Today's webinar will begin in a few minutes.

Please press ***6 to mute your line** or use the "mute" button on your phone.

If you have questions for the presenter or need to contact TCPS staff, type your comments into the chat box.

Lines will be opened during the call, so attendees may ask questions.

Please do not put the conference on hold.

Thank you for your patience.

TENNESSEE
Center for Patient Safety

Tennessee Pharmacists Coalition
Medication Use SAFETY Innovation Community

TENNESSEE Center for Patient Safety

Meeting The Joint Commission Standard for Antibiotic Stewardship: A Practical Approach (Webinar Part 2)

Faculty:

Brad Crane, PharmD, BCPS, Antimicrobial Stewardship Pharmacist, Blount Memorial Hospital

Kelley Lee, PharmD, BCPS, Antimicrobial Stewardship Pharmacist, Le Bonheur Children's Hospital

Ashley Tyler, PharmD, BCPS, Antimicrobial Stewardship Pharmacist, Saint Thomas Midtown Hospital

Chris Trabue, MD, Infectious Diseases Physician, Saint Thomas Midtown Hospital

CE Credit

- Information regarding continuing education credit

Conflict of Interest Disclosure

- The authors have no actual or potential conflict(s) of interest/relevant financial relationship(s) with any commercial interests in relation to this CE activity

Objectives

1. Describe & demonstrate the components of an evidence-based Antimicrobial Stewardship Program (ASP)
2. Describe various methods & mechanisms to provide staff education related to antimicrobial stewardship
3. Describe various methods & mechanisms to provide patient/family education related to antimicrobial stewardship

Objectives

4. Discuss recommendations and key components needed for establishing effective hospital protocols related to antimicrobial stewardship

5. Identify key antimicrobial stewardship resources

6. Explain steps in building an effective ASP

Faculty

- Brad Crane, PharmD, BCPS
  - Blount Memorial Hospital (Maryville)
  - Community Hospital
- Kelley Lee, PharmD, BCPS
  - Le Bonheur Children's Hospital (Memphis)
  - Academic Pediatric Hospital
- Ashley Tyler, PharmD, BCPS & Chris Trabue, MD
  - Saint Thomas Midtown Hospital (Nashville)
  - Large Community, Teaching Hospital

Joint Commission (TJC)

- Standard MM.09.01.01
- Effective January 1, 2017
- Elements of Performance
  1. Organization Priority
  2. Education – Staff
  3. Education – Patients/Family
  4. Multidisciplinary AST
  5. Core Elements
  6. Protocols
  7. Data (collect/analyze/report)
  8. Action

The Joint Commission

• Issued June 22, 2016 •

Prepublication Requirements

The Joint Commission has approved the following revisions for prepublication. While revised requirements are published in the semiannual updates to the print manuals (as well as in the online E-dition®), accredited organizations and paid subscribers can also view them in the monthly periodical *The Joint Commission Perspectives®*. To begin your subscription, call 877-223-6866 or visit http://www.jcrinc.com.

Joint Commission Requirement

New Antimicrobial Stewardship Standard

Applicable to Hospitals and Critical Access Hospitals

Effective January 1, 2017

Medication Management (MM)

Standard MM.09.01.01
The [critical access] hospital has an antimicrobial stewardship program based on current scientific literature.

Elements of Performance for MM.09.01.01

1. Leaders establish antimicrobial stewardship as an organizational priority. (*See also* LD.01.03.01, EP 5)

   Note: *Examples of leadership commitment to an antimicrobial stewardship program are as follows:*

   - *Accountability documents*
   - *Budget plans*
   - *Infection prevention plans*
   - *Performance improvement plans*
   - *Strategic plans*
   - *Using the electronic health record to collect antimicrobial stewardship data*

2. The [critical access] hospital educates staff and licensed independent practitioners involved in antimicrobial ordering, dispensing, administration, and monitoring about antimicrobial resistance and antimicrobial stewardship practices. Education occurs upon hire or granting of initial privileges and periodically thereafter, based on organizational need.

3. The [critical access] hospital educates patients, and their families as needed, regarding the appropriate use of antimicrobial medications, including antibiotics. (For more information on patient education, refer to Standard PC.02.03.01)

   Note: *An example of an educational tool that can be used for patients and families includes the Centers for Disease Control and Prevention's Get Smart document, "Viruses or Bacteria—What's got you sick? at http://www.cdc.gov/getsmart/community/downloads/getsmart-chart.pdf.*

4. The [critical access] hospital has an antimicrobial stewardship multidisciplinary team that includes the following members, when available in the setting:

   - Infectious disease physician
   - Infection preventionist(s)
   - Pharmacist(s)
   - Practitioner

   Note 1: *Part-time or consultant staff are acceptable as members of the antimicrobial stewardship multidisciplinary team.*

   Note 2: *Telehealth staff are acceptable as members of the antimicrobial stewardship multidisciplinary team.*

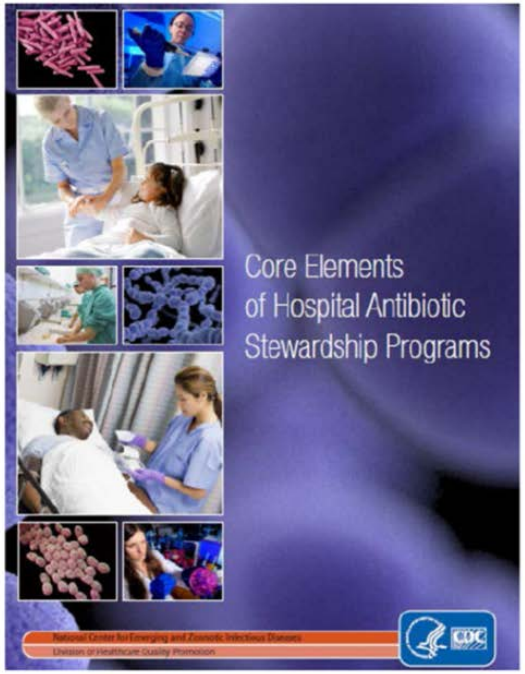
5. Ⓓ The [critical access] hospital's antimicrobial stewardship program includes the following core elements:

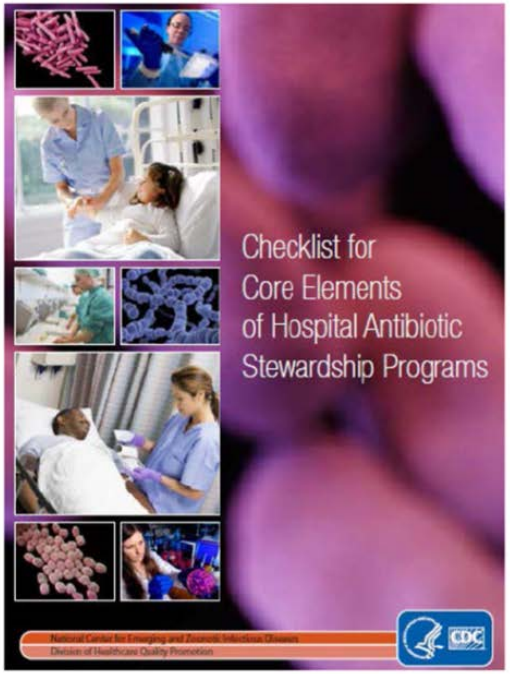
   - Leadership commitment: Dedicating necessary human, financial, and information technology resources.
   - Accountability: Appointing a single leader responsible for program outcomes. Experience with successful programs shows that a physician leader is effective.
   - Drug expertise: Appointing a single pharmacist leader responsible for working to improve antibiotic use.
   - Action: Implementing recommended actions, such as systemic evaluation of ongoing treatment need, after a set period of initial treatment (for example, "antibiotic time out" after 48 hours).
   - Tracking: Monitoring the antimicrobial stewardship program, which may include information on antibiotic prescribing and resistance patterns.

Key: A indicates scoring category A; C indicates scoring category C; Ⓓ indicates that documentation is required; Ⓜ indicates Measure of Success is needed; ⚠ indicates an Immediate Threat to Health or Safety; ⚠ indicates situational decision rules apply; ⚠ indicates direct impact requirements apply; R indicates and identified risk area

CDC Core Elements

1. Leadership Commitment
2. Accountability
3. Drug Expertise
4. Action
5. Tracking
6. Reporting
7. Education



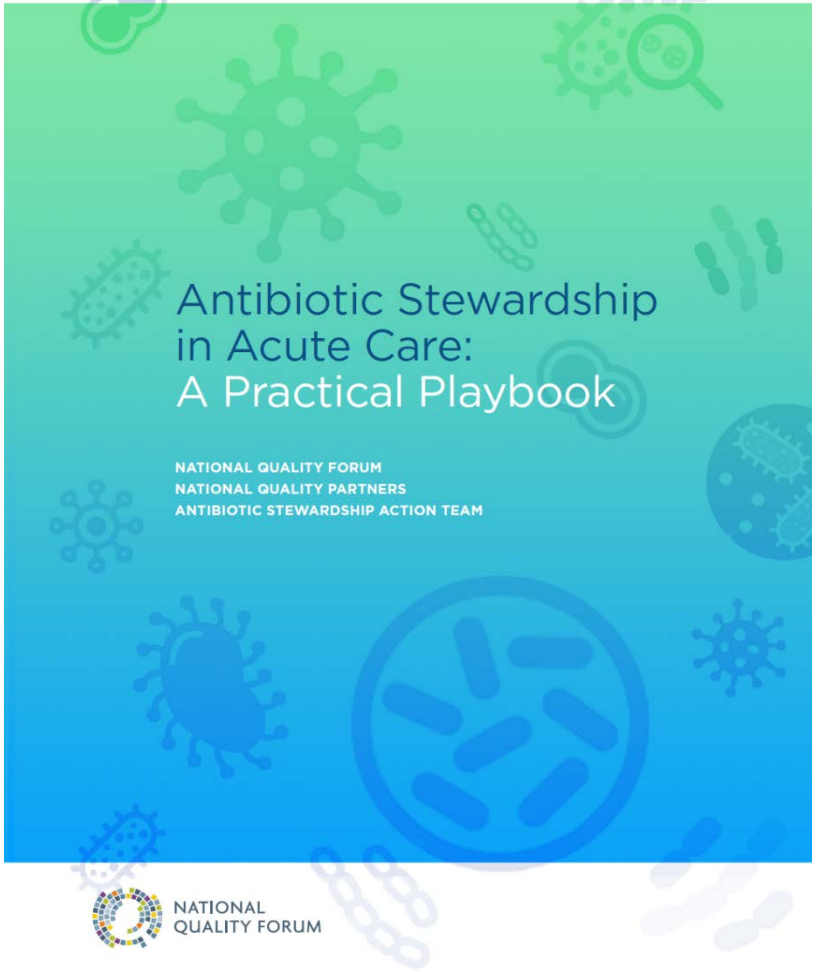


http://www.cdc.gov/getsmart/healthcare/implementation/core-elements.html

http://www.cdc.gov/getsmart/healthcare/pdfs/checklist.pdf

NQF Playbook

- Strategies for each CDC Core Element
- Practical Guidance for ASP
- Examples:
  - Implementation
  - Potential Barriers
  - Tools & Resources
  - Approaches
    - Basic
    - Intermediate
    - Advanced



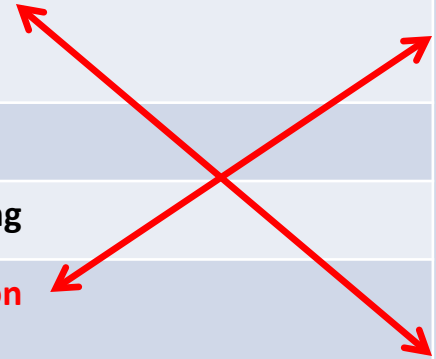
Webinar #1

CDC Core Elements	Joint Commission Standard
1. Leadership Commitment	**Medication Management Standard (MM).09.01.01** **Antimicrobial stewardship program based on current scientific literature** **<u>Elements of Performance:</u>** • **Leadership support** • **Education of patients and clinicians** • **Multidisciplinary team** • **Core Elements outlined by CDC** • **Hospital protocols** • **Collect, analyze, and report data** • **Take action on improvement opportunities**
2. Accountability	
3. Drug Expertise	
4. Action	
5. Tracking	
6. Reporting	
7. Education	

New Antimicrobial Stewardship Standard. Joint Commission Perspectives, July 2016, Vol 36(7) https://www.jointcommission.org/assets/1/6/HAP-CAH_Antimicrobial_Prepub.pdf

Today's Focus

CDC Core Elements	Joint Commission Standard
1. Leadership Commitment	**Medication Management Standard (MM).09.01.01** **Antimicrobial stewardship program based on current scientific literature** **<u>Elements of Performance:</u>** • **Leadership support** • **Education of patients and clinicians** • **Multidisciplinary team** • **Core Elements outlined by CDC** • **Hospital protocols** • **Collect, analyze, and report data** • **Take action on improvement opportunities**
2. Accountability	
3. Drug Expertise	
4. Action	
5. Tracking	
6. Reporting	
7. Education	



New Antimicrobial Stewardship Standard. Joint Commission Perspectives, July 2016, Vol 36(7) https://www.jointcommission.org/assets/1/6/HAP-CAH_Antimicrobial_Prepub.pdf

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ASP Components

Literature

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ASP Guidelines (2007)

- Core Activities
  - Prospective Audit
  - Formulary Restrictions
- Supplements
  - Pathways
  - De-escalation
  - Dose Optimization
  - Education
  - IV → PO
- Support Case for ASP

GUIDELINES

Infectious Diseases Society of America and the Society for Healthcare Epidemiology of America Guidelines for Developing an Institutional Program to Enhance Antimicrobial Stewardship

Timothy H. Dellit,[1] Robert C. Owens,[2] John E. McGowan, Jr.,[3] Dale N. Gerding,[4] Robert A. Weinstein,[5] John P. Burke,[6] W. Charles Huskins,[7] David L. Paterson,[8] Neil O. Fishman,[9] Christopher F. Carpenter,[10] P. J. Brennan,[9] Marianne Billeter,[11] and Thomas M. Hooton[12]

[1]Harborview Medical Center and the University of Washington, Seattle; [2]Maine Medical Center, Portland; [3]Emory University, Atlanta, Georgia; [4]Hines Veterans Affairs Hospital and Loyola University Stritch School of Medicine, Hines, and [5]Stroger (Cook County) Hospital and Rush University Medical Center, Chicago, Illinois; [6]University of Utah, Salt Lake City; [7]Mayo Clinic College of Medicine, Rochester, Minnesota; [8]University of Pittsburgh Medical Center, Pittsburgh, and [9]University of Pennsylvania, Philadelphia, Pennsylvania; [10]William Beaumont Hospital, Royal Oak, Michigan; [11]Ochsner Health System, New Orleans, Louisiana; and [12]University of Miami, Miami, Florida

EXECUTIVE SUMMARY

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 multifaceted nature of antimicrobial stewardship has led to collaborative review and support of these recommendations by the following organizations: American Academy of Pediatrics, American Society of Health-System Pharmacists, Infectious Diseases Society for Obstetrics and Gynecology, Pediatric Infectious Diseases Society, Society for Hospital Medicine, and Society of Infectious Diseases Pharmacists. 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. Given the association between antimicrobial use and the selection of resistant pathogens, the frequency of inappropriate antimicrobial use is often used as a surrogate marker for the avoidable impact on antimicrobial resistance. The combination of effective antimicrobial stewardship with a comprehensive infection control program has been shown to limit the emergence and transmission of antimicrobial-resistant bacteria. A secondary goal of antimicrobial stewardship is to reduce health care costs without adversely impacting quality of care.

These guidelines focus on the development of effective hospital-based stewardship programs and do not include specific outpatient recommendations. Although judicious use of antimicrobials is important in outpatient clinics and long-term care facilities, there are very few data regarding effective interventions, and it is unclear which interventions are most responsible for improvement in these settings.

The population targeted by these guidelines includes all patients in acute care hospitals. Most of the evidence supporting the recommendations in these guidelines is derived from studies of interventions to improve antimicrobial use for hospitalized adults. Many of these studies have focused on adults in intensive care units. Only a handful of studies have focused on hospitalized newborns, children, and adolescents. Few studies have included substantial populations of severely immunocompromised patients, such as patients undergoing

Received 3 October 2006; accepted 4 October 2006; electronically published 13 December 2006.

These guidelines were developed and issued on behalf of the Infectious Diseases Society of America and the Society for Healthcare Epidemiology of America.

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Clinical Infectious Diseases 2007; 44:159–77

1058-4838/2007/4402-0001$15.00

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ASP Guidelines (2016)

- Practice – Focused
- Specific Implementation Recommendations
  - N = 28
  - "Recommend" vs "Suggest"
  - Core Activities & Supplements
  - PK Monitoring
  - Duration
  - Tests
  - Antimicrobial Utilization

Clinical Infectious Diseases Advance Access published April 13, 2016

Clinical Infectious Diseases

IDSA FEATURES

Implementing an Antibiotic Stewardship Program: Guidelines by the Infectious Diseases Society of America and the Society for Healthcare Epidemiology of America

Tamar F. Barlam,[1] Sara E. Cosgrove,[2] Lilian M. Abbo,[3] Conan MacDougall,[4] Audrey N. Schuetz,[5] Edward J. Septimus,[6] Arjun Srinivasan,[7] Timothy H. Dellit,[8] Yngve T. Falck-Ytter,[9] Neil O. Fishman,[10] Cindy W. Hamilton,[11] Timothy C. Jenkins,[12] Pamela A. Lipsett,[13] Preeti N. Malani,[14] Larissa S. May,[15] Gregory J. Moran,[16] Melinda M. Neuhauser,[17] Jason G. Newland,[18] Christopher A. Ohl,[19] Matthew H. Samore,[20] Susan K. Seo,[21] and Kavita K. Trivedi[22]

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Evidence-based guidelines for implementation and measurement of antibiotic stewardship interventions in inpatient populations including long-term care were prepared by a multidisciplinary expert panel of the Infectious Diseases Society of America and the Society for Healthcare Epidemiology of America. The panel included clinicians and investigators representing internal medicine, emergency medicine, microbiology, critical care, surgery, epidemiology, pharmacy, and adult and pediatric infectious diseases specialties. These recommendations address the best approaches for antibiotic stewardship programs to influence the optimal use of antibiotics.

Keywords. antibiotic stewardship; antibiotic stewardship programs; antibiotics; implementation.

EXECUTIVE SUMMARY

Antibiotic stewardship has been defined in a consensus statement from the Infectious Diseases Society of America (IDSA), the Society for Healthcare Epidemiology of America (SHEA), and the Pediatric Infectious Diseases Society (PIDS) as "coordinated interventions designed to improve and measure the appropriate use of [antibiotic] agents by promoting the selection of the optimal [antibiotic] drug regimen including dosing, duration of therapy, and route of administration" [1]. The benefits of antibiotic stewardship include improved patient outcomes, reduced adverse events including *Clostridium difficile* infection (CDI), improvement in rates of antibiotic susceptibilities to targeted antibiotics, and optimization of resource utilization across the continuum of care. IDSA and SHEA strongly believe that antibiotic stewardship programs (ASPs) are best led by infectious disease physicians with additional stewardship training.

Summarized below are the IDSA/SHEA recommendations for implementing an ASP. The expert panel followed a process used in the development of other IDSA guidelines, which included a systematic weighting of the strength of recommendation and quality of evidence using the GRADE (Grading of Recommendations Assessment, Development and Evaluation) system (Figure 1) [2–5]. A detailed description of the methods, background, and evidence summaries that support each of the recommendations can be found online in the full text of the guidelines. For the purposes of this guideline, the term antibiotic will be used instead of antimicrobial and should be considered synonymous.

RECOMMENDATIONS FOR IMPLEMENTING AN ANTIBIOTIC STEWARDSHIP PROGRAM

Interventions

I. Does the Use of Preauthorization and/or Prospective Audit and Feedback Interventions by ASPs Improve Antibiotic Utilization and Patient Outcomes?

Recommendation

1. We recommend preauthorization and/or prospective audit and feedback over no such interventions *(strong recommendation, moderate-quality evidence).*

Received 22 February 2016; accepted 23 February 2016.

It is important to realize that guidelines cannot always account for individual variation among patients. They are not intended to supplant clinician judgment with respect to particular patients or special clinical situations. IDSA considers adherence to these guidelines to be voluntary, with the ultimate determination regarding their application to be made by the clinician in the light of each patient's individual circumstances.

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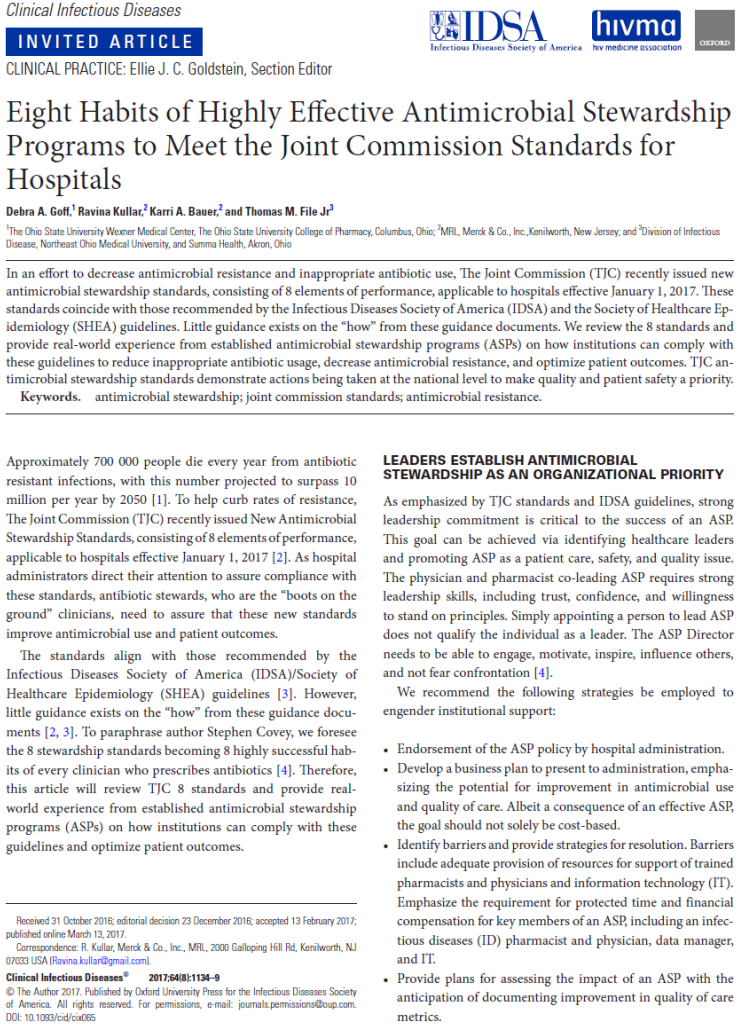
Clinical Infectious Diseases®

DOI: 10.1093/cid/ciw118

Article – Meeting TJC Standards

- Reviews the 8 TJC Standards
- Provides real-world experience from established ASPs



Clinical Infectious Diseases

INVITED ARTICLE

CLINICAL PRACTICE: Ellie J. C. Goldstein, Section Editor

Eight Habits of Highly Effective Antimicrobial Stewardship Programs to Meet the Joint Commission Standards for Hospitals

Debra A. Goff,[1] Ravina Kullar,[2] Karri A. Bauer,[3] and Thomas M. File Jr[3]

[1]The Ohio State University Wexner Medical Center, The Ohio State University College of Pharmacy, Columbus, Ohio; [2]MRL, Merck & Co., Inc., Kenilworth, New Jersey; and [3]Division of Infectious Disease, Northeast Ohio Medical University, and Summa Health, Akron, Ohio

In an effort to decrease antimicrobial resistance and inappropriate antibiotic use, The Joint Commission (TJC) recently issued new antimicrobial stewardship standards, consisting of 8 elements of performance, applicable to hospitals effective January 1, 2017. These standards coincide with those recommended by the Infectious Diseases Society of America (IDSA) and the Society of Healthcare Epidemiology (SHEA) guidelines. Little guidance exists on the "how" from these guidance documents. We review the 8 standards and provide real-world experience from established antimicrobial stewardship programs (ASPs) on how institutions can comply with these guidelines to reduce inappropriate antibiotic usage, decrease antimicrobial resistance, and optimize patient outcomes. TJC antimicrobial stewardship standards demonstrate actions being taken at the national level to make quality and patient safety a priority.

Keywords. antimicrobial stewardship; joint commission standards; antimicrobial resistance.

Approximately 700 000 people die every year from antibiotic resistant infections, with this number projected to surpass 10 million per year by 2050 [1]. To help curb rates of resistance, The Joint Commission (TJC) recently issued New Antimicrobial Stewardship Standards, consisting of 8 elements of performance, applicable to hospitals effective January 1, 2017 [2]. As hospital administrators direct their attention to assure compliance with these standards, antibiotic stewards, who are the "boots on the ground" clinicians, need to assure that these new standards improve antimicrobial use and patient outcomes.

The standards align with those recommended by the Infectious Diseases Society of America (IDSA)/Society of Healthcare Epidemiology (SHEA) guidelines [3]. However, little guidance exists on the "how" from these guidance documents [2, 3]. To paraphrase author Stephen Covey, we foresee the 8 stewardship standards becoming 8 highly successful habits of every clinician who prescribes antibiotics [4]. Therefore, this article will review TJC 8 standards and provide real-world experience from established antimicrobial stewardship programs (ASPs) on how institutions can comply with these guidelines and optimize patient outcomes.

Received 31 October 2016; editorial decision 23 December 2016; accepted 13 February 2017; published online March 13, 2017.

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LEADERS ESTABLISH ANTIMICROBIAL STEWARDSHIP AS AN ORGANIZATIONAL PRIORITY

As emphasized by TJC standards and IDSA guidelines, strong leadership commitment is critical to the success of an ASP. This goal can be achieved via identifying healthcare leaders and promoting ASP as a patient care, safety, and quality issue. The physician and pharmacist co-leading ASP requires strong leadership skills, including trust, confidence, and willingness to stand on principles. Simply appointing a person to lead ASP does not qualify the individual as a leader. The ASP Director needs to be able to engage, motivate, inspire, influence others, and not fear confrontation [4].

We recommend the following strategies be employed to engender institutional support:

- Endorsement of the ASP policy by hospital administration.
- Develop a business plan to present to administration, emphasizing the potential for improvement in antimicrobial use and quality of care. Albeit a consequence of an effective ASP, the goal should not solely be cost-based.
- Identify barriers and provide strategies for resolution. Barriers include adequate provision of resources for support of trained pharmacists and physicians and information technology (IT). Emphasize the requirement for protected time and financial compensation for key members of an ASP, including an infectious diseases (ID) pharmacist and physician, data manager, and IT.
- Provide plans for assessing the impact of an ASP with the anticipation of documenting improvement in quality of care metrics.

ASP Components / Design

Examples

(each faculty member)

Questions from Audience

(Type in your Question)

ASP Components – Le Bonheur Children's Hospital

- Daily prospective audit and feedback for select antibiotics: meropenem, piperacillin-tazobactam, cefepime, vancomycin, 3rd generation cephalosporins, linezolid
- Daily positive sterile site culture review with audit and feedback
- Guideline development, education, monitoring, re-education
- 48 hour antibiotic "time-out"

ASP Components—Saint Thomas Midtown

- Sentri7 Rules/Alerts
  - Positive cultures (sterile sites)
  - Double anaerobic/double beta lactam coverage
  - Broad spectrum antibiotic review at 72 hours
  - Fluoroquinolone review at 72 hours
  - Restricted antibiotic review
- Automatic stop orders at 7 days
- Order Sets for Infections
  - Pneumonia, SSTI, meningitis, febrile neutropenia, diabetic foot infections, etc.

ASP Components / Design

Questions from Audience

(Type in your Question)

(< 5 minutes)

Education – Staff

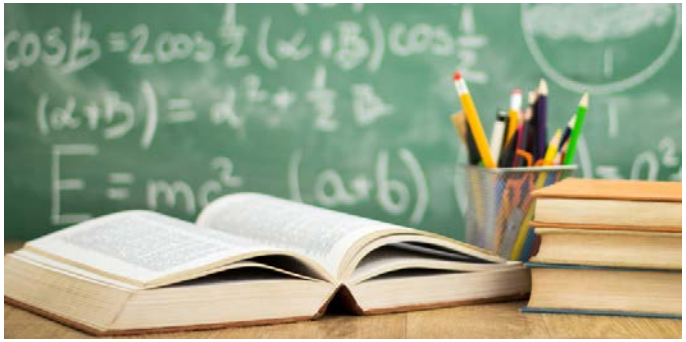
TJC Standard (#2) / Core Element (#7)

- Who?
  - Staff, Licensed Independent Practitioners
  - Involved in antimicrobial ordering *(prescribers/pharmacy)*, dispensing *(pharmacy/nursing)*, administration *(nursing)* and monitoring *(prescribers/pharmacy/nursing)*
- Content?
  - Antimicrobial Resistance
  - Antimicrobial Stewardship Practices
- Frequency?
  - Upon hire (or granting of initial privileges)
  - Periodically thereafter (based on organization need)

Education – Staff

TJC Standard (#2) / Core Element (#7)

- How?
  - Lead by ASP physicians/pharmacists
  - Didactic lectures/sessions – *insufficient*
  - Mandatory ASP competencies
    - Online, CBLs
  - Orientation
  - Face-to-face:
    - Department meetings
    - Antimicrobial recommendations *(informal)*
  - Newsletters



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Education – Staff

Examples

(each faculty member)

Questions from Audience

(Type in your Question)

Education—Pharmacists
Le Bonheur Children's Hospital

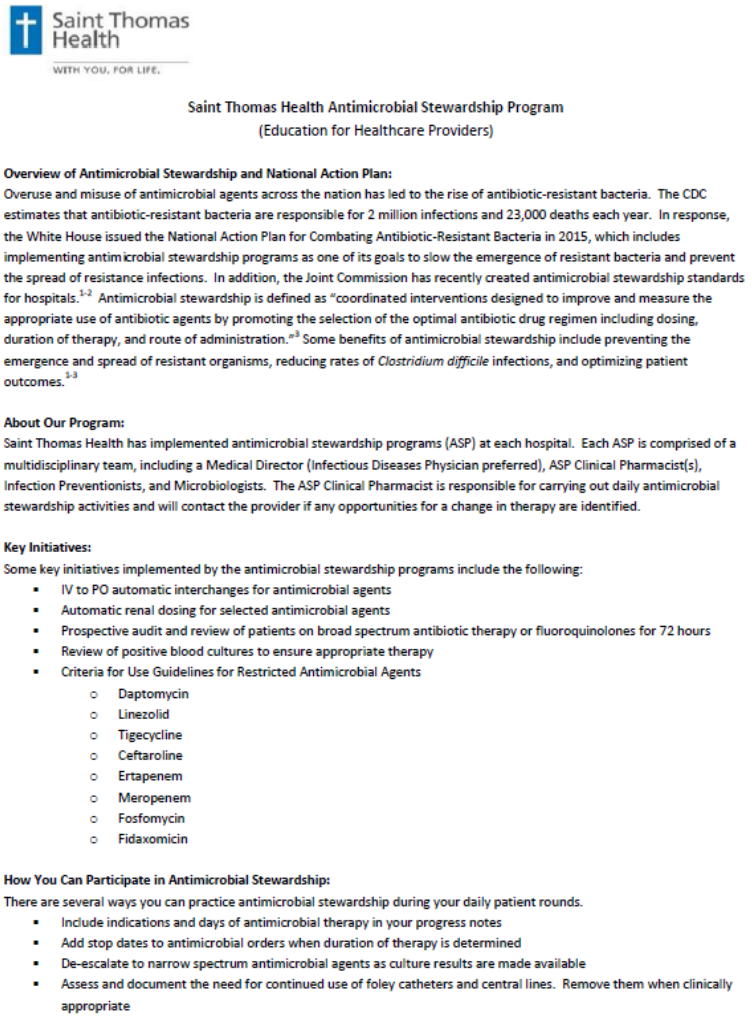
- Web-based, mandatory, upon hire and yearly competency
- Developed by ASP staff
- Includes:
  - Basics of antimicrobial stewardship/antibiotic resistance
  - Information on our hospital's ASP
  - Our hospital's ASP protocols
  - Antibiogram
  - Examples of staff pharmacist role
  - Case/theory-based post-test

Education—Providers
Le Bonheur Children's Hospital

- Pediatrics Grand Rounds
- Surgery Grand Rounds
- Handout for physician orientation
- Web page

Education—Providers (Saint Thomas Midtown)

- **Provided to ALL licensed healthcare providers (MD, DO, NP, and PA)**
- **Education provided upon hire and every 2 years when re-credentialed**



Saint Thomas Health

WITH YOU. FOR LIFE.

Saint Thomas Health Antimicrobial Stewardship Program
(Education for Healthcare Providers)

Overview of Antimicrobial Stewardship and National Action Plan:
Overuse and misuse of antimicrobial agents across the nation has led to the rise of antibiotic-resistant bacteria. The CDC estimates that antibiotic-resistant bacteria are responsible for 2 million infections and 23,000 deaths each year. In response, the White House issued the National Action Plan for Combating Antibiotic-Resistant Bacteria in 2015, which includes implementing antimicrobial stewardship programs as one of its goals to slow the emergence of resistant bacteria and prevent the spread of resistance infections. In addition, the Joint Commission has recently created antimicrobial stewardship standards for hospitals.[1-2] Antimicrobial stewardship is defined as "coordinated interventions designed to improve and measure the appropriate use of antibiotic agents by promoting the selection of the optimal antibiotic drug regimen including dosing, duration of therapy, and route of administration."[3] Some benefits of antimicrobial stewardship include preventing the emergence and spread of resistant organisms, reducing rates of *Clostridium difficile* infections, and optimizing patient outcomes.[1-3]

About Our Program:
Saint Thomas Health has implemented antimicrobial stewardship programs (ASP) at each hospital. Each ASP is comprised of a multidisciplinary team, including a Medical Director (Infectious Diseases Physician preferred), ASP Clinical Pharmacist(s), Infection Preventionists, and Microbiologists. The ASP Clinical Pharmacist is responsible for carrying out daily antimicrobial stewardship activities and will contact the provider if any opportunities for a change in therapy are identified.

Key Initiatives:
Some key initiatives implemented by the antimicrobial stewardship programs include the following:

- IV to PO automatic interchanges for antimicrobial agents
- Automatic renal dosing for selected antimicrobial agents
- Prospective audit and review of patients on broad spectrum antibiotic therapy or fluoroquinolones for 72 hours
- Review of positive blood cultures to ensure appropriate therapy
- Criteria for Use Guidelines for Restricted Antimicrobial Agents
  - Daptomycin
  - Linezolid
  - Tigecycline
  - Ceftaroline
  - Ertapenem
  - Meropenem
  - Fosfomycin
  - Fidaxomicin

How You Can Participate in Antimicrobial Stewardship:
There are several ways you can practice antimicrobial stewardship during your daily patient rounds.

- Include indications and days of antimicrobial therapy in your progress notes
- Add stop dates to antimicrobial orders when duration of therapy is determined
- De-escalate to narrow spectrum antimicrobial agents as culture results are made available
- Assess and document the need for continued use of foley catheters and central lines. Remove them when clinically appropriate

Education – Staff

Questions from Audience

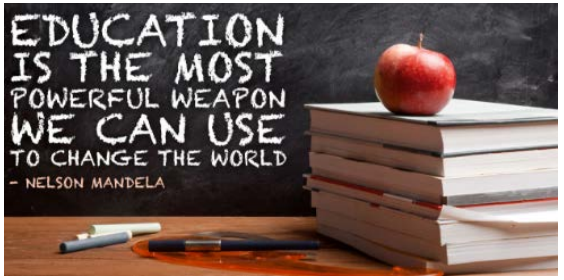
(Type in your Question)

(< 5 minutes)

Education – Patients

TJC Standard (#3) / Core Element (#7)

- Who?
  - To: Patients & Family Members
  - By: Staff *(see last section)*

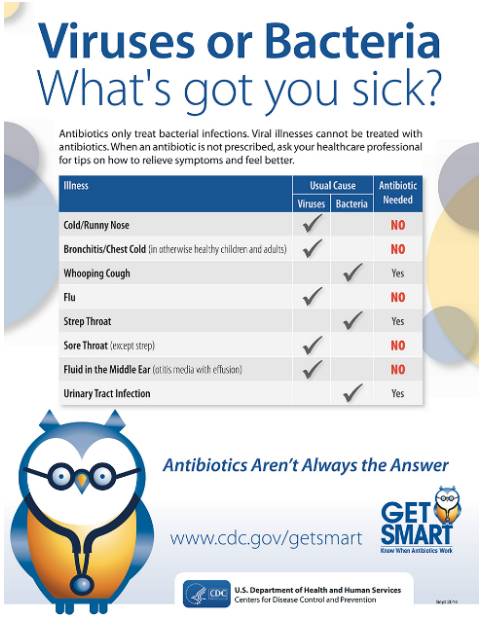


- Content?
  - When antibiotics are/aren't appropriate
  - Unintended consequences (side effects, resistance)
- Why?
  - Patients (expectations) impact/influence prescribers

Education – Patients

TJC Standard (#2) / Core Element (#7)

- How?
  - Materials:
    - CDC "Get Smart, Know When Antibiotics Work"
    - CDC Website
    - Homegrown Sheets / Pamphlets
  - Methods:
    - Admission Packets
    - Television / Computer Screens
    - Patient Rooms
    - Social Media



Education – Patients / Family

Examples

(each faculty member)

Questions from Audience

(Type in your Question)

Education—Patients/families
Le Bonheur Children's Hospital

- Promotional table during *CDC's Get Smart Week*
  - Handouts from CDC
  - Videos from CDC playing continuously near table
  - Candy
- CDC's *Viruses or Bacteria: what's got you sick?* flyer
- Video on patient room TV
- Social Media

Education—Patients (Saint Thomas Midtown)

Placed in the admission packets of ALL patients

ANTIBIOTICS

KNOW THE FACTS

Saint Thomas Health

www.STHealth.com

Feeling better fast is important when you are sick. Illnesses can be caused by either viruses or bacteria. Antibiotics may not be needed, depending on what is causing you to be sick.

BACTERIA

Bacteria cause infections such as strep throat, some pneumonia, and sinus infections. **Antibiotics *can cure* bacterial infections.**

VIRUSES

Viruses cause a common cold, most coughs, and flu. Antibiotics will not keep others from catching your illness. **Antibiotics *will not cure* viral infections.**

PROTECT YOUR HEALTH

An antibiotic won't help my cold?

It ***will not*** help you feel better or get you back to work sooner.

But the mucus from my nose is green or yellow?

That ***does not*** mean you have a bacterial infection. It is normal for mucus to get thick and change color during a viral cold.

Taking antibiotics when they are not needed can be harmful and can allow bacteria to become resistant. Resistant bacteria can cause illnesses that are very hard to treat.

If you have a bacterial infection, like strep throat, and your doctor prescribes antibiotics, be sure to take all of the medicine as directed. The infection needs to be completely treated so that the bacteria do not become resistant.

It's very clear that antibiotics are important medications when taken appropriately, but they ***won't*** work for every illness.

Antibiotics kill bacteria – ***not*** viruses.

Avoid taking unnecessary antibiotics for your good health.

Talk to your doctor about the right medicines for you.

"For the cold or flu, antibiotics won't work for you."

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TENNESSEE Center for Patient Safety

Education – Patients / Family

Questions from Audience

(Type in your Question)

(< 5 minutes)

Protocols

TJC Standard (#6)

- Organizational-approved multidisciplinary protocols / policy & procedures
  - Committees
  - Specialists
- Examples:
  - General: ASP P&P
  - Selection:
    - Formulary Restrictions / Pre-Authorization
    - Order Sets for specific disease states
  - Dosing:
    - PKS (Vancomycin, Aminoglycosides)
    - Renal Adjustments
  - IV → Oral
  - Duration

Protocols

Examples

(each faculty member)

Questions from Audience

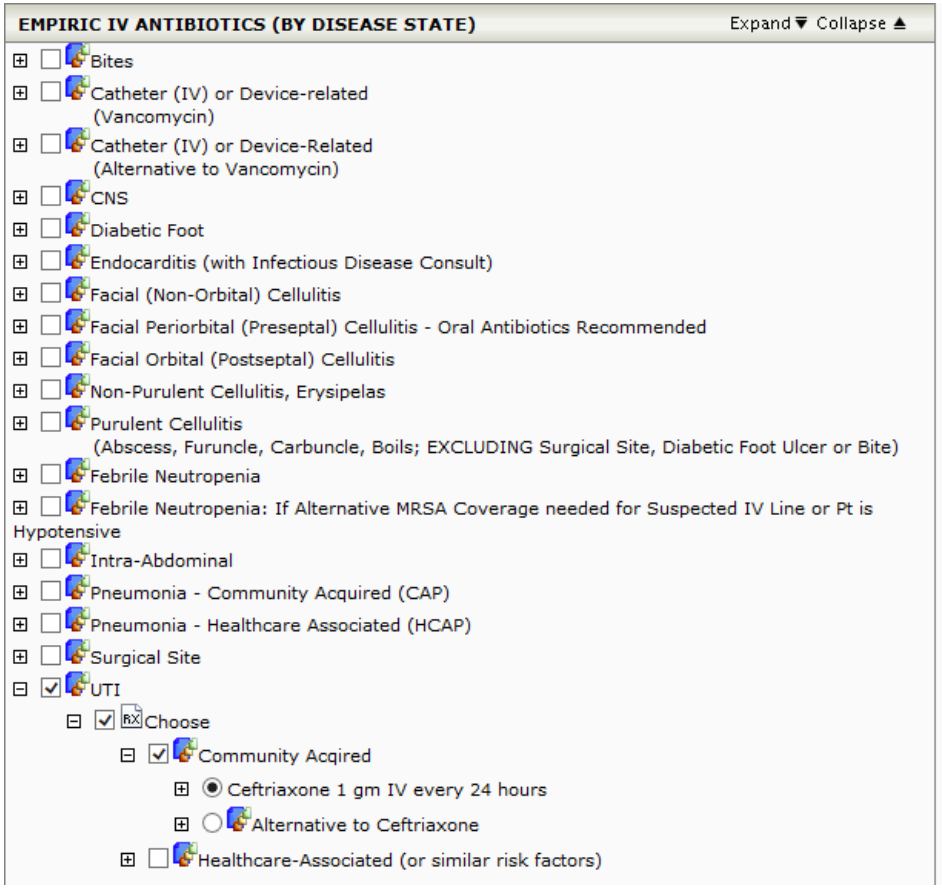
(Type in your Question)

Protocols – BMH

- "Protected Antimicrobials"
  - N = 20+
  - Rationale:
    - Resistance
    - Cost
  - Criteria:
    - Specific Providers
    - Specific Clinical Conditions

Protocols – BMH

- CPOE Order Sets
  - Empiric IV Antimicrobials (13 disease states)
  - Pneumonia Admission Orders
  - ED = Admission



Protocols – BMH

- Policy & Procedures
  - ASP
    - Initial Indication
    - Antimicrobial "Timeout"
  - Dosing:
    - PKS
      - Automatic Rx Consult
    - Weight
    - Renal-Adjustments
  - Labs:
    - BMP / CBC
    - CK (Daptomycin)
    - Procalcitonin
    - MRSA PCR
  - IV → Oral
  - Duration

Protocols

Le Bonheur Children's Hospital

Unit-based guidelines:
- Critical care units empiric antibiotic use:
  - Collect baseline data
  - Determine most common infectious conditions
  - Discussion with unit-based physician "champions"
  - Review literature and antibiogram
  - Develop guidelines in ***collaboration*** with champions
  - Get input from entire unit medical and pharmacy staffs
  - Collect post-implementation data
  - Re-educate

Condition-based guidelines:
- Community-acquired pneumonia:
  - Edit/summarize national guidelines to fit local resistance patterns
  - Educate residents and medical staff
  - Audit
  - Re-educate
- Perforated appendicitis:
  - Pulled national data and literature support
  - Discussion with surgeons
  - Developed guideline in ***collaboration*** with surgeons
  - Collect post-implementation data

Specific drug-based guideline:
- Linezolid use:
  - Collect baseline data
  - Develop guidelines based on literature, antibiogram, and benchmarking
  - Distributed guidelines to medical and pharmacy staffs

Protocols

Le Bonheur Children's Hospital

Example:

guideline pocket-card condensed from national guideline

Inpatient

Community-Acquired Pneumonia:

1Consider viral testing
2Initial chest x-ray
3. Antibiotics:
- •Patients ≥ 4 months of age and age-appropriately immunized[1]: Ampicillin or Penicillin G
- •Patients < 4 months or incompletely immunized: Ceftriaxone or Cefotaxime
- •Life-threatening or complicated[2] infection: Ceftriaxone or Cefotaxime and Vancomycin

4. Consider treatment of atypical pneumonia and influenza if warranted.
5.Total duration (uncomplicated): 7-10 days.

Asthma:

1Limit CXRs to patients with fever and/or clinical signs of pneumonia

2Antibiotics only for those with pneumonia on CXR
3IF antibiotics given, treat as above

Bronchiolitis:

1Antibiotics should only be used with specific indications for a bacterial co-infection.
2IF antibiotics given:
- •< 1 month old: Ampicillin and Cefotaxime
- •> 1 month old: treat as above

[1] At least 2 doses of PCV and Hib vaccines[2] Parapneumonic effusions, empyema, multilobar disease , abscesses or cavities, necrotizing pneumonia, pneumothorax or bronchopleural fistula; or pneumonia that is a complication of bacteremic disease that includes other sites of infection.

Clinical Infectious Diseases 2011;53(7):e25–e76

Protocols

Le Bonheur Children's Hospital

Example: Unit-specific guideline

NICU

Early Onset Sepsis:

Empiric antibiotics: **Ampicillin and Gentamicin**

Duration:

Discontinue at 48 hours or sooner if blood cultures/CRP/CBC WNL
Therapy should typically not exceed 5-7 days

Late Onset Sepsis:

Empiric antibiotics: **Vancomycin and Gentamicin**

If meningitis is suspected, obtain CSF and add **cefotaxime**

Duration:

Discontinue at 48 hours or sooner if blood cultures/CRP/CBC WNL
Duration should be based on culture results.

***Necrotizing Enterocolitis*:**

Empiric antibiotics: **Vancomycin and Gentamicin** (anaerobic coverage with **metronidazole** may be added for surgical Stage 3)

Duration:

Based on staging

Stage 1: 7 days
Stage 2: 10-14 days
Non-surgical stage 3: 10-14 days

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Protocols—Saint Thomas Midtown Hospital

NEW Joint Commission Standards for Antimicrobial Stewardship Checklist
Effective January 1, 2017

Leaders establish antimicrobial stewardship as an organizational priority (e.g. accountability documents, budget plans, infection prevention plans, performance improvement plans, strategic plans, using electronic health record to collect antimicrobial stewardship)

- ☑ Sentri7 alerts implemented to identify patients to monitor
- ☑ ASP Policy and Procedure
- ☑ Root cause analyses performed for HO-Cdiff, CAUTI, and CLABSI

Education of staff and licensed independent practitioners involved in antimicrobial ordering, dispensing, administration, and monitoring about antimicrobial resistance and antimicrobial stewardship practices. Education occurs upon hire or granting of initial privileges and periodically thereafter, based on organizational need

- ☑ Antimicrobial Stewardship Education to Healthcare Providers (MD, DO, NP, PA)—education provided upon hire and then every 2 years when re-credentialed
- ☑ Antimicrobial Stewardship Education for Nursing—education provided upon hire and annually
- ☑ Antimicrobial Stewardship Education for Pharmacists—education provided upon hire and annually
- ☑ Antimicrobial Stewardship Presentation—overview of antimicrobial stewardship initiatives/protocols at STH upon hire of new medical and pharmacy residents
- ☑ Half-day of orientation with Antimicrobial Stewardship Pharmacist upon hire of new pharmacists
- ☑ Penicillin Allergy Assessment Competency Exam—pharmacists must complete every 3 years
- ☑ In-services on new antimicrobial stewardship initiatives

Education of patients, and their families as needed, regarding appropriate use of antimicrobial medications, including antibiotics.

- ☑ CDC Get Smart Documents on "Cold or Flu" and "Viruses or Bacteria" provided in all patient admission packets

Antimicrobial stewardship multidisciplinary team in place (includes Infectious disease physician, Infection Preventionist, pharmacist, and practitioner)

- ☑ Infectious Disease Physician: Chris Trabue, MD, FACP
- ☑ Infection Preventionist: Gail Fraine, RN
- ☑ Antimicrobial Stewardship Pharmacist: Ashley Tyler, PharmD, BCPS

Antimicrobial Stewardship Program includes the following core elements listed below:

1. **Leadership Commitment**
   - ☑ Physician and pharmacist leads have dedicated time to antimicrobial stewardship (see below)
2. **Accountability**
   - ☑ Infectious Disease physician identified as the champion of the program and is responsible for outcomes

   Saint Thomas Midtown Hospital Physician Lead: Chris Trabue, MD, FACP
3. **Drug Expertise**
   - ☑ Antimicrobial Stewardship pharmacist identified as leader responsible for working to improve antibiotic use

   Saint Thomas Midtown Hospital Pharmacist Lead: Ashley Tyler, PharmD, BCPS
4. **Action**
   - ☑ Automatic stop orders (ASO) after 7 days for antibiotic orders without a specified duration
   - ☑ Review of broad spectrum antibiotics and fluoroquinolones after 72 hours using Sentri7
5. **Tracking**
   - ☑ Antibiogram (annual)
   - ☑ Antibiotic DDD/1000 Patient Days Dashboard
   - ☑ Prospective monitoring and de-escalation of broad spectrum antibiotics after 72 hours
6. **Reporting**
   - ☑ Antibiogram is reported annually
   - ☑ Antibiotic DDD/1000 Patient Days Dashboard is reported quarterly
   - ☑ Hospital-onset C. difficile rates reported monthly to HAI-HROW
7. **Education**
   - ☑ Annual antimicrobial stewardship education for new medical residents
   - ☑ Education for nursing, physicians, and pharmacists on extended infusion piperacillin/tazobactam
   - ☑ Education for pharmacists and physicians on penicillin allergies assessments

Antimicrobial Stewardship Program uses organization-approved multidisciplinary protocols

- ☑ Antibiotic Stewardship Program Policy and Procedure, MCC-11
- ☑ Antibiotic Restrictions based on Criteria for Use
- ☑ Penicillin/Cephalosporin Allergy Assessment
- ☑ Antimicrobial Automatic Stop Order of 7 days
- ☑ IV To PO Antimicrobial Conversions
- ☑ Antimicrobial Prophylaxis Protocol for Selected Surgical Procedures, MCC-14
- ☑ *Clostridium Difficile* System Policy, MCC-20
- ☑ Antimicrobial order forms based on site of infection—in progress

Hospital collects, analyzes, and reports data on its antimicrobial stewardship program

- ☑ Antibiogram is reported annually
- ☑ Antibiotic DDD/1000 Patient Days Dashboard is reported quarterly

Hospital takes action on improvement opportunities identified in its antimicrobial stewardship program

- ☑ Penicillin allergy assessment created to decrease inappropriate carbapenem and aztreonam use in patients with beta-lactam allergies
- ☑ Aminoglycosides recommended as the preferred agent in combination with a beta-lactam for double *Pseudomonas* coverage based on local combination antibiogram
- ☑ List of Restricted Antimicrobials by Criteria for Use

Leadership Support
Hospital administration and medical staff leadership at Saint Thomas Midtown Hospital (STMH) understand that their support and collaboration in the development and maintenance of antimicrobial stewardship programs is critical to the success of the program. They recognize that there is an abundance of evidence of cost savings from higher quality care and more careful drug selection, as well as increased patient safety and improved results of healthcare-associated infections associated with ASPs. This leadership commitment is necessary to help further advance the program's acceptance and likelihood of success.

This is a statement of the commitment from STMH ministry senior management to provide leadership support to the STMH antimicrobial stewardship program. This support is personal, financial, administrative, and executive.

Geoffrey N. Swallowdean, CMO, 1-25-17
Ministry Executive Signature, Title, Date

Saint Thomas Midtown Hospital
Ministry Name

Protocols—Saint Thomas Midtown Hospital

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CMO, 1-25-17

Ministry Executive Signature, Title, Date

Saint Thomas Midtown Hospital

Ministry Name

Antimicrobial Stewardship Program uses organization-approved multidisciplinary protocols:

- ASP Policy and Procedure
- Antibiotic Restrictions based on Criteria for Use
- Penicillin/Cephalosporin Allergy Assessment
- IV to PO Antimicrobial Conversions
- Antimicrobial Prophylaxis Protocol for Selected Surgical Procedures
- *Clostridium Difficile* System Policy
- Antimicrobial order forms based on site of infection

Protocols—Saint Thomas Midtown Hospital

Indication Specific Powerplans in CPOE

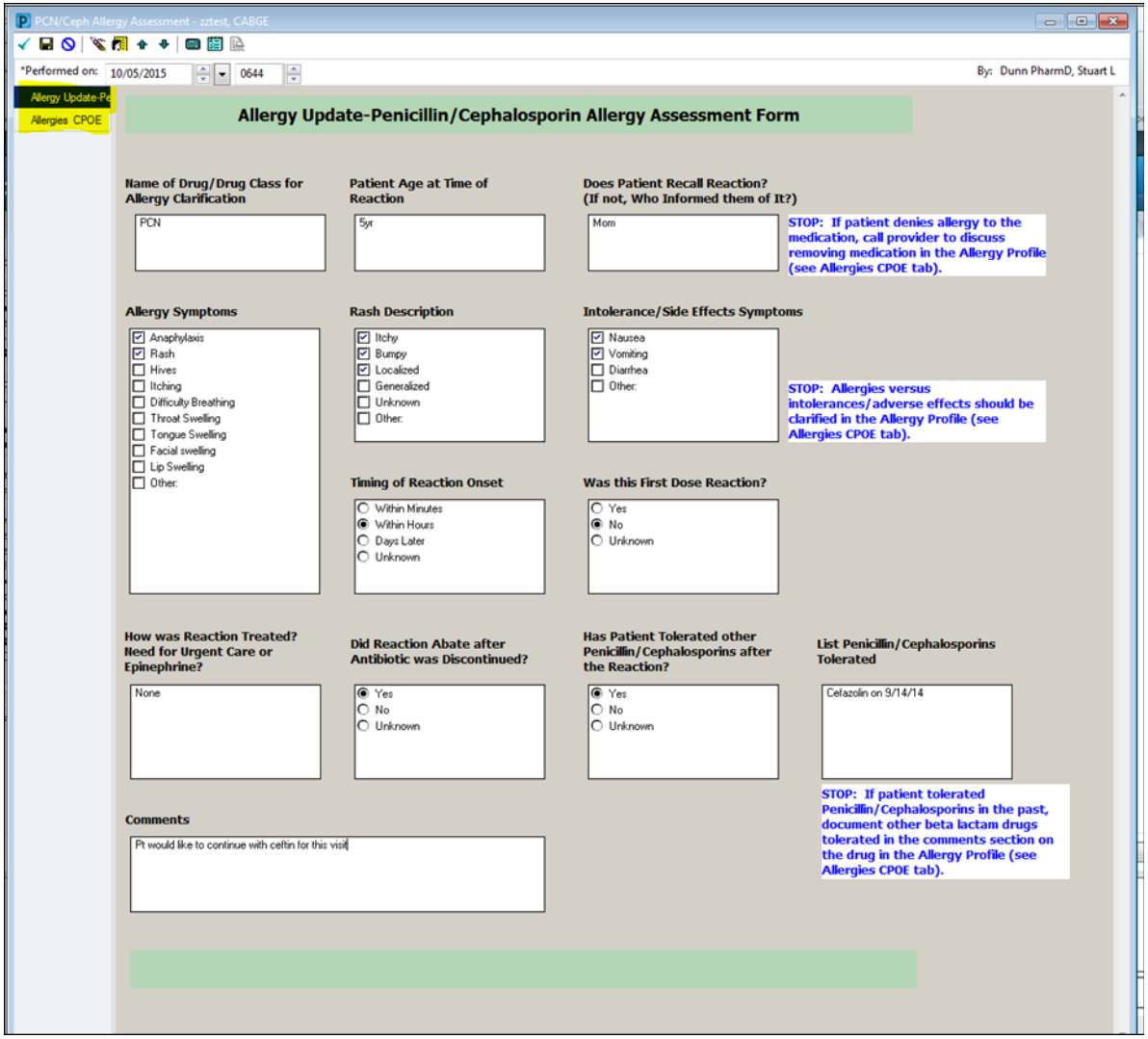
- **Ex. Diabetic Foot Infections**

$	Component	Status	Details
ID Diabetic Foot Infection (Planned Pending)			
Non Categorized			
	**********		
	This powerplan should be used for patients with suspected moderate to severe diabetic foot infections.		
	Initial mild infections are usually treated with oral therapy outpatient. Antibiotic options were chosen		
	based on local antibiogram data. De-escalate to a narrower spectrum agent when cultures return		
	Note: Dosages are for patients with normal renal function.		
	**********		
Medications			
	Antibiotic options for moderate to severe infections when MRSA, Enterobacteriaceae, Pseudomonas, and obligate anaerobes are suspected:		
	Preferred Regimen:		
☐	vancomycin		15 mg/kg, IV solution, IVPB, q12hrs
☐	piperacillin-tazobactam		4.5 gm, IV solution, IVPB, q8hrs, Start: T;N+60, To be infused over 4 hr
	Alternative Regimen:		
☐	vancomycin		15 mg/kg, IV solution, IVPB, q12hrs
☐	cefepime		2 gm, IV solution, IVPB, q8hrs CrCl > 50 mL/min, pharmacy to adjust.
☐	metroNIDAZOLE		500 mg, IV solution, IVPB, q8hrs
	For patients with confirmed type-1 allergies to penicillins and cephalosporins (excluding ceftazidime):		
☐	vancomycin		15 mg/kg, IV solution, IVPB, q12hrs
☐	metroNIDAZOLE		500 mg, IV solution, IVPB, q8hrs
☐	aztreonam		2 gm, IV solution, IVPB, q8hrs
	Antibiotic options for moderate to severe infections in patients with a recent history of extended		
	spectrum beta-lactamase (ESBL) producing organisms and suspected MRSA:		
	Preferred Regimen:		
☐	vancomycin		15 mg/kg, IV solution, IVPB, q12hrs
☐	meropenem		1,000 mg, IV solution, IVPB, q8hrs
Laboratory			
	Cultures: (May consider deep wound culture)		
☐	Blood Culture (Culture Blood)		Blood x 2 (draw prior to administering antibiotics)
☐	Aerobic Culture w/ Gram Stain (Culture Wound, Superficial/Open)		

Protocols—Saint Thomas Midtown Hospital

Penicillin/Cephalosporin Allergy Assessment

- Completed by pharmacists



Protocols

Questions from Audience

(Type in your Question)

(< 5 minutes)

Action

TJC Standard (#8) / Core Element (#4)

- The ASP identifies & implements ≥ 1 specific intervention to improve antibiotic use
- ***Basic:***
  - Restrictions (“Protections”) / Prior-Authorizations
  - Order Set
- ***Intermediate:***
  - Antimicrobial “time-out”
  - IV → PO
  - Dose Adjustments
- ***Advanced:***
  - Rapid Diagnostic Tests
  - Post-Prescriptive Reviews of specific disease states

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Action

Examples

(each faculty member)

Questions from Audience

(Type in your Question)

Action – BMH

- RDT
  - Blood Cultures
    - All BCx + for GPC
    - All called to Pharmacist
    - Action: Interpret results, assess pt, contact prescriber
  - Evaluating other sources
- Procalcitonin
- MRSA PCR

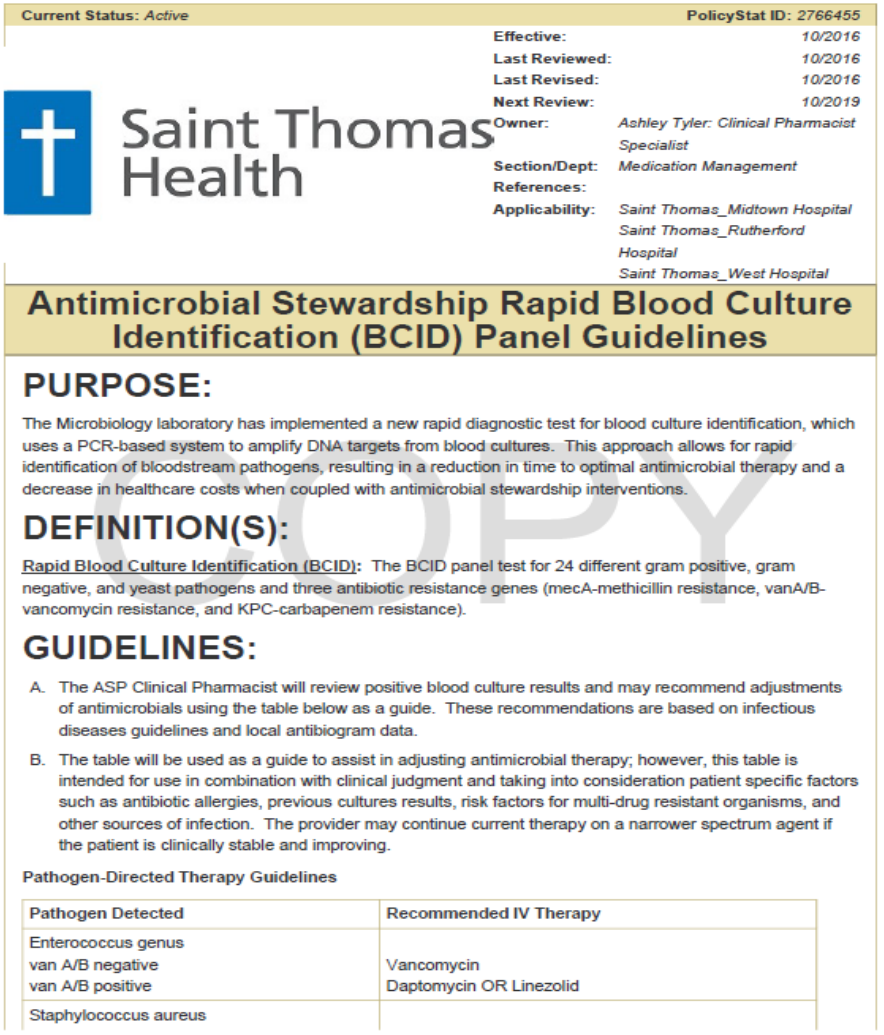
Action
Le Bonheur Children's Hospital

- Daily prospective audit and feedback
  - Select antibiotics
  - Sterile-site cultures
- Daily prospective pharmacokinetics service
  - Pharmacists review each patient on vancomycin and aminoglycosides to determine need for obtaining level
  - Pharmacists order levels/renal function tests
  - Pharmacists interpret levels and discuss need for dose changes with prescriber

Action –Saint Thomas Midtown Hospital

Rapid Diagnostic Tests for Blood

- Pharmacists are alerted on positive blood culture results through Sentri7
- Call prescriber and may recommend changes to antibiotics using the guidelines provided in table.



Current Status: *Active* — PolicyStat ID: *2766455*

Effective:	*10/2016*
Last Reviewed:	*10/2016*
Last Revised:	*10/2016*
Next Review:	*10/2019*
Owner:	*Ashley Tyler: Clinical Pharmacist Specialist*
Section/Dept:	*Medication Management*
References:	
Applicability:	*Saint Thomas_Midtown Hospital, Saint Thomas_Rutherford Hospital, Saint Thomas_West Hospital*

Saint Thomas Health

Antimicrobial Stewardship Rapid Blood Culture Identification (BCID) Panel Guidelines

PURPOSE:

The Microbiology laboratory has implemented a new rapid diagnostic test for blood culture identification, which uses a PCR-based system to amplify DNA targets from blood cultures. This approach allows for rapid identification of bloodstream pathogens, resulting in a reduction in time to optimal antimicrobial therapy and a decrease in healthcare costs when coupled with antimicrobial stewardship interventions.

DEFINITION(S):

Rapid Blood Culture Identification (BCID): The BCID panel test for 24 different gram positive, gram negative, and yeast pathogens and three antibiotic resistance genes (mecA-methicillin resistance, vanA/B-vancomycin resistance, and KPC-carbapenem resistance).

GUIDELINES:

A. The ASP Clinical Pharmacist will review positive blood culture results and may recommend adjustments of antimicrobials using the table below as a guide. These recommendations are based on infectious diseases guidelines and local antibiogram data.

B. The table will be used as a guide to assist in adjusting antimicrobial therapy; however, this table is intended for use in combination with clinical judgment and taking into consideration patient specific factors such as antibiotic allergies, previous cultures results, risk factors for multi-drug resistant organisms, and other sources of infection. The provider may continue current therapy on a narrower spectrum agent if the patient is clinically stable and improving.

Pathogen-Directed Therapy Guidelines

Pathogen Detected	Recommended IV Therapy
Enterococcus genus van A/B negative van A/B positive	Vancomycin Daptomycin OR Linezolid
Staphylococcus aureus	

Action

Questions from Audience

(Type in your Question)

Resources

- TJC Document
- CDC
  - CDC Core Elements (& Checklist)
- NQF Playbook
- ASP Guidelines
- Article on Meeting TJC Standards (D. Goff, et al)
- Other facilities
  - D.Goff article references 12 websites (various ASPs)
- THA / TDoH

Summary

- Reviewed components of ASP
  - Literature, guidelines, hospital-specific
- Discussed Education (staff & patients)
  - Routinely
  - Various methods
- Provided various examples hospital protocols
  - P&P
  - Formularies, Order Sets, PKS, Renal, IV → oral
  - Action (≥ 1 ASP idea)
- Resources
  - CDC, Guidelines, NQF Playbook, Goff Article, each other!

Questions or Comments

(please type them in box)

Tennessee Pharmacists Coalition
Medication Use SAFETY Innovation Community

TENNESSEE Center for Patient Safety

For more information on the Tennessee Pharmacists Coalition and/or ACPE CE

Contact Jackie Moreland at jmoreland@tha.com