



Hot Topics in Infection Prevention and Control in Post Acute Care Settings

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PRESENTS ...

Hot Topics in Infection Prevention and Control in Extended Care Settings

1 Contact Hour


*Participants must complete entire activity. No partial credit will be awarded
Participants must submit a post event evaluation form
There is no conflict of interest for any planner or presenter*

This continuing nursing education activity was approved by the Montana Nurses Association, an accredited approver by the American Nurses Credentialing Center's Commission on Accreditation

Objectives

- Discuss the impact recent outbreaks of HAIs in outpatient settings
- Review common causes of HAIs in outpatient settings
- Discuss evidence based strategies to reduce contamination in the outpatient settings and also available resources to support the IPC program

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Dr. Hudson Garrett



Dr. Hudson Garrett is currently employed as the Vice President, Clinical Affairs for PDI, and is responsible for the global clinical affairs program and also the Medical Science Liaison program for all divisions within the company. He is a recognized international infection prevention and control expert. He has completed the Johns Hopkins Fellows Program in Hospital Epidemiology and Infection Control, and the CDC Fundamentals of Healthcare Epidemiology program. He is board certified in family practice, critical care, vascular access, moderate sedation, and long term care. He is the President of the Vascular Access Certification Corporation, President of the Southeastern Chapter of the Infusion Nurses Society, and the Chairperson for the Research Committee for the Association for the Healthcare Environment.

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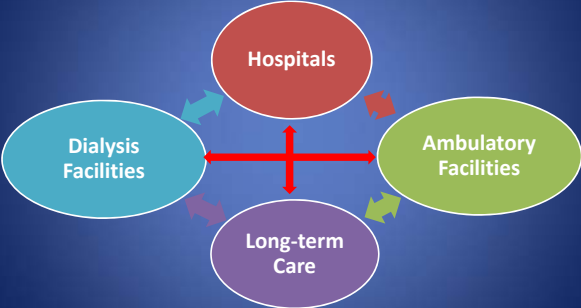


Healthcare Settings

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Healthcare has transformed....




Hospitals

Ambulatory Facilities

Long-term Care

Dialysis Facilities


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Current CDC Hot Topics in Infection Prevention and Control

- Better and Rapid Detection and Prevention
- Role of the Environment in Transmission
- Microbiome and Patient Immunity
- Antibiotic Stewardship
- Advanced Microbiology Tools
- Modeling Techniques to Predict Transmission


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Current Outbreaks

- E. coli-Chipotle
- Norovirus-Schools
- Salmonella-Pork
- CRE-Endoscopes
- Salmonella-Cucumbers


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Nontuberculosis Mycobacterium (NTM)

- NTM=do not cause TB
- Slow growing
- Found in surface water, tap water, and soil
- Opportunistic
- Healthcare Exposure:
 - Immunocompromised patients
 - Breaches in normal host defenses
 - Novel exposure pathways


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Current Known Exposure Points

- LASIK Surgery**
 - Consumer grade humidifier contaminated
 - Laser device manufacturer specified between 40-50% relative humidity
- Open-Chest Heart Surgery**
 - Possible water sources
 - Heater-Cooler unit used for Heart-Lung Machine
- Fans**
- FDA Safety Communication Issued**

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Safe Injection Practices BREAKING NEWS



- Aseptic technique for the preparation and administration of parenteral medications
 - Use a sterile, single-use, disposable needle and syringe for each injection
 - Prevention of contamination of injection equipment, medication and patient care equipment
 - Whenever possible, use single-dose vials over multiple-dose vials, especially when medications will be administered to multiple patients.


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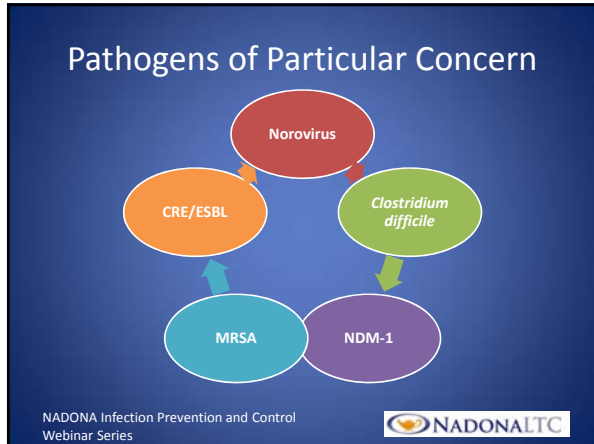


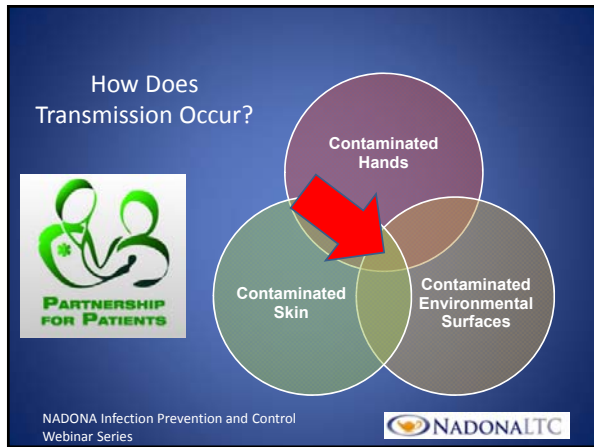
Key Injection Safety Recommendations

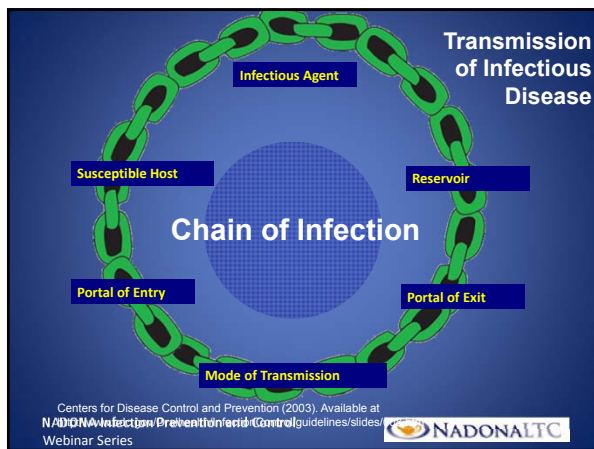
- Use aseptic technique when preparing and administering medications
- Cleanse the access diaphragms of medication vials with 70% alcohol before inserting a device into the vial
- Never administer medications from the same syringe to multiple patients, even if the needle is changed or the injection is administered through an intervening length of intravenous tubing
- Do not reuse a syringe to enter a medication vial or solution
- Do not administer medications from single-dose or single-use vials, ampoules, or bags or bottles of intravenous solution to more than one patient
- Do not use fluid infusion or administration sets (e.g., intravenous tubing) for more than one patient
- Dedicate multidose vials to a single patient whenever possible. If multidose vials will be used for more than one patient, they should be restricted to a centralized medication area and should not enter the immediate patient treatment area (e.g., operating room, patient room/cubicle)
- Dispose of used syringes and needles at the point of use in a sharps container that is closable, puncture-resistant, and leak-proof.
- Adhere to federal and state requirements for protection of HCP from exposure to bloodborne pathogens.

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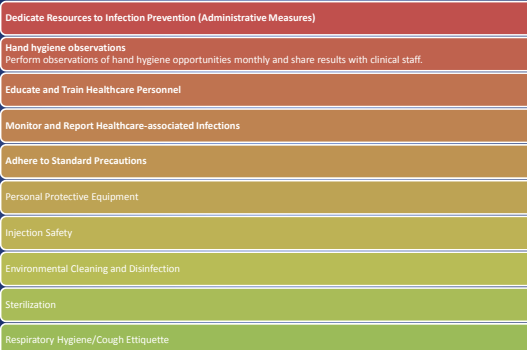
Lessons Learned from EVD



The screenshot shows a webpage for 'Personal Protective Equipment (PPE)'. It features a top navigation bar with social media icons and a language dropdown. The main content area is divided into sections: 'In This Section' with links to guidance for confirmed and clinically unstable patients, and 'PPE Training' with a video thumbnail. A sidebar on the right lists categories like 'U.S. Preparedness and Procedures', 'U.S. Settings', and 'International (Non-U.S.) Settings'. The NADONA logo is at the bottom right.

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CDC Core Recommendations



- Dedicate Resources to Infection Prevention (Administrative Measures)
- Hand hygiene observations
Perform observations of hand hygiene opportunities monthly and share results with clinical staff.
- Educate and Train Healthcare Personnel
- Monitor and Report Healthcare-associated Infections
- Adhere to Standard Precautions
- Personal Protective Equipment
- Injection Safety
- Environmental Cleaning and Disinfection
- Sterilization
- Respiratory Hygiene/Cough Etiquette

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Key Administrative Recommendations



- Develop and maintain infection prevention and occupational health programs
- Assure sufficient and appropriate supplies necessary for adherence to Standard Precautions (e.g., hand hygiene products, personal protective equipment, injection equipment)
- Assure at least one individual with training in infection prevention is employed by or regularly available to the facility
- Develop written infection prevention policies and procedures appropriate for the services provided by the facility and based upon evidence-based guidelines, regulations, or standards

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Key Education and Training Recommendations

Provide job- or task-specific infection prevention education and training to all HCP


- This includes those employed by outside agencies and available by contract or on a volunteer basis to the facility

Training should focus on principles of both HCP safety and patient safety

Training should be provided upon orientation and repeated regularly (e.g., annually)

Competencies should be documented initially and repeatedly, as appropriate for the specific HCP positions

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Key Hand Hygiene Recommendations

Key situations where hand hygiene should be performed include:

- Before touching a patient, even if gloves will be worn
- Before exiting the patient's care area after touching the patient or the patient's immediate environment
- After contact with blood, body fluids or excretions, or wound dressings
- Prior to performing an aseptic task (e.g., placing an IV, preparing an injection)
- If hands will be moving from a contaminated-body site to a clean-body site during patient care
- After glove removal

Use soap and water when hands are visibly soiled (e.g., blood, body fluids), or after caring for patients with known or suspected infectious diarrhea (e.g., *Clostridium difficile*, norovirus). Otherwise, the preferred method of hand decontamination is with an alcohol-based hand rub.

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Key Disinfection Recommendations

Establish policies and procedures for routine cleaning and disinfection of environmental surfaces in ambulatory care settings

- Focus on those surfaces in proximity to the patient and those that are frequently touched

Select EPA-registered disinfectants or detergents/disinfectants with label claims for use in healthcare

Follow manufacturer's recommendations for use of cleaners and EPA-registered disinfectants (e.g., amount, dilution, contact time, safe use, and disposal)

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Key Disinfection Recommendations for Environmental Surfaces


Establish policies and procedures for routine cleaning and disinfection of environmental surfaces in ambulatory care settings

- Focus on those surfaces in proximity to the patient and those that are frequently touched

Select EPA-registered disinfectants or detergents/disinfectants with label claims for use in healthcare

Follow manufacturer's recommendations for use of cleaners and EPA-registered disinfectants (e.g., amount, dilution, contact time, safe use, and disposal)

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All about Terminology

Critical items (e.g., surgical instruments) are objects that enter sterile tissue or the vascular system and must be sterile prior to use.

Semi-critical items (e.g., endoscopes used for upper endoscopy and colonoscopy) contact mucous membranes or non-intact skin and require, at a minimum, high-level disinfection prior to reuse.

Noncritical items (e.g., blood pressure cuffs) are those that may come in contact with intact skin but not mucous membranes and should undergo low- or intermediate-level disinfection depending on the nature and degree of contamination.

Environmental surfaces (e.g., floors, walls) are those that generally do not contact the patient during delivery of care. Cleaning may be all that is needed for the management of these surfaces but if disinfection is indicated, low-level disinfection is appropriate.

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Key Recommendations for Disinfection and Sterilization of Medical Equipment

Facilities should ensure that reusable medical equipment (e.g., blood glucose meters and other point-of-care devices, surgical instruments, endoscopes) is cleaned and reprocessed appropriately prior to use on another patient

Reusable medical equipment must be cleaned and reprocessed (disinfection or sterilization) and maintained according to the manufacturer's instructions. If the manufacturer does not provide such instructions, the device may not be suitable for multi-patient use

Assign responsibilities for reprocessing of medical equipment to HCP with appropriate training

- Maintain copies of the manufacturer's instructions for reprocessing of equipment in use at the facility; post instructions at locations where reprocessing is performed
- Observe procedures to document competencies of HCP responsible for equipment reprocessing upon assignment of those duties, whenever new equipment is introduced, and on an ongoing periodic basis (e.g., quarterly)

Assure HCP have access to and wear appropriate PPE when handling and reprocessing contaminated patient equipment

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Key Recommendations for Cough Etiquette and Respiratory Hygiene

Implement measures to contain respiratory secretions in patients and accompanying individuals who have signs and symptoms of a respiratory infection, beginning at point of entry to the facility and continuing throughout the duration of the visit.


- Post signs at entrances with instructions to patients with symptoms of respiratory infection to:
 - Cover their mouths/noses when coughing or sneezing
 - Use and dispose of tissues
 - Perform hand hygiene after hands have been in contact with respiratory secretions
- Provide tissues and no-touch receptacles for disposal of tissues
- Provide resources for performing hand hygiene in or near waiting areas
- Offer masks to coughing patients and other symptomatic persons upon entry to the facility
- Provide space and encourage persons with symptoms of respiratory infections to sit as far away from others as possible. If available, facilities may wish to place these patients in a separate area while waiting for care.

Educate HCP on the importance of infection prevention measures to contain respiratory secretions to prevent the spread of respiratory pathogens when examining and caring for patients with signs and symptoms of a respiratory infection.

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Your 5 Moments for Hand Hygiene




WHO Save Lives: Clean Your Hands <http://www.who.int/gpsc/5may/background/5moments/en>

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The Inanimate Environment Can Facilitate Transmission




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Equipment

- Patient care equipment that touches intact skin: handle in a manner that prevents skin and mucous membrane exposure, contamination of clothing and transfer of microorganisms to other patients or environments
- Ensure that reusable equipment is properly disinfected prior to use on another patient (pulse ox, glucometer, scissors, stethoscopes, tape measures, pens)
- Non-Patient care equipment should also be disinfected (Phones, Keyboards)
- Beware of GLUCOMETERS!!!

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Sources of contamination

- Inanimate objects
- Hands!



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High Touch Surfaces




Bed Rails	Stretchers
Light Switches	Wheelchairs
Doorknobs	Telephones
Blood Pressure Cuffs	IV Poles
Stethoscopes	Dynamaps
X-ray Machine Handles	Utility Carts
Cardiac Monitor Knobs	Faucet Handles

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Standard Precautions

Standard Precautions for all Healthcare Workers
in All Healthcare Settings



PPE photo provided by Rosetta Jackson, used with permission
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Standard Precautions

- Consists of:
 - Hand Hygiene
 - Proper Use of Personal Protective Equipment
 - Gowns
 - Mask
 - Gloves
 - Eye Protection
 - Safe Injection Practices
 - Safe Handling of Patient Care Equipment
 - Cleaning, disinfection, sterilization
 - Respiratory Hygiene / Cough Etiquette

Centers for Disease Control and Prevention. (2007). Guidelines for isolation precautions: Preventing transmission of infectious agents in healthcare settings 2007. Retrieved January 5, 2010 from <http://www.cdc.gov/dnpp/pdf/guidelines/isolation2007.pdf>


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Staff Competencies

- Staff should be assessed at least yearly and upon hire for competencies in the following categories (Note: not all categories will be applicable to all staff):
 - **Gloving and hand hygiene (all staff)** – includes recognition of appropriate situations for glove use/hand hygiene, proper use and removal of gloves, and proper hand hygiene technique.
 - **Catheter dressing change technique** – includes correct performance of hand hygiene, and use of gloves, and correct use of antiseptics (proper application and allow drying, etc).
 - **Vascular access technique** – includes correct performance of hand hygiene and use of gloves, catheter site and port/vascular access antiseptics, and aseptic technique.
 - **Safe injection/safe medication practices** – includes proper technique for parenteral medication preparation, handling, administration and storage (e.g., not in patient station, etc.), use of aseptic technique, proper hand hygiene before preparing or administering medications or infusions, and proper cleansing of medication injection ports and medication vial diaphragms. Should also include proper use and handling of single use vials and bags.

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Keeping it Simple: Approach to HAI Prevention and Research

Healthcare-associated
infection

- Need for complete implementation of practices known to prevent HAIs
- Need for ongoing research to identify new strategies to prevent the remaining HAIs

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Antibiotic Stewardship

- Traditional Approach
- Regional Approach
 - Acute Care Hospital
 - Long Term Acute Care Hospitals
 - Nursing Homes

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Correlations with CDAD

- Antibiotic exposure is the single most important risk factor for the development of *Clostridium difficile* associated disease (CDAD).
 - Up to 85% of patients with CDAD have antibiotic exposure in the 28 days before infection!

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Improvement is Possible

Antibiotic Rx for Hospitals

Proceed with Caution

If

prescriptions of high-risk antibiotics in hospitals are **reduced by 30%**

Then

it could lead to **26% fewer** cases of deadly diarrhea infections

SOURCE: CDC Vital Signs, March 2014. www.cdc.gov/vitalsigns.

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Protect patients from antibiotic-resistant infections.

Surgeries and single-use catheters help treat patients, but they can be pathways for bacteria to enter the body.

Bacteria can be spread when appropriate infection control actions are not taken.

Antibiotics save lives, but poor prescribing practices puts patients at risk.

Combine infection control actions with every patient to prevent infections in health care.

Prevent infections from catheters and after surgery.

Prevent bacteria from spreading.

Improve antibiotic use.

SOURCE: CDC Vital Signs, March 2016

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Protect every patient every time.

Actions to prevent antibiotic-resistant infections in healthcare.

Prevent infections from catheters and after surgery.

- ✔ Use catheters only when needed.
- ✔ Follow recommendations for safer surgery and catheter insertion and care.
- ✔ Remove catheters from patient as soon as they are no longer needed.

Prevent bacteria from spreading.

- ✔ Improve hand hygiene.
- ✔ Use gloves, gowns, and dedicated equipment for patients who have resistant bacteria.
- ✔ Know about antibiotic-resistant MRSA outbreaks in your hospital and region (e.g. promote coordinated action for prevention).

Improve antibiotic use.

- ✔ Set cultures and start antibiotics promptly, especially in the case of sepsis.
- ✔ Use cultures to measure the need for antibiotics and stop antibiotic treatment as soon as they are no longer needed.
- ✔ When antibiotics are necessary, use the appropriate antibiotic in the proper dosage, frequency, and duration.

Source: US Centers for Disease Control and Prevention

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Holistic View of Antibiotic Use


Antibiotics are the only drug where use in one patient can impact the effectiveness in another.

If everyone does not use antibiotics well, we will all suffer the consequences.

Antibiotics are a shared resource, (and becoming a scarce resource).

Using antibiotics properly is analogous to developing and maintaining good roads.

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CDC Core Elements of Hospital Antibiotic Stewardship Programs

Leadership Commitment

Accountability

Drug Expertise


Action

Tracking

Reporting

Education

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Facilities work together to protect patients.

Common Approach *(Not enough)*


- Patients can be transferred back and forth from facilities for treatment without all the communication and necessary infection control actions in place.

Independent Efforts *(Still not enough)*

- Some facilities work independently to enhance infection control but are not often alerted to antibiotic-resistant or C. difficile germs coming from other facilities or outbreaks in the area.
- Lack of shared information from other facilities means that necessary infection control actions are not always taken and germs are spread to other patients.

Coordinated Approach *(Needed)*

- Public health departments track and alert health care facilities to antibiotic-resistant or C. difficile germs coming from other facilities and outbreaks in the area.
- Facilities and public health authorities share information and implement shared infection control actions to stop spread of germs from facility to facility.



Antibiotic Stewardship

Stewardship Program Leader

Prescriber Leaders and Partners

Pharmacy Leader and Partners

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Targeted Assessment for Prevention Strategy (TAP) Program from CDC

Target from NHSN Data

Target Hospitals with Highest Number of Excess Infections

Partnership for Prevention

- Health Departments
- CMS HENs
- CMS QIO

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Moving Testimony to Importance of HAI Prevention: HHS Partnering to Heal

Partnering to Heal

Instructions for Use
Skip the Introduction
View the Credits
Get Adobe Reader

Teaming-Up Against Health Care-Associated Infections


START Click here to begin the training

U.S. Department of Health and Human Services
A Virtual Experience Immersive Learning Simulation (VELS) Site
U.S. Patent No. 5,913,863 All Rights Reserved

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Future Directions

- NHSN Expansion beyond Acute Care
- Medical Devices
- Environmental Infection Control
- Post Acute Care Healthcare settings
- Sepsis
- Preparedness and Response

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Resources

- www.ahrq.gov
- www.cdc.gov/hai
- www.hhs.gov
- www.epa.gov
- www.fda.gov
- www.apic.org
- www.ahe.org

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Questions and Answers

- Whose Infection will you prevent when you return to your institution?
- How will you approach HAI prevention differently in LTCF's?
- Contact Information:
 - Email: Hudson.garrett@nadona.org
 - Visit www.nadona.org for more information

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