WELCOME!
Please MUTE your phones!
EQuIP for LTC webinar will begin at 10:00 AM PST

Today’s topic is “Antibiotic Stewardship Program Implementation”
10/25/17
Antibiotic Stewardship Program Implementation

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Speaker Disclosures

Dr. Jump has no direct conflicts of interest related to this presentation.

Dr. Jump has current research support from Steris, the VA, CDC and AHRQ. She has previously consulted for GOJO and Pfizer.

The opinions presented herein are my own and do not represent those of the Veterans Affairs system or the federal government.
Learning Objectives

• Review the Center for Medicare & Medicaid Conditions of Participation for an antibiotic stewardship program in long-term care facilities (LTCFs).

• Discuss successful antibiotic stewardship interventions in LTCFs.

• Describe strategies for implementing antibiotic stewardship in LTCFs.
Reform of Requirements for Long-Term Care Facilities
https://www.federalregister.gov/.../medicare-and-medicaid-programs-reform-of-require...
Oct 4, 2016 - This final rule will revise the requirements that Long-Term Care facilities must meet ...
Centers for Medicare & Medicaid Services (CMS), HHS.
Statutory and Regulatory ... · Why revise the long-term ... · General Comments

Nursing Homes - Centers for Medicare & Medicaid Services - CMS.gov
https://www.cms.gov › ... › Survey & Certification - Guidance to Laws & Regulations ▼
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Medicare and Medicaid Programs; Reform of Requirements for Long-Term Care Facilities

This final rule will revise the requirements that Long-Term Care facilities must meet to participate in the Medicare and Medicaid programs. The rule is effective on Tuesday, October 4, 2016.
§ 483.80 Infection control.

The facility must 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.

(3) An antibiotic stewardship program that includes antibiotic use protocols and a system to monitor antibiotic use.
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Nursing Homes

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

Downloads

Appendix PP 03-08-2017 [Effective through November 27, 2017] [PDF, 3MB]
Advance Appendix PP including Phase 2 [Effective November 28, 2017] [PDF, 3MB]
List of Revised FTags [Effective November 28, 2017] [PDF, 152KB]
S&C Memo: Revision to State Operations Manual Appendix PP for Phase 2 (Includes Training Information and Related Issues) [PDF, 121KB]
F-Tag Crosswalk [XLSX, 495KB]
Training for Phase 1 Implementation of New Nursing Home Regulations [PDF, 108KB]
New Long-term Care Survey Process – Slide Deck and Speaker Notes [PPTX, 8MB]

https://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/GuidanceforLawsAndRegulations/Nursing-Homes.html
Reform of Requirements

Surveys & Certification - Guidance to Laws & Regulations

Nursing Homes

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

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- Appendix PP 03-08-2017 [Effective through November 27, 2017] [PDF, 3MB]
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SUBJECT: Revision to State Operations Manual (SOM) Appendix PP for Phase 2, F-Tag Revisions, and Related Issues

Effective November 28, 2017

State Operations Manual

State Operations Manual
Appendix PP - Guidance to Surveyors for Long Term Care Facilities

Table of Contents

(Rev. XXX, XX-XX-17)
Organization

• F-tag for specific sections (§)
• Definitions
• Intent
• Guidance
• Procedures and Probes
• Investigative Protocol
• Key Elements of Non-Compliance
• Deficiency Categories
“stewardship”

- F881 on page 655 for § 483.80(a)(3)

- F690 on page 312-313
  F690—Incontinence; starts on page 301; § 483.25(e).

- F880 on page 633
  F880—Infection Control; starts on page 628; § 483.80(a)(e)(f).
Intent
(page 655)

• 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.

Facilities must develop an antibiotic stewardship program that promotes the appropriate use of antibiotics and includes a system of monitoring to improve resident outcomes and reduce antibiotic resistance.

This means that the antibiotic is prescribed for the correct indication, dose, and duration to appropriately treat the resident while also attempting to reduce the development of antibiotic-resistant organisms.
CDC’s Core Elements (page 657)

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

https://www.cdc.gov/longtermcare/prevention/antibiotic-stewardship.html
Protocols Must Monitor Use...

(page 658)

Incorporate monitoring of antibiotic use, including the frequency of monitoring/review.

Review when the resident is

• new to the facility
• returns or is transferred from a hospital or other facility
• during each monthly medication review
Protocols Must Also... (page 658)

• Assess residents for any infection using standardized tools and criteria

• Contain a system of reports related to monitoring antibiotic usage and resistance data.

• **Educate** prescribing practitioners and nursing staff on antibiotic use (stewardship) and the facility’s antibiotic use protocols. Record how it’s done (verbal, online etc.)

  Record how often
Give feedback to prescribing practitioners regarding
• antibiotic resistance data
• their antibiotic use and
• their compliance with facility antibiotic use protocols

Record how and when feedback is given.
Investigative Summary (page 659)

Do protocols address antibiotic prescribing practices?

- Documentation of the indication, dose, and duration of the antibiotic
- **Review of laboratory reports** to determine if the antibiotic is indicated or needs to be adjusted;
- An infection assessment tool or management algorithm is used when prescribing

Is there a system to monitor antibiotic use (i.e., antibiotic use reports, antibiotic resistance reports)?
Key Elements of Non-Compliance

Failure to develop and implement antibiotic use protocols that

• help ensure that residents who require antibiotics are prescribed the appropriate antibiotics;

• that address unnecessary or inappropriate antibiotic

Develop, promote and implement a facility-wide system to monitor the use of antibiotics.
Examples of Deficiencies
(page 659-60)

Immediate Jeopardy:

• Results of microbiological culture (indicating resistant bacteria) not communicated to practitioner; antibiotic not changed; resident hospitalized for complications

Actual Harm:

• No protocols or monitoring system. 2 residents on antibiotics without appropriate indication. Both developed *C. difficile* infection.
• Additionally, refer to §483.45(c), F756, for concerns related to the failure of the pharmacist to review and report any unnecessary antibiotic irregularity and §483.45(d), F757, for concerns related to unnecessary antibiotic use.

• Refer to 483.10(c)(1), 483.10(c)(4)-(6): the right to be fully informed in advance about care and treatment (F552) for concerns about education of residents and their representatives.
Learning Objectives

• Review the Center for Medicare & Medicaid Conditions of Participation for an antibiotic stewardship program in long-term care facilities (LTCFs).

• Discuss successful antibiotic stewardship interventions in LTCFs.

• Describe strategies for implementing antibiotic stewardship in LTCFs
Review of Antimicrobial Stewardship in LTCFs

- 20 studies with quantitative outcomes
  - 5 randomized controlled trials
  - 15 quasi-experimental analyses

- Quality: 11 good, 7 fair, 2 poor

- 14 with measurable changes
  - Reduced antibiotic starts
  - Reduced total antimicrobial use
  - Increased adherence to guidelines
  - Reduce incidence of *C. difficile* infection and rates of drug-resistant bacteria

Katz et al. Clinical Infectious Diseases 2017
<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tools and Technology</td>
<td>• Objects that individuals use to carry out their work</td>
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2 Additional Components

Involvement of Nurses (14 studies)

Structured Education (16 studies)

- Primary intervention for 7 studies

Sustained changes

- Compared local policy to published guidelines
- Individualized feedback to providers
- Focus on UTIs (vs. asymptomatic bacteriuria)
So what works?

• **Organization**: Integrate change into the workflow
  • Nurses—pre-preservation
  • Prescribers—post-prescriptive; communication via electronic medical record

• **Persons**: Involve professionals with infectious disease expertise
Intervention for catheter-associated ASB*

- Intervention site: 5 acute care and 5 CLC units at a VA medical center
- Control site: 3 acute and 2 CLC units
- On CLC wards, targeted nurses and prescribers
- Case-based audit and feedback and interactive slides. Control site given didactic slides and emailed guidelines

*Asymptomatic bacteriuria Trautner et al. JAMA Intern Med 2015;175(7):1120-7
### Intervention for catheter-associated ASB

<table>
<thead>
<tr>
<th>Outcomes for CLC residents</th>
<th>Baseline (n = 208)</th>
<th>Intervention (n = 36)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cases of ASB, n (%)</td>
<td>135 (65%)</td>
<td>25 (70%)</td>
</tr>
<tr>
<td>Cases of CAUTI, n (%)</td>
<td>73 (35%)</td>
<td>11 (31%)</td>
</tr>
<tr>
<td>Overtreatment of ASB</td>
<td>70/135 (52%)</td>
<td>5/25 (20%)</td>
</tr>
<tr>
<td>Undertreatment of CAUTI</td>
<td>9/73 (12%)</td>
<td>2/11 (18%)</td>
</tr>
</tbody>
</table>

Trautner et al. JAMA Intern Med 2015;175(7):1120-7
Infectious Disease Expertise: Rounds by Consultant

• Weekly rounds by an Infectious Disease physician and NP at a VA Community Living Center (CLC)
• Communication in-person and formal recommendations, orders left in **electronic medical record**
• Total antibiotic use decreased by 30%

Jump et al. JAGS 2013 61(5): 782-7
Infectious Disease Expertise: Chart Review

Beaulac et al. ICHE 2016 37(4): 433-9
• ID physicians & pharmacists reviewed daily pharmacy reports
• Accessed electronic medical records
• Recommendations to providers via email
• Decrease in antibiotic use and CDI rates

Pate et al. ICHE 2012 33(4): 405-8
• Physician and pharmacist reviewed charts weekly. Non-binding recommendations placed in chart; not permanent part of record.
• 21% reduction in antibiotic use
Facility Culture and Antibiotic Stewardship

Carter et al. JAGS 2017 May 65(5): 1073-1078
Did not respond to request for interviews

Medical Director, DON and Infection Control RN talked with us, together

Carter et al. JAGS 2017 May 65(5): 1073-1078
Did not respond to request for interviews

“I think the providers always listen, but do they respond in the way that maybe we were hoping for?”

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Carter et al. JAGS 2017 May 65(5): 1073-1078
Did not respond to request for interviews

“I think the providers always listen, but do they respond in the way that maybe we were hoping for?”

“In the beginning it was kind of a scary step, [to question] a doctor.... I tell them, ‘The CDC’s recommendation isn’t that we treat for 14 days every time now, can we cut it down a few?’ ”

Medical Director, DON and Infection Control RN talked with us, together

Carter et al. JAGS 2017 May 65(5): 1073-1078
Learning Objectives

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Antibiotic Use Protocols

Focus on common infections and
• Diagnostic criteria
• Appropriate antibiotic choices
• Length of therapy

Use standardized assessment criteria

Consider adapting from the Loeb Minimum Criteria, revised McGeer Criteria or from AHRQ website

Jump et al. JAMDA. in press
# Measure Antibiotic Use

<table>
<thead>
<tr>
<th>Metric</th>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Days of Therapy (DOT):</strong></td>
<td>Any dose of antibiotic given on a single day per 100 (or 1000) resident days</td>
<td>Estimates total burden of antibiotic use. Tracks changes in overall use.</td>
</tr>
<tr>
<td><strong>Defined Daily Dose (DDD):</strong></td>
<td>Standardized doses of antibiotics per 100 (or 1000) resident days</td>
<td>World Health Organization standardized measures of antibiotics</td>
</tr>
<tr>
<td><strong>Antibiotic Starts:</strong></td>
<td>Number of new antibiotic prescriptions per month or per 100 (or 1000) resident days</td>
<td>Measures frequency of prescribing. Tracks changes in starts.</td>
</tr>
<tr>
<td>Number of antibiotic prescriptions for duration &gt;7 days per month</td>
<td>Tracks efforts to reduce excessive length of prescriptions.</td>
<td>Does not measure the frequency of overall antibiotic prescriptions.</td>
</tr>
</tbody>
</table>

Content adapted with permission from Dr. D. Nace
Monitor Antibiotic Use and Resistance

Review antibiotic prescriptions
  - upon admission
  - upon return from hospital or ED
  - started by covering provider
  - during monthly med review

Review surveillance data of resistant bacteria

Develop an antibiogram
  - may have to include only urine

Jump et al. JAMDA. in press
Leverage the data....

Collect & Analyze

*Compliance with Antibiotic Use Protocols*

*Measure Antibiotic Use*

*Monitor Antibiotic Use and Resistance*

Share

*Feedback to Individuals*

*Feedback to Whole Facility*

*Education*
Feedback

Written reports to all staff:
  Overall antibiotic use
  Compliance with protocols
  Surveillance data for drug-resistant bacteria and for *C. difficile*

Written reports to individual providers:
  Provider’s antibiotic use
  Provider’s compliance with antibiotic use protocols
  Written acknowledgement of feedback

*Jump et al.* JAMDA. *in press*
Example of Individualized Feedback

Metric

Antibiotic prescription with dose, duration & indication

Urine culture ordered for residents indication of UTI

Reviewed and discussed:
• Antibiotic Use Protocols
• Antibiotic Stewardship Policy
• Antibiotic Use

Facility

Dr. A

Antibiotic prescription with dose, duration & indication
27 of 42 (64%) 8 of 8 (100%)

Urine culture ordered for residents indication of UTI
16 of 20 (80%) 2 of 4 (50%)

Length of Therapy

Facility

Dr. A

1 to 7 days
8 - 14 days
15 - 28 days
>28 days

Dr. A,
Sign and Date: __________________

Medical Director,
Sign and Date: __________________
Education

Antibiotic Stewardship
- To all staff, at least annually
- Document mode & frequency

- To residents (and family members)

Antibiotic Use Protocols
- To all prescribers, medical & nursing staff
- Document mode & frequency

Jump et al. JAMDA. in press
There’s help....

• Template of an Antibiotic Stewardship Policy

• Crosswalk between the policy and specific elements in the Interpretive Guidance Document

• List of Resources to help support your efforts
Antibiotic Stewardship Haiku

Do those bugs need drugs?
Antibiotic stewardship:
Only when needed

Thank you!

robinjump@gmail.com or Robin.Jump@va.gov