



Antibiotic Stewardship

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Objectives

- Understand the need for antibiotic stewardship programs(ASP)
- Identify key elements of an ASP for nursing homes
- Identify 2017 CMS requirements related to antibiotic stewardship
- Describe the strategies that should be implemented in an ASP
- Identify the ASP tools available for LTC

What is the problem?

- Since 1998 only 10 new antibiotics have been approved
 - Only 2 of these have new targets of action
- Antibiotics currently in development are in existing classes and are broad-spectrum
 - More likely to contribute to resistance
- 2 million Americans per year acquire antibiotic resistant infections
 - 23,000 die



CDC: Urgent Threat



Almost 500,000 infections/year*
15,000 deaths*

CDC: Urgent Threat



CARBAPENEM-RESISTANT ENTEROBACTERIACEAE



9,000

DRUG-RESISTANT
INFECTIONS
PER YEAR



600

DEATHS

CARBAPENEM-
RESISTANT
KLEBSIELLA SPP.

7,900



1,400

CARBAPENEM-
RESISTANT
E. COLI

THREAT LEVEL
URGENT



This bacteria is an immediate public health threat
that requires urgent and aggressive action.



**CRE HAVE BECOME RESISTANT TO ALL
OR NEARLY ALL AVAILABLE ANTIBIOTICS**



CDC: Serious Threat

METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS (MRSA)

THREAT LEVEL
SERIOUS



This bacteria is a serious concern and requires prompt and sustained action to ensure the problem does not grow.



80,461

SEVERE MRSA
INFECTIONS PER YEAR



11,285

DEATHS FROM
MRSA PER YEAR

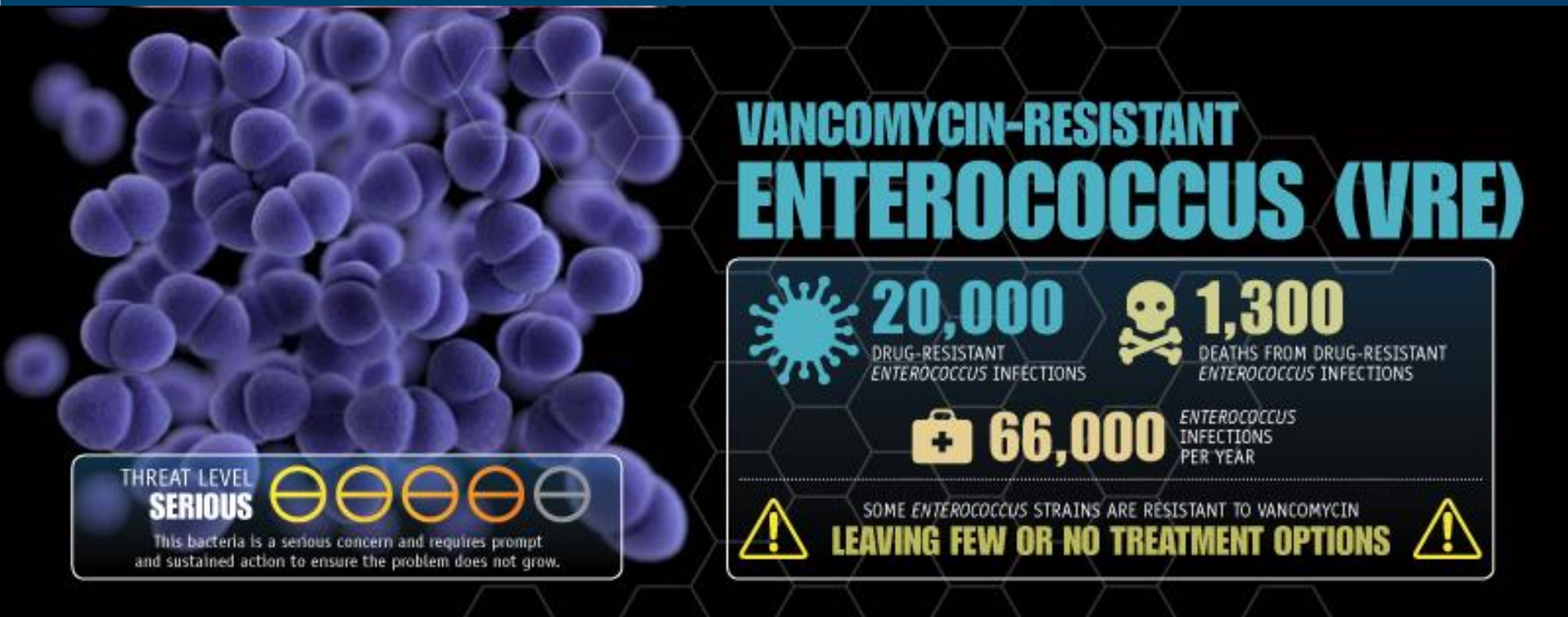


STAPH BACTERIA ARE A LEADING CAUSE OF

HEALTHCARE-ASSOCIATED INFECTIONS



CDC: Serious Threat



CDC: Serious Threat



MULTIDRUG-RESISTANT PSEUDOMONAS AERUGINOSA



6,700

MULTIDRUG-RESISTANT
PSEUDOMONAS
INFECTIONS



440

DEATHS



51,000

PSEUDOMONAS
INFECTIONS
PER YEAR

THREAT LEVEL
SERIOUS



This bacteria is a serious concern and requires prompt and sustained action to ensure the problem does not grow.

LTCF Statistics

Antibiotics are the most frequently prescribed medication in nursing homes

50% to 70% of residents receive one or more courses in a year

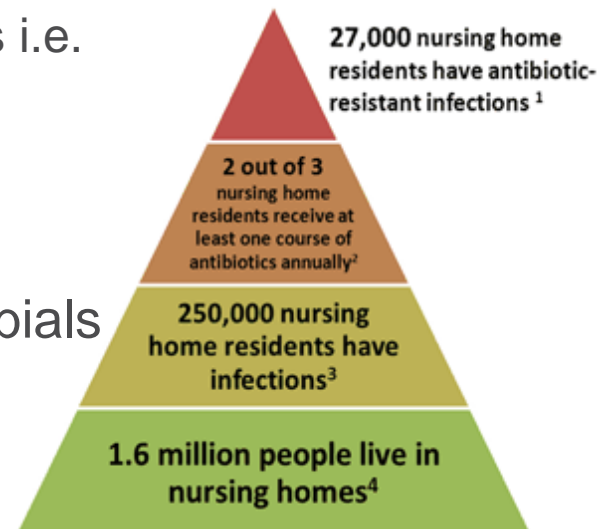
25% to 70% of antibiotics prescribed in LTC may be unnecessary or inappropriate

Risks include:

- Serious diarrheal infections from CDIFF
- Increased adverse drug events and drug interactions
- Colonization and/or infection with antibiotic-resistant organisms

Why LTCF is at Risk

- Frequent transfer from acute care hospitals
 - Antibiotic exposures and infection control measures in the hospital influence residents' health at LTCFs
- Horizontal transmission of organisms
 - Increase in use of invasive devices and procedures i.e. feeding tubes, resp. therapy, dialysis, IV antibiotics
 - Increase in resident acuity
 - Lack of staff education
- Widespread (often inappropriate) use of antimicrobials



Antibiotic Stewardship



Definition of Antibiotic Stewardship

A coordinated program that promotes the appropriate use of antimicrobials (including antibiotics), improves patient outcomes, reduces microbial resistance, and decreases the spread of infections caused by multidrug-resistant organisms.¹

The act of using antibiotics appropriately—that is, using them only when truly needed and using the right antibiotic for each infection. It is called "stewardship" because it protects the effectiveness of the most important tool we have to fight life-threatening bacterial infections: antibiotics.²

The Case for an Antibiotic Stewardship Program (ASP)

ANTIBIOTIC STEWARDSHIP

IN YOUR FACILITY WILL



DECREASE

- ANTIBIOTIC RESISTANCE
- C. DIFFICILE INFECTIONS
- COSTS

Antimicrobial resistance

Increased morbidity and mortality

Increased costs

INCREASE

- GOOD PATIENT OUTCOMES



Increasing evidence that effective ASP:

Improves outcomes

Decreases resistance

Decreases CDIFF infection

Decreases overall costs

CDC Recommended Components for LTCF

Leadership Commitment

- Demonstrate support and commitment to safe and appropriate antibiotic use in your facility

Accountability

- Identify physician, nursing and pharmacy leads responsible for promoting and overseeing antibiotic stewardship activities

Drug Expertise

- Establish access to consultant pharmacists or other individuals with experience or training in antibiotic stewardship

Action

- Implement at least one policy or practice to improve antibiotic use

Tracking

- Monitor at least one process measure of antibiotic use and at least one outcome from antibiotic use

Reporting

- Provide regular feedback on antibiotic use and resistance to prescribing clinicians, nursing staff and other relevant staff

Education

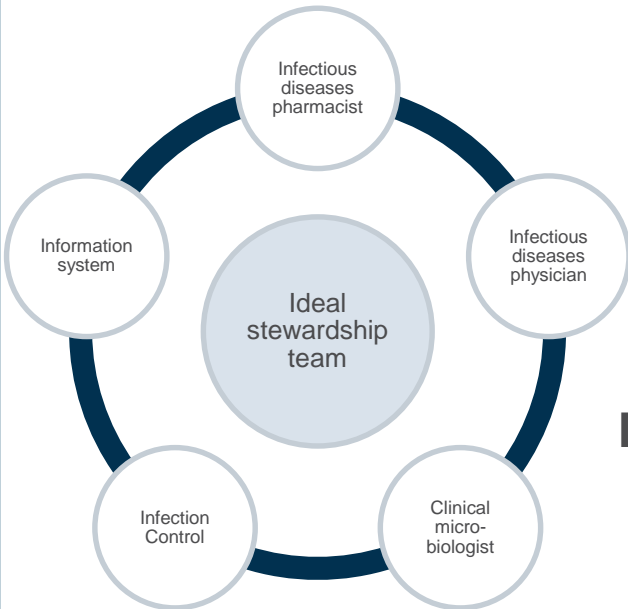
- Provide resources to clinicians, nursing staff, residents and families about antibiotic resistance and opportunities for improving antibiotic use



Leadership Commitment

- Deliver formal statements that the facility supports efforts to improve and monitor antibiotic use
- Include stewardship-related duties in job descriptions and annual performance reviews
- Ensure staff from relevant departments are given sufficient time to contribute to stewardship activities
- Support training and education
- Ensure participation from all disciplines and teams that can support stewardship activities

Accountability and Drug expertise



Accountability

- Empower the Medical Director
- Empower the Director of Nursing
- Engage the consultant pharmacist
- Identify the prevention program coordinator
- Engage the consultant laboratory

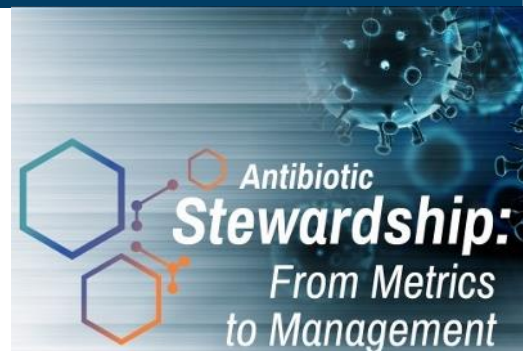
Drug Expertise

- Work with a consultant pharmacist trained in specialized infectious diseases / antibiotic stewardship
- Partner with antibiotic stewardship program leads at the hospitals within your referral network

ACTION

Antibiotic prescribing and use policies

- Documentation of dose, duration and indication
- Establish best practices for use of microbiology testing
- Develop facility-specific treatment recommendations
- Review the antibiotic agents available in the facility
- Develop and implement algorithms for the assessment of residents
- Utilize a communication tool for residents suspected of having an infection
- Develop and disseminate report of antibiotic susceptibility to clinicians]
- Perform antibiotic time-outs/Reduce prolonged antibiotic treatment courses for common infections



ACTION: Infection Specific Interventions to Improve Antibiotic Use

- **Reduce antibiotic use in asymptomatic bacteriuria**
 - Prevalence ranges from 25% to 50% in non-catheterized residents and approaches 100% in catheterized residents
- **Reduce antibiotic prophylaxis for prevention of UTI**
 - UTI prophylaxis accounts for a significant proportion of antibiotic scripts
 - Increases risk of side effects and resistant organisms
- **Optimize management of nursing home-associated pneumonia**
 - Implementation of algorithms for diagnosis and management of nursing home-associated pneumonia may help guide decision-making about use of antibiotics and need for hospital transfer
- **Optimize use of superficial cultures for management of chronic wounds**
 - Superficial wound swabs cannot differentiate bacterial colonization from infection and there may be a lack of correlation between organisms identified by superficial swab cultures compared with deep tissue cultures

ACTION: Tracking and Reporting Antibiotic Use and Outcomes



Process Measures: Tracking how and why antibiotics are prescribed

Completeness of clinical assessment documentation at the time of antibiotic prescription

- Audits to evaluate completeness of documentation and adherence to algorithms

Completeness of antibiotic prescribing documentation

- Ongoing audits

Antibiotic selection is consistent with recommended agents for specific indications

ACTION: Tracking and Reporting Antibiotic Use and Outcomes



Process Measures: Tracking how often and how many

Point prevalence of antibiotic use

- Tracks the proportion of residents receiving antibiotics during a defined time period
- Provides a snapshot of the antibiotic burden in a facility

Antibiotic starts

- Rate of new antibiotic starts per 1000 resident days
- Rate of starts by indication/provider

Antibiotic days of therapy

- Ratio of antibiotic DOT to total resident days = Antibiotic Utilization Ratio (AUR)

ACTION: Tracking and Reporting Antibiotic Use and Outcomes



Outcomes Measures: Track the adverse outcomes and costs

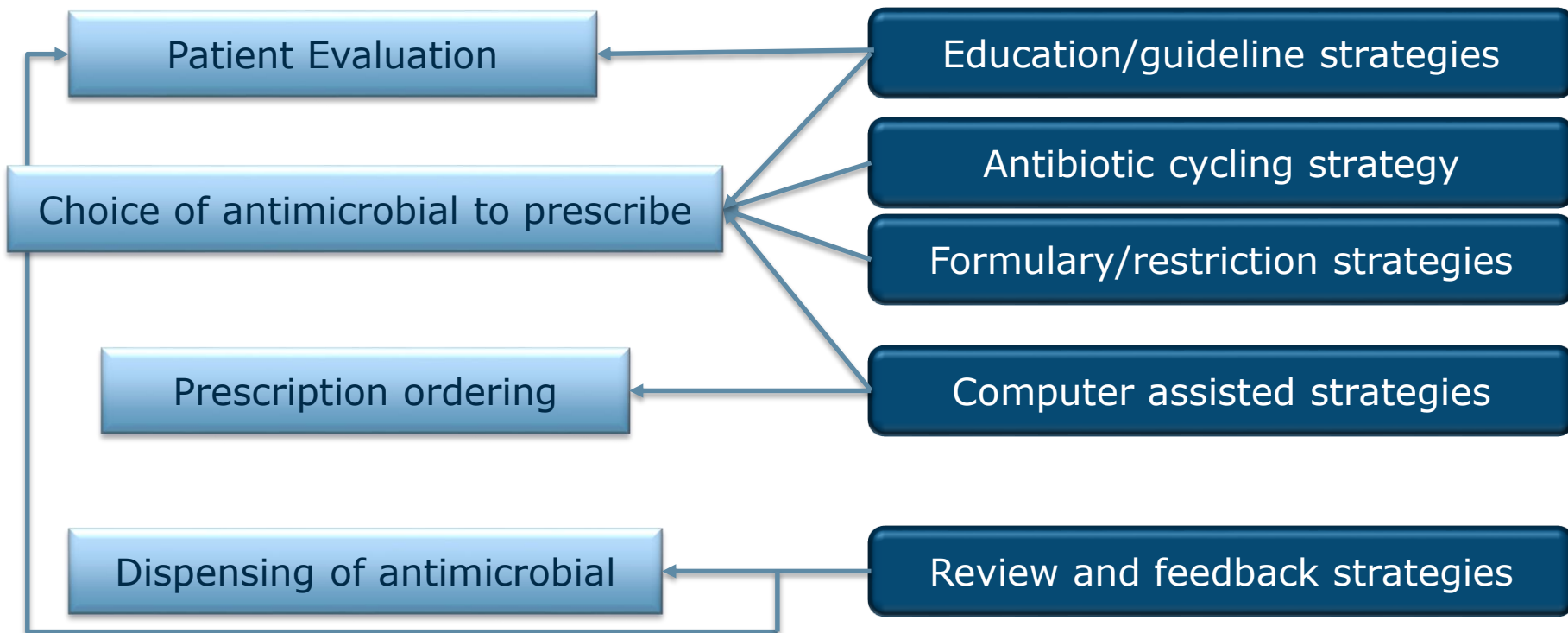
- Track C.difficile and antibiotic resistance
- Track adverse drug events related to antibiotic use
- Track costs related to antibiotic use

Education

- Provide antibiotic stewardship education to:
 - Clinicians
 - Nursing staff
 - Residents
 - Families
- Link education to feedback on provider prescribing practices
- Enlist resident and family in stewardship efforts to manage perceptions



Antimicrobial Prescribing Process and Stewardship Strategies



CDC Initiatives

- Set national goals to improve antibiotic use
 - Cut appropriate prescribing practices by 50% in doctors' offices and 20% in hospitals
 - Implement effective stewardship programs using CDC's Core Elements and recommendations in doctors' offices, hospitals, and nursing homes, integrated with sepsis early recognition programs

CMS Conditions of Participation for Long Term Care Facilities



Conditions of Participation 10/4/2016

§ 483.80 Infection control

- a) Facility must establish an infection prevention and control program (IPCP) to include at a minimum:
 - 1. A system for preventing, identifying, reporting, investigating, and controlling infections and communicable diseases for all residents, staff, volunteers, visitors, and other individuals providing services under a contractual arrangement and following accepted national standards;
 - 2. Written standards, policies, and procedures for the program
 - 3. An antibiotic stewardship program that includes antibiotic use protocols and a system to monitor antibiotic use
 - 4. A system for recording incidents identified under the facility's IPCP and the corrective actions taken by the facility

Conditions of Participation 10/4/2016 Continued...

- b) Infection Preventionist
 1. Have primary professional training in nursing, medical technology, microbiology, epidemiology, or other related field;
 2. Be qualified by education, training, experience or certification;
 3. Work at least part-time at the facility; and
 4. Have completed specialized training in infection prevention and control
- c) IP participation on quality assessment and assurance committee
- d) Influenza and pneumococcal immunizations
- e) Linens must be handled, stored, processed and transported so as to prevent spread of infection
- f) Annual review of IPCP and update as needed

Agency for Healthcare Research and Quality Tools



Toolkits to Determine Whether it is Necessary to Treat a Potential Infection with Antibiotics



- Start an Antimicrobial Stewardship Program
 - provides guidance and tools for establishing a new antimicrobial stewardship program in a nursing home
- Monitor and Sustain Stewardship
 - provides guidance and tools for tracking progress toward meeting antimicrobial stewardship program goals and providing feedback to prescribing clinicians

Toolkits to Determine Whether it is Necessary to Treat a Potential Infection with Antibiotics



- **Suspected UTI SBAR**

- provides guidance and tools for improving the use of antibiotics for urinary tract infections (UTIs) in nursing home residents based on the Situation, Background, Assessment, and Request (SBAR) format

- **Communicating and Decision-making for Four Infections**

- provides guidance and tools for improving the use of antibiotics in the four types of infections where antibiotics are most frequently used in nursing homes: UTIs, lower respiratory infections, skin and soft tissue infections, and gastrointestinal infections

- **Minimum Criteria for Common Infections**

- provides guidance and tools—including a Web app with a diagnostic guidance tool for prescribing clinicians

Toolkits to Help Prescribing Clinicians Choose the Right Antibiotic for Treating an Infection



- **Working with a Lab to Improve Antibiotic Prescribing**

- provides guidance and tools to help a nursing home obtain an antibiogram from its laboratory and use it to improve clinician prescribing practices

- **Concise Antibiogram Toolkit**

- (Using Nursing Home Antibiograms to Choose the Right Antibiotic) provides guidance and tools to help a nursing home create its own antibiogram based on lab results

- **Comprehensive Antibiogram Toolkit**

- (The Nursing Home Antibiogram Program Toolkit: How to Develop and Implement an Antibiogram Program) provides detailed and comprehensive information and tools for creating a complete antimicrobial stewardship program that is built around the use of an antibiogram

Questions?



References



References

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- <https://www.cdc.gov/longtermcare/staff/index.html>
- <https://www.federalregister.gov/documents/2016/10/04/2016-23503/medicare-and-medicaid-programs-reform-of-requirements-for-long-term-care-facilities>
- https://www.cdc.gov/drugresistance/biggest_threats.html
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