

# Antimicrobial Stewardship: Starting Small to Maximize Success

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## Disclosure

- ▶ No actual or potential conflicts of interests in relation to this presentation
- ▶ No "off-label" uses of medications will be discussed

## Objectives

- ▶ Review current antimicrobial stewardship guidelines
- ▶ Discuss strategies to get your antimicrobial stewardship committee up and working
- ▶ Identify simple antimicrobial stewardship activities that can demonstrate impact within your healthcare organization

## Antimicrobial Stewardship

Why do we need it?

- ▶ Increased prevalence of drug-resistant pathogens<sup>1</sup>
- ▶ 20% to 50% of all antibiotics prescribed in the US are unnecessary or inappropriate<sup>2</sup>
- ▶ Antimicrobial Stewardship Programs (ASP)s can optimize the treatment of infections and reduce adverse associated with antibiotic use<sup>2</sup>
  - ▶ Improve the quality of care
  - ▶ Improve patient safety
  - ▶ Reduce treatment failures
  - ▶ Increase frequency of correct prescribing and prophylaxis

## Antimicrobial Stewardship Guidelines<sup>3</sup>

- ▶ Clinical Infectious Diseases 2016 May 15;62(10):e51-77
- ▶ Broken down into different categories
  - ▶ Interventions
  - ▶ Optimization
  - ▶ Microbiology & Lab diagnostics
  - ▶ Measurement
- ▶ 28 recommendations across all 4 categories
- ▶ Still correlates with the CDC's Core Elements of Antimicrobial Stewardship

## Antimicrobial Stewardship CDC Core Elements

- ▶ Released in 2014 to help identify key structural/functional aspects of effective antimicrobial stewardship programs
- ▶ 7 total elements

## Antimicrobial Stewardship CDC Core Elements<sup>2</sup>

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

## Antimicrobial Stewardship CDC Core Elements

- ▶ The problem...
- ▶ CDC and the National Healthcare Safety Network have been tracking core element implementation
- ▶ Big disparity with implementation when broken down according to bed size<sup>4</sup>
  - ▶ More than 50% of hospitals with more than 50 beds met all 7 core elements
  - ▶ Only 26% of hospitals with less than 25 beds report meeting all 7 core elements

## Core Elements 1 & 2 Leadership Commitment & Accountability

- ▶ Important to ensure allocation of resources needed for ASPs
  - ▶ Hospital leadership (the C suite)
  - ▶ Chief medical officer
  - ▶ Pharmacy director
  - ▶ Nursing leaders – CNO
- ▶ All of these can help further facilitate implementation of stewardship initiatives to create a strong and sustainable program

## Leadership Commitment/Accountability Strategies

- ▶ Write a letter to hospital leadership
- ▶ Develop and seek approval for a formal policy regarding the creation of an ASP to include ALL core elements
- ▶ Ask for a formal statement from hospital leadership that details their support and the importance of an ASP
  - ▶ Disseminate that statement to all hospital staff
- ▶ Create a structure for reporting ASP activities/progress/outcomes to ensure that hospital leadership is aware of what the ASP is doing
- ▶ Support training

## Leadership Commitment/Accountability Strategies

- ▶ Consider enrolling in collaborative efforts to improve antibiotic use
  - ▶ Check with KHA, state or local agencies, or larger/academic medical centers to find collaborators
- ▶ Fund remote consultation or telemedicine with experts in antimicrobial stewardship
- ▶ If you have contractual agreements with external pharmacy services, consider requiring those contractors to have formal stewardship training

## Core Element 3 – Drug Expertise

- ▶ Appoint a single pharmacist leader responsible for working to improve antibiotic use

## Drug Expertise Strategies

- ▶ Pharmacist – onsite either full or part time
  - ▶ Consider antimicrobial stewardship being part of their job description or contract
  - ▶ Dedicated time spent on ASP activities – both developing and maintaining
- ▶ Physician – provides support to ASP development/initiatives
  - ▶ Champion
- ▶ Telemedicine collaboratives

## Core Element 4 – Action

- ▶ Implementing at least one recommended intervention or action that has the potential to impact antibiotic use and patient care at your facility
- ▶ The workhorse of the ASP
- ▶ Easy to get stuck

## Action Strategies

- ▶ Develop policies that support optimal antibiotic use
  - ▶ Require proper documentation of the dose, duration, and indications of antibiotics
- ▶ Develop/implement facility specific treatment recommendations
  - ▶ Don't reinvent the wheel
  - ▶ Find nearby hospitals recommendations and adapt to your facility
  - ▶ Guidelines
  - ▶ Online resources

## Action Strategies

- ▶ Consider what drives the majority of antibiotic use in your facility
- ▶ Usual suspects
  - ▶ Community-acquired pneumonia (CAP)
  - ▶ Urinary tract infections (UTI)
  - ▶ Skin and soft tissue infections (SSTI)
- ▶ Developing specific interventions developed around these select infections can have a big impact on antibiotic use

## Action Strategies

- ▶ CAP
  - ▶ Empiric antipseudomonal antibiotic?
  - ▶ Empiric anti-MRSA antibiotic?
  - ▶ Limit treatment to 5-7 days if patient has a timely clinical response
- ▶ SSTI
  - ▶ Develop guidelines that distinguish purulent and non-purulent so they can be managed appropriately
  - ▶ Empiric anti-MRSA antibiotic?
  - ▶ Length of therapy

## Action Strategies

- ▶ UTI
- ▶ Does the patient have true symptoms of a UTI?
  - ▶ Urgency, frequency, dysuria, suprapubic pain, flank pain, pelvic discomfort, acute hematuria
  - ▶ Non-specific symptoms such as delirium, nausea, or vomiting ≠ UTI
  - ▶ If not, do you really need a urine screen/culture?
  - ▶ Catheterized patients should have symptoms of UTI as well
    - ▶ Cloudy or smelly urine ≠ UTI
- ▶ Top Ten Myths Regarding the Diagnosis and Treatment of Urinary Tract Infections
  - ▶ The Journal of Emergency Medicine, Vol. 51, No. 1, pp. 25–30, 2016

## Action Strategies

- ▶ Antibiotic "time outs"
- ▶ Drug utilization evaluation
- ▶ Specify key antibiotics that require review
  - ▶ Can be based on spectrum, cost, etc
  - ▶ Carbapenems
  - ▶ Ertapenem
  - ▶ Vancomycin or other anti-MRSA antibiotics
  - ▶ Dual anti-pseudomonal antibiotics
  - ▶ Dual anti-anaerobic antibiotics
- ▶ Formulary restriction

## Action Strategies

- ▶ Pharmacy-driven
  - ▶ IV to oral antibiotic therapy
    - ▶ Develop criteria that pharmacists and nursing can use to determine when/if a patient can be changed to oral antibiotics
      - ▶ Taking other oral medications
      - ▶ Tolerating enteral diet
      - ▶ No nausea/vomiting
  - ▶ Dose adjustments
    - ▶ Assess the patient's renal function and need to change renally-eliminated antibiotics
  - ▶ Dose optimization
    - ▶ Pharmacy is good at dosing antibiotics based on pharmacokinetic parameters
    - ▶ We were trained to do this

## Action Strategies

- ▶ Pharmacy-driven
  - ▶ Automatic alerts of duplicate therapies
  - ▶ Time-sensitive automatic stop orders
  - ▶ Detection and prevention of antibiotic-related drug-drug interactions

## Action Strategies

- ▶ Don't forget about Nurses!
  - ▶ Check culture & sensitivity reports on your patient
    - ▶ Review results with provider and pharmacist
  - ▶ Monitor response to antibiotics
    - ▶ Give feedback to provider and pharmacist
  - ▶ Assess oral intake status/recommend IV to PO
  - ▶ Medication education/antibiotic side effects
  - ▶ Initiate antibiotic "time outs" with the provider or pharmacist

## Core Element 5 - Tracking

- ▶ Tracking data is essential for assessing ASP actions
- ▶ Review options and make decisions based on local needs and resources

## Tracking Strategies

- ▶ Are facility-established recommendations or guidelines being followed?
  - ▶ Drug use evaluations
  - ▶ Antibiotic audit forms
- ▶ Antibiotic Use Measures
  - ▶ Days of Therapy (DOT)
  - ▶ Defined Daily Dose (DDD)
  - ▶ Specific Antibiotics
  - ▶ Limited number of antibiotics

## Tracking Strategies

- ▶ National Healthcare Safety Network (NHSN)
  - ▶ CDC program
  - ▶ Provides analysis and benchmark data for facilities that electronically submit data
  - ▶ Free\*
- ▶ Provider-level monitoring
- ▶ Avoid antibiotic expenditures as a way to track ASP effectiveness

## Tracking Strategies

- ▶ Implement a tracking system for pharmacist and/or nursing-driven interventions
  - ▶ Internet-based tracking systems
  - ▶ Spreadsheet-based system
  - ▶ Tic marks
  - ▶ Emails, Voicemails, texts to a designated ASP member to track
- ▶ Trend antibiograms – do you see an improvement in resistance rates?

## Core Element 6 - Reporting

- ▶ Tracking data should be reported to providers and hospital leadership
- ▶ Determine optimal timing and format/delivery of reports

## Reporting Strategies

- ▶ Prepare regular reports (bi-annually, annually) about measures being tracked as part of ASP
  - ▶ Standing report to as part of Pharmacy & Therapeutics Committee, Medical Staff Committees, and the hospital board
- ▶ Provider specific reports should remain confidential, shared only with the provider as an educational opportunity
- ▶ Celebrate wins with hospital staff via newsletters, email, etc

## Core Element 7 - Education

- ▶ Due to size of small and critical access hospitals, education can be more personal (even provider to provider, pharmacist to provider)
- ▶ Nursing education can also be helpful
  - ▶ Criteria for IV to PO, blood/sputum culture collection, criteria for urine culture)
- ▶ Patient and family education often easier due to close knit nature of small hospital setting

## Education Strategies

- ▶ Regular ASP updates (monthly or quarterly) via newsletters or other communication tools (intranet, websites, blog, etc)
  - ▶ Share local and national issues
- ▶ One on one
- ▶ Incorporate antimicrobial stewardship education into new employee orientation
- ▶ Incorporate antimicrobial stewardship into yearly competencies
- ▶ Include information on antibiotics in patient education materials

## Education Strategies

- ▶ Didactic presentations
- ▶ Web-based educational resources
- ▶ Posters
- ▶ Story sharing
- ▶ Tip sheets when providers enter most orders

## Other Considerations

- ▶ Tailor your approach to your facility – find what works for you
- ▶ Implement what you can when starting
  - ▶ Easy wins
- ▶ Avoid strategies that can have a negative impact on your practice
- ▶ Ask for help/see what other hospitals are doing

## Questions

- ▶ [sblanner@shc.com](mailto:sblanner@shc.com)

## References

1. Septimus EJ and Owens RC. Need and potential of antimicrobial stewardship in community hospitals. CID 2011;53(5):S8-S14.
2. Centers for Disease Control and Prevention. Core elements of hospital antimicrobial stewardship programs. Available at <http://www.cdc.gov/getsmart/healthcare/pdfs/core-elements.pdf>. Accessed June 2017.
3. Infectious Diseases Society of America and the Society for Healthcare Epidemiology of America. Implementing an antimicrobial stewardship program. CID 2016 May 15;62(10):e51-77.
4. Centers for Disease Control and Prevention. Implementation of antimicrobial stewardship core elements at small and critical access hospitals. Available at . Accessed July 2017.