FR16- Antibiotic Stewardship in PA/LTC Facilities: Evidence-Based Approach on Starting and Sustaining a Successful Program

Friday, March 23
1:30 PM- 3:00 PM

Session Description

This session will provide guidance on starting and sustaining an antibiotic stewardship program (ASP) in their facilities. This will be achieved by introducing the core elements that are essential to a successful ASP. The presenters will provide practical tips on implementing all the core elements using easily available free resources. The audience will also have the opportunity to interact with experts, including those who are currently helping various LTC facilities in developing their own ASP. The ultimate goal of this session is to prepare medical directors, other clinical practitioners, and nursing home administrators for implementing a sustainable ASP at their facilities, based on the Centers for Disease Control and Prevention (CDC) recommended core elements.

Learning Objectives

Describe core elements of an antibiotic stewardship program and the related CMS regulations.
Discuss the need for implementing antibiotic stewardship program with all seven CDC recommended core elements and the role of medical director in the implementation.
Demonstrate practical steps that can be taken to implement each element of antibiotic stewardship program using easily available resources.
Review the available resources needed to successfully start and sustain an antibiotic stewardship program.

Presenter(s): Muhammad S. Ashraf, MBBS, Dheeraj Mahajan, MD, CMD, Elizabeth Frentzel, MPH, Philip Sloane, MD, MPH, Ghinwa Dumyati, MD, Nimalie Stone, MD, MS

Presenter(s) Disclosures: Muhammad S. Ashraf, MBBS: Has a financial disclosure: Grant/Research Support: Merck & Co., Inc.; All other speakers have reported they have no relevant financial relationships to disclose.
Antibiotic stewardship refers to a set of commitments and activities designed to “optimize the treatment of infections while reducing the adverse events associated with antibiotic use.”

**Speaker Disclosures**

Dr. Ashraf

Merck & Co., Inc., Received funding for investigator initiated study to evaluate the effectiveness of a consultant pharmacist antimicrobial stewardship training program

Dheeraj Mahajan, MD, and Elizabeth Frentzel MPH

None

**Learning Objectives**

By the end of the session, participants will be able to:

- Discuss the need for antimicrobial stewardship programs in the post-acute and long-term care facilities
- Describe the core elements of antimicrobial stewardship in post-acute and long-term care facilities
- Recognize practical approaches towards starting and sustaining a successful antimicrobial stewardship program
- Learn about available resources to optimize antibiotic use in the post-acute and long-term care setting

**CDC Core Elements for Antimicrobial Stewardship in Post-Acute and Long-Term Care Facilities**

Dheeraj Mahajan, MD, FACP, CMD, CIC, CHCQM

President and CEO

Chicago Internal Medicine Practice and Research (CIMPAR, SC)

**DEFINITION**

Antibiotic stewardship refers to a set of commitments and activities designed to “optimize the treatment of infections while reducing the adverse events associated with antibiotic use.”

**DATA POINTS**

- 70% of NH residents receive one or more courses of antibiotics in a year
- 40%-75% of antibiotics prescribed in NH may be unnecessary or inappropriate
- Cost of antibiotic use in NHs is $38 to 137 million per year
- Residents with higher antibiotic use are at 24% higher risk of antibiotic related harm
- 20% of providers prescribe 80% of antibiotics
- 40-75% of antibiotics in NH are prescribed incorrectly
- 50% of antibiotics in NH are prescribed for longer duration than necessary
Calls for Action

- White House call for combating antibiotic-resistant bacteria (2014)
- CDC's Core Elements of Antibiotic Stewardship for Nursing Homes (2015)
- CMS regulations on LTC antimicrobial stewardship (2016)
- Joint Commission's 2017 standard on antimicrobial stewardship

Side by Side

Leadership Commitment

- Written statements of Leadership support
- Define Duties of leaders and champions
- Notify and communicate
- Create and promote a culture

Accountability

- The medical director
- The director of nursing
- The pharmacist
- The Infection prevention program coordinator
- The laboratory
- State and local health departments

Drug Expertise

- Work with consultant pharmacists with additional training
- Network with area hospital with similar AMS philosophy and engage with Infection prevention personnel
- Develop relationships with infectious disease consultants
Policy and Practice Change

- Policies that support optimal antibiotic use
- Broad interventions (antibiograms and antibiotic time-outs)
- Pharmacy interventions (review of labs, cultures etc.)
- Infection and syndrome specific interventions (asymptomatic bacteriuria, ASB)

Tracking and Reporting

- Tracking how and why antibiotics are prescribed (process measure)
- Tracking how often and how many antibiotics are prescribed (antibiotic use measure)
- Tracking the adverse outcomes and costs from antibiotics (outcome measure)

Education

- WHO
  Physicians, NPPs, Nursing, residents and families
- HOW
  Flyers, Newsletters, Emails/listserves and in-person sessions
  ...FEEDBACK goes a long way

CONCLUSION

- AMS core elements are similar for hospitals and nursing homes
- NHs should start with 1 or 2 activities and build on success
- Celebrate your achievements and recognize the staff

ANTIMICROBIAL STEWARDSHIP IN POST-ACUTE AND LONG-TERM CARE SETTINGS:
Practical Steps for Implementation

Muhammad S. Ashraf, MBBS
Associate Professor, Division of Infectious Diseases
Medical Director, Nebraska Infection Control Assessment and Promotion Program
Co-Medical Director, Nebraska Antimicrobial Stewardship Assessment and Promotion Program
University of Nebraska Medical Center

Obtain Leadership Statement of Support

- Written statement of support for antimicrobial stewardship program (ASP)
- Outline duties of the ASP team members
- Communicate expectations with the nursing staff and prescribing providers
- Create culture that promote appropriate antibiotic use
Establish Accountability

- Empower leaders of the program
  - Medical Director
  - Director of Nursing
  - Consultant Pharmacist

- Provide dedicated time for ASP activities to:
  - Program leaders
  - Infection Preventionists (who will support day to day activities of ASP)

Partner With Local Experts or Develop Expertise Within The Facility

- Establish access to individuals with antibiotic expertise to implement antibiotic stewardship activities

- Examples of experts include:
  - Consultant pharmacists who have received specialized infectious diseases or antibiotic stewardship training
    - Many Consultant Pharmacists are being trained by their companies on Antimicrobial Stewardship concepts and activities
    - Training is also being made available to consultant pharmacists by national societies.
  - Antibiotic stewardship program leads at the hospitals within your referral network.
  - Develop relationships with infectious disease consultants in your community
  - Medical Directors and Lead Physicians can also take courses that can help them prepare for ASP activities including CDC/SHEA/AMDA courses

Impact of Partnership with ID Specialists

- 30% decrease in total antibiotic use
- 64% decline in tetracyclines use
- 61% decline in clindamycin use
- 38% decline in fluoroquinolones & sulamethoxazole/trimethoprim
- 28% decline in beta lactam/beta lactamase inhibitors use
- Rate of positive C. difficile tests at LTCF also declined while rate were the same in the hospital

Develop Antibiotic Stewardship Policy

Outline the goals of the Antibiotic Stewardship program, structure and procedures of the antimicrobial stewardship committee along with responsibilities of its members
Form an Antibiotic Stewardship Committee/Team

Required
- Infection Preventionist
- Medical Director or a designated lead physician
- Director of Nursing or Assistant Director of Nursing
- Consultant Pharmacist

Optional
- Administrator
- Prescribing Provider (Attending Physician, Nurse Practitioner or Physician Assistant)
- Nurse representative
- Allied Health Professional
- Representative from the Resident and Family Council

Committee should meet at least quarterly and review policy/program annually and as needed

Task Antibiotic Stewardship Committee with Specific Responsibilities

Antibiotic Stewardship Committee should:
- Support and promote antibiotic use protocols
- Develop and maintain a system to monitor antibiotic use
- Develop and maintain a system to monitor resistance data
- Report antibiotic use and resistance data regularly to frontline staff and prescribing providers along with goals of antibiotic stewardship programs
- Provide education on antibiotic stewardship to prescribing providers and nursing staff in addition to residents and families

Antibiotic Use Protocols

Antibiotic use protocols include:
- Requirement of specific dose, duration and indication with all antibiotic orders
- Introduction of standardized tools and criteria for assessment and communication of infections (tools may also include decision support algorithms)
- Guidance on prescribing based on national recommendations and facility specific data which also highlights choosing narrow-spectrum antibiotics whenever possible
- Emphasis on reassessment of empiric antibiotics after 2 to 3 days for appropriateness and necessity (Post-Prescribing Review or Antibiotic time out)

Effective assessment/communication tool

Effectiveness of Assessment/Communication Tool

[Graph showing effectiveness of assessment/communication tool]

Available Assessment/Communication Tools

- Suspected SST SBAR
- Suspected UTI SBAR

[Website link: https://www.ahrq.gov/nhguide/toolkits/]

Some facilities prefer to send a single page fax to the provider instead of a 2 page form.

A modified single page version of communication tool for suspected UTI is available at Nebraska ASAP Website.

Monitoring Antibiotic Use

- Require review of antibiotics:
  - On admission to and transfer out of the facility.
  - When it is prescribed by a provider not on facility's staff (like ED provider).
  - Of all ongoing and completed courses of antibiotics by consultant and/or dispensing pharmacists during monthly medication review.

- Periodic (quarterly) Tracking of adherence to antibiotic use protocols.

- Conduct at least an annual review of antibiotic use data in the facility to identify:
  - Specific antibiotic that is being excessively used or
  - Providers who are using excessive antibiotics as compared to their peers.

- Reach out to pharmacy to provide antibiotic use data and/or use infection/antibiotic start log to obtain antibiotic use measurements like:
  - Antibiotic starts/1000 resident days
  - Days of therapy/1000 resident days.

Monitoring Resistance Data

- Perform at least annual review of surveillance data pertaining to microorganisms related to antibiotic use like:
  - Methicillin-resistant Staphylococcus aureus
  - Carbapenemase-resistant Enterobacteriaceae
  - Clostridium difficile
  - Any other drug resistant organism that a facility seems to be struggling with.

- Make sure that the facility’s contract with laboratory includes provision of facility specific antibiogram.

- Resistance data/antibiogram should also be considered when developing facility specific antibiotic use guidance.

Reporting/Feedback Process

- Antibiotic Stewardship Committee/team will be part of Infection Control and Prevention Program (IPCP).

- It will report progress to the Quality Assessment and Assurance (QAA) Committee at least annually.

- New CMS rules mandate IPCP to be reviewed at least annually.

- In addition to QAA committee, annual written feedback on facility’s antibiotic use and resistance data should be shared with:
  - Prescribing providers
  - Nursing Staff
  - Administrators
  - Resident and Family Council

- Provide written feedback on antibiotic use for each provider on an annual basis.

- Also share facility specific antibiograms with all the prescribing providers.

Use of Nursing Home Antibiogram

- Up to 85% of treatment started empirically.

- Where cultures available:
  - only 32% of empiric antibiotic appropriate.

- Antibiotic was distributed to Nursing Staff, Administrators and Physicians in a meeting.

- 6 months later there was a modest increase in appropriateness; however, the difference was not statistically significant.
Example of Provider Feedback Report

This facility was highlighted in a report for successfully implementing ASP.

Multiple interventions were implemented including:
- Communication tools
- Vigorous review of antibiotic orders
- Introducing antibiograms

However, one of the main interventions was to provide an Antibiotic Report Card to the providers in addition to one-on-one discussions by the medical director.

Data from:

[Insert data source or reference]

Education

- Educational programs should address:
  - Nursing staff
  - Prescribing providers
  - Families
  - Residents
  - Resident and Family Council

Summary of the Steps

1. Obtain leadership statement of support
2. Establish accountability
3. Partner with local experts or develop expertise within the facility
4. Develop Antibiotic Stewardship Protocol
5. Form an Antibiotic Stewardship Committee/Team
6. Task Antibiotic Stewardship Committee with Specific Responsibilities
   a) Support and promote antibiotic use protocols
   b) Develop and maintain a system to monitor antibiotic use
   c) Develop and maintain a system to monitor resistance data
   d) Report antibiotic use and resistance data regularly to frontline staff and prescribing providers
   e) Provide education on antibiotic stewardship to prescribing providers and nursing staff in addition to residents and families

Impact of On-Line Course for Nurses

After the course, nurses’ agreement that their role influences whether residents receive antimicrobials also increased significantly.

[Insert data source or reference]

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STEWARDSHIP: RESOURCES AND TOOLS

- [Insert resource information]

Example 1: Provider Feedback Report

Example 2: Education

Example 3: Summary of the Steps

Example 4: Impact of On-Line Course for Nurses

Example 5: STEWARDSHIP: RESOURCES AND TOOLS
General Principles of Antibiotic Stewardship

- **Value**: Rationale and description
- **Users**: Leadership, champions
- **Exemplar**: CDC Core Elements
  - What is antimicrobial stewardship?
  - What does it involve?
  - Who does it involve?

Implementation Policies and Procedures

- **Value**: Allow staff to clearly understand their roles and responsibilities within predefined limits
- **Users**: All internal staff, and potentially state surveyors, family members, consulting pharmacists
- **Exemplars**: CDC starting a program, AMDA Policies and Procedures for Antimicrobial Stewardship/ AHRQ Nursing Home Guide Template

Starting a program (CDC)

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Types of Resources

- General Principles
- Family & Resident Education and Engagement
- Antimicrobial Stewardship
- Implementation Policies, Procedures
- Measuring and Monitoring Antimicrobial Use
- Antibiotic Use Protocols

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Minimum Criteria for Common Infections Toolkit

Minimum Criteria for Initiating Antibiotics for a Urinary Tract Infection
For residents without an indwelling catheter, initiate antibiotics if the resident meets criteria of one of three situations:
1. Acute dysuria alone
OR
2. Fever of 100°F (37.9°C) or two repeated temperatures of 99°F (37°C) AND at least one of the following:
   - New or worsening:
     - Urgency,
     - Frequency, or
     - Suprapubic pain, or
     - Gross hematuria, or
   - Costovertebral angle tenderness, or
   - Urinary incontinence


Antibiotic Use Protocols

- Value:
  - Allow staff to clearly understand activities for antibiotic stewardship
  - Keeps staff focused on critical antibiotic stewardship issues
- Users: All internal staff and potentially consulting pharmacists and laboratories
- Exemplars: Identifying an infection and treating infections appropriately

Identifying an Infection (AHRQ)

Treating the Infection Appropriately (AHRQ)

Training/CEUs

- Almost all websites provide training
  - Powerpoint presentations
  - Audiofiles
  - Self-paced
- CEUs and self-paced
  - Robin Jump
  - UNC

Measuring and Monitoring Antibiotic Use

- Value: Identifying success, identifying potential issues
- Monitors: Antibiotic Stewardship committee/infection preventionist should monitor
- Receivers: Prescribing clinicians and nurses
- Exemplars: Minnesota summary of infections, AHRQ, Nursing Home Guide for Antibiotic Stewardship monitoring tool
Family and Resident Education and Engagement

- **Value:** Engage and educate family members and residents about the value and risks of antibiotics.
- **Users:** Prescribing clinicians, nurses, and sometimes aides
- **Recipients:** Family members and residents
- **Exemplars:** UNC Patient and Family Education and CDC’s What You Need to Know About Antibiotics in a Nursing Home

Patient and Family Education & Engagement (UNC-Residents and families)


Panel Discussion

- Muhammad Salman Ashraf, MBBS
- Elizabeth Frentzel, MPH
- Dheeraj Mahajan, MD
- Ghinwa Dumyati, MD
- Philip D. Sloane, MD, MPH
- Nimalie Stone, MD, MS