North Carolina SPICE
Statewide Program for Infection Control & Epidemiology

North Carolina Clinical Antibiotic Stewardship Partners

SUMMARY OF THE CORE ELEMENTS OF ANTIBIOTIC STEWARDSHIP FOR NURSING HOMES

June 19, 2024

CONFLICT OF INTEREST DISCLOSURES

- The views and opinions expressed in this series are those of the speakers and do not reflect the official policy or position of any agency of the U.S. or NC government or UNC.
- None of the speakers or planners have any relevant financial relationships with ineligible companies to disclose.
- The speaker does not intend to discuss an unapproved/investigative use of a commercial product/device.

SESSION REMINDERS

- Please turn on your videos!
- Using the chat, please put your name, location, and role in the chat.
- When you share, please don't reveal protected information, specific facilities, or staff members.
- If you need to get a hold of us: Danielle.Doughman@unchealth.unc.edu

North Carolina Clinical Antibiotic Stewardship Partners

OUTLINE OF TODAY'S SESSION

1. Course Review
2. Course Feedback
3. Announcements

North Carolina
Clinical Antibiotic
Stewardship Partners

NC CLASP OFFERINGS

- **Core Elements Series**
  - 7 Sessions on the Core Elements of Antibiotic Stewardship and Fundamentals of QI in Nursing Homes
  - Small Group Discussions to Foster Exchange of Ideas
- **In Person Conference**
  - All settings with dedicated nursing home sessions
  - Experts in the field!
  - Free CME
- **Hot Topics Series**
  - Cutting-edge and up-to-date info on key ASP related topics
  - Dedicated time to discussing your QI problems with a QI expert! Time for QAPI issues to get advice and support
- **Regional Meeting**
  - 1-hour free lunch to bring together local ASP champions from all settings
  - Review of Best Practices of Transitions of Care

Why Antibiotic Stewardship is Necessary in Nursing Homes

Quality Mandate: Antibiotic resistance threatens every person, every country, and modern medicine.

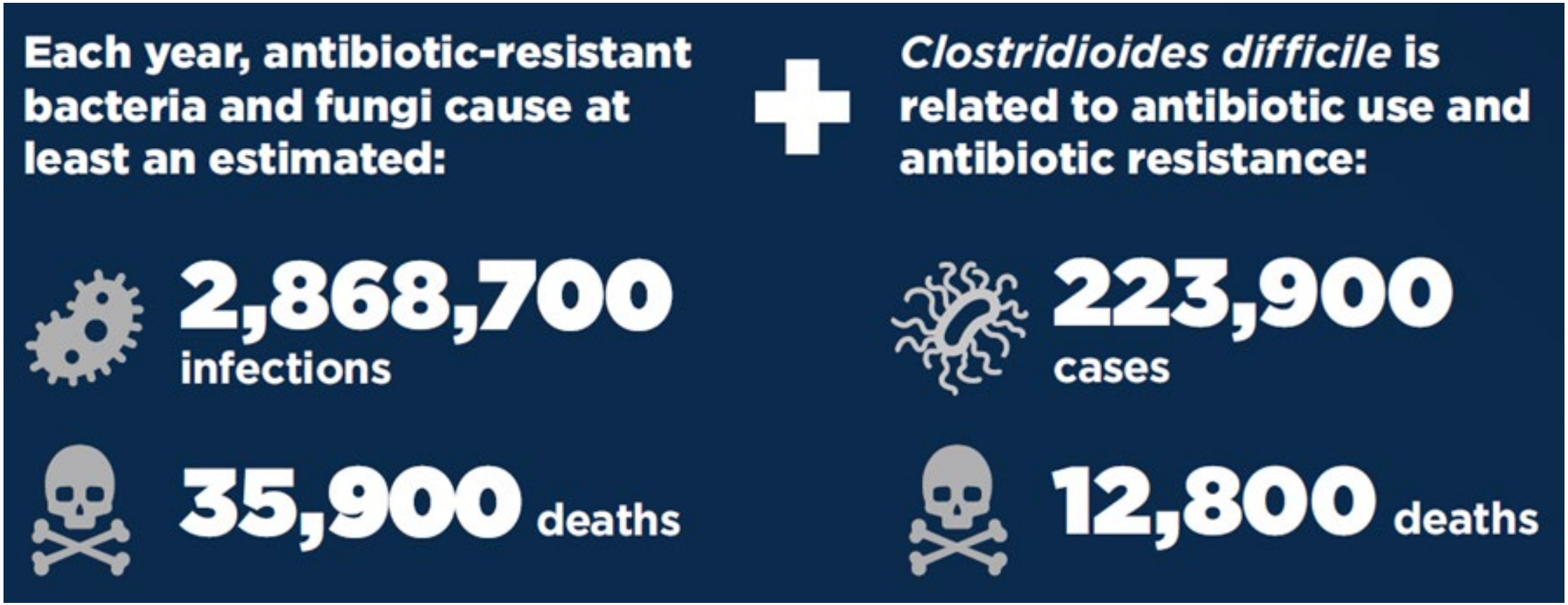


Image: CDC

The CMS Nursing Home Regulatory Mandate

SEPTEMBER 2015: CDC identified core elements of antibiotic stewardship.

CMS 2016-17 ACTION PLAN: developing and pilot test a worksheet for surveyors to "assess the new antibiotic stewardship requirement."

November 2019: All NHs must have a trained infection preventionist

AUTHENTICATED U.S. GOVERNMENT INFORMATION GPO

68688 Federal Register / Vol. 81, No. 192 / Tuesday, October 4, 2016 / Rules and Regulations

42 CFR Parts 405, 431, 447, 482, 483, 485, 488, and 489
Reform of Requirements for Long-Term Care Facilities

Infection Control (§ 483.80)

We are requiring facilities to develop an Infection Prevention and Control Program (IPCP) that includes an Antibiotic Stewardship Program and designate at least one infection Preventionist (IP). That program should include antibiotic use protocols and a system to monitor antibiotic use.

SPICE

EXISTING REGULATIONS PROMOTING ANTIBIOTIC STEWARDSHIP

Federal Tag 483.80: Infection Control

Mentions performing antibiotic review

- **F880 Infection Prevention & Control**
- **F881 Antibiotic Stewardship Program**
- **F882 Infection Preventionist Qualifications**

Federal Tag 483.5 Pharmacy Services

Outlines role of pharmacist in scheduled reviews of medication use in high-risk residents

- **F756: Drug Regimen Review**
- **F757: Drug Regimen is Free From Unnecessary Drugs**
- **F759: Free of Medication Error Rates of 5% or More**

https://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/GuidanceforLawsAndRegulations/Downloads/List-of-Revised-FTags.pdf

SPICE

Summary: Why Antibiotic Stewardship

Quality Mandate

- High NH prevalence of antibiotic resistance
- Multi-drug resistance leads to hospitalizations and need for isolation (e.g., *C. difficile* infection)
- Antibiotics are overprescribed -- Much antibiotic prescribing does not meet guidelines

Regulatory Mandate

- Federal tags related to infection control and pharmacy services
- CMS requirements for antibiotic stewardship and infection prevention

Core Element: Leadership Commitment and Support

WHO ARE THE KEY LEADERS?

- Owner(s)
- Regional Clinical Leads
- Administrator
- Director of Nursing

LEADERS "ON THE GROUND" WITHIN A FACILITY

WHAT SHOULD LEADERSHIP COMMITMENT INCLUDE?

Communicate importance

- Write statements in support of improving antibiotic use – for sharing with staff, prescribers, residents, and families.

Include antibiotic stewardship in job descriptions

- Include stewardship-related duties in position descriptions for medical director, nursing directors, preventionist, and consultant pharmacist.

Expect policy implementation

- Communicate with nursing staff and clinicians the community's expectations about antibiotic use and the monitoring and enforcement of stewardship efforts.

Provide regular reinforcement of commitment

- Create a culture, through messaging, education, and celebrating improvement, that promotes antibiotic stewardship.

Core Element: Accountability

CDC CORE ELEMENT: ACCOUNTABILITY

- Accountability is when nursing homes have **explicit job duties** for the individuals responsible for antibiotic stewardship activities.
- There are **clearly identified roles** for preventionist, physician, nursing, and pharmacy leads in promoting and overseeing antibiotic stewardship activities.
- Accountability is different from Leadership
  - Leaders support those who are accountable for stewardship activities
  - Example: The DON and Administrator support the Infection Preventionist with time and technical support

ACCOUNTABILITY OF ANTIBIOTIC STEWARDSHIP TEAM

Infection Preventionist

- needs to provide DON, MD, and consultants with data
- must have training, time, and resources

Medical Director

- should be empowered to set antibiotic prescribing standards for all prescribers and ensure they are followed.

Director of Nursing

- accountable for nursing practice standards in assessing, monitoring, and communicating changes in condition

Consultant Pharmacist and Lab Specialist

- engage them in QAPI activities such as FREQUENT medication review
- Report antibiotic use data

CONCRETE STEPS AT ACCOUNTABILITY

- Co-leadership
  - Need clear delineation of roles
- Stewardship Rounds
  - Invite the medical provider(s)
- Develop and grow the antibiotic stewardship program
  - Train preventionist
  - Identify and involve a 2nd person in stewardship
- Antibiotic stewardship leaders and those accountable need communication and management skills

Cosgrove SE et al ICHE 2014

Core Element: Pharmacy Expertise

Pharmacy Assistance In Developing Prescribing Guidelines

- Pharmacist works with medical director (coordinated through antibiotic stewardship team meetings)
- Identify priority area for guideline development, such as prescribing for suspected UTI or management of respiratory infections
- Guideline development, implementation and monitoring can be an area of QAPI focus

Pharmacy-Generated Antibiotic Prescribing Reports

- Consultant pharmacists receive and review medications
- Many will generate reports such as....
  - Infection diagnosis / category
  - Antibiotics prescribed, including name, dose, duration, and provider
  - Compare results with benchmarks for antibiotic use: type, starts, days of therapy (DOT)
  - Prescription adherence to surveillance criteria for suspected UTIs, pneumonia, skin/soft tissue infections (e.g., Loeb or McGeer Criteria)

Loeb Criteria for Diagnosis and Management of Pneumonia

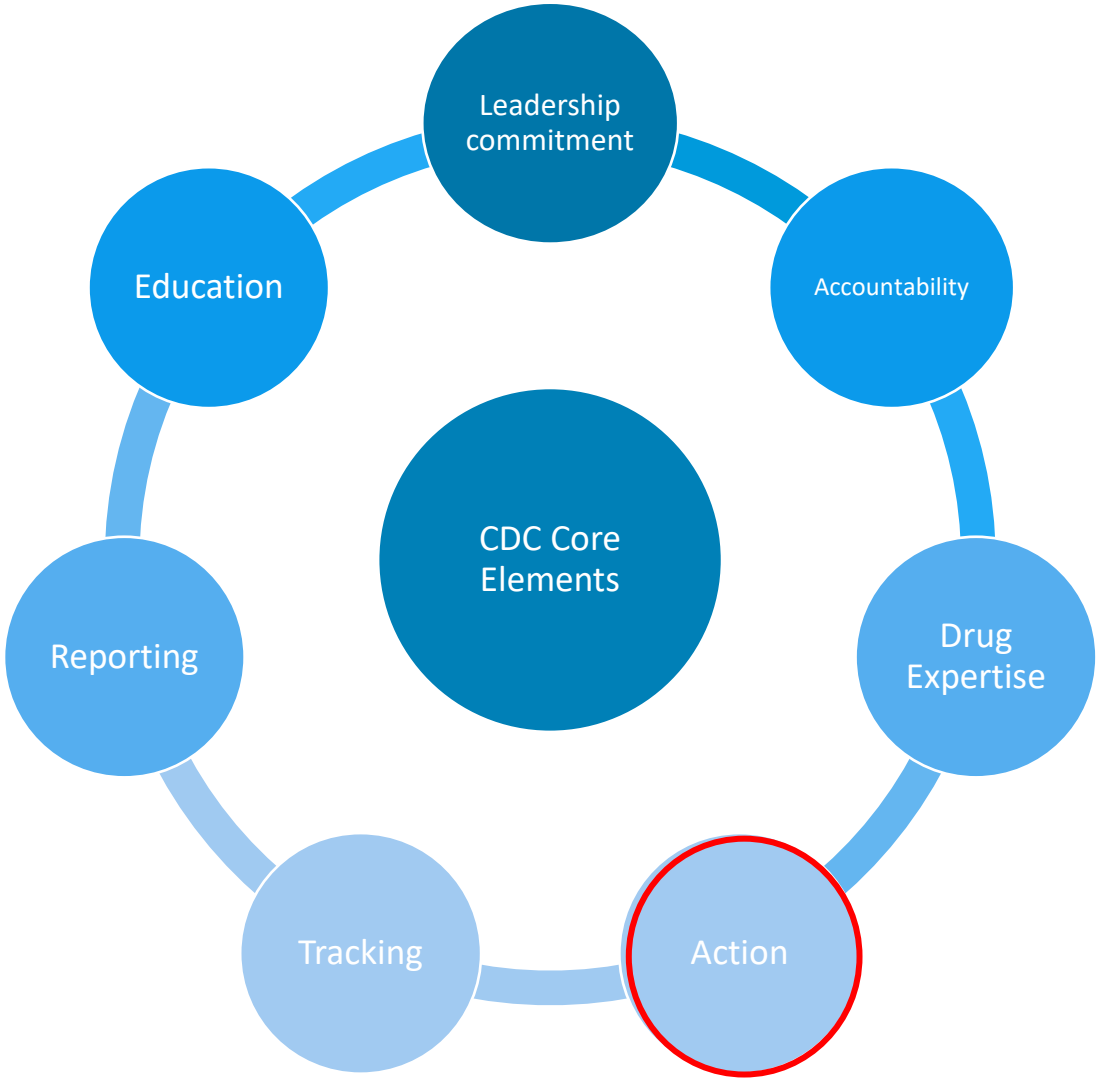
Temperature Level	Minimum Criteria for Initiating Therapy
>102°F	At least 1 of the following: RR >25/min, or productive cough
>100°F or 2.4°F rise above baseline	Presence of a cough, and at least 1 of the following: 1. P>100 2. Delirium 3. Rigors (shaking chills) 4. RR >25/min
Afebrile residents with COPD	New or increase cough with purulent sputum
Afebrile residents without COPD	New cough with purulent sputum and RR >25/min or delirium
In the setting of new infiltrate on chest x-ray thought to be PNA	RR>25/min, productive cough, or fever (100°F or 2.4°F increase above baseline

Loeb D, et al. Infect Control Hosp Epidemiol, 22 (2001).

McGeer Criteria for Pneumonia (All 3 Must be Present)

1. Interpretation of a chest radiograph as demonstrating pneumonia or a new infiltrate
2. At least 1 of the following respiratory subcriteria
   - New or increased cough
   - New or increased sputum production
   - O_2 saturation <94% on room air or a reduction in O_2 saturation of >3% from baseline
   - New or changed lung examination abnormalities
   - Pleuritic chest pain
   - Respiratory rate of ≥25 breaths/min
3. At least 1 of the constitutional criteria
   - Fever
   - Leukocytosis
   - Acute change in mental status (i.e. delirium)
   - Acute functional decline

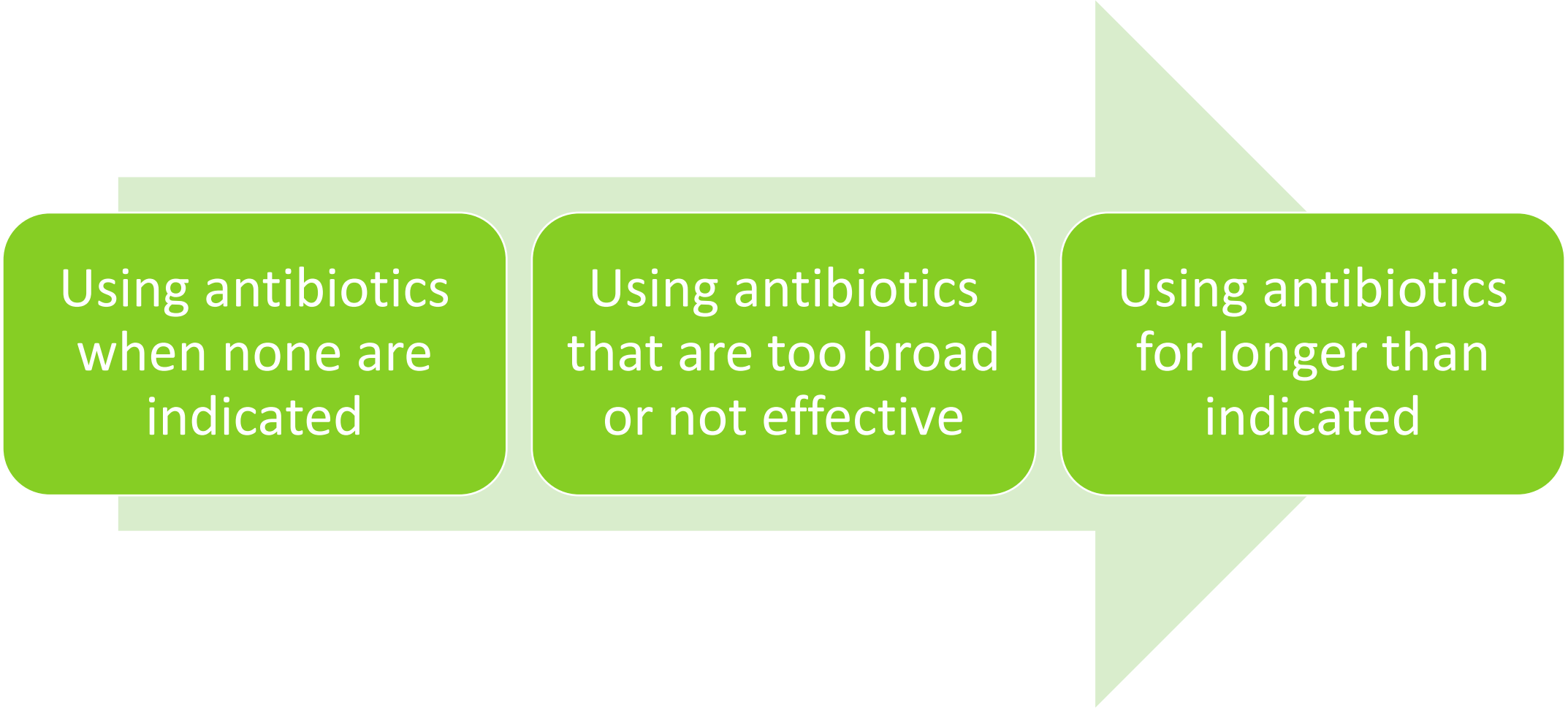
Core Element: Action



ACTION TO IMPROVE ANTIBIOTIC USE

- Policies that support optimal antibiotic use
  - CMS regulations for medication reconciliation
  - F880 and F881: concerns related to infection prevention and control or the antibiotic stewardship program
  - Quality tracking using modified Loeb or McGeer criteria for suspected infection
- Broad interventions to improve antibiotic use
  - Communication guides
  - Culture criteria
  - Antibiotic time-out
- Pharmacy interventions
  - Standing review of type, dose, duration of antibiotics and antibiograms based on community cultures
- Infection and syndrome specific interventions to improve antibiotic use
  - Target specific clinical situations that drive inappropriate antibiotic use develop/implement interventions

THREE WAYS TO OVERUSE ANTIBIOTICS



EXAMPLE OF ACTION: AN ANTIBIOTIC TIME-OUT?

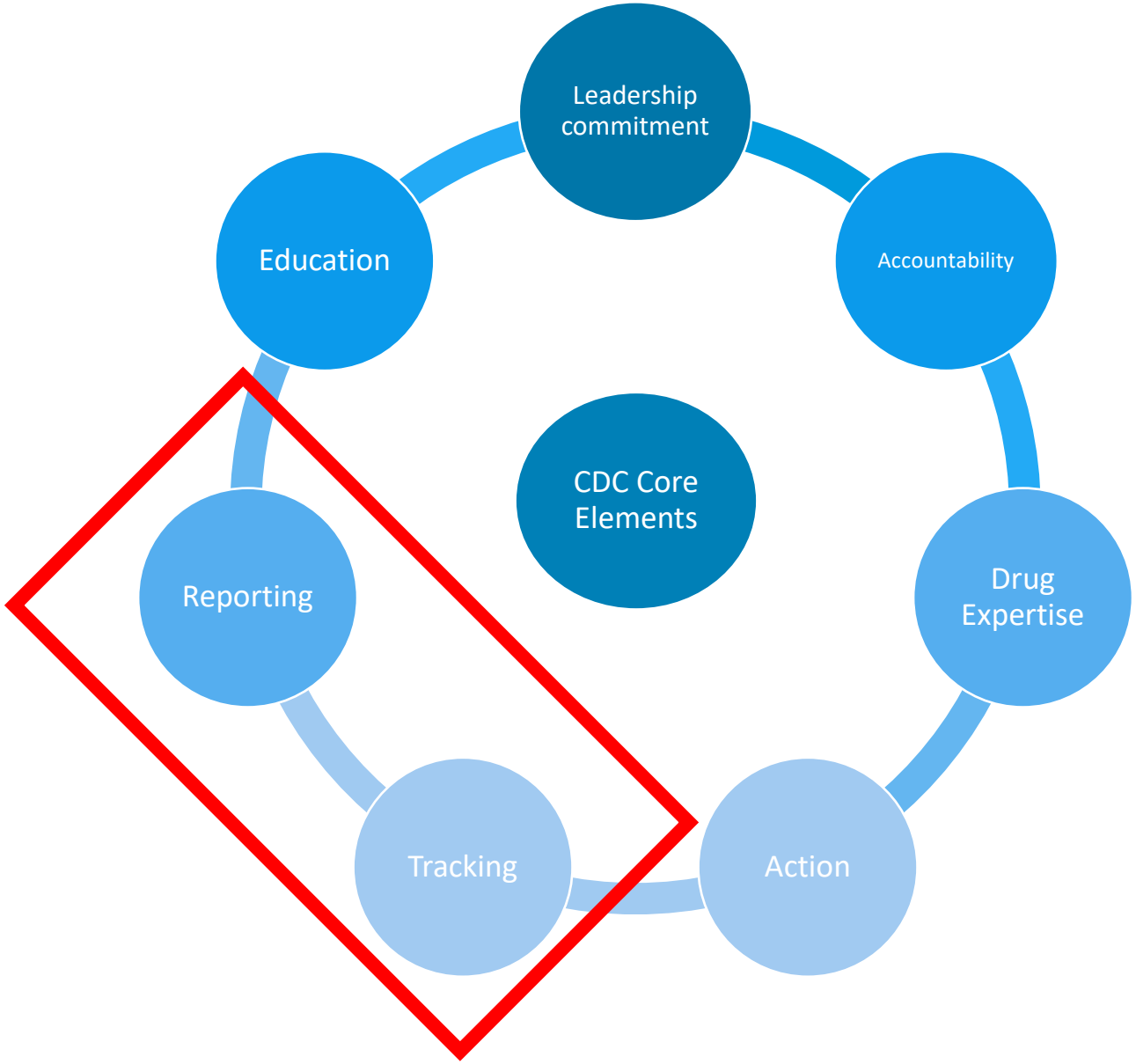
A structured opportunity to review a resident's antimicrobial therapy 36 to 72 hours into treatment.

- The provider takes new information into account...
  - results from blood or urine cultures
  - how the patient is responding to the drug

...and decides if adjustments are needed to the drug, dose, duration, or route.

- For example, antibiotics can be
  - narrowed to more precisely target the organism identified in a culture
  - discontinued if the patient is not found to have an illness that will respond to antimicrobials after all
  - changed from the IV to oral route and vice versa.

Core Element: Tracking and Reporting



CORE MEASURES FOR TRACKING AND REPORTING

- Process measures: tracking how and why antibiotics are prescribed
  - Periodic chart reviews to assess adherence to nursing home policies regarding diagnosis, testing, prescribing, and/or monitoring
  - Giving feedback to providers about their data.
  - Have pharmacy to help with a medication use evaluation (MUE)

- Antibiotic use measures:
  - Minimum should include infection diagnosis / category; antibiotic name; dose and duration; and provider
  - Adherence to surveillance criteria (Loeb and/or McGeer) for suspected UTIs, pneumonia, skin/soft tissue infections

- Antibiotic outcome measures:
  - Rates of *c. difficile*, MRSA, CRE, and other MDROs (multi-drug resistant organisms)

- Your data on antibiotic use and outcomes should be shared!

USE TRACKING DATA FOR QUALITY IMPROVEMENT

Tracking a measure over time allows us to answer questions about a key process, such as:

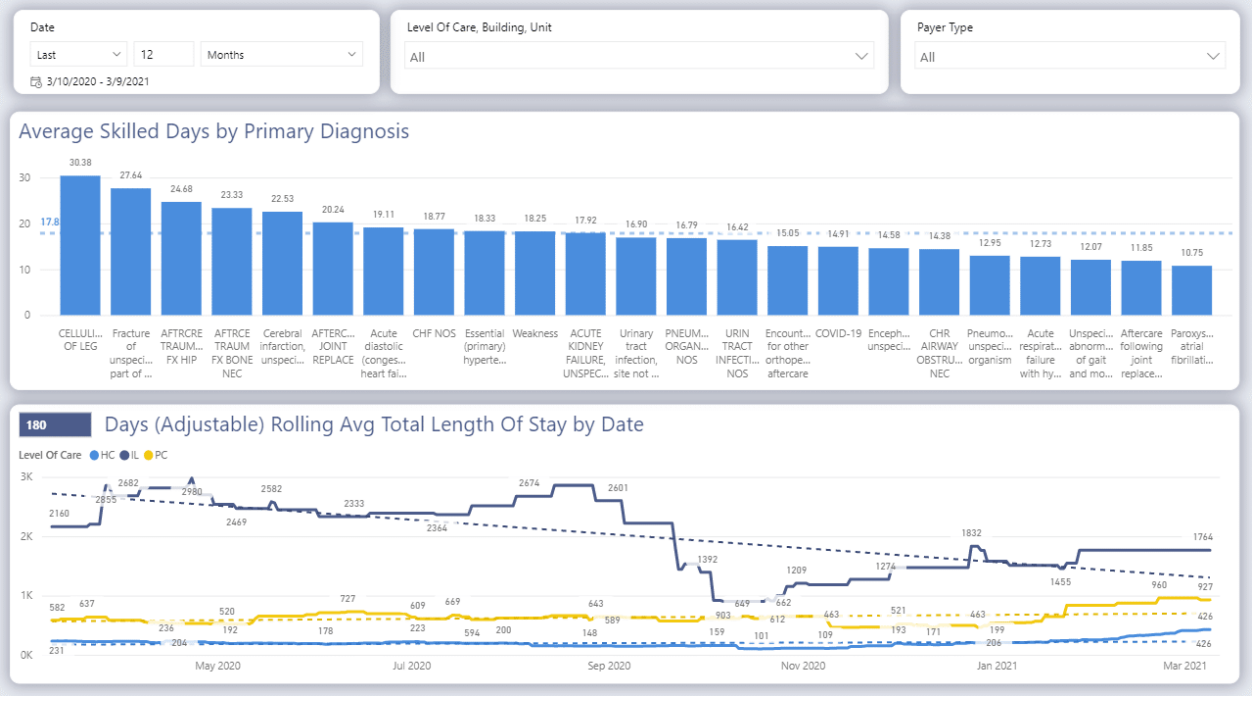
- What is the current state (baseline) of our process?
- Is it stable (or reliable)?
- How will we know if a change is an improvement?
- Which actions have an impact on our process?

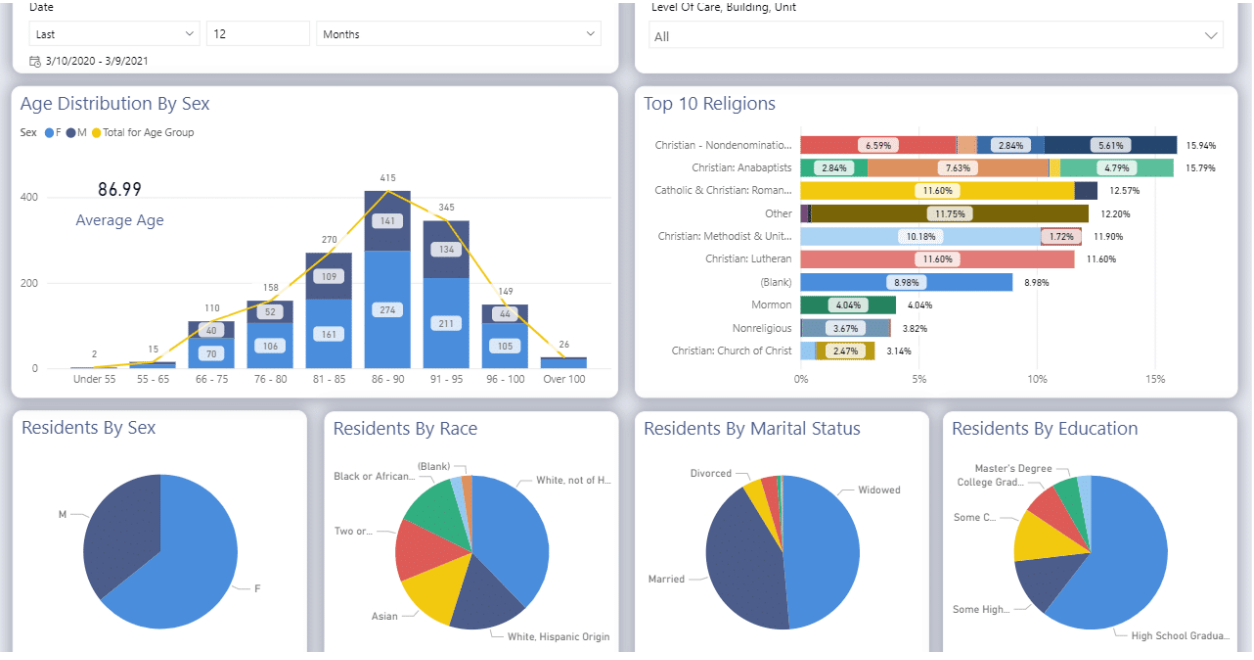
FREE HELP FOR DEVELOPING YOUR ELECTRONIC TRACKING!

- http://www.rochesterpatientsafety.com/index.cfm?Page=For%20Nursing%20Homes
- https://www.health.state.mn.us/diseases/antibioticresistance/hcp/asp/ltc/index.html
- https://www.cdph.ca.gov/Programs/CHCQ/HAI/Pages/SNF_ASP_Toolkit.aspx
- https://asap.nebraskamed.com/long-term-care/tools-templates-long-term-care/
- https://www.cdc.gov/longtermcare/prevention/antibiotic-stewardship.html
- https://www.ahrq.gov/nhguide/index.html

Many tools (156!) available for free on the internet, mostly about education, patient assessment and outcome measurement.

Belan M. J Antimicrob Chemother. 2020 Jun





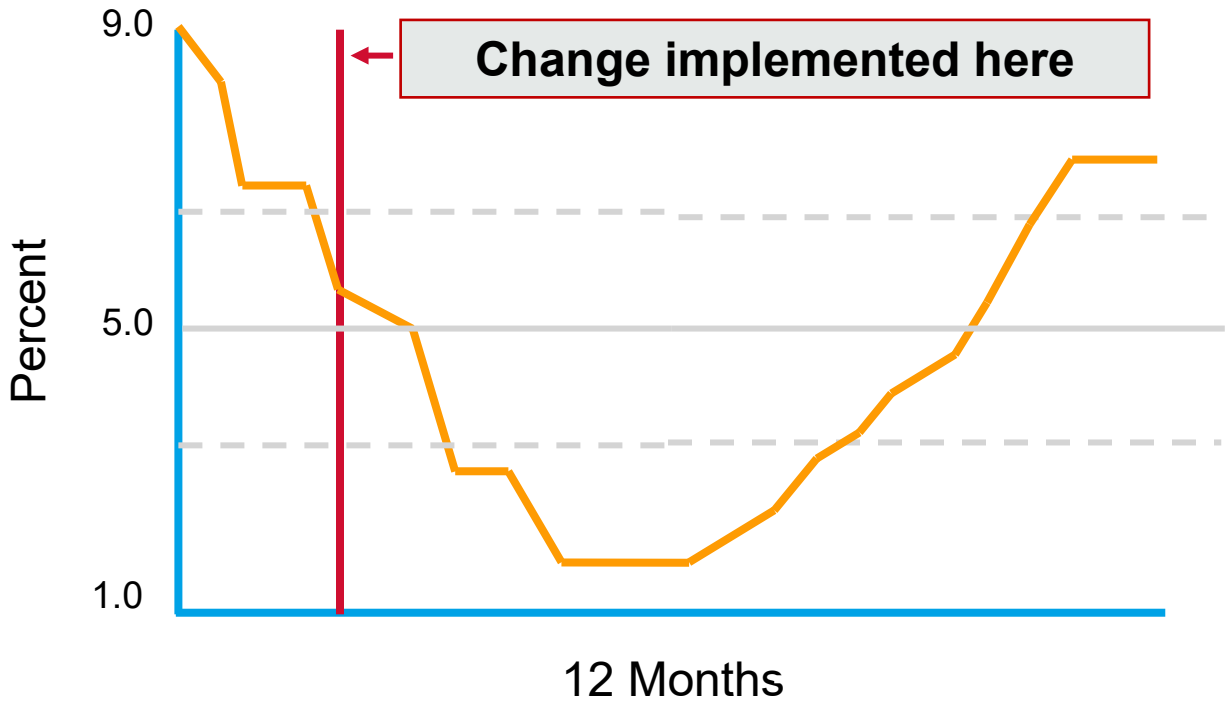
When to use:

1. Bar Graphs
   - Compares values across different categories or groups
2. Stacked Bar Graphs
   - Shows the breakdown of a whole into its constituent parts or categories
3. Line Graphs
   - Displays trends or changes in data over a continuous interval, such as time
4. Pie Charts
   - Visualize how different categories make up a total
5. Box-Whiskers
   - Displays the distribution of a dataset, including the median, quartiles, and any outliers

https://www.dashpointanalytics.com/census-analysis-dashboard-main/

SPICE

THIS IS A COMMON CURVE IN QUALITY IMPROVEMENT



Now what do you conclude about the impact of the change?

Core Element: Education

KEY CONCEPTS AROUND ANTIBIOTIC STEWARDSHIP EDUCATION

- Provide staff with:
  - Disease specific education
  - Conflict mediation
  - “How to” information (e.g., how to collect a wound culture)
- Give providers both education and feedback to providers.
- Engage Residents and Families
  - Working with residents and families will reduce the perception that their expectations are a barrier to improving antibiotic use in nursing homes.
  - Education around use empowers the family and resident

A FEW HOW TO'S OF ANTIBIOTIC STEWARDSHIP EDUCATION

- Effective educational programs:
  - address both nursing staff and clinical providers
  - Address the goal of an antibiotic stewardship intervention
  - Address responsibility of each group for ensuring its implementation
- Mechanisms for disseminating antibiotic education to staff:
  - flyers,
  - pocket-guides,
  - newsletters or electronic communications
  - Face-to-face interactive workshops have the strongest evidence for improving medication prescribing practices

There's More to Come

Antibiotic Stewardship & Best Practices in Transitions of Care

Free lunch & learn presentation for healthcare professionals serving in outpatient clinics, hospitals, or long-term care communities.

North Carolina Clinical Antibiotic Stewardship Partners

July 10, 2024 | 11:30 a.m. to 1 p.m.
Wake County Health and Human Services
220 Swinburne St Raleigh, NC 27610
Swinburne Building, Room 2132

WAKE COUNTY NORTH CAROLINA

North Carolina Clinical Antibiotic Stewardship Partners and Wake County Public Health invite you to join us for a learning session on improving care transitions between healthcare facilities.

Topics will include:

- Antimicrobial stewardship at hospital discharge
- Safe and smooth transitioning home or to long-term care

Resources

REGISTER FOR NC CLASP ONLINE SESSIONS

ANTIBIOTIC STEWARDSHIP CONFERENCE

CMS requires that all acute care hospitals and certified nursing homes have an antimicrobial stewardship program. CDC recommends **ALL** healthcare settings reduce inappropriate antibiotic use through antibiotic stewardship programs.

NC CLASP can help with that.

ACUTE CARE HOSPITALS

OUTPATIENT FACILITIES

NURSING HOMES

- Find session slides at https://spice.unc.edu
- → ncclasp
- → nursing homes

IN CASE YOU MISSED IT!
ANTIBIOTIC STEWARDSHIP CONFERENCE RECORDING AVAILABLE!

https://spice.unc.edu/antibiotic-stewardship-conference/

North Carolina Clinical Antibiotic Stewardship Partners