

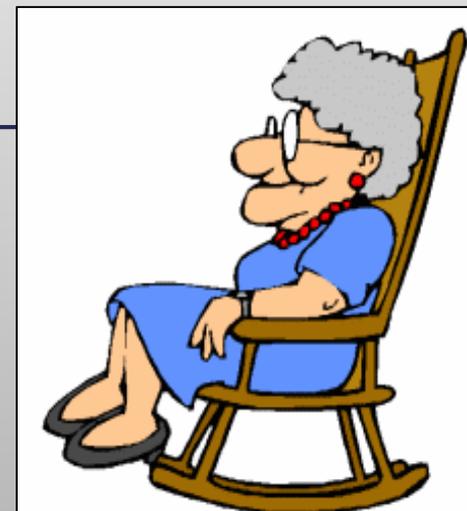
KEEP ANTIBIOTICS WORKING FOR RESIDENTS IN LONG-TERM CARE FACILITIES

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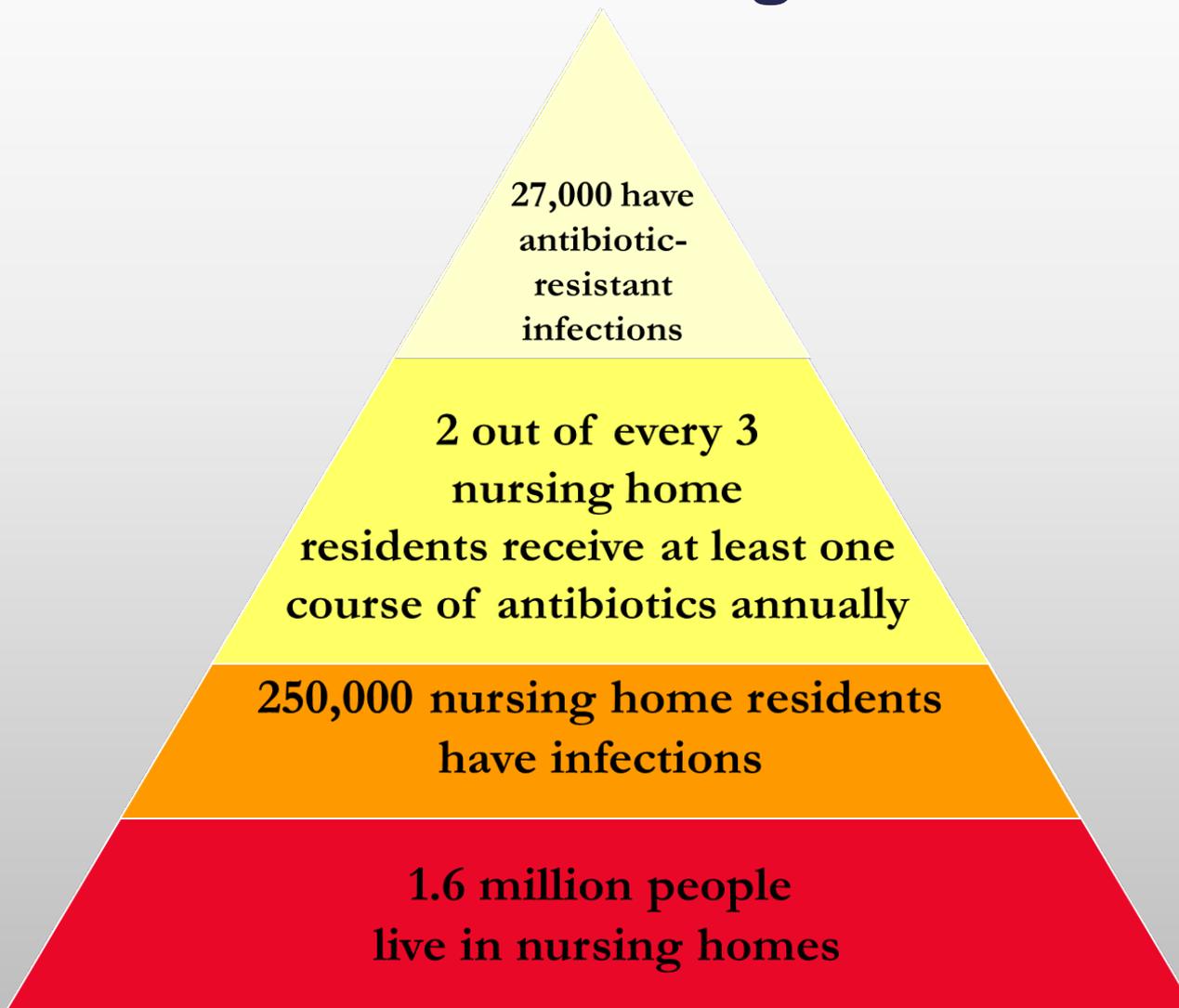
Learning Objectives

- Describe the burden of infections among long-term care facility (LTCF) residents
- Identify the differences between viruses and bacteria – and the infections they can cause
- Describe antibiotic use and antibiotic resistance in LTCF
- Define antimicrobial stewardship
- List 3 steps long-term care facility LTCF nurses can take to ensure that antibiotics will be effective when needed

BACKGROUND



Burden of Infections in Long-term Care



Viruses and Bacteria

- **Viruses:**
 - Cause of most respiratory infections like colds and influenza (flu)
 - Antibiotics will NOT work – viral illnesses must run their course
- **Bacteria:**
 - Common cause of infections like urinary tract infections, pneumonia, and skin infections
 - May require antibiotic therapy

Viruses and Bacteria (cont.)

Illness	Usual Cause		Antibiotic Needed
	Virus	Bacteria	
Cold	Yes	No	No
Flu	Yes	No	No
Chest Cold (in otherwise healthy children and adults)	Yes	No	No
Sore Throats (except strep)	Yes	No	No
Bronchitis (in otherwise healthy children and adults)	Yes	No	No
Runny Nose (with green or yellow mucus)	Yes	No	No
Fluid in the Middle Ear	Yes	No	No

Antibiotics are not effective against viral infections!

Bacteria Commonly Cause...

- Urinary tract infections (UTI)
- Pneumonia
- Skin infections
- *Clostridium difficile* infection

These infections may need to be treated with antibiotics.

Virus or Bacteria: How Do You Know?

- Symptoms may overlap, such as fever or malaise
- Signs/symptoms of infection and laboratory results are needed to know

Myths and Facts

- **Myth:** Giving a resident antibiotics for cold and flu symptoms will make him or her feel better faster.
- **Fact:**
 - Antibiotics do not ease the symptoms of viral illnesses
 - The infection must resolve on its own
 - Comfort measures such as extra fluids and medicines to reduce fever and pain are helpful

Myths and Facts

- **Myth:** Bacteria in the urine always should be treated with antibiotics.
- **Fact:**
 - The presence of bacteria in urine does not always indicate that the person has an infection
 - Presence of bacteria in urine:
 - Frequently occurs in elderly persons
 - Occurs in most persons with catheters
 - Antibiotics are only needed if there is bacteria in the urine AND the resident has signs/symptoms of a UTI

Myths and Facts

- **Myth:** Giving antibiotics to a resident to ease the minds of family members isn't harmful.
- **Fact:** Giving antibiotics to a resident when they aren't needed can:
 - 1) disrupt the balance of normal gut bacteria, allowing harmful bacteria like *C. diff* to overgrow
 - 2) put the resident at risk for potentially serious side effects
 - 3) lead to antibiotic resistance

Antibiotics

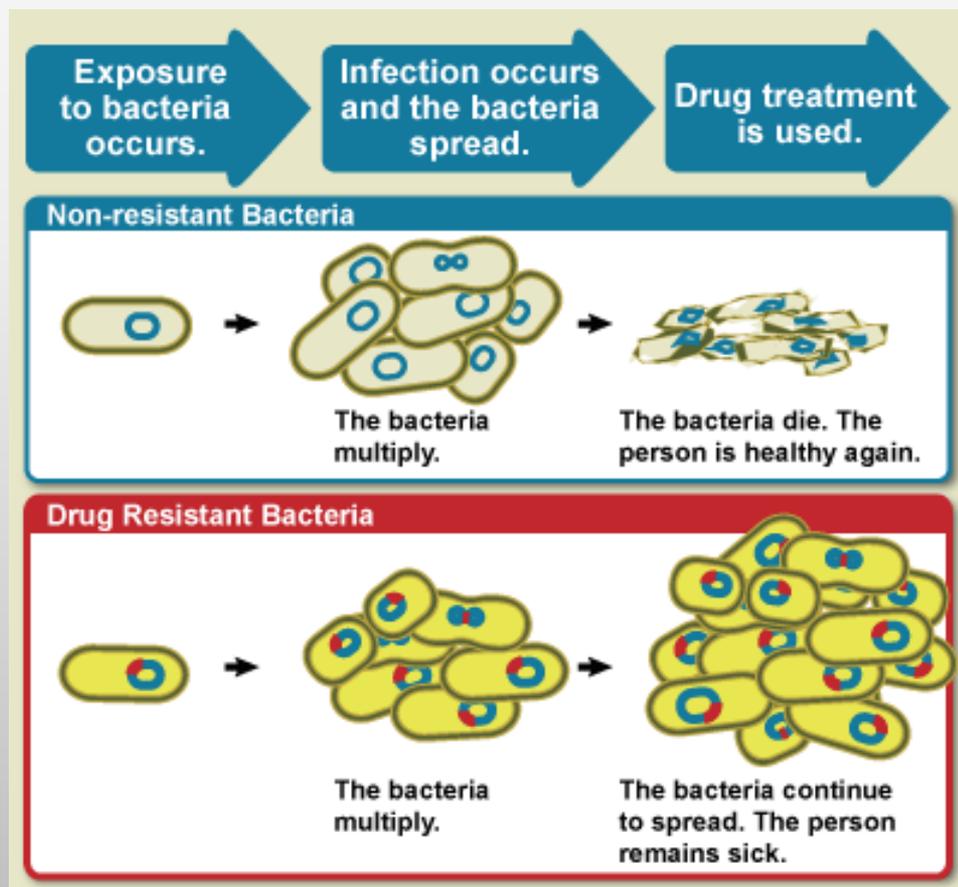
- The most important tool we have to combat disease-causing bacteria
- When used properly, antibiotics can save lives
- Antibiotics can also have side effects – unnecessary antibiotic use needlessly puts residents at risk



Antibiotic Resistance

- Antibiotic-resistant bacteria: bacteria that have developed mechanisms to resist the antibiotics that were designed to kill them
- Antibiotic-resistant bacteria can survive antibiotics and continue to cause infection.
- Antibiotic overuse (including unnecessary use) increases the development of antibiotic-resistant bacteria
- Antibiotic resistance is one of the world's most pressing public health threats

How Antibiotic Resistance Develops



Source: National Institute of Allergy and Infectious Diseases

What's the Problem?

- Overuse and misuse of antibiotics
- Antibiotics are among the most commonly prescribed medications in LTCF
 - Up to 70% of residents receive an antibiotic every year
 - 35-75% of these are inappropriately prescribed
- Use and misuse of antibiotics + resident and facility factors contribute to resistance

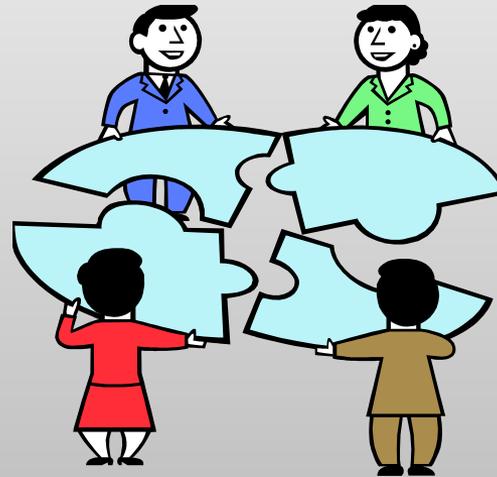
Consequences of Antibiotic Misuse

- Adverse drug effects or drug interactions
- Secondary infections (*Clostridium difficile*)
- Increased cost of care
- Antibiotic resistance



What is Antibiotic Stewardship?

- Multidisciplinary approach that includes strategies to prevent misuse so that the benefits of antimicrobials to outweigh the risks



Antibiotic Stewardship: Ingredients to a successful program

- Education for nurses, prescribers, pharmacists
 - Evidence-based guidelines for clinical assessment, testing for and treating infections
- Accurate assessment of resident conditions, change of status
- Accurate, timely communication of resident status and laboratory test results
- Participation of all care providers within the LTCF

Principles of Antibiotic Stewardship

- Use antibiotics only when needed
- Assist residents in managing symptoms of non-bacterial infections
- Use evidence-based guidelines regarding indication for treatment, antibiotic selection, and duration of antibiotic therapy

Antibiotic Stewardship Provider Strategies

- ➔ Right diagnosis/ drug/ dose/ duration/ de-escalation
- ➔ Obtain cultures when clinically indicated / avoid empiric prescribing if possible
- ➔ Adjust empiric prescribing/stop antibiotic based on lab results

The Role of Nursing

- Role of nursing is critical!
 - You are the eyes & ears; have relationships with the residents
 - Infection signs/symptoms important to assess but do not always require antibiotics
 - Prescribers need thorough clinical information for decision-making

How Can We Stop Antibiotic Misuse?

Nurses make all the difference!

- Timely & accurate resident assessment
 - Communication to relevant staff
 - Documentation of resident signs and symptoms
- 
- Correct symptom recognition
 - Correct action
 - Correct follow-up

The Role of Nursing (cont.)

You can – and must – implement steps in your nursing practice to help prevent the development and transmission of antibiotic-resistant microorganisms

- Perform thorough nursing assessments prior to contacting a provider about a change in resident status
- Document observations and assessment findings; communicate clearly and thoroughly to the provider
- Recognize resident risk factors for developing an infection (compromised immune system, age, chronic conditions)

Infection Prevention & Control

Standard Precautions – use for all residents, all of the time

- Hand hygiene - always!
 - Break the chain of infection
- Gloves for contact with all mucous membranes, body fluids, secretions, excretions, and contaminated items
- Gown to protect clothing if contact with resident secretions, excretions, or contaminated items is anticipated
 - Prevent germs from attaching to uniforms, badges, or other items worn by healthcare workers
- Mask and eye protection if spraying or splashing is anticipated (performing personal cares for a resident with productive cough, recent emesis, or diarrhea)
- Respiratory hygiene / Cough etiquette



Infection Prevention & Control (cont.)

Contact Precautions – use for any resident that:

- Has a wound or skin lesion that cannot be covered fully or has drainage that cannot be completely contained by dressings
 - Is incontinent of urine and/or stool that cannot be contained by incontinence products
 - Has a tracheostomy with secretions that cannot be contained
 - Has been epidemiologically linked to infections caused by antibiotic-resistant organisms in other residents
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- Cohorting – if private rooms are not available, room together residents known to be colonized or infected with the same organism

Educate Residents, Family and Visitors

- Infection prevention and control recommendations for residents in LTCF differ from those for patients in hospitals
- Contact Precautions are generally implemented for patients known to have antibiotic-resistant organisms while they are in the hospital because:
 - People in hospitals are sicker, more vulnerable
 - Frequent presence of invasive devices
- Assure family members that you are providing appropriate care to their loved one

Hand Hygiene

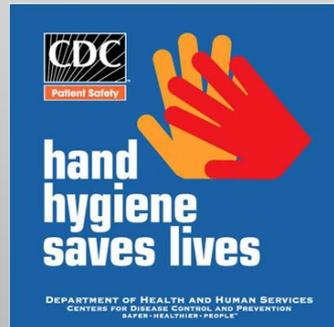
- Perform hand hygiene:
 - After touching bodily or environmental surfaces contaminated with blood, body fluids, secretions, excretions, etc. – whether or not gloves were worn
 - Immediately after removing gloves
 - Before touching clean bodily or environmental surfaces
 - Between resident contacts
- Soap and warm water / friction
 - Liquid soap preferred over bar soap (bar can serve as transmission vehicle)
 - Use paper towels or air dryers; avoid sharing hand towels
- Alcohol-based gel/foam
 - Use when hands are not visibly soiled (use soap and water if hands are visibly soiled)



Hand hygiene is the most effective way to prevent the spread of infections!

Fingernails and Artificial Nails

- **Fingernails**
 - Centers for Disease Control and Prevention (CDC) recommends that natural nail tips should be kept to ¼ inch in length
 - Even after careful hand hygiene, pathogens can live under fingernails
- **Artificial nails**
 - Artificial nails are discouraged for healthcare workers
 - Possible infection hazard – studies show that healthcare workers with artificial nails are more likely to have pathogens on their fingertips than those with natural nails - both before and after they wash their hands



Guideline for Hand Hygiene in Health-care Settings. MMWR 2002;51(No. RR-16):29.

Influenza Vaccination

- Influenza (flu) – common but serious viral infection
 - Causes 36,000 deaths and 114,000 hospitalizations each year in U.S.
 - One of the leading causes of death due to a vaccine-preventable disease
 - 90% of deaths occur in elderly
- LTCF residents are particularly vulnerable to influenza
 - Advanced age and comorbid medical conditions
 - During outbreaks, 25-60% of residents can be affected, with fatality rates of 10-20%
- Unvaccinated healthcare workers infected with influenza can transmit this deadly virus to their vulnerable residents

Influenza Vaccination (cont.)

- **Prevent residents' exposure to influenza!**
 - Get your flu shot every fall
 - Remind resident family members to get one
- Influenza vaccination protects you from getting sick and spreading flu to residents
- Influenza vaccination is safe
- Recommended as a standard of care since 1981

All health-care workers should receive annual influenza vaccination

Summary

- Antibiotic resistance is an increasing health threat to LTCF residents, healthcare workers, and communities
- Misuse and overuse of antibiotics contributes to antibiotic resistance
- Educate residents and family about antibiotic resistance and infection prevention
- Practice excellent hand hygiene and use Standard Precautions in the care of all residents
- Antimicrobial stewardship requires collaboration between all levels of care – and nursing plays a critical role

Resources

- MDH Infection Prevention and Control
www.health.state.mn.us/divs/idepc/dtopics/infectioncontrol/guidelines.html
- Minnesota Antibiotic Resistance Collaborative
www.minnesotaarc.org/
- CDC Campaign to Prevent Antibiotic Resistance
www.cdc.gov/getsmart/index.html
- Alliance for the Prudent Use of Antibiotics
www.tufts.edu/med/apua/

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Infection Control and Antimicrobial Resistance Unit

Minnesota Department of Health

www.health.state.mn.us/divs/idepc/dtopics/antibioticresistance