North Carolina SPICE
Statewide Program for Infection Control & Epidemiology

LONG-TERM CARE COMMUNITIES
ANTIBIOTIC STEWARDSHIP CORE ELEMENTS
SESSION # 7: PHARMACY EXPERTISE AND OUTCOME ASSESSMENT

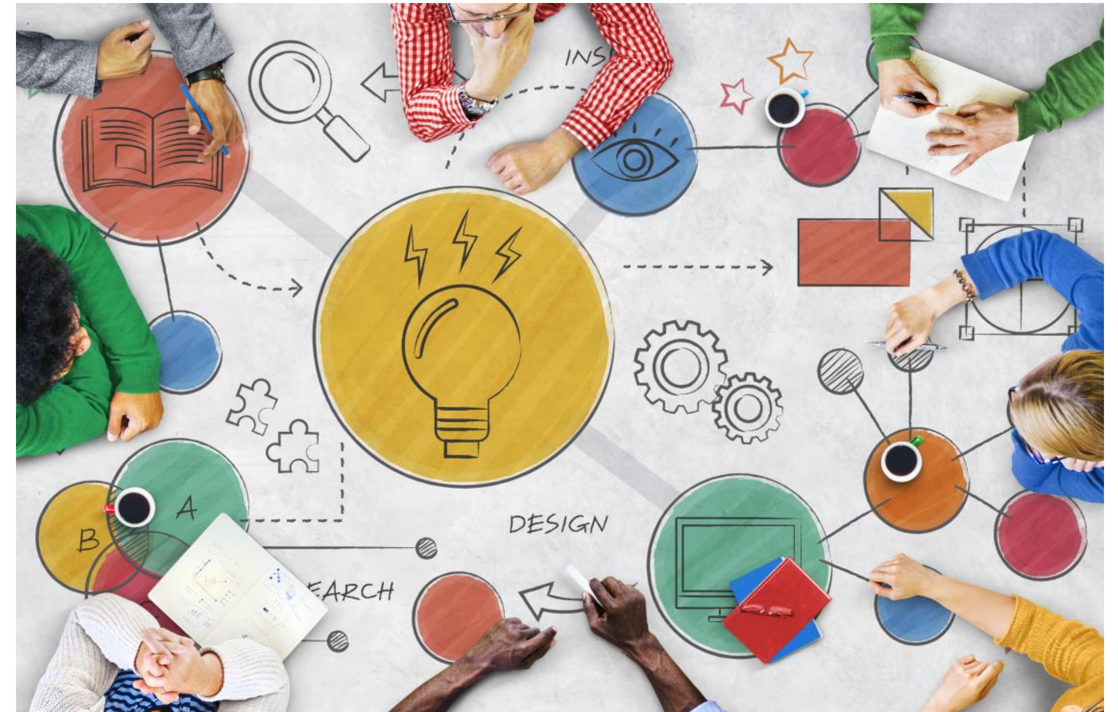
January 17, 2024

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.
- 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.

OUTLINE OF TODAY'S SESSION

1. NC CLASP reminders
2. QI on Outcome Assessment
3. Small Group Discussion on Outcome Measures
4. CDC Core Element: Drug Expertise
5. Zoom Poll and Large Group Discussion
6. Diagnosis and Pharmacologic Management of Pneumonia
7. Small Group Discussion on Pharmacy Support

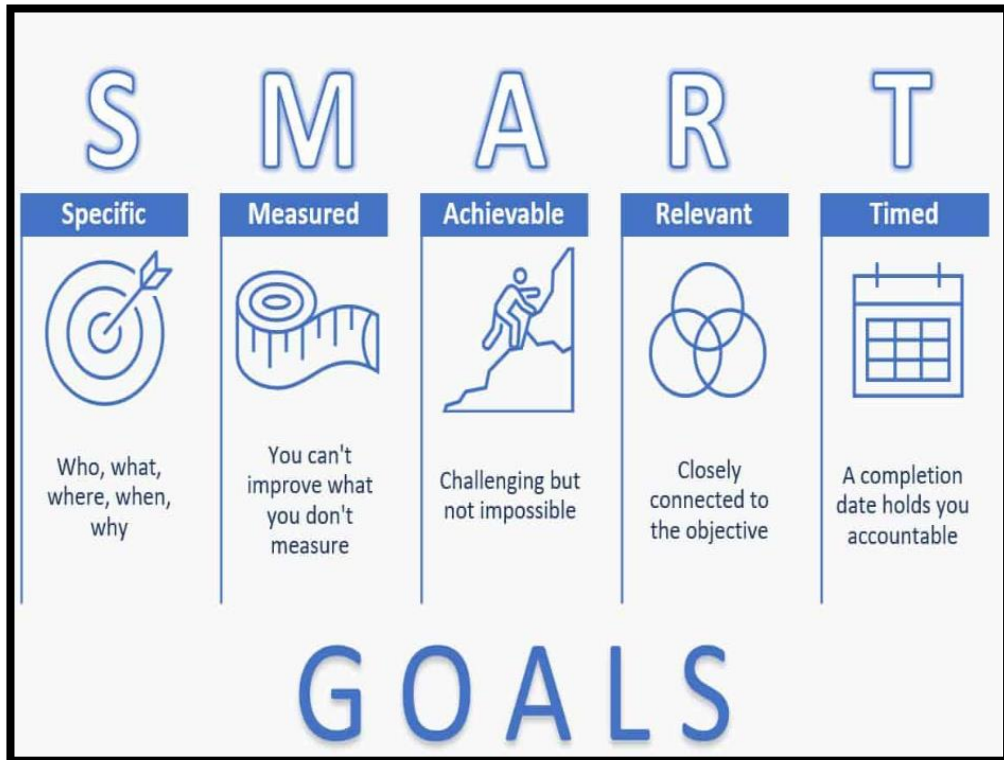


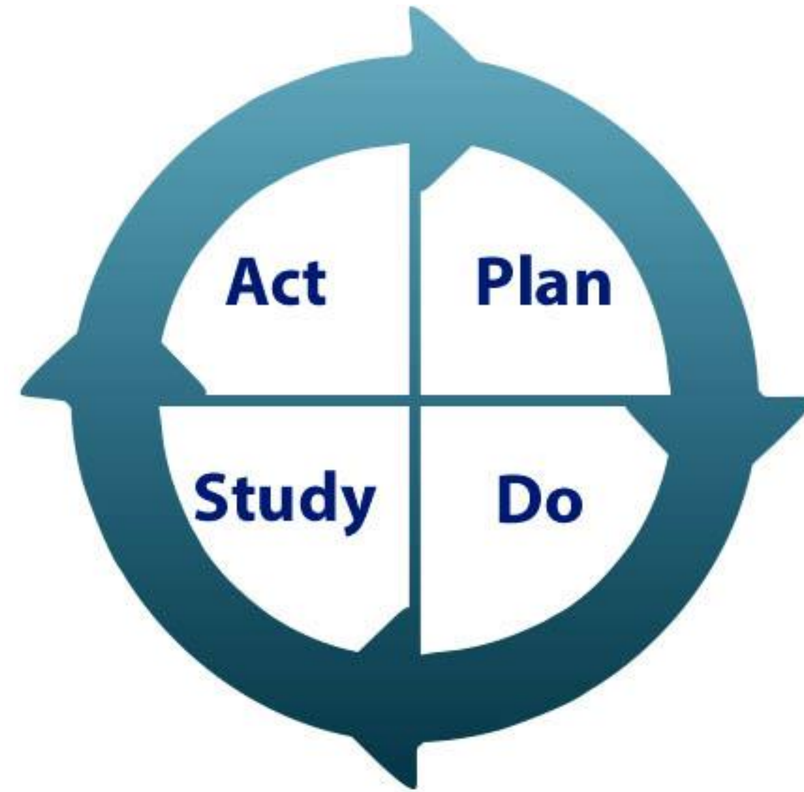
SESSION REMINDERS

- 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
- If you need to get a hold of us, please email: Danielle.Doughman@unchealth.unc.edu

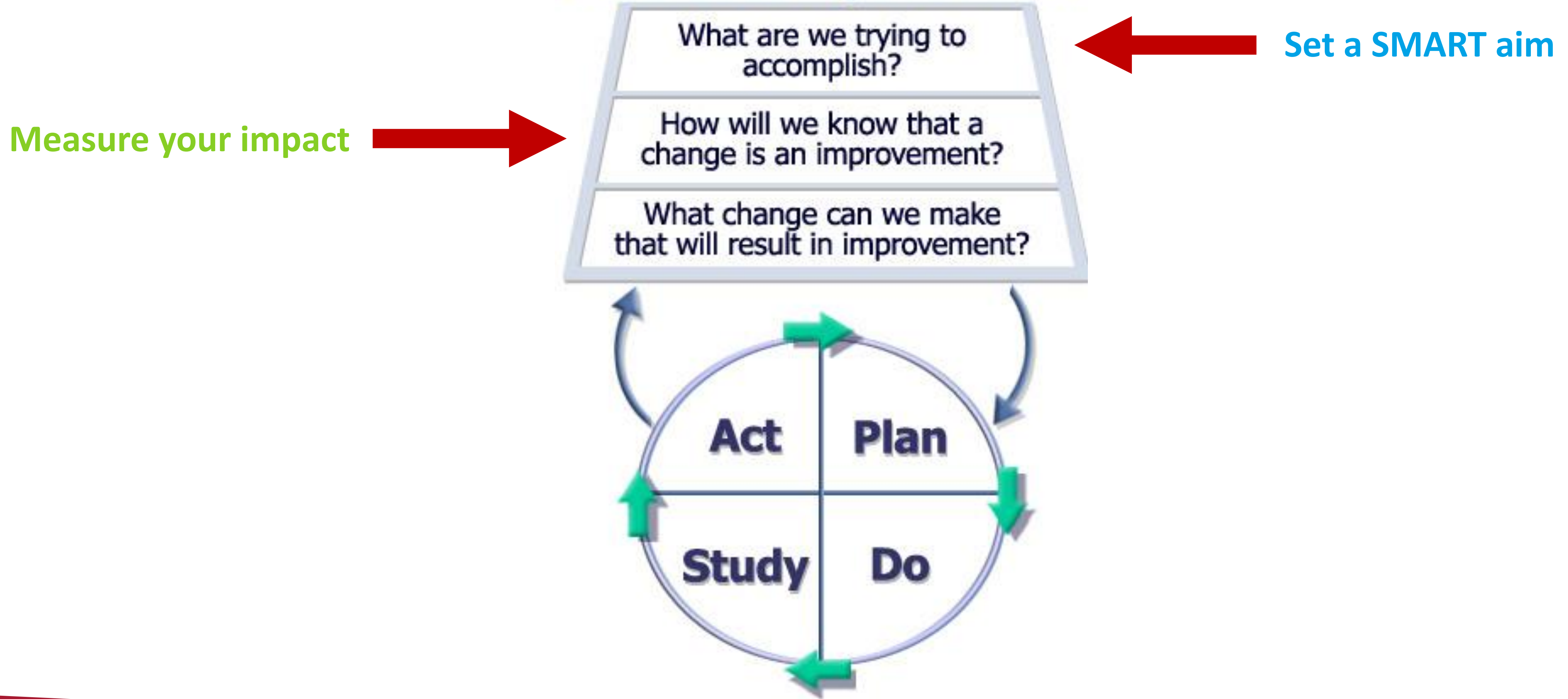
WE WANT TO HELP YOU WORK SMARTER, NOT HARDER

- **Quality Assurance and Process Improvement Plans**





MEASUREMENT



TYPES OF MEASURES

OUTCOME MEASURE

(HOW IS THE SYSTEM PERFORMING? WHAT IS THE RESULT?)

- Number of antibiotic-resistant infections
- Use of antibiotics — rate or #
- Use of antibiotics without positive culture

Facility Measures

PROCESS MEASURE

(ARE THE PARTS/STEPS IN THE SYSTEM PERFORMING AS PLANNED?)

- Number of cultures performed
- Dose, duration, indication, and symptoms documented
- Number of consultations with Pharmacist

PIP measures

TYPES OF MEASURES

BALANCING MEASURE

(BALANCING MEASURES DETERMINE WHETHER CHANGES DESIGNED TO IMPROVE ONE PART OF THE SYSTEM ARE CAUSING NEW PROBLEMS IN OTHER PARTS OF THE SYSTEM, AKA UNINTENDED CONSEQUENCES)

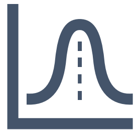
- Number of infections
- Complications of infections
- Resident and family satisfaction rate

Question for the chat box:
Can you think of any other "balancing measures" — unintended consequences of a focus on appropriate antibiotic use???

Choose measures from all three categories to ensure that you have an accurate picture of the effects on the system of changes you are making

MEASURING FOR IMPROVEMENT

Try to keep to a yes/no format

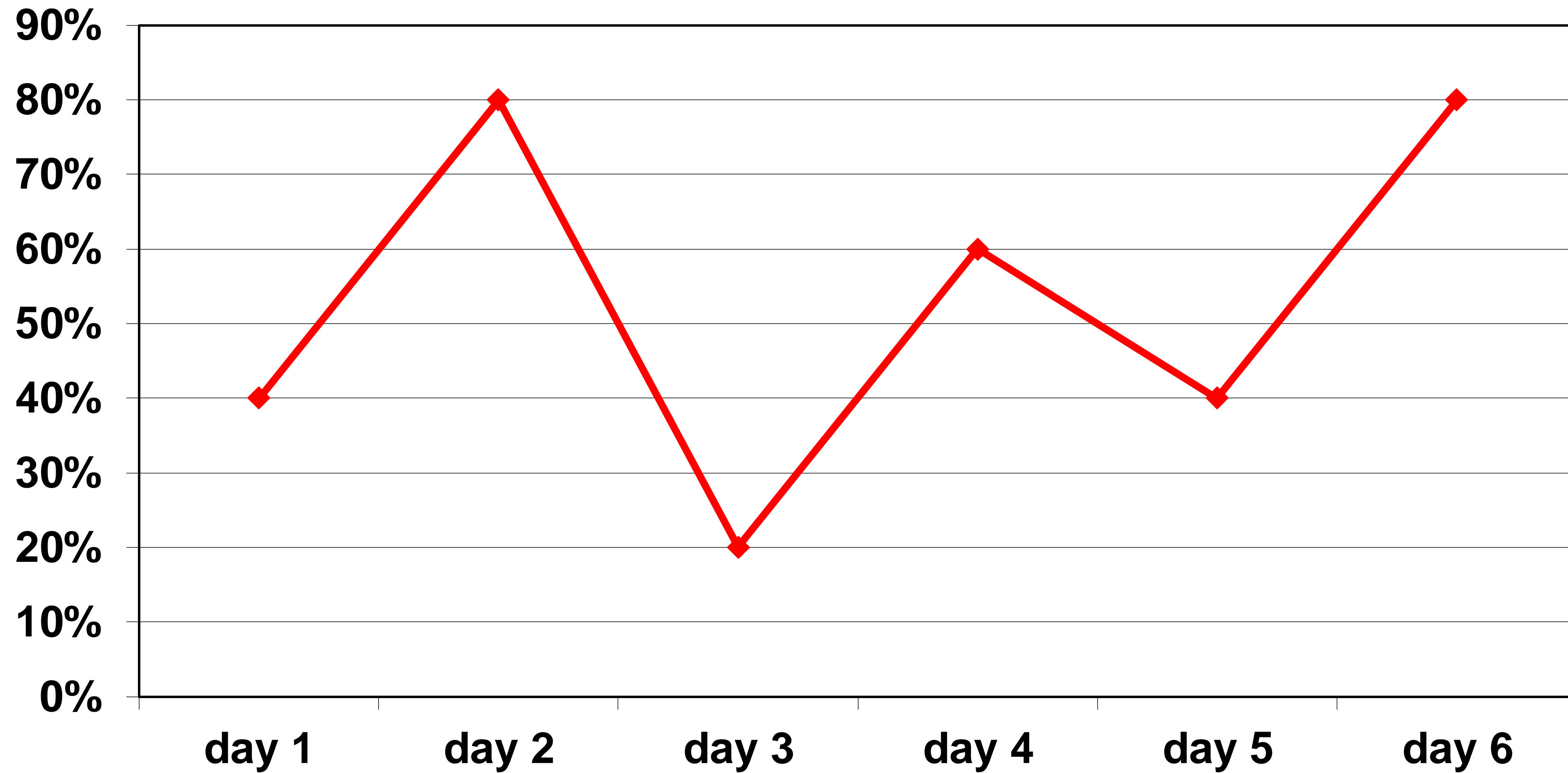


Small samples rather than all

Person/persons responsible for the design should do the data collection

For a process thought to be reliable, spot checks need to be made and defects studied

OUTCOME MEASURE
ANTIBIOTIC ADMINISTERED ONLY AFTER POSITIVE CULTURE



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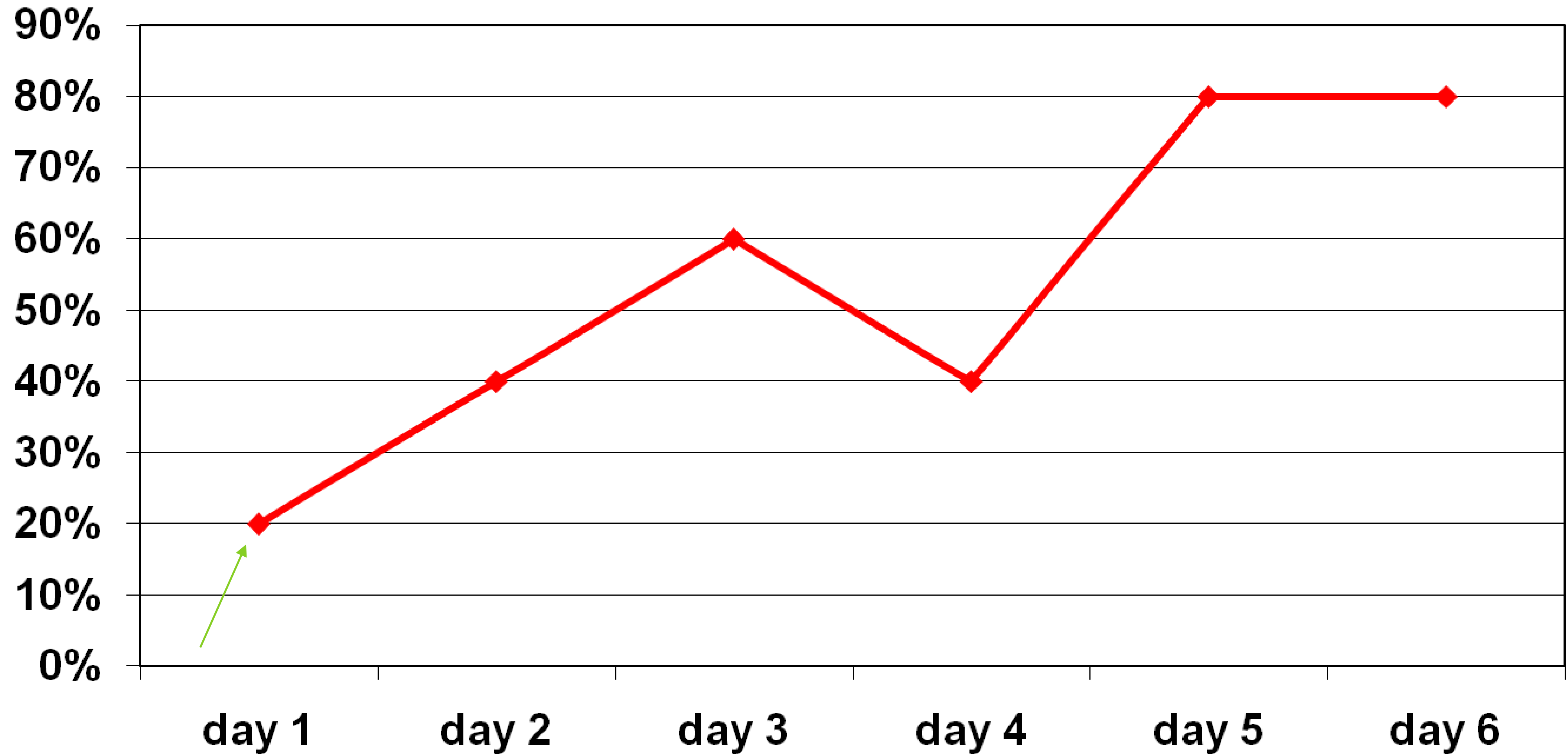
PROCESS MEASURE
INDICATION, DOSE, AND DURATION DOCUMENTED IN EHR



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MINI QUIZ: OUTCOME, PROCESS, OR BALANCING MEASURE?

SMART Aim: Our goal is to reduce prophylactic antibiotic use for UTI by 30% (from 9 down to 6 residents) by June 30, 2024.

QUIZ:

A. Number of 1:1 conversations conducted with staff about abx procedures (O/P/B?)

B. Staff satisfaction rate (O/P/B?)

C. Number of cultures performed (O/P/B?)

D. Number of expert Q&A sessions held (O/P/B?)

SMALL GROUP DISCUSSION

Measures in your CLC for your SMART aims

- What sort of outcome measures do you use
- What sort of process (PIP) measures do you use?
- What sort of unintended consequences/balancing measures do you consider?

CDC CORE ELEMENT: DRUG EXPERTISE

- Work with a consultant pharmacist with antibiotic stewardship training
  - https://mad-id.org/antimicrobial-stewardship-programs/
  - https://sidp.org/Stewardship-Certificate
- Partner with the antibiotic stewardship program at your local hospital
- Develop a relationship with a local infectious disease consultant to support your efforts

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ZOOM POLL

Does your community have a pharmacist with antibiotic stewardship training who can help you?

- ❑ Yes
- ❑ No
- ❑ I Don't Know

Does your community work with your local referring hospital's stewardship team?

- ❑ Yes
- ❑ No
- ❑ I Don't Know

Does your community work with any local ID physician to support your stewardship efforts?

- ❑ Yes
- ❑ No
- ❑ I Don't Know

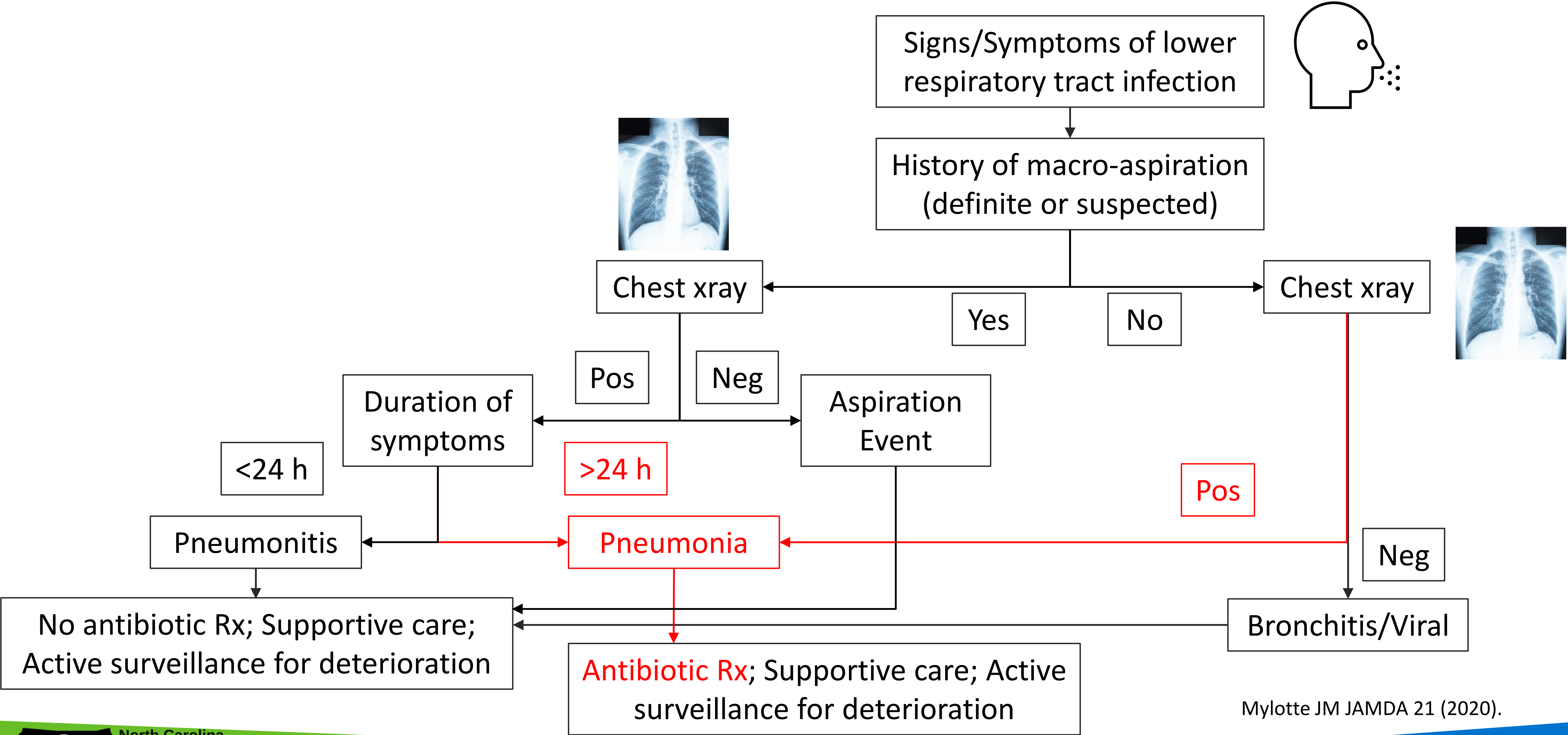
DIAGNOSTIC CRITERIA FOR PNEUMONIA

- Loeb criteria for bacterial 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).

POTENTIAL DIAGNOSTIC PATHWAY



Mylotte JM JAMDA 21 (2020).

PHARMACOLOGIC MANAGEMENT

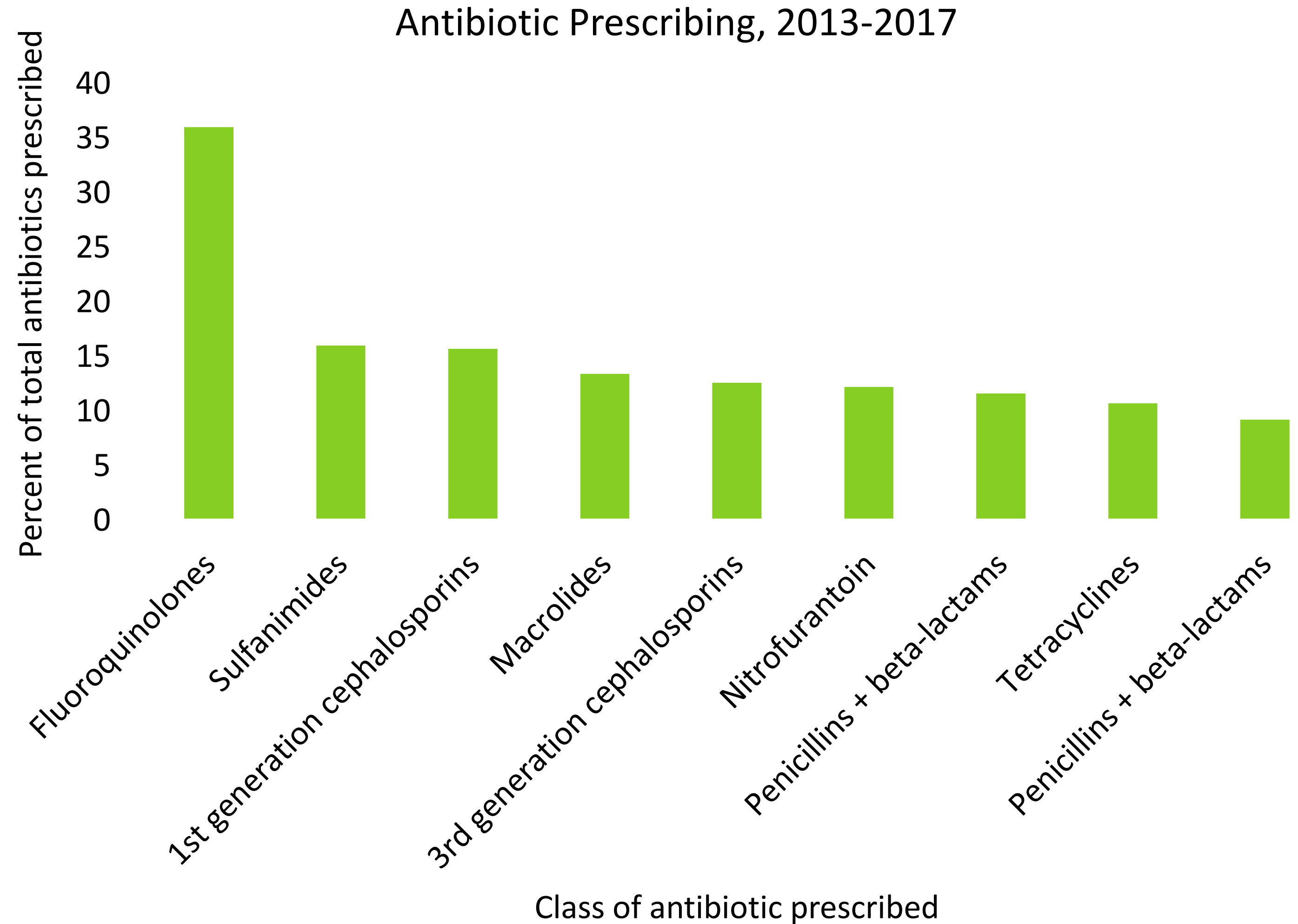
Preferred choice	Medication	Duration
First-line options	IM Ceftriaxone 500 mg q day	2-3 days and then switch to orals*
	IM Cefotaxime 1 gm q 12 hours	2-3 days and then switch to orals*
	PO Amoxicillin 1 gm TID	5 days if clinically stable, otherwise 7
	PO Amoxicillin/Clavulanate 500/125 mg BID	5 days if clinically stable, otherwise 7
	PO Doxycycline 100 mg BID	5 days if clinically stable, otherwise 7
	PO Cepodoxime 200 mg BID	5 days if clinically stable, otherwise 7
Second-line options	PO Levofloxacin 750 mg q day	5 days if clinically stable, otherwise 7
	PO Moxifloxacin 400 mg q day	5 days if clinically stable, otherwise 7

Mylotte JM. JAMDA. 2020.

* Switch to orals determined by clinical stability, but no more than 7 days.

INAPPROPRIATE ANTIBIOTIC STEWARDSHIP

- Large retrospective cohort study of 1,375,062 long-term care residents
- Over a 3-year period, 66.2% of LTC residents received an antibiotic
- Fluoroquinolones accounted for a third of all prescriptions despite failing to be a first-line antibiotic for any infection
- They were also prescribed for over 8 days on average, compared with 6 days or less for all over classes



Riester MR et al J Infect Dis. 2023

SMALL GROUP DISCUSSION

Use your drug experts:

- How do you use your consultant pharmacy to help with antibiotic prescribing?
- How can you engage your pharmacists more in your antibiotic stewardship goals (SMART aims, QAPI, and PIP)?

UPCOMING LEARNING SESSIONS

- **Hot Topics in Stewardship: Treatment of Respiratory Viral Infections**
  January 24, 2024 | 11:30-12:30 PM
  Note: Hot topic sessions are not eligible for CME
- *Register at* *https://spice.unc.edu/nc-clasp-registration/*

▶ ***Coming in February***

- *CDC's Core Elements of Nursing Home Stewardship: Summary and Debrief*
- *Nonspecific symptoms in persons with cognitive impairment*
- *Challenges around equivocal chest x-rays*