Organization: Holy Cross Hospital, Silver Spring Maryland

Solution Title: Antimicrobial Stewardship to Improve Medication Safety

Program/Project Description, including Goals:
All medication orders including antibiotics orders placed in the computerized physician ordering system are defaulted to 30 days unless the prescriber specifies a duration of treatment. Prolong duration of therapy with antimicrobial agents may lead to antimicrobial resistance and increase adverse effects.

Goal: The goal of antimicrobial stewardship is to preserve the effectiveness of current antibiotics, encourage appropriate antibiotic use, minimize unnecessary side effects, reduce antibiotic resistance, and improve patient care, safety and clinical outcomes. Providing appropriate duration of antibiotic therapy as indicated is one of the techniques to enhance the goal of antimicrobial stewardship.

Process: What methodology or process was used to develop the Solution?
Active surveillance by pharmacists to promote appropriate use of antibiotics through daily antimicrobial reports that are targeting the following: Drug Bug mismatch, duration of treatment, antibiotics with no growth, ordering procalcitonin levels for upper respiratory tract infections, ertapenem prescribing pattern, and de-escalation for no growth after 48 hours.

Solution: What Solution was developed? How was it implemented?
Starting January 13, 2015 decentralized pharmacists print the antimicrobial report every morning at the beginning of the shift and review all antimicrobial medication orders for the respective patient care units. Pharmacists modify all adult intravenous antibiotic orders without a stop date or if the stop date defaults to 30 days to include a 7-day duration. Exceptions to this policy include indications for endocarditis, osteomyelitis, C. difficile infections and neutropenic fever as these conditions may warrant a longer duration of therapy. Pharmacists also evaluate the culture results, vitals and lab values and streamline the therapy after contacting the prescriber. Drug Bug Mismatch alerts report from quality compass software is also another solution to antimicrobial streamlining. Clinical pharmacists and pharmacy residents check the dashboard every morning for Drug Bug Mismatch alert and resolve with the prescribing team.

Measurable Outcomes: What are the results of implementing the Solution? Provide qualitative and/or quantitative results to data. (Please include graphs, charts, or tools).
- Number of clinical interventions documented as antimicrobial streamlining
- Antibiotic total cost
- Cost per adjusted patient day or cost per patient discharge
<table>
<thead>
<tr>
<th>Year</th>
<th>Month</th>
<th>Number of Interventions</th>
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### Antibiotic Total Cost

**August 2014 - June 2015**

![Chart showing antibiotic total cost from August 2014 to June 2015](chart.png)
**Sustainability:** What measures are being taken to ensure that results can be sustained and spread?

Clinical interventions are run every month and reported to the Pharmacy & Therapeutics Committee and the department of medicine meeting. We also evaluate the number of orders, monthly documented pharmacist interventions, and antibiotic total cost.

**Role of Collaboration and Leadership:** What role did teamwork and collaboration play in the
Solution? What partners and participants were involved? Was the organization’s leadership engaged and did they share the vision for success? How was leadership support demonstrated?

Physicians are encouraged to include the indications in the comment section for all antibiotics orders and pharmacists are expected to document all antimicrobial streamlining performed daily. Encouraging multidisciplinary collaboration within the health system to ensure that the prophylactic, empirical and therapeutic uses of antimicrobial agents result in optimal patient outcomes. Pharmacists can report the microbiology culture results to the physicians as they go through the report and aid in appropriate selection, optimal dosing, proper monitoring and de-escalation of antimicrobial therapies.

Primary Contact

Htet Htet Zaw, Pharm.D
PGY-1 Pharmacy Resident
Holy Cross Hospital
Work-301-557-4277
Email: HtetHtet.Zaw@holycrosshealth.org

Secondary contact

Kikelola Gbadamosi, M.S, Pharm.D, BCPS
Associate Director, Clinical Services
Holy Cross Hospital
Phone: 301-7547313
Email: gbadak@holycrosshealth.org