Antibiotic Stewardship in Long-Term Care Facilities

NHSN LTC Training
July 17 2018

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Learning Objectives

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

1. Discuss ways to track the core elements of antibiotic stewardship implementation using the annual survey
2. Identify opportunities to improve antibiotic use in UTI using the UTI module
3. Monitor outcomes of antibiotic stewardship using LabID event reporting
Antibiotics are Frequently Prescribed Inappropriately in Nursing Homes.

- An estimated 50-70% of NH residents will be prescribed one or more courses of systemic antibiotics in a year.\textsuperscript{1,2}

- 40-75% of antibiotic use in NHs is inappropriate:
  1. Diagnosis: treatment may not be indicated.
  2. Drug: antibiotic selection may not be correct.
  3. Dose: dosing may be inappropriate or not adjusted.
  4. Duration: treatment is longer than recommended guidelines.
  5. De-escalation: prescription is not adjusted based on clinical condition or laboratory results.
Antibiotics Save Lives but Increase the Risk of Adverse Events in Older Adults and Nursing Home Residents.

- Polypharmacy is associated with an increased risk of ADEs in older adults.\(^1,2\)
  - ADEs increase with the number of regularly scheduled medications in residents in NHs.

- In a cohort study at two NHs, 13% of ADEs were secondary to antibiotic use.\(^1\)

Antibiotics Increase Harm by Causing *Clostridium difficile* Infections in Nursing Homes.

- There are over 100,000 cases of *C. difficile* infection estimated to occur in NHs in a given year and among residents with *C. difficile* infection, up to 75% have had recent exposure to antibiotics.¹
  - Risk of acquiring *C. difficile* infection and subsequent complications, including death, are greatest in older adults.²

Antibiotic Use Leads to Antibiotic-Resistant Infections and the Spread of Antibiotic-Resistant Bacteria to Other Residents and Patients.

- Antibiotic exposure is one of the most important risk factors associated with the development of antibiotic resistance.\(^1,2\)
  - In many cases, antibiotic-resistant infections have higher mortality and worse outcomes such as longer hospital stays and higher healthcare costs.\(^3\)

- Residents who are colonized with antibiotic-resistant bacteria can spread these organisms to other residents and patients in other healthcare settings.\(^4,5\)

What is Antibiotic Stewardship?

- Antibiotic stewardship is a set of commitments and actions designed to **optimize** the treatment of infections while **reducing** the adverse events associated with antibiotic use.
- Antibiotic stewardship is fundamentally about **resident safety** and **high-quality healthcare**.

**THE RIGHT ANTIBIOTIC**
**AT THE RIGHT DOSE**
**AT THE RIGHT TIME**
Major Policy Development for Antibiotic Stewardship.

- CMS issued a final rule **requiring** nursing homes to have antibiotic stewardship integrated within pharmacy and infection prevention and control programs (IPC).
  - Interpretive guidelines based on the Core Elements.

The Core Elements of Antibiotic Stewardship for Nursing Homes.

Provide a framework for assessing current and new antibiotic stewardship activities, and for monitoring and improving antibiotic use:

- Leadership Commitment
- Accountability
- Drug Expertise
- Action
- Tracking
- Reporting
- Education

http://www.cdc.gov/longtermcare/prevention/antibiotic-stewardship.html
Leadership Commitment: Demonstrate support and commitment to safe and appropriate antibiotic use.

19. Does your facility have a written statement of support from leadership that supports efforts to improve antibiotic use?

[ ] Yes  [ ] No

20. Are antibiotic use and resistance data reviewed by leadership in quality assurance/performance improvement committee meetings?

[ ] Yes  [ ] No
Leadership Commitment: Essential First Step for Antibiotic Stewardship Implementation.

- NH leaders commit to improving antibiotic use.
  - Owners, facility administrators, regional and national leaders.

- Examples of demonstrating support:
  - Written statements that support improving antibiotic use and shared with staff, residents and families
  - Review antibiotic use and resistance data in quality improvement meetings
Accountability: Identify physician, nursing or pharmacy leads responsible for promoting and overseeing antibiotic stewardship activities in your facility.

*12. Are there one or more individuals responsible for the impact of activities to improve use of antibiotics at your facility?

   □ Yes      □ No

If Yes, what is the position of the individual(s)? (select all that apply)

   □ Medical director       □ Director of Nursing
   □ Consultant Pharmacist  □ Other (please specify): __________________________
Accountability: Identifying Individuals Who Will Lead Antibiotic Stewardship Implementation.

- It is critical to identify a local “champion” who will lead the implementation of antibiotic stewardship actions.¹
  - Medical Director
  - Nursing Director
  - Consultant Pharmacist
  - Other: IPC coordinator have key expertise and data to improve antibiotic use.

Drug Expertise: Establish access to consultant pharmacists or other individuals with experience or training in antibiotic stewardship in your facility.

*21. Does your facility have access to individual(s) with antibiotic stewardship expertise (e.g., consultant pharmacist trained in antibiotic stewardship, stewardship team at referral hospital, external infectious disease/stewardship consultant)? □ Yes □ No
Drug Expertise: Support for Antibiotic Stewardship Implementation.

- Establishing access to individuals with antibiotic expertise:
  - Engage consultant pharmacists
    - Incorporate monitoring of antibiotic use during monthly medication regimen review.
    - Provide antibiotic use reports.
  - Partner with antibiotic stewardship leads in referring hospitals in the same network.
  - Develop partnerships with infectious disease consultants in the community.
Action: Implement at least one policy or practice to improve antibiotic use.

*13. Does your facility have a policy that requires prescribers to document an indication for all antibiotics in the medical record or during order entry?  □ Yes □ No
   If Yes, has adherence to the policy to document an indication been monitored?  □ Yes □ No

*14. Does your facility provide facility-specific treatment recommendations, based on national guidelines and local susceptibility, to assist with antibiotic decision making for common clinical conditions?  □ Yes □ No
   If Yes, has adherence to facility-specific treatment recommendations been monitored?  □ Yes □ No

*15. Is there a formal procedure for performing a follow-up assessment 2-3 days after a new antibiotic start to determine whether the antibiotic is still indicated and appropriate (e.g. antibiotic time out)?  □ Yes □ No

*16. Does a physician, nurse, or pharmacist review courses of therapy for specified antibiotic agents and communicate results with prescribers (i.e., audit with feedback) at your facility?  □ Yes □ No
   If Yes, What type of feedback is provided to prescribers? (check all that apply)
   □ Feedback on antimicrobial route and/or dosing
   □ Feedback on the selection of antimicrobial therapy and/or duration of therapy
   □ Other (please specify): ________________________________
Action: Implementing Antibiotic Prescribing Policies to Improve Antibiotic Use.

- Antibiotic prescribing and use policies:
  - Documentation of indication, dose and duration for every antibiotic course.
  - Adherence to the documentation policy
Action: Implementing Antibiotic Prescribing Policies to Improve Antibiotic Use.

- Antibiotic prescribing and use policies:
  - Develop facility-specific treatment guidance for common infections based on practice guidelines.

*14. Does your facility provide facility-specific treatment recommendations, based on national guidelines and local susceptibility, to assist with antibiotic decision making for common clinical conditions? □ Yes □ No

If Yes, has adherence to facility-specific treatment recommendations been monitored? □ Yes □ No
Action: Implementing Antibiotic Prescribing Policies to Improve Antibiotic Use.

- Antibiotic prescribing and use policies:
  - “Antibiotic time-out”, reassessing treatment 2-3 days after antibiotic start.
Other Actions

- Antibiotic prescribing and use policies:
  - Develop facility-specific algorithms for appropriate diagnostic testing (i.e., obtaining cultures) for different infections.
  - Develop best practices for microbiology testing.
    - Avoiding “test of cure” for UTI or *C. difficile* infection.
Tracking: Monitor at least one process measure of antibiotic use and least one outcome from antibiotic use in your facility.

4. Does your laboratory provide a report summarizing the percent of antibiotic resistance seen in common organisms identified in cultures sent from your facility (often called an antibiogram)?

☐ Yes  ☐ No

If Yes, how often is this summary report or antibiogram provided to your facility? (check one)

☐ Once a year  ☐ Every 2 years  ☐ Other (specify): ______________________

17. Does the pharmacy service provide a monthly report tracking antibiotic use (e.g., new orders, number of days of antibiotic treatment) for the facility?

☐ Yes  ☐ No
Tracking Antibiotic Use

- Monitoring **antibiotic use** can help guide practice changes

- Antibiotic use can also be tracked by using electronic health records or manual chart review.

*17. Does the pharmacy service provide a monthly report tracking antibiotic use (e.g., new orders, number of days of antibiotic treatment) for the facility? □ Yes □ No

- Asymptomatic bacteriuria is common in NH residents.\(^1,2\)
  - Urine cultures are positive for bacteria in 25-50% of women and 15-35% of men in NHs.\(^3\)
- Up to 1/2 of antibiotics prescribed to treat UTI in older adults are unnecessary or inappropriate.\(^4-7\)
  - Foul-smelling or cloudy urine frequently leads to unnecessary urine testing and treatment.\(^6\)
- **Overtesting** leads to *overdiagnosis* of UTI, treatment of asymptomatic bacteriuria, risk for adverse drug events (ADE) and delays in diagnosis.\(^8\)

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### Tracking: Using the Urinary Tract Infection Module

- Tracking the number of urine cultures, antibiotic starts for UTI and UTI events that meet surveillance definitions can help with tracking of testing and treatment practices for UTI:
  - Tracking testing practices
  - Tracking antibiotic use for UTI through the number of antibiotic starts

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<th>Facility ID:</th>
<th>Location Code:</th>
<th>Number of residents</th>
<th>Number of residents with a urinary catheter</th>
<th>New antibiotic starts for UTI indication</th>
<th>Number of urine cultures ordered</th>
<th>Number of admissions</th>
<th>Number of admissions on C. diff treatment</th>
<th>Month:</th>
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Tracking: Active Monitoring of Health Outcomes.

- Monitor antibiotic use and **health outcomes** to guide practice changes
  - Health outcomes:
    - ADEs secondary to antibiotics
    - Cost of antibiotics
    - Rates of *C. difficile* infection
    - Antibiotic susceptibility profiles

*4. Does your laboratory provide a report summarizing the percent of antibiotic resistance seen in common organisms identified in cultures sent from your facility (often called an antibiogram)?*

- [ ] Yes
- [x] No

If Yes, how often is this summary report or antibiogram provided to your facility? (check one)

- [ ] Once a year
- [ ] Every 2 years
- [ ] Other (specify): ________________

http://www.rochesterpatientsafety.com/images_Content/Site1/Files/Pages/Nursing%20Homes/Managing%20Common%20Infections%20in%20Older%20Adults.pdf
Reporting: Provide regular feedback on antibiotic use and resistance to prescribing clinicians, nursing staff and other relevant staff.

16. Does a physician, nurse, or pharmacist review courses of therapy for specified antibiotic agents and communicate results with prescribers (i.e., audit with feedback) at your facility? □ Yes □ No

If Yes, What type of feedback is provided to prescribers? (check all that apply)

□ Feedback on antimicrobial route and/or dosing

□ Feedback on the selection of antimicrobial therapy and/or duration of therapy

□ Other (please specify): __________________________
Reporting: Providing regular feedback on antibiotic use and resistance to prescribing clinicians, nursing staff and other relevant staff.

- Reporting can motivate staff and sustain practice changes.
  - Providing feedback on prescribing practices and compliance with facility antibiotic use protocols
    - Provider-specific feedback and peer comparison may be an effective way to change prescribing behavior as demonstrated in the outpatient setting.¹

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

*18. Has your facility provided education to clinicians and other relevant staff on improving antibiotic use in the past 12 months?  □ Yes  □ No
Education: Providing Education to Staff and Residents to Improve Antibiotic Prescribing Practices.

- Education to staff, residents and families may be the first element implemented to address shared concerns about the change in antibiotic use practices.¹
- Provide education about antibiotic use to clinicians and nursing staff.²
  - Education can be provided through distribution of educational materials and through in-service training.
    - Face-to-face interactive workshops may be most effective.
- Provide ongoing education to residents and families to set expectations and address concerns about antibiotic prescribing.
  - Start the conversation early with residents and families.

Percent of U.S. Nursing Homes Reporting Implementation of All CDC Core Elements on 2016 Annual NHSN Survey*

*Preliminary results courtesy of Danielle Palms, adapted from presentation at SHEA Spring Conference 2017; St. Louis, MO. Abstract 9026
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Training Resources

- CDC Training on Antibiotic Stewardship, up to 8 hours of free CE, 4 section throughout 2018. Open to all clinicians, pharmacists, physician assistants, nurses, certified health educators, and public health practitioners with an MPH.
  - https://www.train.org/cdctrain/course/1075730
- Infection Prevention and Control training course
Thank you!