Building Blocks for Antibiotic Stewardship in Nursing Homes

May, 2018
Qualis Health

- A leading national population health management organization
- The Medicare Quality Innovation Network - Quality Improvement Organization (QIN-QIO) for Idaho and Washington

The QIO Program

- One of the largest federal programs dedicated to improving health quality at the local level
Up to 70% of nursing home residents received one or more courses of systemic antibiotics in a year.

Antibiotics represent 40% of all prescriptions in nursing homes.

40% to 75% Unnecessary

F-757 Unnecessary Drugs*

§ 483.45(d) Unnecessary Drugs—General.
Each resident’s drug regimen must be free from unnecessary drugs. An unnecessary drug is any drug when used—

• § 483.45(d)(1) In excessive dose (including duplicate drug therapy); or
• § 483.45(d)(2) For excessive duration; or
• § 483.45(d)(3) Without adequate monitoring; or
• § 483.45(d)(4) Without adequate indications for its use; or
• § 483.45(d)(5) In the presence of adverse consequences which indicate the dose should be reduced or discontinued; or
• § 483.45(d)(6) Any combinations of the reasons stated in paragraphs (d)(1) through (5) of this section.

*State Operations Manual Appendix PP Revised 11-22-17
F-881 and Antibiotic Stewardship*

- **F881 § 483.80(a)** Infection prevention and control program. The facility must establish an infection prevention and control program (IPCP) that must include, at a minimum, the following elements:
  
- **§ 483.80(a)(3)** An antibiotic stewardship program that includes antibiotic use protocols and a system to monitor antibiotic use.

The intent of this regulation is to ensure that the facility:

- Develops and implements protocols to optimize the treatment of infections by ensuring that residents who require an antibiotic, are prescribed the appropriate antibiotic;

- Reduces the risk of adverse events, including the development of antibiotic-resistant organisms, from unnecessary or inappropriate antibiotic use; and

- Develops, promotes, and implements a facility-wide system to monitor the use of antibiotics.

*State Operations Manual Appendix PP Revised 11-22-17

Phase 2 to be implemented November 28th 2017
Antibiotics Increase Risk of Clostridium Difficile Infection

- Odds of \textit{C. difficile} infection increase by a factor of \textbf{7 to 10} during antibiotic treatment and in the month following*

- Broad spectrum antibiotics are most strongly associated with \textit{C. difficile} infection
  - ciprofloxacin, levofloxacin, clindamycin, ceftriaxone, cefazolin

Ideally, would be all yes’s…. 

There are a lot of different ways to achieve the 7 core elements of antibiotic stewardship program…one of the challenges is to sort through the huge number of resources and figure out which one works for you. Some of you have been working on this for years, some of you may have just come into positions where this is now expected of you. Our approach is to try to meet you where you are, taking advantage of the structure of the CDC Checklist and the pool of expertise already developed among nursing homes and other stakeholders, such as the WA Department of Health.
Checklist and Resources for Core Elements of Antibiotic Stewardship in Nursing Homes
www.Medicare.QualisHealth.org/CoreNH

So how do you know if your are on track to meet Phase 2 ROP? 7 major headings (Leadership, accountability, drug expertise, actions to improve antibiotic use, tracking antibiotic prescribing and resistance, reporting to staff, education. 10 subheadings and 48 individual elements.

... don’t be mislead into thinking that a yes at the subheading level is all there is to the checklist. The sub elements matter too
Demonstration of Leadership Support Attestation Poster

Our Commitment to Using Antibiotics Wisely
We are dedicated to providing all of our residents with the best possible care. Antibiotics are prescribed only when they are truly needed.

Antibiotics must be used with care. Side effects can range from uncomfortable to potentially serious conditions, including skin rashes, diarrhea, and yeast infections. Some infections are becoming harder to treat because bacteria are building resistance to current medications. Widespread use of antibiotics makes these "super bugs" stronger.

Antibiotics only fight infections caused by bacteria. Antibiotics do not work against viruses which cause the common cold, most coughs, and most sore throats. Taking antibiotics for viral infections:
- Will not ease symptoms
- Is a waste of money
- Will not get rid of the infection
- May cause side effects

If you have any questions about the care you are receiving, or want more information about your family member’s treatment, please talk to:

www.Medicare.QualisHealth.org/CoreNH

One way to demonstrate Leadership Support is by printing and posting the Attestation Poster (example above from the Qualis health website)

Another example available from WA Department of health website at https://www.doh.wa.gov/Portals/1/Documents/5000/420-206-LeadershipCommitmentToStewardshipPosterTemplate.pptx

Can your facility demonstrate leadership support for antibiotic stewardship through one or more of the following actions?

☐ Yes ☐ No

If yes, indicate which of the following are in place (select all that apply)

1. Written statement of leadership support to improve antibiotic use*
2. Antibiotic stewardship duties included in medical director position description
3. Antibiotic stewardship duties included in director of nursing position description
4. Leadership monitors whether antibiotic stewardship policies are followed**
5. Antibiotic use and resistance data is reviewed in quality assurance meetings**
Demonstration of Leadership Support (Beyond the Poster)

Other Evidence of Leadership Support:
- Antibiotic Stewardship included in job descriptions
- Budget plans for Antibiotic Stewardship
- QAPI reports that reference Antibiotic Stewardship
- Use of electronic health records in A.S. program
- Support for Antibiotic Stewardship education
- Accountability documents for A.S. program

Other Evidence of Support:
- Leadership job descriptions
- Budget plans
- QAPI reporting
- Support for use of electronic health records in ASP
- Support for education
- Accountability documents

Can your facility demonstrate leadership support for antibiotic stewardship through one or more of the following actions?
- Yes
- No

If yes, indicate which of the following are in place (select all that apply):
1. Written statement of leadership support to improve antibiotic use*
2. Antibiotic stewardship duties included in medical director position description
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4. Leadership monitors whether antibiotic stewardship policies are followed**
5. Antibiotic use and resistance data is reviewed in quality assurance meetings**
Accountability

Example Antibiotic Stewardship Accountability Grid (for demonstration purposes only)

<table>
<thead>
<tr>
<th>Name / Position</th>
<th>Antibiotic Stewardship Program Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurse Nancy / ADNS</td>
<td>• Develops agendas and convenes quarterly ASP meetings.</td>
</tr>
<tr>
<td></td>
<td>• Leads or arranges for clinical staff trainings.</td>
</tr>
<tr>
<td></td>
<td>• Collects data on quality improvement interventions related to ASP.</td>
</tr>
<tr>
<td></td>
<td>• Develops strategies related to monitoring new interventions.</td>
</tr>
<tr>
<td></td>
<td>(Add more...)</td>
</tr>
<tr>
<td>Dr. Nouri / Medical</td>
<td>• Communicates with prescribers as necessary to support ASP goals and processes.</td>
</tr>
<tr>
<td>Director</td>
<td>• Reviews and contributes as necessary to development of ASP policies and procedures.</td>
</tr>
<tr>
<td></td>
<td>(Add more...)</td>
</tr>
<tr>
<td>Jane Noitall / DNS</td>
<td>• Writes ASP policies and procedures with input from ASP committee.</td>
</tr>
<tr>
<td></td>
<td>(Add more...)</td>
</tr>
<tr>
<td>Sally Ointment / Pharmacist</td>
<td>• Reviews antibiotic courses for appropriateness of administration and/or indication.</td>
</tr>
<tr>
<td></td>
<td>• Establishes standards for clinical/laboratory monitoring for adverse drug events from antibiotic use.</td>
</tr>
<tr>
<td></td>
<td>• Reviews microbiology culture data to assess and guide antibiotic selection</td>
</tr>
<tr>
<td></td>
<td>(Add more...)</td>
</tr>
</tbody>
</table>

Dynamic document that will be updated as you develop your ASP with policies and procedures

Has your facility identified a lead(s) for antibiotic stewardship activities?

☐ Yes  ☐ No

If yes, indicate who is accountable for stewardship activities (select all that apply)

6. Medical director
7. Director or assistant director of nursing services
8. Consultant pharmacist
9. Other: ___________________________
Antibiotic Stewardship Expertise

Does your facility have access to individual(s) with antibiotic stewardship expertise? the following link available from Qualis health Website provides an in-depth detailed self assessment of antibiotic stewardship knowledge


- Antimicrobial Stewardship Training Programs
- Society for Infectious Disease Pharmacists Certificate Program
- Infect Control Hosp Epidemiol 2014;35(12):1444–1451

☐ Yes  ☐ No

If yes, indicate who is accountable for stewardship activities (select all that apply)

10. Consultant pharmacy has staff trained/is experienced in antibiotic stewardship

11. Partnering with stewardship team at referral hospital

12. External infectious disease/stewardship consultant

13. Other: ____________________________
Actions to Improve Antibiotic Use: Policies

Does your facility have policies to improve antibiotic prescribing/use?

If yes, indicate which policies are in place (select all that apply)
- Requires prescribers to document a dose, duration, and indication for all antibiotic prescriptions
- Developed facility-specific algorithm for assessing residents suspected of infection
- Developed facility-specific algorithms for appropriate diagnostic testing (e.g., obtaining cultures) for specific infections
- Developed facility-specific treatment recommendations for infections
- Reviews antibiotic agents listed on the medication formulary
- Other: ____________________

- Sample Antibiotic Stewardship Policy & Procedure
- Sample Policy: Minimum Criteria for Infections
- Sample Letter to Prescriber
- Clinician Guide to Collecting Cultures

www.Medicare.QualisHealth.org/CoreNH

Generic policy templates… but the Minimum Criteria policy has the … Minimum Criteria, which you will see again in the Minimum Criteria for Antibiotics Tool and the Infection Specific SBAR forms.

Note that it may take a while to develop facility specific algorithms for treatment… would want to start with national guidelines, and modify based on local factors including facility based-antibiogram

Next to last bullet point on left… Reviews antibiotic agents listed on the medication formulary… the concern here is that there is a policy that assigns a accountability for who overlooks ABX formulary to ensure that antibiotics that are chosen for facility specific algorithms are readily available, especially those that are to be used for empiric treatment and taken from a E-kit or satellite pharmacy.
www.Medicare.QualisHealth.org/CoreNH

I’d like to highlight two links in the right hand side …. the SBAR for suspected UTI as an example of sub-element 20 “Utilizes a standard assessment and communication tool for residents suspected of having an infection.” and the Minimum Criteria for Antibiotics Tool
Complete this form before contacting the resident’s physician.

Date/Time ____________________________

Nursing Home Name ____________________________

Resident Name ____________________________ Date of Birth ____________________________

Physician/NP/PA ____________________________ Phone ____________________________

Fax ____________________________

Nurse ____________________________ Facility Phone ____________________________

Submitted by: __ Phone __ Fax __ In Person __ Other ________________

**Situation**

I am contacting you about a suspected UTI for the above resident.

Vital Signs: BP _______/______ HR ________ Resp. rate ________ Temp. ________

**Background**

Active diagnoses or other symptoms (especially, bladder, kidney/genitourinary conditions)

<table>
<thead>
<tr>
<th>Specify</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ No □ Yes The resident has an indwelling catheter</td>
</tr>
<tr>
<td>□ No □ Yes Patient is on dialysis</td>
</tr>
<tr>
<td>□ No □ Yes The resident is incontinent If yes, new/worsening? □ No □ Yes</td>
</tr>
<tr>
<td>□ No □ Yes Advance directives for limiting treatment related to antibiotics and/or hospitalizations Specify ____________________________</td>
</tr>
</tbody>
</table>

www.Medicare.QualisHealth.org/CoreNH (see under Actions to Improve Antibiotic Use AHRQ Suspected urinary Tract Infection)

Situation and Background… background starts to lay out the assessment necessary to make a decision of whether an antibiotic is indicated
www.Medicare.QualisHealth.org/CoreNH (see under Actions to Improve Antibiotic Use AHRQ Suspected urinary Tract Infection)

Note that key element of the assessment is concluding whether minimum criteria have been met… this should guide what kind of follow-up actions are taken, including whether a urinalysis and culture is obtained or antibiotics are ordered.
The Request section serves a double purpose of requesting orders and providing a guide for the types of orders that might be appropriate.
www.Medicare.QualisHealth.org/CoreNH (see under Actions to Improve Antibiotic Use- AHRQ Minimum Criteria for Antibiotics Tool)

The Minimum Criteria for Antibiotics Tool
3 common infections types... so if I choose UTI ...
The tools then makes me choose whether there is an indwelling catheter or not and gives guidance gathering cultures and whether to start empiric treatment.
The presence or absence of acute dysuria should be the guide as to whether one starts antibiotic treatment before the cultures results are available.
If I clicked yes, then minimum criteria is met
But if you click through the tool and do NOT meet minimum criteria, the tool will tell you that and provide guidance on follow-up actions.
Antibiogram is a key set of data... it tells you and your prescribers the resistance pattern for the population you serve....these top three links can help you whether you are working with your lab to create an antibiogram for your facility, or you are creating your own antibiogram with free downloadable software. I wanted to highlight a sample policy for use of antibiotic–time out...
Example Antibiotic SBAR:

**Situation:**
Resident on antibiotic therapy more than 48 hours, new labs and assessment available for review

**Background:**
- Initial order and indications for antibiotic (include drug, dose, schedule, route, and what infection the antibiotic is intended to treat)
- Drug allergies, Vital signs, clinical assessment of infection, Culture and Sensitivity lab results

**Assessment:**
No adverse reaction, S&Fs of infection improving (or not) from baseline

**Request:** Please review and advise if antibiotic should be discontinued or a more targeted antibiotic can be used instead.

This can be used to effectively communicate with prescribers so that antibiotics are not unnecessarily continued when no longer indicated.
Actions to Improve Antibiotic Use: Pharmacy Support

Does your consultant pharmacist support antibiotic stewardship activities?

If yes, indicate activities performed by the consultant pharmacist (select all that apply)

- Reviews antibiotic courses for appropriateness of administration and/or indication
- Establishes standards for clinical/laboratory monitoring for adverse drug events from antibiotic use
- Reviews microbiology culture data to assess and guide antibiotic selection

Note the emphasis on pharmacy support for ASP... these are strong suggestions for pharmacist’s areas of accountability. The trick is to integrate these pharmacy functions into your AS/ICIP/QAPI programs.
Tracking Antibiotic Stewardship: Processes

Does your facility monitor one or more measures of antibiotic use?

If yes, indicate which of the following are being tracked (select all that apply)

- Adherence to clinical assessment documentation (signs/symptoms, vital signs, physical exam findings)
- Adherence to prescribing documentation (dose, duration, indication)
- Adherence to facility-specific treatment recommendations

- Sample Antibiotic Use Tracking Tool
- Sample Monthly Antibiotic Summary Report

www.Medicare.QualisHealth.org/CoreNH  (See under tacking)

TRACKING: MONITORING ANTIBIOTIC PRESCRIBING, USE, AND RESISTANCE

Does your facility monitor one or more measures of antibiotic use?

☑ Yes ☑ No

If yes, indicate which of the following are being tracked (select all that apply)
28. Adherence to clinical assessment documentation (signs/symptoms, vital signs, physical exam findings)
29. Adherence to prescribing documentation (dose, duration, indication)
30. Adherence to facility-specific treatment recommendations
31. Performs point prevalence surveys of antibiotic use
32. Monitors rates of new antibiotic starts/1,000 resident-days
33. Monitors antibiotic days of therapy/1,000 resident-days
34. Other: ________________________________
<table>
<thead>
<tr>
<th>Tracking Antibiotic Stewardship: Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does your facility monitor one or more measures of antibiotic use?</td>
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<td>If yes, indicate which of the following are being tracked (select all that apply)</td>
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<td>• Other: ____________________</td>
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Tracking antibiotic use will make it possible to measure progress in ASP. Ultimately, you want lower rates of abx as measured in rates of Rx, point prevalence, and the antibiotic use ratio which takes into consideration both the number of Rx and duration of therapy.

Question: where would you obtain the days of therapy statistic?
Tracking Antibiotic Stewardship: Outcomes

Does your facility monitor one or more outcomes of antibiotic use?

- Monitors rates of C. difficile infection
- Monitors rates of antibiotic-resistant organisms
- Monitors rates of adverse drug events due to antibiotics
- Other: ____________________

- C-Diff Tracking Tool
- Sample MDRO Infection Tracking Tool
- National Healthcare Safety Network
- Antibiotic adverse drug events

www.Medicare.QualisHealth.org/CoreNH
## Tracking Antibiotic Stewardship: Outcomes

### Signs and Symptoms of Antibiotic Adverse Drug Events*

<table>
<thead>
<tr>
<th>Elevated kidney function tests</th>
<th>Elevated liver function tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elevated serum potassium</td>
<td>Decrease in platelets</td>
</tr>
<tr>
<td>Nausea/vomiting</td>
<td>Diarrhea</td>
</tr>
<tr>
<td>Loss of appetite</td>
<td>Flushing of skin</td>
</tr>
<tr>
<td>Lethargy</td>
<td>Dizziness</td>
</tr>
<tr>
<td>Hearing loss</td>
<td>Rash</td>
</tr>
<tr>
<td>Seizures</td>
<td>Ventricular arrhythmias</td>
</tr>
<tr>
<td>Peripheral neuropathy</td>
<td></td>
</tr>
</tbody>
</table>

Reporting to Staff

- Measures of antibiotic use at the facility
- Measures of outcomes related to antibiotic use (e.g., C.-diff rates)
- Report of facility antibiotic susceptibility patterns (within last 18 months)
- Personalized feedback on antibiotic prescribing practices (to clinical providers)
- Other: _______

These reports would come from the data in your tracking tools.
Stewardship Education

Does your facility provide educational resources and materials about antibiotic resistance and opportunity for improving antibiotic use?

If yes, indicate which of the following are being tracked (select all that apply)

- Clinical providers (e.g., MDs, NPs, PAs, PharmDs)
- Nursing staff (e.g., RNs, LPNs, CNAs)
- Residents and families
- Other: __________

- Antibiotic Fact Sheets
- Nursing Home Training Sessions
- EQuIP for LTC Training Materials and Webinars
- Antibiotic Stewardship Educational Resources for Residents and Families
- PowerPoint Training Medical Care Referral Form
- PowerPoint Training on Minimum Criteria for Common Infections
- Pocket Cards: MRSA, C-Diff, VRE, Situations When Antibiotics Not Indicated

Of these resources, I’d like to highlight the Pocket Cards available from AHRQ


4 cards 3 address c-diff, vre, and mrsa.. The 4th is a quick list of 12 nursing homes situations where systemic antibiotics are usually NOT indicated
JAMDA Antibiotic Stewardship Resources

https://www.jamda.com/article/S1525-8610(17)30430-9/fulltext

“Template for an Antibiotic Stewardship Policy for Post-Acute and Long-Term Care Settings”

• Antibiotic stewardship policy template
• ~50 links to stewardship resources

https://www.jamda.com/article/S1525-8610(17)30430-9/fulltext
EQuIP for LTC
“Education, Quality Infection Prevention”

• Created by WA Department of Health
• Link from Qualis Health Website or
  https://www.doh.wa.gov/YouandYourFamily/IllnessandDisease/HealthcareAssociatedInfections/EQuIP/LongTermCare
• Educational webinars and other resources for antibiotic stewardship and on-going 2018 series on infection control for long-term care

https://www.doh.wa.gov/YouandYourFamily/IllnessandDisease/HealthcareAssociatedInfections/EQuIP/LongTermCare
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