TUESDAY, JANUARY 12:
ANTIMICROBIAL STEWARDSHIP IN IOWA
WELCOME

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Iowa Pharmacy Association
ANTIMICROBIAL STEWARDSHIP

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OBJECTIVES

- Define antimicrobial stewardship
- Discuss antimicrobial resistance and how it has become the driving force behind Antimicrobial Stewardship
- Summarize the PCAST report, National Strategy and National Action Plan and their role in expanding Antimicrobial Stewardship
- Identify upcoming hospital requirements related to Antimicrobial Stewardship
- Discuss the different components of developing an antimicrobial stewardship program
- Learn about what Iowa hospitals are doing to develop their own stewardship programs
ANTIMICROBIAL STEWARDSHIP (AS)

- **By Definition:**
  - Coordinated interventions designed to improve and measure the appropriate use of antimicrobials by promoting the selection of the optimal antimicrobial drug regimen, dose, duration of therapy, and route of administration

- **4 R’s**
  - Right Antibiotic
  - Right Time
  - Right Dose
  - Right Duration
ANTIMICROBIAL STEWARDSHIP (AS)

- IDSA Guidelines

- Goal of Antimicrobial Stewardship
  - Optimize clinical outcomes while minimizing unintended consequences of antimicrobial use, including toxicity, the selection of pathogenic organisms (such as Clostridium difficile), and the emergence of resistance.

NEW GUIDELINES – IDSA

Antimicrobial Stewardship

Developing an Institutional Program to Enhance Antimicrobial Stewardship

Share this Guideline

Published: Clinical Infectious Diseases; 2007; 44:159-77

Guidelines for Developing an Institutional Program to Enhance Antimicrobial Stewardship

This document presents guidelines for developing institutional programs to enhance antimicrobial stewardship, an activity that includes appropriate selection, dosing, route, and duration of antimicrobial therapy. The primary goal of antimicrobial stewardship is to optimize clinical outcomes while minimizing unintended consequences of antimicrobial use, including toxicity, the selection of pathogenic organisms (such as Clostridium difficile), and the emergence of resistance. Thus, the appropriate use of antimicrobials is an essential part of patient safety and deserves careful oversight and guidance. Link to full text guideline

*Every 12 to 18 months following publication, IDSA reviews its guidelines to determine whether an update is required. This guideline was last reviewed and deemed current as of 07/2013.

Implementing an Antibiotic Stewardship Program

Share this Guideline

Published: xx; xx; xx: xx-xx

IDSASHEA Clinical Practice Guidelines on Antimicrobial Stewardship

The purpose of this guideline will be to present different approaches to antimicrobial stewardship in different health care settings assisting individuals and institutions in determining how to individualize their own programs, based on resources.

*Projected Publication, Fall 2015
ANTIMICROBIAL RESISTANCE (AR)
ANTIMICROBIAL RESISTANCE (AR)

- 2004, the IDSA published report “Bad Bugs, No Drugs”
  - IDSA called for statutory incentives to address and fight drug-resistant bacterial infections

- 2007- IDSA/SHEA
  - Guidelines for Developing an Institutional Program to Enhance Antimicrobial Stewardship

- 2010- IDSA launched 10 x ’20 Initiative
  - Support R&D for 10 new systemic antibiotics by 2020
10 X 20 Initiative

- Initiative to develop 10 new antibacterial agents by 2020
- 39 antibiotics in clinical development (Sept 2015)
- Specifically looking for agents to treat:
  - Enterococcus faecium
  - Staphylococcus aureus
  - Klebsiella pneumoniae
  - Acinetobacter baumannii
  - Pseudomonas aeruginosa
  - Enterobacter species
GAIN ACT – 2012

- Congress passed in law June 2012
- Qualified Infectious Disease Product (QIDP) - “an antibacterial or antifungal drug for human use intended to treat serious or life-threatening infections.”
  - QIDP designation - allows marketing exclusives for 5 years = manufacturer incentives
- Expedited/Fast track drug review
- FDA guidance on pathogen-focused antibiotics
- FDA to compile list of “qualifying pathogens” that pose serious public health threats (every 5 years)
# Recently Approved Antibiotics

<table>
<thead>
<tr>
<th>Drug</th>
<th>FDA Approval Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telavancin</td>
<td>September 2009</td>
</tr>
<tr>
<td>Ceftarolone</td>
<td>October 2010</td>
</tr>
<tr>
<td>Dalbavancin</td>
<td>May 2014</td>
</tr>
<tr>
<td>Tedizolid</td>
<td>June 2014</td>
</tr>
<tr>
<td>Oritavancin</td>
<td>August 2014</td>
</tr>
<tr>
<td>Ceftolozane/tazobactam</td>
<td>December 2014</td>
</tr>
<tr>
<td>Ceftazadime/avibactam</td>
<td>February 2015</td>
</tr>
</tbody>
</table>
CDC’s Threat Report 2013

- CDC prioritized as: **Urgent, Serious, or Concerning**.
  - **Urgent**: high-consequence antibiotic-resistant threats due to significant risks identified across several criteria.  
    1.) Clostridium difficile (C. difficile), 2.) Carbapenem-resistant Enterobacteriaceae (CRE), 3.) Drug-resistant Neisseria gonorrhoeae (cephalosporin resistance)
  - **Serious**: significant antibiotic-resistant threats. For varying reasons (e.g., low or declining domestic incidence or reasonable availability of therapeutic agents)
  - **Concerning**: threat of antibiotic resistance is low, and/or multiple therapeutic options for resistant infections.
FOUR CORE ACTIONS

PREVENTING INFECTIONS, PREVENTING SPREAD.
TRACKING RESISTANCE PATTERNS.
IMPROVING USE OF ANTIBIOTICS.
DEVELOPING NEW ANTIBIOTICS AND DIAGNOSTIC TESTS.
AR - PRESIDENTIAL INVOLVEMENT

The Need for Urgent Action
PCAST REPORT

- President’s Council of Advisors on Science and Technology (PCAST)

- PCAST report - released Sept. 2014
  - President Obama requested practical and actionable recommendations to combat AR (Nov. 2013)
  - 8 policy recommendations
    - Recommendation #6- Improving Stewardship of existing antibiotics in Health Care.
      - Report encourages CMS to use reimbursement as incentive
      - Encourages federal government to use funding requirements to drive Stewardship
NATIONAL STRATEGY- HIGHLIGHTS

▪ **National Strategy (CARB)-Combating Antibiotic-Resistant Bacteria**
  ▪ September 2014
  ▪ Developed included representatives from the Department of Health and Human Services (HHS), the Department of Agriculture (USDA), the Departments of Homeland Security (DHS), State, Defense (DOD), Veterans Affairs (VA), the U.S. Agency for International Development (USAID), and the Environmental Protection Agency (EPA)
  ▪ 5 interrelated goals for action
  ▪ **GOAL 1**: Slow the Development of Resistant Bacteria and Prevent the Spread of Resistant Infections
NATIONAL ACTION PLAN-HIGHLIGHTS

▪ **National Action Plan-(CARB)-Combating Antibiotic-Resistant Bacteria**
  ▪ Released March 2015
  ▪ U.S. Government Task Force (annual updates)
  ▪ 5 year Action plan
    ▪ **1 year plan**: Require hospitals to have robust Stewardship programs that align with CDC’s Core Elements paper (NHSN will track)
    ▪ **3 year plan**: Require Medicare/Medicaid programs to comply with Condition of Participations (CoP) based on CDC’s Core Elements paper
    ▪ **5 year plan**: CDC will work w/ select hospitals to expand abx use reporting and stewardship implementation.
# AR- NATIONAL ACTION PLAN

## TABLE 1: National Targets to Combat Antibiotic-Resistant Bacteria

**By 2020, the United States will:**

### For CDC Recognized Urgent Threats:

- Reduce by 50% the incidence of overall *Clostridium difficile* infection compared to estimates from 2011.
- Reduce by 60% carbapenem-resistant Enterobacteriaceae infections acquired during hospitalization compared to estimates.
- Maintain the prevalence of ceftriaxone-resistant *Neisseria gonorrhoeae* below 2% compared to estimates from 2013.

### For CDC Recognized Serious Threats:

- Reduce by 35% multidrug-resistant *Pseudomonas spp.* infections acquired during hospitalization compared to estimates from 2011.
- Reduce by at least 50% overall methicillin-resistant *Staphylococcus aureus* (MRSA) bloodstream infections by 2020 as compared to 2011.*
- Reduce by 25% multidrug-resistant non-typhoidal *Salmonella* infections compared to estimates from 2010-2012.
- Reduce by 15% the number of multidrug-resistant TB infections.¹
- Reduce by at least 25% the rate of antibiotic-resistant invasive pneumococcal disease among <5 year-olds compared to estimates from 2008.
- Reduce by at least 25% the rate of antibiotic-resistant invasive pneumococcal disease among >65 year-olds compared to estimates from 2008.
WHAT DOES IT ALL MEAN?

- CMS (Centers for Medicare and Medicaid Services)
- IDSA/SHEA - request CMS for Condition of Participation (CoP) - 2014
- PCAST report - recommends CoP by 2017
- Hospital Infection Control Worksheet - currently in place
  - Written policies and procedures
  - Designated leader (e.g., physician, pharmacist, etc.)
  - Requires practitioners to document antibiotic indication
  - Formal procedure for all Practitioners to review the appropriateness of any antibiotics after 48 hours
- Hospital monitors antibiotic use (consumption) at the Unit and/or hospital level.
WHAT DOES IT ALL MEAN?

- The Joint Commission (TJC)
  - TJC Participated in White House Forum on AS
  - In November 2015, the Joint Commission proposed a new standard for antimicrobial stewardship that will apply to critical-access hospitals, general hospitals, ambulatory health care, nursing care centers, and office-based surgical sites. As it stands, the proposed standard (MM.09.01.01) would require all of these settings to have an antimicrobial stewardship program.

- Proposed standard comment deadline was 12-30-15

- 8 Elements of performance
WHAT DOES IT ALL MEAN?

Antimicrobial Stewardship

Antimicrobial stewardship information
Antimicrobial stewardship can help prevent the development of multidrug resistant organisms, and reduce unnecessary drug use and costs associated with expensive, broad-spectrum therapies used to treat HAIs. Resources include a free toolkit that provides guidance to health care organizations building or looking to improve antimicrobial stewardship programs.

Joint Commission Content

- Joint Commission Joins White House Effort to Reduce Antibiotic Overuse
- Antimicrobial Stewardship - Pfizer IGLC Funded Project

Joint Commission Resources

- Antimicrobial Stewardship Toolkit
ANTIMICROBIAL STEWARDSHIP
WHAT’S HAPPENING IN IOWA?
IOWA STEWARDSHIP SURVEY RESULTS

- IPA survey on Antimicrobial Stewardship
- 37 responses (15%)
- 68% of institutions have a formal written policy
- 62% have a dedicated ID pharmacist
- 76% have an ID physician
  - 54% employed on-site, 22% contracted
- 73% were aware of the PCAST report, CARB publications, and the pending CMS antimicrobial stewardship metrics
IOWA STEWARDSHIP SURVEY RESULTS

- Pharmacy Stewardship Activities/Involvement
  - Renal dosing: 100%
  - IV to PO: 89%
  - Pharmacokinetic dosing service: 95%
  - Formal Culture Review: 76%
  - Antimicrobial Subcommittee: 68%
  - Penicillin Skin Testing: 49%
ANTIBIOTIC STEWARDSHIP PROGRAM (ASP): WHAT DOES IT LOOK LIKE?

▪ Coordinated (structured) program
  ▪ Leadership commitment to adequate resources
  ▪ Accountability for program outcomes
  ▪ Authority

▪ Multidisciplinary Expertise
  ▪ Drug (pharmacist) and management (ID doc)

▪ Multiple Program Elements
  ▪ Tracking and reporting of antibiotic prescribing and resistance (CDC’s AUR)
  ▪ Education of clinicians about resistance and optimal prescribing
  ▪ Active interventions
CDC’S CHECKLIST FOR STEWARDSHIP

Checklist for Core Elements of Hospital Antibiotic Stewardship Programs
SUMMARY OF THE CDC CHECKLIST

1. Leadership commitment
2. Accountability
3. Drug Expertise
4. Act
5. Track
6. Report
7. Educate
ESTABLISHED STEWARDSHIP PROGRAMS

Stewardship Program Examples

Hospital Antibiotic Stewardship Programs

- Barnes-Jewish Hospital
- The Cleveland Clinic Foundation
- Stanford Antimicrobial Safety and Sustainability
- Columbia University Medical Center
- The Johns Hopkins Hospital
- The Nebraska Medical Center
- University of California, San Francisco
- University of Kentucky Hospital
- University of Miami and Jackson Memorial Hospital
- University of Pennsylvania Health System
- University of Wisconsin Hospital and Clinics Antimicrobial Stewardship Program
- Wake Forest University

cdc.gov
IDSA & STEWARDSHIP

- Infectious Disease Society of America (IDSA)- Published in 2007 (updates in progress)
  - Prospective Audit and Feedback
  - Formulary Restriction and Preauthorization
  - Education
  - Guidelines and Clinical Pathways
  - Antimicrobial Cycling and Scheduled Antimicrobial Switch
  - Order Forms
  - Combination Therapy
  - De-escalation
  - Dose Optimization
  - IV to PO conversion
### Infectious Diseases Society of America-United States Public Health Service Grading System for ranking recommendations in clinical guidelines.

<table>
<thead>
<tr>
<th>Category, grade</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strength of recommendation</strong></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Good evidence to support a recommendation for use</td>
</tr>
<tr>
<td>B</td>
<td>Moderate evidence to support a recommendation for use</td>
</tr>
<tr>
<td>C</td>
<td>Poor evidence to support a recommendation</td>
</tr>
<tr>
<td>D</td>
<td>Moderate evidence to support a recommendation against use</td>
</tr>
<tr>
<td>E</td>
<td>Good evidence to support a recommendation against use</td>
</tr>
<tr>
<td><strong>Quality of evidence</strong></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>Evidence from $\geq 1$ properly randomized, controlled trial</td>
</tr>
<tr>
<td>II</td>
<td>Evidence from $\geq 1$ well-designed clinical trial, without randomization; from cohort or case-controlled analytic studies (preferably from $&gt;1$ center); from multiple time-series; or from dramatic results from uncontrolled experiments</td>
</tr>
<tr>
<td>III</td>
<td>Evidence from opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees</td>
</tr>
</tbody>
</table>


© 2001 by the Infectious Diseases Society of America
Recommendation: IA

**Daily review** of targeted antimicrobials for appropriateness. (contact prescribers if alternative therapy necessary)
- For smaller hospitals, regular basis could = 3 x per week
- Infectious Disease Physician or Pharmacist can complete
- Review reports and make contact to prescribers (each intervention is an opportunity for education)
- **Computer surveillance** of antimicrobial use- target specific services/units, identify patients on particular agents or inappropriate combinations
- Decrease cost, effect on resistance less clear
FORMULARY RESTRICTION AND PREAUTHORIZATION

- Recommendation: IIB and IIIB
- Restrict use of targeted antimicrobials to approved indications
- Direct control over antimicrobial use, however unclear of long term impact
- Need to have large staff to service
- Don’t want to delay care to the patient
- Perceived loss of autonomy for prescribers
EDUCATION

- Recommendation: IIIA and IIB
- Can provide a good foundation but also need active intervention
- Best if provided to smaller groups
GUIDELINES AND CLINICAL PATHWAYS

- Recommendation: IA and IIIA
- Can utilize both published guidelines and local guidelines/pathways based on microbiologic data
- Can be implemented through education and patient outcomes
ANTIMICROBIAL CYCLING AND SCHEDULED ANTIMICROBIAL SWITCH

- Recommendation: IIC
- Insufficient data; unsure of the long term impact
- May actually cause more resistance
ORDER FORMS

- Recommendation: IIB
- Can be done utilizing paper or CPOE
- Effective way to streamline and guide physician choices
COMBINATION THERAPY

- Recommendation: IIC and IIA
- Insufficient data to recommend for all patients
- May be beneficial in initial therapy in critically ill patients
DE-ESCALATION

- Recommendation: IIA
- Streamline on the basis of culture results
- Help to avoid redundant therapy
- Reduce exposure
- Cost savings
DOSE OPTIMIZATION

- Recommendation: IIA
- Dose adjust based on individual patient needs – example: renal function
- Pharmacokinetic/Pharmacodynamic properties
IV TO PO CONVERSION

- Recommendation: IIIA
- Many institutions utilize
- Policies that allow pharmacist to change certain medications based on bioavailability
- Not only cost of medication; less need/risk for IV access and potential decrease in length of stay
- “Low Hanging Fruit”
### IV TO PO OPPORTUNITIES

<table>
<thead>
<tr>
<th>Fluconazole</th>
<th>Metronidazole</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ciprofloxacin</td>
<td>Levofloxacin</td>
</tr>
<tr>
<td>Azithromycin</td>
<td>Linezolid</td>
</tr>
</tbody>
</table>
NEW GUIDELINES… THE RUMORS….

• Will use new GRADE system
• Contain more details and will be more implementation driven
• Continue to suggest Preauthorization, Prospective Audit, Use of Guidelines, IV to PO and Education
  • Remove Antimicrobial Cycling
• Role of Computerized Decision Support
• “Antibiotic Time Out”
• Microbiology/ Diagnostics
• Allergies
• PK/PD
• Duration of Therapy
• Metrics
• Specific Syndromes and Special Populations
STEWARDSHIP….GETTING STARTED

- Establish a core planning committee
  - Subcommittee of P&T
  - Subcommittee of Infection Control
  - Other interested stakeholders
- Establish goals and mission statement
- Draft an idea
- Identify existing and needed resources (gap analysis)
  - Current status, desired goals, bridge the gap
STEWARDSHIP….GETTING STARTED

- Collaborate with the Administration, Pharmacy Director, Infectious Disease Physicians and Infection Prevention
  - Meet regularly with staff
- Get to know your microbiology lab
  - Spend some quality time with the Micro team
  - Very important piece of stewardship
- Target a few key items
  - after successful implementation look to expand
A few areas to target …

- Active review of antibiotic orders
  - Is it appropriate, the 4 R’s
  - Are there cultures available?
- Antibiogram
  - Do you have one? Is it readily available? Follow trends?
- IV to PO Conversion
  - Collaborative practice agreements
- Focus on a specific infectious process
  - Possible examples include: cellulitis, lower respiratory tract infections, UTIs
MEASUREMENT

- Important to measure something!
- Two types of measures
  - Process measures
  - Outcome measures
- Know your audience
  - Executives
  - Clinical Staff
### WHAT OTHER OUTCOMES CAN WE MEASURE?

<table>
<thead>
<tr>
<th>Clinical</th>
<th>Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Length of Stay</td>
<td>• Dose optimization</td>
</tr>
<tr>
<td>• Clinical cure/failure rates</td>
<td>• Adherence to guidelines</td>
</tr>
<tr>
<td>• Readmission rates (30 days)</td>
<td>• Appropriate de-escalation/streamlining</td>
</tr>
<tr>
<td>• Resistance rates</td>
<td>• Appropriateness of therapy</td>
</tr>
<tr>
<td>• Infection-related mortality</td>
<td>• Cultures before antibiotics</td>
</tr>
<tr>
<td>• C. Diff infections</td>
<td>• Duration</td>
</tr>
<tr>
<td></td>
<td>• IV to PO conversion rates</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Safety</th>
<th>Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Adverse drug events avoided</td>
<td>• Antimicrobial utilization (DDD or DOT)</td>
</tr>
<tr>
<td>• Time to appropriate antibiotics</td>
<td>• Hospital-wide abx expenditures</td>
</tr>
<tr>
<td></td>
<td>• Relative consumption use</td>
</tr>
<tr>
<td></td>
<td>• Rate of IV antimicrobial use</td>
</tr>
<tr>
<td></td>
<td>• Nonformulary agents avoided</td>
</tr>
</tbody>
</table>
METRICS

- **Inventory Costs**
  - Can be used for initial stewardship justification
  - Can be challenging with regards to drug shortages, formulary changes and contract pricing

- **Daily Dose (DDD)**
  - Calculation that uses the WHO defined daily dose
  - Based on “standard patient dose”
  - Standardized with a denominator such as 1000 patient days or hospitalized patient days

- **Days of Therapy (DOT)**
  - Number of days a patient is on an antibiotic
  - Assumes patient was dosed appropriately
  - Can count more than one DOT if patient is receiving more than one antibiotic
  - Standardized with the denominator such as 1000 patient days
Examples of Scorecard Information:

- Infection Prevention Data
- Antimicrobial Stewardship Metrics
- Stewardship Intervention Data
- Allergy Assessments Completed
- Education Provided
- Highlights of Meaningful Interventions
STEWARDSHIP TRAINING
CERTIFICATE PROGRAMS

• SIDP
• MAD-ID
REFERENCES


5. https://www.whitehouse.gov/administration/eop/ostp/pcast/docsreports


GENESIS ANTIMICROBIAL STEWARDSHIP PROGRAM

Jeff Houseman, R.Ph.
Pharmacy Manager
Genesis East Medical Center Davenport
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GENESIS ANTIMICROBIAL STEWARDSHIP

- Stewardship Processes already in place
- Administrative Support
- Metrics
- Antimicrobial Stewardship Committee
- Implementation
- Role of the Pharmacist(s)
- Future State
STEWARDSHIP PROCESSES ALREADY IN PLACE

- Annual Antibiogram to help drive empiric antibiotic decisions
- Also includes:
  + Information for IV to PO switches
  + Oral step down therapy recommendations
  + Automatic therapeutic substitutions
  + Our ID-restricted antibiotics per Formulary
  + Suggested duration of antimicrobial therapy
- Pharmacist-driven IV to PO policy that includes antimicrobial agents
- ID Formulary Restrictions (requires ID consult)
- Automatic Therapeutic Substitutions for antimicrobial agents
ADMINISTRATIVE SUPPORT

- In September 2015 proposal to C-Suite for ID-designated pharmacist
  - Obtained approval for 0.5 FTE pharmacist to focus on ID and Antimicrobial Stewardship
  - Expectation was that we will reduce drug expenditures and other health-care costs related to antimicrobial therapy

- Also obtained Pharmacy funding this fall for 9 Genesis pharmacists to complete ID training via the SIDP (Society of Infectious Diseases Pharmacists) Antimicrobial Certification Program
  - This is an on-line program that must be completed in one year
  - Have selected pharmacists from each of the Genesis Campuses to complete this training program
Metrics to be followed were decided upon by a Genesis Antimicrobial “Team”

Team consisted of:
- Our ID Specialist Physician
- Pharmacy
- Infection Prevention Nurse
- Cerner Value Creation Office

To be reviewed monthly to monitor success of program

Antimicrobial Stewardship Charter created
METRICS CONT’D

- Project Measurable Outcomes/Metrics: (*Excludes Dialysis & Peds patients)
  - Average Days of Therapy – All Antimicrobial*
  - Average Days of Therapy – Levofloxacin*
  - Average Days of Therapy – Zosyn*
  - Average Days of Therapy – Vancomycin*
  - Average Defined Daily Dose – All antimicrobials*
  - Average Defined Daily Dose – Levofloxacin*
  - Average Defined Daily Dose – Zosyn*
  - Average Defined Daily Dose – Vancomycin*
  - % of Antimicrobials Delivered via IV*
  - Average LOS for Patients on Antimicrobials (days)*
  - Average Antimicrobial Cost per Patient Day*
  - % of Inpatients Diagnosed with HAI
  - Reductions in HAIs (looking at CAUTI, Central Line Infection, VAC, Surgical Site)
  - # of Hospital-Acquired C-Diff Rates per 1000 Patient Days
  - Reduction in Antimicrobial Cost by 10%
  - Reduction in Antimicrobial LOS by 0.125 Days
ANTIMICROBIAL STEWARDSHIP COMMITTEE

- Committee Formed
- Antimicrobial Stewardship Charter Created (see next slide)
  - Purpose
  - Responsibilities
  - Team Members
- Started meeting monthly in October 2015 with Cerner VCO
  - First on agenda to create requirement in Cerner for all providers to enter an indication and duration for all antimicrobial agents
  - Go-Live in Cerner occurred 12/7/2015 for these 2 items
**Antimicrobial Stewardship Committee Charter**

**Purpose**
Inappropriate antimicrobial use is strongly associated with the emergence of antimicrobial resistant pathogens. An effective antimicrobial stewardship program, with appropriate drug product selection, dosing, route of administration, and duration of antimicrobial therapy, in conjunction with a comprehensive infection control program has been shown to limit the emergence and transmission of antimicrobial-resistant microorganisms. The goals of antimicrobial stewardship are to optimize safe and appropriate use of antibiotics, enhance clinical outcomes while minimizing unintended consequences of antimicrobial use (e.g., toxicity, resistance), and reduce healthcare costs without adversely affecting quality of care.

**Committee Members**
*Chairman:* Our ID Specialist Physician  
Committee Coordinators: Director of Pharmacy, ID Pharmacist  
Members:  
- Physicians - 3 practitioners  
- Pharmacy – 2 Pharmacists from separate campuses  
- Pharmacy Informatics – IT Pharmacist  
- Laboratory – (1) Lab practitioner  
- Infection Control – Infection Control Coordinator  
- Executive Sponsor – Genesis Davenport President

**Responsibilities**
This committee will describe the relationship between inappropriate antimicrobial use and the emergence of antimicrobial-resistant pathogens, the goals of antimicrobial stewardship programs in the hospital setting, and new evidence-based guidelines from the Infectious Diseases Society of America (IDSA) for developing programs to enhance antimicrobial stewardship in the hospital setting.

The two proactive core strategies that provide the foundation for an antimicrobial stewardship program will be emphasized:  
1. Prospective auditing of antimicrobial utilization with direct interaction and feedback to the prescriber, and  
2. Formulary restriction and pre-authorization requirements to immediately reduce antimicrobial use and cost.

Various additional elements (e.g., education, antimicrobial cycling, antimicrobial order forms, parenteral-to-oral conversion plans) will be considered as part of the stewardship.

**Frequency:** once a month for operations and quarterly for physicians or ad hoc as needed  
**Communication:** Monthly summaries via email distribution to physicians, Monthly in person operations updates at committee meetings  
**Reports to:** Pharmacy and Therapeutics Committee, Medical Executive Committee, Infection Control Committee
IMPLEMENTATION

- Committee members formed
- Created Antimicrobial Stewardship Charter
- Created Antimicrobial Stewardship Policy
- Used a Couple of Existing Policies
  - IV to PO Conversion Policy
  - Therapeutic Interchange for Anti-Infectives
  - Revised Automatic Stop Policy So Pharmacist Have Ability to Place a 14 Day Stop
- Education sent to Medical Staff in Med Staff Newsletter
- Education sent to Pharmacy, Nursing, and other Ancillary Staff (Teach tool for Cerner sent to all healthcare users)
- Soft Go-Live with indication/duration fields available 12/3/15
- Hard Go-Live with indication/duration fields mandatory 12/7
ROLE OF THE ID PHARMACIST(S)

- One of Lead Members of the Antimicrobial Stewardship Committee
- Daily Patient Reviews
- Review Complex Cases with ID Physician
- Make Recommendations to Providers
- Consult with ID Physician for Providers
- Study Compiled Data Information
- Pharmacy-to-Dose Recommendations
- Staff Education
- Creating the Annual Antibiogram
- Key Player in Management of Antimicrobial Formulary Restrictions, and Order Set Policies
FUTURE STATE

- Once Cerner IT Build is Complete
  - Antimicrobial Stewardship Committee to Meet Monthly
  - Review Monthly Metric Data
  - Implement New Initiatives to Improve Program

- Next Cerner Phases
  - Alert to Pharmacy When Patient Meets Criteria to Change an Antimicrobial from IV to PO
  - Alert to Provider When No Cultures have been Ordered
  - Alert to Pharmacy When Organism Found Resistant to Current Antimicrobial Agents the Patient is Receiving
LESSONS LEARNED

- Too Aggressive Timeline to Implement
- Key players not all present at start of project development
  - Nursing overlooked as a key player when in fact they were very key
- Work flow analysis not thoroughly conducted for all disciplines affected
  - Periop Director and Surgery Scheduler
- Go-live communication did not reach everyone
- Cerner Power Plan list that was provided was not complete
  - Some providers’ powerplans not contacted
  - Preop orders that had already been placed did not have changes
- Power plans from outside provider offices did not get changed promptly so have incomplete orders coming thru
Questions?
STAY ENGAGED. STAY INFORMED.

JOIN US TUESDAY, FEBRUARY 9:
IOWA MEDICAID MODERNIZATION UPDATE

Questions? Contact David Schaaf at dschaaf@iarx.org or 515-270-0713