EDUCATIONAL SERIES: Navigating Infection Control and Antimicrobial Stewardship in Long-Term Care

Webinar #6: Infection Control: Management (Case Scenarios)

New England Nursing Home Quality Care Collaborative
Webinar Will Begin Shortly.

Call-In Number: (888) 895-6448
Access Code: 1228904
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Tufts University School of Medicine
Antimicrobial Steward and Associate Hospital Epidemiologist
Tufts Medical Center
Scenario 1

- A 67 year old man is admitted to your rehab facility from a hospital after a fall with surgical repair of a femur fracture
- He will require physical therapy multiple times a day
- During his hospital admission, he had developed an infection of the surgical site due to MRSA
- The infection was treated and he no longer has visible evidence of infection at the incision or symptoms
Questions

• Does this resident require precautions?
• If so, for how long and what criteria would I use to discontinue precautions?
• Does it matter whether the resident is colonized or infected with MRSA?
• For how long does someone remain colonized?
MRSA

- Described in 1961, shortly after the introduction of methicillin
- Outbreaks were reported beginning in the early 1960s
- Prevalence of methicillin resistance among *S. aureus* isolates in intensive care units in the United States is 60%
- >80,000 invasive infections and 11,285 deaths due to MRSA occurred in the US in 2011*

*2014 National CARB Strategy, CDC*
Risk Factors for MRSA Infection

Hospital acquired
- Antibiotic use
- Prolonged hospitalization
- Intensive care
- Hemodialysis
- MRSA colonization
- Proximity to others with MRSA colonization or infection

Post-discharge
- MRSA colonization
- Discharge to a nursing home
- Presence of a chronic wound
- Discharge with a central venous catheter or other invasive device

MRSA Outcomes Compared to Methicillin-sensitive *Staph aureus* (MSSI)

- Higher mortality
- Longer hospital stays
- Higher healthcare costs
- Higher rates of acute renal failure
- Higher rates of hemodynamic instability
- Prolonged ventilator dependency

MRSA Colonization

- Approximately 7% of patients in United States hospitals are colonized with MRSA.
- Among healthcare workers, the prevalence of MRSA nasal colonization is 4–15%.
- The duration of colonization is variable. In one systematic review including 1804 patients, median time to clearance of MRSA colonization was 88 weeks.

Sites of MRSA Colonization

• The anterior nares is the most common site
• Individuals with nasal MRSA carriage transmit MRSA more readily when they have a URI
• Most people with nasal colonization are also colonized in other areas such as the hands, axillae, perineum, and umbilicus (in infants)
MRSA Colonization
At Risk Areas On Your Body

Colonization Risk Colors:
- High
- Med
- Low

Provided by theMRSA.com
MRSA Colonization: other sites

- Surgical wounds
- Decubitus ulcers
- Intravascular catheter sites
- Other invasive devices
- Throat
- Sputum
- GI tract
- GU tract
The Iceberg Effect
Contact Precautions - Are they Worth it?

“Isolation is the sum total of wretchedness to a man.”

Thomas Carlyle
(1800s Scottish Philosopher)
Negative Aspects of Contact Precautions

• Monetary costs: disposable gowns or laundry, screening cultures, private rooms, delayed discharge from acute care. Estimated to be between additional $400-$2,000 per day for a patient with MRSA or VRE.

• Increased likelihood of adverse events: (31 vs. 15 per 1,000 days); preventable adverse events: (20 vs. 3 per 1,000 days)

• Higher rates of patient satisfaction complaints: (8% vs. 1%)

Morgan et al. American Journal of Infection Control 2009; 37(2)
Stelfox et al. JAMA 2003;290 (14).
Negative Aspects of Contact Precautions

• 50% fewer room entries, 50% less time spent in rooms, 50% less physical contact
• Nurses failed to record vital signs as frequently and physicians provided a recorded progress note half as often
• 23% less contact from visitors
• 40% more depression

Goldszer et al. *Journal of Clinical Outcomes Management* 2002: 9(10)
Morgan et al. *Infection Control & Hospital Epidemiology* 2013: 34(1).
Day et al. *Journal of Hospital Infection* 2011; 79 (2).
Figure 2. Average time spent by each intern per visit to isolation compared to non-isolation rooms.
Red line shows time per visit to non-isolation rooms. Blue line shows time per visit to isolation rooms.

Our resident…developments

• The surgical wound becomes red and purulent drainage is noted.
• A culture is sent. It is growing both MRSA and *E. coli*. The latter is resistant to carbapenems.
Aside from urgent evaluation by the orthopedic surgeon, what should be done from a precautions standpoint?
Contact Precautions for MRSA: What does the CDC say to do?

| Multidrug-resistant organisms (MDROs), infection or colonization (e.g., MRSA, VRE, VISA/VRSA, ESBLs, resistant *S. pneumoniae*) | Contact + Standard | MDROs judged by the infection control program, based on local, state, regional, or national recommendations, to be of clinical and epidemiologic significance. Contact Precautions recommended in settings with evidence of ongoing transmission, acute care settings with increased risk for transmission or wounds that cannot be contained by dressings. See recommendations for management options in Management of Multidrug-Resistant Organisms In Healthcare Settings, 2006 ([https://www.cdc.gov/infectioncontrol/guidelines/mdro/](https://www.cdc.gov/infectioncontrol/guidelines/mdro/)) [870]. Contact state health department for guidance regarding new or emerging MDRO. |
Contact Precautions for MRSA: What does the Massachusetts DPH say?

Contact Precautions for MRSA: What does the Massachusetts DPH say?

*Contact Precautions* may be indicated for residents with MDROs. Consider the resident’s individual clinical situation and the prevalence or incidence of the particular MDRO in the facility when deciding whether to implement Contact Precautions for a resident infected or colonized with an MDRO.

- **Healthy residents:** For relatively healthy and mainly independent residents, follow *Standard Precautions*, making sure that gloves and gowns are used for contact with uncontrolled secretions, pressure ulcers, draining wounds, stool incontinence, urinary catheters, and ostomy tubes/bags.

- **Ill residents:** For those residents who are ill, or totally dependent upon healthcare personnel for healthcare activities of daily living, or ventilator-dependent, and for those residents whose infected secretions or drainage cannot be contained, use *Contact Precautions* in addition to *Standard Precautions*.

A single patient room is preferred for patients who require Contact Precautions.

For CDI: If possible, residents should be assigned to a private room with their own bathroom.

If a private room is not available, residents with CDI/MDRO should be cohorted with other residents with CDI/MDRO.

If multi-resident rooms are used, > 3 feet spatial separation is advised to reduce the opportunities for inadvertent sharing of items between the infected/colonized resident and other residents.

Decisions regarding resident placement should be made on a case-by-case basis, balancing infection risks for other residents in the room, the presence of risk factors that increase the likelihood of transmission or acquisition, and the potential adverse psychological impact on the infected or colonized resident.
“There is currently no definitive data to support the decision about when to **discontinue contact precautions**; however, the resident’s risk of transmission to others (e.g., overall health, dependence on healthcare, and device use) can be considered. In most cases, the absence of active wound drainage, diarrhea and copious contaminated secretions greatly reduces the risk presented by an infected or colonized individual.”

- Note: this does not apply to carbapenem-resistant *Enterobacteriaceae* (CRE)
# Summary of Recommendations for the Management of SNF Residents with CRE

<table>
<thead>
<tr>
<th>Measure</th>
<th>CP-CRE infection</th>
<th>CP-CRE colonization</th>
<th>Non-CP-CRE infection</th>
<th>Non-CP-CRE colonization††</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notify receiving facility*</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Notify MDPH upon transfer or death</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Standard precautions</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Contact precautions† Gown/gloves for in-room resident care</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>For residents at higher risk of CRE transmission</td>
</tr>
<tr>
<td>Door signage</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>For residents at higher risk of CRE transmission</td>
</tr>
<tr>
<td>Private room</td>
<td>Yes (strongly encouraged)</td>
<td>Yes (strongly encouraged)</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Restricted to room</td>
<td>Yes</td>
<td>No**</td>
<td>No**</td>
<td>No**</td>
</tr>
<tr>
<td>Enhanced environmental cleaning</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Designated or disposable equipment</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>If &gt;1 case, cohort staff if feasible</td>
<td>Yes</td>
<td>Yes</td>
<td>Optional</td>
<td>Optional</td>
</tr>
<tr>
<td>If &gt;1 case, cohort residents if feasible</td>
<td>Yes</td>
<td>Yes</td>
<td>Optional</td>
<td>Optional</td>
</tr>
</tbody>
</table>

MDPH CRE toolkit: https://www.mass.gov/service-details/carbapenem-resistant-enterobacteriaceae-cre-information-for-providers
• Discontinue contact precautions when the resident has at least three negative screening cultures per the following algorithm:
  – At least three months after the last positive culture;
  – AND At least three months after last course of antibiotics;
  – AND Each culture obtained ≥1 week apart.
• The recommended screening sites are either rectal or perirectal swabs. If the original site of infection is still present such as a wound that hasn’t healed or urine from a chronically catheterized patient, at least one culture from such sites should be added to the screening from the GI tract.
Scenario 2

• An 87 year old man who has lived in long-term care for six years develops a sudden high fever and tachycardia without localizing signs or symptoms.

• During monitoring he is noted to have a dropping blood pressure and is transferred to an acute care hospital.

• Three days later, the hospital calls to say the resident’s blood culture was positive for Group A *Streptococcus*. The resident died from septic shock.
Clusters of Confirmed Invasive GAS in LTCFs

Invasive GAS clusters investigated by MDPH by year

* Data as of February 27, 2018 and is subject to change
Questions

How many cases of GAS in my facility should result in implementation of an action plan?
How can I prevent the spread of GAS once I have a case (or more than one case)?
Invasive GAS in LTCF

- 1 case of invasive GAS in LTCF
  - Determine if there have been additional cases of invasive or non-invasive GAS in the facility (among other residents or staff)
  - Recommend retrospective review of medical charts and lab results to determine if there have been any other cases of invasive or non-invasive GAS infection among residents or staff (providing direct patient care) within the previous 6 months
  - If any staff or residents have symptoms such as sore throat, tonsillar inflammation, cervical lymphadenopathy or skin infections including pyoderma and impetigo, then obtain appropriate cultures
  - If any cultures are positive then treat as appropriate or prescribed by a health care professional
  - Recommend enhanced surveillance for next 6 months
  - Reinforce rigorous hand washing
Infections caused by *Streptococcus pyogenes* (GAS)

- **Superficial diseases**
  - pharyngitis, skin & soft tissue inf\(^n\), erysipelas, impetigo, vaginitis, post-partum inf\(^n\)

- **Deep infections**
  - bacteraemia, necrotising fasciitis, deep soft tissue inf\(^n\), cellulitis, myositis, puerperal sepsis, pericarditis, meningitis, pneumonia, septic arthritis

- **Toxin-mediated**
  - scarletina, toxic shock-like syndrome

- **Immunologically mediated**
  - rheumatic fever, post-streptococcal GN, reactive arthritis

Dr.T.V.Rao MD
Invasive GAS in LTCF (Continued)

• 2 or more cases of invasive GAS in a LTCF within 6 months
  – Intensive follow up is indicated
  – Consists of identifying the exposed group (both residents and HCWs) and screening those exposed regardless of symptom status
  – Positive cultures should be treated appropriately
  – Staff members with indistinguishable PFGE results should continue treatment and follow-up cultures should be obtained 7-10 days after completion of therapy

If follow-up cultures in staff members with indistinguishable PFGE results remain positive after completion of therapy, culturing household contacts of the colonized staff member may be indicated
Infection Control Recommendations for GAS

• Report any cases to MDPH by calling 617-983-6800 (24/7)
• Report cases to the Bureau of Health Care Safety and Quality by using the web-based Health Care Facility Reporting System (HCFRS).
• Place residents who have GAS infection on the appropriate precautions, as follows:
  – Standard precautions for skin or wound infection if a dressing covers and contains drainage
  – Standard, contact, and droplet precautions if no dressing is present or the dressing does not adequately contain drainage
  – Droplet and standard precautions for pharyngitis or pneumonia (through the first 24 hours of antimicrobial therapy)
  – Droplet and standard precautions for invasive disease (through the first 24 hours of antimicrobial therapy).
Infection Control
Recommendations for GAS

- BACK TO BASICS: Provide education on proper hand hygiene and respiratory etiquette to staff, residents, and visitors. Don’t forget your contracted specialists!
- Ensure appropriate number and location of hand hygiene dispensers to optimize compliance.
- Provide education on wound care and dressing changes.
- Provide education on environmental cleaning, with a focus on high-touch areas.
- Provide education on equipment cleaning, reinforcing the importance of cleaning and disinfecting equipment that is shared between residents; or use dedicated equipment, if possible.
- Monitor compliance with hand hygiene, respiratory etiquette, standard and transmission-based precautions, personal protective equipment, usage, and cleaning practices.
Infection Control
Recommendations for GAS

Surveillance to Identify Additional Cases
• Perform retrospective review of all resident cultures for the previous month for culture-confirmed infections.
• Maintain active symptom surveillance for invasive and noninvasive cases for six months after the onset of the most recent infection.
  – Check residents daily for symptoms of GAS infection and order a culture for anyone who is symptomatic
  – Survey staff for symptoms of GAS and order a culture for any staff member who is symptomatic; refer staff with positive cultures to a physician for treatment
• Provide staff education on recognition of GAS infections, the importance of basic hygiene, and not working while ill.

Identification of Potential Carriers
• In consultation with the MDPH, you may be asked to order cultures for staff and other patients who come into close contact with residents who have GAS infections.
Scenario 3

• A 71 year old female is admitted after a long stay at an acute care hospital where she was in the ICU with a trach and PEG after a stroke
• She is off the ventilator and slowly recovering her strength but she continues to require tube feeds due to swallowing dysfunction
Scenario 3 (continued)

• Since her admission, her stools have been loose, so a *C. diff* test is sent and comes back PCR-positive
• She is started on oral vancomycin therapy
• Stools remain loose without change in character
Questions

What type of precautions does this resident need?

When can precautions be discontinued and based on what criteria?

If her stools stay loose forever does that mean precautions are maintained forever?

This resident needs PT/OT…how do we do this safely?
Contact Precautions for *C. difficile*: What does the CDC say?

<table>
<thead>
<tr>
<th>Gastroenteritis</th>
<th>Contact + Standard</th>
<th>Duration of illness</th>
<th>Discontinue antibiotics if appropriate. Do not share electronic thermometers [853], [854]; ensure consistent environmental cleaning and disinfection. Hypochlorite solutions may be required for cleaning if transmission continues [847]. Handwashing with soap and water preferred because of the absence of sporicidal activity of alcohol in waterless antiseptic handrubs [983].</th>
</tr>
</thead>
</table>
Rationale for Hand Hygiene Recommendations after Caring for a Patient with *Clostridium difficile* Infection

Erik R. Dubberke, MD, MSPH; Dale N. Gerding, MD

Questions frequently arise in regards to the recommended method of hand hygiene after caring for patients with *Clostridium difficile* infection (CDI). The CDI component of the SHEA / IDSA Compendium of Practice Recommendations to Prevent Healthcare-Associated Infections and the SHEA / IDSA Clinical Practice Guidelines for CDI recommend preferential use of soap and water for hand hygiene over alcohol-based hand hygiene products only in outbreak settings (BIII) (1;2).

Some have found the recommendation to preferentially perform hand hygiene with soap and water after caring for a patient with CDI only during outbreaks, and not in non-outbreak settings, confusing. Alcohol does not kill *C. difficile* spores (1). In addition, several studies have found hand washing with soap and water, or with an antimicrobial soap and water, to be more effective at removing *C. difficile* spores than alcohol-based hand hygiene products from the hands of volunteers inoculated with a known number of *C. difficile* spores (3;4).

The primary reason hand hygiene with soap and water is not recommended for CDI prevention in non-outbreak settings is there are no studies that have found an increase in CDI with the use of alcohol-based hand hygiene products or a decrease in CDI with the use of soap and water (6-11). Conversely, several of the studies did identify decreases in methicillin-resistant *Staphylococcus aureus* (6-8;11) or vancomycin resistant enterococcus (7) associated with the use of alcohol-based hand hygiene products. The combination of these findings, lack of change in CDI but decreases in other non-spore forming, multidrug resistant pathogens, with the use of alcohol-based hand hygiene products are the basis behind not recommending preferential use of soap and water for CDI prevention in non-outbreak settings. However because of the theoretical increase in risk of *C. difficile* transmission based on the volunteer hand contamination studies, the experts who wrote the CDI component of the SHEA / IDSA Compendium and the SHEA / IDSA Clinical Practice Guidelines for CDI felt it was prudent to recommend preferential use of soap and water after caring for a patient with CDI in outbreak settings.
A single patient room is preferred for patients who require Contact Precautions.

For CDI: If possible, residents should be assigned to a private room with their own bathroom.

If a private room is not available, residents with CDI/MDRO should be cohorted with other residents with CDI/MDRO.

If multi-resident rooms are used, > 3 feet spatial separation is advised to reduce the opportunities for inadvertent sharing of items between the infected/colonized resident and other residents.

Decisions regarding resident placement should be made on a case-by-case basis, balancing infection risks for other residents in the room, the presence of risk factors that increase the likelihood of transmission or acquisition, and the potential adverse psychological impact on the infected or colonized resident.
Other Considerations

• Restrict movement while symptomatic, then allow resident to participate in group activities
  – Make sure hands and clothes are clean and body substances contained

• Caregivers, even outside the resident’s room (e.g. PT/OT), should wear gowns and gloves
Assessment of Current CDI Prevention Activities
Early Identification and Containment of CDI

December 28, 2016

Background/Rationale:

- *C. difficile* infection (CDI) is a common cause of acute diarrhea in nursing homes.
- Individuals with CDI serve as a source for bacterial spread to others, through the contamination of caregiver hands and shared equipment.
- Contamination of a resident’s skin and environment is greatest when a resident has diarrhea from CDI but hasn’t started on appropriate treatment.
- Early identification of CDI can limit the spread of *C. difficile* by reducing the time from symptom onset to starting therapy.
- Rapid containment through implementation of contact precautions for symptomatic residents can reduce contamination.
- Contact precautions include use of gowns/gloves and dedicated equipment during care of residents with new diarrhea.
- It’s critical to understand when and when not to send *C. difficile* laboratory testing.
- Extending or initiating unnecessary therapy for *C. difficile* colonization can prevent the reestablishment of normal bacterial flora in the intestines.

Current activities survey:

<table>
<thead>
<tr>
<th>SECTION 1. KNOWLEDGE AND COMPETENITY</th>
<th>YES</th>
<th>NO</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Early Identification</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q1 Do direct care personnel* identify and communicate new or worsening diarrhea?</td>
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<tr>
<td>Q2 Do nursing personnel* obtain a stool specimen for <em>C. difficile</em> testing only when a resident is having watery diarrhea?</td>
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<tr>
<td>Q3 Do nursing personnel know the appropriate way to collect and submit a stool specimen for <em>C. difficile</em> testing?</td>
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</tr>
<tr>
<td>Q4 Do medical personnel* know the <em>C. difficile</em> testing (e.g., EIA “toxin” vs. molecular “PCR”) being performed by the laboratory?</td>
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<tr>
<td><strong>Rapid containment</strong></td>
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<tr>
<td>Q5 Do healthcare personnel* know what precautions are used to prevent the spread of <em>C. difficile</em>?</td>
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<tr>
<td>Q6 Do nursing personnel know to implement contact precautions for residents known or suspected of having CDI?</td>
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<tr>
<td>Q7 Do residents with CDI and their family members receive education about the use of hand washing and contact precautions to prevent transmission of CDI?</td>
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</tbody>
</table>

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<thead>
<tr>
<th>SECTION 2. INFECTION PREVENTION POLICIES AND INFRASTRUCTURE</th>
<th>YES</th>
<th>NO</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Early Identification</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q1 Is there a protocol for notifying medical personnel when a resident develops new or worsening diarrhea?</td>
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</tr>
<tr>
<td>Q2 Does your nursing home have a policy that allows nursing personnel to collect and order a stool for <em>C. difficile</em> testing?</td>
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</tr>
<tr>
<td>Q3 Is there a protocol for notifying medical personnel of the results of a <em>C. difficile</em> test?</td>
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</tr>
<tr>
<td><strong>Rapid containment</strong></td>
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<tr>
<td>Q4 Does your nursing home have a policy that allows nursing personnel to implement contact precautions when a resident develops new or worsening diarrhea?</td>
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<tr>
<td>Q5 Is there a visual tool (e.g., sign) used to communicate to healthcare personnel and visitors when contact precautions are in use for a resident with known or suspected CDI?</td>
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<tr>
<td>Q6 Are there adequate supplies of gowns/gloves immediately available in all resident care areas?</td>
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<tr>
<td>Q7 Does your nursing home dedicate resident equipment when contact precautions for CDI are in use?</td>
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<tr>
<td>Q8 Does your nursing home have a policy or procedure to provide separate toilets for residents with CDI who are sharing a room with residents without CDI?</td>
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</tbody>
</table>

https://www.cdc.gov/longtermcare/prevention/index.html
Clinical Practice Guidelines for *Clostridium difficile* Infection in Adults and Children: 2017 Update by the Infectious Diseases Society of America (IDSA) and Society for Healthcare Epidemiology of America (SHEA)

L. Clifford McDonald,1 Dale N. Gerding,2 Stuart Johnson,2,3 Johan S. Bakken,4 Karen C. Carroll,5 Susan E. Coffin,4 Erik R. Dubberke,7 Kevin W. Garey,8 Carolyn V. Gould,1 Ciaran Kelly,9 Vivian Loo,10 Julia Shaklee Sammons,8 Thomas J. Sandra,11 and Mark H. Wilcox12

1 Centers for Disease Control and Prevention, Atlanta, Georgia; 2 Edward Hines Jr Veterans Administration Hospital, Hines, and 3 Toyota University Medical Center, Maywood, Illinois; 4 St Luke’s Hospital, Duluth, Minnesota; 5 Johns Hopkins University School of Medicine, Baltimore, Maryland; 6 Children’s Hospital of Philadelphia, Pennsylvania; 7 Washington University School of Medicine, St Louis, Missouri; 8 University of Houston College of Pharmacy, Texas; 9 Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, Massachusetts; 10 McGill University Health Centre, McGill University, Montréal, Québec, Canada; 11 Boston Children’s Hospital, Massachusetts; and 12 Leeds Teaching Hospitals NHS Trust, United Kingdom
XIII. Should private rooms and/or dedicated toilet facilities be used for isolated patients with CDI?

**Recommendations**

1. Accommodate patients with CDI in a private room with a dedicated toilet to decrease transmission to other patients. If there is a limited number of private single rooms, prioritize patients with stool incontinence for placement in private rooms (*strong recommendation, moderate quality of evidence*).

2. If cohorting is required, it is recommended to cohort patients infected or colonized with the same organism(s)—that is, do not cohort patients with CDI who are discordant for other multidrug-resistant organisms such as methicillin-resistant *Staphylococcus aureus* or vancomycin-resistant *Enterococcus* (*strong recommendation, moderate quality of evidence*).
XIV. Should gloves and gowns be worn while caring for isolated CDI patients?

**Recommendation**

1. Healthcare personnel must use gloves (*strong recommendation, high quality of evidence*) and gowns (*strong recommendation, moderate quality of evidence*) on entry to a room of a patient with CDI and while caring for patients with CDI.
XV. When should isolation be implemented?

**Recommendation**

1. Patients with suspected CDI should be placed on preemptive contact precautions pending the *C. difficile* test results if test results cannot be obtained on the same day (*strong recommendation, moderate quality of evidence*).
XVII. What is the recommended hand hygiene method (assuming glove use) when caring for patients in isolation for CDI?

**Recommendations**

1. In routine or endemic settings, perform hand hygiene before and after contact of a patient with CDI and after removing gloves with either soap and water or an alcohol-based hand hygiene product (strong recommendation, moderate quality of evidence).

2. In CDI outbreaks or hyperendemic (sustained high rates) settings, perform hand hygiene with soap and water preferentially instead of alcohol-based hand hygiene products before and after caring for a patient with CDI given the increased efficacy of spore removal with soap and water (weak recommendation, low quality of evidence).

3. Handwashing with soap and water is preferred if there is direct contact with feces or an area where fecal contamination is likely (eg, the perineal region) (good practice recommendation).
XIX. Should noncritical devices or equipment be dedicated to or specially cleaned after being used on the isolated patient with CDI?

Recommendation

1. Use disposable patient equipment when possible and ensure that reusable equipment is thoroughly cleaned and disinfected, preferentially with a sporicidal disinfectant that is equipment compatible (strong recommendation, moderate quality of evidence).
XX. What is the role of manual, terminal disinfection using a *C. difficile* sporicidal agent for patients in isolation for CDI?

**Recommendation**

1. Terminal room cleaning with a sporicidal agent should be considered in conjunction with other measures to prevent CDI during endemic high rates or outbreaks, or if there is evidence of repeated cases of CDI in the same room (*weak recommendation, low quality of evidence*).

XXI. Should cleaning adequacy be evaluated?

**Recommendation**

1. Incorporate measures of cleaning effectiveness to ensure quality of environmental cleaning (*good practice recommendation*).
XX. What is the role of manual, terminal disinfection using a *C. difficile* sporicidal agent for patients in isolation for CDI?

**Recommendation**

1. Terminal room cleaning with a sporicidal agent should be considered in conjunction with other measures to prevent CDI during endemic high rates or outbreaks, or if there is evidence of repeated cases of CDI in the same room (*weak recommendation, low quality of evidence*).

XXI. Should cleaning adequacy be evaluated?

**Recommendation**

1. Incorporate measures of cleaning effectiveness to ensure quality of environmental cleaning (*good practice recommendation*).
CDI Cleaning and Disinfection: Product Selection

• Ensure that your facility is using an EPA-registered hospital grade disinfectant that is effective against CDI

https://www.epa.gov/pesticide-registration/list-k-epa-registered-antimicrobial-products-effective-again-clostridium
XXIII. What is the role of daily sporicidal disinfection?

Recommendation

1. Daily cleaning with a sporicidal agent should be considered in conjunction with other measures to prevent CDI during outbreaks or in hyperendemic (sustained high rates) settings, or if there is evidence of repeated cases of CDI in the same room (weak recommendation, low quality of evidence).
But...does this resident actually have *C. diff*?

**DIAGNOSIS**

VI. What is the preferred population for *C. difficile* testing, and should efforts be made to achieve this target?

**Recommendation**

1. Patients with unexplained and new-onset ≥3 unformed stools in 24 hours are the preferred target population for testing for CDI (*weak recommendation, very low quality of evidence*).
Maximizing Test Reliability

• False positive tests are likely to occur in residents:
  – Who are on laxatives
  – Who are on tube feeds
  – Who do not have at least 3 loose stools in a 24 hour period
  – Who do not have new onset diarrhea
  – Who do not have other signs/symptoms of CDI (abdominal pain, elevated WBC, fever)
  – Who do not have liquid stool (lab should reject)
Test Characteristics

C. DIFF COMPLETE testing algorithm

99% NPV

77% of Samples
EXCLUDE

12% of samples
TREAT

11% of samples
DECIDE

PCV test
C. difficile Testing

• Toxin negative/PCR positive results MAY indicate colonization rather than infection (but not always)

• Colonized residents do not require antibiotic therapy (in fact this will increase their risk of true C. diff infection)

• Colonized residents may be shedding spores…role of precautions is unclear
XVI. How long should isolation be continued?

**Recommendations**

1. Continue contact precautions for at least 48 hours after diarrhea has resolved (*weak recommendation, low quality of evidence*).
2. Prolong contact precautions until discharge if CDI rates remain high despite implementation of standard infection control measures against CDI (*weak recommendation, low quality of evidence*).
IX. What is the role of repeat testing, if any? Are there asymptomatic patients in whom repeat testing should be allowed, including test of cure?

**Recommendation**

1. Do not perform repeat testing (within 7 days) during the same episode of diarrhea and do not test stool from asymptomatic patients, except for epidemiological studies (*strong recommendation, moderate quality of evidence*).
“coordinated guidance and interventions to improve appropriate use of microbiological diagnostics to guide therapeutic decisions. It should promote appropriate, timely diagnostic testing, including specimen collection, and pathogen identification and accurate, timely reporting of results to guide patient treatment.”

Diagnostic stewardship is an integral part of antibiotic stewardship programmes and is also essential for infection prevention and control activities in health-care facilities. Timely and accurate microbiological results help clinicians to select the most appropriate antibiotics or antibiotic combinations for their patients, as well as to implement the necessary precautions to reduce the risk of transmission and prevent outbreaks due to bacterial pathogens in health-care facilities."
Take Home Points

- Avoid over-isolating
- Avoid over-testing
- Avoid over-treating
• AU data submission is **required** to receive formal recognition from MDPH for complete participation in the *Navigating Infection Control and Antibiotic Stewardship Program*

• It is not too late to start and there’s still time to submit May data

• You will be meeting a core AS element: Tracking

• You will receive a monthly (and soon quarterly) report showing you how your use compares to other facilities
• Eye drops and ointments do not need to be reported
• If a new patient is transferred into your facility during the reporting month on an antibiotic started at an outside facility, you should report that as a start for the month they were admitted
• If you have made an error in your monthly reporting, simply email Jessica.Leaf@state.ma.us or Melissa.Cumming@state.ma.us for assistance
## 2018 Monthly Reported Antibiotic Start Data

<table>
<thead>
<tr>
<th>Antibiotic class</th>
<th>Antibiotic</th>
<th>num</th>
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(Continued)
Data can be submitted using the same link every month:

https://www.surveymonkey.com/r/9Y2TQ7C
Upcoming Educational Series Webinars

**Jul 10th**  WEBINAR: Antibiotic Selection, De-Escalation, and Duration

**Aug 14th**  WEBINAR: How to Get an A on Your Report Card: Prevention and Management of *C. difficile* and Other Healthcare Associated Infections

**Sep 11th**  WEBINAR: Measure Your Success: Monitoring and Tracking Data
New England Nursing Homes
Commitment to Quality Improvement

Take a photo of your badge displayed in your front entrance (bonus points if staff are included), post it to social media using the hashtag #WeCommit2Quality, and tag the New England QIN-QIO on any of the following:

Facebook  @NEQINQIO
Twitter  @NewEnglandQI
LinkedIn  @New England QIN-QIO

Facilities who use this hashtag will have a chance to be featured in New England QIN-QIO social media postings, newsletters and programs.
Thompson House
Rehabilitation & Nursing Center
May 18 at 9:13 AM

#WeCommit2Quality New England QIN QIO

... Continue Reading
Blue ribbons will be awarded to Collaborative participants who:

- Actively participate in the New England Nursing Home Quality Care Collaborative (ex: attending webinars and other learning events related to your quality goals)
- Implement performance improvement projects and best practices to help improve performance and health care outcomes and share as a “success story” to the New England QIN-QIO

Gold ribbons will be awarded to Collaborative participants who:

- Achieved a composite score of 6.0 or below by September 2018
- Earned and maintained a percentage at or below the state average for the long-stay antipsychotic medication quality measure by September 2018
- Met criteria outlined for the blue ribbon requirements
QIN-QIO State Leads

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This material was prepared by the New England QIN-QIO, the Medicare Quality Innovation Network-Quality Improvement Organization for New England, under contract with the Centers for Medicare & Medicaid Services (CMS), an agency of the U.S. Department of Health and Human Services. The contents presented do not necessarily reflect CMS policy. CMSQINC22018061451.