after leaving patient room and closing door.

1. Gloves

- Outside of gloves is contaminated!
- Grasp outside of glove with opposite gloved hand; peel off
- Hold removed glove in gloved hand
- Slide fingers of ungloved hand under remaining glove at wrist
- Peel glove off over first glove
- Discard gloves in waste container



2. Goggles or Face Shield

- Outside of goggles or face shield is contaminated!
- To remove, handle by head band or ear pieces
- Place in designated receptacle for reprocessing or in waste container

3. Gown

- Gown front and sleeves are contaminated!
- Unfasten ties
- Pull away from neck and shoulders, touching inside of gown only
- Turn gown inside out
- Fold or roll into a bundle and discard

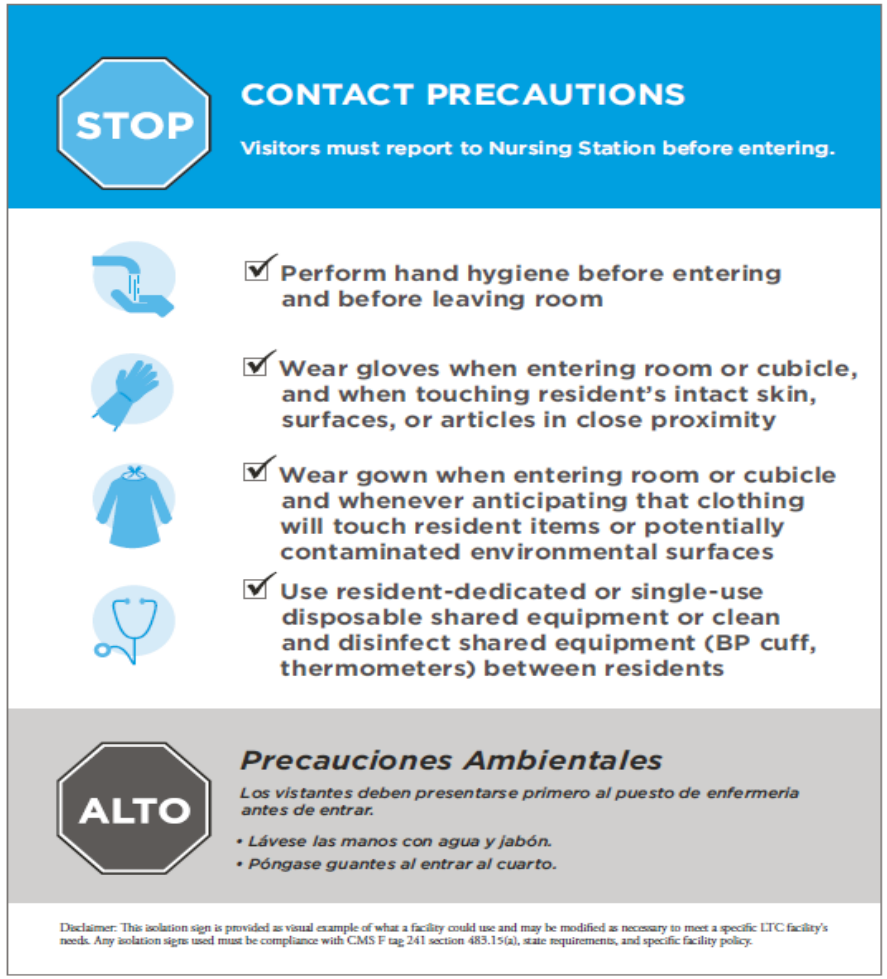
2. Mask or Respirator

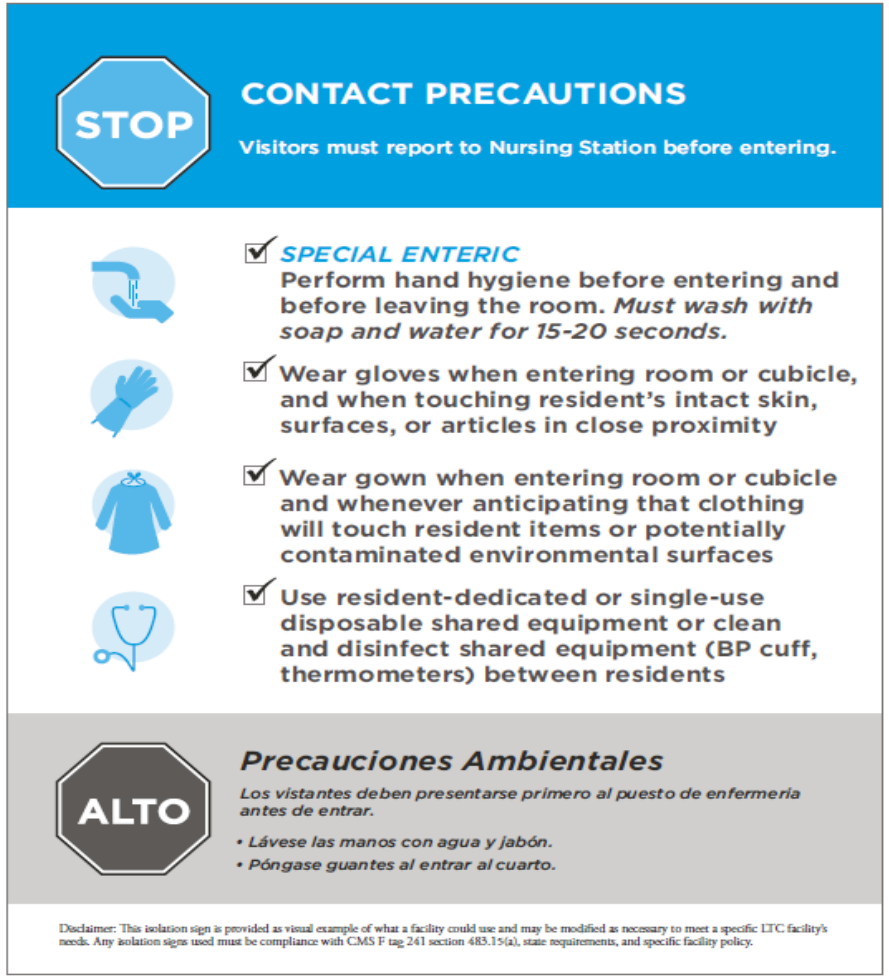
- Front of mask/respirator is contaminated—**DO NOT TOUCH!**
- Grasp bottom, then top ties or elastics and remove
- Discard in waste container

Perform hand hygiene immediately after removing all PPE

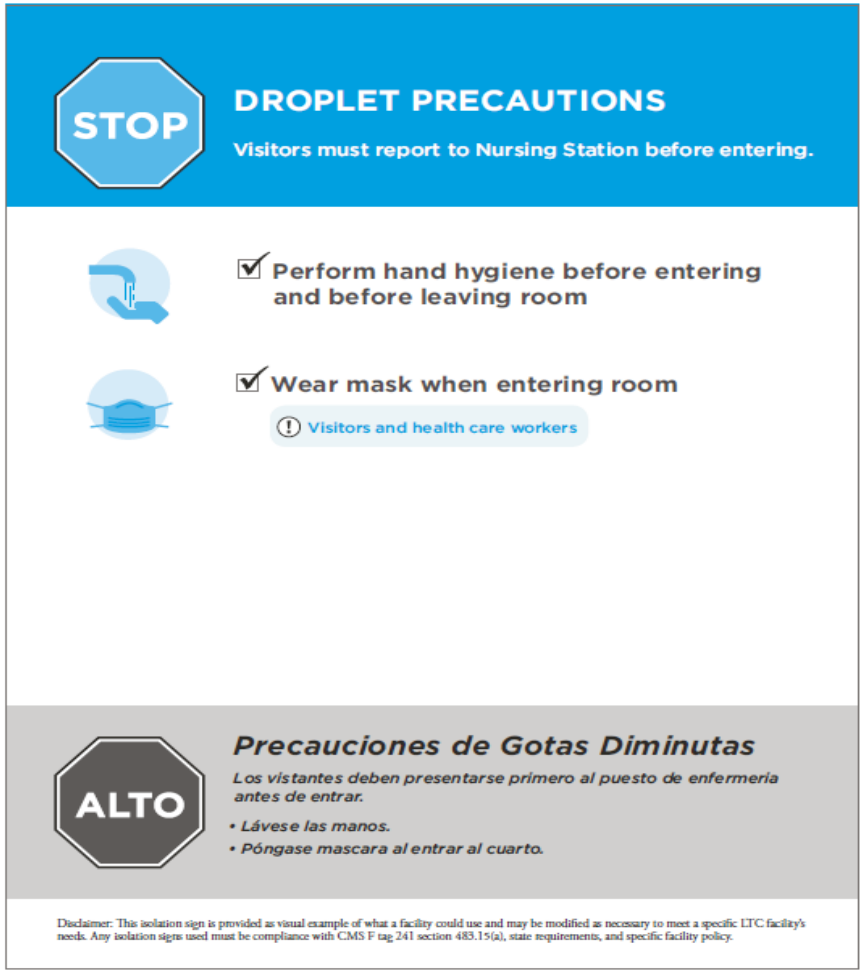
Adapted from Centers for Disease Control and Prevention. Available at: http://www.cdc.gov/HAI/pdfs/ppe/ppeposter148.pdf.

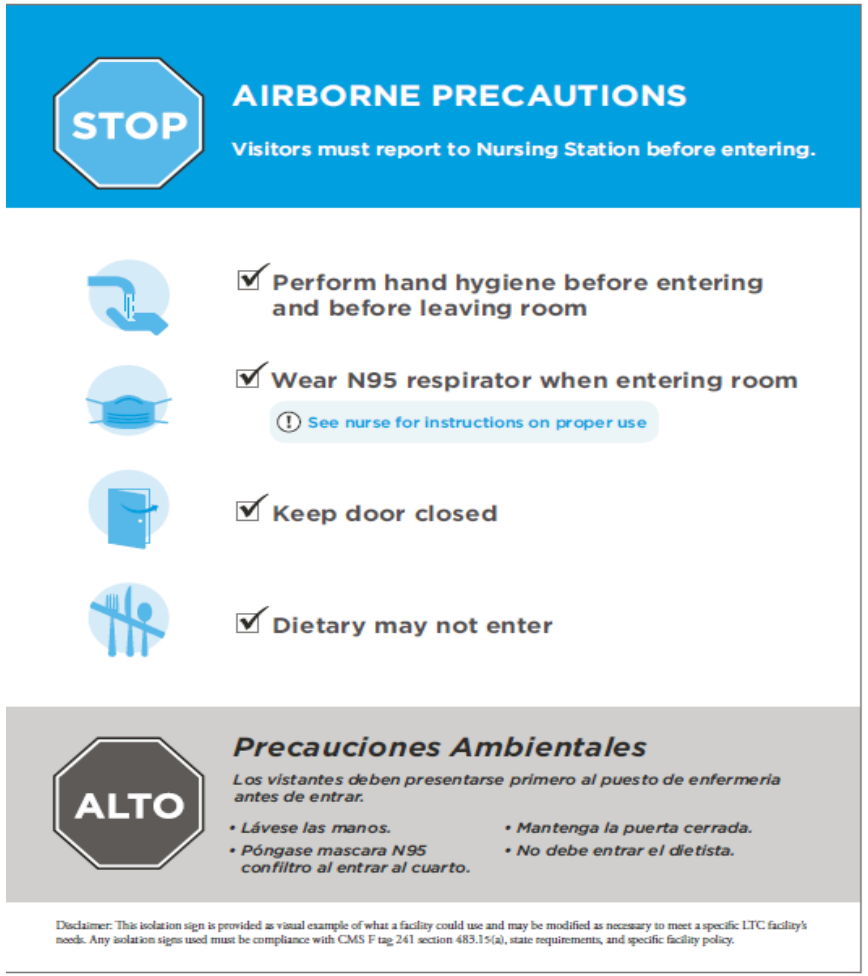
Sample Signage





Sample Signage





References

- CDC 2007 Isolation Guidelines for Healthcare
- Franck, J., Bodily-Bartrum, M. Infection Prevention Guide to Long Term Care. 2019. 2nd Ed. APIC. Arlington, VA.

Environment of Care

Cleaning, Disinfection of the Environment

- Cleaning versus disinfection
  - Cleaning is the physical removal of dirt, body fluids and other organic matter.
  - Disinfection is the act of destroying the number of "bugs" on a surface.
  - A surface cannot be disinfected unless it has been cleaned.

Cleaning, Disinfection of the Environment

- Five Ws
  - Who
  - What
  - When
  - Where
  - Why

Cleaning, Disinfection of the Environment

- **WHO** is responsible for cleaning?
  - Joint responsibility between clinical staff and Environmental Services (EVS) staff
  - Facility policy should include cleaning schedules and a clear delineation of who is responsible for cleaning what items

Cleaning, Disinfection of the Environment

- **WHAT** items must be cleaned?
  - Ideally, ALL surfaces should be cleaned according to an established schedule. For example:
    - Any items or equipment used/shared between patients
    - Common high touch surfaces such as call lights, remote control devices, over-bed tables and nightstands, rails, sinks, toilets and bathroom fixtures, telephones, light switches, doorknobs, handrails and other handles, etc.
    - Walls, floors and blinds
    - Carpets
    - Hard surfaces in the facility
    - Horizontal surfaces

Cleaning, Disinfection of the Environment

- **WHAT** products should I use to clean?
  - As much as possible, only use facility-approved, hospital-grade cleaner/disinfectants.
  - Microfiber is recommended over cotton fiber.
  - Follow the manufacturer's directions for use (read the label).
  - Ensure correct dilution of disinfectants/germicides, recommended contact times and appropriate environmental conditions, as these affect how well the product works.

Cleaning, Disinfection of the Environment

- **WHEN** should cleaning occur?
  - Clean any equipment, items or surfaces used between patients.
  - Clean any visibly soiled items as soon as possible.
  - Clean high-touch surfaces at least daily and more often as needed during outbreaks. The same applies to emptying trash.
  - Walls, floors and other surfaces should be cleaned according to the established EVS schedule.

Cleaning, Disinfection of the Environment

- **WHEN** should cleaning occur?
  - Terminal cleaning should occur once a resident is discharged or transferred.
    - Surfaces that came in contact with resident or may have been contaminated must be cleaned and disinfected before the next resident.
    - Unused items such as toilet paper and towels should be discarded if disposable or cleaned if reusable.
    - All linen, both used and unused, must be sent to the laundry.

Cleaning, Disinfection of the Environment

- **WHEN** should cleaning occur?
  - Terminal cleaning should occur once a resident is discharged or transferred.
    - Pillows and mattresses should be inspected. Replace if any holes or tears are found.
    - EVS staff must use PPE, including gowns, when performing terminal cleaning, and all PPE must be removed and discarded upon exiting the cleaned room.

Cleaning, Disinfection of the Environment

- **WHERE** should cleaning products and supplies be stored?
  - Chemicals must be securely stored when not in use.
  - All cleaning supplies should be stored in their original containers when possible. If stored in secondary containers, they should be adequately labeled with contents.
  - The facility should have up-to-date Safety Data Sheets (SDS) on file and be readily accessible to staff.

Cleaning, Disinfection of the Environment

- **WHY** is cleaning and disinfection of the environment so important?
  - The physical environment in a facility can be a reservoir for infectious agents, such as bacteria, fungus and viruses.
  - Cleaning, disinfecting and storing equipment and supplies is important in preventing the transmission of potential pathogens.

Cleaning, Disinfection of the Environment

- Validation
  - Environmental Monitoring methods
  - Checklists/Audit tools

Other Considerations

- Trash
- Medical waste
- Laundry and linen handling and storage
- Handling and storage of equipment and supplies

References

- Franck, J., Bodily-Bartrum, M. Infection Prevention Guide to Long Term Care. 2019. 2nd Ed. APIC. Arlington, VA.

Surveillance, Epidemiology and Reporting

ALLIANT HEALTH SOLUTIONS

Surveillance

- IPs must understand the purpose, methods and definitions of surveillance
- Your "pulse" on the facility
- Must be consistent with regulations, state requirements and evidence-based practice
- Findings should be shared with frontline staff and leadership at IP or QAPI committee

What Is Surveillance?

- Surveillance is a system that allows for identification, reporting, investigation and control of infectious or communicable diseases and applies to staff, residents, volunteers, visitors or others in the facility.
- It is a necessary component of an effective IP program and the pulse on your facility.

Data Collection

- What infections or event types will you perform surveillance for?
  - Hint: This is informed by your risk assessment and IP Plan.
- What data will you collect?

Surveillance Methods

- Electronic
- House-wide or comprehensive surveillance
- Outbreak surveillance
- Outcome surveillance
- Process surveillance
- Prospective surveillance
- Retrospective surveillance
- Targeted surveillance

Surveillance Definitions

- Essential component of an effective infection prevention program
- Defined in the APIC text as, "a comprehensive method for measuring outcomes and related processes of care, analyzing the data, and providing information to members of the health care team to assist in improving those outcomes"
- Should be based on sound epidemiological and statistical principles
- When properly collected, surveillance data can be used to improve the quality of care and outcomes
- No matter which criteria are used, it is important that the definitions are accepted by the facility physicians and infection prevention and applied consistently to ensure standardized surveillance is done over time (NHSN versus McGeer criteria)

Surveillance Methods

- Targeted
- Total house
- Combination

Surveillance Plan

- Annual infection prevention plans should include a surveillance section describing:
  - Surveillance method (total/targeted/combination)
  - Populations (patient, resident, staff, those with specific risk factors, etc.)
  - Events monitored (UTI, C. diff, etc.)
  - In addition to other high-risk events, such as TST conversions, which events will be monitored throughout the year? (C. auris, CRE, etc.)
  - Surveillance plan should be evaluated regularly to ensure it meets organizational goals and objectives and to ensure methodologies are current
  - Efforts should be made to select event types with standardized, validated and nationally recognized benchmarking data (McGeer Criteria or NHSN)
  - Examples: NHSN for HAI data or McGeer Criteria

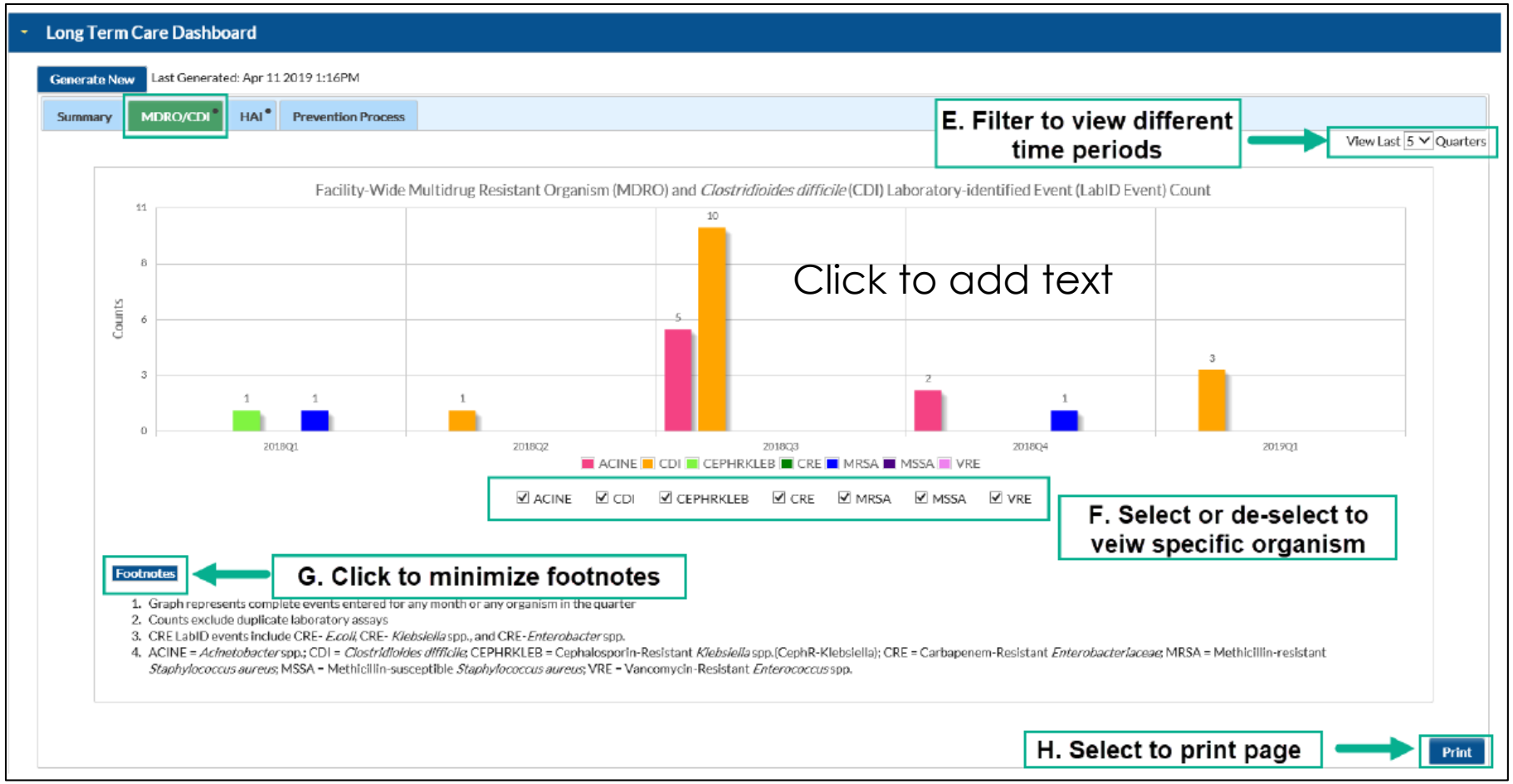
Data Collection

- Concurrent versus retrospective
- Data source examples
- Medical records
- Lab reports
- List of admissions with diagnoses
- Patient day reports/census data by unit
- Isolation precautions report/list
- Incident reports
- Observations
- Procedure or activity logs

NHSN Data Analysis Options

- When using NHSN for surveillance data submission, there are a number of reports, analyses and dashboards available.
  - The dashboard shows a snapshot of the submitted data for up to five quarters to visualize data for MDRO and C. diff Lab ID event, UTI and prevention process measures.

MDRO Dashboard Example



[NHSN LTCF Dashboard Guidance]

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 That an Outbreak Is Occurring

- 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.

Verify the Diagnosis

On 12/12, two residents reported nausea and diarrhea. Additionally, one of them has vomiting. On 12/13, a third resident reported 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 of Cases

- 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 Case Systematically

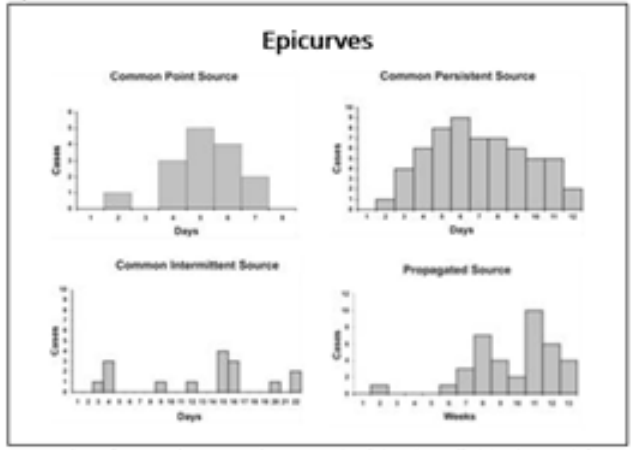
Name	DOB	Sex	Room	Hall	Symptom onset	Symptoms	Lab test result
Jane	3/4/45	F	212	B	12/13/20	N V	pending
Jack	5/3/42	M	214	B	12/12/20	N D	+
Sam	8/13/92	F	Staff	Kitchen	12/11/20	N V D	Not tested
Jill	7/14/39	F	222	B	12/12/20	N V D	Not tested

Name	DOB	Sex	Room	Hall	Symptom onset	Symptoms	Lab Result
Lou	9/18/37	M	124	A	12/15/20	N V	+
Lan	12/8/45	M	128	A	12/18/20	N D	+
Lisa	4/15/29	F	116	A	12/16/20	N V D	+

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?

Figure 6.3 Typical Epi Curves for Different Types of Spread



Adapted from: European Programme for Intervention Epidemiology Training [Internet]. Solna, Sweden: Smittskyddsinstitutet [updated 2004 Sep 27; cited 2006 Sep 22].

Develop, Evaluate, Refine Hypothesis

- 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. It's 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 aid 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 the 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
  - Cohosting only 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

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 seven 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

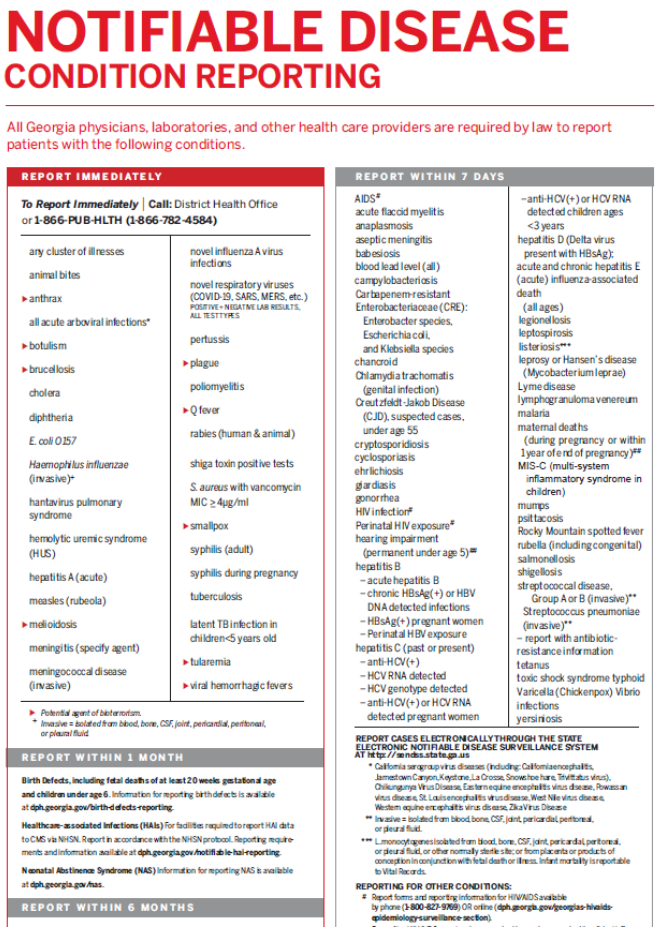
Final written report

Reporting

- Internal
  - IP/Antimicrobial Stewardship Committee
  - QAPI
- External
  - Public Health
  - NHSN
  - Other

What To Report to Public Health (and When!)

- Your health department is your partner!
- When in doubt, send it out.
- Print the Notifiable Disease list and keep handy for reference.
- Bookmark this webpage:
  - www.dph.ga.gov/disease-reporting



NOTIFIABLE DISEASE
CONDITION REPORTING

All Georgia physicians, laboratories, and other health care providers are required by law to report patients with the following conditions.

REPORT IMMEDIATELY

To Report Immediately | **Call:** District Health Office or **1-866-PUB-HLTH (1-866-782-4584)**

- any cluster of illnesses
- animal bites
- ▸anthrax
- all acute arboviral infections*
- ▸botulism
- ▸brucellosis
- cholera
- diphtheria
- *E. coli* O157
- *Haemophilus influenzae* (invasive)*
- hantavirus pulmonary syndrome
- hemolytic uremic syndrome (HUS)
- hepatitis A (acute)
- measles (rubeola)
- ▸melioidosis
- meningitis (specify agent)
- meningococcal disease (invasive)
- novel influenza A virus infections
- novel respiratory viruses (COVID-19, SARS, MERS, etc.) POSITIVE + NEGATIVE LAB RESULTS, ALL TEST TYPES
- pertussis
- ▸plague
- poliomyelitis
- ▸Q fever
- rabies (human & animal)
- shiga toxin positive tests
- *S. aureus* with vancomycin MIC ≥ 4µg/ml
- ▸smallpox
- syphilis (adult)
- syphilis during pregnancy
- tuberculosis
- latent TB infection in children<5 years old
- ▸tularemia
- ▸viral hemorrhagic fevers

▸ *Potential agent of bioterrorism.*
* *Invasive = isolated from blood, bone, CSF, joint, pericardial, peritoneal, or pleural fluid.*

REPORT WITHIN 1 MONTH

Birth Defects, including fetal deaths of at least 20 weeks gestational age and children under age 6. Information for reporting birth defects is available at **dph.georgia.gov/birth-defects-reporting**.

Healthcare-associated Infections (HAIs) For facilities required to report HAI data to CMS via NHSN. Report in accordance with the NHSN protocol. Reporting requirements and information available at **dph.georgia.gov/notifiable-hai-reporting**.

Neonatal Abstinence Syndrome (NAS) Information for reporting NAS is available at **dph.georgia.gov/nas**.

REPORT WITHIN 6 MONTHS

REPORT WITHIN 7 DAYS

- AIDS#
- acute flaccid myelitis
- anaplasmosis
- aseptic meningitis
- babesiosis
- blood lead level (all)
- campylobacteriosis
- Carbapenem-resistant Enterobacteriaceae (CRE): Enterobacter species, Escherichia coli, and Klebsiella species
- chancroid
- Chlamydia trachomatis (genital infection)
- Creutzfeldt-Jakob Disease (CJD), suspected cases, under age 55
- cryptosporidiosis
- cyclosporiasis
- ehrlichiosis
- giardiasis
- gonorrhea
- HIV infection#
- Perinatal HIV exposure#
- hearing impairment (permanent under age 5)##
- hepatitis B
  - acute hepatitis B
  - chronic HBsAg(+) or HBV DNA detected infections
  - HBsAg(+) pregnant women
  - Perinatal HBV exposure
- hepatitis C (past or present)
  - anti-HCV(+)
  - HCV RNA detected
  - HCV genotype detected
  - anti-HCV(+) or HCV RNA detected pregnant women
  - anti-HCV(+) or HCV RNA detected children ages <3 years
- hepatitis D (Delta virus present with HBsAg);
- acute and chronic hepatitis E
- (acute) influenza-associated death (all ages)
- legionellosis
- leptospirosis
- listeriosis***
- leprosy or Hansen's disease (Mycobacterium leprae)
- Lyme disease
- lymphogranuloma venereum
- malaria
- maternal deaths (during pregnancy or within 1 year of end of pregnancy)##
- MIS-C (multi-system inflammatory syndrome in children)
- mumps
- psittacosis
- Rocky Mountain spotted fever
- rubella (including congenital)
- salmonellosis
- shigellosis
- streptococcal disease, Group A or B (invasive)** Streptococcus pneumoniae (invasive)**
  - report with antibiotic-resistance information
- tetanus
- toxic shock syndrome typhoid
- Varicella (Chickenpox)
- Vibrio infections
- yersiniosis

REPORT CASES ELECTRONICALLY THROUGH THE STATE ELECTRONIC NOTIFIABLE DISEASE SURVEILLANCE SYSTEM AT http://sendss.state.ga.us

* California serogroup virus diseases (including: California encephalitis, Jamestown Canyon, Keystone, La Crosse, Snowshoe hare, Trivittatus virus), Chikungunya Virus Disease, Eastern equine encephalitis virus disease, Powassan virus disease, St. Louis encephalitis virus disease, West Nile virus disease, Western equine encephalitis virus disease, Zika Virus Disease

** Invasive = isolated from blood, bone, CSF, joint, pericardial, peritoneal, or pleural fluid.

*** *L. monocytogenes* isolated from blood, bone, CSF, joint, pericardial, peritoneal, or pleural fluid, or other normally sterile site; or from placenta or products of conception in conjunction with fetal death or illness. Infant mortality is reportable to Vital Records.

REPORTING FOR OTHER CONDITIONS:

Report forms and reporting information for HIV/AIDS available by phone (**1-800-827-9969**) OR online (**dph.georgia.gov/georgias-hivaids-epidemiology-surveillance-section**).

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/
- www.dph.ga.gov/disease-reporting
- 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

Questions?

Thanks Again…

- Georgia Department of Public Health
- University of Georgia

Making Health Care Better

ALLIANT HEALTH SOLUTIONS

@AlliantQIO

Alliant Health Solutions

@AlliantQIO

AlliantQIO

This material was prepared by Alliant Health Solutions, under contract with the Georgia Department of Public Health as made possible through the American Rescue Plan Act of 2021.

quality.allianthealth.org