Jefferson Health

Using High Reliability and Rapid Cycle Change to Drive Improvement

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It Starts Here

Quality Improvement Processes

What is Quality improvement:

- Rapid cycles of change
- Small processes to make big change
- Multi-disciplinary teams

What Isn't Quality Improvement:

- Top Down management
- Once and done
- If it can't be replicated, then didn't address route cause

"If you can't describe what you are doing in a process, then you don't know what you are doing"

- Charles Deming

Model for Rapid Cycle Improvement

- What are we trying to accomplish: **AIM**
- How will we know that a change is an improvement: **Current Knowledge**
- What changes can we make that result in improvement: **PDSA cycle**

Quality Improvement Methods in Clinical Medicine, Paul Plsek; Pediatrics 1999;103; 203.

Philosophy for Improvement

- Lean
- Six Sigma
- Baldrige
- HRO
- Servant Leadership

What is a PDSA cycle
Plan, Do, Study, Act

- Plan: a change aimed at improvement is identified (formulating hypothesis)
- Do: see this change tested (collecting data)
- Study: examines the success of the change(analyzing and interpreting the results)
- Act: identifies adaptation and the next steps to inform a new cycle (making inferences to iterate the hypothesis)

Have to know where you are going

- Measurement and analysis leads to performance improvement
- Without data you just have opinion
- “To see the rocks, you must lower the water level” GSAM Leadership

Performance Improvement

- Track data and information—establish your floor
- Review performance and compare to similar but high performing organizations
- Develop a priority agenda
- Continuous improvement and learning to achieve results

Journey to Excellence is long and difficult

- We started our journey about eight years ago with a deeper look into our performance and we realized we have to improve our quality and safety
- Our patients deserve it
- Our mission demands it

Performance Improvement

- Select the measures you wish to improve
- Set the baseline and establish targets for improvement. You should have reasonable goals and stretch goals
- Use a methodology to determine how you will approach the process. We use PDSA which is very simple but effective. There are many different methods.

Performance Improvement

- Cascade the goals
- Enterprise goals
- Hospital goals
- Department goals
- Individual goals
- The goals need to be aligned—easier said then done

Performance Improvement

- Track your data and escalate it up the chain
- Look at the gaps in the data
- Direct attention to those areas that not meeting goals
- May need coaching at individual level
- Continually evaluate and improve

Four Key Habits For Improvement

- Habit of Viewing Clinical Practice as a Process

  complex coordination of care

- Habit for Evidence-based Practice

  bring daily practice of health care in line with knowledge of what works

- Habit for Collaborative Learning

  open and curious

- Habit for Change

  building on past tradition of improvement; not just on the way we always did it

Quality Improvement Methods in Clinical Medicine; Plsek

What is a High Reliable Organization? (HRO)

- High performing organizations characterized by sustaining nearly error free performance for extended periods of time. (Vogus and Singer, 2016)
- An environment of "collective mindfulness," in which all workers look for and report small problems or unsafe conditions before they pose a substantial risk. (Chassin , Loeg, 2013) Need to respond to changes that happen very quickly and have immediate impact to the organization and to individuals.

Examples of complex systems:

hospitals and healthcare, airlines and air traffic controllers, electric power grids, nuclear power plants

Characteristics of HRO

- **Always "Think Failure":** all staff at all levels are aware of how their processes may break down; become preoccupied with failure
- **Reluctance to Simplify:** No excuses for failed outcomes: keep digging for answers; ask the 5 whys
- **Sensitivity to Operations:** All staff at all levels of organization are aware of operations and processes – "something just doesn't feel right."; transparency
- **Defer to Experts**: Leaders listen to the content & process experts
- **Commitment to Resilience**: Never give up; constantly look for actual/potential failures with efficient problem solving skills

(AQHR, 2013)

What is needed in a HRO

- Leadership Commitment to Zero Patient Harm from Board to bedside clinical staff
- Living and breathing principles and practices of a culture of safety throughout the organization, from orientation onward

  i.e., annual safety surveys; stop unsafe care in the moment
- Widespread use of the most effective process improvement tools and methods

  i.e., The Joint Commission's Robust Process Improvement Initiatives,
- Mindful Organizing: Defined as processes that manage fluctuations by developing capabilities to make sense of new data quickly, and to deploy the right response at the right time.

(Vogus, Singer, 2016)

Example of PDSA at Jefferson NJ

Goal: Right antibiotic, for right patient at right time

Physician: order specimen for culture and sensitivity
prescribe antibiotic based on clinical findings

Nurse: review the order medication
review the microbiology culture and sensitivity report prior to administration

Microbiology: calls RN for preliminary culture result

Nurse: calls Physician for notification and potentially antibiotic may require adjustment by Physician

Successes at Jefferson-NJ

- Restricted Antibiotic use
- Greater than 2 antibiotics need ID consult
- Severe Sepsis ID consult
- HA C. Diff ID consult
- Nurse Antibiotic Stewardship Classes
- Increase Nurse interest and knowledge of ABS

Implementation and Three-Year Results of Antimicrobial Stewardship Program in a Three Hospital Community Health System

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Purpose

The purpose of this study was to evaluate the impact of a newly implemented Antimicrobial Stewardship Program (ASP) in a community health system

Background

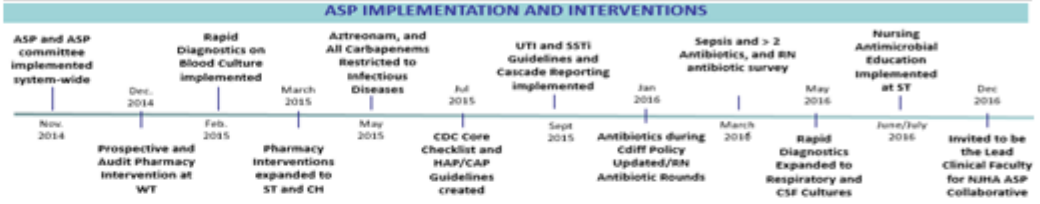
- Jefferson Health – New Jersey (JH-NJ) is a three hospital community health system located in southern New Jersey.
  - Total # licensed beds: 607
    - 196 – Jefferson-Cherry Hill Hospital (CH)
    - 181 – Jefferson-Stratford Hospital (ST)
    - 230 – Jefferson-Washington Township Hospital (WT)
- Primary metrics:
  - 1) Antibiotic Days of Therapy /1000 Patient Days (DOT/1000PD)
  - 2) HO-CDI/1000PD
  - 3) Antimicrobial cost/patient day.

Methods

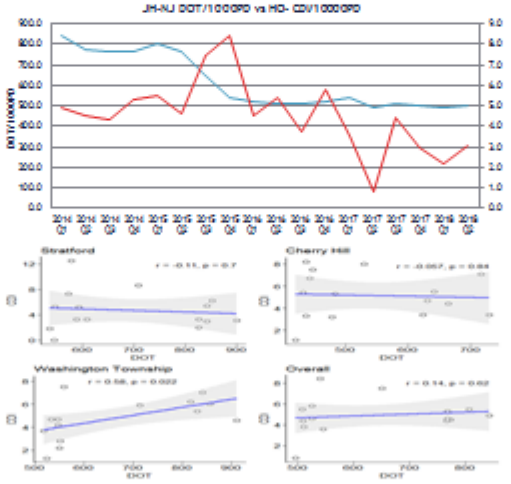
- ASP was implemented in November 2014 and this study evaluated a 3 year snapshot of ASP metrics.
- Multi-disciplinary ASP was implemented at JH-NJ on November 2014 with interventions focused primarily on reducing antimicrobial utilization (AU) and hospital – onset clostridium difficile infection (HO-CDI).

Design of ASP

ASP Timeline



Results



	2014	2015	2016	2017*
Total Medication Expenditure	$16,750,292	$15,248,976	$19,455,963	$13,455,674
Total Antibiotic Expenditure	$1,676, 819	$1,373,259	$1,665,825	$1,169,715
Antibiotic % of total Expenditure	10.01%	9.00%	8.54%	8.67%
Total Patient Days	121,729	117,427	118,094	87,211
Antimicrobial Cost/patient day	$13.76	$12	$14.10	$13.41

*January to September Data

Discussion

- ASP in the three-hospital system employs multi-pronged strategies, including mandatory ID consults for sepsis, severe sepsis, and septic shock; for CDI, and for patients on 3 or more antibiotics; nurse-initiated AS course, as well as pharmacy initiatives, amongst many other interventions.
- Limitations: fluctuations in antibiotic acquisition costs, sample size.
- Future: impact of ASP on HO-CDI over 5 years and sustainability of initiatives.

Conclusion

- There was a decline in DOT/1000 PD, especially in fluoroquinolones and ceftriaxone, HO-CDI, and overall antimicrobial cost/patient day.
- ASP efforts should engage critical roles of ID, pharmacy and nursing, as well as other disciplines.

Disclosure

We have no financial disclosures.

References

- CDC :https://www.cdc.gov/hai/pdfs/toolkits/CDI-Primer-2-2016.pdf
- Drees, M. et al. Open Forum Infect Dis. 2017 Fall; 4(Suppl 1): S1–S2.

The Right Antibiotic Makes a Difference!

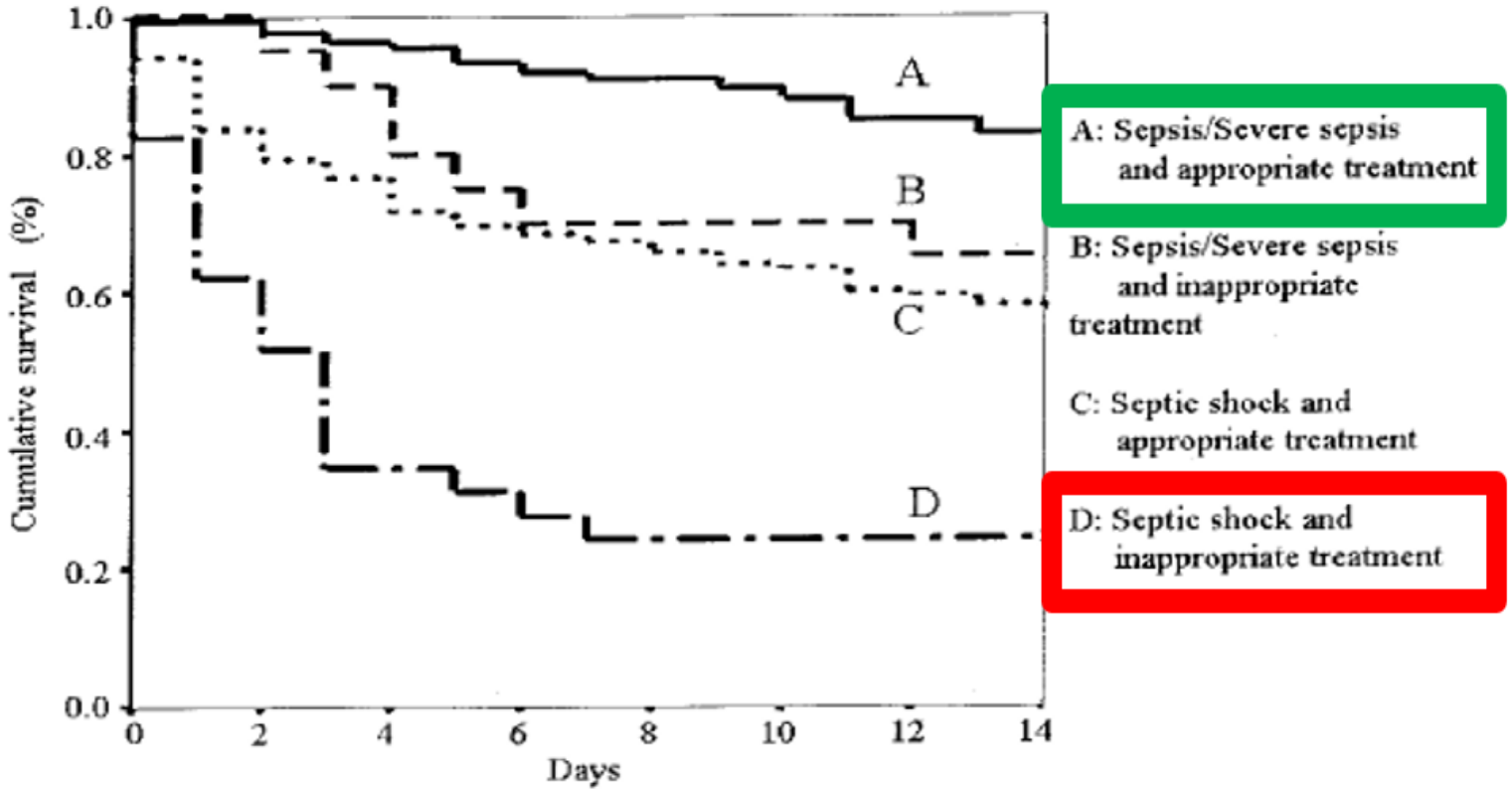
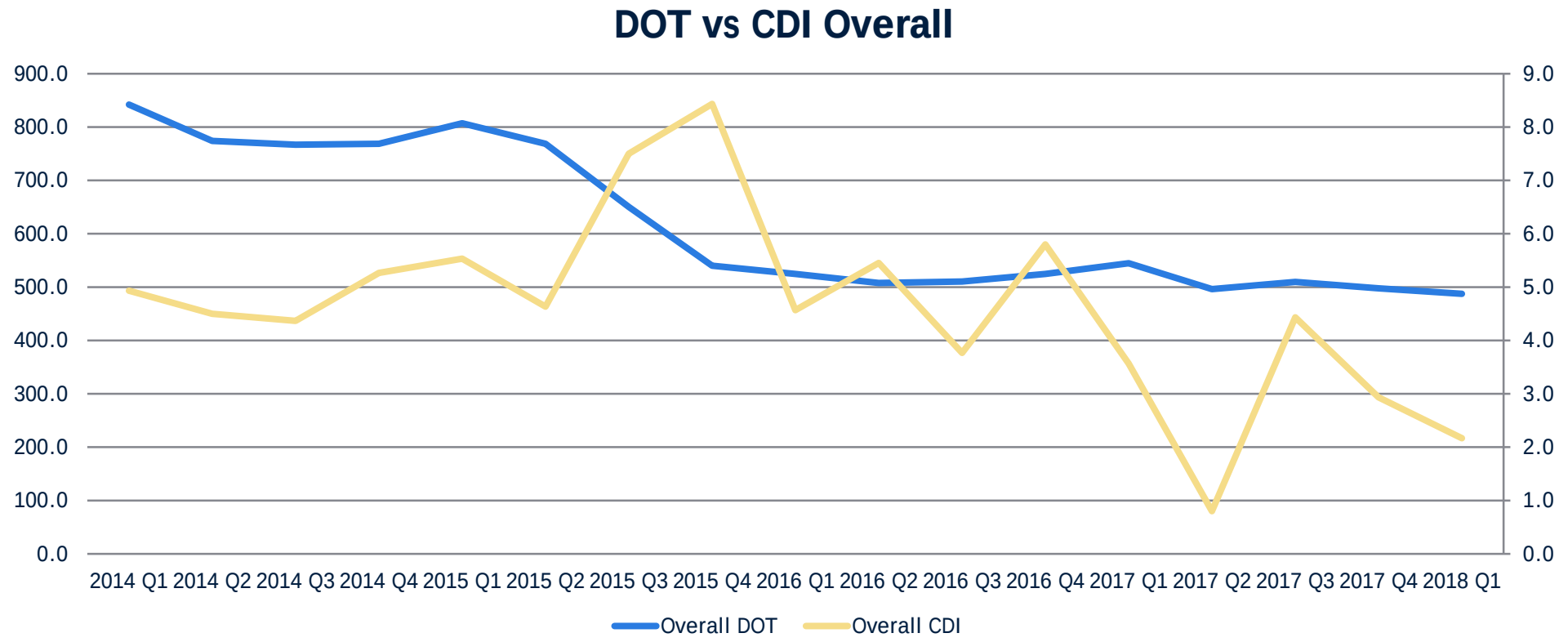


FIGURE 2. Survival rate according to the presence of shock and empiric antibiotic treatment (log-rank test, $p < 0.001$).

CHEST 2003; 123:1615–1624

Jefferson Health New Jersey Data



Conclusion

- Performance excellence requires constant diligence in situational assessment and mitigating risk
- Rapid cycle change is one way of improving quality of care
- You cannot improve what you do not measure
- True culture of safety is always looking for failures to reduce harm
- It is a journey

Thank you

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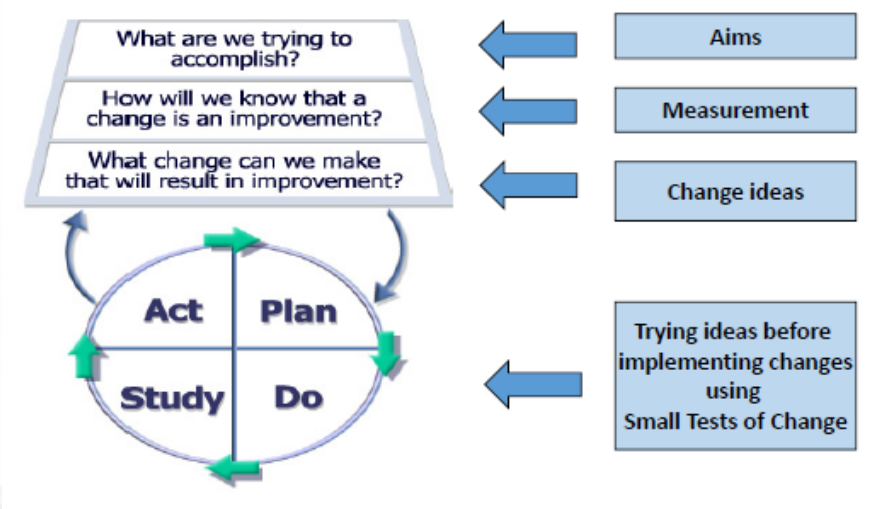
Model for Improvement



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Adapt – Adopt - Abandon

- The basic decision point after each cycle of testing:

Adapt – the test shows improvement is needed

OR the tipping point has not been reached yet

Adopt – the test show the process or tool is

stable and is ready for use

Abandon – the test is a failure OR some aspect of change should be abandoned

Hello!

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Mr. Potato Head: PDSA

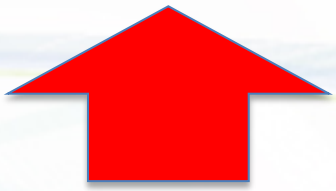
- Mr. Potato Head should be completely disassembled.
- Goal is to put Mr. Potato Head back together as efficiently and accurately as possible
- At your tables choose a person for each role:

1. Master clinician
2. Documenter
3. A timekeeper
4. An accuracy score inspector

Testing the Change

- On your PDSA Sheet identify a plan and a prediction:

	Plan	Do	Study	Act
PDSA Cycle #	What change will you test? What questions are you trying to answer? What do you predict will happen? What will your time and accuracy be?	What did you discover while testing?	What were the results? What was the time and accuracy scores? What did you learn?	Adapt (how?), Adopt, Abandon?



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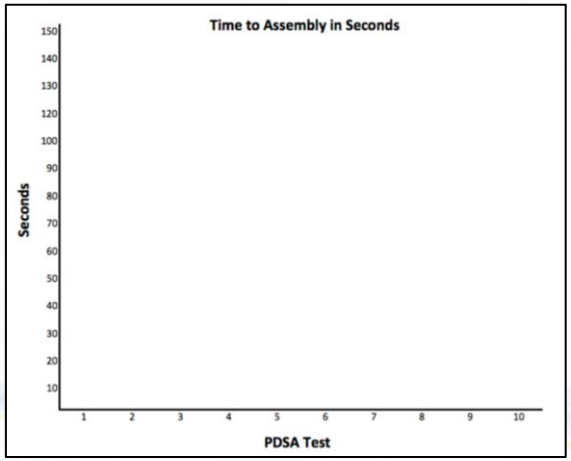
Testing the Change

- Conduct up to 4 cycles of change, each cycle document what you did, the results and how you will act on the results

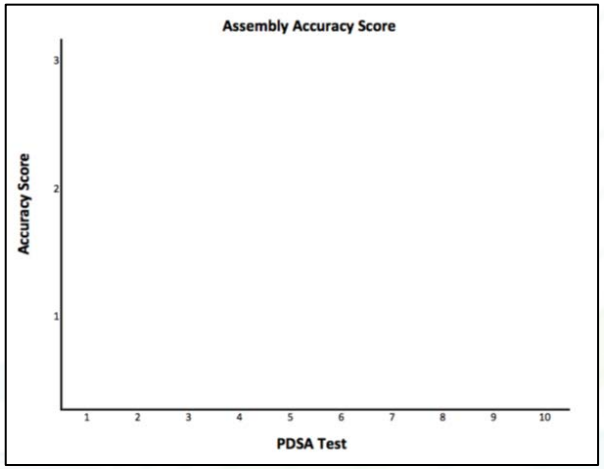


Accuracy Scoring Guide

3 – All pieces are on & positioned correctly

2 – All pieces are on, but one or more is out of place

1 – One or more pieces are not on.



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Area of Improvement Action Plan Report Out

Area of Improvement	Possible Solution 1	Possible Solution 2	Possible Solution 3	Next Steps

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Wrap Up

- Challenges?
- Successes?

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