ABS Is a Priority. Now What?

https://www.cdc.gov/antibiotic-use/healthcare/pdfs/core-elements.pdf
Hospital Antibiotic Stewardship Checklist

This is a good tool to use to review your current efforts with your antibiotic stewardship team:
- Identify gaps
- Identify priorities
- Monitor progress

https://www.cdc.gov/antibiotic-use/healthcare/implementation/checklist.html

CORE ELEMENTS 1 AND 2: LEADERSHIP COMMITMENT/ACCOUNTABILITY
Leadership Commitment/Accountability

- Designate a physician (e.g., CMO) in the C-suite or individual that reports to C-suite to be accountable for the outcomes of the antibiotic stewardship.
- Approve a policy for the creation and/or expansion of the antibiotic stewardship program to include all core elements.
- Integrate stewardship activities into ongoing quality improvement and/or patient safety efforts in the hospital – Are you involved in a sepsis initiative?
- Create a reporting structure for the stewardship program to ensure that information on stewardship activities and outcomes is shared with facility leadership and the hospital board (e.g., semi-annual stewardship update at the board meeting).
- Issue a formal board-approved statement on the importance of the antibiotic stewardship program and include in the hospital's annual report.
- Issue a statement from the hospital leadership (e.g., medical, pharmacy and nursing) to all providers, staff and patients highlighting the hospital’s commitment to improving antibiotic use.
- Support training for hospital stewardship leaders on antibiotic stewardship through on-line or in-person.

Examples of Commitment in Action

Claire Barton Hospital and Clinic: Commitment to our Antibiotic Stewardship Program

Mission Statement: The Drug Stewardship Program at Claire Barton Hospital and Clinic is dedicated to improving the quality of care by promoting appropriate antibiotic use. The program includes:
- Education and awareness
- Clinical Pharmacy Consultation
- Antimicrobial Stewardship Leadership
- Monitoring and Prevention of Antimicrobial Resistance

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- Antimicrobial Stewardship Leadership
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Find a commitment to action

- Physicians will review the MDMP and be accountable for following the recommendations.
- Antimicrobial stewardship teams will be accountable for following the recommendations.
- Antimicrobial therapy will be revised as necessary, based on the recommendations.
- The team will work with the provider to ensure the correct and appropriate use of antibiotics.
- Antibiotic therapy will be reviewed by the provider and revised as necessary.
- A team of experts will review antibiotic therapy to ensure compliance with the recommendations.
- Antibiotic therapy will be reviewed and revised as necessary to ensure appropriate use.
- Antimicrobial therapy will be reviewed by the provider to ensure compliance with the recommendations.
- The team will work with the provider to ensure the correct and appropriate use of antibiotics.
Leadership Commitment/Accountability

Some small and Critical Access Hospitals have found it helpful to seek off-site support for their antibiotic stewardship efforts. Examples include:

- Enroll in multi-hospital, collaborative efforts to improve antibiotic stewardship
  - Check out what opportunities exist with KHA, KFMC, KDHE and KHC
- Funding remote consultation or telemedicine with experts in antibiotic stewardship (e.g., infectious diseases physicians and pharmacists)
  - Even when remote expertise is used, it is important to have a leader of the program who is on staff at the hospital
- Placing stewardship requirements into the contractual responsibilities of any external pharmacy services including a requirement that pharmacy contractors have formal stewardship

CORE ELEMENT 3: DRUG EXPERTISE
Drug Expertise

Examples of implementation strategies:
- Appoint a pharmacist leader, ideally someone who is on-site either full- or part-time. Consider having stewardship as part of the job description or service contract of the pharmacist leader and ensure that leaders have dedicated time to spend on developing and maintaining a stewardship.
- Appoint a physician leader to provide physician support to the antibiotic stewardship program, ideally someone who is on-site either full- or part-time.
- Offer access to training courses on antibiotic stewardship to help develop local.
- Seek additional expertise by joining multi-hospital improvement collaboratives or through remote consultation (e.g. telemedicine).

Medication Therapy and Patient Care: Specific Practice Areas—Statements 327

ASHP Statement on the Pharmacist’s Role in Antimicrobial Stewardship and Infection Prevention and Control

Position
The American Society of Health-System Pharmacists (ASHP) believes that pharmacists have a responsibility to take prominent roles in antimicrobial stewardship programs and participate in the infection prevention and control programs of health systems. This responsibility arises, in part, from pharmacists’ understanding of and influence over antimicrobial use within the health system. Further, ASHP believes that the pharmacist’s ability to effectively participate in antimicrobial stewardship and infection prevention and control efforts can be realized through clinical endeavors focused on proper antimicrobial utilization and membership on multidisciplinary work groups and committees involved in these endeavors. The pharmacist’s role in antimicrobial stewardship and infection prevention and control includes:

1. Providing education and training to healthcare providers about the appropriate use of antimicrobials.
2. Developing and implementing antimicrobial stewardship programs.
3. Surveillance systems to track the occurrence and transmission of infections.
4. Surveillance systems to track the use of antimicrobials and the development of antimicrobial resistance.
5. Promotion of evidence-based practices and interventions to prevent the development of infections.

Responsibilities of Pharmacists
Pharmacists’ responsibilities for antimicrobial stewardship and infection prevention and control include promoting the optimal use of antimicrobial agents, reducing the transmission of infections, and educating health professionals, patients, and the public.

https://www.ashp.org/-/media/ashp_policy_guidelines/policies-statements/pharmacists_role-antimicrobial-stewardship.pdf?la=en&hash=9B62450ACC29F5EBBBFEE7801A93E70A703AC12
# CORE ELEMENT 4: ACTION

## TABLE 1. KEY OPPORTUNITIES TO IMPROVE ANTIBIOTIC USE

<table>
<thead>
<tr>
<th>Community-acquired pneumonia</th>
<th>Diagnostic Considerations</th>
<th>Goal of Clinical Therapy</th>
<th>Assess Evidence of Infection Before Antimicrobial Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 days after onset of symptoms</td>
<td>Use the clinical criteria for diagnosis: adult with cough, sputum, fever, dyspnea, fatigue, and signs of pneumonia</td>
<td>Avoid empiric use of antimicrobial therapy</td>
<td>Consider clinical criteria for diagnosis: adult with cough, sputum, fever, dyspnea, fatigue, and signs of pneumonia</td>
</tr>
</tbody>
</table>

**Comment:**
- Use the clinical criteria for diagnosis: adult with cough, sputum, fever, dyspnea, fatigue, and signs of pneumonia.
- Avoid empiric use of antimicrobial therapy.
- Consider clinical criteria for diagnosis: adult with cough, sputum, fever, dyspnea, fatigue, and signs of pneumonia.

<table>
<thead>
<tr>
<th>Urinary tract infection</th>
<th>Diagnostic Considerations</th>
<th>Goal of Clinical Therapy</th>
<th>Assess Evidence of Infection Before Antimicrobial Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 days after onset of symptoms</td>
<td>Use the clinical criteria for diagnosis: adult with dysuria, frequency, urgency, and suprapubic pain</td>
<td>Avoid empiric use of antimicrobial therapy</td>
<td>Consider clinical criteria for diagnosis: adult with dysuria, frequency, urgency, and suprapubic pain</td>
</tr>
</tbody>
</table>

**Comment:**
- Use the clinical criteria for diagnosis: adult with dysuria, frequency, urgency, and suprapubic pain.
- Avoid empiric use of antimicrobial therapy.
- Consider clinical criteria for diagnosis: adult with dysuria, frequency, urgency, and suprapubic pain.
Action — Pharmacist

The following items are daily activities that can also be performed by a pharmacist:

- Review antibiotics for unnecessary duplicative antibiotic therapy, such as double anaerobic (e.g., piperacillin/tazobactam AND metronidazole) or double anti-MRSA coverage.

- Review for opportunities for intravenous to oral conversion (e.g., patients taking other oral medications).

- Monitor for medication safety (e.g., renal dose adjustments) though these represent general pharmacy practices and are not specific to stewardship.
Action – Nurses

Nurses play an important role in implementing stewardship actions in Critical Access Hospitals.¹³ For example, nurses can:

- Review culture techniques to ensure that microbiology cultures are collected properly.
- Review culture results with the treating clinician and pharmacist.
- Monitor response to antibiotic therapy with feedback to the treating clinician and pharmacist.
- Assess oral intake and clinical status to alert providers and pharmacist when there are opportunities to convert antibiotics from intravenous to oral therapy.
- Educate patients about potential adverse events associated with antibiotics, especially *C. difficile* infection.
- Nurses are also well positioned to initiate “antibiotic time-outs” with the treating clinician and pharmacist, and review antibiotic therapy after 48 hours of treatment.

Study Finds Nurses are the Missing Link in Strengthening Hospital-Wide Antimicrobial Stewardship

On June 11, News Medical reported that Antimicrobial Stewardship Programs (ASPs) are more effective when nurses are educated about antimicrobial stewardship and buy in to the cause, according to a recent study conducted at Jefferson Health in New Jersey.

“Our findings show that nurses have been overlooked and under-utilized in ASPs,” said the study’s lead author Cindy Hov, DO, MA, MBA, FACN, Jefferson Health – New Jersey Infection Control Officer. “Changing the culture and empowering nurses to speak up about antimicrobial stewardship leads to closer team coordination and cross-discipline collaboration, which ultimately saves lives.”

A 10-question quiz found that, in general, nurses were not comfortable with microbiology reports or familiar with unique features of different antibiotics. Jefferson Health was able to achieve buy-in with its nurses by engaging chief nursing officers, opening participation in ASPs to nursing leadership, educators, performance improvement staff, and infection control staff. “Nurse-speak” was also used in developing written materials and integrated into their typical nursing workflow.

[https://www.news-medical.net/news/20180611/Nurses-have-been-overlooked-in-antimicrobial-stewardship-programs-study-finds.aspx](https://www.news-medical.net/news/20180611/Nurses-have-been-overlooked-in-antimicrobial-stewardship-programs-study-finds.aspx)
Redefining the Antibiotic Stewardship Team:
Recommendations from the American Nurses Association/Centers for Disease Control and Prevention Workgroup on the Role of Registered Nurses in Hospital Antibiotic Stewardship Practices

Effective Date: 2017

Executive Summary

The purpose of this American Nurses Association/Centers for Disease Control and Prevention (ANA/CDC) White Paper is to inform registered nurses in the United States about the problem of antibiotic resistance and facilitate their role in hospital antibiotic stewardship programs. The White Paper is the result of a series of online meetings. The purpose of the meeting is to explore how nurses can become active participants in antibiotic stewardship initiatives. The purpose of the meeting is to explore how nurses can become active participants in antibiotic stewardship initiatives.

https://www.cdc.gov/antibiotic-use/healthcare/pdfs/ANA-CDC-Whitepapers.pdf

NQF Partners Playbook:
Antibiotic Stewardship in Acute Care

CORE ELEMENT 5: TRACKING

Tracking

- Submit antibiotic use and resistance through CDC NHSN AU and Resistance Module. Alternative approach (if NHSN AU Option not feasible): Calculate defined daily dose (DDD) per **WHO ATC DDD Guidelines** for top 5 commonly used antibiotics (e.g., ceftriaxone, azithromycin, vancomycin, piperacillin-tazobactam, and fluoroquinolones). This can be useful in tracking antibiotic use over time at a given hospital. Note that the DDD metric has limitations in **pediatrics**.
- Monitor adherence to facility-specific treatment recommendations (see above in Action) for CAP, UTI and SSTI. If feasible, consider tracking adherence to treatment recommendations per provider.
- Monitor the performance of antibiotic time-outs to see how often these are being done and if opportunities to improve use are being realized during time-outs.
- Perform a medication use evaluation to assess courses of therapy for selected antibiotics (e.g., piperacillin-tazobactam, carbapenems, vancomycin, fluoroquinolones) to see if there are opportunities to improve use.
- Monitor how often patients are converted from intravenous to oral therapy and assess to see if there are missed opportunities to convert.
- Assess how often patients are prescribed unnecessary duplicate therapy (e.g., two antibiotics to treat anaerobes).
NQF Partners Playbook

**TABLE 1. SUGGESTED MEASURES FOR ANTIBIOTIC STEWARDSHIP**

<table>
<thead>
<tr>
<th>Measurement Area</th>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Antibiotic consumption</strong></td>
<td>Days of therapy (DOT) per 1,000 patient-days—overall and for specific agents or classes of agents</td>
</tr>
<tr>
<td></td>
<td>Defined daily doses (DDD) per 1,000 patient-days (DOT not applicable)</td>
</tr>
<tr>
<td></td>
<td>Cost analysis using published Antibiotic Administration Framework</td>
</tr>
<tr>
<td><strong>PROCESS MEASURES</strong></td>
<td>Physical examination (with each antibiotic course)</td>
</tr>
<tr>
<td></td>
<td>Percentage of cases where therapy is appropriate (consideration for resistant infections, such as MRSA)</td>
</tr>
<tr>
<td></td>
<td>Appropriate treatment of bloodstream infections (Box C: Acute Care)</td>
</tr>
<tr>
<td></td>
<td>Frequency at which de-escalation occurs</td>
</tr>
</tbody>
</table>
|                  | Brown et al. 
|                  | Antibiotics not prescribed to treat asymptomatic bacteriuria |
|                  | Appropriate exclusion of antibiotics during outpatient visits |
|                  | Adherence to hospital-specific guidelines |
|                  | Compliance with ASHP recommendations |
|                  | Frequency of performance of antibiotic time-outs or reviews |
|                  | Duration administration of appropriate antibiotics in cases of suspected infections |

**Outcome Measures**

<table>
<thead>
<tr>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of stay</td>
</tr>
<tr>
<td>Midi-adjudicated mortality</td>
</tr>
<tr>
<td>Hospital-acquired infections for select infections</td>
</tr>
<tr>
<td>Hospital-acquired, catheter-associated infections</td>
</tr>
<tr>
<td>Adverse drug reactions (number per 1,000 patient-days)</td>
</tr>
<tr>
<td>Adverse drug reactions (number per 1,000 patient-days)</td>
</tr>
<tr>
<td>Adverse drug reactions (number per 1,000 patient-days)</td>
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</tr>
<tr>
<td>Adverse drug reactions (number per 1,000 patient-days)</td>
</tr>
<tr>
<td>Patient's cost per patient-day</td>
</tr>
<tr>
<td>Antibiotic cost per admission</td>
</tr>
<tr>
<td>Not applicable risk per admission</td>
</tr>
</tbody>
</table>

*Note: NQF-recommended measure
CORE ELEMENT 6: REPORTING

Reporting

- Prepare regular reports on the measures being tracked related to antibiotic use. Include these data as a standing report to key stakeholders within the facility (e.g., pharmacy and therapeutics, patient safety/quality, medical staff leadership/committees, and hospital board).
- Hold quarterly staff meetings with providers if feasible. Share provider-specific reports with individual clinicians confidentially.
- Distribute data and key messaging through staff newsletters and emails.
- Present "what we are doing and why we need stewardship" to the governing board.
CORE ELEMENT 7: EDUCATION

Education

- Integrate regular (e.g., monthly or at least quarterly) updates on antibiotic stewardship and resistance into communications tools with particular focus on interventions related to CAP, UTI and SSTI (e.g., blogs, website, intranet, and employee newsletters).
- Provide targeted in-person or web-based educational presentations and messages to key provider, pharmacist and nursing groups at least annually (e.g., staff meetings for sections).
- One-on-one provider education/coaching (e.g., academic detailing).
- Incorporate antibiotic stewardship education into orientation for new medical, pharmacist and nursing staff and required annual provider educational programs.
- Incorporate antibiotic stewardship into (re)credentialing education.
- Ask the patient-family advisory committee for input on patient education material.
- Develop stories to share how patients' lives are affected by complications of antibiotic use (e.g. C. difficile infection).
- Include information on antibiotics in patient education materials.
Resources

https://www.cdc.gov/antibiotic-use/

https://greatplainsqin.org/initiatives/antibiotic-stewardship/

https://insight.livestories.com/s/v2/kansas-hapac-advisory-group/66c3c547-eb7e-4087-b66a-0a9c93760b8e/

www.APIC.org

http://www.idsociety.org/Guidelines/Patient_Care/IDSA_Practice_Guidelines/Language-2814/English/Implementing_an_Antibiotic_Stewardship_Program/

References


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This material was prepared for the Kansas Quality Initiative Network, the Medicare Quality Improvement Organization for Kansas, Nebraska, North Dakota, South Dakota, and Wisconsin, under contract with the Centers for Medicare & Medicaid Services (CMS), an agency of the U.S. Department of Health and Human Services. The contents presented do not necessarily reflect CMS policy. 150099-0522013-3 C-106-180718-2.