Long Term Care RISE

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“Antibiotic Awareness” in Long-Term Care

Philadelphia Department of Public Health Long-Term Care Collaborative Call

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Case

- 92 yo female nursing home resident with Alzheimer's disease, severe arthritis, and depression develops dark urine over the weekend
  - On-call physician notified → urine culture requested and ordered
  - Afebrile, normal vitals, no urinary catheter in place
- 2 days later, primary physician called with results
  - Urinalysis: moderate WBCs, 1+ nitrites; Urine culture: >100,000 CFU of gram-negative rod
  - Ciprofloxacin is ordered for a 7 day course
- One week later, resident continues to have dark urine
  - No fever or other symptoms
  - Resident's family now requests a repeat urine to make sure the infection has resolved

Adapted from Nace DA. JAMDA 2014

Audience Question #1

- **Which of the following statements regarding this case is true?**

A. Minimum antibiotic duration for a UTI is 7 days

B. Urine studies should be repeated at the end of antibiotic course to make sure infection is cured

C. If a bacteria grows in the urine culture, it means there is an infection

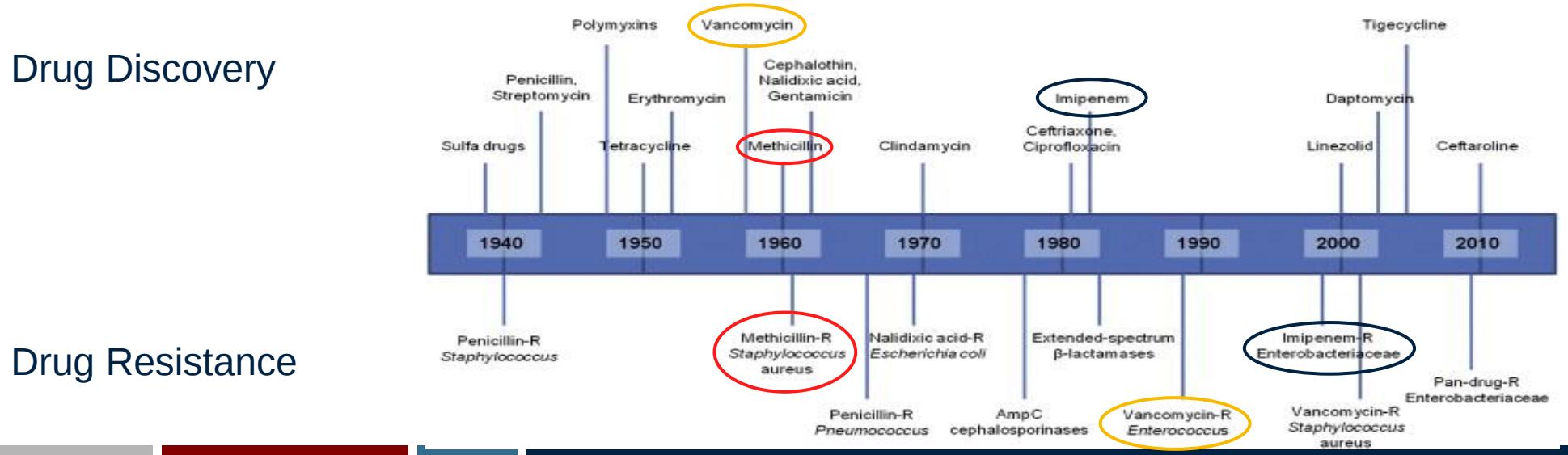
D. Dark urine is a common symptom for UTIs in the elderly

E. Risks of not treating an elderly resident with a positive urine culture outweigh any risks from antibiotic use

F. None of the above

The Problem

- Antibiotics have saved countless lives
- However, widespread antibiotic use has led to:
  - Antibiotic resistance
  - *C. difficile* infections
  - Adverse drug effects including drug-drug interactions
- A substantial amount of antibiotic use in the community is unnecessary



Tang et al. Advanced Drug Delivery Reviews 2014

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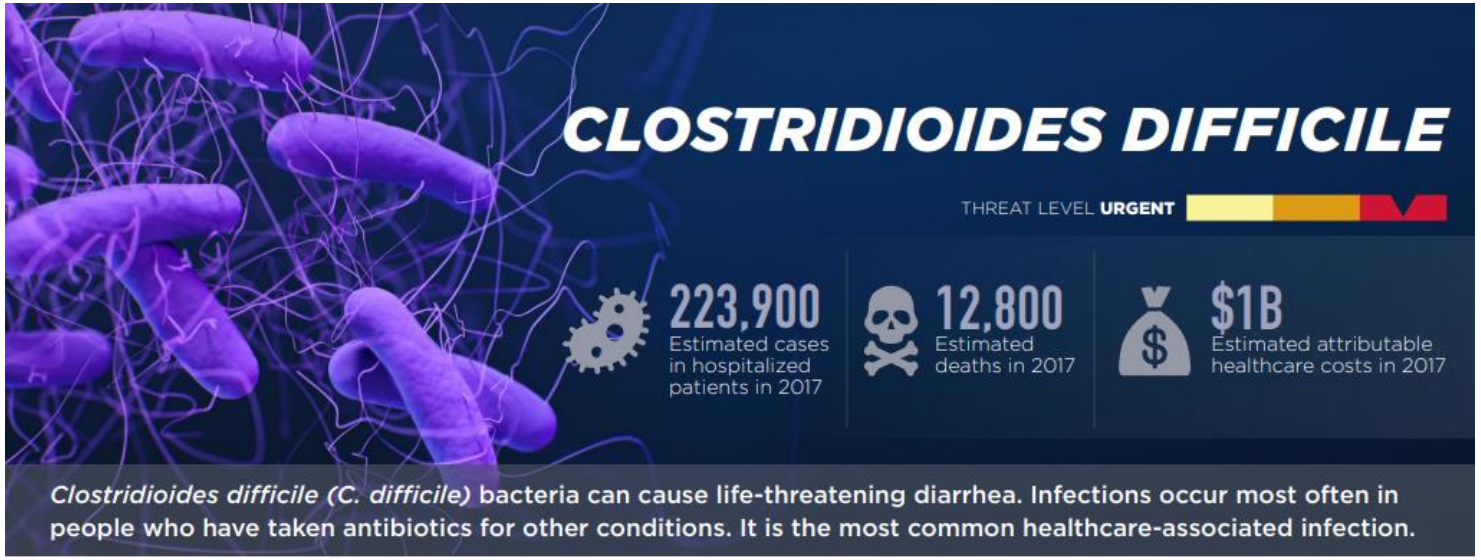
CDC's Urgent Threats: *C. difficile*



WHAT YOU NEED TO KNOW

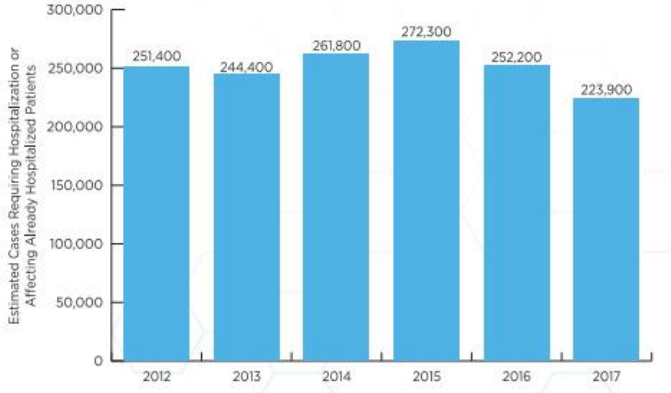
- While healthcare-associated *C. difficile* cases are decreasing, community-associated cases are not.
- Strategies to reduce *C. difficile* infections include improving antibiotic use, infection control, and healthcare facility cleaning and disinfection.
- *C. difficile* infections are more common and tend to be more severe in older patients.

Previously *Clostridium difficile*. Also called *C. diff*. Cost includes hospital-onset cases only.

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

CASES OVER TIME

Continued appropriate infection control, antibiotic use, and diagnostic testing are important to maintain decreases in *C. difficile* cases.



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CDC's Urgent Threats: *Candida auris*

Department of Public Health
CITY OF PHILADELPHIA

Philadelphia Department of Public Health
Division of Disease Control

CHERYL BETTIGOLE, MD, MPH
Health Commissioner

SHARA EPSTEIN, MD
Medical Director, Division of Disease Control

COLEMAN TERRELL
Director, Division of Disease Control

Health Update

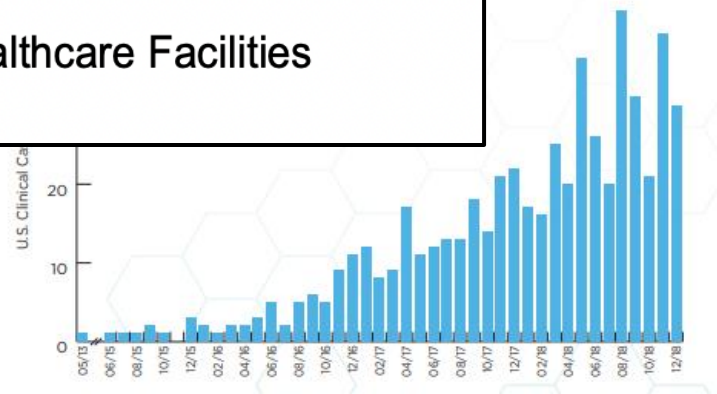
Update: Outbreak and Containment of *Candida auris* in PA Healthcare Facilities

August 8, 2022

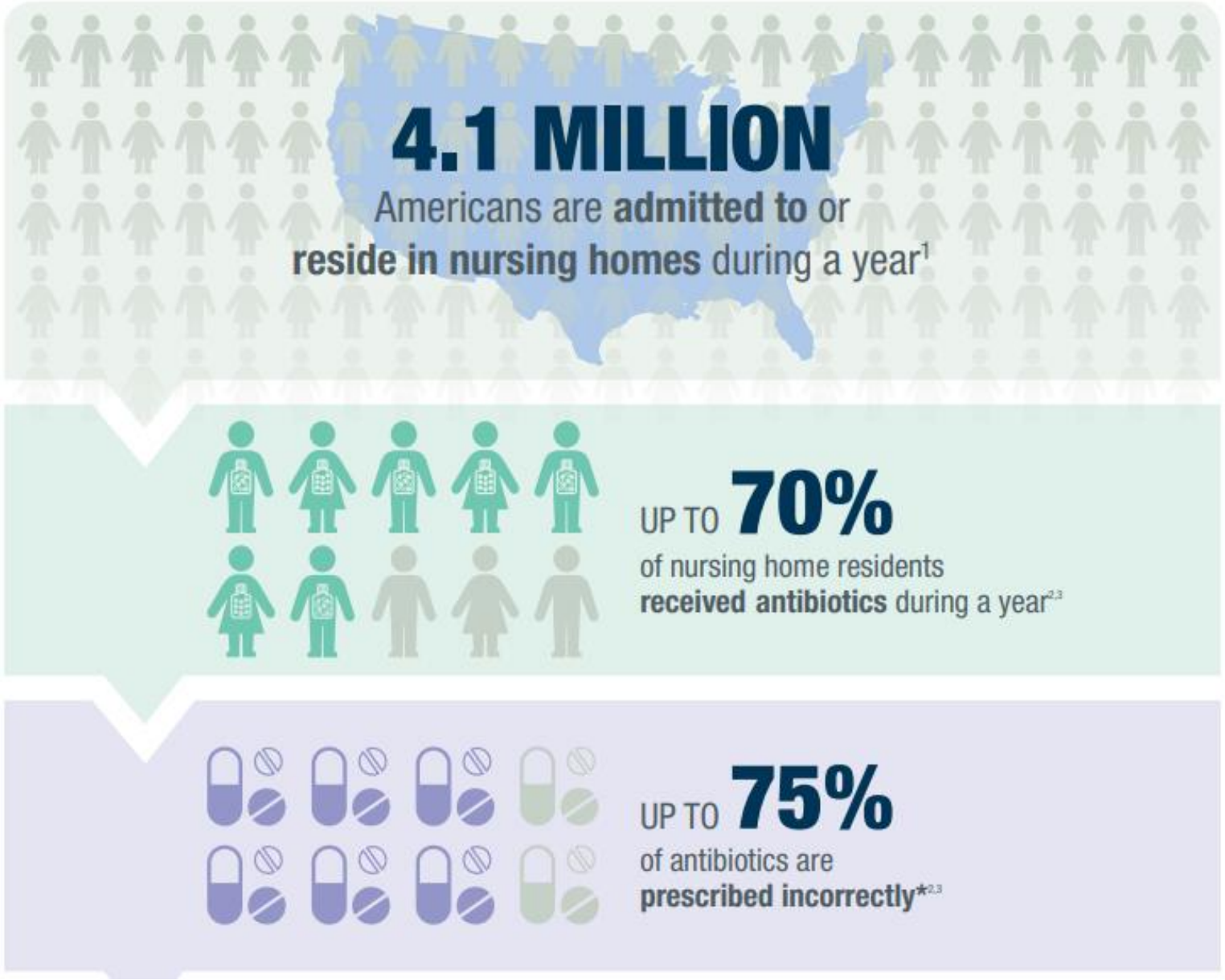
- Can be carried on patients' skin without causing infection, allowing spread to others

Data represents U.S. cases only. Isolates are pure samples of a germ.

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention



Antibiotic Use in Nursing Homes



*incorrectly = prescribing the wrong drug, dose, duration or reason

1. AHCA Quality Report 2013.
2. Lim CJ. Clin Interven Aging. 2014
3. Nicolle LE. Infect Control Hosp Epidemiol 2000; 21:537–45.

Negative Impact of Antibiotic Use in Nursing Homes

Cost-estimates of antibiotics in nursing homes range from **$38 million** to **$137 million per year.**[1]

Residents in nursing homes with higher antibiotic use have a **24% increased risk** of antibiotic-related harm.[2]

In nursing homes with higher antibiotic use, **even residents who do not receive antibiotics are at increased risk** of indirect antibiotic-related harms due to the spread of resistant bacteria or *C. difficile* germs from other patients.[2]

1. Strausbaugh LJ. Infect Control Hosp Epidemiol 2000
2 Daneman N. JAMA Intern Med. 2015

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Antibiotic Stewardship

- The **right antibiotic**, at the **right dose**, for the **right duration**, at the **right time**

- Antibiotics are unique drugs because they impact not just the resident, but also the community around the resident

- Multi-faceted effort requiring more than just education or antibiotic expertise

CMS Regulations

- **“CMS Reform of Requirements for LTCFs”** implemented Nov 28, 2017

§ 483.80 Infection control.

The facility must establish and maintain an infection prevention and control program designed to provide a safe, sanitary, and comfortable environment and to help prevent the development and transmission of communicable diseases and infections.

(a) ***Infection prevention and control program.*** The facility must establish an infection prevention and control program (IPCP) that must include, at a minimum, the following elements:

(3) An antibiotic stewardship program that includes antibiotic use protocols and a system to monitor antibiotic use.

- **F-tag 881** provides detailed guidance for surveyors to ensure the elements of an appropriate antibiotic stewardship program in place

CDC Core Elements for Antibiotic Stewardship in Nursing Homes

Audience Question #2

- **Which of the following elements do you believe offers the greatest opportunity to improve antibiotic stewardship in long term care facilities?**

A. Education for residents and families on appropriate antibiotic use

B. Standardized protocols and policies (e.g., minimum use criteria) for antibiotic use

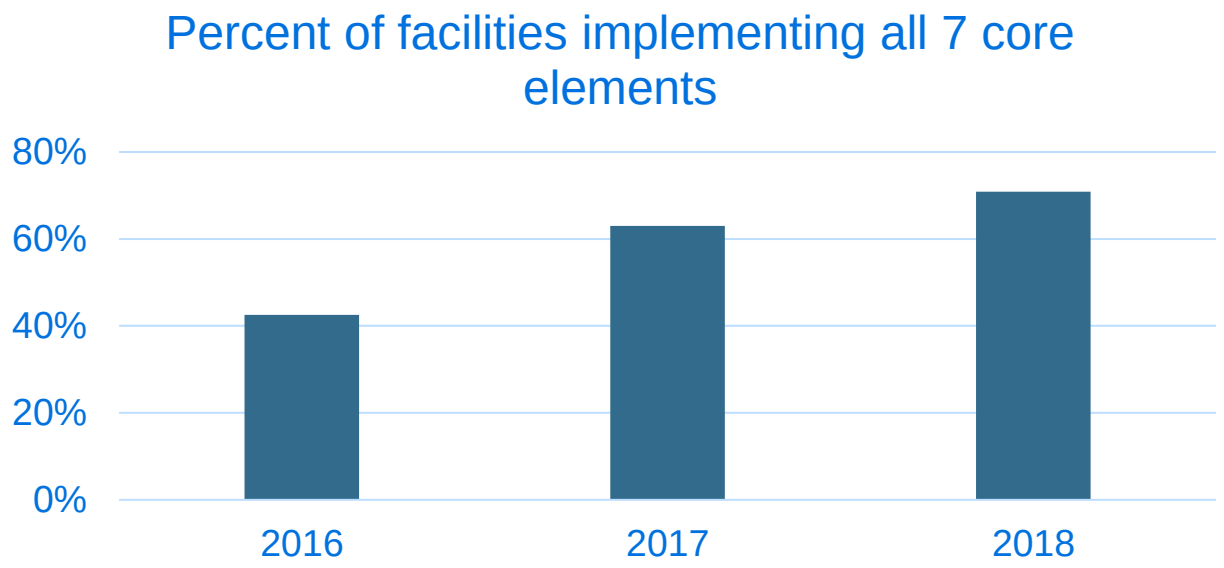
C. Availability of antibiotic expertise from an external consultant

D. Increased accountability and/or leadership support for stewardship efforts

E. Education for staff regarding when and how to obtain cultures, and when to treat with antibiotics

Positive Trend in Implementation of Core Elements - NHSN

- Percent of facilities implementing all 7 core elements increased by 28% between 2016 and 2018
- Greatest increases in education, reporting, and drug expertise
- Nursing homes with at least 20 hours of IPC activity per week were 14% more likely to implement all 7 core elements



Gouin HA. ICHE 2022

Antibiotic Stewardship: PDPH & LTC RISE Partnership

THANK YOU to all facilities that participated!

- 38 facilities, 81% response rate
- Facility customized reports sent earlier this week

55% of all facilities that responded met *all* core elements of a SNF antibiotic stewardship program!

Department of Public Health
CITY OF PHILADELPHIA
Healthcare-associated Infections/Antimicrobial Resistance (HAI/AR) Program
Long Term Care RISE
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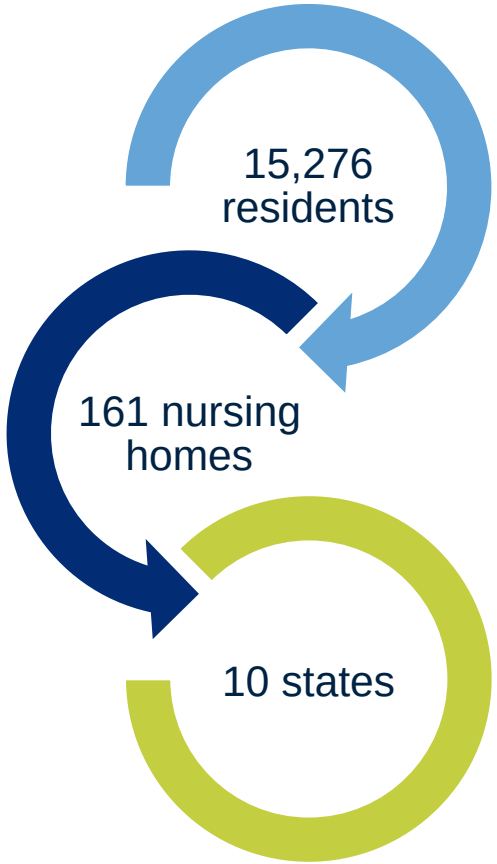
Targeting QI Efforts

- 2017 point prevalence survey
  - **Abx use more common** in following residents
    - admitted for **short stays** after post-acute care
    - **central venous catheter** in place
    - indwelling **urinary catheter** in place
  - **UTI** was the most common indication
  - **18%** of antibiotics were for **prophylaxis**, typically urinary
  - **Fluoroquinolones** (e.g., ciprofloxacin, levofloxacin) were most common antibiotic class
  - **33%** of antimicrobials were **broad spectrum antibiotics**



Thompson. JAMA 2021

Audience Question #3

- **Which of the following myths is <u>most likely to be driving unnecessary antibiotic use in skilled nursing facilities</u>?**

A. Minimal antibiotic duration for a UTI is 7 days
B. Urine studies should be repeated at the end of antibiotic course to make sure infection is cured
C. If a bacteria grows in the urine culture, it means there is an infection
D. Dark urine is a common symptom for UTIs in the elderly
E. Risks of not treating an elderly resident with a positive urine culture outweigh any risks from antibiotic use
F. Other – please write into chat

Returning to our case…

- 92 yo female nursing home resident with Alzheimer's disease, severe arthritis, and depression develops dark urine over the weekend
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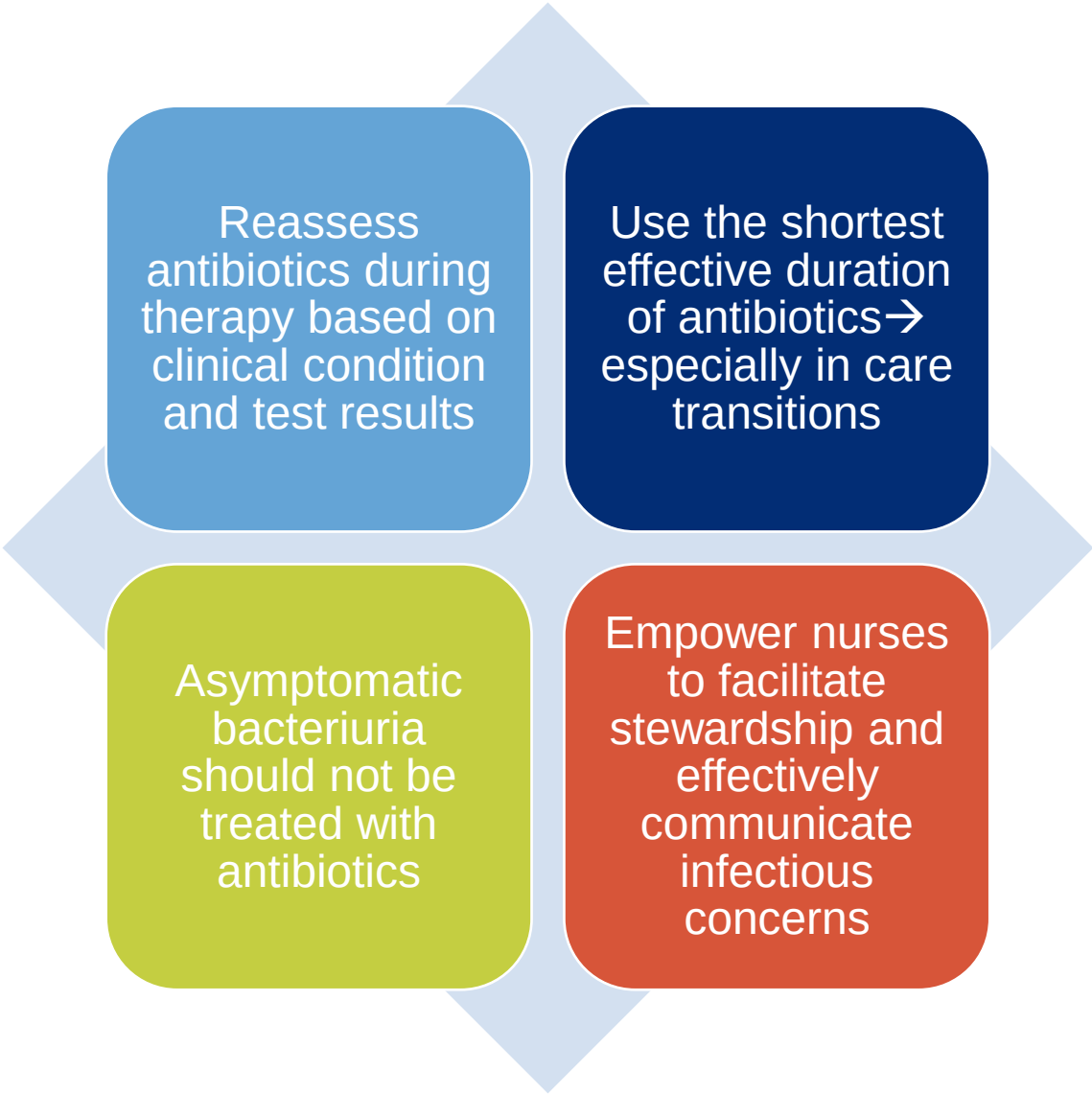
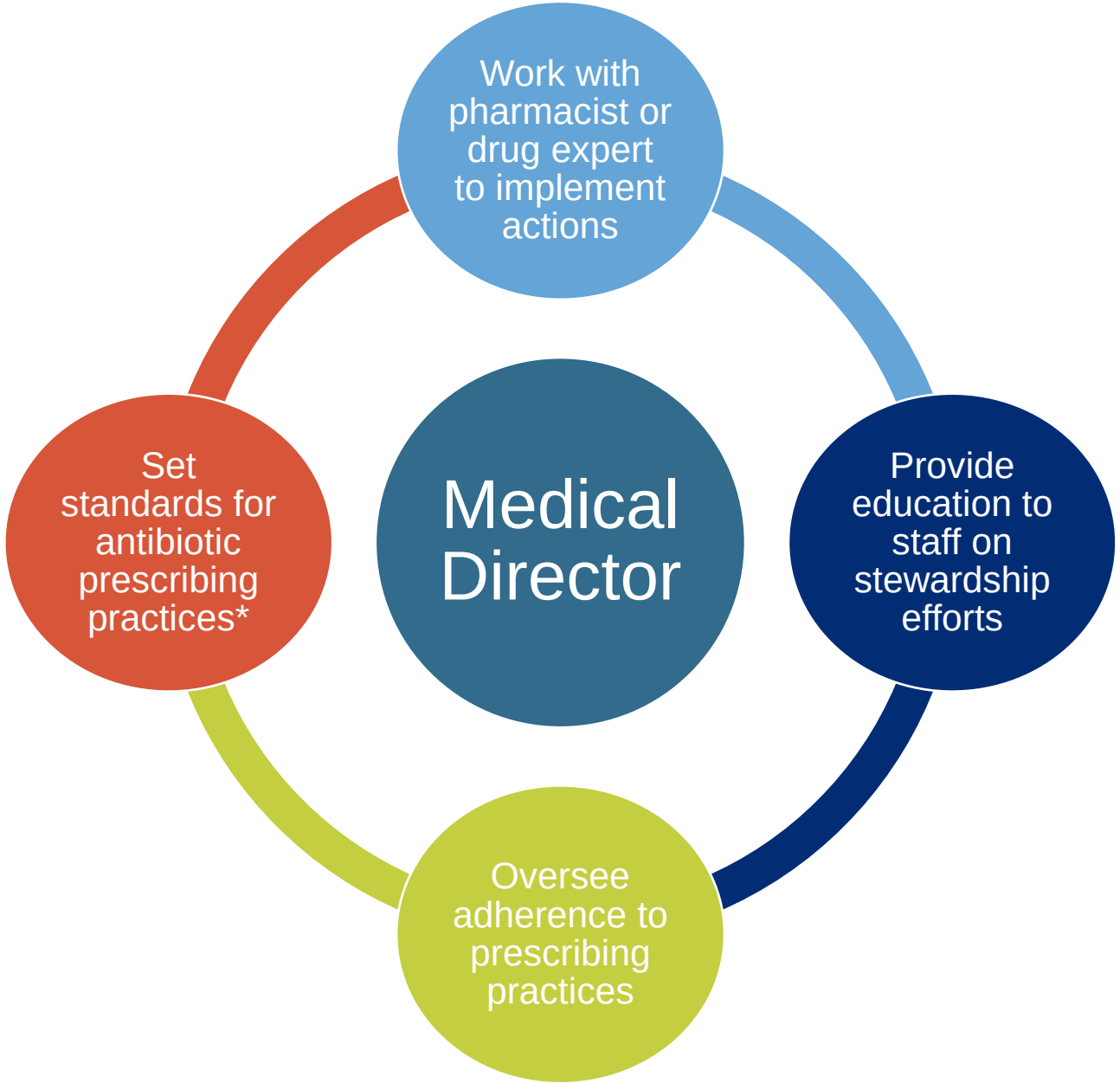
Key stewardship strategies for long-term care



“Nurses are antibiotic first responders, central communicators, coordinators of care, as well as 24-hour monitors of patient status, safety, and response to antibiotic therapy.”

Olans RN. Clin Infect Dis 2016.



***right drug, right dose, right duration, right time**

Takeaways

- Antibiotics are unique and powerful tools that impact both the resident and the community
- Seven core elements form the foundation for a SNF antibiotic stewardship program:
  - Leadership commitment
  - Accountability
  - Actions to improve use
  - Drug Expertise
  - Tracking
  - Reporting
  - Education
- Stewardship QI opportunities may be increased in:
  - Short stay/post-acute residents
  - UTI treatment and “prophylaxis”
  - Fluoroquinolone use
- Key strategies for SNFs include:
  - Reassessing antibiotic choice and duration based on clinical condition and culture results
  - Using the shortest effective duration, especially in care transition
  - Avoiding treatment for asymptomatic bacteriuria
  - Empowering nurses to facilitate stewardship and effectively communicate infectious concerns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