



North Carolina Clinical Antibiotic Stewardship Partners

LONG-TERM CARE COMMUNITIES ANTIBIOTIC STEWARDSHIP SESSION #8

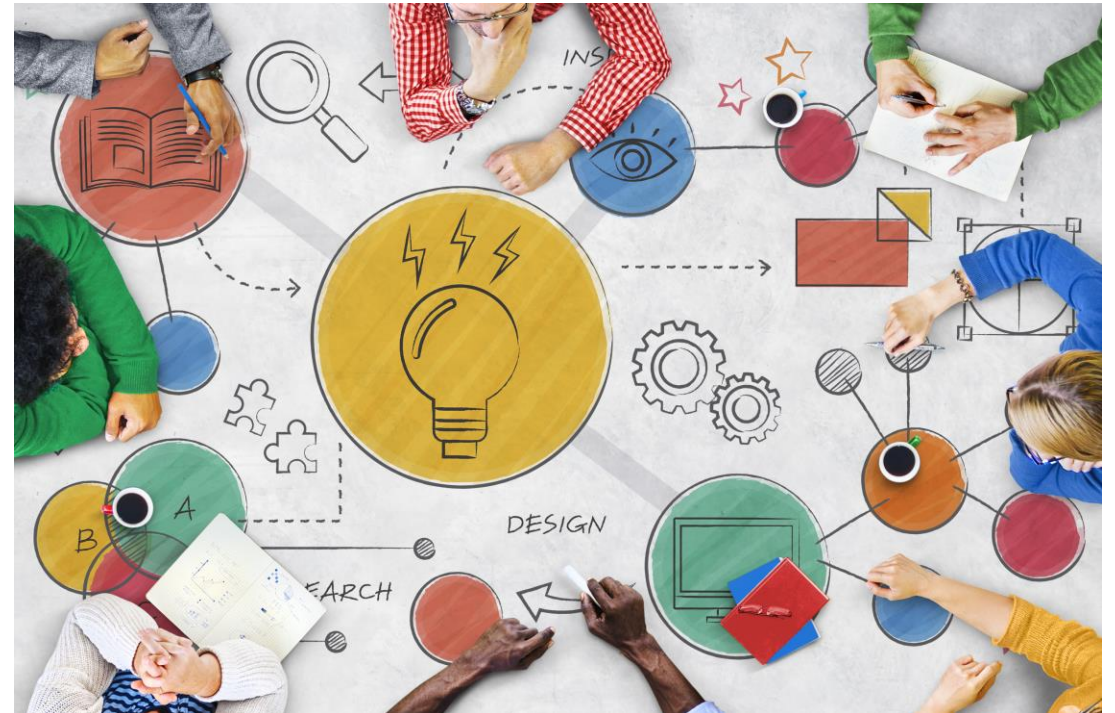
June 21, 2023

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- ▶ 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.
 - ▶ Ms. Doughman owns individual Gilead stock.
- ▶ 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 including CDC, WHO, AHRQ, etc.

OUTLINE OF TODAY'S SESSION

1. Antibiotic Stewardship Challenge:
Persons living with Dementia
2. Role Play Case in Small Groups
3. Tests for Change
4. Small Group Discussion
5. Announcements



SESSION REMINDERS

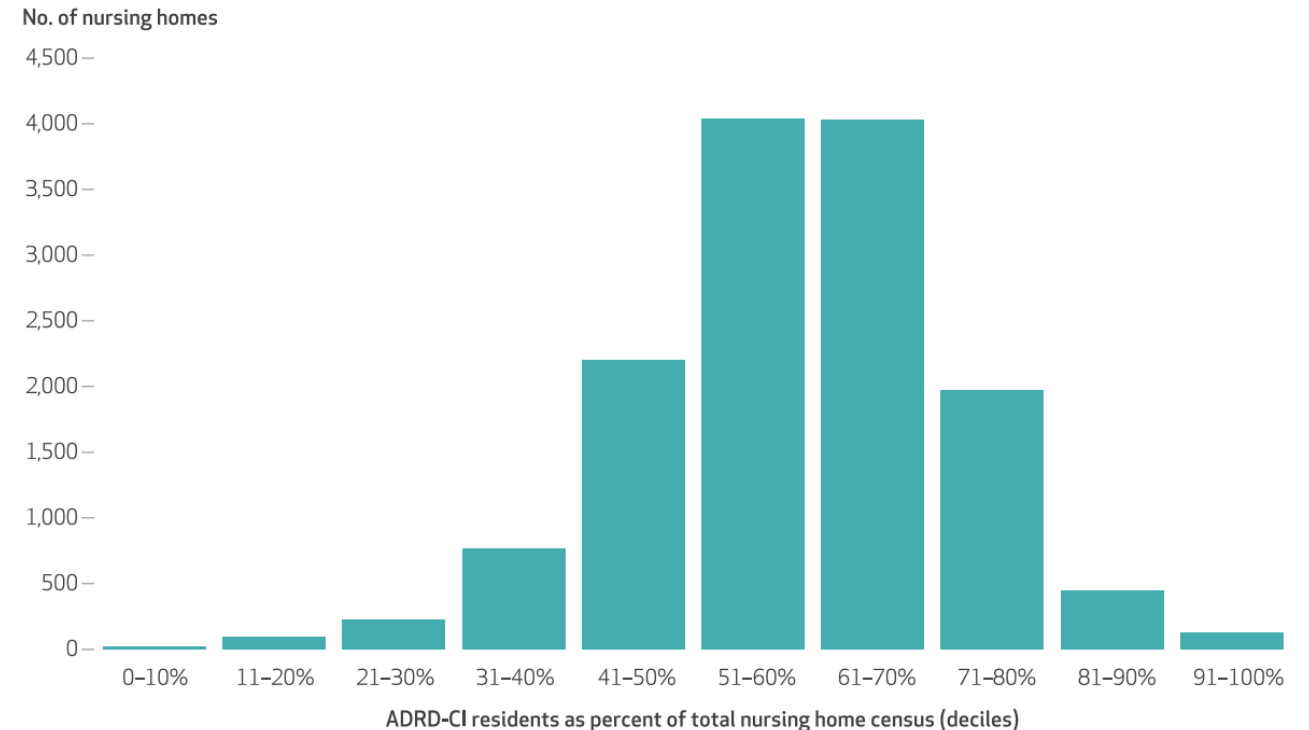
- ▶ This time is for you and your learning.
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- ▶ Use the chat- please put your name, location, and role in the chat.
- ▶ Let's use and share our learning, but not in a way that identifies protected information, specific facilities, or staff members.
- ▶ If you need to get a hold of us:
Danielle.Doughman@unchealth.unc.edu



ANTIBIOTIC STEWARDSHIP CHALLENGE #1: PERSONS LIVING WITH DEMENTIA

- While present in all nursing homes, fewer than half of people with dementia live in a NH where >60% of the residents have dementia.
- In a study of 21 Boston area NHs, 66% of the 142 residents with advanced dementia received at least 1 antibiotic over 322 days of follow-up
 - Quinolones were most prescribed (38% of cases)
- A more recent study of homebound people with dementia found that 42% of them (N=16,956) accounted for 45,122 antibiotic prescriptions in a year.

Distribution of US nursing homes by Alzheimer's disease and related dementias or cognitive impairment (ADRD-CI) deciles, 2017-19



Mukamel DB. Et al Health Affairs June 2023
D'Agata E and Mitchell SL Arch Intern Med 2008 Feb
Datta R Open Forum Infect Dis 2022 Sep



DIAGNOSTIC AND TREATMENT CHALLENGES IN MANAGING INFECTIONS IN PERSONS WITH DEMENTIA

Infections are common

Symptoms are hard to report

Physical assessment is difficult

Persons with dementia rarely
drink fluids without prompting

Behavioral expressions
complicate all aspects of care



Infections are part of terminal
dementia

Pain and dyspnea can be assessed
in dementia

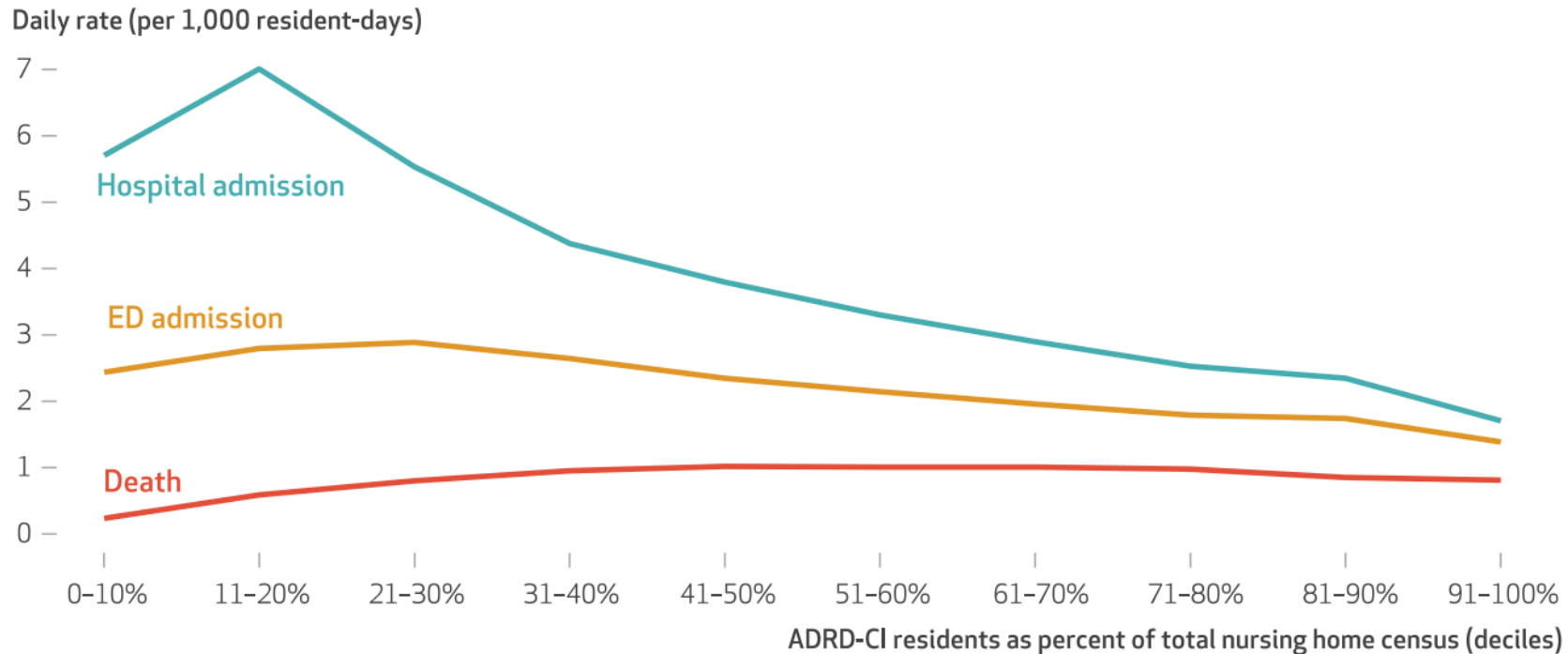
Chest x-rays and blood work are
possible

Providing person-centered care



FAMILIARITY BREEDS BETTER CARE?

Daily hospital admission, emergency department (ED) admission, and death rates per 1,000 resident-days among nursing home residents in the US, 2017-19

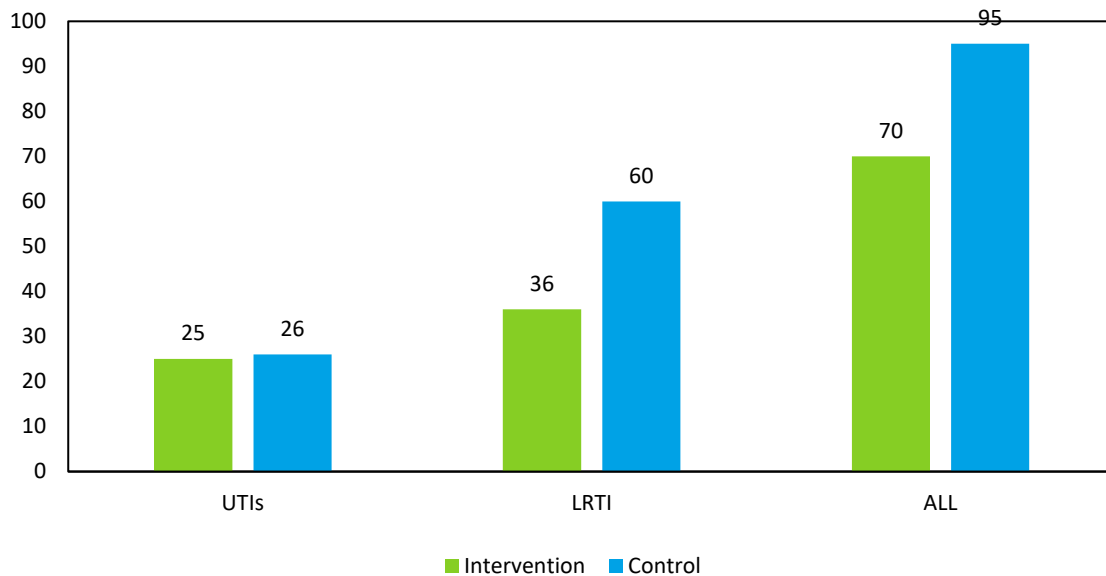


Hospital Admissions, ED visits, and Mortality improved with increasing populations of residents with dementia.

Mukamel DB. Et al Health Affairs June 2023

TRIAL TO REDUCE ANTIMICROBIAL USE IN NURSING HOME RESIDENTS WITH ALZHEIMER'S DISEASE AND OTHER DEMENTIAS (TRAIN-AD)

TRAIN-AD RESULTS



- Cluster RCT evaluating a multicomponent program to improve infection management among residents with advanced dementia
- High level of adherence in N=298 nurses and N=82 prescribers
- Considerable difference in antibiotic use, mostly due to reduction in prescriptions for suspected LRTI; results did not reach statistical significance due to small sample size and lower than anticipated rate of infections

Hendricksen M Contemp Clin Trials Commun. 2022 Mar
Mitchell SL et al JAMA Intern Med 2021 Sept

CONCRETE STEPS TO IMPROVE STEWARDSHIP- SHEA GUIDELINES

Suspected urinary tract infection	Suspected lower respiratory tract infection	Suspected skin infection	Febrile episode
<p>A. No indwelling Foley catheter Acute dysuria alone OR temperature >37.9°C AND ≥1 of following:</p> <ol style="list-style-type: none"> 1. New or worse frequency 2. Urgency 3. Costovertebral tenderness 4. Gross hematuria 5. Suprapubic pain 6. Mental status change 7. Rigors <p>B. Indwelling Foley catheter ≥1 of following:</p> <ol style="list-style-type: none"> 1. Temperature >37.9°C 2. Rigors 3. Mental status change 	<p>A. Temperature >38.9°C ≥1 of following:</p> <ol style="list-style-type: none"> 1. Respiratory rate >25 breaths/minute 2. New productive cough <p>B. Temperature <38.9°C New productive cough AND ≥1 of the following:</p> <ol style="list-style-type: none"> 1. Pulse >100 beats/minute 2. Respiratory rate >25 breaths/minute 3. Rigors 4. Mental status change <p>C. Afebrile with COPD New/increased cough with purulent sputum</p>	<p>New or increased purulent drainage OR ≥1 of the following:</p> <ol style="list-style-type: none"> 1. Temperature >37.9°C 2. Redness 3. New or increased swelling 4. Warmth 5. Tenderness 	<p>Temperature >37.9°C AND ≥1 of the following:</p> <ol style="list-style-type: none"> 1. Mental status change 2. Rigors 3. Unstable vital signs

HOW DO I TELL THE DIFFERENCE BETWEEN ACUTE MENTAL STATUS CHANGES/DELIRIUM AND DEMENTIA AND PSYCHOTIC CONDITIONS?

- ▶ **Talk** with family/caregivers to establish baseline
- ▶ **Observe** the patient:
 - ❖ An acute change in mental status **is NOT dementia**
 - ❖ Rapidly fluctuating course **is NOT typical for dementia**
 - ❖ Abnormal level of consciousness **is NOT typical for dementia**
- ▶ **Determining delirium is not always clear but it's not chronic, AND it is caused by MORE than just infections!**
- ▶ **Diagnosis becomes more difficult in patients with dementia.**



CONCRETE STEPS TO IMPROVE ANTIBIOTIC STEWARDSHIP

Nursing led interventions

- ▶ UTI
 - ▶ Always push fluid intake
 - ▶ Change diapers/assisted toileting REGULARLY
 - ▶ Use barrier cream
- ▶ PNA
 - ▶ Assisted Feeding
 - ▶ Modified diet
- ▶ Skin/Soft Tissue
 - ▶ Wrap legs/compression stockings
 - ▶ Feet up!
 - ▶ Barrier cream to legs

Prescription interventions:

- ▶ UTI
 - ▶ Methenamine
 - ▶ Cranberry
 - ▶ Trial of prophylactic antibiotics
- ▶ PNA
 - ▶ Trial of mucolytics like guaifenesin or inhalers
 - ▶ Oxygen as tolerated
- ▶ Skin/Soft Tissue
 - ▶ Diuretics
 - ▶ Short-term trials of antibiotics

SMALL GROUP ROLE PLAY!

Case: You have a resident with dementia who is bed-to-chair and says few, often unintelligible, words. She has episodes of lethargy and not eating that have been treated several times this year with antibiotics as presumed UTIs. Her daughter worries about infections but also about too many antibiotics. The day shift nurse reports that the resident cannot give a history and becomes agitated with an exam.

Question: What steps can you take to encourage staff to minimize an inappropriate antibiotic prescription when the resident is lethargic again?

Role play: Have one person act a floor nurse, one as the Infection Preventionist, one as a family member, and one as a reporter.



Introduction to small scale testing: PDSA cycles

Marian Johnson, Session 8

AHRQ ECHO National Nursing Home
COVID-19 Action Network

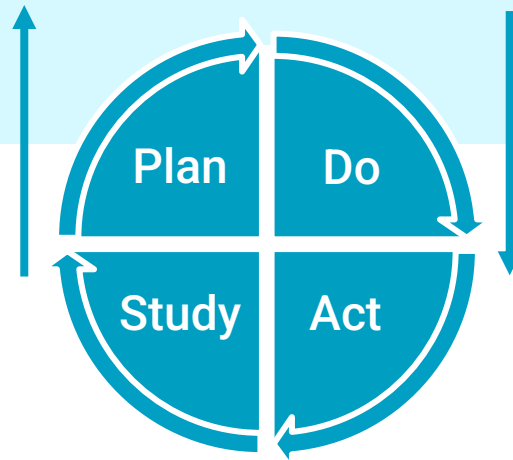


Model for Improvement

What are we trying to accomplish?

How will we know that the change is an improvement?

What changes can we make that will result in improvement?



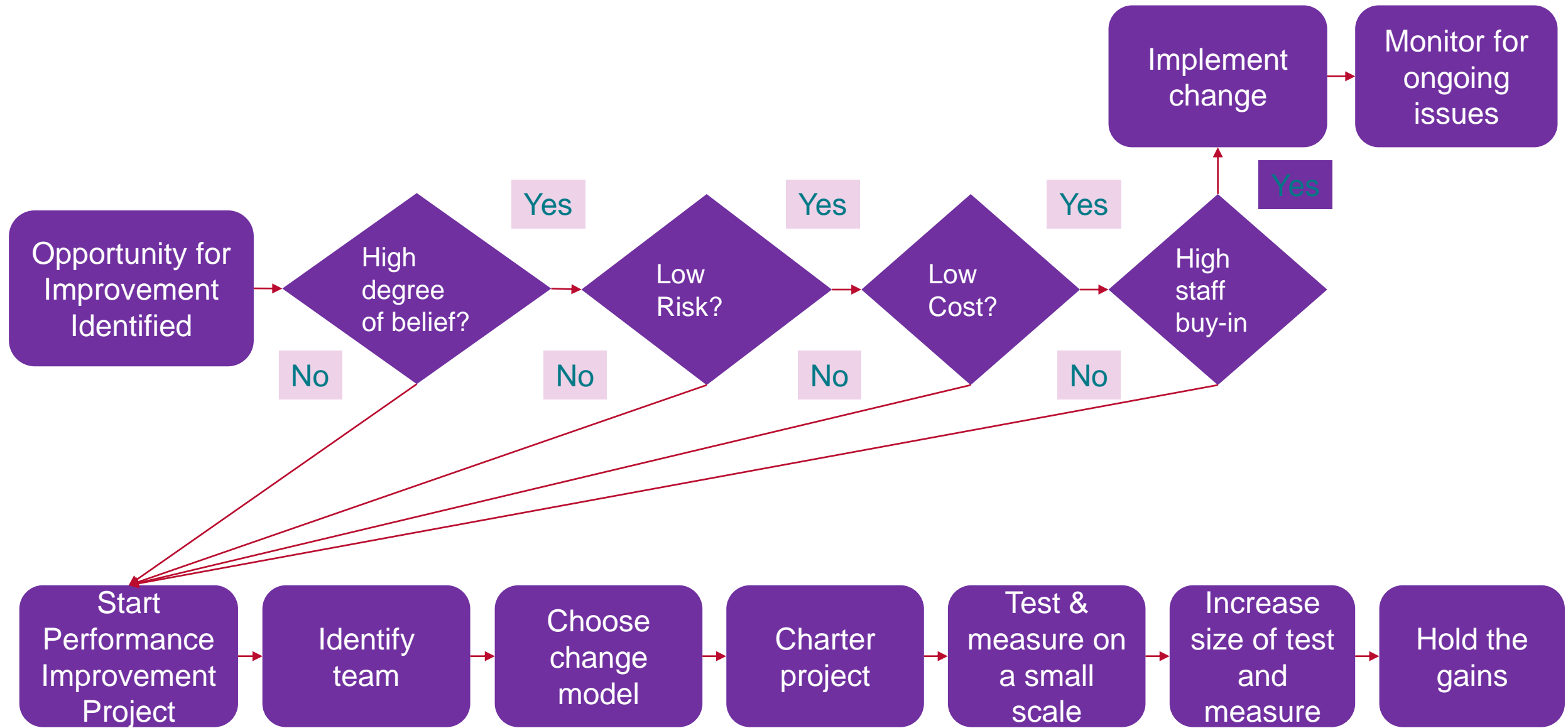
Why Test?

- Increase the belief that the *change will result in improvement*
- *Predict* how much improvement can be expected from the change
- Learn how to *adapt the change* to conditions in the local environment
- *Evaluate* costs and side-effects of the change
- *Minimize resistance* upon implementation

Deciding on the Scale of the Test

Source: The Improvement Guide: A Practical Approach to Enhancing Organizational Performance, Table 7.1, p. 146.

Readiness To test changes		No commitment	Some commitment	Strong commitment
Low degree of belief that change idea will lead to Improvement	Cost of failure large	Very small-scale test	Very small-scale test	Very small-scale test
	Cost of failure small	Very small-scale test	Very small-scale test	Small-scale test
High degree of belief that change idea will lead to Improvement	Cost of failure large	Very small-scale test	Small-scale test	Large-scale test
	Cost of failure small	Small-scale test	Large-scale test	Implement



Testing on a Small Scale

- Develop a plan to simulate the change in some way some way
- Conduct the test in one facility or one office in the organization, or with one customer: “**oneness**” principle
- Scale down size of test (# of patients, location)
- Test with volunteers
- Do not try to get buy-in, consensus, etc.
- Collect useful data during each test

Plan

Test: To reduce skin and soft tissue infections by putting feet up and using barrier creams 2x daily.

1. Plan the test, including a plan for collecting data.

Questions and predictions:

How long will it take to apply barrier cream? How will staff remember to apply cream and put feet up? Will residents be resistant?

Who, what, where, when:

On Monday morning, the all CNAs will discuss plan at morning meeting to apply cream and elevate legs 2x daily for all residents with dementia.

Plan for collecting data:

CNAs will complete a checklist and a short sentence about how it went.

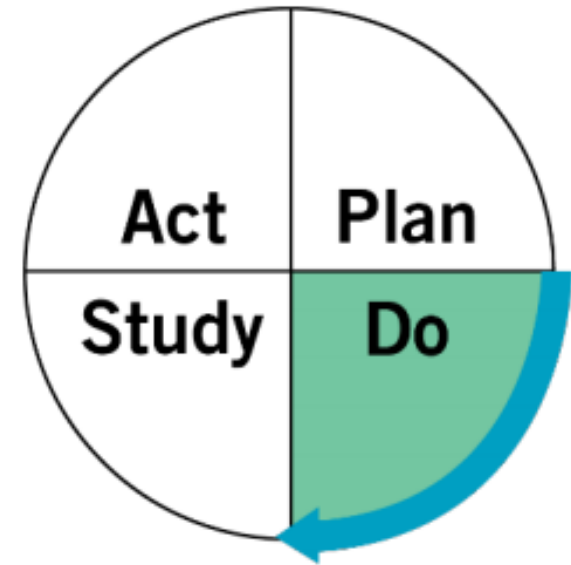


Do

2. Run the test on a small scale.

Describe what happened. What data did you collect? What observations did you make?

On Monday morning, staff huddled and discussed the PDSA plan. CNAs received a short checklist and data collection sheet and agreed to carry out the test and report back at the end of their shift.

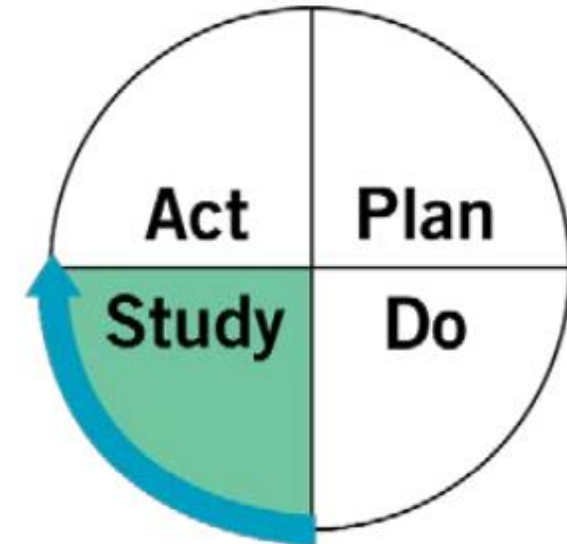


Study

3. Summarize and reflect on what you learned.

How does this compare to your predictions?

Applying the cream and elevating legs took less than 2 minutes for each resident. Residents did not always want to keep their legs raised.



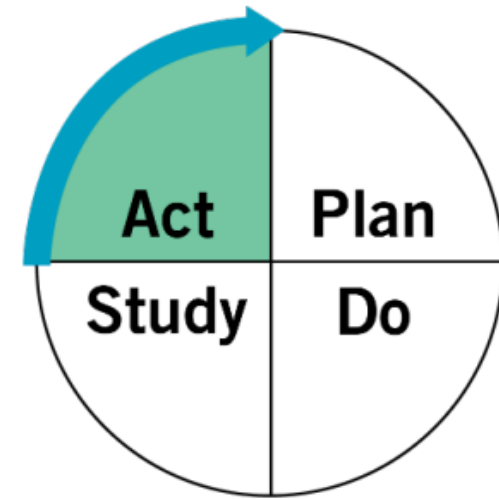
Act

4. Based on what you learned from the test, make a plan for your next step.

Adapt (make modifications and run another test), adopt (test the change on a larger scale), or abandon (don't do another test on this change idea).

Prepare a plan for the next PDSA.

Add to the standard care form and/or add reminders on each door for all residents with dementia.



Case example

Why are staff not doing a better job of encouraging hydration?:

Why? Staff have too many residents assigned so they are rushing.

Why? Staff do not think you can get them to drink.

Why? **Staff believe it takes too long to help them drink when they only have a short time to pass meds, etc.**

Brainstorm ideas to try:

- Educate staff on facts about dehydration in NHs
- Practice sessions to learn how to encourage hydration quickly and safely
- Complete a time study to determine how long it takes to deliver water and how long it takes residents to drink.

PDSA

Plan: Observe and record CNAs on Hall B delivering water to the room of a resident with dementia.

Do: Observe and time 3 CNAs on day shift and 2 CNAs on night shift.

Study: All took 3-5 minutes to deliver water

- 1 CNA had to find the water cart
- 2 CNAs had to find straws

Act: Adapt water delivery process to address challenges identified from observations

- Have the kitchen make up cups of water with straws for residents with dementia.
- Have kitchen staff deliver but CNAs round and assist with hydration.

Breakout Session: Leave in Action

- Try one PDSA this month in your facility and report back next session!
- Let's spend 8 minutes talking about what PDSA you would want to try?

SAVE THE DATES!

1. OUR NEXT SESSION WILL BE ON THURSDAY, JULY 6.
2. THE FALL CONFERENCE WILL BE HELD ON WEDNESDAY, NOVEMBER 15.



Antibiotic Stewardship Conference



11.15.23 | 9 am - 4 pm
The Friday Conference Center
Chapel Hill, NC



**North Carolina
Clinical Antibiotic
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More information at spice.unc.edu/ncclasp/



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