

Antimicrobial Stewardship: Program Overview Vanderbilt University Medical Center

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Tennessee Hospital Association Medication Safety Summit on
Antibiotic Stewardship

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Antimicrobial Stewardship (ASP) at VUMC

- VUH Program started in 2009
- MCJCH Program started 2012
- VUH Currently staffed by:
 - ID physician: George Nelson, MD (Director)
 - ID physicians: Patty Wright, MD; Matthew Greene, MD; Gowri Satyanarayana, MD (Associate Directors)
 - ID pharmacist: Whitney Jones, PharmD
 - Therapeutic drug monitoring pharmacist: Pratish Patel, PharmD

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Bring Everyone to the Table

- We created a multidisciplinary approach
 - Pharmacy
 - Infection Prevention
 - Quality Department
 - Laboratory
 - Infectious Diseases
 - Nursing
 - Patient Education
 - IT/Analytics
 - Evidence based medicine
 - Many others....



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Major ASP Activities at VUMC

- Oversight of restricted high risk, high cost antimicrobials
 - 25 restricted antimicrobials requiring pre-approval
- Limited post-prescription review of antimicrobials
- Focused interventions in selected areas
 - Heme/Onc, surgical subspecialties, etc.
- Manage antimicrobial shortages/formulary
- Review of protocols/policies/order sets
- Provision of education and training
- Algorithm development/Quality initiatives
- Ensure compliance with CDC, CMS, TJC guidance

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VUH ASP Quality Initiatives

- Staphylococcal bacteremia treatment algorithm
- Reduce unnecessary testing via advisors
 - Diarrhea and Respiratory Viral Infections
- Pharmacokinetics monitoring service
 - Vancomycin and Aminoglycosides
- *Clostridium difficile* initiatives
- Partner with lab for rapid diagnostics
 - Ex: BUGZ pager for Verigene results
- Algorithms for unnecessary short stay admissions

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Cellulitis Pathway to Reduce Short Stay Admissions

- Cellulitis recognized as a top diagnosis for admissions with LOS <2 days
- Collaboration between VASP, ED, Pharmacy, and Quality Council
- Algorithm identified patients who could be safely managed as outpatients with options for therapy
- Started Feb, 2016
- Prior to pathway ~ 50% of cellulitis presentations were admitted; after ~ 30%

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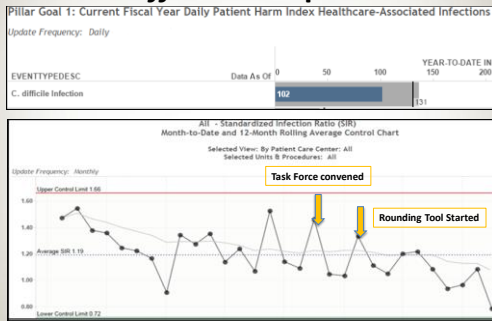
Staphylococcus Bacteremia Safety Algorithm

- Ensures appropriate management
 - TTE/repeat BCx/etc, treatment (duration/agent)
- Implemented at VUH August 2015
 - After several patient-specific opportunities for improvement noted
 - Elevated need for quality improvement
- 82 interventions on 68 distinct patients
 - Only 2 elevations to supervising MD
 - No elevations to Chief of Staff
- 15 patients had adverse events averted (not mutually exclusive):
 - No treatment (or suboptimal) → treatment n= 9
 - Escalate from PO to IV therapy n= 5
 - Increase duration of therapy n=1
 - Obtain TTE n= 9
 - Repeat BCx n=7

Improving Antibiotic Appropriateness Reduces *C. diff*

- Increase in *C. difficile* infections on select inpatient units, FY2015
- Task Force convened
 - Antibiotic misuse identified
- Rounding tool created on target unit (MICU)
 - Based on validated CDC assessment tool
- 650 patients enrolled in quality improvement project

C. diff Rates Improved

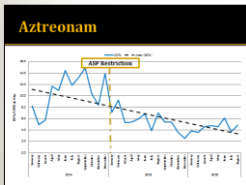


Quality vs Cost

- We have found that it is important to partner with Quality department
 - Resonates with providers
 - Longer lasting
 - Quality/safe care is goal
 - Patient level concerns drive point home
- Cost effectiveness remains important goal
 - Easier to quantify
 - Leverage in administration
- Collect data on interventions to demonstrate value

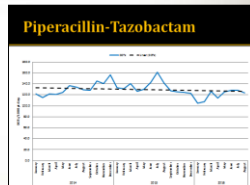
Restricted Antibiotics

-Restrictions can drive improvement



Unrestricted Antibiotics

-Lack of restriction demonstrates stable use



Antibiotic Utilization Reporting

- Mandatory external reporting anticipated
- Internal reporting to leverage change within units, divisions, departments and beyond
- Build upon success of hand hygiene feedback program
- Use data as agent of change
- Have developed dashboard to capture the above

