

## Five Things Providers and Patients Should Question

1

### Don't continue antibiotics beyond 72 hours in hospitalized patients unless patient has clear evidence of infection.

Antibiotics are often started when a patient is possibly infected. After three days, laboratory and radiology information is available and antibiotics should either be deescalated to a narrow-spectrum antibiotic based on culture results or discontinued if evidence of infection is no longer present. Lessening antibiotic use decreases risk of infections with *Clostridium difficile* (*C. difficile*) or antibiotic-resistant bacteria.

2

### Avoid invasive devices (including central venous catheters, endotracheal tubes and urinary catheters) and, if required, use no longer than necessary. They pose a major risk for infections.

Invasive devices are often necessary for patient support; however, they are a major risk for healthcare-associated infections (HAIs). We are learning they can often be avoided and, if used, can be quickly removed with the help of clinical reminders and protocols. They should never be used for convenience.

3

### Don't perform urinalysis, urine culture, blood culture or *C. difficile* testing unless patients have signs or symptoms of infection. Tests can be falsely positive leading to overdiagnosis and overtreatment.

Although important for diagnosing disease when used in patients with appropriate signs or symptoms, these tests often are positive when an infection is not present. For example, in the absence of signs or symptoms, a positive blood culture may represent contamination, a positive urine culture could represent asymptomatic bacteriuria, and a positive test for *C. difficile* could reflect colonization. There are no perfect tests for these or most infections. If these tests are used in patients with low likelihood of infection, they will result in more false positive tests than true positive results, which will lead to treating patients without infection and exposing them to risks of antibiotics without benefits of treating an infection.

4

### Don't use antibiotics in patients with recent *C. difficile* without convincing evidence of need. Antibiotics pose a high risk of *C. difficile* recurrence.

*C. difficile* can be a life threatening illness and is generally caused by antibiotics killing normal bacteria in the intestine. Patients recovering from *C. difficile* are three times as likely to have a recurrence if they receive an antibiotic in the following month. However, unnecessary antibiotics are often used in this population – primarily for misdiagnosed urinary tract infection or pneumonia.

5

### Don't continue surgical prophylactic antibiotics after the patient has left the operating room.

Prophylactic antibiotics during surgery can significantly decrease the risk of surgical site infections; however, they only have benefit if used immediately around the time of surgery. When antibiotics are used for longer than necessary, they increase the risk of infection with antibiotic-resistant bacteria and *C. difficile*.

## How This List Was Created

A list of approximately 40 potential *Choosing Wisely* recommendations were collected from members of the SHEA Guidelines, Public Policy and Government Affairs, Antibiotic Stewardship, Education and Publications Committees. From those suggestions, a subgroup of the Guidelines Committee reviewed the list for duplicates and anonymously electronically ranked them. The top fifteen were sent to the SHEA Research Network for a separate ranking. Those that ranked in the top eight were reviewed by the Guidelines Committee for their appropriateness for the *Choosing Wisely* campaign, and five final recommendations were formally approved via individual member vote by the SHEA Guidelines Committee and the SHEA Board of Trustees.

For SHEA's disclosure and conflict of interest policy, please visit [www.shea-online.org](http://www.shea-online.org).

## Sources

- Core Elements of hospital antibiotic stewardship programs from the Centers for Disease Control and Prevention [Internet]. Atlanta (GA): Centers for Disease Control and Prevention; 2015 [updated 2015 May 7; cited 2015 Jul 21]. Available from: <http://www.cdc.gov/getsmart/healthcare/implementation/core-elements.html>

Antibiotic resistance threats in the United States, 2013 [Internet]. Atlanta (GA): Centers for Disease Control and Prevention; 2013 [cited 2015 Jul 21]. Available from: <http://www.cdc.gov/drugresistance/threat-report-2013/pdf/ar-threats-2013-508.pdf>

Elligsen M, Walker SA, Pinto R, Simor A, Mubareka S, Rachlis A, Allen V, Daneman N. Audit and feedback to reduce broad-spectrum antibiotic use among intensive care unit patients: a controlled interrupted time series analysis. *Infect Control Hosp Epidemiol*. 2012 Apr;33(4): 354-61.
- Klompas M, Anderson D, Trick W, Babcock H, Kerlin MP, Li L, Sinkowitz-Cochran R, Ely EW, Jernigan J, Magill S, Lyles R, O'Neil C, Kitch BT, Arrington E, Balas MC, Kleinman K, Bruce C, Lankiewicz J, Murphy MV, E Cox C, Lautenbach E, Sexton D, Fraser V, Weinstein RA, Platt R; CDC Prevention Epicenters. The preventability of ventilator-associated events. The CDC Prevention Epicenters Wake Up and Breathe Collaborative. *Am J Respir Crit Care Med*. 2015 Feb 1;191(3):292-301

Marschall J, Mermel LA, Fakih M, Hadaway L, Kallen A, O'Grady NP, Pettis AM, Rupp ME, Sandora T, Maragakis LL, Yokoe DS; Society for Healthcare Epidemiology of America. Strategies to prevent central line-associated bloodstream infections in acute care hospitals: 2014 update. *Infect Control Hosp Epidemiol*. 2014 Jul;35(7):753-71.

Lo E, Nicolle LE, Coffin SE, Gould C, Maragakis LL, Meddings J, Pegues DA, Pettis AM, Saint S, Yokoe DS. Strategies to prevent catheter-associated urinary tract infections in acute care hospitals: 2014 update. *Infect Control Hosp Epidemiol*. 2014 Sep;35 Suppl 2:S32-47.
- Peterson LR, Robicsek A. Does my patient have *Clostridium difficile* infection? *Ann Intern Med*. 2009 Aug 4;151(3):176-9.

Dubberke ER, Carling P, Carrico R, Donskey CJ, Loo VG, McDonald LC, Maragakis LL, Sandora TJ, Weber DJ, Yokoe DS, Gerding DN. Strategies to prevent *Clostridium difficile* infections in acute care hospitals: 2014 update. *Infect Control Hosp Epidemiol*. 2014 Sep;35 Suppl 2:S48-65.

Lo E, Nicolle LE, Coffin SE, Gould C, Maragakis LL, Meddings J, Pegues DA, Pettis AM, Saint S, Yokoe DS. Strategies to prevent catheter-associated urinary tract infections in acute care hospitals: 2014 update. *Infect Control Hosp Epidemiol*. 2014 Sep;35 Suppl 2:S32-47.

Bates DW, Goldman L, Lee TH. Contaminant blood cultures and resource utilization. The true consequences of false-positive results. *JAMA*. 1991 Jan 16;265(3):365-9.
- Shaughnessy MK, Amundson WH, Kuskowski MA, DeCarolis DD, Johnson JR, Drekonja DM. Unnecessary antimicrobial use in patients with current or recent *Clostridium difficile* infection. *Infect Control Hosp Epidemiol*. 2013 Feb;34(2):109-16.

Drekonja DM, Amundson WH, DeCarolis DD, Kuskowski MA, Lederle FA, Johnson JR. Antimicrobial use and risk for recurrent *Clostridium difficile* infection. *Am J Med*. 2011 Nov;124(11):1081.e1-7.

Dubberke ER, Carling P, Carrico R, Donskey CJ, Loo VG, McDonald LC, Maragakis LL, Sandora TJ, Weber DJ, Yokoe DS, Gerding DN. Strategies to prevent *Clostridium difficile* infections in acute care hospitals: 2014 update. *Infect Control Hosp Epidemiol*. 2014 Sep;35 Suppl 2:S48-65.
- Anderson DJ, Podgorny K, Berríos-Torres SI, Bratzler DW, Dellinger EP, Greene L, Nyquist AC, Saiman L, Yokoe DS, Maragakis LL, Kaye KS. Strategies to prevent surgical site infections in acute care hospitals: 2014 update. *Infect Control Hosp Epidemiol*. 2014 Sep;35 Suppl 2:S66-88.

Bratzler DW, Dellinger EP, Olsen KM, Perl TM, Auwaerter PG, Bolon MK, Fish DN, Napolitano LM, Sawyer RG, Slain D, Steinberg JP, Weinstein RA; American Society of Health-System Pharmacists; Infectious Disease Society of America; Surgical Infection Society; Society for Healthcare Epidemiology of America. Clinical practice guidelines for antimicrobial prophylaxis in surgery. *Am J Health Syst Pharm*. 2013 Feb 1;70(3):195-283.

### About the ABIM Foundation

The mission of the ABIM Foundation is to advance medical professionalism to improve the health care system. We achieve this by collaborating with physicians and physician leaders, medical trainees, health care delivery systems, payers, policymakers, consumer organizations and patients to foster a shared understanding of professionalism and how they can adopt the tenets of professionalism in practice.

To learn more about the ABIM Foundation, visit [www.abimfoundation.org](http://www.abimfoundation.org).



### About the Society for Healthcare Epidemiology of America

SHEA is a professional society representing physicians and other healthcare professionals around the world with expertise in healthcare epidemiology, infection prevention and antimicrobial stewardship. SHEA's mission is to prevent and control healthcare-associated infections, improve the use of antibiotics in healthcare settings and advance the field of healthcare epidemiology. The society promotes science and research, advocating for effective policies, providing high-quality education and training and developing appropriate guidelines and guidance in practice. SHEA upholds the value and critical contributions of healthcare epidemiology and improved antibiotic use to improve patient care and healthcare worker safety in all healthcare settings.



Visit SHEA online at [www.shea-online.org](http://www.shea-online.org), [www.facebook.com/SHEApreventingHAIs](https://www.facebook.com/SHEApreventingHAIs) and [@SHEA\\_Epi](https://twitter.com/SHEA_Epi).

For more information or to see other lists of Things Providers and Patients Should Question, visit [www.choosingwisely.org](http://www.choosingwisely.org).