American Hospital Association

Quality Advisory

July 1, 2014

APPROPRIATE USE OF MEDICAL RESOURCES ANTIMICROBIAL STEWARDSHIP

AT A GLANCE

At Issue

In *Appropriate Use of Medical Resources*, a white paper released in November 2013, the American Hospital Association's (AHA) Physician Leadership Forum (PLF) identified five areas where hospitals, in partnership with their clinical staff and patients, should look to reduce non-beneficial care (www.aha.org/appropriateuse). To support hospitals' efforts in the appropriate use of medical resources, the PLF is releasing toolkits on each of the recommended areas. This second toolkit focuses on antimicrobial stewardship in partnership with several national organizations. The first toolkit, released in April, examined patient blood management in collaboration with AABB.

Our Take:

Hospitals and health systems play an important role in the appropriate and consistent use of health care resources. According to the Centers for Disease Control and Prevention (CDC), "Hospital-based programs dedicated to improving antibiotic use, commonly referred to as 'Antibiotic Stewardship Programs (ASPs),' can both optimize the treatment of infections and reduce adverse events associated with antibiotic use."

What You Can Do:

- ✓ Share this advisory with your senior management, a senior leader for quality, purchasing directors, clinic managers, nurse managers, key physician leaders, risk managers, pharmacy leaders, infection preventionists, hospital epidemiologists, laboratory staff and information technology staff.
- ✓ Complete the readiness assessment tool, a checklist developed by the CDC, to determine your hospital's readiness for adopting an ASP program (www.ahaphysicianforum.org/ASP).
- ✓ **Participate in the ASP webinar Wednesday, July 16 at 3 p.m. ET**. Share the webinar information with your medical staff, clinicians and infection control team. The webinar will include compelling evidence of antimicrobial stewardship programs improving care and lowering costs and will feature Arjun Srinivasan, MD, FSHEA, CAPT, USPHS, from the CDC and Howard Gold, MD, from Beth Israel Deaconess Medical Center in Boston. Click here to register.

Further Questions:

If you have additional questions, please feel free to contact Elisa Arespacochaga, AHA director, Physician Leadership Forum at 312-422-3329 or elisa@aha.org.

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BACKGROUND

In *Appropriate Use of Medical Resources*, a white paper released in November 2013, the American Hospital Association's (AHA) Physician Leadership Forum (PLF) identified five areas where hospitals, in partnership with their clinical staff and patients, should look to reduce non-beneficial care (www.aha.org/appropriateuse). To support hospitals' efforts in the appropriate use of medical resources, the PLF is releasing toolkits on each of the recommended areas. This second toolkit focuses on antimicrobial stewardship in partnership with several national organizations. The first toolkit, released in April, examined patient blood management in collaboration with AABB.

The AHA collaborated with the following organizations to develop the antimicrobial stewardship toolkit:

- Association for Professionals in Infection Control and Epidemiology (APIC)
- American Society of Health-System Pharmacists (ASHP)
- Centers for Disease Control and Prevention (CDC)
- Infectious Diseases Society of America (IDSA)
- Pediatric Infectious Diseases Society (PIDS)
- Society for Healthcare Epidemiology of America (SHEA)
- Society of Hospital Medicine (SHM)

AT ISSUE

Antibiotics are one of the great discoveries in medicine and the most important weapon in fighting bacterial diseases. Infections that were once deadly can now be cured, and antibiotics have made many life-saving treatments possible. However, when it comes to antibiotics, more is not always better.

Overuse of antibiotics has garnered national attention with stories of deaths due to antibiotic-resistant strains of bacteria. Unfortunately, unnecessary use of antibiotics not only

leads to public health concerns from resistant strains, it also can cause serious side effects. The CDC reports that approximately half of all antibiotic prescriptions written in the United States are either unnecessary or used inappropriately. Ear infections, for example, are often overtreated with antibiotics when watchful waiting would suffice. Antibiotics also are often inappropriately used to treat viral conditions for which they have no effect.

In 2012, SHEA, IDSA and PIDS issued a policy statement calling for the development and broad dissemination of antimicrobial stewardship programs (ASPs) stating that "antimicrobial stewardship must be a fiduciary responsibility for all health care institutions across the continuum of care." Antimicrobial stewardship programs, defined by SHEA as "coordinated interventions designed to improve and measure the appropriate use of antimicrobials by promoting the selection of the optimal antimicrobial drug regimen, dose, duration of therapy and route of administration," have increased in hospitals and health care systems in recent years, but more must be done.

To be effective, ASPs need to engage patients, providers and administrators to work together to appropriately use antibiotics. A comprehensive, multidisciplinary effort across the hospital or health system provides the structure needed to ensure antibiotic use is carefully monitored. Core elements for implementing an ASP, as identified by the CDC and included as a resource in the toolkit, include:

- **Leadership:** Leadership must make a firm commitment to creating and running an antibiotic stewardship program, including making sure all necessary resources are in place and support and education are offered.
- **Accountability:** Identify a single leader, preferably a clinician with training in infectious diseases and committed to quality improvement, who will be responsible for all outcomes. This person should have the support of and be able to work across all hospital groups.
- **Drug expertise:** Identify a pharmacy leader who will help co-lead the program.
- **Optimal antibiotic use:** Pick interventions based on the needs of the facility. Do not try to implement too many changes at once. Interventions can be broad in nature, such as antibiotic "time outs" or making sure one has prior authorization, or they can be more specifically focused on certain conditions.
- **Track antibiotic patterns:** It is important to measure whether antibiotic processes and policy, their use and the outcomes associated with such use, are working.
- **Report:** On a regular basis, make sure all staff are aware of antibiotic use and resistance. Also, if possible, link your hospital with the CDC's Antibiotic Use Option, which reports monthly outcomes.
- **Education:** Employ a variety of educational resources, including didactic presentations, messaging and web-based resources.

By implementing an ASP, hospitals can ensure antimicrobial efficacy and safety for their patients. These programs help ensure patients receive the right antibiotics at the right time and for the right duration. An effective ASP should reduce costs, but more importantly, appropriate antimicrobial use saves lives.

ACTION STEPS

- Share this advisory with your senior management, a senior leader for quality, purchasing directors, clinic managers, nurse managers, key physician leaders, risk managers, pharmacy leaders, infection preventionists, hospital epidemiologists, laboratory staff and information technology staff.

- Complete the readiness assessment tool, a checklist developed by the CDC, to determine your hospital's readiness for adopting an ASP program. (www.ahaphysicianforum.org/ASP). The toolkit provides two levels of resources for hospitals and health systems, one for those just starting an ASP, the second for those who wish to enhance an existing program.

- **Participate in our ASP webinar Wednesday, July 16 at 3 p.m. ET.** Share the webinar information with your medical staff, clinicians, and infection control team. This complimentary webinar will include evidence of antimicrobial stewardship programs improving care and lowering costs. It will feature Dr. Arjun Srinivasan, associate director for healthcare associated infection prevention programs, Division of Healthcare Quality Promotion at CDC's National Center for Emerging and Zoonotic Infectious Diseases and Dr. Howard Gold, medical director of antimicrobial stewardship, Silverman Institute for Health Care Quality and Safety, and Division of Infectious Diseases at Beth Israel Deaconess Medical Center in Boston, sharing his perspective on developing an antimicrobial stewardship program at Beth Israel. Click here to register.

- Share the tools and guidelines for developing and enhancing an ASP with the infection control team, physicians and other clinicians in your organization.

- Make available the patient resources, including "Ask Questions about Your Medicines," a guide from APIC explaining when antibiotics work and when they don't.

FURTHER QUESTIONS

If you have additional questions, please contact Elisa Arespacochaga, director, Physician Leadership Forum, at 312-422-3329 or elisa@aha.org.

American Hospital Association

American Hospital Association's PHYSICIAN LEADERSHIP FORUM

Appropriate Use of Medical Resources

Antimicrobial Stewardship Toolkit

APIC Association for Professionals in Infection Control and Epidemiology

ashp pharmacists advancing healthcare

CDC Centers for Disease Control and Prevention

IDSA

Pediatric Infectious Diseases Society

SHEA The Society for Healthcare Epidemiology of America

shm Society of Hospital Medicine

Over the past two decades, the past five years in particular, a national discussion emerged concerning the increased cost of health care. Perhaps of greater importance, increased health care costs have not always led to improved outcomes. In fact, over-diagnosis, overuse of treatments and a "try everything" approach have contributed to increased health care costs with little discernible improvement in health. At the same time, medical knowledge has increased exponentially and clinical knowledge is doubling as fast as every two years. But with all this knowledge looms a larger debate, when are we doing too much and how do we decide?

Care providers endeavor to provide the most appropriate care to patients regardless of cost, but all too often there isn't enough discussion with patients about what is appropriate. Further, how can the health care system equip patients to participate in those discussions and make the most informed decision in partnership with their caregivers? As medical societies, provider organizations and others look for ways to drive appropriate use, hospitals and health systems can play an important role in supporting and guiding these efforts.

In 2013, the AHA, with guidance from its Committee on Clinical Leadership, examined the issue and developed the white paper Appropriate Use of Medical Resources, which identifies the drivers of health care utilization and recommends a way to move forward to reduce non-beneficial services and improve care. Among its efforts, the AHA developed a "top five" list of hospital-based procedures or interventions that should be reviewed and discussed by a patient and physician prior to proceeding, including:

- Appropriate blood management in inpatient services;
- Appropriate antimicrobial stewardship;
- Reducing inpatient admissions for ambulatory-sensitive conditions (e.g. low back pain, asthma, uncomplicated pneumonia);
- Appropriate use of elective percutaneous coronary intervention; and
- Appropriate use of the intensive care unit for imminently terminal illness (including encouraging early intervention and discussion about priorities for medical care in the context of progressive disease).

To begin the discussion, the AHA released in November 2013 the *Appropriate Use of Medical Resources*. We encouraged our members to share it with their board, medical staff, and community leaders and use the accompanying discussion guide to explore the issue together.

To further support hospitals' efforts, the AHA's Physician Leadership Forum is releasing toolkits on each of the five areas. This second toolkit focuses on antimicrobial stewardship. To access all toolkits, please visit www.aha.org/appropriateuse.

FOR MORE INFORMATION
Visit www.aha.org/appropriateuse.

CONTACT INFORMATION
Elisa Arespacochaga, director, Physician Leadership Forum, elisa@aha.org or 312-422-3329.

Antimicrobial Stewardship Toolkit

To access the toolkit, visit www.aha.org/appropriateuse.
Developed with resources from:
Association for Professionals in Infection Control and Epidemiology (APIC)
American Society of Health-System Pharmacists (ASHP)
Centers for Disease Control and Prevention (CDC)
Infectious Diseases Society of America (IDSA)
Pediatric Infectious Diseases Society (PIDS)
Society for Healthcare Epidemiology of America (SHEA)
Society of Hospital Medicine (SHM)

User Guide

The toolkit is composed of three sections:

Hospital and Health System Resources - includes a readiness assessment tool, the starting point in developing or enhancing a successful Antimicrobial Stewardship Program (ASP). The tool, a checklist developed by the CDC, should be shared with senior management, a senior leader for quality, purchasing directors, clinic managers, nurse managers, key physician leaders, risk managers, pharmacy leaders, infection preventionists and hospital epidemiologists, laboratory staff and information technology staff. For ease of use, it is divided into two sections, one for those just beginning a program, the other for those who wish to enhance an existing program.

Clinician Resources - includes webinars, clinical evidence supporting appropriate use of antibiotics, implementation guides and related articles.

Patient Resources - includes frequently asked questions, pamphlets and handouts on how patients can best engage in their care and resources on appropriate use of antibiotics.

The CDC Assessment Tool

This checklist will assist hospitals in assessing key elements needed for creating a program that ensures optimal antibiotic prescribing and appropriate use. The key elements of a successful ASP include leadership commitment, accountability, drug expertise, action, tracking, reporting and education. To access the checklist, go to http://bit.ly/1pgmuw4.

Hospital and Health System Resources

GETTING STARTED

CDC Core Elements of Hospital Antibiotic Stewardship Programs

This document summarizes core elements of successful hospital ASPs. It complements existing guidelines on ASPs from organizations including the IDSA in conjunction with SHEA, ASHP and The Joint Commission. Experience demonstrates that ASPs can be implemented effectively in a wide variety of hospitals and health systems and that success is dependent on defined leadership and a coordinated multidisciplinary approach. To download, go to http://bit.ly/1mkf6MJ.

Antibiotic Rx in Hospitals: Proceed with Caution

This fact sheet from CDC illustrates how antibiotics save lives, but poor prescribing practices put patients at unnecessary risk for preventable allergic reactions, super-resistant infections and deadly diarrhea. Errors in prescribing decisions also contribute to antibiotic resistance, making these drugs less likely to work in the future. To download, go to http://bit.ly/1iuBhQY.

Guidelines for Developing an Institutional Program to Enhance Antimicrobial Stewardship

A joint SHEA/IDSA task force presents guidelines for developing institutional programs to enhance antimicrobial stewardship, an activity that includes appropriate selection, dosing, route and duration of antimicrobial therapy. These guidelines, published in the journal *Clinical Infectious Diseases*, focus on the development of effective hospital-based stewardship programs and do not include specific outpatient recommendations. To download, go to http://bit.ly/1IOKSCO.

Policy Statement on Antimicrobial Stewardship by SHEA, IDSA and PIDS

This position statement recommends the mandatory implementation of antimicrobial stewardship throughout the health care continuum, suggests process and outcome measures to monitor these interventions and addresses deficiencies in education and research in this field as well as the lack of accurate data on antimicrobial use in the United States. To download, go to http://bit.ly/1q5IAkw.

ASHP Statement on the Pharmacist's Role in Antimicrobial Stewardship and Infection Prevention and Control

Pharmacists have a responsibility to take prominent roles in ASPs and participate in the infection prevention and control programs of hospitals and health systems. Pharmacists' responsibilities for antimicrobial stewardship and infection prevention and control include promoting the optimal use of antimicrobial agents, reducing the transmission of infections and educating health professionals, patients and the public. To download, go to http://bit.ly/1qHxaDu.

ENHANCING an EXISTING PROGRAM

CDC Vital Signs: Improving Antibiotic Use among Hospitalized Patients

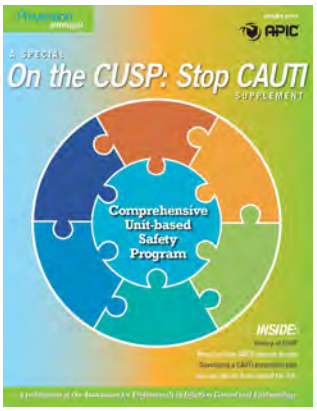
Antibiotic prescribing for inpatients is common, and there is ample opportunity to improve use and patient safety by reducing incorrect antibiotic prescribing. Hospital administrators and health care providers can reduce potential harm and risk for antibiotic resistance by implementing formal programs to improve antibiotic prescribing in hospitals. To download, go to http://bit.ly/1q5IMjA.

Guidelines for the Prevention of Antimicrobial Resistance in Hospitals

This joint SHEA/IDSA task force publication details how antimicrobial resistance results in increased morbidity, mortality and costs of health care. Prevention of the emergence of resistance and the dissemination of resistant microorganisms will reduce these adverse effects and their attendant costs. Appropriate antimicrobial stewardship that includes optimal selection, dose and duration of treatment, as well as control of antibiotic use, will prevent or slow the emergence of resistance among micro-organisms. A comprehensively applied infection control program will interdict the dissemination of resistant strains. To download, go to http://bit.ly/1lnJDZT.

On the CUSP: Stop CAUTI Supplement from APIC

This supplement features success stories from facilities that have joined the *On the CUSP: Stop CAUTI* program, strategies for engaging others in CAUTI prevention, insight from experts on the program's core national faculty, ways for health care organizations to be part of the program and frequently asked questions. To download, go to http://bit.ly/1o0v7qX.



Clinician Resources

IMPLEMENTATION GUIDES and TOOLS

Assessment of Appropriateness of Antibiotics

The primary goal of antibiotic stewardship efforts is to optimize the use of antibiotics. However, assessing "optimal" or "appropriate" antibiotic use remains a challenge. To begin addressing the challenge, CDC, in consultation with a variety of external experts, has developed assessment tools that can help facilities explore potential opportunities for improving antibiotic use. These forms draw heavily from existing treatment guidelines to identify variations in diagnostic evaluation and antibiotic use that deviate from general recommendations, such as:

- Urinary Tract Infections
- Community-Acquired Pneumonia
- Resistant Gram-Positive Infections
- Inpatient Antibiotics

Tools and Sample Forms

This resource, from SHEA's Antimicrobial Stewardship task force, includes tools such as an adult inpatient antibiotic approval form, a blank order set for antifungal therapy, a sample checklist, a drug use evaluation form and others. To view the materials and forms, go to http://bit.ly/1kPhoTG.

CASE EXAMPLES:

ASP in a RURAL HOSPITAL

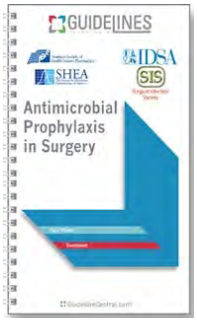
In ASHP's *American Journal of Health-System Pharmacy*, the authors describe implementation of a pharmacy-directed ASP involving the use of telemedicine technology. Concluding such implementation led to increases in pharmacist-recommended interventions and streamlining of antimicrobial therapy, as well as decreases in health care-associated *C. difficile* infections and antimicrobial purchasing costs. To download, go to http://bit.ly/1yO9vUp.

CALIFORNIA ASP EFFORT

California law requires that general acute care hospitals implement programs for monitoring the judicious use of antibiotics and requires a quality improvement committee with responsibility for oversight. California is the only state with this type of mandate. This web page highlights hospital's work and shares their antimicrobial stewardship program strategies and progress. Also identified are California physician, pharmacists and infection prevention leaders willing to serve as mentors to other hospitals in various stages of antimicrobial stewardship program implementation. To view, go to http://bit.ly/1l9AQpy.

HOSPITALS with ASPs

Compiled by SHEA, this web page provides links to organizations with antimicrobial initiatives underway such as Grady Health System, Cleveland Clinic, Johns Hopkins Hospital, Nebraska Medical Center, University of Kentucky Hospital, University of Pennsylvania Health System and the University of California, San Francisco. To view, go to http://bit.ly/1l9AUFL.



Clinical Practice Guidelines for Antimicrobial Prophylaxis in Surgery

Authored by ASHP, IDSA, the Surgical Infection Society (SIS) and SHEA these guidelines are intended to provide practitioners with a standardized approach to the rational, safe and effective use of antimicrobial agents for the prevention of surgical-site infections based on currently available clinical evidence and emerging issues. To download, go to http://bit.ly/1lnJPZe.

RESOURCES and ARTICLES

"Antimicrobial Stewardship: A Collaborative Partnership between Infection Preventionists and Health Care Epidemiologists" from APIC

Infection preventionists and health care epidemiologists play key roles in promoting effective antimicrobial stewardship in collaboration with other health professionals, according to a joint position paper published by APIC and SHEA in their respective peer-review journals, the *American Journal of Infection Control* and *Infection Control and Hospital Epidemiology*. To download, go to http://bit.ly/1l7ZPyo.

Infection Prevention + Antimicrobial Stewardship = Synergy

In the APIC quarterly member magazine, *Prevention Strategist,* Julia Moody, MS, SM (ASCP), shares a case study and explains the infection preventionist's and health care epidemiologist's role in antimicrobial stewardship. To download, go to http://bit.ly/1lNwAR4.

Clinical and Economic Outcomes of a Prospective Antimicrobial Stewardship Program

In ASHP's *American Journal of Health-System Pharmacy*, the authors found antimicrobial expenditures, which had increased by an average of 14.4 percent annually in the years preceding ASP implementation, decreased by 9.75 percent in the first year of the program and remained relatively stable in subsequent years, with overall cumulative cost savings estimated at $1.7 million. Rates of nosocomial infections involving *Clostridium difficile*, methicillin-resistant *Staphylococcus aureus* and vancomycin-resistant enterococci all decreased after ASP implementation. To download, go to http://bit.ly/Vl7JuV.

Antimicrobials and Resistance

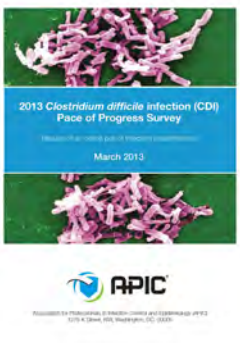
This chapter from the 4th edition of *APIC Text of Infection Control and Epidemiology* discusses that although infection prevention traditionally has approached the problem of resistance primarily from the aspect of preventing transmission, more needs to be done to control how antimicrobials are commonly used. To download, go to http://bit.ly/VlfL75 and click on the blue bar that reads, "Download a free chapter of the APIC Text on 'Antimicrobials and Resistance.'"

ASHP Guidelines on Pharmacist-Conducted Patient Education and Counseling

A coordinated effort among health care team members will enhance patients' adherence to pharmacotherapeutic regimens, monitoring of drug effects and feedback to the health system. ASHP believes these patient education and counseling guidelines are applicable in all practice settings—including acute inpatient care, ambulatory care, home care and long-term care—whether these settings are associated with integrated health systems, managed care organizations or are freestanding. To download, go to http://bit.ly/1lNwau2.

Antimicrobial Stewardship and Clostridium difficile *Infection: A Primer for the Infection Preventionist*

This chapter, in *Guide to Preventing Clostridium difficile Infections (CDI), an APIC Implementation Guide*, discusses antimicrobial use and its impact on patients in all healthcare settings and ASPs within the context of CDI. To download, go to http://bit.ly/1iuCg3F.



APIC 2013 Clostridium difficile *infection "Pace of Progress" survey*

Activities to stop the spread of the intestinal superbug *Clostridium difficile (C. diff)* are on the rise, but they are not yielding large improvements, according to a nationwide survey. According to the survey, 70 percent of infection preventionists have adopted additional interventions in their health care facilities to address CDI since March 2010, but only 42 percent have seen a decline in facility-associated CDI rates; 43 percent have not seen a decline. While CDI rates have climbed to all-time highs in recent years, few facilities (21 percent of respondents) have added more infection prevention staff to address the problem. To download, go to http://bit.ly/1q5JZr7.

Pediatric Stewardship Resources

Resources are available from SHEA that are specific to pediatric antimicrobial stewardship. To view, go to http://bit.ly/1knAzPv.

Research Bibliography

A bibliography on antimicrobial stewardship published in the *Infection Control and Hospital Epidemiology* journal available from SHEA can be found at http://bit.ly/1lo37gm.

WEBINARS

Antimicrobial Stewardship: The Hospital Opportunity

The webinar features Dr. Arjun Srinivasan of the CDC and Dr. Howard Gold of Beth Israel Deaconess Medical Center sharing compelling evidence for antimicrobial stewardship to improve care and lower cost. To register, go to http://bit.ly/1q5KjX0.

Antimicrobial Stewardship: What the Infection Preventionist Needs To Know

Provided by APIC, this webinar features Keith S. Kaye, MD, MPH who defines antimicrobial stewardship, discusses goals and components of an ASP, as well as details the role and collaboration of the infection preventionist with an antimicrobial stewardship team. To view, go to http://bit.ly/1rHoLO4.

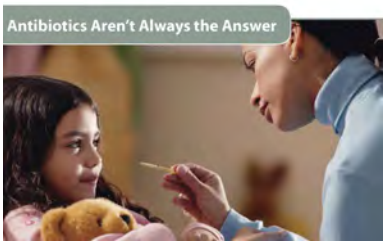
From Tragedy to Triumph to Trepidation: Antibiotics at Age 70

Provided by APIC, this webinar features Stephen M. Brecher, PhD, who explains how the war in England, then in the US, a famous fire in Boston and a football game all played a role in making penicillin the "Miracle Drug." With many new antibiotics, the war against infectious diseases seemed won. The problem, however, was that the bacteria did not read the press clippings. Antibiotics at Age 70 is the story of tragedy then triumph and now trepidation. To view, go to http://bit.ly/1mm08kS.

Patient Resources

Antibiotics Aren't Always the Answer

This fact sheet from the CDC briefly explains six simple and smart facts about antibiotic use and when antibiotics can help treat your child's illness. To download, go to http://bit.ly/1mc1Yo8.



Cold or Flu. Antibiotics Don't Work For You.

This tri-fold brochure from the CDC briefly explains the difference between bacteria and viruses and how bacteria become resistant. It also answers some common questions about when it is and is not appropriate to use an antibiotic. To download, go to http://bit.ly/1pyTxHt.

Ask Questions about Your Medicines

This guide from APIC explains to patients when antibiotics work, when they don't and when prescribed why it's important to finish the course of antibiotics as the prescriber recommends. To view, go to http://bit.ly/1o0wmGw.

FAQs about Clostridium difficile

A list of common patient questions about CDI, such as who is most likely to get it, how it is treated and how contraction can be prevented are included in this handout co-sponsored by SHEA, IDSA, AHA, APIC, CDC and The Joint Commission. To download, go to http://bit.ly/1rvhzo6.

What You Need to Know about Clostridium difficile

This article from APIC explains what *Clostridium difficile* is, the symptoms, who is at risk, how it's diagnosed, treated and can be prevented. To view, go to http://bit.ly/1mc2jY6.

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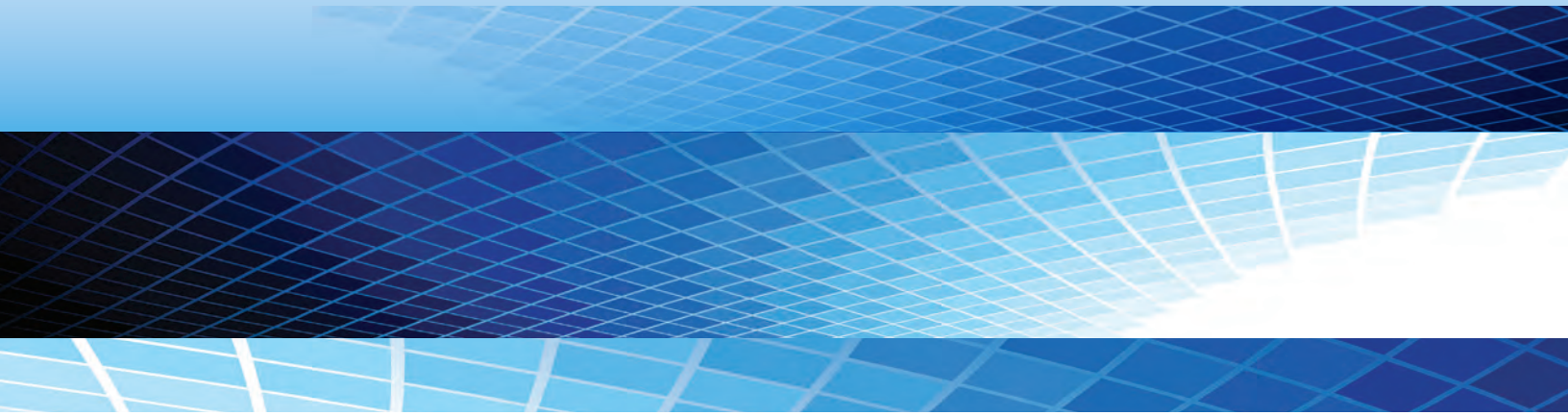

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