

What is an Antibiotic Stewardship Program?

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National Nursing Home Quality Care Collaborative Change Package

Change Bundle: To prevent healthcare-acquired infections

<https://www.lsqin.org/wp-content/uploads/2015/10/ChangePackage-bundle-HACs.pdf>



Objectives

- Describe an antibiotic stewardship program and why it is important
- Define the 7 core elements of antibiotic stewardship for nursing homes
- Identify steps to implement the core elements in your nursing home
- Describe ways to monitor your program's progress

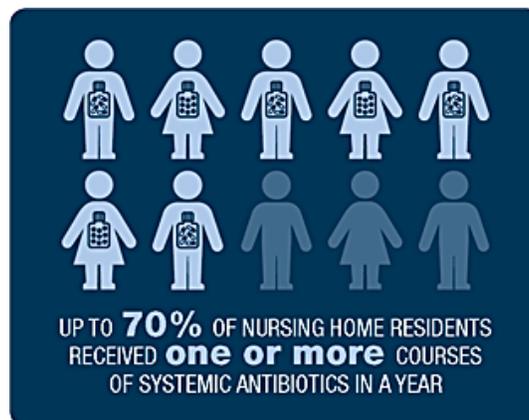
What is Antibiotic Stewardship?

A set of commitments and activities designed to optimize the treatment of infections while reducing the adverse events associated with antibiotic use

Why is Antibiotic Stewardship important?

- 40% - 75% of antibiotics prescribed in nursing homes may be unnecessary or inappropriate
- High level of exposure to antibiotics can lead to serious adverse events and consequences for the individual and community
 - *Clostridium difficile* infections
 - Drug-drug interactions
 - Colonization or infection with antibiotic-resistant organisms

Do we really use that many antibiotics? Yes.



Why is Antibiotic Stewardship Important in Nursing Homes?

- The CDC states that antibiotic stewardship is the single most important action needed to slow down the development and spread of antibiotic resistant infections
- The LTC Final Rule, section 483.80 mandates an antibiotic stewardship program as part of the Infection Control Program (by 11/28/17)

Federal Register / Vol. 81, No. 192 / Tuesday, October 4, 2016 / Rules and Regulations

IPCP Requirements

- Include a system for prevention, identification, investigation, surveillance, and control of all infections and communicable diseases.
- This program must apply to all residents, staff, volunteers, visitors, and others providing services under contractual agreement.
- Must include methods for recording incidents identified under the facility's infection prevention and control program (IPCP)

IPCP Requirements

- Documentation of any corrective actions taken by the facility
- The facility must designate an infection prevention and control officer(s) (IPCO)
- Integrate the IPCO with the facility's quality assurance and performance improvement (QAPI) program

IPCP Requirements

- Establish written policies and procedures for the IPCP including policies and procedures for antibiotic use protocols and systems for monitoring antibiotic use.
- Provide the IPCO and facility staff, residents, volunteers, visitors and other contracted personnel with education or training related to the IPCP

Don't Panic –
There is guidance....



7 Core Elements of Nursing Home Antibiotic Stewardship

CDC's Core Elements for Nursing Homes

1. Leadership commitment
2. Accountability
3. Drug expertise
4. Action
5. Tracking
6. Reporting
7. Education

Leadership Commitment

- **Demonstrate support and commitment to safe and appropriate antibiotic use in your facility**
- **How?**
 - Write statements in support of improved antibiotic use to share with staff, residents, and families
 - Include antibiotic stewardship-related duties in job descriptions of medical directors/nurse leads/pharmacists
 - Communicate with staff and physicians about antibiotic use
 - Create a culture which promotes stewardship

Accountability

- **Identify physician, nursing, and pharmacy leads responsible for promoting and overseeing antibiotic stewardship activities in your facility**
- **How?**
 - Medical director: sets standards for antibiotic prescribing
 - Director of nursing: leads communications on resident conditions and how information is relayed to clinicians
 - Pharmacist: provides oversight through medication review
 - Work with infection prevention program coordinator, consultant laboratory, state, and local health departments

Drug Expertise

- **Establish access to consultant pharmacists or other individuals with experience or training in antibiotic stewardship**
- **How?**
 - Work with a consultant pharmacist who has specialized infectious diseases or antibiotic stewardship training
 - Partner with stewardship program leads at hospitals within your referral network
 - Develop relationships with infectious disease consultants in your community

Action

- **Implement at least one policy or practice to improve antibiotic use**
- **How?**
 - Require an “antibiotic time-out”
 - Require review for all new antibiotic prescriptions
 - Standardize practices during care of any resident with a suspected infection or who has been started on an antibiotic
 - Pharmacy interventions to improve antibiotic use
 - Infection and syndrome specific interventions 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**
- **How?**
 - Process measures: tracking how and why antibiotics are prescribed
 - Antibiotic use measures: tracking how often and how many antibiotics are prescribed
 - Antibiotic outcome measures: tracking the adverse outcomes and costs from antibiotics

Reporting

- **Provide regular feedback on antibiotic use and resistance to prescribing clinicians, nursing staff, and other relevant staff**
- **How?**
 - Share reports of tracking data with staff
 - Include antibiotic use check-ins in huddles
 - Review antibiotic tracking measures with QAPI committee
 - Share antibiotic prescribing rates with providers compared to others

Education

- **Provide resources to clinicians, nursing staff, residents, and families about antibiotic resistance and opportunities for improving antibiotic use**
 - Provide information on the goal of an antibiotic stewardship intervention and the responsibility of each group for ensuring the implementation
 - Sustain improvements by incorporating both education and feedback to providers
 - Engage residents and their family members in antibiotic use and stewardship education

To Check Your Program...

- **Complete the core elements facility checklist:**
 - <https://www.cdc.gov/longterm-care/pdfs/core-elements-antibiotic-stewardship-checklist.pdf>
 - This can provide an outline of your current antibiotic stewardship program and guidance for developing it further

Checklist for Core Elements of Antibiotic Stewardship in Nursing Homes

The following checklist is a comparison to the Core Elements of Antibiotic Stewardship in Nursing Homes. The CDC recommends that all nursing homes take steps to implement antibiotic stewardship activities. Before getting started, use this checklist as a baseline assessment of policies and practices which are in place. Then use the checklist to review progress in expanding stewardship activities on a regular basis (e.g., annually). Check boxes, implement activities for each element in a step-wise fashion.

LEADERSHIP SUPPORT	VITALITY OF FACILITY
<p>1. Did your facility appoint a leader(s) to support antibiotic stewardship through one or more of the following activities?</p> <p>If yes, indicate which of the following are in place (check all that apply)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Senior leadership or leadership support to improve antibiotic use <input type="checkbox"/> Antibiotic stewardship duties included in medical director position description <input type="checkbox"/> Antibiotic stewardship duties included in director of nursing position description <input type="checkbox"/> Leadership involves other antibiotic stewardship positions (e.g., infection prevention and control, surveillance, quality improvement, stewardship) 	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>2. Has your facility identified a leader(s) for antibiotic stewardship activities?</p> <p>If yes, indicate which is accountable for stewardship activities (check all that apply)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Medical Director <input type="checkbox"/> Director or assistant director of nursing services <input type="checkbox"/> Compliance officer/audit <input type="checkbox"/> Other 	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>3. Does your facility have access to individuals with antibiotic stewardship expertise?</p> <p>If yes, indicate which of the following are in place (check all that apply)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Consultant pharmacist, has staff pharmacist involvement in antibiotic stewardship <input type="checkbox"/> Pharmacy staff stewardship team or other stewardship <input type="checkbox"/> External infectious disease stewardship consultation <input type="checkbox"/> Other 	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>4. Does your facility have policies in place to improve antibiotic stewardship?</p> <p>If yes, indicate which policies are in place (check all that apply)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Required prescribers to document a clear history and indication for all antibiotic prescriptions <input type="checkbox"/> Standardized facility-specific algorithms for antibiotic selection <input type="checkbox"/> Standardized facility-specific algorithms for appropriate diagnostic testing (e.g., ordering indicated for specific infections) <input type="checkbox"/> Standardized facility-specific antibiotic susceptibility test methods <input type="checkbox"/> Standard antibiotic agents listed on the medication formulary <input type="checkbox"/> Other 	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>

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Discuss Checklist Findings

Discuss the findings from your checklist assessment with your QAPI team.

- **What do you already do well with antibiotic stewardship?**
- **What might be the hardest pieces or core elements for you to implement and why?**
- **Where are your opportunities for improvement and implementation?**

Action Items

- **Pick one element not currently in place to take action on**
 - Select one or two activities to start with and over time, as improvements are implemented, expand efforts to add new strategies to continue improving antibiotic use
- **Commit to antibiotic stewardship policies and practices that protect residents and improve clinical care**

Next Steps

- **Work in a stepwise fashion to expand stewardship efforts**
 - As policies and practices are successfully implemented, new strategies can be added to ensure that, over time, activities for each element are put into place
- **Any action to improve antibiotic use is expected to reduce adverse events, prevent emergence of resistance, and lead to better outcomes for residents in nursing homes.**

Monitoring Antibiotic Use and the Success of Your Antibiotic Stewardship Program

Antibiotic Stewardship Monitoring Measures

- **Process measures**
 - Track how and why antibiotics are prescribed
- **Antibiotic use measures**
 - Track how often and how many antibiotics are prescribed
- **Antibiotic outcome measures**
 - Track the adverse outcomes and costs from antibiotics

Process Measures

- **Completeness of clinical assessment documentation at the time of the antibiotic prescription**
 - Incomplete assessment and documentation of a resident's clinical status, physical exam, or laboratory findings at the time a resident is evaluated for infection can lead to uncertainty about the rationale and/or appropriateness of an antibiotic
 - If a facility has developed algorithms or protocols for evaluating residents suspected of having an infection, then perform audits of the quality of the assessment to ensure that algorithm was followed

Process Measures

- **Completeness of antibiotic prescribing documentation**
 - Ongoing audits of antibiotic prescriptions for completeness of documentation
 - Verify that the antibiotic prescribing elements have been addressed and documented regardless of where the antibiotic was initiated
 - Elements include:
 - dose (including route)
 - duration (i.e. start date, end date, and planned days of therapy)
 - indication (i.e. rationale and treatment site) for every course of antibiotics

Process Measures

- **Antibiotic selection is consistent with recommended agents for specific indications**
 - Intermittent review of antibiotic selection to ensure practices are consistent with facility policies
 - Requires facility-specific treatment guidelines for one or more infections

Measures of Antibiotic Use

- **Point prevalence of antibiotic use**
 - Track the proportion of residents receiving antibiotics during a given time period (i.e. a single day, a week, or a month).
 - Because the data collection is time-limited, point prevalence surveys are an easier way to capture antibiotic use data
 - Can capture data for any residents on antibiotics, not only those that are initiated in the nursing home

Point Prevalence

- **Percent of residents receiving antibiotics**
 - $(\text{Number of residents on antibiotic} / \text{total residents in the facility}) \times 100$
- **Percent of new admissions receiving antibiotics**
 - $(\text{Number of residents admitted to nursing home receiving antibiotics} / \text{total number of new admissions}) \times 100$

Measures of Antibiotic Use

- **Antibiotic starts**
 - Generally, rates of antibiotic starts are based on the prescriptions written after the resident has been admitted to the facility.

Antibiotic Starts

- **Rate of new antibiotic starts initiated in nursing home (per 1,000 resident days)**
 - (Number of new antibiotic prescriptions/total number of resident days) x 1000
 - Rate of antibiotic starts can be calculated by indication, for example: (number of new antibiotic starts for urinary tract infection/total number of resident days) x 1000
 - Rates of antibiotic starts could also be calculated for individual prescribers in the nursing home to compare prescribing patterns among different providers practicing in the facility.

Measures of Antibiotic Use

- **Antibiotic days of therapy (DOT)**
 - Tracking antibiotic DOT requires more effort than tracking antibiotic starts, but may provide a better measure to monitor changes in antibiotic use over time
 - The ratio of antibiotic DOT to total resident-days is the antibiotic utilization ratio (AUR)

DOT and AUR

- **An antibiotic day: each day that a resident receives a single antibiotic**
- **Antibiotic DOT: the sum of all antibiotic days for all residents in the facility during a given time frame (e.g. 1 month or 1 quarter)**
 - Rate of antibiotic DOT (per 1,000 resident days): $(\text{Total monthly DOT} / \text{total monthly resident days}) \times 1000$
 - Antibiotic Utilization Ratio: $\text{Total monthly DOT} / \text{total monthly resident days}$

Antibiotic Outcome Measures

- **Track *C. difficile* and antibiotic resistance**
 - National Healthcare Safety Network (NHSN) allows facilities to track rates of *C. difficile* and selected multidrug-resistant organisms such as methicillin-resistant *Staphylococcus aureus* (MRSA) and antibiotic resistant gram-negative bacteria like *E. coli* using laboratory based surveillance as proxy for infections

Antibiotic Outcome Measures

- **Track adverse drug events related to antibiotic use**
 - Adverse events due to use of antibiotics in skilled nursing facilities accounted for nearly 40% of harms identified in a recent report by the Office of the Inspector General*.
 - Antibiotics are among the most frequently prescribed medications in skilled nursing facilities and have a high rate of adverse drug events.
- **Track costs related to antibiotic use**
 - This metric can be useful in justifying support of staff time and external consultant support for antibiotic stewardship activities.

Understanding Antibiotic Use in Your Building

Which of the process and/or outcome measures do you already track?

- **Who** is prescribing the antibiotics?
- **What** are the most frequently used antibiotics?
- **Where** are the units that tend to use the most antibiotics?
- **When** are antibiotics most likely to be prescribed?
- **Why** are the antibiotics being used? What are the most common reasons they are being used?

We Don't Have Control Over Our Prescribers!

- Nursing home leaders will have to understand resistance patterns
- Tell prescribing providers that antibiotics are not expected by the facility
- Notify prescribers that antibiotic prescribing rates will be monitored as part of new antibiotic stewardship regulations
- Make sure that cultures and antibiograms are used to help guide empiric treatment

Scenario 1

A new administrator has joined Quality Nursing Home – how would she know whether this facility made antibiotic stewardship a priority area?

Scenario 2

How would staff and providers know if a new facility administrator made antibiotic stewardship a priority?

Take Home Messages

- Antibiotic stewardship helps reduce inappropriate antibiotic use
- Inappropriate use causes development of resistant bacteria which can be very difficult and costly to treat
- There are strategies that nursing homes can implement to be good stewards of antibiotics - these strategies can be implemented in a step-wise fashion

Take Home Messages

- **Everyone in the nursing home plays a role in antibiotic use and preventing antibiotic resistance**
- **Teamwork is required to support the judicious use of antibiotics**
 - Key players include prescribing providers, nurses, pharmacists, infection control practitioners, laboratory technicians, and residents and families

Resources

- [AHRQ Nursing Home Antimicrobial Stewardship Guide](#)
- [Minnesota Antimicrobial Stewardship Program Toolkit for Long-Term Care Facilities](#)
- [GNYHA Antimicrobial Stewardship Toolkit](#)
- [Michigan Antibiotic Resistance Reduction \(MARR\) Toolkit for Long-term Care Facilities to Prevent Antimicrobial Resistance](#)
- [Implementing an Antibiotic Stewardship Program: Guidelines by the Infectious Diseases Society of America and the Society for Healthcare Epidemiology of America](#)
- [Rochester Patient Safety *C. difficile* Prevention Collaborative: Resources and Tools](#)
- [The Centers for Disease Control and Prevention Print Materials for Everyone](#)
- [Improving the Care of Long-Term Care Facility Residents with Infections by Robin L. P. Jump, MD, PhD](#)

A Tool You Can Use

- Nursing Home Quality Essentials page on Lake Superior QIN's website has a sample Antibiotic Stewardship Policy:
- <https://www.lsqin.org/wp-content/uploads/2017/04/ASP-example-policy.docx>

Other Learning Opportunities

<http://www.qioprogram.org/nursing-home-training-sessions>

PATIENTS & FAMILIES	HEALTH CARE PROVIDERS	PARTNERSHIPS & INITIATIVES	ABOUT	EVENTS	NEWS
<p>▼ NURSING HOME TRAINING SESSIONS</p> <p><i>Nursing Home Training Sessions Introduction</i></p> <ol style="list-style-type: none">1. TeamSTEPS® in LTC: Communication Strategies to Promote Quality and Safety2. Exploring Antibiotics and their Role in Fighting Bacterial Infections3. Antibiotic Resistance: How it Happens and Strategies to Decrease the Spread of Resistance4. Antibiotic Stewardship5. Clostridium difficile Part One: Clinical Overview6. Clostridium difficile Part Two: Strategies to Prevent, Track, and Monitor C. difficile		<h3>Nursing Home Training Sessions Introduction</h3> <p>Print PDF</p>  <p>We hope that you find these training tools and resources helpful in your work to implement antibiotic stewardship and prevent C. difficile infections in your residents. All are welcome to explore this site and use the information as applicable to you and your organization. Thank you for your dedication to preventing infections in residents (and staff, too) and promoting appropriate antibiotic use.</p> <p>Training sessions and resources for nursing homes to support:</p> <ul style="list-style-type: none">• Implementation of principles and practices of <p>C. difficile harms residents!</p> <ul style="list-style-type: none">• C. difficile caused almost half a million infections			

Next Webinar

Antibiotic Stewardship in LTC Facilities: Where Do We Start?

- August 22, 2017
- 2-3 p.m. ET, 1-2 p.m. CT
- More information, including registration, can be found at: <https://www.lsqin.org/initiatives/nursing-home-quality/ls4/>

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Thank you!

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