

**St. Louis Children's Hospital
Organizational Policies/Guidelines**

TITLE: Antimicrobial Stewardship Program (ASP)

INCLUDED APPENDICES:

Appendix A – Antimicrobial Restrictions Document

PURPOSE: To describe the rationale and functions of the antimicrobial stewardship program at St. Louis Children's Hospital. This policy will address the state, federal, and Joint Commission regulatory elements that will be required for all ASPs.

DEFINITIONS: Antimicrobial Stewardship: Providing the best antimicrobial therapy at the right dose, right time for the right duration to achieve the best clinical outcome with the least amount of antimicrobial toxicity and antimicrobial resistance.

POLICY STATEMENT:

In the fall of 2013, the CDC reported that 23,000 Americans die annually of antibiotic-resistant infections and an additional 2 million are infected with these difficult to treat pathogens. Furthermore, 250,000 Americans annually suffer from *Clostridium difficile* infections while 19,000 die from this antibiotic-related infection.¹ In response to these sobering findings, the White House published the National Action Plan for Combating Antibiotic Resistance Bacteria (CARB) in March of 2015. Among the 5 goals contained within the plan, the first goal addresses the need for antimicrobial stewardship programs being present in all acute care hospitals as well as stewardship efforts in ambulatory care settings. An important objective in this plan is to reduce inappropriate antimicrobial prescribing in inpatient and outpatient settings by 20% and 50%, respectively.²

Since the CARB plan was released, the Centers for Disease Control and Prevention (CDC) published the 7 core elements required for effective inpatient antimicrobial stewardship programs. These elements are: Leadership Commitment, Accountability, Drug Expertise, Actions, Data Tracking, Data Reporting, and Education.³ Furthermore, the CDC has developed a National Quality Foundation-endorsed metric, the Standardized Antimicrobial Administration Ratio (SAAR), that can be obtained for facilities that submit data to the National Healthcare Safety Network (NHSN) Antimicrobial Use and Resistance (AUR) module. These elements will be assessed and are expected to be implemented as part of new regulatory requirements that have been recently proposed or implemented.

The new regulations that impact SLCH include those from The Joint Commission, the Center for Medicare and Medicaid Services (CMS), and the state of Missouri. Beginning January 1, 2017, the Joint Commission will evaluate hospitals on their implementation of the 8 elements of performance for antimicrobial stewardship programs.⁴ In June of 2016, CMS proposed that all acute care hospitals will need an active antimicrobial stewardship programs in place as a condition of participation.⁵ Finally, the state of Missouri passed into law on June 8, 2016, a bill that requires all acute care hospitals and ambulatory surgical centers to have ASPs in place by August 28, 2017.⁶ Important to these regulatory requirements will be the implementation of the CDC core elements, collaboration with the Quality Assessment and Performance Improvement and Infection Prevention and Control Programs, reporting of data to the CDC AUR module, and education of hospital staff, patients and families. Therefore, this policy affects all personnel

involved in the care of children at SLCH facilities and will require ongoing collaboration to develop and maintain the most effective ASP.

PROCEDURE: This section will address the ASP team, reporting structure, documents and activities that will be implemented and maintained for a successful ASP. Additionally, we will address each core element required by the CDC.

ASP Mission/Goal- To provide the best antimicrobial therapy (right dose, drug and duration) to patients that results in the best outcome with the least amount of toxicity and resistance.

ASP Philosophy- Communication and Collaboration- We will strive to be the best at communicating and collaborating with the healthcare teams and the patients and families we serve. We believe a sustainable ASP is only achieved through these core characteristics.

Organizational Structure:

The ASP will report to and work closely with Quality and Safety and PD&T. The ASP Medical Director and Pharmacy Director will report directly to the Associate Chief Medical Officer for Quality and Safety and Director of Pharmacy at SLCH. Job descriptions for both the Medical and Pharmacy Directors of the ASP will be maintained. See attachment 1. The ASP team will also work closely with Infection Prevention and Control.

ASP Multidisciplinary Core Team

Administrative Sponsors (Leadership Commitment): SLCH Vice President of Operations; SLCH Director of Pharmacy; and Associate Chief Medical Officer for Quality and Safety

ASP Pharmacy Leader (Drug Expert)

ASP Physician Leader (Accountability)

ASP Data Analyst

Microbiology Representatives

Infection Prevention and Control Representative

Clinical Pharmacists

ID Physicians

ID Fellows

ASP Subcommittee:

A PD&T subcommittee will be formed that will meet at least quarterly starting November 2016. The ASP Subcommittee will be comprised of the Core Team plus additional members from the following groups:

Family Advisory Board Member

Nursing Leader(s)

Critical Care (PICU and CICU)

NICU

Hospitalist

Hematology/Oncology

Residency program

Pulmonology including transplant

Nephrology

Emergency Department

Gastroenterology

Surgery- (General, Orthopedics, Neurosurgery, Cardiothoracic)

The meeting will address the following issues:

1. Process and outcome data review which will include: antimicrobial use, *C. difficile* rates, number of multi-drug resistant bacteria (e.g., MRSA, VRE, CRE, ESBL) and current ASP data including number of patients evaluated, number receiving an action/recommendation, and percentage of clinician acceptance of the action.
2. Current antimicrobial drug shortages and the actions being taken to address these shortages.
3. Antimicrobial prescribing areas of concern and strategies to improve these areas.
4. Review of the annual goals and business plan developed by the ASP leaders.
5. Aid in the development and approval of an effective educational plan for the hospital staff and the patients and families.
6. Any additional issues/concerns pertaining to antimicrobial stewardship.

A summary of the items discussed at the ASP Subcommittee will be reported to the SLCH PD&T Committee.

ACTIONS of the SLCH ASP

1. Formulary Restriction/Prior approval

PD&T will continue to review new antimicrobials and determine the need for them to remain on the hospital formulary. The ASP will work in conjunction with PD&T in helping inform and guide these decisions.

Prior approval refers to requiring providers to obtain approval or an Infectious Diseases Consult for an antimicrobial prior to that drug being started. For antimicrobials requiring this approval, the prescriber is required to call or page the ID clinical service or ASP. If approval is granted by the ID service or ASP then the pharmacy is notified to release the drug to be administered to the patient. Please see the St. Louis Children's Hospital Antimicrobial Restrictions document (appendix A) for a current list of antimicrobials requiring approval.

This list of antimicrobials requiring prior approval will be reviewed at least annually. Other antimicrobials might be added to this list in the instances of severe drug shortages or as new broad-spectrum agents are brought to market.

2. Prospective-audit with feedback

All new antimicrobials (IV, IM, PO, inhalational) started in the previous 24 hours or have been continued for 72 hours or greater will be reviewed by the ASP pharmacist and/or physician 6 days per week. The reviews will focus on the appropriateness of the dose, drug selection, and duration. Clinicians will then be contacted about any potential stewardship related actions (e.g., stop antibiotic, change dose, etc.). Additionally, ASP will communicate with all inpatient services regularly to answer questions regarding antimicrobial use.

3. Empiric antimicrobial treatment and prophylaxis guidelines

An empiric antimicrobial treatment guideline will be in place to help guide antimicrobial selection for different types of infections commonly encountered by clinicians in the outpatient and/or inpatient settings. This document will be reviewed at minimum annually by the ASP medical and pharmacy directors and approved by the ASP Subcommittee. The development of the initial guideline involved literature review, review of the SLCH antibiogram, and input from medical and surgical divisions at SLCH. This guideline will be made available electronically via the ASP website and other electronic platforms.

Perioperative prophylaxis selection table has been in place and the ASP will update and periodically review this table in collaboration with Infection Prevention and Control. This table will provide recommended prophylactic antibiotics for a majority of surgical cases performed. This document will be reviewed annually.

4. Support community antimicrobial stewardship efforts

The institutional ASP will support and encourage community division/team-based efforts for improving antimicrobial use. We will assist these divisions/teams in providing data and additional expertise to accomplish the goals they establish.

5. Clinical practice guidelines/Care process models

The ASP will assist in the development of CPGs/CPMs to aid in standardizing care for common infectious diseases. The ASP will focus on antimicrobial treatment recommendations assuring that the correct drug(s), dose(s) and durations are provided within these CPGs.

Data Tracking

1. The SLCH ASP will monitor program process measures that at minimum will include the number of antimicrobials reviewed, the actions/recommendations taken by the ASP and provider/team agreement with these actions. Additional process measures such as compliance with guidelines will be obtained when applicable. The percentage of surgeries receiving the appropriate antimicrobial prophylaxis based on the prophylactic table.

2. ASP outcome data will at minimum include days of therapy per 1000 patient days. This data will be followed utilizing process control charts. Additionally, we will follow and evaluate Standardized Antimicrobial Administration Ratio (SAAR), the CDC measure obtained from the NHSN AUR module, when available.

3. Clinical outcomes will be followed by the program on a quarterly basis and will include: length of stay, overall 30-day readmission rate (excluding Heme/Onc patients), Hospital-acquired *C. difficile* infections, antimicrobial cost per discharge, and antimicrobial cost per 1000 patient days. We will also work with the microbiology lab to obtain the number of multi-drug resistant organisms (MRSA, VRE, CRE, ESBL) isolated per month. Data will be monitored using process control charts.

Data Reporting

1. The data that are tracked will be presented at the following meetings and frequency:

ASP subcommittee- quarterly

PD&T committee- quarterly

Infection Prevention and Control- quarterly

2. An annual report based on the calendar year will be developed and delivered to the Executive Sponsor by January 31st following the completion of the previous calendar year.

3. Select data will be available on the ASP website.

Education

1. All hospital employees (including new house staff) will receive education on the SLCH ASP during their orientation.

2. All clinical employees annually will review an ASP module that addresses the importance of antimicrobial stewardship and the mechanisms of improving antimicrobial prescribing through the SLCH Learning Management System.

3. All Physicians will receive annual education that addresses the reasons for antimicrobial stewardship and the mechanisms by which SLCH performs stewardship. This education will often occur while the ASP team is doing their daily prospective-audit with feedback rounds.
4. Family education on the appropriate use of antimicrobials will be developed and reviewed as needed with the help of the Family Advisory Board.

REFERENCES:

1. Centers for Disease Control and Prevention. Antibiotic Resistance in the United States, 2013. www.cdc.gov/drugresistance/threat-report-2013 Accessed July 25, 2016.
2. The White House. National Action Plan for Combating Antibiotic-Resistant Bacteria. 2015. https://www.whitehouse.gov/sites/default/files/docs/national_action_plan_for_combating_antibiotic-resistant_bacteria.pdf. Accessed March 29, 2016.
3. Centers for Disease Control and Prevention. Core Elements of Hospital Antibiotic Stewardship Programs 2015. <http://www.cdc.gov/getsmart/healthcare/implementation/core-elements.html> Accessed July 25, 2016.
4. The Joint Commission. New Antimicrobial Stewardship Standard. 2016. https://www.jointcommission.org/assets/1/6/HAP-CAH_Antimicrobial_Prepub.pdf.
5. Services CfMM. Hospital and critical access hospital changes to promote innovation, flexibility, and improvement in patient care. 2016. <https://www.federalregister.gov/articles/2016/06/16/2016-13925/medicare-and-medicaid-programs-hospital-and-critical-access-hospital-cah-changes-to-promote>. Accessed July 18, 2016.
6. Modifies provisions relating to infection reporting of health care facilities and telehealth services, MO-SB579(2016). <https://trackbill.com/bill/mo-sb579-modifies-provisions-relating-to-infection-reporting-of-health-care-facilities-and-telehealth-services/1209364/> Accessed July 25, 2016.

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