Get Smart About Antibiotics

A Global Public Health Initiative

DEFINITION & MISSION

Antibiotic resistance is a critical issue to public health systems worldwide. Because of it, infections that were once easily treated with antibiotics are becoming more dangerous, causing treatment failure, prolonged suffering, or even death. The International College of Dentists formed a partnership with the Centers for Disease Control and Prevention (CDC) “Get Smart: Know When Antibiotics Work” program. The mission of this partnership is to disseminate critical information on antibiotic resistance and appropriate antibiotic use to ICD Fellows globally.

The ICD’s mission is to make available information from the CDC and the World Health Organization, to assist Fellows globally in understanding the critical importance of the antibiotic resistance, as well as appropriate use and over-prescribing issues facing the world today.

www.icd.org/get-smart-about-antibiotics/
ARTICLES
- NEW! Fish Slime: An answer to antibiotic resistance?
- Where antibiotics are more common than water, superbugs thrive
- Antimicrobial resistance needs an URGENT global response!
- WHO: Antibiotic Resistance KEY FACTS
- SAVE LIVES! Clean your hands
- Containing Unusual Resistance
- Troubling Trend in Antibiotic Prescriptions in the Outpatient Setting
- STOP using antibiotics on healthy animals!
- FREE Materials and Resources to promote Antibiotic Resistance Awareness
- What drives inappropriate antibiotic use in outpatient care?
- New Antibiotic Packs a Punch Against Bacterial Resistance
- Getting medical care? How to Avoid Getting an Infection
- Addressing Antibiotic Resistance in Dentistry: “What can WE do?”
- Antibiotic resistance ‘scary’ threat to modern medicine
- Why Do We Prescribe Unnecessary Antibiotics?
- Protecting Yourself and Your Family
- Antimicrobial Resistance – A Global Imperative

MEDIA RESOURCES
- CDC Training Video on Antibiotic Stewardship focuses on antibiotic prescribing in dentistry. Earn CE credit!
- The CDC Grand Rounds “Be Antibiotics Aware: Smart Use, Best Care,” where speakers discuss efforts to measure and improve antibiotic prescribing.
- Get your Antibiotics Awareness graphics HERE!
- The Be Antibiotics Aware Spanish language website is now live!
- The Right Tool Video
- Hand Washing Technique
- Check out this useful Antibiotic Resistance Q&A, perfect for both dentists and patients with questions.
- We All Must Get Smarter – Blog by Christian John Lillis
- The Other Side of Antibiotics – The Story of Peggy Lillis

COLLABORATION
The ICD members involved in this project are Dr. John Tullner, Dr. Tom O’Hara and Dr. Christine Benoit. In addition, the CDC’s Office of Antibiotic Stewardship provides as-needed technical assistance.

ICD Sections, Regions and Fellows are invited to participate in this College initiative by providing program opportunities and distributing information, using their own resources and communications. The ICD Global Visionary Fund may be a source for financial support.

PROGRESS TO DATE
The Get Smart About Antibiotics program was first introduced during the ICD Infection Control & Safety Train-the-Trainer two-day program for dental educators, at the Maulana Azad Institute of Dental Sciences in New Delhi, India in February 2016. Next, the Get Smart About Antibiotics program was implemented in a widely-attended “Infection Control in Dentistry” workshop held in Vietnam, September 2016, coinciding with the 2016 SEAADE meeting. The program has also been featured in the USA Section's Key publication. Additionally, ICD has participated in the 2016 and 2017 Get Smart About Antibiotics weeks.
Antimicrobial resistance

World Antibiotic Awareness Week 2018 - Think Twice. Seek Advice.

7 November 2018 – World Antibiotic Awareness Week (12-18 November) aims to increase global awareness of antimicrobial resistance (AMR) and to encourage best practices among the general public, health workers and policy makers to avoid the further emergence and spread of antibiotic resistance.

The misuse of antibiotic is putting us all at risk.

2018 campaign website
2018 campaign materials

Antimicrobial resistance (AMR) is the ability of a microorganism (like bacteria, viruses, and some parasites) to stop an antimicrobial (such as antibiotics, antivirals and antimalarials) from working against it. As a result, standard treatments become ineffective, infections persist and may spread to others.

About antimicrobial resistance (AMR)

Global action plan (GAP) on antimicrobial resistance

Implementation of the global action plan

Strategic objectives
- Awareness and education
- Surveillance of antimicrobial resistance
- Infection prevention and control
- Optimal use of antimicrobial medicines in human and animal health
- R&D and investment

National action plans
Burden of infections with resistant bacteria

Each year, 33,000 people die from an infection due to bacteria resistant to antibiotics. The burden of infections is comparable to that of influenza, tuberculosis and HIV/AIDS combined.

https://antibiotic.ecdc.europa.eu/en

#KeepAntibioticsWorking: join us on social media!

As a healthcare professional, what can you do to keep antibiotics working? What can a patient association do to contribute? What can policymakers do at European level? What can a parent do? Everyone can join the campaign on European Antibiotics Awareness Day - posting his/her own message, picture or video using the #KeepAntibioticsWorking hashtag. Tell the world what you do, in your professional or personal life, at individual or collective level, to use antibiotics responsibly and #KeepAntibioticsWorking!

Read about the #KeepAntibioticsWorking campaign
**Antibiotic Guardian**

Antibiotic resistance is one of the biggest threats facing us today. Become an antibiotic guardian - keep antibiotics working.

Choose one simple pledge about how you’ll make better use of antibiotics and help save these vital medicines from becoming obsolete.

Antibiotic Guardian is a UK-wide campaign.

Antibiotic Guardian website »

**Campaigns in the UK and Ireland**

- e-bug: Fun games and teaching resources about microbes and antibiotics - Public Health England
- Antibiotic awareness resources: 2017 - Public Health England
- European Antibiotic Awareness Day - Scottish medicines consortium
- Antibiotic resistance: Awareness campaign, resources - Public Health Wales
- Under the weather, Health Service Executive, Ireland
- Antibiotic prescribing, Health Service Executive, Ireland
Be Antibiotics Aware is a national effort to help fight antibiotic resistance and improve antibiotic prescribing and use.

Antibiotics save lives, but any time antibiotics are used, they can cause side effects and lead to antibiotic resistance. In U.S. doctors’ offices and emergency departments, at least 47 million antibiotic prescriptions each year are unnecessary, which makes improving antibiotic prescribing and use a national priority.

Antibiotic Prescribing and Use in Doctor’s Offices
Many antibiotics prescribed in doctors’ offices, clinics, and other outpatient settings are not needed. CDC focuses on appropriate prescribing and use for common illnesses in children and adults.

Antibiotic Prescribing and Use in Hospitals and Long-Term care
Many patients in hospitals, nursing homes, and other healthcare facilities receive antibiotics to fight infections, but these drugs are often prescribed incorrectly. CDC helps clinicians prescribe the right drug for the right patient at the right dose and time.

Antibiotic Prescribing and Use on the Farm
CDC promotes appropriate use of antibiotics in animals, serves as a liaison among the public health community, veterinarians, and food animal producers, and builds relationships with the animal agriculture industry within the United States.

U.S. Antibiotic Awareness Week
An annual observance to raise awareness of the threat of antibiotic resistance and the importance of appropriate antibiotic prescribing and use...

Antibiotic Prescribing and Use in the U.S.

CDC’s Initiative to Fight Antibiotic Resistance

Combating antibiotic resistance, a global threat

Antibiotics save lives, but any time they are used, they can lead to antibiotic resistance. CDC is working to combat this threat through its Antibiotic Resistance Solutions Initiative. Find out how you can help.

Nuevos recursos educativos

Haga clic aquí para obtener NUEVOS recursos educativos en español sobre la prescripción y el uso de antibióticos.
Antibiotic Prescribing for Dental Prophylaxis: An Overview

- Prophylactic antibiotics are prescribed for patients with certain health conditions to avoid bacteremia and the potential for severe disease due to a dental cleaning or procedure.
- Historically, there have been two main reasons that a patient may receive prophylactic antibiotics prior to a dental cleaning or procedure.
  - Cardiac conditions that may have increased risk of developing infective endocarditis (1).
  - Prosthetic joints that may be at risk for developing a prosthetic joint infection (2).
- Recent changes to prophylaxis guidance has resulted in fewer recommendations for prophylaxis prior to a dental procedures (3).


Antibiotic Prophylaxis: Guidance From the American Heart Association

- Update of recommendations from 1997 (many updates between 1955 and 1997).
- Changes recommend prophylaxis for only those at highest risk of an adverse outcome from infective endocarditis.
- Amoxicillin is the recommended first-line agent
  - If penicillin allergy: cephalexin, clindamycin, azithromycin, or clarithromycin are recommended.

Antibiotic Prophylaxis: A Closer Look at the American Heart Association Guidance

Primary reasons for revision of the infective endocarditis prophylaxis guidelines:

- Infective endocarditis is much more likely to result from frequent exposure to random bacteremias associated with daily activities than from bacteremia caused by a dental, gastrointestinal (GI) tract or genitourinary (GU) tract procedures.
- Prophylaxis may prevent an exceedingly small number of episodes of infective endocarditis, if any, in people who undergo a dental, GI tract, or GU tract procedure.
- The risk of antibiotic-associated adverse events exceeds the benefit from prophylactic antibiotic therapy.
- Maintenance of oral health and hygiene may reduce the incidence of bacteremia from daily activities and is more important than prophylactic antibiotics in reducing the risk of infective endocarditis.


Antibiotic Prophylaxis: Changes in the American Heart Association Guidance

Prior to the published update in 2007, many patients with underlying cardiac conditions, such as mitral valve prolapse (MVP), were recommended to receive prophylactic antibiotics prior to dental procedures.

- The American Heart Association (AHA) guidelines define dental procedures as any procedure that involves the manipulation of gingival tissue or the periapical region of teeth or perforation of the oral mucosa.


Credit: CDC Antibiotic Stewardship Considerations in Dentistry
Antibiotic Prophylaxis: Changes in the American Heart Association Guidance

Cardiac conditions for which prophylaxis with dental procedures is reasonable:
- Prosthetic cardiac valve or prosthetic material used for cardiac valve repair.
- Previous infective endocarditis.
- Congenital heart disease (CHD):*
- Cardiac transplantation recipients who develop cardiac valvulopathy.

*MVP is the most common underlying condition that may predispose a patient to infective endocarditis. It's important to note that prophylactic antibiotics are no longer recommended for patients with MVP due to the extremely low absolute incidence of endocarditis in this population. This is important because many of these patients may expect to continue antibiotic prophylaxis prior to dental visits and will need to be informed and educated about the changes in guidance.
Antibiotic Prophylaxis: Guidance for Patients With Prosthetic Joints

- Prophylaxis prior to dental procedures for patients with prosthetic joints had been recommended to avoid possible cases of bacteremia resulting in prosthetic joint infections.
- Dental procedures are defined in the Academy of Orthopedic Surgeons (AAOS) and ADA guidelines as those that involve gingival manipulation or mucosal incision (1,2).


Antibiotic Prophylaxis: Guidance for Patients With Prosthetic Joints

Summary of Recommendations (1):

- In general, for patients with prosthetic joint implants, prophylactic antibiotics are not recommended prior to dental procedures to prevent prosthetic joint infection. This clinical recommendation should be integrated with the practitioner’s professional judgement and the patient’s needs and preferences.
- Evidence fails to demonstrate an association between dental procedures and prosthetic joint infection or any effectiveness for antibiotic prophylaxis. When also considering the potential harm from antibiotic use, using antibiotics before dental procedures is not recommended to prevent prosthetic joint infection.


Credit: CDC Antibiotic Stewardship Considerations in Dentistry
Management of patients with prosthetic joints undergoing dental procedures

Clinical Recommendation:
In general, for patients with prosthetic joint implants, prophylactic antibiotics are not recommended prior to dental procedures to prevent prosthetic joint infection.

For patients with a history of complications associated with their joint replacement surgery who are undergoing dental procedures that include gingival manipulation or mucosal incision, prophylactic antibiotics should only be considered after consultation with the patient and orthopedic surgeon.* To assess a patient’s medical status, a complete health history is always recommended when making final decisions regarding the need for antibiotic prophylaxis.

Clinical Reasoning for the Recommendation:
• There is evidence that dental procedures are not associated with prosthetic joint implant infections.
• There is evidence that antibiotics provided before oral care do not prevent prosthetic joint implant infections.
• There are potential harms of antibiotics including risk for anaphylaxis, antibiotic resistance, and opportunistic infections like Clostridium difficile.
• The benefits of antibiotic prophylaxis may not exceed the harms for most patients.
• The individual patient’s circumstances and preferences should be considered when deciding whether to prescribe prophylactic antibiotics prior to dental procedures.

* In cases where antibiotics are deemed necessary, it is most appropriate that the orthopedic surgeon recommend the appropriate antibiotic regimen and when reasonable write the prescription.

Challenges with antibiotic prescribing in dentistry:

- Pressure from patients and other clinicians to prescribe antibiotics.
- Difficult for patients to understand why they no longer need a prophylactic antibiotic when they had been previously told it was necessary.
- Limited guidance available for dental health professionals on the treatment of infections.
- Limited data available to study antibiotic prescribing by dentists.

Checklist for Antibiotic Prescribing in Dentistry

Pretreatment
- Correctly diagnose an oral bacterial infection.
- Consider therapeutic management interventions, which may be sufficient to control a localized oral bacterial infection.
- Weigh potential benefits and risks (i.e., toxicity, allergy, adverse effects, *Clostridium difficile* infection) of antibiotics before prescribing.
- Prescribe antibiotics only for patients of record and only for bacterial infections you have been trained to treat. **Do not** prescribe antibiotics for oral viral infections, fungal infections, or ulcerations related to trauma or aphthae.
- Implement national antibiotic prophylaxis recommendations for the medical concerns for which guidelines exist (e.g., cardiac defects).
- Assess patients’ medical history and conditions, pregnancy status, drug allergies, and potential for drug-drug interactions and adverse events, any of which may impact antibiotic selection.

Prescribing
- Ensure evidence-based antibiotic references are readily available during patient visits. **Avoid** prescribing based on non-evidence-based historical practices, patient demand, convenience, or pressure from colleagues.
- Make and document the diagnosis, treatment steps, and rationale for antibiotic use (if prescribed) in the patient chart.
- Prescribe only when clinical signs and symptoms of a bacterial infection suggest systemic immune response, such as fever or malaise along with local oral swelling.
- Revise empiric antibiotic regimens on the basis of patient progress and, if needed, culture results.
- Use the most targeted (narrow-spectrum) antibiotic for the shortest duration possible (2-3 days after the clinical signs and symptoms subside) for otherwise healthy patients.
- Discuss antibiotic use and prescribing protocols with referring specialists.

Patient Education
- Educate your patients to take antibiotics exactly as prescribed, take antibiotics prescribed only for them, and not to save antibiotics for future illness.

Staff Education
- Ensure staff members are trained in order to improve the probability of patient adherence to antibiotic prescriptions.

Credit: CDC Antibiotic Stewardship Considerations in Dentistry
Antibiotic Safety: Do’s and Don’ts at the Dentist

**Do**

- **DO** tell your dentist if you have any drug allergies or medical conditions.
- **DO** tell your dentist about any medications, vitamins, or herbal
- **DO** ask how some mouth infections can be treated without antibiotics.
- **DO** take your antibiotics exactly as prescribed.
- **DO** tell your dentist if you have side effects, such as frequent diarrhea, while taking, or shortly after stopping antibiotics.

**DO NOT**

- **DO NOT** skip doses or stop taking your antibiotics without consulting your dentist.
- **DO NOT** save unused antibiotics for future use or give antibiotics to others.
- **DO NOT** take antibiotics prescribed for others.
- **DO NOT** pressure your dentist to prescribe an antibiotic. Instead, ask your dentist how you can feel better even if antibiotics are not prescribed.

To learn more about antibiotic prescribing and use, visit [www.cdc.gov/antibiotic-use/](http://www.cdc.gov/antibiotic-use/).

Credit: CDC Antibiotic Stewardship Considerations in Dentistry