C. difficile infection prevention as a QAPI activity

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Presentation Objectives

- Translate infection prevention activities into a Quality Assurance/Performance Improvement (QAPI) program
- Discuss strategies for tracking and reducing *C. difficile* infections (CDI)
- Apply measures of process improvement in *C. diff* detection and prevention
Describing a nursing home QAPI program

- Data-driven
- Pro-active
- Continuous identification of opportunities for improvement
- Addressing gaps in systems
- Comprehensive
- Systematic interventions

Designed to improve the quality of care

Content from K. Hoffman, QAPI for providers, AMDA LTC Medicine Annual conference, 3-2013
http://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/QAPI/NHQAPI.html
5 Elements of QAPI

- Element 1 – Design and scope
- Element 2 – Governance and Leadership
- Element 3 – Feedback, Data Systems & Monitoring
- Element 4 – Performance Improvement Projects
- Element 5 – Systematic Analysis & Systemic Action

Activities of an infection prevention program

Content from K. Hoffman, QAPI for providers, AMDA LTC Medicine Annual conference, 3-2013
http://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/QAPI/NHQAPI.html
Feedback, Data Systems & Monitoring

- Monitoring processes and outcomes
  - Infection surveillance
  - Adherence to infection prevention practices

- Data from multiple sources
  - Laboratory data on antibiotic resistance
  - Pharmacy data on antibiotic use
  - Resident medical records for signs/sx

- Establishing benchmarks or facility targets

- Implementing feedback
  - Reporting to an infection control or QA committee
  - Sharing data with front-line staff and providers

Adapted from K. Hoffman, QAPI for providers, AMDA LTC Medicine Annual conference, 3-2013
http://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/QAPI/NHQAPI.html
Performance improvement projects

- Concentrated effort on a particular problem
- Utilize a thorough and organized, and structured approach to understanding problems
  - Gathering information
  - Examine the current process and evaluate results
  - Improve care processes
  - Monitor impact of changes
- Infection prevention examples:
  - Increasing adherence to hand hygiene
  - Improving antibiotic use for suspected UTI
  - Detection and control of an outbreak

Adapted from K. Hoffman, QAPI for providers, AMDA LTC Medicine Annual conference, 3-2013
http://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/QAPI/NHQAPI.html
Advancing Excellence Infections Goal

INFECTIONS
FOLLOW THESE SEVEN SIMPLE STEPS TO SUCCESS

EXPLORE GOAL

Deciding what you want to change and communicating that intention is the first step of the quality improvement cycle. This page provides a general description of the goal and its benefits in line with the strategic goals of the campaign.

www.nhqualitycampaign.org
Why focus on *Clostridium difficile* (aka C.diff) ?

- *C. difficile* infection (CDI) has become the leading cause of acute diarrhea in nursing home residents.
- Deaths, severe disease, and hospitalizations from CDI occur more among people over age 65 years than in other age groups.
- The prevention activities, like hand hygiene, which can help prevent spread of *C. diff* will also reduce other infections.
- Reducing CDI in healthcare is a national priority identified in the National Action Plan to Prevent Healthcare-Associated Infections.
HHS National Action Plan to Prevent HAIs: LTC Chapter

National Action Plan to Prevent Health Care-Associated Infections: Road Map to Elimination

- Action Plan Development
- Phase 1: Acute-Care Hospitals
- Phase 2: Ambulatory Surgical Centers, End-Stage Renal Disease Facilities, and Increasing Influenza Vaccination Among Health Care Personnel
- **Phase 3 Long-Term Care Facilities**
- Evaluation of the Health Care-Associated Infections Action Plan
- State HAI Prevention Plans

http://www.hhs.gov/ash/initiatives/hai/actionplan/index.html
Action Plan for HAI Prevention in LTCF

Priority areas for skilled nursing facilities and nursing homes

- Increasing National Healthcare Safety Network (NHSN) enrollment
- Tracking *Clostridium difficile* Infections (CDI) in NHSN
- Tracking Urinary Tract Infections (UTI) in NHSN
- Increasing Resident Influenza and Pneumococcal Vaccination reported by MDS 3.0
- Increasing Healthcare Personnel Influenza Vaccination reported in National Health Interview Survey data

National infection reporting system

- CDC managed web-based system designed for healthcare facility reporting of infections
- Uses standardized infection definitions to identify events
- Data used by facilities for surveillance and internal quality improvement
- Data used by CDC to establish national benchmarks and track overall improvement in efforts to prevent healthcare-associated infections
NHSN Long-term care facility component

- NHSN reporting option specifically for LTCFs
- 177 facilities have enrolled since its launch in Sept 2012

National Healthcare Safety Network (NHSN)

Tracking Infections in Long-term Care Facilities

Eliminating infections, many of which are preventable, is a significant way to improve care and decrease costs. CDC’s National Healthcare Safety Network provides long-term care facilities with a customized system to track infections in a streamlined and systematic way. When facilities track infections, they can identify problems and track progress toward stopping infections. On the national level, data entered into NHSN will gauge progress toward national healthcare-associated infection goals.

NHSN’s long-term care component is ideal for use by: nursing homes, skilled nursing facilities, chronic care facilities, and assisted living and residential care facilities.

To report *C. difficile*, MRSA, and other drug-resistant infections, click here.

- Enrollment into NHSN
- Forms
- Protocols

To report urinary tract infections, click here.

- Enrollment into NHSN
- Forms
- Protocols

1 to 3 million serious infections occur every year in long-term care.

As many as 380,000 patients die of the infections they contract.

Infections are among the most frequent reasons LTC patients get admitted to hospitals.

www.cdc.gov/nhsn/ltc
NHSN LTCF Component Users

- **174 unique SNF/NHs actively enrolled as of 6/2/14**
  - 174/15,668 certified facilities = 1.1%
  - 31 states with at least one or more SNF/NH enrolled

- **170 with annual facility survey data**

- **Ownership**
  - 17 (10%) Government/Veterans administration**
  - 100 (59%) Non-profit**
  - 53 (31%) For profit

- **Affiliation**
  - 58 (34%) Hospital-based**
  - 66 (39%) Independent
  - 46 (27%) Multi-facility organizations

- **94% Dual certified facilities (Medicare and Medicaid)**

**proportions are higher than distribution nationally**
31 states with SNF/NH users

*Wyoming with 1 ALF enrolled

**Kentucky with 1 ICF enrolled
Facility size and resident services

- Median bed size: 143 (Range 10 – 815)

<table>
<thead>
<tr>
<th></th>
<th>&lt;=50 beds</th>
<th>51-100 beds</th>
<th>101-199 beds</th>
<th>&gt;200 beds</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 (15%)</td>
<td>22 (18%)</td>
<td>53 (44%)</td>
<td>28 (23%)</td>
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- Average percent occupancy: ~91%

- Percent of facilities providing the following services:

<table>
<thead>
<tr>
<th>Service Type</th>
<th>&lt;=50 beds</th>
<th>51-100 beds</th>
<th>101-199 beds</th>
<th>&gt;200 beds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long-term General Nursing Service</td>
<td>95%</td>
<td>68%</td>
<td>87%</td>
<td>31%</td>
</tr>
<tr>
<td>Long-term Dementia Service</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skilled Nursing Service</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long-term Psychiatric Service</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Ventilator Service</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Bariatric Service</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Hospice/Palliative Service</td>
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<tr>
<td></td>
<td>33%</td>
<td>26%</td>
<td>58%</td>
<td>33%</td>
</tr>
</tbody>
</table>
Facility infection prevention resources

- **Average staff hours spent each week on infection prevention and control activities**
  - Average among all facilities: 17.5 hours
  - Average hours spent on infections surveillance: 9 hours (~50%)

- **Infection prevention average staff hours by facility size**
  
<table>
<thead>
<tr>
<th>Facility Size</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;=50 beds</td>
<td>8.6</td>
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<tr>
<td>51-100 beds</td>
<td>16.1</td>
</tr>
<tr>
<td>101-199 beds</td>
<td>18.1</td>
</tr>
<tr>
<td>&gt;200 beds</td>
<td>24.5</td>
</tr>
</tbody>
</table>

- **Infection prevention average staff hours by affiliation**
  
<table>
<thead>
<tr>
<th>Affiliation</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital-based</td>
<td>12.6</td>
</tr>
<tr>
<td>Independent</td>
<td>18.4</td>
</tr>
<tr>
<td>Multi-facility organization</td>
<td>21.8</td>
</tr>
</tbody>
</table>
Advancing Excellence Infections Goal

INFECTIONS

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www.nhqualitycampaign.org
Understanding *C. diff* in your facility: Questions to ponder

- How do we define CDI?
- How do we track/measure CDI?
- Are my facility’s CDI rates high?
- If my facility’s rates are high, why?
  - Are CDI rates in my community high?
- Which residents are most affected by CDI in my facility?
  - Skilled care vs. long-stay
  - Recently hospitalized?
  - Recent antibiotic use?
- Are most cases of CDI new, or relapsing cases?
Tracking CDI using positive lab tests

- **Laboratory Identified (Lab-ID) CDI events**
  - Laboratory cultures used as a proxy for surveillance
  - Definitions will match the Lab-ID event criteria being applied across healthcare settings

- **This method is based solely on laboratory data and limited resident admissions/transfer data**
  - This includes results of testing performed on residents while at the facility
  - Clinical evaluation of resident is not required, and therefore this surveillance option is less labor intensive
NHSN CDI definitions

- **C. difficile positive laboratory test:** A positive result for a laboratory test detecting presence of either of the following:
  - *C. difficile* toxin A or B (e.g., enzyme immunoassay or EIA test), OR
  - A toxin-producing *C. difficile* organism detected in the stool specimen by culture
  - A toxin producing *C. difficile* bacteria detected by nucleic acid amplification testing (for example, polymerase-chain reaction, or PCR).

- **Duplicate C. difficile lab test:** Any *C. difficile* positive laboratory test from the same resident following a previous *C. difficile* positive test within the past 2 weeks
NHSN CDI definitions (continued)

- **CDI LabID Event**: All non-duplicate *C. diff* positive laboratory tests obtained **while a resident is receiving care in the LTCF**.
  - Lab results from outside facilities, **before a resident’s admission**, *should not* be included in CDI event reporting.

<table>
<thead>
<tr>
<th>Date of Positive <em>C. difficile</em> lab tests for a resident</th>
<th>Duplicate?</th>
<th>Enter as a CDI LabID Event?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/3/2012</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>1/7/2012</td>
<td>Yes</td>
<td>No (within 2 weeks of positive test 1/3/2012)</td>
</tr>
<tr>
<td>1/20/2012</td>
<td>Yes</td>
<td>No (within 2 weeks of positive test 1/7/2012)</td>
</tr>
<tr>
<td>2/1/2012</td>
<td>Yes</td>
<td>No (within 2 weeks of positive test 1/20/2012)</td>
</tr>
<tr>
<td>2/23/2012</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>
CDI LabID Events are categorized further by the NHSN system:

- **Incident CDI LabID Event:** The first positive C. diff test ever entered or a subsequent C. diff test entered > 8 weeks after the most recent positive reported for an individual resident

- **Recurrent CDI LabID Event:** Any positive C. diff test entered > 2 weeks and ≤ 8 weeks after the most recent positive test reported for an individual resident

**Remember, duplicate C. difficile positive laboratory tests for a resident should NOT be entered as LabID events**
Identifying a NHSN CDI LabID Event

**LAB ID EVENT:** Complete Form

**Incident**
- No previous positive,
- OR
- Prior positive ≥ 8 weeks

**Recurrent**
- Prior positive
- > 2 and ≤ 8 weeks

Resident with positive CDI test result

Prior CDI positive in last 2 weeks?

**NO**

**YES**
Duplicate-Not LabID Event
NHSN CDI Event categorization

- CDI LabID Events are put into categories based on the date of current admission to facility and the date specimen collected:
  - **Community-onset LabID Event:** Date specimen collected ≤ 3 calendar days after current admission to the facility (i.e., days 1, 2, or 3 of admission)
  - **Nursing home-onset LabID Event:** Date specimen collected > 3 calendar days after current admission to the facility (i.e., on or after day 4).
### Example: Classification of Lab ID Events as Community-onset or Nursing home-onset

<table>
<thead>
<tr>
<th>Admission date</th>
<th>June 4th</th>
<th>June 5th</th>
<th>June 6th</th>
<th>June 7th</th>
<th>June 8th</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community-onset</td>
<td>day 1</td>
<td>day 2</td>
<td>day 3</td>
<td>day 4</td>
<td>day 5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nursing home-onset</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
NHSN CDI analysis/measures

- **Total CDI Rate/10,000 resident-days** = Number of CDI LabID Events per month regardless of time spent in the facility / Number of resident-days per month x 10,000
  - *Percent that is Community-onset* = Number of CDI LabID Events that are CO / Total number of CDI LabID Events x 100
  - *Percent that is Nursing home-onset* = Number of CDI LabID Events that are NH-onset / Total number of CDI LabID Events x 100
  - *Percent that is Recurrent CDI* = Number of CDI LabID Events that are recurrent / Total number of CDI LabID Events x 100

- **Nursing home-onset incidence Rate/10,000 resident-days** = Number of all incident NH-onset CDI LabID Events per month / Number of resident-days x 10,000. *This formula excludes recurrent CDI events.*
  - *Percent of NH-onset that is related to recent transfer from acute care* = Number of ACT-NH CDI LabID Events / Total number of NH-onset CDI LabID Events x 100
Data for monitoring: AE CDI data collection tool

- Excel spreadsheet
- Helps facility to track CDI lab-events using the NHSN LTCF definitions
- Includes optional data fields to capture process measures
  - Time from identifying diarrhea to testing stool
  - Time from identifying diarrhea to starting precautions
- Provides graphs/charts as data is entered

Glossary

Quick Links

- C. difficile positive laboratory assay
- Incident CDI assay
- Duplicate C. difficile positive laboratory assay
- Recurrent CDI assay
- Laboratory-identified (Lab ID) Event
- Nursing home onset Lab ID event
- Community onset Lab ID event

C. difficile positive laboratory assay
Any positive laboratory test result sent from a stool specimen for the diagnosis of CDI. These laboratory results could come from any of the following tests: tests for the C. difficile toxin A and/or B (e.g., enzyme immunoassay, or EIA test), tests which identify toxin-producing C. difficile bacteria using either culture or other methods (e.g., nucleic acid amplification testing by polymerase chain reaction, also called PCR).

Duplicate C. difficile positive laboratory assay
Any C. difficile positive laboratory test from the same resident following a previous C. difficile positive test within the past two weeks, even across calendar months.

Laboratory-identified (Lab ID) Event
All non-duplicate C. difficile positive laboratory assays obtained while a resident is receiving care
## AE CDI data collection tool: Specimen log

**SpecimenLog**

| Resident Room Number | Date of Current Admission* | Stay Type* | Date of Diarrhea Onset | Date Contact Precaution Implemented | Date Stool Specimen Collected* | Automatic Resident Code
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>01/02/09</td>
<td>12/15/12</td>
<td>Long Stay</td>
<td>01/13/13</td>
<td>01/08/13</td>
<td>01/06/13</td>
<td>r1</td>
</tr>
<tr>
<td>01/02/10</td>
<td>12/15/12</td>
<td>Long Stay</td>
<td>01/13/13</td>
<td>01/08/13</td>
<td>01/06/13</td>
<td>r1</td>
</tr>
<tr>
<td>01/03/13</td>
<td>12/15/12</td>
<td>Short Stay</td>
<td>01/13/13</td>
<td>01/08/13</td>
<td>01/06/13</td>
<td>r6</td>
</tr>
<tr>
<td>01/02/12</td>
<td>12/15/12</td>
<td>Short Stay</td>
<td>01/13/13</td>
<td>01/08/13</td>
<td>01/06/13</td>
<td>r15</td>
</tr>
<tr>
<td>01/15/13</td>
<td>12/15/12</td>
<td>Short Stay</td>
<td>01/13/13</td>
<td>01/08/13</td>
<td>01/06/13</td>
<td>r8</td>
</tr>
<tr>
<td>01/11/13</td>
<td>12/15/12</td>
<td>Short Stay</td>
<td>01/13/13</td>
<td>01/08/13</td>
<td>01/06/13</td>
<td>r7</td>
</tr>
<tr>
<td>01/10/13</td>
<td>12/15/12</td>
<td>Long Stay</td>
<td>01/13/13</td>
<td>01/08/13</td>
<td>01/06/13</td>
<td>r3</td>
</tr>
<tr>
<td>02/15/13</td>
<td>12/15/12</td>
<td>Short Stay</td>
<td>01/13/13</td>
<td>01/08/13</td>
<td>01/06/13</td>
<td>r14</td>
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<tr>
<td>03/23/13</td>
<td>12/15/12</td>
<td>Short Stay</td>
<td>01/13/13</td>
<td>01/08/13</td>
<td>01/06/13</td>
<td>r4</td>
</tr>
<tr>
<td>05/12/11</td>
<td>12/15/12</td>
<td>Long Stay</td>
<td>01/13/13</td>
<td>01/08/13</td>
<td>01/06/13</td>
<td>r16</td>
</tr>
<tr>
<td>03/04/13</td>
<td>12/15/12</td>
<td>Short Stay</td>
<td>01/13/13</td>
<td>01/08/13</td>
<td>01/06/13</td>
<td>r13</td>
</tr>
</tbody>
</table>

*Fields with red asterisk are required for calculations.

**Record ALL CDI positive specimens**

**Step 2:**
Select your start date using the drop down menu in the field above. Then, record information for each positive C. diff stool specimen collected. Nursing home onset and incident CDI Lab ID events will be identified for you.

- Highlight indicates Nursing Home Onset Incident CDI Lab Event
- Highlight indicates excess time between onset and action.
Preventing *C. diff* in your facility: Questions to ponder

- Is there a process for early identification, diagnosis and containment of CDI?
- Do we have preventative hand hygiene processes in place?
- Are there environmental factors (shared equipment, cleaning the rooms and common areas, etc.) contributing to our CDI rates?
- Could antibiotic use in our facility being impacting our CDI rates?
Identifying opportunities for improvement

- Four prevention strategies identified for process improvement
  - Early diagnosis/rapid containment of CDI
  - Hand hygiene
  - Environmental cleaning/disinfection
  - Antibiotic stewardship

- **Successful implementation of many of these strategies will reduce spread of other MDROs in the nursing home in addition to C.diff**
AE CDI prevention strategies: Assessment checklists

CREATE IMPROVEMENT

Available Medline University course (free of charge):

- Infection Prevention in Long-Term Care Settings (1 Contact Hour)
- QIS: Infection Prevention and Control (for Administrators) (1.25 Contact Hours)

In addition to using a PDSA cycle to create change, the AE Campaign has identified best practices to help you get started.

Advancing Excellence Assessment Checklists

Use these checklists to assess your current policies, procedures, knowledge and practices as a first step to identify opportunities to improve.

- Early Identification/Containment Assessment Checklist
  This checklist examines nursing home processes and staff practices for identification and diagnosis of CDI and implementation of appropriate precautions to limit spread of C. difficile.

- Hand Hygiene Assessment Checklist
  This checklist examines nursing home processes and staff practices for performing appropriate hand hygiene during
Example assessment checklist

- Early identification and containment
- Yes/No format to assess current practices
- May identify opportunities for practices improvements or new processes of care

http://www.nhqualitycampaign.org/star_index.aspx?controls=InfectionsImprove
Taking a deeper look at early CDI identification and containment

- How is new or worsening diarrhea documented in the resident’s chart and reported to nursing and medical staff?
- How quickly are stool specimens collected and sent for *C. diff* laboratory testing after a resident develops new or worsening diarrhea?
- What test is used to identify *C. difficile* in the laboratory?
- How soon after we send a sample do laboratory results for *C. difficile* get reported back to us?
- When do we implement contact precautions for CDI (e.g., when new diarrhea identified vs. after positive *C. diff* test is reported)?
Evaluate communication and actions when CDI suspected

- What is the process for communicating *C. difficile* and other lab results to providers?
- How quickly are stool tests submitted to the lab when CDI is suspected?
- When do we implement infection prevention precautions for suspected CDI?
  - Are front-line nursing staff empowered to start contact precautions vs. requiring a provider order?
  - Do we wait until positive test results vs. starting immediately when new diarrhea is identified?
AE CDI data collection tool: Measuring process improvement

**Process Tracking**

**Average Number of Days from Onset of Diarrhea Till Action**

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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Onset Dates This Month</td>
<td>4</td>
<td>7</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Average number of days between onset of diarrhea and implementation of contact precautions</td>
<td>4.8</td>
<td>2.3</td>
<td>1.0</td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average number of days between onset of diarrhea and specimen collection</td>
<td>2.8</td>
<td>2.1</td>
<td>1.5</td>
<td></td>
<td></td>
<td></td>
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</table>
Evaluate use of CDI diagnostics

- Testing practices for *C. difficile* vary
  - To track CDI, you must know how you diagnose it
- How often are stool samples for CDI testing obtained on residents with new diarrhea? (always, mostly, never)
  - Does testing differ by provider?
  - Are there situations where residents are treated for CDI without a confirmatory lab test?
  - Can nursing staff submit a stool when CDI suspected without contacting a provider first?
- What *C. diff* detection test is used by the lab?
  - Enzyme-linked Immunoassay (ELISA) for toxin vs. molecular assays (e.g., PCR)
Understanding *C. diff* testing

- **Enzyme immunoassay (EIA) for toxins A and B**
  - Commonly used by commercial labs – less expensive
  - Low sensitivity (60-80%) – meaning, more false negatives
  - Prompts repeat testing – can cause less reliable results

- **Molecular assays (nucleic acid testing, PCR)**
  - More sensitive than EIA (93% vs. 60%; \( p < 0.001 \))
  - High specificity – rare false negatives
  - Short turnaround time – more expensive

- **Important to understand what test your lab performs to know reliability of the results**

Potential effects of molecular tests

- Increase in CDI detection
  - May see rates increase just because of new test
- Fewer days in contact precautions for residents with negative test
- Fewer repetitive tests performed per resident
  - Decreased expense of repeat testing, more reliable results
- Can lead to more rapid and appropriate response
  - Earlier treatment initiation, reduced complications, and improved infection control

Loo VG, Frenette C. Presented at ICAAC 2011. Abstract D-1273
Belmares J, et al. [abstract 150]. Presented at SHEA 2011 Annual Scientific Meeting, 1–4 April, 2011; Dallas, TX.
Appropriate use of *C. diff* tests

- Only watery stools should be submitted for testing
  - Some labs have a “rejection policy” when formed stools are sent
  - If molecular tests are being used, then repeat stool specimens do not need to be sent (high sensitivity means a negative test is a true negative)
- *C. diff* stool testing at the end of treatment to “test for cure” is NOT recommended
  - Often you’ll continue to get positive results which prompt unnecessary additional treatment
- Residents can carry *C. difficile* in their bowels (colonized) for months after their diarrhea resolves
  - Testing for asymptomatic carriage is NOT recommended
  - Treatment to eradicate carriage has not been shown to be effective and may increase duration of carriage and risk of relapse

*Cohen SH. Infect Control Hosp Epidemiol 2010; 31(5):431-455*
Improving early identification and containment

Screen patients for new-onset diarrhea* on admission and on a regular basis

Facilitate early testing -- consider nurse-driven protocols

Pair testing with order for using gowns/gloves for care – until CDI excluded

Use more sensitive testing methods – like molecular assays

* Diarrhea = Three or more liquid or watery stools above what is normal for the resident within a 24-hour period

Stone et al. Infect Contr Hosp Epi. 2012; 33: 965-977
AE CDI data collection tool: Reporting outcomes

- Provides your summary CDI data by month
- Based on monthly resident admission and average daily census provide on separate tab in worksheet
- Submit data to AE website to see your rates compared with others in the campaign

<table>
<thead>
<tr>
<th></th>
<th>CDI nursing home onset cases this month (numerator)</th>
<th>Resident Days This Month (denominator)</th>
<th>CDI nursing home onset incidence per 10,000 resident days (numerator/denominator)*10,000</th>
<th>Percent of new/re-admissions treated for CDI on admission to NIH</th>
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</thead>
<tbody>
<tr>
<td>January 2013</td>
<td>2</td>
<td>775</td>
<td>25.8</td>
<td>30.0%</td>
</tr>
<tr>
<td>February 2013</td>
<td>4</td>
<td>729</td>
<td>54.9</td>
<td>0.0%</td>
</tr>
<tr>
<td>March 2013</td>
<td>2</td>
<td>775</td>
<td>25.8</td>
<td>30.0%</td>
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<td>April 2013</td>
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<td>May 2013</td>
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<td>December 2013</td>
<td>0</td>
<td>744</td>
<td>0.0</td>
<td>n/a</td>
</tr>
</tbody>
</table>
Other AE resources for CDI Prevention

- Fact sheets about *C. difficile* infection prevention
  - Consumers; nursing home staff; leadership
- Links to websites with tools and resources to help address gaps identified by the assessment checklists
- Resources developed AE working group in partnership with CDC
  - Representing nursing home expertise in infection prevention, clinical care, and quality improvement
What about tracking CDI using NHSN?

- The AE data collection tool will help you gather all the important data needed to report events into NHSN.

- Eventually, nursing homes may enroll and use NHSN for reporting, and use AE tools for prevention.

- Using AE tools will teach facilities the NHSN surveillance process while also supporting their internal QAPI activities.

www.cdc.gov/nhsn/ltc/ltc-enroll-steps.html
For even more infection prevention resources: CDC LTC website

www.cdc.gov/longtermcare
Infection surveillance and prevention programs already incorporate many of the elements of a strong QAPI program.

Exploring the NHSN infection tracking system for LTCFs and learning the CDI event definitions using the AE data collection tool will prepare your facilities for future infection prevention initiatives.

CDC and AE are aligning efforts and partnering to develop tools and resources to reduce CDI in NHs.

- Working within state-led prevention collaboratives can increase access to expertise and support for your program.
- Over time, consistent reporting will allow for development of national benchmarks for targeted infections.

Now is the time to learn about and implement these infection surveillance and prevention activities.
Thank you!!

Email: nstone@cdc.gov with questions/comments

For more information please contact Centers for Disease Control and Prevention

1600 Clifton Road NE, Atlanta, GA 30333
Telephone, 1-800-CDC-INFO (232-4636)/TTY: 1-888-232-6348
E-mail: cdcinfo@cdc.gov Web: www.cdc.gov

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.