Learning from the ICU Project
It Takes a TEAM

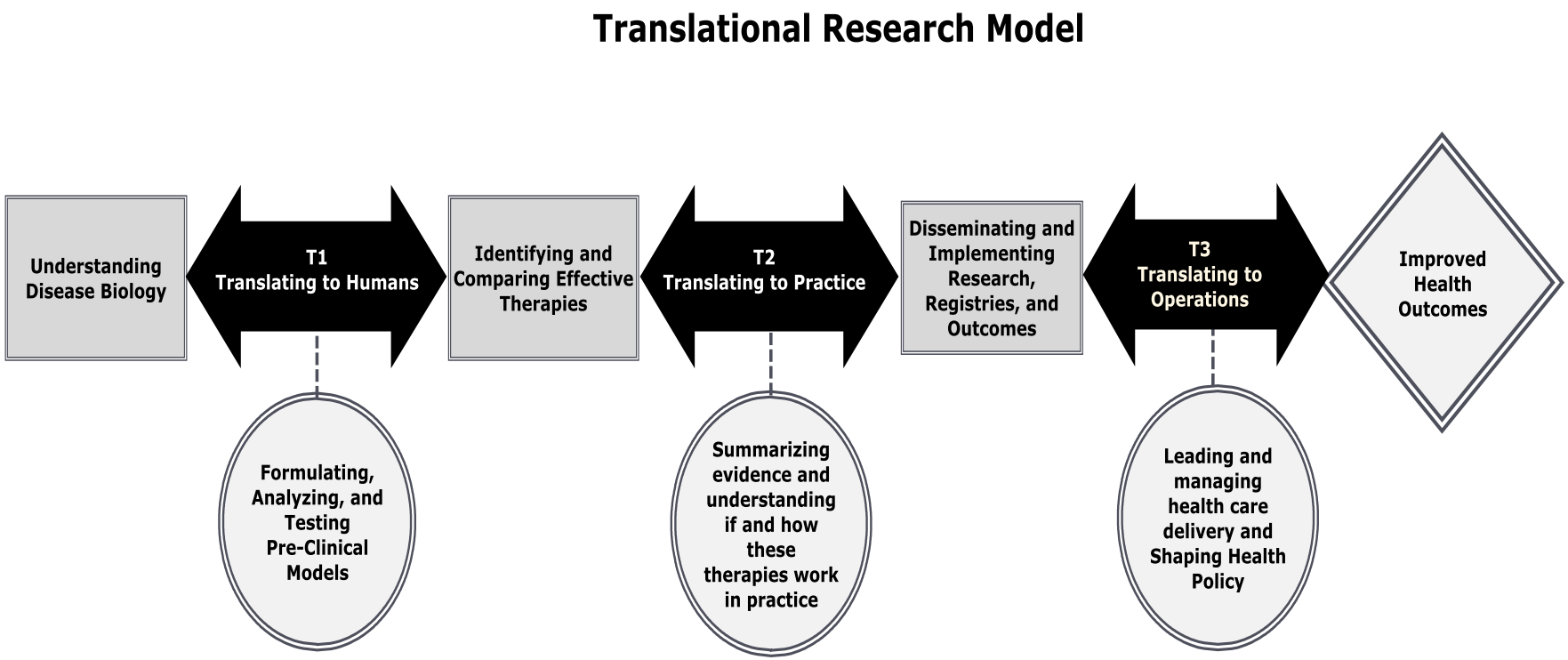
Christine Goeschel RN MPA MPS ScD (c)
Director, Quality and Safety Initiatives

Madrid, Spain
November 2009

Learning Objectives

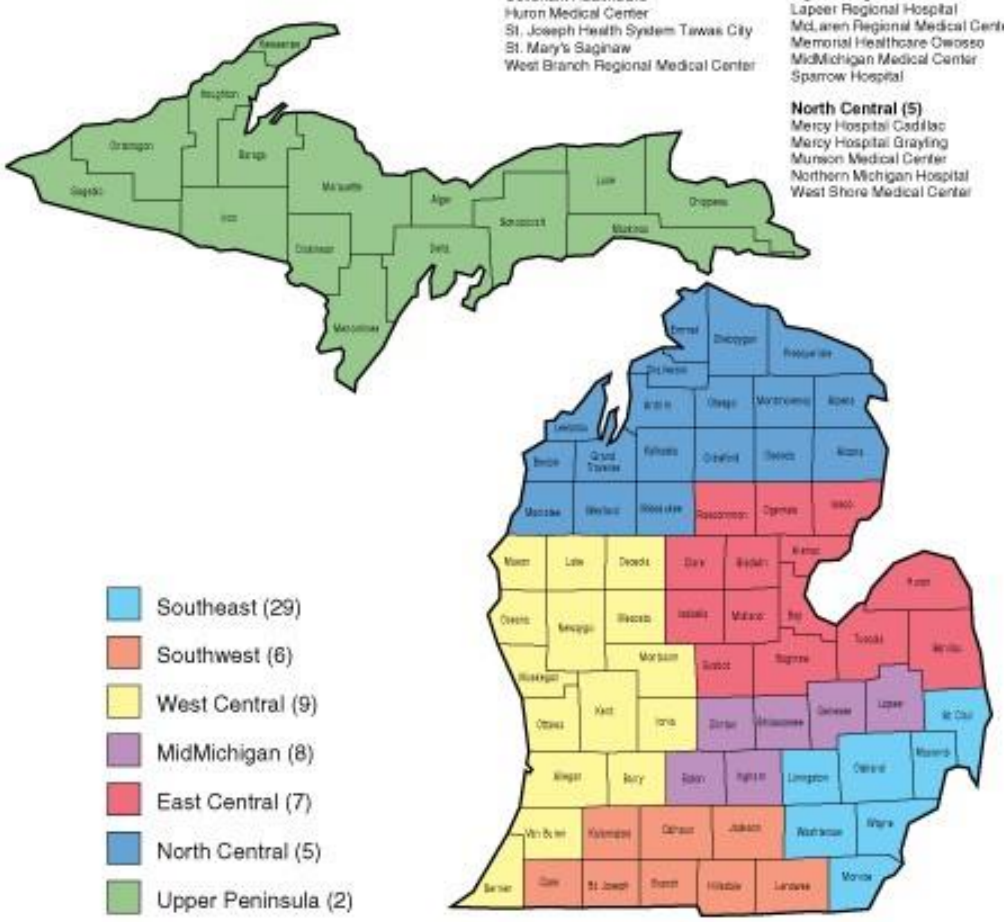
- Review basic components of Hopkins program to reduce CLABSI's in intensive care units
- Increase awareness of initial and sustained results from the program as implemented in Michigan and beyond
- Understand key leadership challenges and how they may be managed

Closing the Gap



Pronovost JAMA 2008

Keystone ICU: Michigan



East Central (7)
Alida E. Lutz VAMC
Bay Regional Medical Center
Covenant HealthCare
Huron Medical Center
St. Joseph Health System Tawas City
St. Mary's Saginaw
West Branch Regional Medical Center

Mid Michigan (8)
Genesys Regional Medical Center
Hurley Medical Center
Ingham Regional Medical Center
Lapeer Regional Hospital
McLaren Regional Medical Center
Memorial Healthcare Owosso
MidMichigan Medical Center
Sparrow Hospital

North Central (5)
Mercy Hospital Cadillac
Mercy Hospital Grayling
Munson Medical Center
Northern Michigan Hospital
West Shore Medical Center

Southeast (29)
Beaumont Hospital-Royal Oak
Beaumont Hospital-Troy
Botsford General Hospital
Chelsea Community Hospital
Crittenton Hospital Medical Center
Garden City Hospital
Harper University Hospital
Henry Ford Health System
Henry Ford Wyandotte Hospital
Huron Valley Sinai Hospital
Mercy Memorial Hospital (Monroe)
Mt. Clemens General Hospital
Oakwood Annapolis Hospital
Oakwood Dearborn
Oakwood Heritage Hospital
Oakwood South Shore Hospital
POH Medical Center
Port Huron Hospital
Providence Hospital
St. John Detroit Riverview Hospital
St. John Hospital & Medical Center
St. John Macomb Hospital
St. John Oakland Hospital
St. John River District Hospital
St. Joseph Mercy Hospital (Ann Arbor)
St. Joseph Mercy Oakland
St. Joseph's Mercy of Macomb
St. Mary Mercy Livonia
University of Michigan Health System

Southwest (6)
Battle Creek Health System
Borgess Medical Center
Bronson Methodist Hospital
Community Health Center of Branch County
Three Rivers Area Hospital
W.A. Foote Health System

Upper Peninsula (2)
Marquette General Hospital
War Memorial Hospital

West Central (9)
Gerber Memorial Health Services
Hackley Hospital
Holland Community Hospital
Lakeland Hospital
Mercy General Health Partners
Metropolitan Hospital
Spectrum Health
St. Mary's Mercy Medical Center
United Memorial Health Center

Out-of-state (5)
Mercy Medical Center - Des Moines (IA)
Mercy Medical Center (Sioux City, IA)
Mercy Medical Center Clinton (IA)
St. Agnes Medical Center (Fresno, CA)
St. Joseph Regional Medical Center (South Bend, IN)

Measure

Have We Created a Safe Culture? How Do We know We Learn from Mistakes?

CUSP
Comprehensive Unit based Safety program

1. Educate staff on science of safety
2. Identify defects
3. Assign executive to adopt unit
4. Learn from one defect per quarter
5. Implement teamwork tools

How Often Do we Harm? Are Patient Outcomes Improving?

(TRiP)
Translating Evidence Into Practice

1. Summarize the evidence in a checklist
2. Identify local barriers to implementation
3. Measure performance
4. Ensure all patients get the evidence

IMPROVE

Intervention to Eliminate CLABSI

Evidence-based Behaviors to Prevent CLABSI

- Remove Unnecessary Lines
- Wash Hands Prior to Procedure
- Use Maximal Barrier Precautions
- Clean Skin with Chlorhexidine
- Avoid Femoral Lines

MMWR. 2002;51:RR-10

Identify Barriers

- Ask staff about knowledge
  - Use team check up tool
- Ask staff what is difficult about doing these behaviors
- Walk the process of staff placing a central line
- Observe staff placing central line

Ideas for ensuring patients receive the interventions: the 4Es

- Engage: stories, show baseline data
- Educate staff on evidence
- Execute
  - Standardize: Create line cart
  - Create independent checks: Create BSI checklist
  - Empower nurses to stop takeoff
  - Learn from mistakes: review infections
- Evaluate
  - Feedback performance
  - View infections as defects

Pre CUSP Work

- Create an ICU team
  - Nurse, physician administrator, others
  - Assign a team leader
- Measure Culture in the ICU
  (discuss with hospital association leader)
- Work with hospital quality leader to have a senior executive assigned to ICU team

Comprehensive Unit-based Safety Program (CUSP)

An Intervention to Learn from Mistakes and Improve Safety Culture

1. Educate staff on science of safety
   http://www.safercare.net
2. Identify defects
3. Assign executive to adopt unit
4. Learn from one defect per quarter
5. Implement teamwork tools

Pronovost J, *Patient Safety*, 2005

Learning from Mistakes

- What happened?
- Why did it happen (system lenses)
- What could you do to reduce risk
- How to you know risk was reduced
  - Create policy / process / procedure
  - Ensure staff know policy
  - Evaluate if policy is used correctly

Pronovost 2005 JCJQI

Teamwork Tools

- Call list
- Daily Goals
- AM briefing
- Shadowing
- Culture check up
- TEAMSTepps

Pronovost JCC, JCJQI

Safety Score Card
Keystone ICU Safety Dashboard

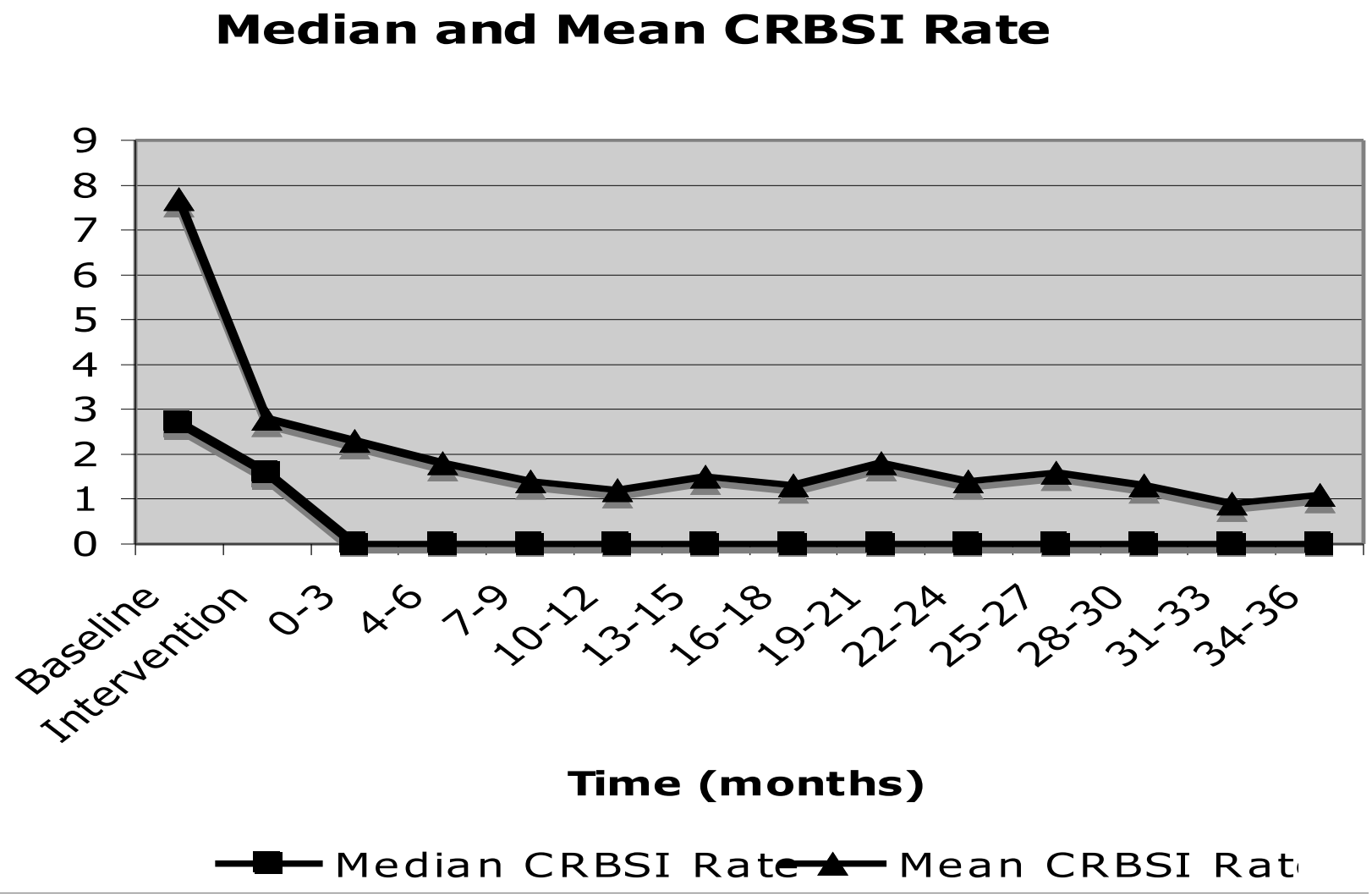
	2004	2006
How often did we harm (BSI) *(median)*	2.8/1000	0
How often do we do what we should	66%	95%
How often did we learn from mistakes*	100s	100s
Have we created a safe culture **% Needs improvement in**		
Safety climate*	84%	43%
Teamwork climate*	82%	42%

CUSP is an intervention to improve these*

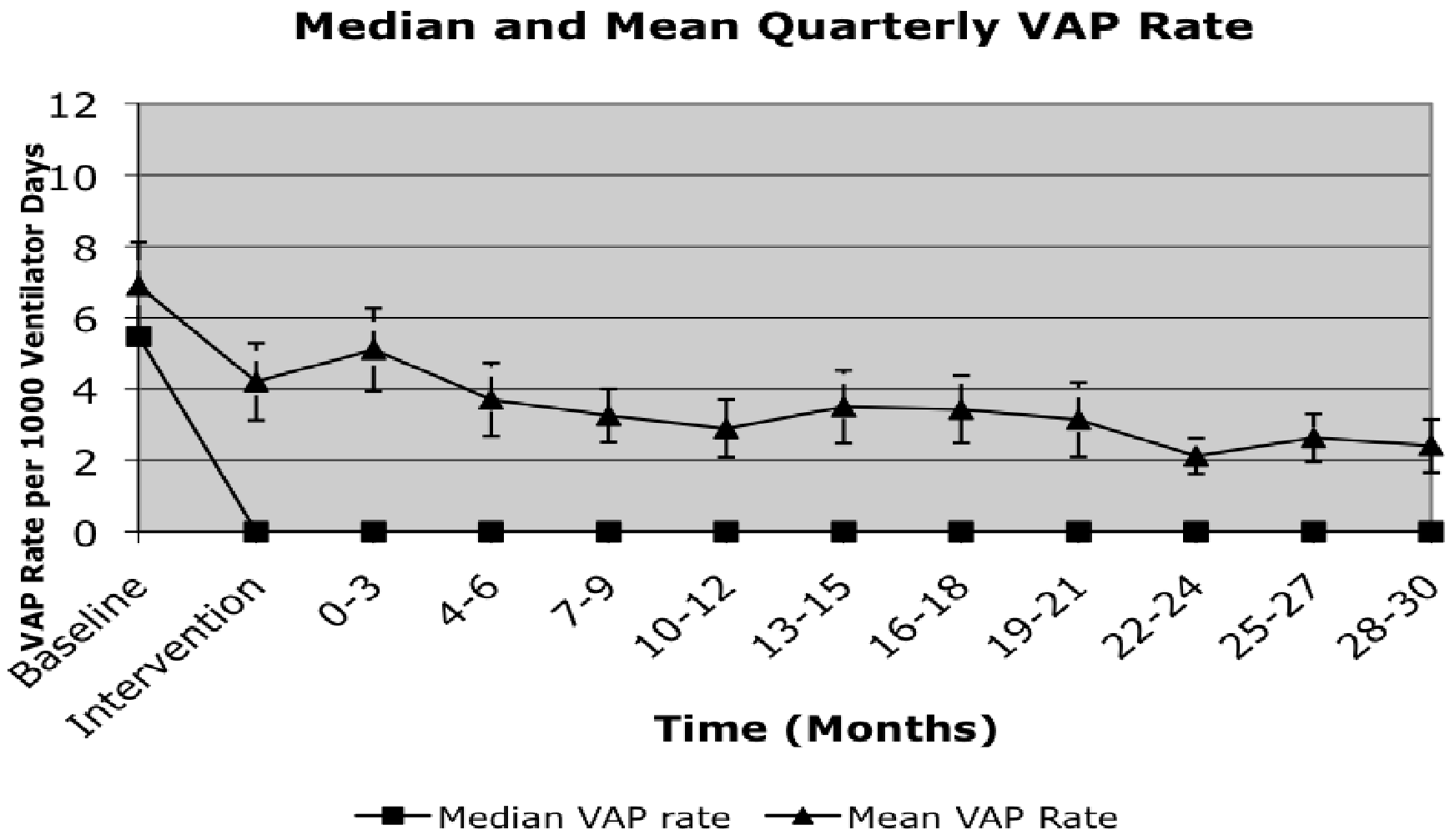
CRBSI Rate Summary Data

Study Period	No. of ICUs	No. of Infections	Catheter Days	Infection Rate		IRR (95 % CI)
		Median (Q1, Q3)	Median (Q1, Q3)	Median (Q1, Q3)	Mean (SD)	
Baseline	55	2 (1, 3)	551 (220, 1091)	2.7 (0.6, 4.8)	7.7 (28.9)	Reference
During Implementation	96	1 (0, 2)	447 (237, 710)	1.6 (0, 4.4)	2.8 (4.0)	0.81 (0.61, 1.08)
After Implementation						
Initial Evaluation Period						
0-3 mo	95	0 (0, 2)	436 (246, 771)	0 (0, 3.0)	2.3 (4.0)	0.68 (0.53, 0.88)
4-6 mo	95	0 (0, 1)	460 (228, 743)	0 (0, 2.7)	1.8 (3.2)	0.62 (0.42, 0.90)
7-9 mo	96	0 (0, 1)	467 (252, 725)	0 (0, 2.0)	1.4 (2.8)	0.52 (0.38, 0.71)
10-12 mo	95	0 (0, 1)	431 (249, 743)	0 (0, 2.1)	1.2 (1.9)	0.48 (0.33, 0.70)
13-15 mo	95	0 (0, 1)	404 (158, 695)	0 (0, 1.9)	1.5 (4.0)	0.48 (0.31, 0.76)
16-18 mo	95	0 (0, 1)	367 (177, 682)	0 (0, 2.4)	1.3 (2.4)	0.38 (0.26, 0.56)
Sustainability Period						
19-21 mo	89	0 (0, 1)	399 (230, 680)	0 (0, 1.4)	1.8 (5.2)	0.34 (0.23, 0.50)
22-24 mo	89	0 (0, 1)	450 (254, 817)	0 (0, 1.6)	1.4 (3.5)	0.33 (0.23, 0.48)
25-27 mo	88	0 (0, 1)	481 (266, 769)	0 (0, 2.1)	1.6 (3.9)	0.44 (0.34, 0.57)
28-30 mo	90	0 (0, 1)	479 (253, 846)	0 (0, 1.6)	1.3 (3.7)	0.40 (0.30, 0.53)
31-33 mo	88	0 (0, 1)	495 (265, 779)	0 (0, 1.1)	0.9 (1.9)	0.31 (0.21, 0.45)
34-36 mo	85	0 (0, 1)	456 (235, 787)	0 (0, 1.2)	1.1 (2.7)	0.34 (0.24, 0.48)

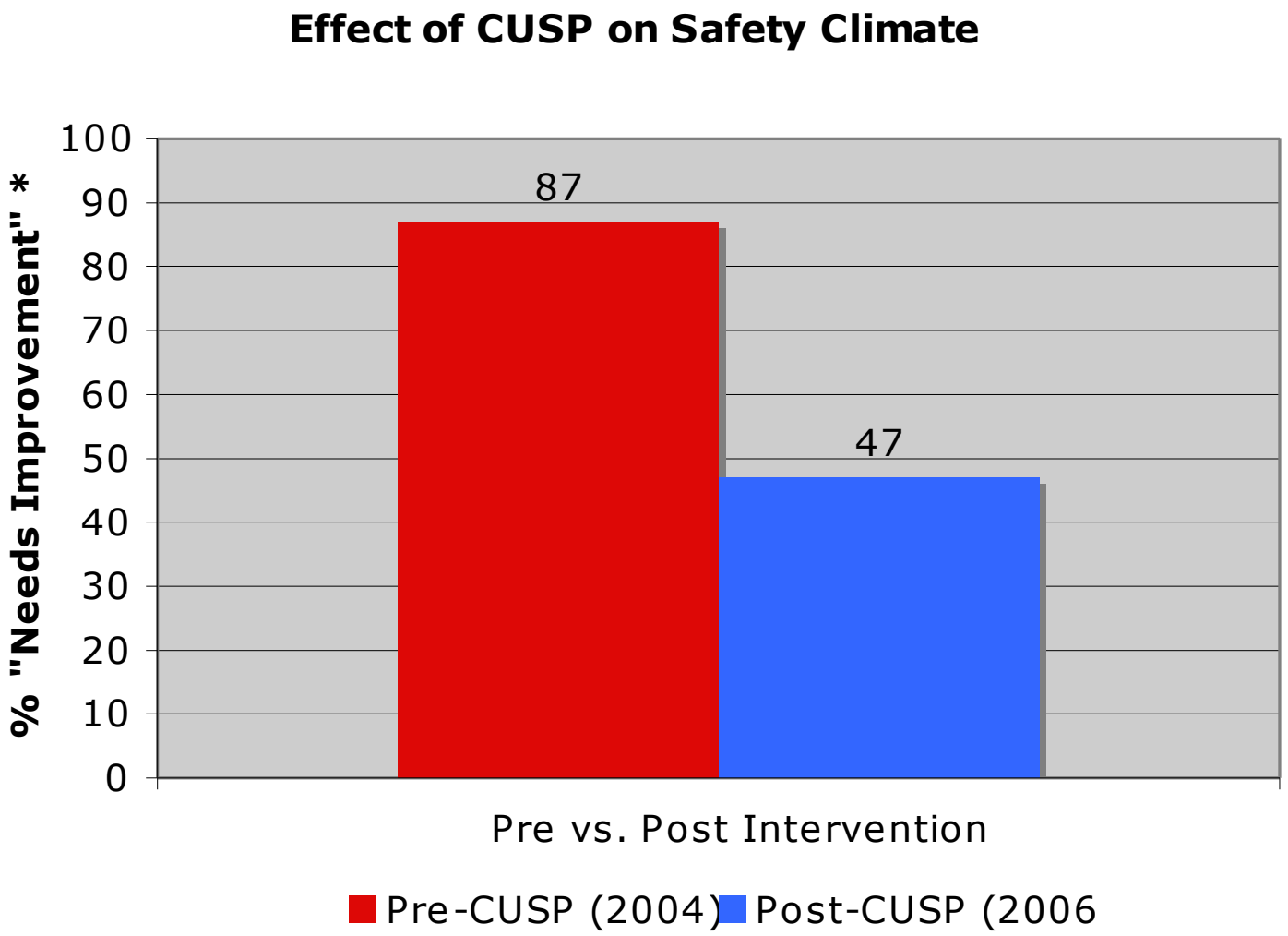
CRBSI Rate Over Time



VAP Rate Over Time



Michigan ICU Safety Climate Improvement

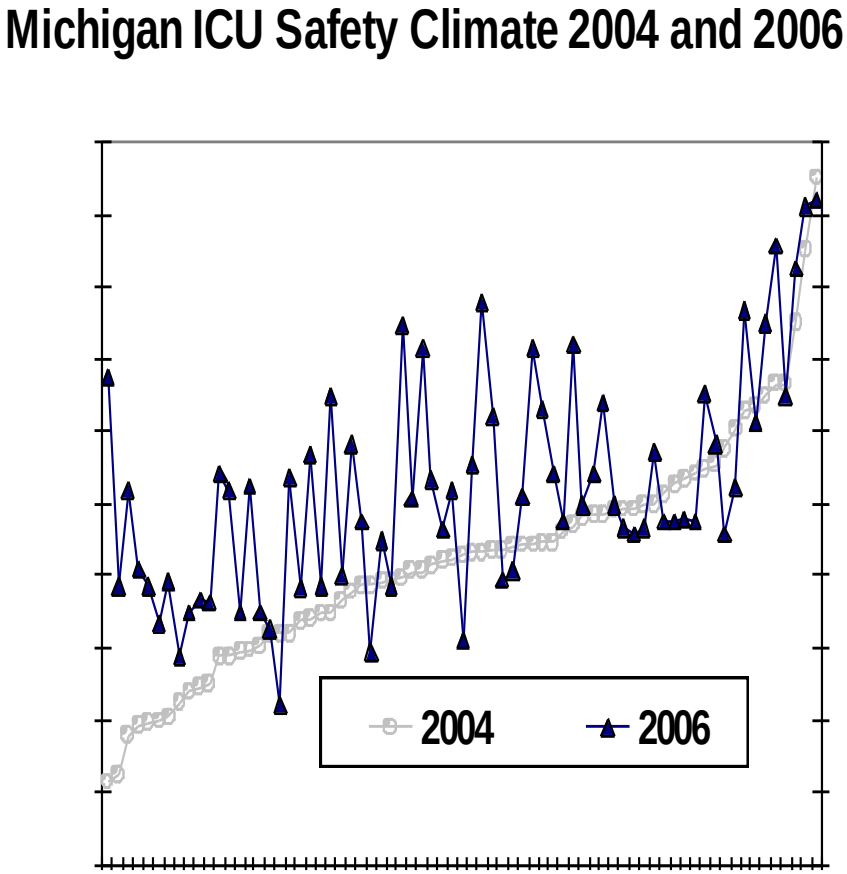


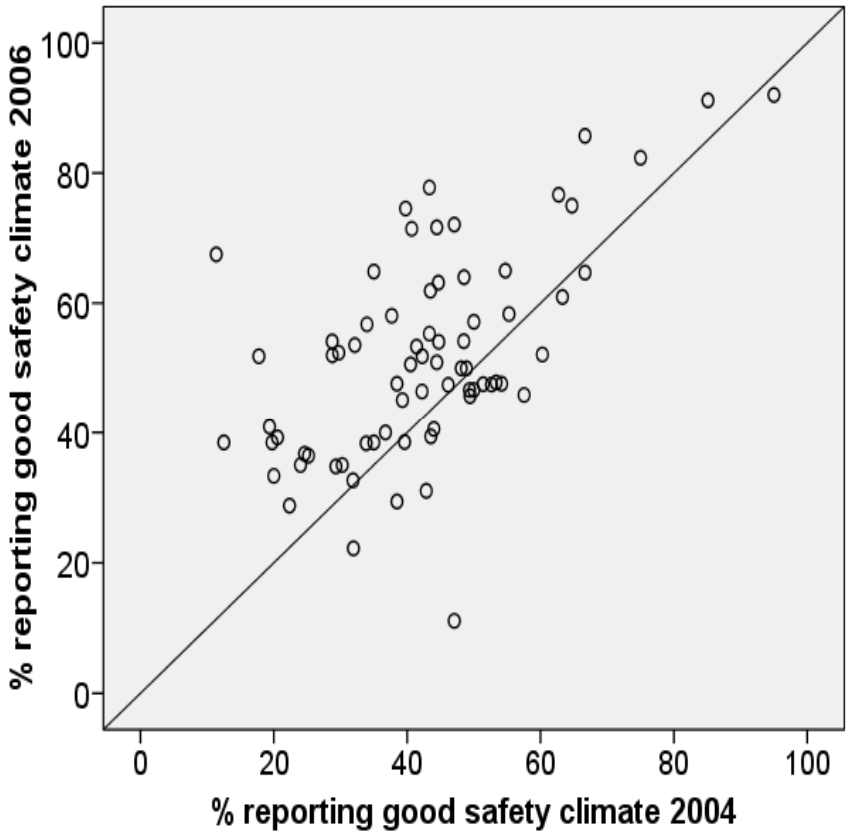
* “Needs Improvement” - Safety Climate Score <60%

Michigan ICU Safety Climate Survey Item Agreement

	% Mean Agreement 2004	% Mean Agreement 2006
I would feel safe being treated here as a patient.	73	76
Medical errors are handled appropriately in this clinical area.	69	73
I receive appropriate feedback about my performance.	55	64
In this clinical area, it is difficult to discuss errors.	19	18
I am encouraged by my colleagues to report any patient safety concerns I may have.	73	80
The culture in this clinical area makes it easy to learn from the errors of others.	52	60
I know the proper channels to direct questions regarding patient safety in this clinical area.	81	86

Michigan ICU Safety Climate Score Distributions





Leading Change

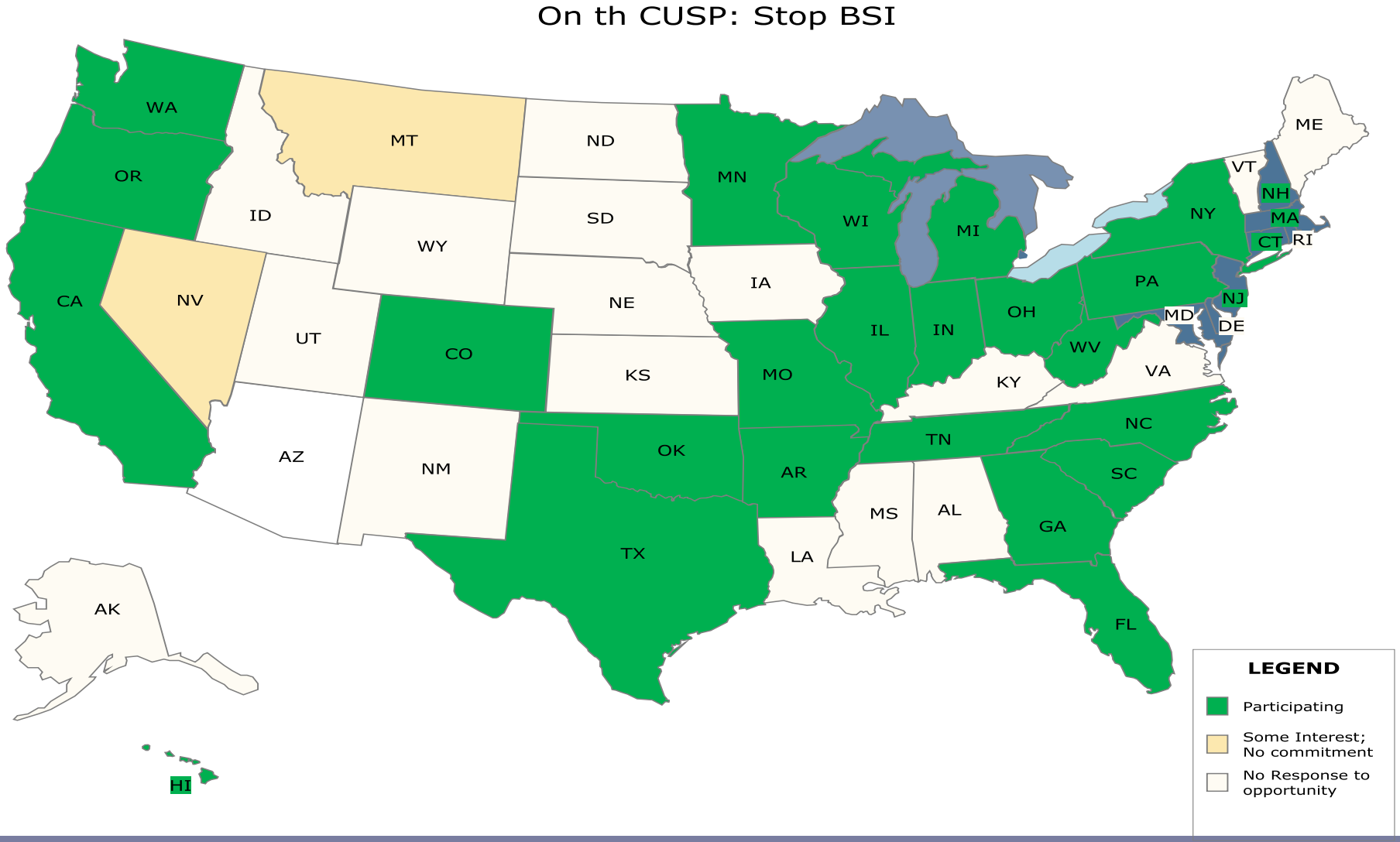
- Technical Work
  - Work for which there is known science
  - Evidence and Measures
- Adaptive work
  - Work for which there is no science
  - Requires changes in values attitudes belief
- Need to get both technical and adaptive work right
- Adaptive work is usually why programs falter

Strategies for Adaptive Work

- Clarify what hill you will climb and invite others to determine how to climb it
- Surface real and perceived loss- the flip
- Create Containing Vessel to communicate- monsters in the bathroom
- Tune into WIFM- Pepperoni Pizza
- Keep the temp pressure in the pressure cooker just right: not too hot and not too cold
- Value the dissenter

Heifetz: leadership without easy answers

On the CUSP: STOP BSI



On the CUSP: STOP-BSI

Goals: Technical and Adaptive

- To work to eliminate central line associated blood stream infections (CLABSI); state mean < 1/1000 catheter days, median 0
- To improve safety culture by 50%
- To learn from one defect per month

Improving ICU Culture by Creating Trust

- Caring
  - Keep Patients your North Star
  - Preventable harm is not tenable
  - Tell your own Josie Story
- Competent
  - Learn from mistakes and implement teamwork tools (CUSP)

Stages of Support

Strategies to Engage Executives

- Project: 4 Es
  - Review evidence, impact, opportunity
- Role Clarity
  - Part of CUSP Team
- Explain what is needed
  - CEO /Senior Leader Checklist

Strategies for Physician Engagement

- Management level
  - Assign physician leader for project
    - ICU director, chief medical officer or senior physician
  - Obtain support from hospital for this persons time
  - Create Compact
    - Clearly define what is expected of them
    - Review performance regularly

Strategies for Physician Engagement

- Staff level
  - Communicate prior to start of project
    - No surprises
    - who, what, when, where, how
  - Listen to those who resist
  - Create opportunities to talk about the project with physicians (eliminate decoding errors)
    - M and M, grand rounds, quality meetings
  - Identify and overcome barriers
    - Clinician, Intervention, System
  - Reward physician and nurse leaders
    - News letters or presentations to senior leaders

Nurse Engagement

- Keep Patient as north star
- Decision to speak up
  - Must feel competent
  - Must feel it is safe
  - Must feel it will work
- Policy level (code of conduct)
  - Helpful if enforced

Manage Communication

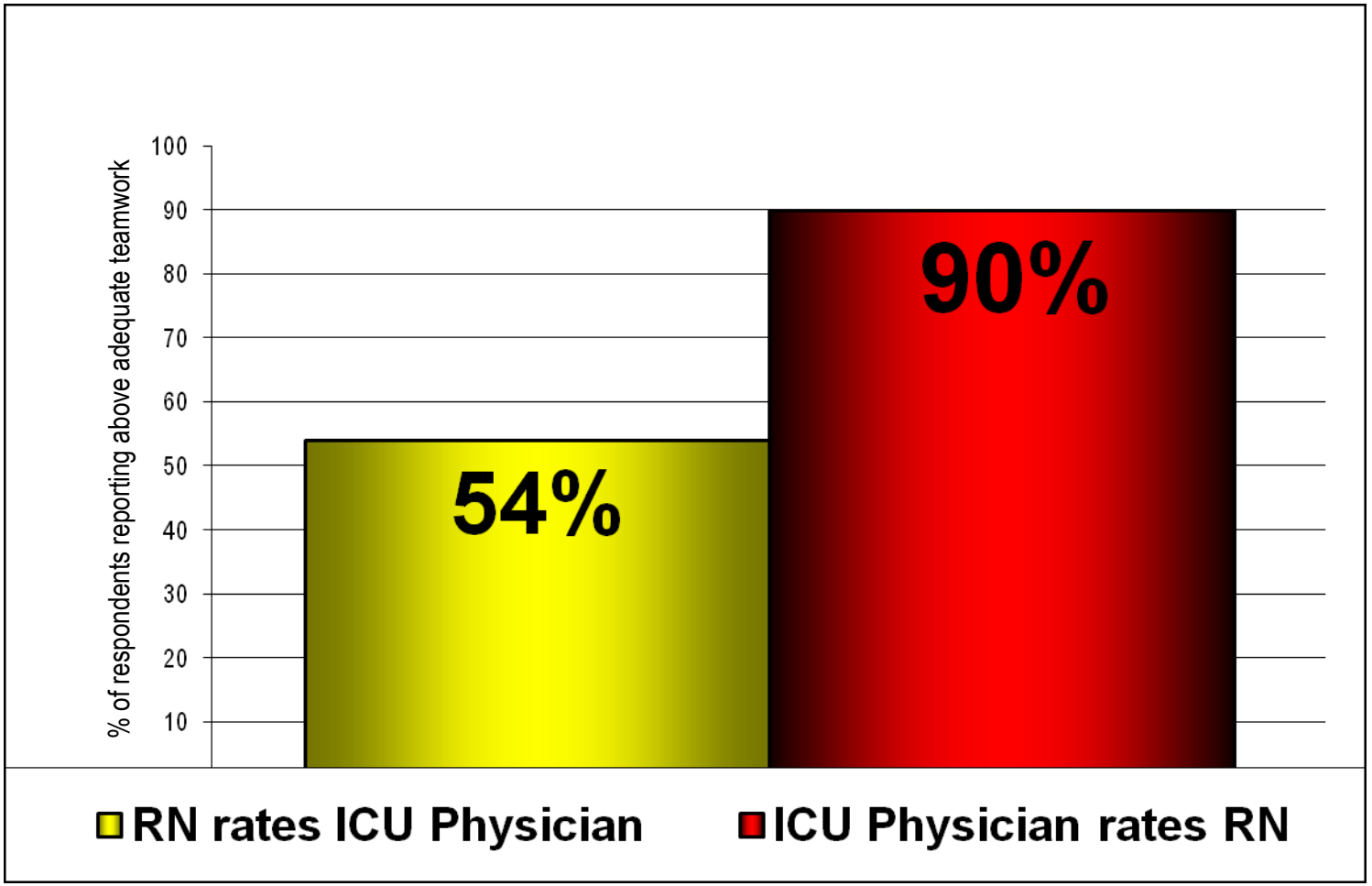
- At each step or meeting clarify
  - Message
  - Who needs to know
- Assume that all staff have patient as north star
- Remind staff they are participating in something greater - ohana

Patient Focus: Implementing Daily Goals

Importance of Daily Goals

- Communication defects common
- People and organizations who create explicit goals and provide feedback toward goals achieve more than those who do not
- Rounds generally patient rather than provider centered
- Discussion on rounds is divergent (brainstorming) rather than convergent (explicit plan)

ICU Physicians and ICU RN Collaboration

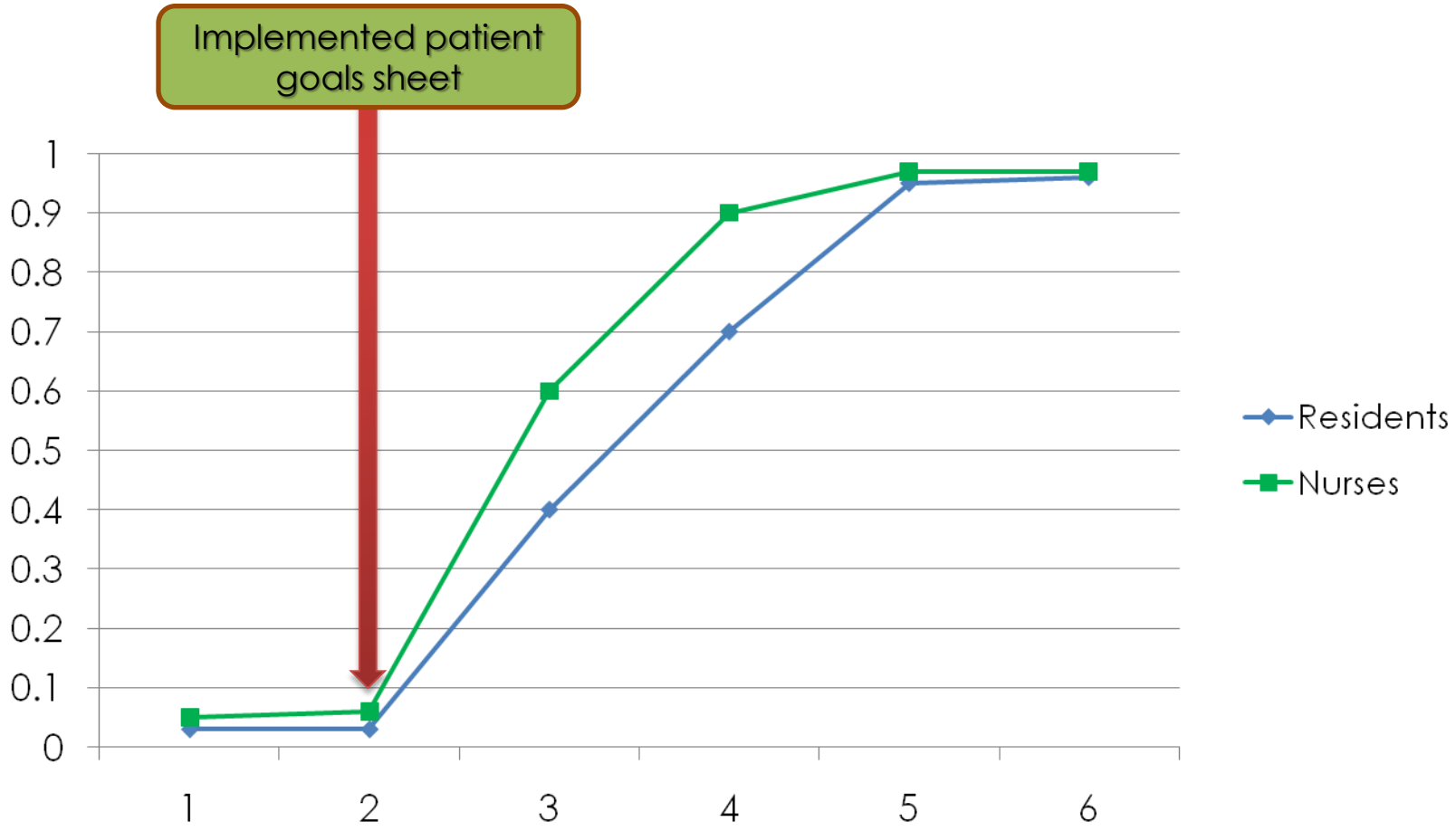


ICUSRS Data

Communication Errors

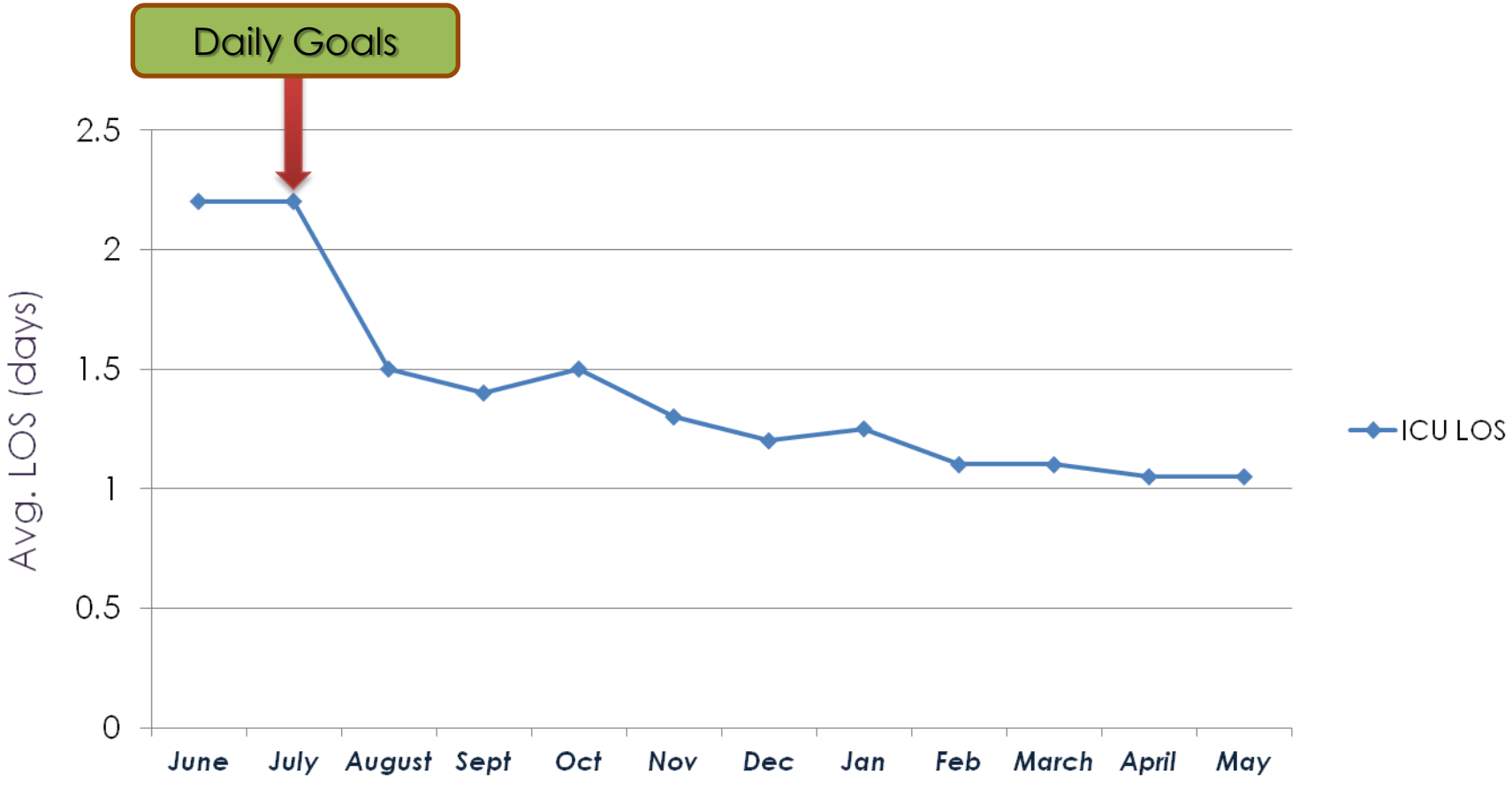
- Communication errors most common contributing factor for all types of sentinel events reported to The Joint Commission
- Over 80% of staff responding to the question, "how will the next patient be harmed" list communication failure

Percent Understanding Patient Care Goals



Pronovost daily goals

Impact on ICU Length of Stay



654 New Admissions: 7 Million Additional Revenue

Action Plan: Physician Engagement

- Ensure you have physician leader for this project
- Create Compact for this role
- Create structured opportunities for communication
- Develop plan for communication
- Listen to physicians to surface and mitigate barriers

Action Plan: Nurse Engagment

- Meet with ICU team
- Discuss what policies can be put in place to enhance nurse empowerment
- Create strategy to involve beside nurses in this project use the 4Es
- Discuss what tools you can use to enhance nurse empowerment

Action Plan: Daily Goals

- Present the idea to your ICU team
- Draft a daily goals form
- Obtain support from one or more ICU physicians
- Monitor number of time physicians are paged (WIFM..”Whats in it for me?”
  - Daily goals reduced pages by 80%
- Pilot test on one patient
- Expand

Lessons to Consider

- Listen
- Offer don't Dictate
- Acknowledge, don't judge
- Look for common ground
- Consider what you can contribute, not what you can change

Courage

"Never doubt that a small group of thoughtful committed citizens can change the world. Indeed, it's the only thing that ever has."

Margaret Meade

References

- Pronovost PJ, Berenholtz S, Dorman T, Lipsett PA, Simmonds T, Haraden C. Improving communication in the ICU using daily goals. J Crit Care 2003;18(2):71-5.

- Schwartz JM, Nelson KL, Saliski M, Hunt EA, Pronovost PJ. The daily goals communication sheet: A simple and novel tool for improved communication and care. Jt Comm J Qual Patient Saf 2008;34(10):608-13.

- Dayton E, Henriksen K. Teamwork and Communication: Communication Failure: Basic Components, Contributing Factors, and the Call for Structure. Jt Comm J Qual Patient Saf 2007;33(1):34-47.