


Core Elements of Successful Antimicrobial Stewardship Programs in Long-Term Care

The basics and best practices

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Overview for this hour

- Define long-term care (LTC)
- Identify why LTC is key to reducing resistance
- Discuss the CDC 7 Core Elements for antibiotic stewardship in nursing homes*
- Outline key players and collaborators
- Best practices in real life

Definitions

- Long-term care (LTC):
 - Services provided to those unable to perform activities of daily living
 - Can be medical and non-medical
- Skilled nursing facilities (SNF)
 - High level of care provided in a medical environment
 - Traditionally called nursing homes
- Assisted living (senior living)
 - LTC provided in a residential setting
 - More focused on home and residential needs and not medical needs
 - Independent living communities

Group Homes:

Supervised living typically less than ten residents and funded by Medicaid

Antibiotics in nursing home history

- Up to 70% of nursing home residents receive antibiotics during a year
- 20-30% of nursing home residents receive multiple courses during a calendar year
- Up to 75% of the antibiotics are prescribed incorrectly
- At least 2 million people in the United States are infected by antibiotic-resistant bacteria each year and about 23,000 die as a result
- Close living quarters and high numbers of comorbidities leave SNF residents at highest risk of infection spread and mortality

Summary of Core Elements for Antibiotic Stewardship in Nursing Homes



Leadership commitment

Demonstrate support and commitment to safe and appropriate antibiotic use in your facility



Accountability

Identify physician, nursing and pharmacy leads responsible for promoting and overseeing antibiotic stewardship activities in your facility



Drug expertise

Establish access to consultant pharmacists or other individuals with experience or training in antibiotic stewardship for your facility



Action

Implement **at least one** policy or practice to improve antibiotic use



Tracking

Monitor **at least one process** measure of antibiotic use and **at least one outcome** from antibiotic use in your facility



Reporting

Provide regular feedback on antibiotic use and resistance to prescribing clinicians, nursing staff and other relevant staff



Education

Provide resources to clinicians, nursing staff, residents and families about antibiotic resistance and opportunities for improving antibiotic use

Core Elements for Hospital Stewardship Program

- Leadership commitment
- Accountability
- Drug expertise
- Action
- Tracking
- Reporting
- Education

Patterned after hospital stewardship program

- Leadership

- Statements, define duties, communicate, and create a culture

- Accountability

- **Medical director: The commander** **Not in-house like the hospital*

- Sets the standard. Accountable for overseeing adherence.

- **Director of nursing: The influencer**

- Knowledge, perception, attitude of staff is set by the DON

- The main communicator on frontline events and to staff

- **Consultant pharmacist: The drug expert** (see next slide)

- Also assists IP with reports

- **Infection preventionist: The data czar**

- Collects the key data on infection occurrences, antibiotic use, prevention, treatment, and resistance patterns

Patterned after hospital stewardship program

○ Drug expertise

- Consultant pharmacist is not in-house; Very limited access

○ Action

- Training on antibiotic choices, resistance patterns, and antibiogram development
- Evaluate on a schedule antibiotic use, resistance, and *c. diff* outbreaks
- Use reports to create specific interventions to improve antibiotic use

○ Tracking and reporting

- What antibiotics were prescribed and why? What were the outcomes?

○ Education

- Initial needs and scheduled continued education based on tracking results

Leadership/ accountability best practices

Antibiotic Stewardship
must be a priority and not
a check box.

- Who are you accountable to?

- Where is your primary care provider?
 - Do you have a nurse practitioner in the building? Notice that role is not in the CDC guidelines.
 - What is your facility's expectation for this role?
 - Who brings the reports to this key figure?
- Who owns these relationships? Why?
 - Lab contact: Someone at the facility needs to own this relationship. IP or DNS?
 - State and county health department contact: report the reportables and track outbreaks

Drug expertise and action best practices

- Not all ER visits are UTIs. Take away this excuse.
Work up ER UTIs as part of your tracking. Did it meet criteria?
- Set routine tracking and reporting requirements
- Use your consultant pharmacist but not *only* your consultant pharmacist
- Other pharmacist contact
 - Consultant pharmacists are part-time help. Who is your back-up?
 - Use your lab contact and your company contract with the lab company
 - Use the local hospital(s) and your referral network. Get referral team involved.
- Start at level set: have you identified a problem?

What resources can you devote?

How do you fill the gap between resources and needs?

Tracking and Reporting Best Practices

- Potential goals based on current capabilities and needs:
 - Identifying Potential Problems
 - Create a baseline stewardship tracker
 - Identifying true infections
 - Suspected infection SBAR
 - Decision making tools for different infections/ minimum criteria developed
 - Choosing the right antibiotic
 - Antibigrams
 - Patient and Family Pressures
 - Education programs for families and patients
 - Identify gaps in community knowledge-support referral hospital programs

Identify your goals and revisit annually.

Education best practices

- Be creative
 - Outsourcing education: What are referral sources doing in the community?
 - What do your partners offer? Do labs have an education program?
 - Do your primary care providers have resources? Psychiatric providers?
- Be specific
 - What does your facility need? What do you do well?
 - Does your referral source have a stewardship program?
- Know your niche
 - Vent units have more intense needs for stewardship
- How “expert” are your experts?
 - How do you evaluate? Surveys and quizzes
 - Are you still using ceftriaxone for UTI?
 - Are you identifying opportunistic infections
 - Do you have a plan to reduce the overuse of ATB?
- Antibiotic stewardship vs. infection prevention

Case study

- 76-year-old female was sent to the ER from a SNF due to increased confusion and aggression
- Patient was sent back from the ER with a diagnosis of UTI and a three-day course of ceftriaxone IM QD
- The IP called the hospital three days later and received the culture results
- The UA C/S came back with >100k cfu growth of *Citrobacter freundii*
- Citrobacter was sensitive to ceftriaxone

Basic stewardship

- IP noted the patient had no urinary symptoms and the culture could be colonization
- Medical director was notified and recommended education on delirium and behavior management

Best practice stewardship

- Primary care NP notes Citrobacter is an opportunistic infection
 - Reviews recent history of ATB use which includes three ER trips with diagnosis of UTI
 - DON works with medical director on overuse of ATB education to staff and patient family who calls the patient a “chronic UTI sufferer”
 - Psychotherapy and physical therapy were brought in to assist with behavior management and incontinence training
- Primary care NP notes use of ceftriaxone for UTI is not a best practice due to GI route of the drug and the increased risk of *C. difficile* and drug resistance.
 - DON works with medical director on referral hospital ATB use. Referral team reaches out to hospital infectious disease team for ATB choice assistance.

Case study

Working with your referral hospital

- Identify a clinical person from the SNF team to work with your admissions team
 - Clinical lead must know the infectious disease team
 - What resources will they share? Hospitals and SNF have shared responsibility. Will the referral/local hospitals share education resources?
 - Antibigrams for these hospitals will give you a bigger (better?) picture of resistance patterns than just your facility's antibigrams
 - Do they have an infectious disease pharmacist?
- When and how does the hospital contact the state and county dept of health?

Working with your contracted lab

What relationship do they
have with local hospitals?

- Who is your facility's lab contact?
Someone must own this relationship.
- Ensure you obtain the monthly lab
results, resistance
patterns/antibiograms
 - Not all antibiograms are good
- What education resources do they
have?
- When and how do they contact the
state and county departments of
health?

At what cost?

Education and prevention vs. high ATB use

- Education and prevention costs prohibit facilities from building and supporting a robust antibiotic stewardship program
- According to the CDC, one study showed AS saved \$28 on antibiotics per resident with a total potential cost of treating ADR savings of \$1,098 per resident
- Nursing costs for isolation, PICC line placement for IV ATB for MDRO, mental health deterioration due to isolation, and the ATB costs themselves
 - Ceftazidime/avibactam \$2,000/day
 - Ceftolozane/tazobactam \$1,500/day
 - Fidaxomicin for *C.difficile* \$5,600 for 10-day course

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