

ANTIMICROBIAL STEWARDSHIP PROGRAM DEVELOPMENT

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Updated October 19, 2016

FUNDAMENTAL PRINCIPLE

Vertical versus Horizontal
Antimicrobial Management

VERTICAL VERSUS HORIZONTAL

- Vertical Antimicrobial Management
 - One Patient
 - Usual Focus Physicians/Nurses – including Infectious Diseases Physician
- Horizontal Antimicrobial Management
 - Population Based
 - Antimicrobial Stewardship focus

OBJECTIVES

- Explain the different parts that are necessary for an effective program.
- To discuss guidelines to help determine the appropriate scope of the ASP program
- Explain team members and roles
- Define minimum training and qualifications of leadership
- Teach the components of background work to get started

OBJECTIVES

- How to get support from involved departments
 - Medical staff
 - Knowledgeable, respected physician leader
 - Access to appropriate medical departments/committees
 - Identify multiple physician champions
 - Pharmacy
 - Involve pharmacists with clinical functions
 - Stewardship pharmacist must disseminate information to other pharmacists

OBJECTIVES

- How to get support from involved departments
 - Lab
 - Work with lab to develop tracking and trending tools
 - Review results with lab directors
 - Encourage lab participation in bringing forth new technologies
 - Nursing
 - Stewardship education
 - Clinical nurses as part of IV to PO process
 - Clinical nurses as part of antibiotic tracking
 - Teach how Infection Control interplays with stewardship

COMPONENTS OF PROGRAM DEVELOPMENT

- Perform Gap Analysis
- Establish Administration Support – Discussed Last Presentation
- Identify and Develop Team Membership
- Provide/Obtain necessary minimum stewardship training
- ASP policy/procedure including reporting program activities to hospital quality improvement



**ONE SIZE DOES NOT FIT
ALL**

START SMALL

ASP SCOPE-ONE SIZE DOES NOT FIT ALL

- Perform a gap analysis
- Look at facility size
 - Critical Access
 - Community –small versus large
 - University
- Services Provided
 - Maternity
 - Surgical
 - Pediatrics
 - Transplant
 - Trauma
 - Neuro

ASP SCOPE-ONE SIZE DOES NOT FIT ALL

- What needs do we have for our populations?
- Resources Available?
- Review antibiotic usage in your facility
 - High use broad spectrum antibiotics.
 - High expense antibiotics.
 - High toxicity antibiotics.
- Identify areas of opportunity for intervention
 - Prophylaxis
 - Empiric therapy choices
 - Duration of antibiotics
 - De-escalation of antibiotics
 - Immunizations

ASP SCOPE- ONE SIZE DOES NOT FIT ALL

- Develop ASP policy
- Develop a plan for implementation
 - Determine Target Antibiotics
 - Explain how results will be measured
 - Set Goals and Time Lines



TEAM MEMBERSHIP

TEAM MEMBERSHIP -

- Physician Directed multi-disciplinary(required)
- Members of the ASP team
 - Stewardship trained expert (required minimum of 1)
 - Physician (preferably also ID trained)
 - Must still complete additional stewardship training
 - Clinical pharmacist (preferably ID trained pharmacist)
 - Must obtain additional stewardship training if not an ID trained pharmacist
 - Microbiologist/lab director
 - Infection Preventionist
 - Nursing/Quality
 - IT

ROLES OF MEMBERS

- Physician directed: Medical staff committee
- Minimum 1 stewardship trained pharmacist or physician: expert input on gap analysis, interpretation of data, and recommendations
- Microbiologist: collecting and presenting antibiogram; guidance in available testing and any trends noted
- Infection Preventionist: C. difficile data; HAI nosocomial transmission trends

ROLES OF MEMBERS

- Nursing/Quality: assistance with quality measures that include antibiotics e.g. surgical prophylaxis, adverse effects leading to prolonged LOS or re-admission. Immunization compliance is also a form of stewardship
- IT: Programming for data extraction, order sets with guidelines, best practice alerts, report generation



MINIMUM QUALIFICATIONS/ TRAINING

DEVELOPING A POLICY AND PROCEDURE

- Must include CDPH requirements to meet basic level.
- Determine what elements of the intermediate and advanced program that you wish to complete and include those.
- Institutional choice as to how specific and detailed the policy/procedure should be.
- Examples of policies will be posted to the ASP SharePoint site.
- <http://www.cdph.ca.gov/programs/hai/pages/anti-microbialstewardshipprograminitiative.aspx>



**WHAT ARE YOU ALREADY
DOING?**

DETERMINE STEWARDSHIP ACTIVITIES ALREADY BEING PERFORMED

- Antibigram
 - Tracking of any resistance patterns developing
 - Look at patterns over several years
- Formulary Process
 - Restricted Antibiotics
- IV to PO conversion
- Surgical prophylaxis
- Order Sets with antibiotic recommendations and usage
- Education of providers



**WHERE ARE YOUR
OPPORTUNITIES?**

IMPROPER INITIAL CHOICES

- Lack of order sets
 - Not available
 - Not being utilized
- Unrestricted formulary
- Lack of antibiogram with analysis and teaching
- Lack of education of providers
- Decisions based on severity of illness and not source
- Surgical Prophylaxis

SOURCES OF PROLONGED USAGE

- Inadequate cultures
- Lack of ownership by single provider
- Poor handoffs and incomplete documentation
- No reassessments
- No defined source
- No evidence based defined duration

FAILURE TO DE-ESCALATE

- Therapeutic inertia
 - Easier to continue therapy than address whether it is needed
 - IV to PO conversion delayed until discharge
- Fear
 - Subjective provider anxiety about stopping antibiotics
- Failure to review and adjust based on cultures
 - Not using culture results as evidence base for de-escalation

WHAT WORKS



PROVIDER CHAMPIONS

- Don't under-estimate the importance of the providers owning this process
- The goal of stewardship is to teach appropriate antibiotic usage.
- Feet on the ground engagement will markedly lessen the work load of the stewardship committee and lead to better care/outcomes
- Rounds
- Department Meetings
- Peer/Quality Review

EDUCATION

- Noon Conferences
- Department Meetings
- Pharmacy Inservices
- Daily Rounds
- Newsletter/Medical Directors Report
- Quality/Core Measures Teaching

EDD

- Day Number 3 of therapy
- Antimicrobial Time Out
- **E**valuate
 - Look at patient status, labs, and culture results
- **D**efine
 - What is the infection being treated, if any
- **D**e-Escalate
 - Choose the most narrow spectrum antibiotics for the shortest period of time by the least invasive route

USING ANTIBIOGRAM

- Need Annual Report
- Compare serial results
- Do an analysis of results and present to HCW
- Help with deciding what antibiotics to evaluate
- Use this information for formulary decisions
- Help with guidance for empiric therapy on order sets

ANTIBIOGRAM ANALYSIS

- Data was compared to the last 5 years
- Staphylococcus aureus
 - Incidence of MRSA is gradually decreasing and is now around 40% of all Staph aureus isolates
 - Clindamycin sensitivity has gradually decreased over the years to about 75%.
 - Almost all of this is attributable to MRSA which is resistant to clindamycin about 50% of the time
 - MSSA sensitivity is lower but exhibits about 85% sensitivity
 - Levofloxacin sensitivity is stable but remains problematic
 - MRSA <1/3 are sensitive
 - MSSA sensitive 75%
 - Trimethoprim-sulfa sensitivity remains excellent at 98%
 - Vanco MIC 2 or greater only 1% EMC, probably related to using Vitek and not Microscan system.
 - Tetracycline sensitivity remains steady about 95%

DATA

- Collect
 - Concurrent
- Analyze
 - Case specific
 - Provider specific
 - Bigger Trends
- Make Changes
 - Be flexible and change depending on circumstances
 - Shortages of medications
 - Unusual outbreaks

START SMALL

- Look at existing and available resources
- Target one drug or one area of usage
- Set Goals
- Evaluate Progress and Report
- Foster Hospital Wide Participation



MAINTAINING MOMENTUM

Avoid Distractions

MAINTAINING MOMENTUM

- Share Successes
- Listen to the caregivers to learn how to help them
- Small wins count when dealing with challenges
- It is all about the patient(s)
 - Vertical
 - Horizontal



THANK YOU