Practical Strategies to Control the Spread of *C. difficile* in Healthcare
Phenelle Segal, Infection Control Consulting Services
Broadcast live from APIC *C. difficile* Consensus Conference, Baltimore (www.apic.org)

**Presentation Overview**
- Risk factors in the Healthcare Setting
- Challenges for Special Care Settings
- Prevention Strategies
- A Multi-disciplinary Approach including:
  - Team STEPPS
  - Positive Deviance
- Antimicrobial Stewardship

**Risk Factors in The Healthcare Setting**
- Injudicious use of antimicrobials (e.g. incorrect dosing, inappropriate antibiotic, incorrect timing)
- Injudicious use of other medications (e.g. PPIs)

**Risk Factors in The Healthcare Setting**
- Patient/Resident Placement (e.g. lack of private rooms)
- Lack of hand-hygiene
- Ineffective isolation
- Environmental contamination

**Acute Care/LTAC Hospitals**
*Acute Care Hospitals* are designed for short-term stays, helping to stabilize patients from a variety of conditions.
*Long Term Acute Care Hospitals (LTACHs)* are designed for patients who are in need of acute care services that no longer warrant a continued stay in the acute care hospital. These patients have medically complex needs and require specialized care in a traditional setting.

**Special Care Settings**
*Long Term Care*
- *Nursing homes* (NHs) provide maintenance and personal or nursing care for persons (as the aged or the chronically ill) who are unable to care for themselves properly.
- *Skilled nursing facilities* (SNFs) provide skilled nursing care and other related health services.
- NH and SNF are often interchangeable.

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**Special Care Settings**

*Long Term Care*

Rehabilitation Hospitals/Centers provide an intensive rehabilitation program to inpatients. Patients receive skilled nursing care on a 24-hour basis, under the supervision of medical and a nursing staff.

**Challenges for Special Care Settings**

- Usually more than one person in a room and moving residents is difficult due to the room being their bedroom “within their home”
- Contact precautions are not always strictly followed
- Less control over personal hygiene including hand hygiene
- Residents or patients usually not restricted to their rooms, especially in the nursing home setting
- Move about, attend group activities and congregate in common areas

**Prevention Strategies**

Common Terms to Describe Strategies

- Bundle Approach
- Tiered Approach
- Basic and Enhanced
- Core and Supplemental

**Prevention Strategies – Early Identification**

- Take a thorough history from patient/resident
- Place all patients/residents with diarrhea on contact precautions until CDI has been ruled out AFTER ruling out other causes such as:
  - new medication
  - change in diet
  - tube feeding
  - questionable viral syndrome (Norovirus)

**Prevention Strategies – Placement**

*Acute Care*

Single room with bathroom

Cohort if single room not available

Contact Precautions

- Gloves and gowns donned when entering the room regardless of reason for entry
- Gloves and gowns removed appropriately when leaving the room

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Prevention Strategies - Placement

Long-term Care
- Private room preferable but if not possible then:
  - Cohort with other CDI patients and do NOT cohort with other organisms such as MDROs
  - Place with residents/patients who are at "low risk" for acquiring CDI
  - If infected resident uses commode, preferable to use a disposable liner which can be discarded as regular trash

Prevention Strategies – Hand Hygiene

Basic
Acute and Special Care Settings
Perform hand hygiene before and after contact with patient
- Wash hands if visibly soiled as alcohol will not penetrate protein material
- Alcohol hand sanitizers may be used in a non hyperendemic environment albeit that this may be controversial due to its lack of sporicidal activity

Enhanced
Acute and Special Care Settings
- If CDI is on an increase or appears to be epidemic, enforce hand washing after patient care as the preferred method to physically eliminate hand carriage of the spores
- Reinforce hand washing technique in order to obtain maximum efficacy for hand hygiene
- Increase efforts to monitor hand-hygiene compliance

Prevention Strategies – Contact Precautions – Basic

Acute and Special Care Settings
- Gowns and gloves upon entry to the patient/resident room regardless of the reason for entering
- Gowns and gloves to be worn throughout the duration of the HCW’s stay in the room
- Gowns and gloves to be appropriately removed before exiting the room

Prevention Strategies – Contact Precautions – Basic

Acute and Special Care Settings
- If providing care in a cohort situation, remove gloves, conduct hand-hygiene and don a new pair of gloves prior to rendering care to the next patient/resident
- Use dedicated equipment whenever possible
- If shared equipment is used, disinfect using appropriate agents before using on another patient/resident

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**Contact Precautions Basic Signage**

- Enhance communication of CDI by placing additional signage at entry of room
- In the acute care setting in particular, consider keeping patients on contact precautions until discharge or in the special care setting, consider keeping residents/patients on contact precautions beyond cessation of symptoms particularly with a history of recurrence
- Increase monitoring for compliance

**Prevention Strategies – Contact Precautions - Enhanced**

*Acute and Special Care Settings*

**Prevention Strategies – Environmental Care - Basic**

*Acute and Special Care Settings*

**Prevention Strategies – Environmental Care - Enhanced**

*Acutely and Special Care Settings*

**Prevention Strategies – Environmental Care - Enhanced**

*Acutely and Special Care Settings*

**Prevention Strategies – Environmental Care - Enhanced**

*Acutely and Special Care Settings*

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**Other Special Care Settings**
- Outpatient Facilities
  - Multi-specialty
  - GI centers
  - Private practices

**Multi-disciplinary Teamwork**
Definition:
Multidisciplinary team (MDT) is a group of healthcare workers who are experts in different areas united as a team, for the purpose of planning and implementing best practices to enhance the safety and wellbeing of the patients

**Multi-disciplinary Teamwork**
Teams include key players in patient care including but not limited to the following departmental staff
- Nursing
- Medical
- Administration
- Laboratory
- Housekeeping/EVS
- Pharmacy

**Team STEPPS**
*TeamSTEPPS* is an evidence-based teamwork system developed jointly by the Department of Defense (DoD) and the Agency for Healthcare Research and Quality (AHRQ) to improve communication and teamwork skills among healthcare professionals.

**Team STEPPS**
The Objectives of Team STEPPS include:
- Producing highly effective medical teams that optimize the use of information, people, and resources to achieve the best clinical outcomes for patients.
- Increasing team awareness and clarifying team roles and responsibilities.
- Resolving conflicts and improving information sharing.
- Eliminating barriers to quality and safety

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**Team STEPPS**
Team STEPPS is a three phase process and provides training and education
• A pretraining assessment for site readiness.
• Training for onsite trainers and health care staff.
• Implementation and sustainment

**Positive Deviance (PD)**
*Understanding PD*
• PD is based on the premise that, in every organization or community, there are people who solve problems better with peers who have exactly the same resources
• The PD process engages frontline hospital staff in discovering, creating and spreading those practices
• PD seeks to bridge the gap between what healthcare providers know and what they do

**Positive Deviance – Facility Success**
Using Positive Deviance, the Pittsburgh VA Healthcare System and Albert Einstein Health Care System in Pennsylvania, created a culture in which all employees were and continue to be encouraged to contribute and implement ideas for preventing MRSA infection and ensure that strict infection control procedures were and continue to be followed. Areas in which employees have made key contributions include the following:
• Staff Education
• Isolation of Positive Patients
• Vigilant hand hygiene for providers
• Disinfection practices
• Standardized housekeeping protocols
• Ongoing monitoring and case review
• Patient education

**Antimicrobial Stewardship**
CDI is increasing and efforts to reduce rates, improve patient care and contain costs include the development of an antimicrobial stewardship program in every facility regardless of the type
Stewardship programs can be very basic or advanced and they depend on many factors
It is critical for staff members involved with the immediate care of the patient, to understand how antimicrobials are used and monitored and what steps are in place to monitor and prevent overuse, incorrect use and inappropriate use of various agents

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**Antimicrobial Stewardship**

- Antimicrobial stewardship programs provide optimization of antimicrobial prescribing in an attempt to improve individual patient care
- reduce or eliminate the spread of antimicrobial resistant organisms including *C. difficile*
- reduce hospital costs

**Questions**

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14 March  UPDATE ON "NO TOUCH" ROOM DISINFECTION SYSTEMS: UV LIGHTS, HYDROGEN PEROXIDE AND OZONE
Speaker: Prof. Dick Zoutman, Queen’s University, Kingston

21 March  TUBERCULOSIS INFECTION CONTROL IN HIGH HIV BURDENED COUNTRIES
Speaker: Virginia Lipke, CDC, Atlanta

09 April  (WHO Teleclass) INNOVATION AND NEW INDICATORS IN HAND HYGIENE MONITORS
Speaker: Prof. John Boyce, Yale University

11 April  UTILIZING HOSPITAL-TO-HOSPITAL PARTNERSHIPS TO STRENGTHEN INFECTION PREVENTION AND CONTROL
Speaker: Dr. Shamsuzzoha Babar Syed, WHO African Partnerships for Patient Safety, Geneva