



Indiana State Department of Health

Epidemiology Resource Center

Antibiotic Use and Resistance Resource Manual

Introduction to Antibiotic Resistance

According to the Centers for Disease Control and Prevention (CDC), antibiotic resistance is one of the world's most pressing public health problems. People of all ages can lower this risk by talking to their healthcare providers and using antibiotics appropriately.

Two major reasons that antibiotic resistance occurs are overuse (such as taking antibiotics for viral illnesses, i.e. colds) and misuse (such as skipping doses or not completing the full course of antibiotics). Studies have demonstrated 50% of all antibiotic use is either unnecessary or inappropriate.

Taking antibiotics when they are not needed can do more harm than good. Widespread inappropriate use of antibiotics is fueling an increase in drug resistant disease causing bacteria. Almost every type of bacteria has become stronger and less responsive to antibiotic treatment when it really is needed. These antibiotic resistant bacteria can quickly spread among families, schools and co-workers, thus threatening the community with a new strain of infectious disease that is more difficult to cure and more expensive to treat.

Some of the more common antibiotic resistant infections that affect Indiana citizens include Methicillin-resistant *Staphylococcus aureus* (MRSA), *Clostridium difficile* (CDI), *Streptococcus pneumoniae*, and Tuberculosis. Presently, there are additional diseases emerging as threats to the health of Hoosiers.

The following Antibiotic Use and Resistance Resource Manual includes information from the Indiana State Department of Health (ISDH), CDC, Healthcare Infection Control Practices Advisory Committee (HICPAC), Emerging Infectious Diseases (EID), World Health Organization (WHO), Society for Hospital Epidemiology of America (SHEA), Association for Professionals in Infection Control (APIC), Indiana Coalition for Antibiotic Resistance Education Strategies (ICARES), and Infectious Diseases Society of America (IDSA). These resources provide links to a variety of information from fact sheets, brochures, and posters for the general public, schools, and other organizations/facilities; including detailed medical guidelines for healthcare professionals. We hope this information will be helpful in reducing your risk of infection and providing healthcare personnel with the most current information on Antibiotic Resistance.

The inclusion of documents and lecture's in this Antibiotic Use and Resistance Resource Manual does not constitute an endorsement of any product or company by the ISDH.

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Information about Antibiotic Resistance
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- **General Public**

- Antibiotic Use and Antibiotic Resistance Quick Facts, ISDH
<http://www.in.gov/isdh/25507.htm>
- Antibiotic Safety, APIC
<http://www.apic.org/For-Consumers/IP-Topics/Article?id=antibiotic-awareness-101>
- Get Smart: Know When Antibiotics Work, CDC
<http://www.cdc.gov/getsmart/>
- Hospital vs. Home Setting Precautions for Antibiotic Resistant Bacteria Fact Sheet, Texas State Department of Health Services
http://www.dshs.state.tx.us/idcu/health/antibiotic_resistance/mrsa/antibio_edu_home_hospital.pdf
- Indiana Coalition for Antibiotics Resistance Education Strategies (ICARES), Marion County Public Health Department
<http://www.icares.org/>
- Information for Everyone, CDC
<http://www.cdc.gov/getsmart/specific-groups/everyone.html>

Information for Healthcare Providers

➤ **Healthcare Guidelines**

- [SHEA and IDSA Joint Committee on the Prevention of Antimicrobial Resistance: Guidelines for the Prevention of Antimicrobial Resistance in Hospitals](#) (April 1997)
- IDSA Clinical Practice Guideline for Acute Bacterial Rhinosinusitis in Children and Adults, March 20, 2012
<http://cid.oxfordjournals.org/content/54/8/1041>

➤ **General Information**

- Alliance for the Prudent Use of Antibiotics (APUA)
<http://www.tufts.edu/med/apua/>
- Get smart for Healthcare, CDC
<http://www.cdc.gov/getsmart/healthcare/>

➤ **Antibiotic Stewardship**

- [CDC's Get Smart: Know When Antibiotics Work Program](#) - Information for Providers
- [IDSA and SHEA Guidelines for Developing an Institutional Program to Enhance Antimicrobial Stewardship](#) (January 2007)

➤ **Journal Articles**

- *Antibiotics in Environment fuel Drug Resistance?*- WebMD, May 8, 2012
<http://www.medscape.com/viewarticle/763657?src=mp&spon=38>
- *From Bench to Bedside: Meeting Furthers Evidence-Based Infection Control Practices*- InfectionControl Today, April 17, 2012
<http://www.infectioncontrolday.com/news/2012/04/from-bench-to-bedside-meeting-furthers-evidencebased-infection-control-practices.aspx>
- *Antimicrobial Stewardship: A Collaborative Partnership between Infection Preventionists and Healthcare Epidemiologists*-APIC/SHEA Position Paper, March 15, 2012
<http://www.jstor.org/stable/full/10.1086/665037>

➤ **Presentations**

- *Caution in Antibiotic Use for Rhinosinusitis*, Medscape
<http://www.medscape.org/viewarticle/760796?src=cmemp>
- *Three Steps to Antibiotic Stewardship*- CDC, 11-15-2010
<http://www.medscape.com/viewarticle/731784?src=mp&spon=24>
- *Antimicrobial Stewardship for the Community Hospital: Practical Tools & Techniques for Implementation*-CDC, August 24, 2010
<http://www.cdc.gov/getsmart/healthcare/learn-from-others/CME/antimicrobial-stewardship.html>
- *Get Smart for Healthcare Slides*-CDC
<http://www.cdc.gov/getsmart/healthcare/inpatient-stewardship.html>
- [Antibiotic Stewardship and Rapid Diagnostics, Brian MacDonald](#)

Healthcare Provider Related Topics

➤ Acute Care Facility Guidelines

- [2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings](#), (CDC and HICPAC)
- [Clinical Practice Guidelines for *Clostridium difficile* Infection in Adults; 2010 Update by SHEA and IDSA](#) (May 2010)
- [Guide to the Elimination of *Clostridium difficile* in Healthcare Settings](#) (APIC Guide, 2008)
- [Guide to the Elimination of Methicillin-Resistant *Staphylococcus aureus* \(MRSA\) Transmission in Hospital Settings](#) (APIC Guide, March 2007)
- [Management of Multidrug-Resistant Organisms in Healthcare Settings](#) (2006, CDC and the HICPAC)
- [SHEA Guideline for Preventing Nosocomial \[HAI\] Transmission of Multidrug-Resistant Strains of *Staphylococcus aureus* and *Enterococcus*](#), (SHEA, May 2003)

➤ Long Term Care Facility Guidelines

- [Clostridium difficile in Long-Term-Care Facilities for the Elderly](#) (SHEA, November 2002)
- [Guide to the Elimination of Methicillin-Resistant *Staphylococcus aureus* \(MRSA\) in the Long-Term Care Facility](#) (APIC Guide, 2009)

Related Topics

➤ Hand Hygiene

- Clean Care is Safer Care, World Health Organization Campaign
<http://www.who.int/gpsc/en/>
- General Hand Hygiene Posters, Department of Veterans Affairs
http://www.publichealth.va.gov/flu/materials/posters_hand_hygiene.asp
- Guideline for Hand Hygiene in Health Care, 2002, CDC
<http://www.cdc.gov/handhygiene/Guidelines.html>
- Guidelines on Hand Hygiene in Health Care, 2009, WHO
http://whqlibdoc.who.int/publications/2009/9789241597906_eng.pdf
- Handwashing Campaign, ISDH
<http://www.in.gov/isdh/24036.htm>

- Handwashing Quick Facts, ISDH
<http://www.in.gov/isdh/25483.htm>
- Hand Hygiene Educational Training, CDC
<http://www.cdc.gov/handhygiene/training.html>
- Hand Hygiene Posters, Department of Veterans Affairs
http://www.publichealth.va.gov/flu/materials/posters_hand_hygiene.asp
- Hand Hygiene Saves Lives: Patient Admission Video, CDC
http://www.cdc.gov/handhygiene/Patient_materials.html

All information presented is intended for public use.
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