Antibiotic Stewardship as Part of Your Quality Improvement Program

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Objectives

• Examine current national antibiotic stewardship efforts
• Understand basic Quality Improvement (QI) processes
• Understand how communication with team members and patients/residents/family members is essential to success
NATIONAL ANTIBIOTIC STEWARDSHIP (ABS) EFFORTS
Antibiotic Prescription Rates

Community Antibiotic Prescriptions per 1,000 Population by State - 2015

Each year 269.4 million antibiotic prescriptions are written in the United States; enough to give 4 out of every 5 people one prescription.

Data source: QuintilesIMS Xponent, 2015

Current Quality Improvement Efforts and Antibiotic Stewardship

• Are you implementing any type of Antibiotic Stewardship (ABS) Plan?
• Are you using the CDC’s National Health Safety Network (NHSN) to track infection?
• Are you collecting any prescribing/use data?
• Do you track types of antibiotics used?
• Do you have a standing Quality Improvement team?
• Have you or are you conducting ANY Performance Improvement Projects?
Collecting & Using Data: Identifying Gaps and Opportunities

• What systems do you have for collecting data?
  – Different tools/types of data are available?
  – As close to real time as possible for QI work

• What do you do with that data?
  – Reports that are accessible to staff, leadership, board members, residents and family
  – Dashboards that are also accessible to all
  – Systems for ongoing QAPI monitoring (performance metrics) once a change has been implemented
Where to Find Current Data

- CDC’s National Ambulatory Medical Care Survey (NAMCS) and National Hospital Ambulatory Medical Care Survey (NHAMCS) can be used to measure outpatient antibiotic prescribing and appropriateness in U.S. doctor’s offices, emergency departments, and hospital-based clinics.

- Proprietary datasets from third party vendors.
  - QuintilesIMS (formerly IMS Health) Xponent database can be used to measure the number and rates of outpatient, oral antibiotics dispensed in U.S. community pharmacies.

- Healthcare Effectiveness Data and Information Set (HEDIS), can be used to examine the quality of antibiotic prescribing by region and across health plans.

https://www.cdc.gov/antibiotic-use/community/programs-measurement/measuring-antibiotic-prescribing.html
Current Quality Measures (HEDIS Reporting)

• Appropriate testing for children with pharyngitis: percentage of children 2 to 18 years of age who were diagnosed with pharyngitis, prescribed an antibiotic and received a group A *Streptococcus* (strep) test for the episode.
  
  – Nationally, in 2012, mean performance across all health plans was 80% (range 2–97%), compared to a goal of 100%.\textsuperscript{6}

• Appropriate treatment for children with upper respiratory infection (URI): percent of children 3 months to 18 years of age with a diagnosis of URI who were not prescribed antibiotics on or three days after the episode date.
  
  – Nationally, in 2012, mean performance across all health plans was 83% (range 45–99%), compared to a goal of 100%.\textsuperscript{6}

• Avoidance of antibiotic treatment in adults with acute bronchitis (inverted the measure rate and renamed measure for 2008): percent of adults diagnosed with acute bronchitis who were not dispensed an antibiotic prescription.
  
  – Nationally, in 2012, mean performance across all health plans was 23% (range 7-72), compared to a goal of 100%.

https://www.cdc.gov/antibiotic-use/community/programs-measurement/measuring-antibiotic-prescribing.html
Current Goals

The White House National Action Plan for Combating Antibiotic-Resistant Bacteria (CARB) to reduce inappropriate antibiotic outpatient antibiotic use by 50 percent by the year 2020.

https://www.cdc.gov/antibiotic-use/community/programs-measurement/measuring-antibiotic-prescribing.html
UTILIZING QUALITY IMPROVEMENT TECHNIQUES FOR ABS
Root Cause Analysis
Using the 5 Why’s Method

• Develops the problem statement.
• The team keeps asking “Why?” until there is agreement the root cause has been identified.
• To determine if the team truly has found the root cause, ask these questions:
  • Would the event have occurred if this cause had not been present?
  • Will the problem recur if this cause is corrected or eliminated?

If “No” is the answer to both questions, then the team has identified the root cause.

If the answer is “Yes” to either question, the team needs to do some further analysis to get to the root cause.
Setting SMART Goals

How good do you want to be and by when?

• Specific – What exactly are we improving
• Measurable – Use hard numbers not percentages
• Attainable – Do you have the capacity to reach the goal
• Relevant – Is this issue a key priority at the time or just an quick easy win
• Time-Bound – When do we want to improvement to be made and how do we break the goal into smaller increments over the course of the project?

Benchmarking

• Internal
  – Comparing processes within the organization

• Competitive
  – Comparing processes against another similar organization

• Functional
  – Comparing against similar type of work processes in different disciplines

• Generic
  – Comparing against other industries, regardless of the services provided
Data Tracking Categories

- Consults given to consumers about ABS efforts
- Number or prescriptions written
- Infection for which a prescription is written
- Number or drugs prescribed (duration)
- Type of drugs prescribed (intravenous to oral)
- Transition time from intravenous to oral
- Number of antibiotic “time-outs” initiated
- Results of antibiotic “time-outs”
- Number of cultures collected properly.
- Time between culture results and review of the results with the treating clinician and pharmacist.
*Base the development, implementation and evaluation of EVERYTHING in your home on the Institute for Healthcare Improvement’s (IHI)

**MODEL FOR IMPROVEMENT**

*Every challenge*
*Every opportunity*
*Every deficiency*
*Every want/wish/desire.....*
The Plan, Do, Study, Act (PDSA) Model

• **Plan**
  – Identify objectives, predict outcomes, collect baseline data

• **Do**
  – Test interventions (small scale)

• **Study**
  – Collect post data and evaluate findings

• **Act**
  – Adjust the plan or implement the change
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.

• If feasible, share provider-specific reports with individual clinicians confidentially.

• Distribute data and key messaging through staff newsletters and emails.
COMMUNICATION IS THE KEY TO LONG-TERM SUCCESS

Engaging Front Line Teams

• Is there something preventing you from getting your work done?

• What is frustrating you with the work around this initiative or this aspect of care or service?

• Are there any colleagues who deserve special recognition for their efforts on this initiative or this aspect of care or service?

• Are there any colleagues who could be helped through coaching/training to make this initiative or aspect of care or service more successful?

• What feedback, if any, have you heard from patients/residents and families about changes taking place as part of this initiative?
Communicate with Patients, Residents, and Families

- Including antibiotic stewardship information in routine communications with patients/residents/families
- Make sure all patients, residents, and family members have input on antibiotic stewardship efforts in resident and family advisory groups and other venues
- Ask residents and family members to tell you about their quality concerns
- Try to view concerns through residents’ eyes
- Consider including antibiotic stewardship information in routine communications to families
Nurses play an important role in implementing stewardship actions in critical access hospitals. 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.
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.
Tangible Benefits Quality Improvement Efforts

- Consistency with the organization’s mission
- Establishing and fostering relationships with other healthcare organizations
- Increased ability to market Continuous Quality Improvement as a reason to choose you as a provider
- Higher quality of care and fewer rehospitalizations
- Potential for increased market share from improved care practices
- The ability to work with larger health systems and find solutions to other persistent problem issues besides ABS efforts
- Increased interaction with state-wide healthcare leaders and stakeholders
- Increased community outreach and support from patients/residents/families
Resources

1. Great Plains QIN Antibiotic Stewardship Web Page - Outpatient Providers:
   https://greatplainsqin.org/initiatives/antibiotic-stewardship/
   – CDC Outpatient Core Element Video Series
   – Past Training Events
   – Documents and Resources

2. Great Plains QIN Antibiotic Stewardship Resources for Long-term Care:

3. Great Plains QIN Long-term Care Antibiotic Stewardship Plan Template:

4. NCC Nursing Home Training Sessions for Antibiotic Stewardship (free CEs):
   http://qioprogram.org/nursing-home-training-sessions

5. CDC Antibiotic Stewardship Resources: https://www.cdc.gov/antibiotic-use

   https://insight.livestories.com/s/v2/kansas-hai-ar-advisory-group/66c57a47-eb7e-4807-b666-00ac93760f8e/

7. Infectious Disease Society of America’s Antibiotic Stewardship Resources:
   http://www.idssociety.org/Guidelines/Patient_Care/IDSA_Practice_Guidelines/Language_-28144/English/Implementing_an_Antibiotic_Stewardship_Program/

8. Association of Professions in Infection Control and Epidemiology (APIC) Resources:
   https://apic.org/
References


5. Centers for Disease Control.

6. Hagmeier, N. Great Plains QIN. KHERF Quality Corner Presentation. July 2018


9. Reeves, J. Great Plains QIN Plan, Do, Study, Act, Rinse and Repeat. October 2017

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