Upon completion of this program, attendees should be able to:

1. Outline the new and revised infection control requirements and expectations, including the key components, antibiotic stewardship, and standards of practice.

2. Discuss the components of an effective infection prevention and control program and how to ensure inclusion in your system.

3. List components of staff education for infection prevention and control.

4. Discuss how to access resources and best practices for infection prevention and control.

5. Outline an audit system to determine success of your process.
Current F-Tags potentially associated with antibiotic stewardship

- F441: Infection Control
- F315: Urinary Incontinence (UTI’s)
- F329: Unnecessary Medications
- F428: Drug Regimen Review

Understanding F441: Infection Control

Overview: F441 Infection Control

- Infections are a significant source of morbidity and mortality for nursing home residents
- Account for up to half of all nursing home resident transfers to hospitals
- Infections result in an estimated 150,000-200,000 admissions per year to the hospital – at a cost of between $673 million to $2 billion annually
Establish and maintain an Infection Prevention and Control Program designed to provide a safe, sanitary and comfortable environment and to help prevent the development and transmission of communicable diseases and infections.

The Infection Prevention and Control Program (IPCP) must contain:

- A system for:
  - Identifying
  - Reporting
  - Investigating and
  - Controlling

Infections and communicable diseases for all:
- Residents
- Staff
- Volunteers/visitors
- Others (providing services contractual agreement)

Written standards, policies and procedures:
- System for surveillance (to identify possible communicable diseases or infection before they can spread to others in the facility)
- When and to whom possible incidents of communicable disease or infections should be reported
- Standard and transmission-based precautions to be followed to prevent the spread of infection
- When and how isolation should be used
- Circumstances under which the facility will prohibit employees with communicable disease or infected skin lesions from direct contact with residents or their food if direct contact will transmit the disease
- Hand hygiene procedures to be followed by staff involved in direct resident contact
• Antibiotic Stewardship Program to include antibiotic use protocols and a system to monitor antibiotic use
  – Effective implementation date: 11/28/17
• A system for recording incidents identified under the facility’s IPCP and corrective actions taken by the facility

F441: Infection Control

Infection Preventionist
• Facility must designate one or more individuals responsible for the IPCP (Infection Prevention and Control Program)
  – Must have primary professional training in nursing, Med tech, microbiology, epidemiology or related field
  – Be qualified by education, training, experience or certification
  – Work at least part-time in the facility
  – Have completed specialized training in Infection Prevention and Control

• Infection Preventionist must participate/be a member of the facility’s QAA Committee and report on the Infection Prevention and Control Program (IPCP) to the committee on a regular basis

• **Both the Infection Preventionist and the Infection Preventionist participation on QAA are Phase 3: November, 2019.**
F441: Infection Control

Influenza and pneumococcal immunizations:
• Policies and Procedures
• Prior to offering—must provide education to the resident or resident’s representative on benefits and potential side effects
• Influenza: Offer between October 1–March 31 annually unless medically contraindicated or already immunized during time period
• The Resident or resident’s representative has the opportunity to refuse

F441 Federal Regulation

• Linen Handling to prevent the spread of infection
• Annual Review: The facility will conduct an annual review of its IPCP and update their program as necessary

Examples: Survey Citations
Examples of Survey Citations

**Hand washing/Gloving:**
- Staff providing cares and not removing gloves and washing hands prior to touching items in room or obtaining clothes in closets/drawers

Examples: Survey Citations

**Facility failed to prevent transmission of influenza outbreak by failure to:**
- Cohort residents and Staff
- Stop Activities
- Close Main Dining Room Service
- Analyze Data
- Maintain adequate records of employees for safe return to work

Examples of Survey Citations

**GI Symptoms or Norovirus:**
- Facility did not have policies regarding GI outbreaks
- Facility not quarantined when residents throughout the building presented with symptoms
- Local Health Department not called
- Medical Director not notified
- Staff continued to float throughout the building
- New Admissions not limited
- Hand washing (staff and resident)
- No documentation that staff were not allowed to return to work until symptom free for 48 hours
Examples of Survey Citations

- Blood Glucose Monitors not disinfected between each use. (Following manufacturer’s recommendations)
- Catheter drainage bag on floor
- Gait belt used – resident on isolation
- Dressing changes - technique
- Peri-wipes and skin cream contaminated
- Failure to have an IC Program
- Did not clean and disinfect electric razors

Examples of Survey Citations

- Did not clean resident’s finger before using lancet
- Did not have an assigned person for infection control program
- Lack of surveillance and analysis of data to determine clusters, prevalent organisms, or rate of infections
- Did not wash hands between each resident at med pass
- Dumping soiled water into sink

Examples of Survey Citations

- Peri-care
- Tracking of staff attendance when calling in (actually wanted a log of all call-ins and when they came back to work)
- Mapping of infections on a facility grid
- Proper storage of items in the dietary refrigerators
Examples of Survey Citations

- Facility failed to have a comprehensive antibiotic stewardship program in place
- Touching barrier cream tube without removing gloves, washing hands and reapplying gloves and put contaminated tube in drawer after use
- Not using paper towels to turn off sink handles

Infection Control

Focus on Prevention

Components - Infection Control Program

- Program Development and Oversight
- Policies and Procedures
- Infection Preventionist
- Surveillance
- Documentation
- Monitoring
- Data Analysis
- Communicable Disease Reporting
- Education
- Antibiotic Review and Stewardship
Definitions

The IDSA (Infectious Diseases Society of America):

• ”Antimicrobial stewardship refers to coordinated interventions designed to improve and measure the appropriate use of antimicrobials by promoting the selection of the optimal antimicrobial drug regimen, dose, duration of therapy, and route of administration. Antimicrobial stewards seek to achieve optimal clinical outcomes related to antimicrobial use, minimize toxicity and other adverse events, reduce the costs of health care for infections, and limit the selection for antimicrobial resistant strains.”

http://www.idsociety.org/Stewardship_Policy/#sthash.YJuwUaoI.dpuf

Group Discussion

• List 5 Reasons Antibiotic Stewardship is necessary in Nursing Facilities
• What steps have you taken in your organization to ensure appropriate antibiotic use?
• What opportunities for improvement on antibiotic use have you identified in your organization?
Let's See How Many Areas Identified

Antibiotic Stewardship Concerns

- Unnecessary (no identified bacterial infection)
- Asymptomatic
- No clear definition of infection considered
- Wrong Antibiotic
- Duration too long
- Risk of acquiring MDRO
- Risk of colonization
- Risk of developing C-Diff
- Side effects
- Practitioner Prescribing habits
- Family/resident request
- Nurse's knowledge
- Lab or imaging concerns

What EXACTLY IS Antibiotic Stewardship?
Report to the President on Combating Antibiotic Resistance (September 2014):

• The beginning of the 20th century, 9 our of every 1,000 women who gave birth died—40% from Sepsis
• In some cities—up to 30% children died prior to their 1st birthday
• 1 out of 9 people who contracted a serious skin infection died (even scrapes and insect bites!)
• 30% of people with pneumonia died
• 70% of people with meningitis died
• Etc., etc.,
What happened in the 20th century?
- Improvements in public health
- Vaccines
- Antibiotics

* Deaths from infections declined
* Millions of lives saved – primarily due to antibiotics!

We are losing progress!!!

- Antibiotic Resistance "is now occurring at an alarming rate and is outpacing the development of new countermeasures capable of thwarting infections in humans"

Recommended focused efforts include:
1. Improving our surveillance of the rise of antibiotic-resistant bacteria
2. Increasing longevity of current antibiotics
3. Increasing the rate at which new antibiotics and other interventions are discovered and developed
https://www.whitehouse.gov/sites/default/files/docs/national_action_plan_for_combating_antibiotic-resistant_bacteria.pdf

Antibiotics have been a critical public health tool since the discovery of penicillin in 1928, saving the lives of millions of people around the world. Today, however, the emergence of drug resistance in bacteria is reversing the miracles of the past eighty years, with drug choices for the treatment of many bacterial infections becoming increasingly limited, expensive, and, in some cases, nonexistent.

The Centers for Disease Control and Prevention (CDC) estimates that drug-resistant bacteria cause two million illnesses and approximately 23,000 deaths each year in the United States alone.
Resistance is due largely to extensive exposure of bacteria to antibiotics.

One of the recommendations for LTC includes Stewardship programs – by the end of 2017, CMS should have Federal regulations (Conditions of Participation) in place that will require LTC facilities to develop and implement robust antibiotic stewardship programs that adhere to best practices.

An antibiotic stewardship program will include a system in which the use of antibiotics is only to maximize the benefit to the resident while minimizing the rise in antibiotic resistance and includes:

- Identification of the microbe responsible for the disease
- Selection of the appropriate antibiotic including dose, route, duration and d/c when no longer needed

Other updates to Infection Control

- Linens: Personnel must handle, store, process and transport linens so as to prevent the spread of infection
- Annual Review: The facility will conduct an annual review of it’s IPCP and update the program as necessary
CMS 3 Part AIM:

Better Care
Affordable Care
Healthy People
Healthy Communities

Readmission Measure and VBP


CDC
Centers for Disease Control and Prevention
ONCE AGAIN –
In order to have a successful Antibiotic Stewardship Program - the facility must have a solid Infection Prevention and Control Program

It Starts with Preadmission!

Admission Screening Risk Factors

- Antibiotic use past 30 days
- Current symptoms or diagnosis
- Cultures taken and results
- Immunization history
- Duration of indwelling catheter
- Presence of MDROs
- Prior infection
- 2-step Mantoux - history of positive reaction
- Vaccines
The facility must establish an infection prevention and control program (IPCP) that must include, at a minimum, the following elements:

- "A system for—preventing, identifying, reporting, investigating, and controlling infections and communicable diseases for all residents, staff, volunteers, visitors, and other individuals providing services under a contractual arrangement based upon the facility assessment conducted according to §483.70(e) and following accepted national standards;"
“These six bacteria are among the most deadly antibiotic-resistant bacteria, identified as urgent or serious threats by CDC”:

- CRE (carbapenem-resistant Entrobacteriaceae)
- MRSA (Methicillin-resistant Staphylococcus aureus)
- ESBL-producing Enterobacteriaceae (extended-spectrum β-lactamases)
- VRE (vancomycin-resistant enterococci)
- Multi-Drug resistant pseudomonas
- Multi-Drug resistant Acinetobacter

http://www.cdc.gov/vitalsigns/protect-patients/index.html
Prevention includes a well-planned and comprehensive approach:

- Resource management
- Communication
- Surveillance
- Follow-up
- QAPI
- Employee Education
- Environmental Management
- Antibiotic Stewardship

Pathogen classes that potentially cause infection include:
- Bacteria
- Viruses
- Fungi
- Parasites
- Prions

Can be transmitted by direct or indirect contact


Transmission-Based Precautions

- For known, suspected or colonized with epidemiologically important pathogens
- For use in addition to Standard Precautions when the route or routes of transmission alone will not be sufficient for Infection Prevention or Control

Colonized = presence of an organism obtained by culture from a resident with no signs or symptoms

Contact Precautions:
- Direct (i.e. you contract scabies from a resident)
- Indirect (you do not disinfect the blood glucose monitor and transmit pathogens from one resident to another)

2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings

Contact Precautions

- Single room is preferred
- If not available, risk assessment and review of options (cohorting)
  - Consider:
    - Uncontained drainage, stool incontinence, hygiene habits
    - Immunocompromised residents
    - Open wounds
    - Tubes or devices
- In shared room situations, >3 feet spatial separation is advised
- PPE before room entry and discarding before exiting

Contact Precautions

- Hand Hygiene
- Don gloves upon entry to room and with cares
- Don gown upon entry to room
- Mask and eye protection (or face shields) not normally routine with Contact Precautions - follow if indicated by Standard Precautions
- Resident Care Equipment-use disposable or resident dedicated equipment if possible. If common use is unavoidable, clean and disinfect equipment before use with another resident
- Limit transport unless necessary but when necessary, ensure infected or colonized are is contained and covered if possible
- Environmental cleaning - standard facility disinfectant is adequate but prioritized for frequent cleaning (at least daily)
- Group Activities - case by case basis with hand hygiene, if wound - contain drainage, incontinent = proper supplies

Contact Precautions - continued

- Visitors: should be directed to the nurse for directions:
  - Handwashing
  - PPE
- Cultures
  - Only indicated for residents displaying S&S
- Discontinuing Precautions:
  - When active S&S resolve
  - If for C-diff - when diarrhea resolves
  - When wound drainage resolves
  - According to pathogen-specific recommendations in Appendix A of the HICPAC/CDC Isolation Guideline:
    http://www.cdc.gov/nicdod/dhqp/pl_isolation.html

Droplet Precautions: 
“...respiratory droplets carrying infectious pathogens transmit infection when they travel directly from the respiratory tract of the infectious individual to susceptible mucosal surfaces of the recipient, generally over short distances, necessitating facial protection”

2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings

Droplet Precautions – continued:
• Droplets are generated
  – Sneezing
  – Talking
  – Suctioning
• Defined risk is a distance of less than or equal to 3 feet around the resident however, “it may be prudent to don a mask when within 6 to 10 feet of the patient or upon entry into the patient’s room”

2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings

Droplet Precautions
• Special air handling and ventilation are not required
• A single room is preferred (or prefer to cohort with same pathogen)
  – Risk assessment (i.e. roommate immunocompromised)
  – Physical separation - > 3 ft. and draw privacy curtain
• If resident transported outside the room should wear a mask and follow Respiratory Hygiene/Cough Etiquette
• PPE (no recommendation for routine use of eye protection unless otherwise indicated for Standard Precautions)
**Airborne Precautions:**
- Transmission occurs by dissemination of:
  - Airborne droplet nuclei
  - Small particles – infectious
  - Mycobacterium tuberculosis, Aspergillus spp, Measles, varicella-zoster virus, SARS
- Restrict susceptible staff from entering the rooms of residents known or suspected to have measles (rubella), varicella (chickenpox), disseminated zoster, or smallpox if other immune healthcare personnel are available
- Requires special ventilation and air handling
- "Airborne Infection Isolation Room (AIIR)
- NIOSH-certified fit-tested N-95 respirator for infectious tuberculosis or Smallpox

2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings

**Modes of Transmission**

**Still Current**

Management of Multidrug-Resistant Organisms In Healthcare Settings, 2006


**Control Interventions**

- Administrative Support
- Education
- Judicious use of antimicrobial agents
- MDRO surveillance
- Infection Control Precautions
- Environmental Measures
- Decolonization

Management of Multidrug-Resistant Organisms In Healthcare Settings, 2006
Multidrug-Resistant Organisms (MDROs):
- Microorganisms (primarily bacteria)
- Resistant to one or more classes of antimicrobial agents
  - (MRSA) Methicillin-resistant Staphylococcus aureus
  - (VRE) Vancomycin-resistant-enterococci
  - (ESBL) Extended spectrum beta-lactamase
  - Acinetobacter baumannii
  - (CRE) Carbapenem-resistant enterobacteriaceae
  - (KPC) Klebsiella pneumoniae carbapenemase
  - Etc.

Bacteria is normally present in human intestines and female genital tract as well as the environment.

- Can cause infection
- Not spread by casual contact, coughing or sneezing
- Usually passed to others by direct contact with:
  - Indirect contact via hands of healthcare workers
  - Contaminated environment
  - Stool
  - Urine
  - Blood containing VRE

The CDC indicates that people with colonized VRE do not need treatment.

**VRE (Vancomycin Resistant Enterococcus)**

http://www.cdc.gov/HAI/organisms/vre/vre.html

*ESBL*

ESBL-producing Enterobacteriaceae (extended-spectrum B-lactamases)

- Enzymes resistant to extended-spectrum (3rd generation) cephalosporins and momobactams but do not affect cephamycins or carbapenems (actually destroy antibiotics)
- Can be difficult to detect
- Can be spread by direct contact-hands

http://www.cdc.gov/HAI/settings/lab/lab_esbl.html

**Acinetobacter baumannii**

- It is a bacteria that is found in soil and water
- Infection occurs primarily in healthcare settings (most frequently in ICU’s or where there are very ill residents)
- Can be found in wounds, blood or as pneumonia (residents with urinary catheters are also at risk)
- Can colonize (i.e. wounds, trachs, etc.)
- Spread by direct contact with another person or contact with surfaces that are contaminated

http://www.cdc.gov/HAI/organisms/acinetobacter.html
**CRE** Carbapenem-Resistant Enterobacteriaceae

- Often found in GI tract
- Can be resistant to all or most antibiotics—limiting treatment options
- Colonization can cause infection if the organism gains entrance to areas such as lungs, bladder or bloodstream
- Colonized and infected residents should be on Contact Precautions

**KPC** *Klebsiella pneumoniae* carbapenemases

- Drug resistant Gram-negative bacilli
- Associated with significant morbidity and mortality
- “They have created significant clinical challenges for clinicians as they are not consistently identified by routine screening methods and are highly drug-resistant, resulting in delays in effective treatment and a high rate of clinical failures.”


**Complications! Clostridium difficile**

The CDC indicates:
- Almost a half million infections in 2011
- 29,000 people died within 30 days of initial diagnosis
- Most at risk=older adults who take antibiotics!

CDC has developed a Toolkit


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Clostridium Difficile - HUGE CONCERN!!!

CDC has developed a Toolkit

AHRQ: Agency for Healthcare Research and Quality:

Diagnosis, Prevention and Treatment of C. difficile: Current State of the Evidence
May 30, 2017


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Advancing Excellence

Infections
- Information
- Helpful Websites
- Infections Tracking Tool
- Assessment Checklists
- Fact Sheets
- Ability to submit data and view your trend graphs for infections

https://www.nhqualitycampaign.org/goalDetail.aspx?g=inf
Are Antibiotics Overused? (Group Discussion)

- Are overused
- Are misused
- Reactions and Side Effects
- Can only work with infections=bacteria
- Resistance is growing
- Reactions and Side Effects

“An estimated 2 million illnesses and 23,000 deaths occur each year in the United States due to antibiotic-resistant infections. Overuse and misuse of antibiotics are main drivers of resistance.”


![Most common infections treated with antibiotics in nursing homes](http://www.cdc.gov/getsmart/healthcare/learn-from-others/factsheets/nursing-homes/2013)

- **Core Elements for Antibiotic Stewardship**
  - Leadership Commitment
  - Accountability
  - Drug Expertise
  - Action
  - Tracking
  - Reporting
  - Education
  - [http://www.cdc.gov/media/releases/2015/p0915-nursing-home-antibiotics.html](http://www.cdc.gov/media/releases/2015/p0915-nursing-home-antibiotics.html)
Antibiotic resistance is one of the biggest threats to global health today. 

Recommendations for Health Care Workers:

• Infection prevention with proper hand hygiene and clean instruments and environment
• Keep residents vaccinations up to date
• If you suspect a bacterial infection, test to confirm with bacterial cultures
• Antibiotic administration only when truly necessary
• Antibiotics: Right dose and right duration!

Antibiotic stewardship involves a system that will lead staff and practitioners to:

- Follow a process to identify the microbe responsible for disease, based on evidence based definitions;
- Selection of the appropriate antibiotic with documentation to indicate the indication for use and rationale as well as to include the appropriate dose, duration and route of medication; and
- To ensure that the antibiotic is discontinued when no longer needed.

http://www.cdc.gov/longtermcare/prevention/antibiotic-stewardship.html
Leadership Commitment

- Policies and Procedures
- Job Descriptions
- Identification of a solid communication system
- Culture Change

*All these efforts assist the facility with oversight of proper and safe antibiotic use
Policies and Procedures

- Include policies for criteria for infection
  - Use Evidence-Based Standards of Practice
  - Professionally Accepted Resources

“Surveillance Definitions of Infections in Long-Term Care Facilities: Revisiting the McGeer Criteria”
http://www.jstor.org/stable/10.1086/667743

Policies and Procedures

- Definitions for Criteria (Infections)
  - Fever
  - Respiratory Tract Infections
  - Urinary Tract Infections
  - Skin, Soft Tissue and Mucosal Infections
  - Gastrointestinal Tract Infections
  - Systemic Infections

“Surveillance Definitions of Infections in Long-Term Care Facilities: Revisiting the McGeer Criteria”
http://www.jstor.org/stable/10.1086/667743

See Example (Handout)
Other Areas to Consider when drafting P&P's:

• Antibiotic Ordering and Use
  – Drug, Dosage, Duration, etc.
  – Prophylactic Antibiotic Ordering
• Diagnostic Testing and Reporting
• Medical Director Involvement
• Pharmacy Consultant Involvement
• Communication and Education
  – Staff
  – Residents
  – Families

Antibiotic Stewardship Responsibilities should be included in the job descriptions of:

• Infection Preventionist
• Director of Nursing
• Licensed Nurses
• Medical Director
• Pharmacy Consultant

• Nurse to Practitioner
• Nurse to DON
• Medical Director
• Families
• Residents
• Pharmacy Consultant
Culture

Culture Change for Quality!
- Facility
- Practitioners
- Nurses
- Families
- Residents

Accountability
**Accountability**

- Medical Director
- DON
- Infection Preventionist
- Consultant Pharmacist
- Lab

**Medical Director**

- Educate
  - CDC
  - CMS
  - AMDA
  - Advancing Excellence
  - McGeers
- Policy and Procedure Assistance and Review
- Coordination with other Practitioners
- Coordination with Pharmacy Consultant
- Advisor to Lab/Imaging
- QA and QAPI

**DON**

- Educate (self and others)
  - CDC
  - CMS
  - AMDA
  - Advancing Excellence
  - McGeers
  - Etc.
- Coordination with Medical Director, Pharmacy Consultant, Lab and X-Ray, Attending Practitioners
- Communication and Collaboration with Infection Preventionist and Administrator
- Staff Accountability
- Communication with Hospitals, Transport, Health Department, etc.
Infection Preventionist

- Educate (self and others)
  - CDC
  - CMS
  - AMDA
  - Advancing Excellence
  - McGeers
- Coordination with Medical Director, Pharmacy Consultant, Lab and X-Ray, Attending Practitioners in conjunction with DON
- Communication and Collaboration with DON, staff and Administrator
- Staff Accountability
- Communication with Hospitals, Transport, Health Department, etc.
- Surveillance

Consultant Pharmacist

- Educate
  - CDC
  - CMS
  - Advancing Excellence
  - McGeers
- Policy and Procedure Assistance and Review
- Coordination with Medical Director
- Coordination with DON, Administrator, IP
- Advisor to Lab/Imaging
- QA and QAPI

Lab and Imaging

- Aware of Evidence Based Best Practices
- Communication with Facility
- Accurate and Timely Results
- Communication with Medical Director when necessary
- QA and QAPI as indicated by facility
Drug Expertise

- Pharmacist
- Physicians
- Hospital Partners

Pharmacist

- Pharmacist
  - Identify what specific training does the consultant pharmacist (and pharmacists at the contracted pharmacy)
* You can work with your Pharmacy Consultant on attending a course
Physicians

- Medical Director
- Attending Physicians
- Infection Specialists

Hospital Partners

- Is there an Epidemiologist or Specialist at one of your Hospital Partnerships that you can use as a resource?
Leaders of the organization will determine necessary system updates

- Policy and Procedural changes
- Collaboration with Medical Director
- Collaboration with Pharmacy Consultant
- Staff Education

Example: Multi-Drug Resistant Organism Facility Assessment?

* Identify ONE area that can improve antibiotic use practices for care improvement—Put into QAPI Process!

- One example is an Antibiotic “Time-Out”
  - After culture results obtained (24-48 hours) talk to physician and re-evaluate the therapy
    - Still necessary
    - Appropriate (based on lab results)
    - Can even assist in plan (i.e. duration)

Facility Assessment

- Administrative Measures
- Risk Assessment
- Education
- Antibiotic Use Evaluation and Antibiotic Stewardship
- Surveillance
- Hand Hygiene
- Standard and Transmission Based Precautions
- Environmental Measures
Facility Assessment—Final Rule

- **Implemented in** Phase 2 (Nov. 28, 2017)
  - **Facility Wide Resource Assessment**
    - To determine appropriate resources to care for residents during day to day operations and also in emergencies
    - Update annually & with any major change in census or services
    - Address the following:
      - Census
      - Capacity
      - Types of Care
      - Staff competencies required
      - Cultural aspects
      - Resources (personnel & equipment)

Facility Assessment

- **Facility Assessment** must address or include
  - Resident population
    - Number of residents in facility & capacity
    - Care required by resident population considering
      - Types of diseases, conditions, physical & cognitive disabilities, overall acuity, and other pertinent facts of the population
      - Staff competencies that are necessary to care for the population
      - Physical environment, equipment, services, and other physical plant considerations
      - Any ethnic, cultural, or religious factors that may potentially affect the care including nutrition and activities

Administration

- **Facility Assessment** must address or include
  - Facility resources
    - All buildings, physical structures, vehicles
    - Equipment (medical and non-medical)
    - Therapies and pharmacy
    - All personnel including managers, staff (both employed and contracted) and volunteers as well as their education and/or training and any competencies related to resident care
    - Contracts, memos of understanding, or other agreements with third parties to provide services or equipment to facility during normal operations or emergencies
Facility Assessment

- **Facility Assessment** must address or include
  - Facility resources
    - Health information technology resources, such as systems for electronically managing patient records and electronically sharing information with other organizations
  - Facility-based and community-based risk assessment utilizing a all-hazards approach
    - [http://www.who.int/hac/techguidance/preparedness/emergency_preparedness_eng.pdf](http://www.who.int/hac/techguidance/preparedness/emergency_preparedness_eng.pdf)
In order for organizations to be able to appropriately monitor success of the antibiotic stewardship program, organizations will need to have a solid system to be able to track data. CMS has outlined information on how to track process measures, antibiotic use measures and antibiotic outcome measures as well as costs at:


Tracking and Reporting

- Infection Preventionist
  - Antibiotic Use
    - Symptoms/Infection Criteria
    - Diagnostics
    - Dose, Duration
    - Follow up

Tracking

Example: Appropriate Antibiotic Use

- Diagnosis
- Practitioner Order
- Site of Infection
- Start/Stop Date of Medication
- Resident presents with signs/symptoms of infection (using evidence based definitions of infection)
- Organism identified through laboratory testing (i.e. C&S)
- Care Planning

Auditing
Reporting

- Nursing Staff
  - Appropriate Use
  - Prescribing Practices
- Pharmacy Consultant
- Leadership Team
- Medical Director

Education
Education

- Facility Staff
- Clinicians
- Residents
- Families/Responsible Party

Education-Infection Preventionist

**FINAL RULE: § 483.80 Infection control:**

The Infection Preventionist:

- Must have primary professional training in nursing, medical technology, microbiology, epidemiology, or other related field
- Have completed specialized training in infection prevention and control

Final rule

**§ 483.95 Training requirements:**

"(e) Infection control. A facility must include as part of its infection prevention and control program mandatory training that includes the written standards, policies, and procedures for the program"
NEW!

AHRQ—Agency for Healthcare Research and Quality
Nursing Home Antimicrobial Stewardship Guide

Provides toolkits to help nursing homes optimize the use of antibiotics

- Start an Antimicrobial Stewardship Program tool kit (guide to establish a new program in a nursing home)
- The Monitor and Sustain Stewardship Toolkit (guidance and tools for tracking progress toward meeting antimicrobial program goals and provides feedback to prescribing clinicians)

http://www.ahrq.gov/nhguide/about/index.html
Nursing Home Antimicrobial Stewardship Guide

• Toolkits to Determine Whether It is Necessary to Treat a Potential Infection With Antibiotics
  – Suspected UTI SBAR toolkit
  – Communicating and Decisionmaking for Four Infections toolkit
  – Minimum Criteria for Common Infections toolkit
    [http://www.ahrq.gov/nhguide/about/index.html](http://www.ahrq.gov/nhguide/about/index.html)

Nursing Home Antimicrobial Stewardship Guide

• Toolkits to Help Prescribing Clinicians Choose the Right Antibiotic for Treating an Infection
  – Working with a Lab to Improve Antibiotic Prescribing Toolkit
  – Concise Antibiogram Toolkit
  – Comprehensive Antibiogram Toolkit
    [http://www.ahrq.gov/nhguide/about/index.html](http://www.ahrq.gov/nhguide/about/index.html)

Nursing Home Antimicrobial Stewardship Guide

• Toolkit to Education and Engage Residents and Family Members
  “This section contains one toolkit that provides guidance and tools for educating residents and their family members about antibiotics and engaging them in health care decisions
    [http://www.ahrq.gov/nhguide/about/index.html](http://www.ahrq.gov/nhguide/about/index.html)
Facility Staff Education

Staff Education is essential!

Orientation and Yearly (examples)
- Policies and Procedures
- Antibiotic Stewardship
- Hand Hygiene (return demonstration)
- Personal Protective Equipment
- Transmission Based Precautions
- Standard Precautions
- Linen Handling
- Identification of signs/symptoms of infection
- Communicating, Documentation, Reporting
- Staff illness/signs and symptoms
- Infection Criteria

“On-The-Spot”
- When break in procedures/technique or practice is observed either through audit or observation
- When an infection (or infections) are identified and procedures/techniques need to be reinforced
- New information needs to be addressed
Facility Staff Education

- Review the reports from the President
- CDC Core Elements of Antibiotic Stewardship for LTC Facilities
- McGeers Criteria
- Facility Policy and Procedures
- Multidrug Resistant Organisms
  - Prevention
  - Treatment

Standard Precautions

- "Standard precautions" (formerly "Universal Precautions") refers to infection prevention practices that apply to all residents, regardless of suspected or confirmed diagnosis or presumed infection status. Standard Precautions is a combination and expansion of Universal Precautions and Body Substance Isolation (a practice of isolating all body substances such as blood, urine, and feces)
- Standard Precautions include a group of infection prevention practices that apply to all patients, regardless of suspected or confirmed infection status, in any setting in which healthcare is delivered.

- Hand hygiene; use of gloves, gown, mask, eye protection, or face shield, depending on the anticipated exposure; and safe injection practices. Also, equipment or items in the patient environment likely to have been contaminated with infectious body fluids must be handled in a manner to prevent transmission of infectious agents (e.g., wear gloves for direct contact, contain heavily soiled equipment, properly clean and disinfect or sterilize reusable equipment before use on another patient).
Hand Hygiene

- Hand hygiene continues to be the primary means of preventing the transmission of infection. The following is a list of some situations that require hand hygiene:

- During the delivery of healthcare, avoid unnecessary touching of surfaces in close proximity to the patient to prevent both contamination of clean hands from environmental surfaces and transmission of pathogens from contaminated hands to surfaces.

- When hands are visibly dirty, contaminated with protein material, or visibly soiled with blood or body fluids, wash hands with either a non-antimicrobial soap and water or an antimicrobial soap and water.

- If hands are not visibly soiled, or after removing visible material with non-antimicrobial soap and water, decontaminate hands. The preferred method of hand decontamination is with an alcohol-based hand rub. Alternatively, hands may be washed with an antimicrobial soap and water. Frequent use of alcohol-based hand rub immediately following handwashing with non-antimicrobial soap may increase the frequency of dermatitis.

- When coming on duty;
- When hands are visibly soiled (hand washing with soap and water); Before and after direct resident contact (for which hand hygiene is indicated by acceptable professional practice);
- Before and after performing any invasive procedure (e.g., fingerstick blood sampling);
- Before and after entering isolation precaution settings;
- Before and after eating or handling food (hand washing with soap and water);
- Before and after assisting a resident with meals (hand washing with soap and water);
- Before and after assisting a resident with personal care (e.g., oral care, bathing);
• Before and after handling peripheral vascular catheters and other invasive devices;
• Before and after inserting indwelling catheters;
• Before and after changing a dressing;
• Upon and after coming in contact with a resident's intact skin, (e.g., when taking a pulse or blood pressure, and lifting a resident);
• After personal use of the toilet (hand washing with soap and water);
• Before and after assisting a resident with toileting (hand washing with soap and water);
• After contact with a resident with infectious diarrhea including, but not limited to infections caused by norovirus, salmonella, shigella, and C. difficile (hand washing with soap and water);
• After blowing or wiping nose;
• After contact with a resident's mucous membranes and body fluids or excretions;
• After handling soiled or used linens, dressings, bedpans, catheters and urinals;
• After handling soiled equipment or utensils;
• After performing your personal hygiene (hand washing with soap and water);
• After removing gloves or aprons; and
• After completing duty.

• After contact with blood, body fluids or excretions, mucous membranes, non-intact skin, or wound dressings.
• After contact with a patient's intact skin (e.g., when taking a pulse or blood pressure or lifting a patient).
• If hands will be moving from a contaminated-body site to a clean-body site during patient care.
• After contact with inanimate objects (including medical equipment) in the immediate vicinity of the patient.
Clinician Education

- Determine practitioner need
- Develop an action plan in association with:
  - Pharmacy Consultant
  - Medical Director
- Determine opportunities for improvement
- Utilize evidence-based best practice
- Determine method of delivery

Resident and/or Family Education
Focus on Prevention
F334

• Influenza and pneumococcal immunizations
  – Influenza: The facility must develop P&P’s to ensure that
    • Prior to offering the flu vaccine, the resident or representative receives education on the benefits and potential side effects of the vaccine
    • Each resident, unless medically contraindicated or if already immunized, is offered the flu vaccine between 10/1 and 3/31 annually
    • The resident (or representative) has the right to refuse
  – Documentation must include the education, if the resident received or did not and reason why not and administration

Pneumococcal Disease

• The facility must develop P&P’s to ensure:
  – Prior to offering the pneumococcal vaccine, the resident or representative receives education on the benefits and potential side effects of the vaccine
  – Each resident will be offered the pneumococcal immunizations unless medically contraindicated or already immunized
  – The resident or representative has the right to refuse
  – Documentation must include the education, if the resident received or did not and reason why not and administration

Immunization/Vaccination Program

• Pneumococcal Vaccines:
  – 2 Pneumococcal vaccines are licensed in the U.S.:
    • PCV13 (Prevnar-13®) and
    • PPSV23 (Pneumovax® 23)
Pneumococcal Vaccines

- ACIP-Advisory Committee on Immunization Practices recommends:
  - A dose of PCV13 to be followed by a dose of PPSV23 in all adults aged 65 years or older if they have not previously received pneumococcal vaccine and age 2 or older with high risk because of underlying medical conditions (unless contraindicated).
  - The recommended intervals between the 2 vaccines differ by age and risk group.
  - Please see ACIP recommendations plus Erratum (Vol. 64, No. 34. October 30, 2015).

http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6434a4.htm

Prevnar 13 (PCV-13) Immunization for preventing pneumococcal infections will need to be part of the standard of practice for immunizing adults in Nursing Homes

- On September 19, 2014 the Centers for Disease Control and Prevention (CDC) published new Advisory Committee on Immunization Practices (ACIP) recommendations pertaining to pneumococcal vaccination. These recommendations were updated on September 2015 and incorporated into the 2016 ACIP Adult Immunization Schedule.
- ACIP now recommends that adults aged 65 years and older receive the pneumococcal conjugate vaccine (PCV13, Prevnar-13®) followed by the pneumococcal polysaccharide vaccine (PPSV23, Pneumovax®23). The full recommendations are available at: http://www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/pneumo.html

Pneumococcal Vaccines continued

- Nursing homes that have not incorporated PCV-13 into their pneumococcal immunization program must immediately work with their Medical Director and Infection Preventionist to do so. Failure to do so may put a facility at risk of being out of compliance with F334 Pneumococcal Immunizations, F501 Medical Director, and F441 Infection Control.
- Noncompliance may result in a serious deficiency(s).
Preadmission Assessment

- Do you have a comprehensive Preadmission Screening Process?
- See the Preadmission Screening Form

Preadmission Assessment

- Review the Medical Record
  - Diagnosis(es)
  - Antibiotic Use
  - Vital Signs
  - Lab Work (Results or Pending Tests)
  - Imaging
- Ask the nursing staff at the hospital (or other entity) about infections or symptoms

Resident Transfer

http://www.cdc.gov/hai/pdfs/toolkits/InfectionControlTransferFormExample1.pdf
Admission Screening Risk Factors

- Antibiotic use past 30 days
- Current symptoms or diagnosis
- Cultures taken and results
- Immunization history
- Duration of indwelling catheter
- Presence of MDROs
- Prior infection
- 2-step Mantoux - history of positive reaction
- Vaccines

Checklist

CDC


Communication Systems

- Preadmission
- Nurse to Nurse
- Nurse to C.N.A.
- Nurse to Practitioner
- Nursing to IDT
- Nurse to DON
- Nurse to Infection Preventionist
- Nurse, DON, IP to Administrator
- Nurse to Resident
- Nurse to Family/Resident Representative
- Nurse to Transport
- Nurse to Hospital or other Health Care Entity
System Overview

- Infection Preventionist
- Hand Hygiene
- Employee Health
- Visitors
- Management of Infectious Diseases
- Prevention of Catheter-Associated UTI’s
- Standard and Transmission Based Precautions
- Waste Disposal
- Pest Control
- Environmental Controls
- Cleaning and Disinfection Procedures
- Food Safety and Dietary Policies
- Outbreak Prevent AND Management
- Lab-Review of microbiology Culture and Sensitivity Reports and follow up

Evaluation of Entire Program!

- Pets and Animals in the Facility
- Ice Chests and Machines
- Linen Handling and Laundry Procedures
- Housekeeping Policies (General and Isolation)
- Beauty/Barber Shop
- Blood and Body Fluid Spill Clean Up Procedures
- Preadmission Process
- Immunization and Vaccination Program
- TB Exposure Control Plan
- Mapping Infections
- Process Surveillance
- Outcome Surveillance
- And more!

Evaluation - Continued
Key Clinical Processes Requiring Revision to Align with the New Requirements

1. Ongoing analysis that includes:
   - Auditing all antibiotic use in the facility
     - Review nurse assessment information
     - Root cause analysis: what information was discussed with the physician? (Criteria for Infection?)
     - Documentation
   - Ensure that the resident is taking the right antibiotic for the right amount of time
   - Appropriate discussion with practitioner regarding antibiotic use—may need to involve the Medical Director and the Pharmacy Consultant
Key Areas to Look at

2. Remember Regulatory Requirements
   – F441: Infection Control
   – F329: Unnecessary Medications
   – F428: Drug Regimen Review

Key Clinical Processes

3. Review Your ENTIRE Infection Prevention and Control Program!
   – Policies and Procedures
   – Surveillance Activities
   – Tracking and Data Management
   – IDT Involvement
   – Medical Director Involvement
   – Pharmacy Consultant Involvement
   – Lab and X-Ray

Key Clinical Processes

Enhance Clinical Skills of Nursing Staff
   • Assessment skills
   • Early identification of changes of condition
     – INTERACT™ Quality Improvement Program
   • Communication
   • Notifications
   • Prompt Action
Audits

Example: Appropriate Antibiotic Use
- Diagnosis
- Practitioner Order
- Site of Infection
- Start/Stop Date of Medication
- Resident presents with signs/symptoms of infection (using evidence based definitions of infection)
- Organism identified through laboratory testing (i.e. C&S)
- Care Planning

Audits
- Hand Hygiene Audits
- Food Preparation Audits
- Personal Protective Equipment Audits
- Water Pass Audits
- Med Pass Audits
- Catheter Care Audits
- Peri-Care Audits
- Room Sanitization Audits
- Environmental Audits
- Dining Room Audits
- Linen Handling Audits
### Correction Area

<table>
<thead>
<tr>
<th>Four (4) Staff Members (2 nursing, 1 housekeeper and 1 dietary employee) observed non-compliant with policy for hand hygiene</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Action Steps for Compliance</th>
<th>Date Due</th>
<th>Responsible Party</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. All staff in-service with return demonstration on facility P&amp;P for Hand Hygiene. 2. Audits will be completed 3 times/week for 4 weeks then weekly thereafter 3. Results of hand hygiene audits will be addressed with the QI team</td>
<td>5/1/17, Beginning 5/15/17, 6/12/17</td>
<td>Infection Preventionist and Nurse Managers, Infection Preventionist</td>
</tr>
</tbody>
</table>
Strategies for Implementation and Quality Monitoring for Successful Outcomes

• Ensure all policies and procedures are updated to include new requirements, recommendations and evidence-based standards of practice
• Meet with Medical Director to discuss changes necessary and include in policy and procedure changes as well
• Include the Pharmacy Consultant in the process of system update and implementation

Strategies

• Ensure a solid, preadmission process to identify potential resident’s with MDRO’s and/or antibiotic use
• Include antibiotic stewardship in your QAPI process and report all status updates and practice outcomes to the quarterly QA Committee meeting
Strategies

• Ensure ongoing communication with the Infection Preventionist
  – Daily stand-up meeting
  – Direct contact with concerns
  – During Quality Assurance Committee meetings

Stay up to date with the most current recommendations, guidelines, evidence based standards of practice and regulatory requirements.

ACTION PLANNING Group Exercise
References and Resources

CDC: The Core Elements of Antibiotic Stewardship for Nursing Homes

http://www.cdc.gov/longtermcare/prevention/antibiotic-stewardship.html
References and Resources

- U.S. Department of Health & Human Services: AHRQ: Nursing Home Antimicrobial Stewardship
  

Transmittal: 168 Dated March 8, 2017:

CMS State Operations Manual, Appendix PP – Guidance to Surveyors for Long Term Care Facilities:

References and Resources

Medicare and Medicaid Programs; Reform of Requirements for Long-Term Care Facilities


**Resources**

- National Healthcare Safety Network (NHSN) LTC facilities
  - Tracking Infections
    - Training
    - Protocols
    - Forms
    - Support Materials
    - And More!
  - https://www.cdc.gov/nhsn/ltc/index.html

**References and Resources**


- Management of Multidrug - Resistant Organisms In Healthcare Settings, 2006
References and Resources

**Infectious Diseases Society of America and the Society for Healthcare Epidemiology of America Guidelines for Developing an Institutional Program to Enhance Antimicrobial Stewardship**


[http://cid.oxfordjournals.org/content/44/2/159.full.pdf+html](http://cid.oxfordjournals.org/content/44/2/159.full.pdf+html)

Advancing Excellence

**Infections**
- Information
- Helpful Websites
- Infections Tracking Tool
- Assessment Checklists
- Fact Sheets
- Ability to submit data and view your trend graphs for infections

[https://www.nhqualitycampaign.org/goalDetail.aspx?q=inf](https://www.nhqualitycampaign.org/goalDetail.aspx?q=inf)

Resources


http://www.cdc.gov/hicpac/Pubs/Antibiotic-Stewardship-Statement.html


http://www.cdc.gov/hicpac/CAUTI_fastFacts.html

Resources and References

- http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4579247/
References and Resources

- [http://www.cdc.gov/hai/pdfs/toolkits/InfectionControlTransferFormExample1.pdf](http://www.cdc.gov/hai/pdfs/toolkits/InfectionControlTransferFormExample1.pdf)
- [https://www.whitehouse.gov/sites/default/files/docs/national_action_plan_for_combating_antibiotic-resistant_bacteria.pdf](https://www.whitehouse.gov/sites/default/files/docs/national_action_plan_for_combating_antibiotic-resistant_bacteria.pdf)

Questions?

Thank You For Attending Today’s Presentation!
Pathway Health