



Antibiotic Stewardship

June 13 | June 18 | June 25
2024

Your HQI Team



Susan Moeslein
MSA, BSN, ACM, CIC
Consultant



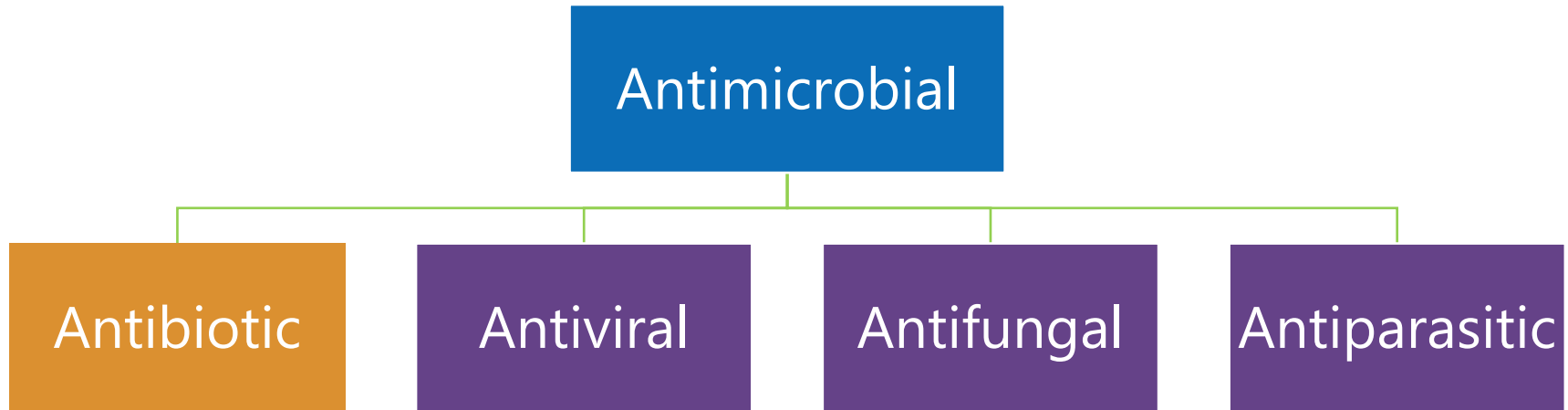
Deb Smith
MLT (ASCP), BSN, CIC, CPHQ
Consulting Manager

Objectives

- ✓ Define antimicrobials & antimicrobial resistance (AR)
- ✓ Describe the antibiotic resistance crisis
- ✓ Provide information about the importance of antibiotic stewardship
- ✓ Identify educational resources to promote antibiotic stewardship



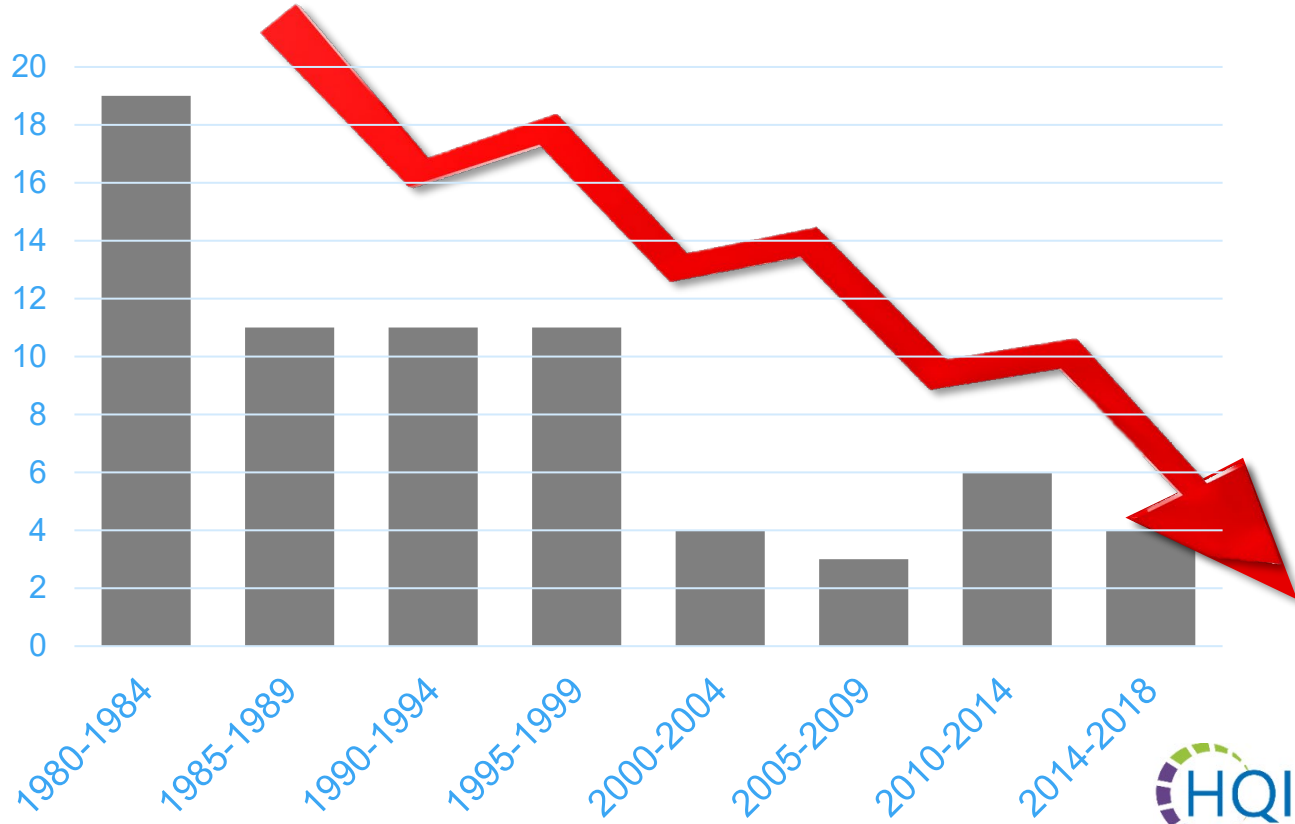
Antimicrobial or Antibiotic?



Antimicrobials

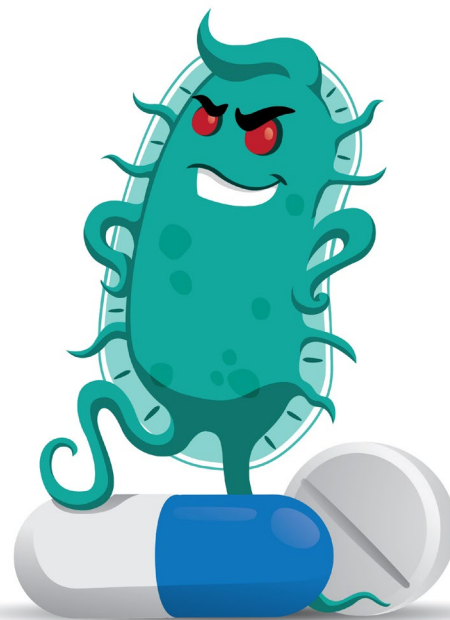


Antibiotic Development is on the Decline



What is Antibiotic Resistance (AR)?

- Antibiotic resistance (AR) happens when germs develop the ability to defeat the drugs designed to kill them.
- AR has the potential to affect people at any stage of life, as well as the healthcare, veterinary and agriculture industries.
- This makes it one of the world's most urgent public health problems.



The Antibiotic Resistance Crisis

2.8 million antibiotic resistant infections occur in the US each year with 35,000 deaths (*CDC, 2019*)

Numbers continue to increase (*CDC, 2022*)



Available data show an alarming increase in resistant infections starting during hospitalization, growing at least 15% from 2019 to 2020.

- Carbapenem-resistant *Acinetobacter* (+78%)
- Antifungal-resistant *Candida auris* (+60%)*
- Carbapenem-resistant Enterobacterales (+35%)
- Antifungal-resistant *Candida* (+26%)
- ESBL-producing Enterobacterales (+32%)
- Vancomycin-resistant Enterococcus (+14%)
- Multidrug-resistant *P. aeruginosa* (+32%)
- Methicillin-resistant *Staphylococcus aureus* (+13%)

Antibiotic Resistance & Infectious Agents

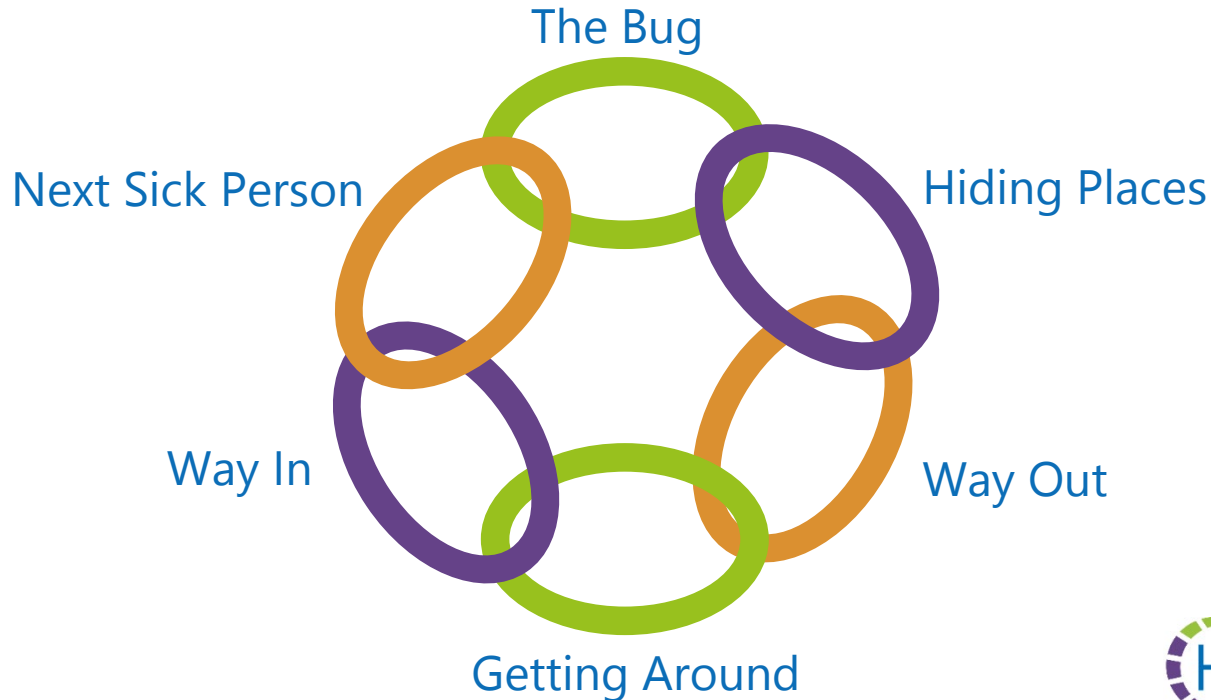


Transmission Video



Antibiotic Resistance & Preventing Transmission

The Chain of Infection



Another Visual for Transmission

From our partners at VDSS:



Antibiotic Resistance Scenarios

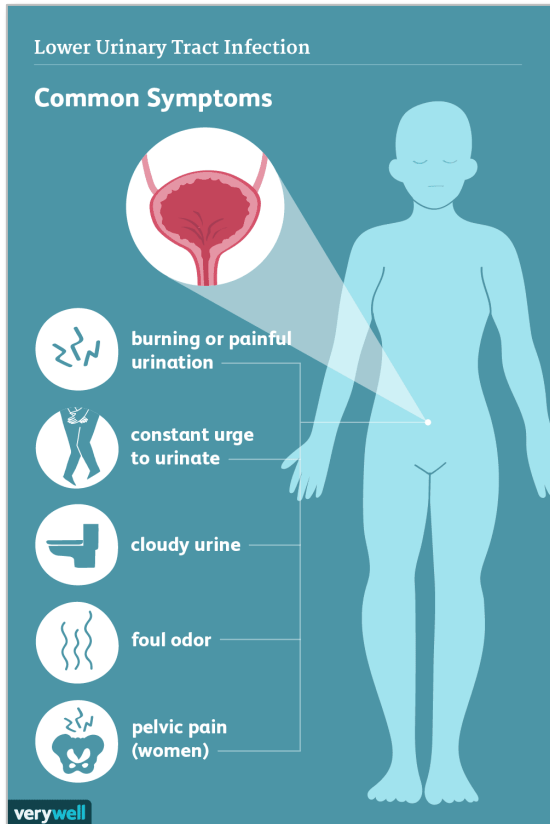
Scenario 1: Anna

What we know:

- No fever
- No pain
- Normal appetite
- More tired than normal



Antibiotic Resistance Scenarios



What is Missing?

- Pain (especially pelvic pain in women)
- Fever
- Increased urination, burning with urination, cloudy and/or strong-smelling urine or bloody urine
- Antibiotic prescription associated with culture results (>105 CFU/ML) clean catch

What Matters?

- Symptoms
- Abnormal Urinalysis
- Positive urine culture (>105 CFU/ML) clean catch

[Symptoms of a Urinary Tract Infection | VeryWell](#)

Antibiotic Resistance Scenarios

Scenario 2: Javier

What we know:

- Cough (comes and goes)
- Has been treated with antibiotics in the past



Antibiotic Resistance Scenarios

Antibiotics: When Do You Need Them?



How do I know if I need an antibiotic?

- Ask your healthcare provider what medicines you can safely take to help you feel better.
- If you have an infection caused by bacteria, your healthcare provider may prescribe an antibiotic. If so, you should take the antibiotic as directed.
- If you have an infection caused by a virus, an antibiotic won't help, and may make you feel worse.



Why don't I need an antibiotic for my cold or cough?

- Viruses, not bacteria, cause colds and coughs. Antibiotics don't treat viruses.
- Antibiotics do not help a cough or a stuffy or runny nose go away faster.
- Antibiotics can cause side effects like diarrhea, rash, or allergic reactions—which can sometimes be serious.
- Every time you take an antibiotic when you do not need one, you increase the chances that common antibiotics won't work as well in the future.
- To practice better, safer medicine, your healthcare practitioner will only prescribe antibiotics when necessary.

What is Missing?

- A differential diagnosis

What Matters?

- Symptoms





Antibiotic Stewardship Education

FIGHT ANTIMICROBIAL RESISTANCE WITH INFECTION CONTROL

Antimicrobial resistance happens when germs like bacteria and fungi develop the ability to defeat the drugs designed to kill them. That means the germs are not killed and continue to grow and spread.

As a frontline healthcare worker, you play an important role in fighting antimicrobial resistance.

When you practice infection control, you stop resistant germs from:

-  **Entering the body** and causing infections through procedures and medical devices
-  **Spreading to people** from surfaces like bedrails or the hands of healthcare workers
-  **Moving with patients** when they are transferred between facilities
-  **Spreading into the community**, making them harder to control

Infection control fights resistance by:



- Preventing new healthcare associated infections
- Stopping the spread of resistant germs
- Reducing the need for antibiotics or antifungals

Infection control also protects you from getting sick and decreases the risk of spreading germs to patients.

Check out Project Firstline resources to learn more about how you can protect your patients, yourself, and your community from antimicrobial resistance.

www.cdc.gov/ProjectFirstline

WE HAVE THE POWER TO STOP RESISTANT INFECTIONS. TOGETHER

Everyone Has a Role in Infection Prevention

Antibiotic Stewardship Education

- ✓ Provide resources to staff
- ✓ Educate staff upon hire and annually thereafter



Antibiotic Resistance & Preventive Vaccines

Your Health Can't Wait, Vaccinate!
Adults can be protected from deadly diseases.

COVID-19
Older adults and people with underlying medical conditions like heart or lung disease, or diabetes, are at higher risk for getting very sick from Covid-19.

Shingles
An older adult with shingles is more likely to experience pain from postherpetic neuralgia (nerve pain).
1 in 3 adults develop shingles!

Influenza (Flu)
Between 70% and 85% of seasonal flu related deaths have occurred in people 65 years and older. Older adults have a 6x greater risk of dying from flu and related complications.

Pneumococcal Disease (Pneumonia)
Complications of pneumococcal disease include infection in the lungs and chest cavity, inflammation of the lining of the heart, and blockage of airways. Risk of hospitalization for pneumococcal pneumonia is more than 6x greater in older adults.

**KNOW THE RISKS FOR ADULTS AGE 65+
VACCINES ARE SAFE**

[Respiratory Virus Guidance | CDC](#)

[Flu & People 65 Years and Older | CDC](#)

[Complications of Shingles \(Herpes Zoster\) | CDC](#)

[Symptoms and Complications of Pneumococcal Disease | CDC](#)

[Recommended Adult Immunization Schedule | CDC](#)

This material was prepared by Health Quality Innovators (HQI), a Quality Improvement Network Quality Improvement Organization (QIN-QIO) under contract with the Centers for Medicare & Medicaid Services (CMS), an agency of the U.S. Department of Health and Human Services (HHS). Views expressed in this material do not necessarily reflect the official views or policy of CMS or HHS, and any reference to a specific product or entity herein does not constitute endorsement of that product or entity by CMS or HHS. 10/2020. HQI/QIN-QIO-0546-05/24/23

HQI
HEALTH QUALITY INNOVATORS

HQIN
HEALTH QUALITY IMPROVEMENT NETWORK

Antibiotic Resistance & Preventive Vaccines

Communication Strategies

Meet people where they are

- Empathy for those who are vaccine hesitant
- Are they willing but need more information

Avoid repeating false claims

- Emphasize the facts over misinformation
- Be honest about risks of the infection

Emphasize support for vaccinations rather than focus on naysayers

- Positive messaging about support for vaccination
- “Pride in Prevention”



Antibiotic Stewardship Education


ANTIBIOTIC RESISTANCE THE GLOBAL THREAT

Antibiotic resistance – when bacteria change and cause antibiotics to fail – is happening **RIGHT NOW**, across the world

The full impact is unknown. There is no system in place to track antibiotic resistance globally

Without urgent action, many modern medicines could become obsolete, turning even common infections into deadly threats.



 Centers for Disease Control and Prevention
National Center for Emerging and Zoonotic Infectious Diseases

Learn More
<http://www.cdc.gov/getsmart>
<http://www.cdc.gov/drugresistance>

CDC#0913-N

ANTIBIOTIC RESISTANCE HOW IT SPREADS

HANDLE ANTIBIOTICS WITH CARE



Antibiotics are given to food producing animals and crops

Animals develop drug-resistant bacteria in their gut

Antibiotics are given to patients, which can result in drug-resistant bacteria developing in the gut

Drug-resistant bacteria reaches humans through food, the environment (water, soil, air) or by direct human-animal contact

Antibiotic resistance happens when bacteria change and become resistant to the antibiotics used to treat the infections they cause.

Patient attends hospital or clinic

Drug-resistant bacteria spreads to other patients through poor hygiene and unclean facilities

Drug-resistant bacteria spreads to the general public

www.who.int/drugresistance
#AntibioticResistance

 World Health Organization

Antibiotic Stewardship Education

IMPROVING ANTIBIOTIC USE



Do I really need antibiotics?



SAY YES TO ANTIBIOTICS when needed for certain infections caused by **bacteria**.



SAY NO TO ANTIBIOTICS for **viruses**, such as colds and flu, or runny noses, even if the mucus is thick, yellow or green. Antibiotics also won't help for some common bacterial infections including most cases of bronchitis, many sinus infections, and some ear infections.

Antibiotics are only needed for treating certain infections caused by bacteria.

Antibiotics do NOT work on viruses.

Do antibiotics have side effects?

Any time antibiotics are used, they can cause side effects. However, antibiotics can save lives. When you need antibiotics, the benefits outweigh the risks of side effects. If you don't need antibiotics, you shouldn't take them because they can cause harm.

Common side effects of antibiotics include:



Rash



Dizziness



Nausea



Yeast Infection



Diarrhea

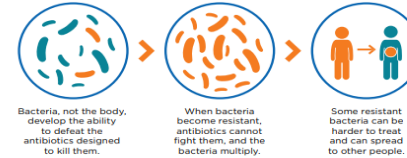
Get immediate medical help if you experience severe diarrhea. It could be a symptom of a **C. difficile infection** (also called **C. diff**), which can lead to severe colon damage and death. People can also have severe and life-threatening allergic reactions.

If you experience side effects, follow up with your healthcare professional.

1 OUT OF 5 medication-related visits to the emergency room are from reactions to antibiotics.

What are antibiotic-resistant bacteria?

Antibiotics can save lives, but anytime antibiotics are used, they can lead to antibiotic resistance. Antibiotic resistance occurs when germs like bacteria and fungi develop the ability to defeat the drugs designed to kill them. If antibiotics lose their effectiveness, then we lose the ability to treat infections, like those that lead to sepsis.



More than **2.8 million** antibiotic-resistant infections occur in the United States each year, and more than **35,000** people die as a result.

Can I feel better without antibiotics?

Respiratory viruses usually go away in a week or two.

To stay healthy and keep others healthy, you can:

- Clean your hands
- Stay home when sick
- Avoid close contact with people who are sick
- Get recommended vaccines
- Cover your coughs and sneezes
- Avoid touching your face
- If you need antibiotics, take them exactly as prescribed

Talk to your healthcare professional about what you can do to feel better.

To learn more about antibiotic prescribing and use, visit www.cdc.gov/antibiotic-use.



Antibiotic Resistance & AR Stewardship

What Antimicrobial Stewardship Can Do

Antimicrobial stewardship has been shown to:

- Decrease overall antimicrobial use
- Decrease incidence of *C. difficile*
- Decrease prevalence of several MDROs
- Increase adherence to guidelines
- Increase appropriate antibiotic prescribing



Chatterbox





Resources

- [How Antibiotic Resistance Spreads | CDC](#)
- [How Antibiotic Resistance Moves Directly Germ to Germ | CDC](#)
- [Print Materials, Graphics and More | Project Firstline | CDC](#)
- [Fight Antimicrobial Resistance with Infection Control | CDC](#)



Contact Information



804.289.5320



hqi.solutions



@healthqualityinnovators