North Carolina SPICE
Statewide Program for Infection Control & Epidemiology

North Carolina Clinical Antibiotic Stewardship Partners

LONG-TERM CARE COMMUNITIES ANTIBIOTIC STEWARDSHIP SESSION #6

December 6, 2023

North Carolina Clinical Antibiotic Stewardship Partners

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.
- Our speakers have the following financial relationships with the manufacturer(s) and/or provider(s) of commercial services discussed in this activity:
  - Dr. Kistler served as a consultant for Base10, Inc on their UTI embedded clinical support tool and received funding from Pfizer to study pneumococcal carriage.
- The speakers do not intend to discuss an unapproved/investigative use of a commercial product/device in this series, and all COI have been mitigated.
- These slides contain materials from a variety of colleagues, Drs. Philip Sloane and David Weber, as well as the CDC, WHO, AHRQ, etc.

NC CLASP REMINDERS

- If you need to get a hold of us, please email:
  - Danielle.Doughman@unchealth.unc.edu
- CME
  - Attendance and active participation per learning session
  - Use your MyAHEC account
  - Complete surveys as requested

LET US KNOW WHO'S HERE TODAY!

Please put your name and nursing home community in the chat

If using computer with no mic, please mute the computer and dial in +1 646 931 3860 US

Meeting ID: 849 4943 4651

Passcode: 496304

SESSION REMINDERS

- This time is for you and your learning.
- Please turn on your videos!
  - Cameras on
  - Stay muted unless speaking
- Use the chat
- Let’s use and share our learning, but not in a way that identifies protected information.

OUTLINE OF TODAY'S SESSION

1. NC CLASP reminders
2. Zoom Poll
3. CDC Core Element: Tracking and Reporting, with a focus on surveillance for UTIs
4. Small Group Discussion
5. QI on Tracking and Reporting
6. Take-home thoughts?

ZOOM POLL

- 1. Who regularly receives antibiotic stewardship reports in your community? Click on all applicable.

❑ No one

❑ DON

❑ Medical Director

❑ Pharmacist

❑ Nursing staff

❑ Family/residents

2. What do your community's antibiotic stewardship reports contain? Click on all applicable.

❑ Tables

❑ Graphs

❑ Data by prescriber

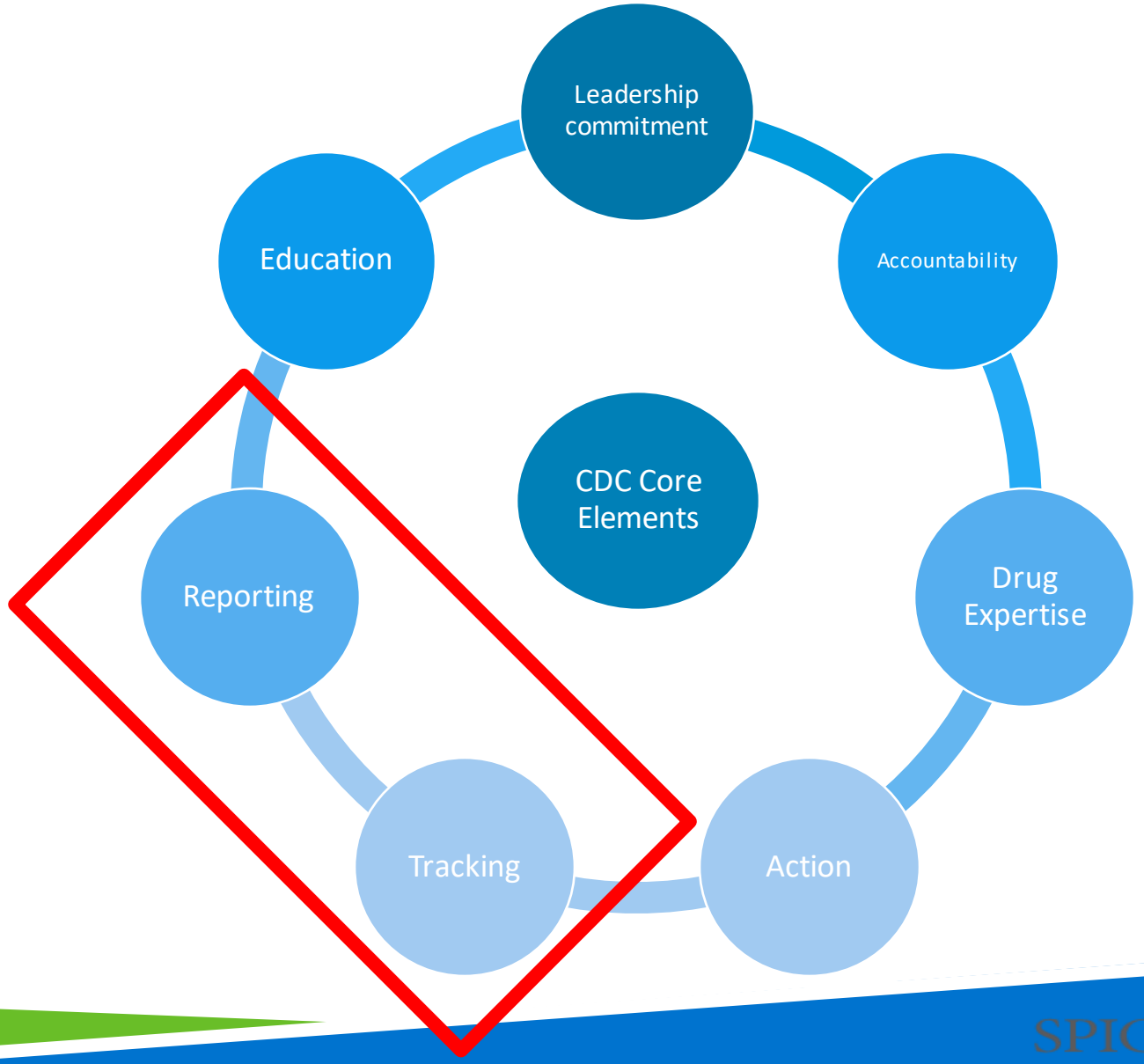
❑ Comparison over time

❑ Summaries without statistics

❑ Check this box if separate reports are created for different people

CDC CORE ELEMENTS: TRACKING AND REPORTING

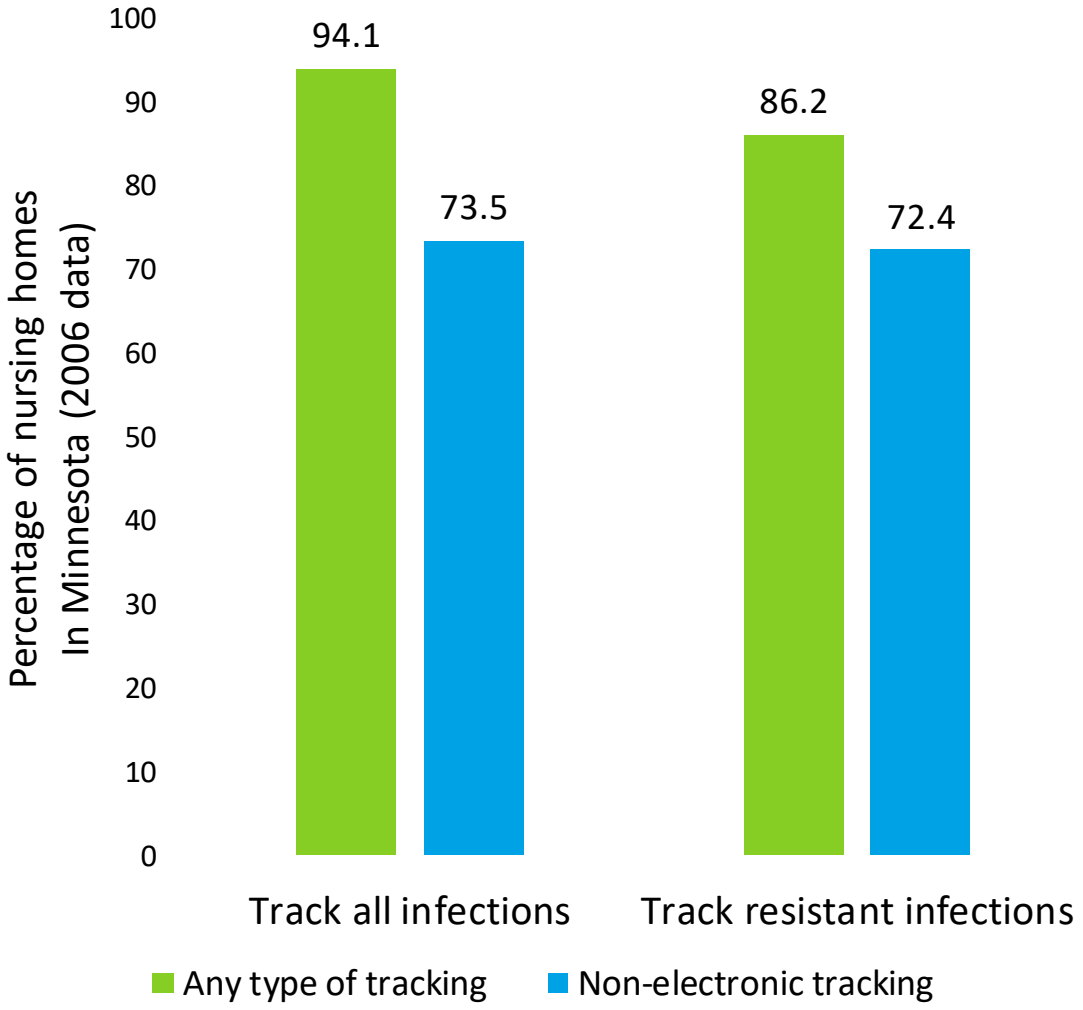
- Process measures: tracking how and why antibiotics are prescribed
  - Periodic chart reviews to assess adherence to nursing home policies regarding diagnosis, testing, prescribing, and/or monitoring
  - Giving feedback to providers about their data.
  - Have pharmacy to help with a medication use evaluation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



CORE MEASURES FOR TRACKING AND REPORTING

- Antibiotic use measures:
  - For now, minimum should include infection diagnosis / category; antibiotic name; dose and duration; and provider
  - CDC is developing an Antibiotic Use reporting options withing the NHSN (National Healthcare Safety Network)
  - Standardized benchmarks are likely coming for antibiotic use: type, starts, days of therapy (DOT).
  - Adherence to surveillance criteria 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!

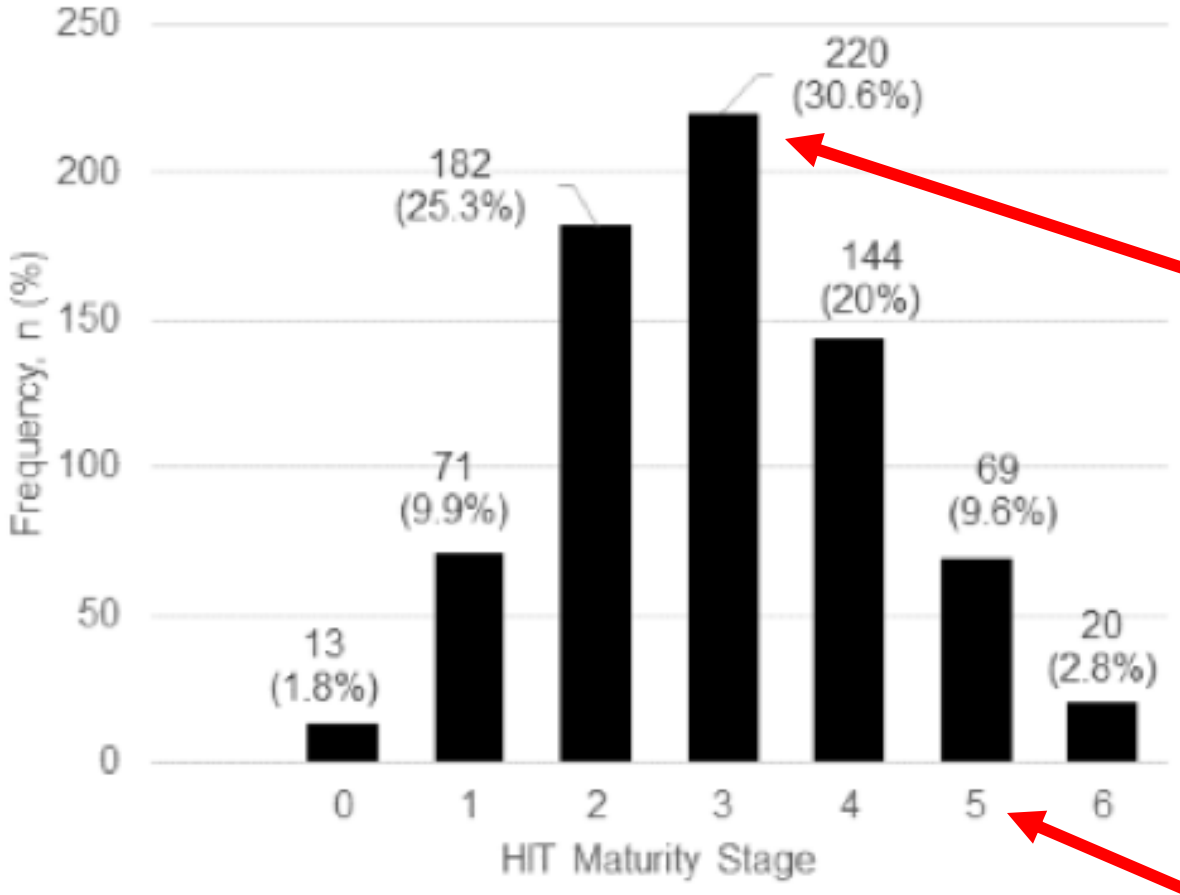
HAS INFECTION TRACKING IMPROVED SINCE 2006?



- Most tracking done on paper, not electronically
- Only 1/3 of clinicians were informed of antibiotic use trends
- 2/3 described their systems as “not” or “somewhat” effective at optimizing appropriate antibiotic use
- In 42% of nursing homes, the infection preventionist spent <5 hours per month on stewardship activities.

O’Fallon et al JAGS 2007.

HOW MATURE IS YOUR IT SYSTEM FOR INFECTION TRACKING?



- A recent study of 719 nursing homes from all 50 states and DC.
- The majority (61%) had stage 3 IT systems or less (internal use only; no analytics).
- Small rural nursing homes had less mature IT systems.

Level 5 – analytics by resident and/or provider

Alexander GL et al JMIR Aging 2022 Aug.
https://aging.jmir.org/2022/3/e37482/

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

ANTIBIOTIC TRACKING USING ROCHESTER SYSTEM

GO TO:
https://www.rochesterpatientsafety.com/index.cfm?Page=For%20Nursing%20Homes

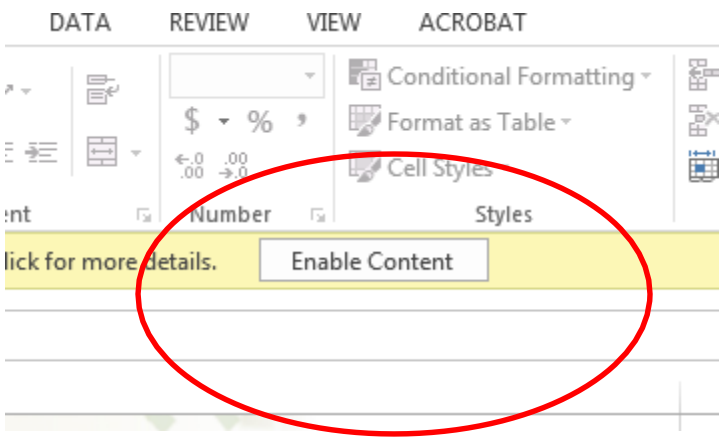
- You will need to learn to create and use two separate excel forms:

1. **Antibiotic Tracking form**
2. **Antibiotic Trending form**

- Unit location and prescriber information will only need to be completed once

ANTIBIOTIC TRACKING FORM

- The data form is intended to track antibiotics for **a single month**
- Name the form clearly
- Save a new copy for every month you are beginning to track antibiotics
- Keep a blank file saved for back up
- Be sure to select the button to <u>enable editing and enable content</u> at the top of the file when the tracking form is opened

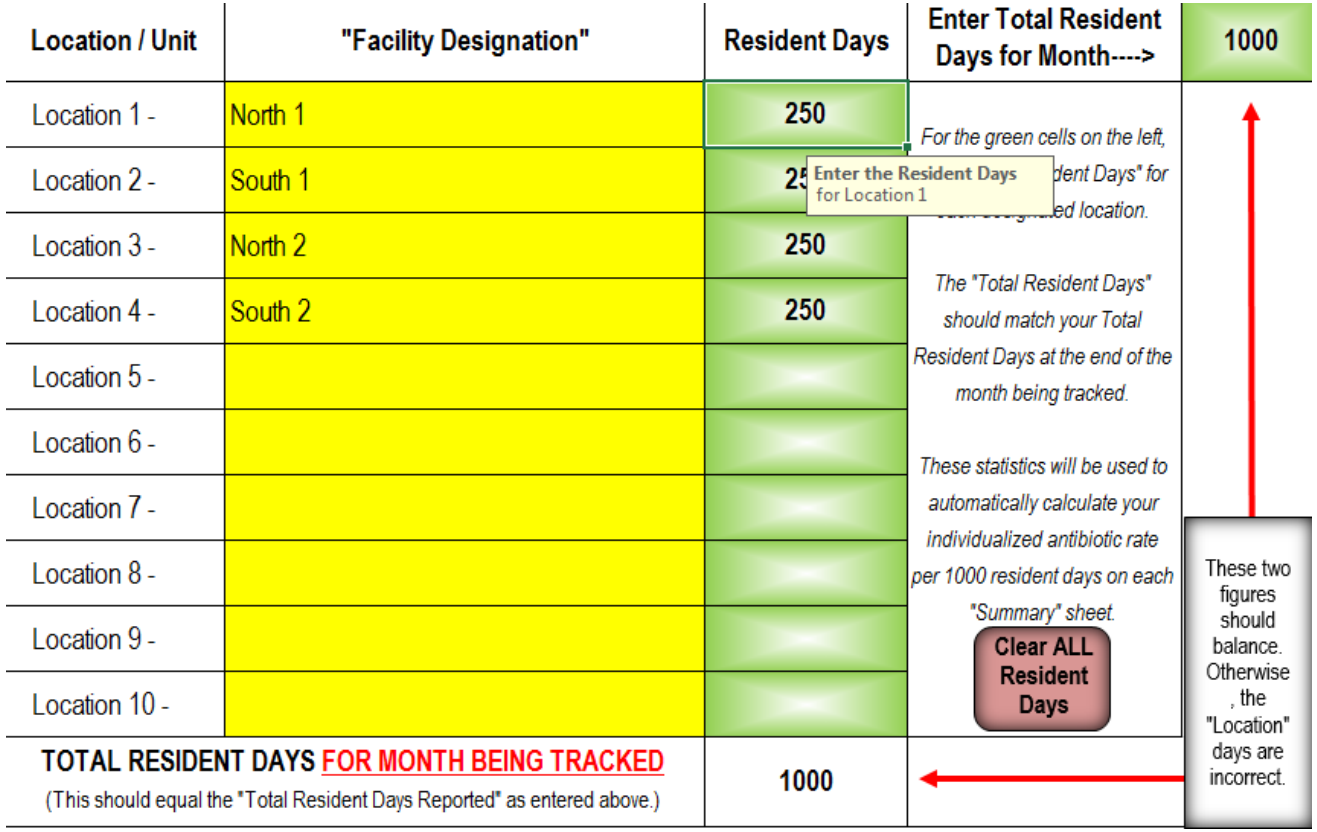


COLLECTING DATA ON ANTIBIOTIC USE

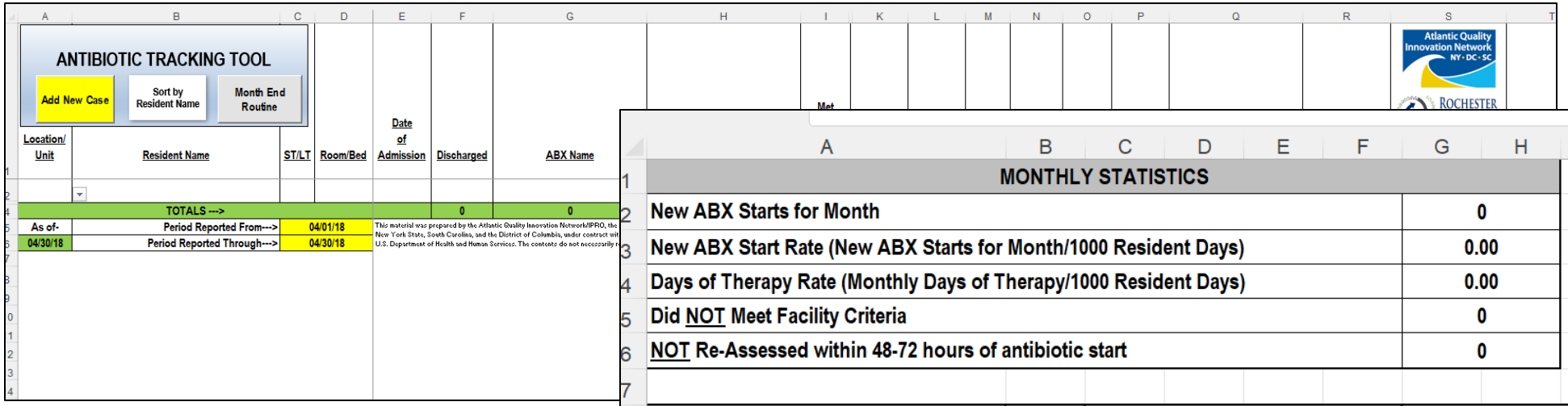
- Create and use a 24-hour report sheet or collect data during daily morning meetings or report
- Strategies to avoid missing existing antibiotic use:
  - Review charts: to be sure you don't miss residents that are receiving antibiotics for long term prophylaxis or suppression, or for other reasons
  - Conduct a point prevalence study: of all antibiotics at periodic intervals (weekly or monthly) by reviewing all the medication administration records
  - Review pharmacy antibiotic dispensing data: on admission or weekly or monthly and compare it to your tracking sheet

RESIDENT-DAYS - YOUR DENOMINATOR FOR ALL STATISTICS

- This information is needed to calculate rates per 1,000 resident days
- If interested in **unit specific data** enter monthly resident days for each unit at the end of the month and enter the total resident-days in right upper corner
- If only interested in the **entire facility** rate, enter the monthly resident–days in the right upper corner without completing the data for each unit
- Each month, the resident-days data needs to be updated



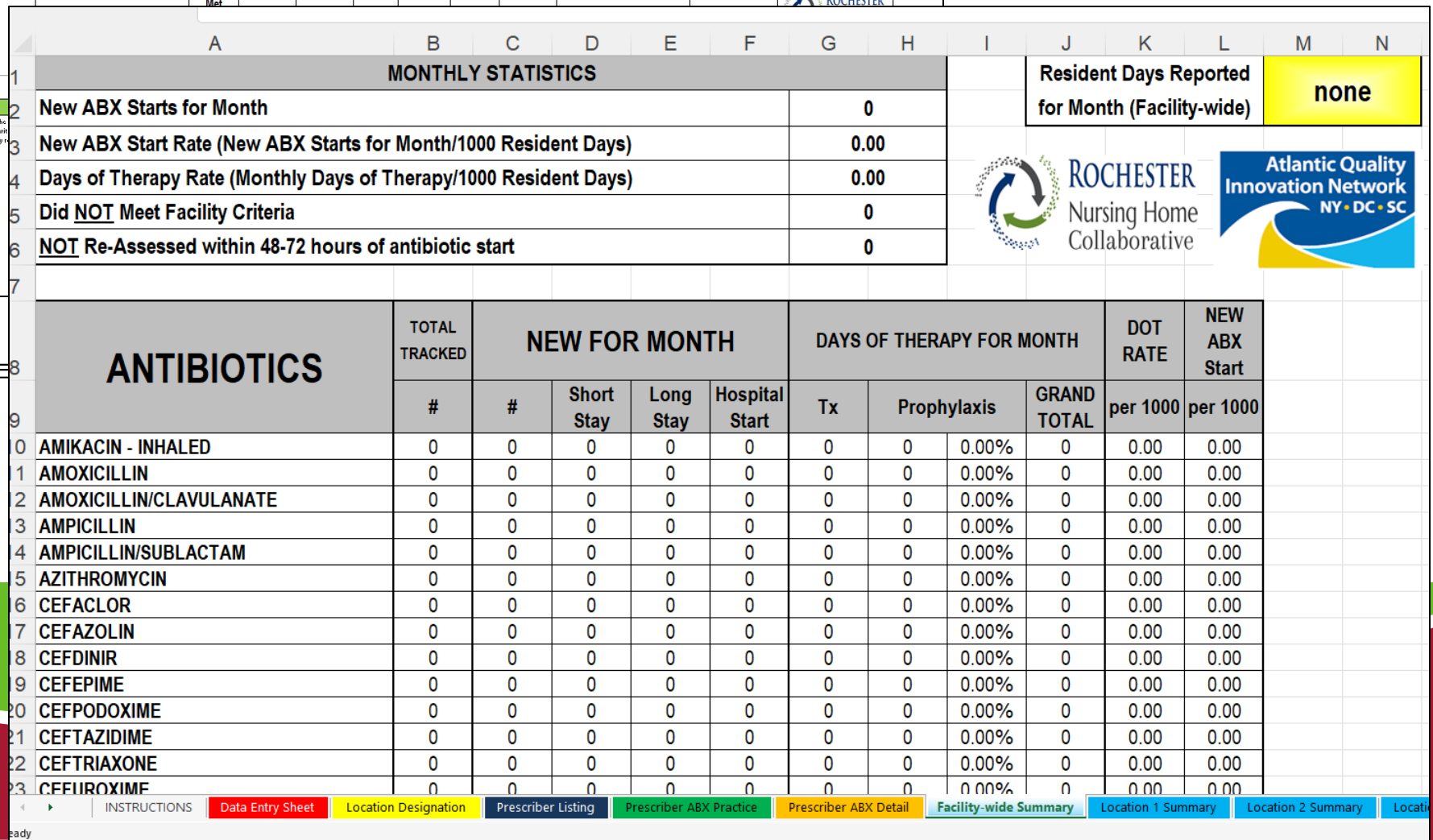
INFECTION TRACKING EXCEL SPREADSHEETS



ANTIBIOTIC TRACKING TOOL

Add New Case | Sort by Resident Name | Month End Routine

Location/ Unit	Resident Name	ST/LT	Room/Bed	Date of Admission	Discharged	ABX Name
TOTALS --->					0	0
As of-	Period Reported From--->	04/01/18				
04/30/18	Period Reported Through--->	04/30/18				



MONTHLY STATISTICS

New ABX Starts for Month	0
New ABX Start Rate (New ABX Starts for Month/1000 Resident Days)	0.00
Days of Therapy Rate (Monthly Days of Therapy/1000 Resident Days)	0.00
Did NOT Meet Facility Criteria	0
NOT Re-Assessed within 48-72 hours of antibiotic start	0

Resident Days Reported for Month (Facility-wide): none

ANTIBIOTICS	TOTAL TRACKED	NEW FOR MONTH				DAYS OF THERAPY FOR MONTH				DOT RATE	NEW ABX Start
	#	#	Short Stay	Long Stay	Hospital Start	Tx	Prophylaxis		GRAND TOTAL	per 1000	per 1000
AMIKACIN - INHALED	0	0	0	0	0	0	0	0.00%	0	0.00	0.00
AMOXICILLIN	0	0	0	0	0	0	0	0.00%	0	0.00	0.00
AMOXICILLIN/CLAVULANATE	0	0	0	0	0	0	0	0.00%	0	0.00	0.00
AMPICILLIN	0	0	0	0	0	0	0	0.00%	0	0.00	0.00
AMPICILLIN/SUBLACTAM	0	0	0	0	0	0	0	0.00%	0	0.00	0.00
AZITHROMYCIN	0	0	0	0	0	0	0	0.00%	0	0.00	0.00
CEFACLOR	0	0	0	0	0	0	0	0.00%	0	0.00	0.00
CEFAZOLIN	0	0	0	0	0	0	0	0.00%	0	0.00	0.00
CEFDINIR	0	0	0	0	0	0	0	0.00%	0	0.00	0.00
CEFEPIME	0	0	0	0	0	0	0	0.00%	0	0.00	0.00
CEFPODOXIME	0	0	0	0	0	0	0	0.00%	0	0.00	0.00
CEFTAZIDIME	0	0	0	0	0	0	0	0.00%	0	0.00	0.00
CEFTRIAXONE	0	0	0	0	0	0	0	0.00%	0	0.00	0.00
CEFUROXIME	0	0	0	0	0	0	0	0.00%	0	0.00	0.00

INSTRUCTIONS | Data Entry Sheet | Location Designation | Prescriber Listing | Prescriber ABX Practice | Prescriber ABX Detail | Facility-wide Summary | Location 1 Summary | Location 2 Summary

http://www.rochesterpatientsafety.com/index.cfm?Page=For%20Nursing%20Homes

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INFECTION TRACKING OVER TIME

Antibiotic Statistical Trending Report				Facility Name-											Unit/Floor-										
Month/Year--->		Jan-00	Mar-00	Apr-00	May-00	Jun-00	Jul-00	Aug-00	Sep-00	Oct-00	Nov-00	Dec-00	Jan-01	Feb-01	Mar-01	Apr-01	May-01	Jun-01	Jul-01	Aug-01	Sep-01	Oct-01	Nov-01	Dec-01
New ABX Starts for Month																								
New ABX Start Rate (New ABX Starts for Month/1000 Resident Days)																								
Days of Therapy Rate (Monthly Days of Therapy/1000 Resident Days)																								
Did NOT Meet Facility-Adopted Criteria																								
Not Re-Assessed within 48-72 hours of Facility-Start																								
The 6 rows below are for the trending of "User-Defined" areas. You may choose any "topic" or statistic to trend up to 24 months from the Monthly Antibiotic Tracking Tool. Whatever "Topic" that is typed in column "A" (below) will automatically appear as a corresponding chart title below along with the trending data entered across in that same row. If the "topic" is left blank along with the 24 monthly trending cells across the sheet, the corresponding graph below will simply appear blank.																								

Atlantic Quality Innovation Network NY • DC • SC

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USE OF McGEER SURVEILLANCE CRITERIA

Syndrome	McGeer Surveillance Criteria	
<u>If NO culture, STOP, infection does not meet UTI surveillance definitions</u>		
UTI without indwelling catheter (Must fulfill both 1 AND 2)	**At least ONE of the following signs/symptoms:** ➢ Acute dysuria or pain, swelling, or tenderness of testes, epididymis, or prostate ➢ Fever or leukocytosis and ≥1 of the following: • Acute costovertebral angle pain or tenderness • Suprapubic pain • Gross hematuria • New or marked increase in incontinence • New or marked increase in urgency • New or marked increase in frequency ➢ If no fever or leukocytosis, then ≥2 or the following: • Suprapubic pain • Gross hematuria • New or marked increase in incontinence • New or marked increase in urgency • New or marked increase in frequency	**At least ONE of the following microbiological criteria:** ➢ ≥10^5 cfu/mL of no more than 2 species of organisms in a voided urine sample ➢ ≥10^2 cfu/mL of any organism(s) in a specimen collected by an in-and-out catheter

Stone, N. D et al. ICHE (2012).

McGEER vs LOEB vs SOMETHING ELSE

- **McGeer Criteria** are surveillance criteria. They are good for looking back and evaluating performance over time. They are good for quality improvement but not specific clinical decisions.
- **Loeb Criteria** provide clinical guidance regarding initiation of antibiotics, by identifying a minimum set of signs and symptoms which indicate high likelihood of infection.
- **Facility-specific criteria** may be useful in quality improvement by helping focus on one or more QAPI targets around antibiotic use. They should be based on one or more studies in the scientific literature.

SMALL GROUP DISCUSSION

Tracking and Reporting for UTIs

1. How do you track a patient with a UTI? What's something helpful that you do? What's a barrier?

2. What goes in your report of your data? WHAT do you do with it?

Ask for volunteer to debrief the larger group on how you report the data!

SMALL GROUP DEBRIEF

Tracking and Reporting for UTIs

How do you report the data?

Understanding Variation through Tracking and Reporting

Looking at Data Over time

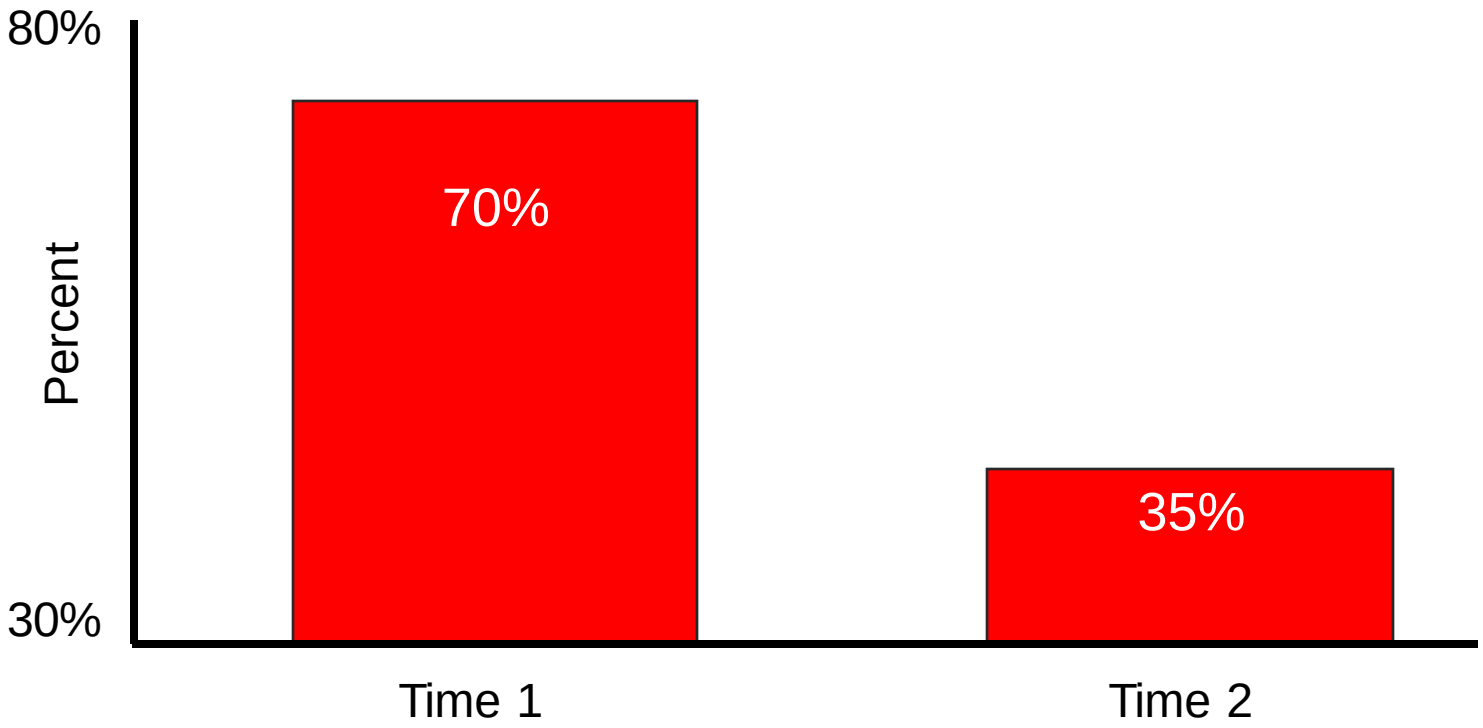
Chrissy Kistler 12-4-23

TRACKING DATA FOR 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?

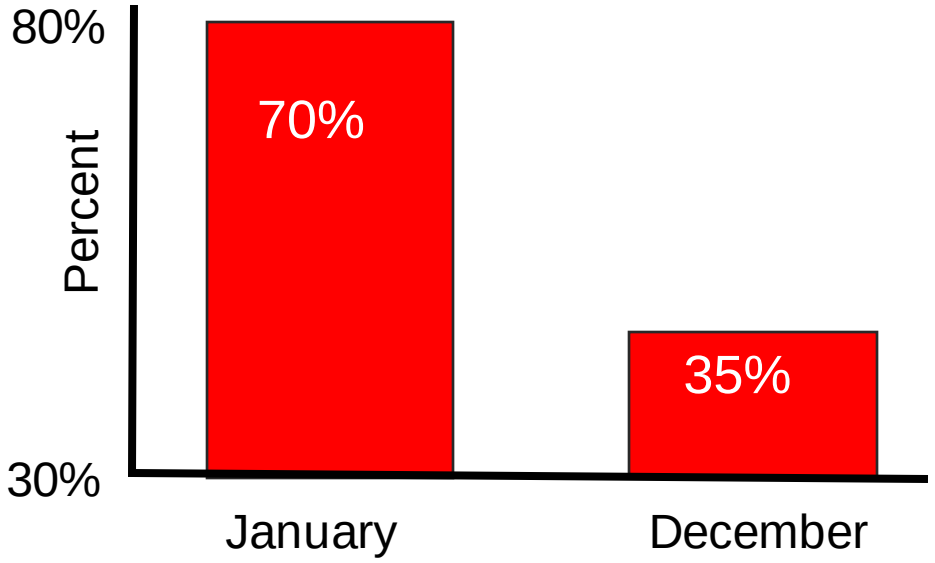
ONE WAY OF SHOWING CHANGE IN PERCENT OF INAPPROPRIATE ANTIBIOTICS

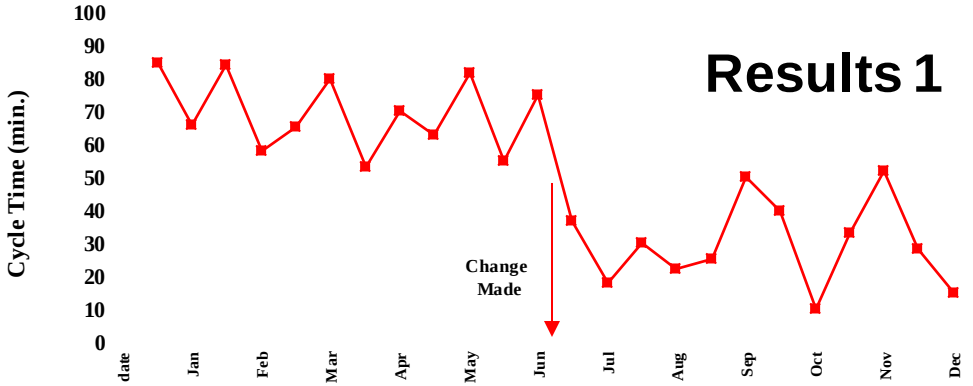


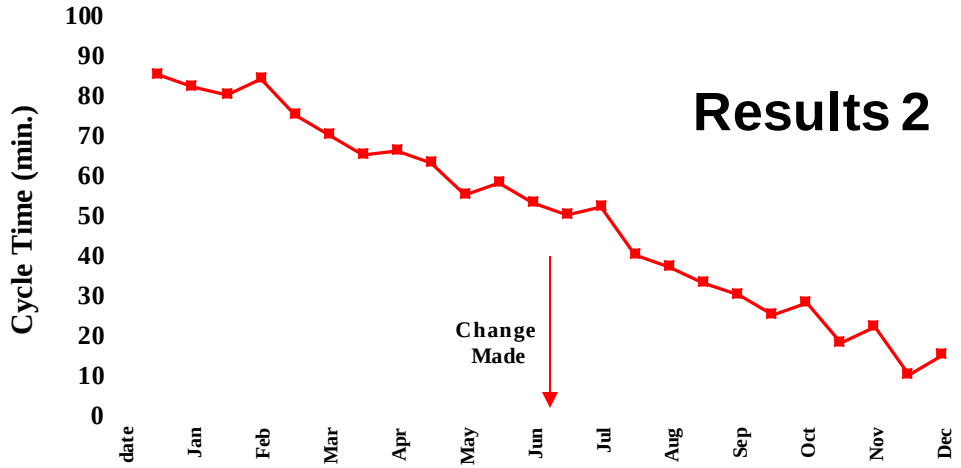
Conclusion -The change was a success!

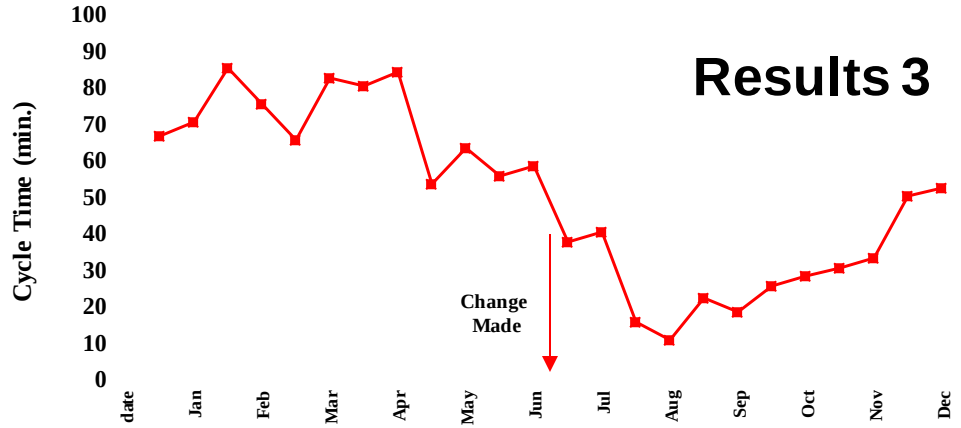
A 50% drop in antibiotic use!

MONTHLY VS OVERALL CHANGE CAN TELL DIFFERENT STORIES









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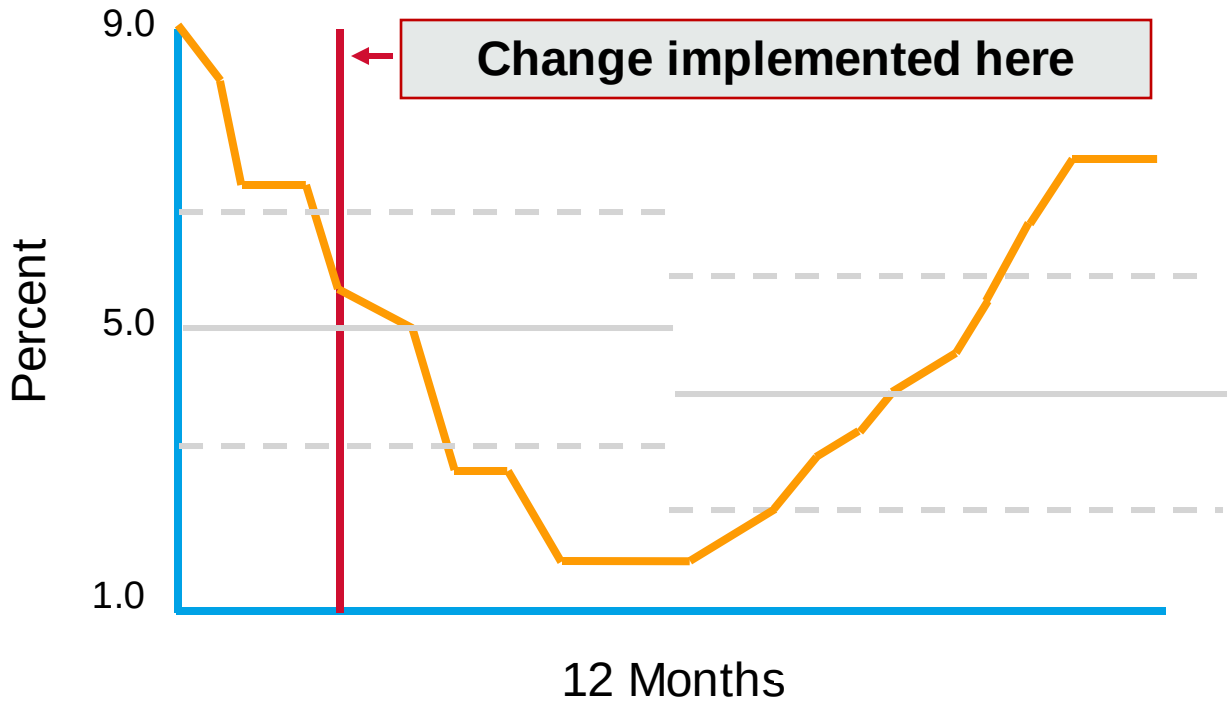
SPICE

THIS IS A COMMON CURVE IN QUALITY IMPROVEMENT



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

Please type in the chat:

- one potential tracking and reporting intervention for antibiotic stewardship that you can try in your nursing home.