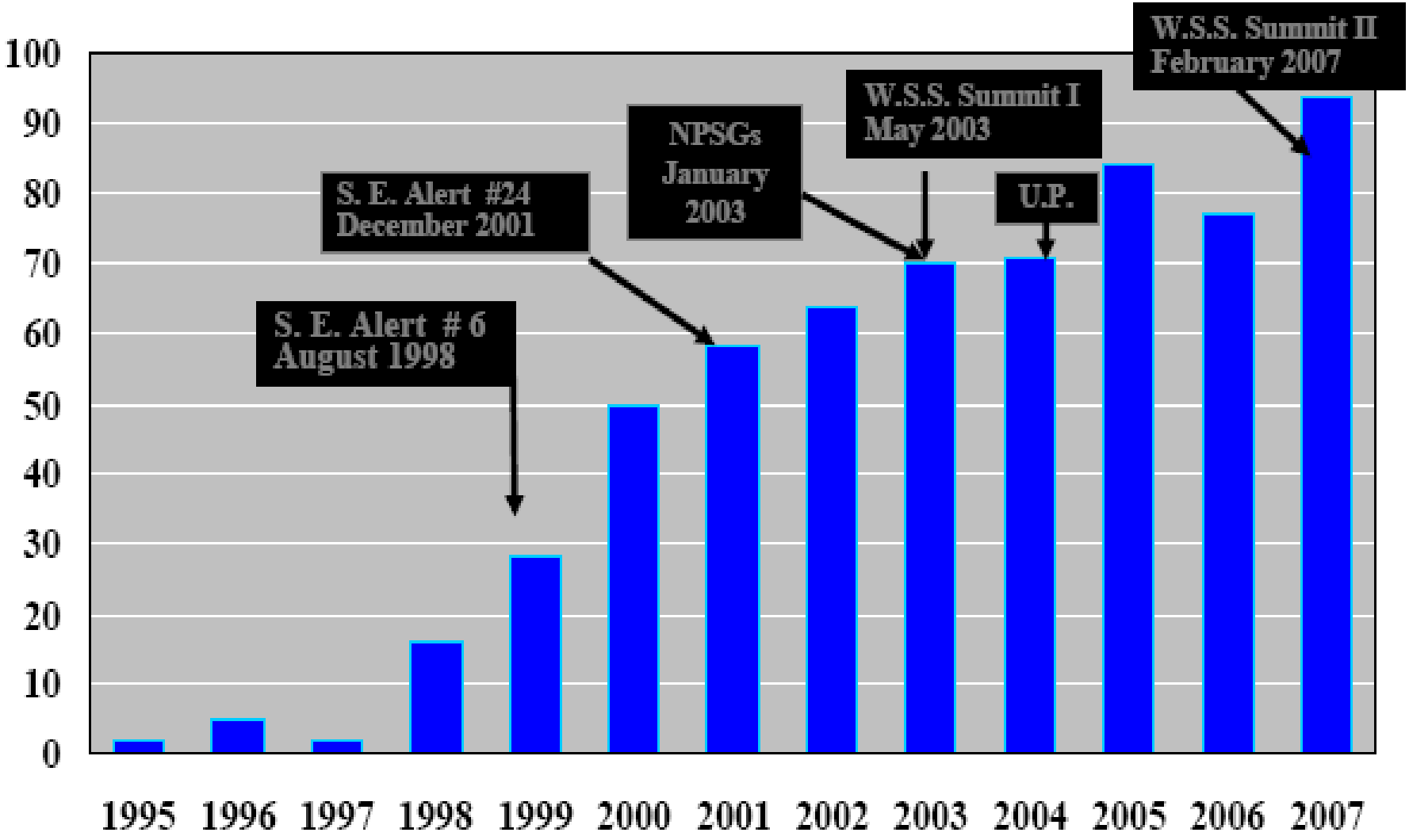
Overview of STOP-BSI Program
Peter Pronovost, MD, PhD

Wrong-site Surgeries Reviewed by Year

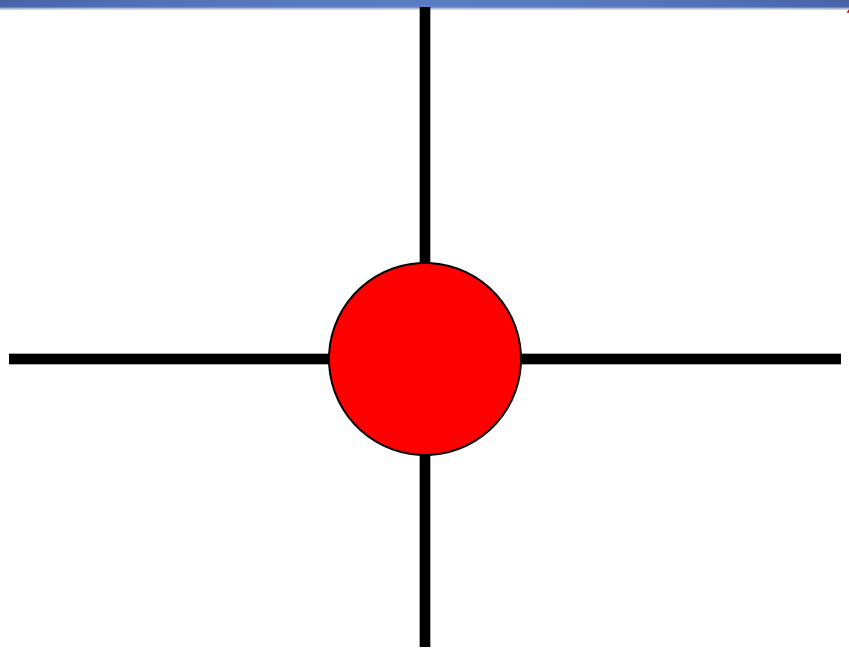


Please answer each question with a score of 1 to 5. 1 is below average, 3 is average and 5 is above average

- How smart am I
- How hard do I work
- How kind am I
- How tall am I
- How good is the quality of care we provide

Regulatory

X



Scientifically Sound

Feasible

Local Wisdom/Market

Goals

- To work to eliminate central line associated blood stream infections (CLABSI); state mean < 1/10000 catheter days, median 0
- To improve safety culture
- To learn from one defect per month

Project Organization

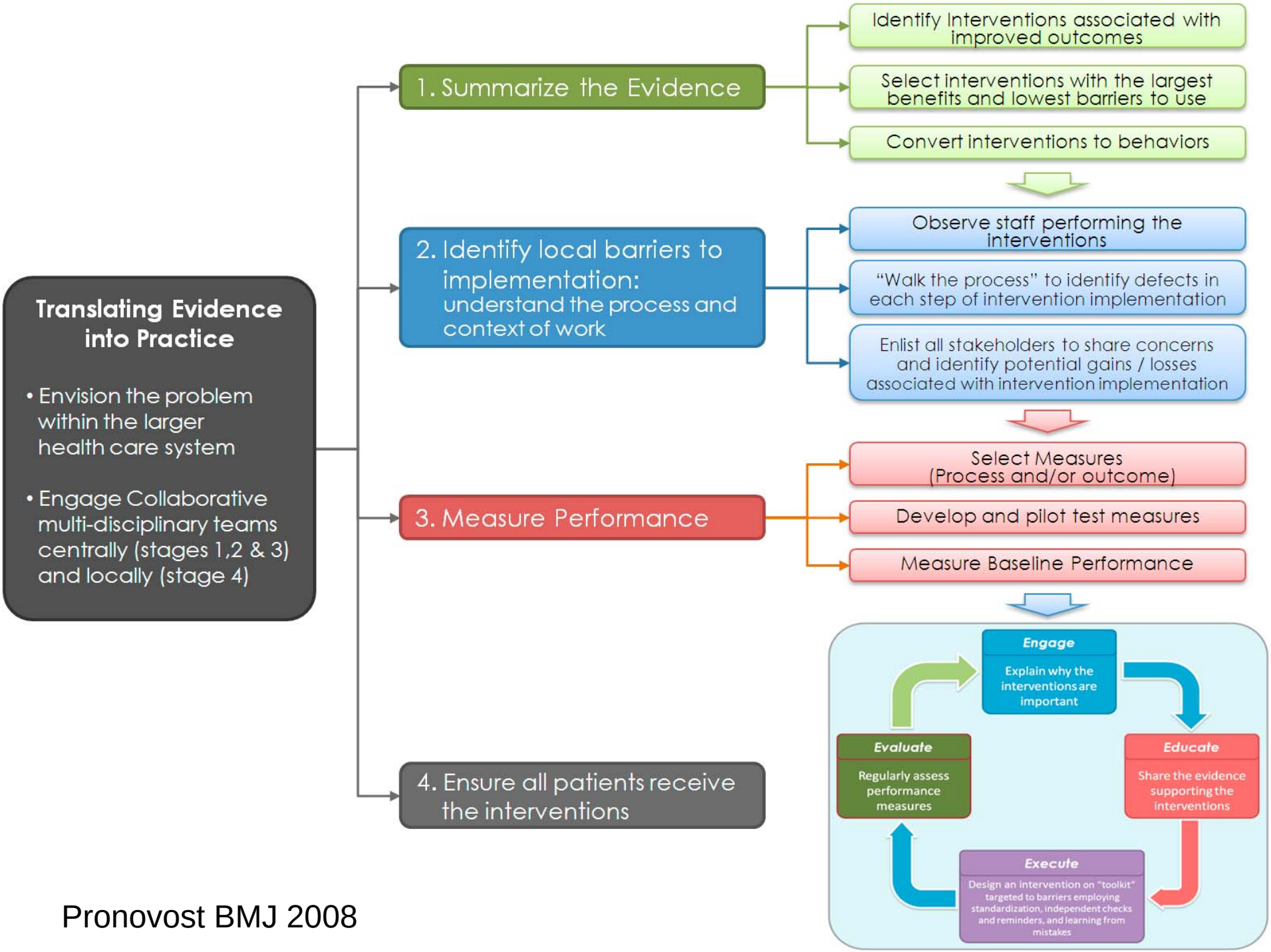
- Partner with HRET, MHA, JHU, State Hospital Associations
- State wide effort coordinated by Hospital Association
- Use collaborative model
  (2 face to face meetings, monthly calls)
- Standardized data collection tools and evidence
- Local ICU modification of how to implement interventions

Improving Care

CUSP	Translating Evidence Into Practice (TRiP)
1. Educate staff on science of safety	1. Summarize the evidence in a checklist
2. Identify defects	2. Identify local barriers to implementation
3. Assign executive to adopt unit	3. Measure performance
4. Learn from one defect per quarter	4. Ensure all patients get the evidence
5. Implement teamwork tools	

www.safercare.net

Intervention to Eliminate CLABSI



Pronovost BMJ 2008

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

Ensure Patients Reliably Receive Evidence

	Senior leaders	Team leaders	Staff
Engage	*How does this make the world a better place?*		
Educate	*What do we need to do?*		
Execute	*What keeps me from doing it?* *How can we do it with my resources and culture?*		
Evaluate	*How do we know we improved safety?*		

Pronovost: Health Services Research 2006

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

Can We Do this

Safety Score Card
Keystone ICU Safety Dashboard

	2004	2006
How often did we harm (BSI)	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 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)

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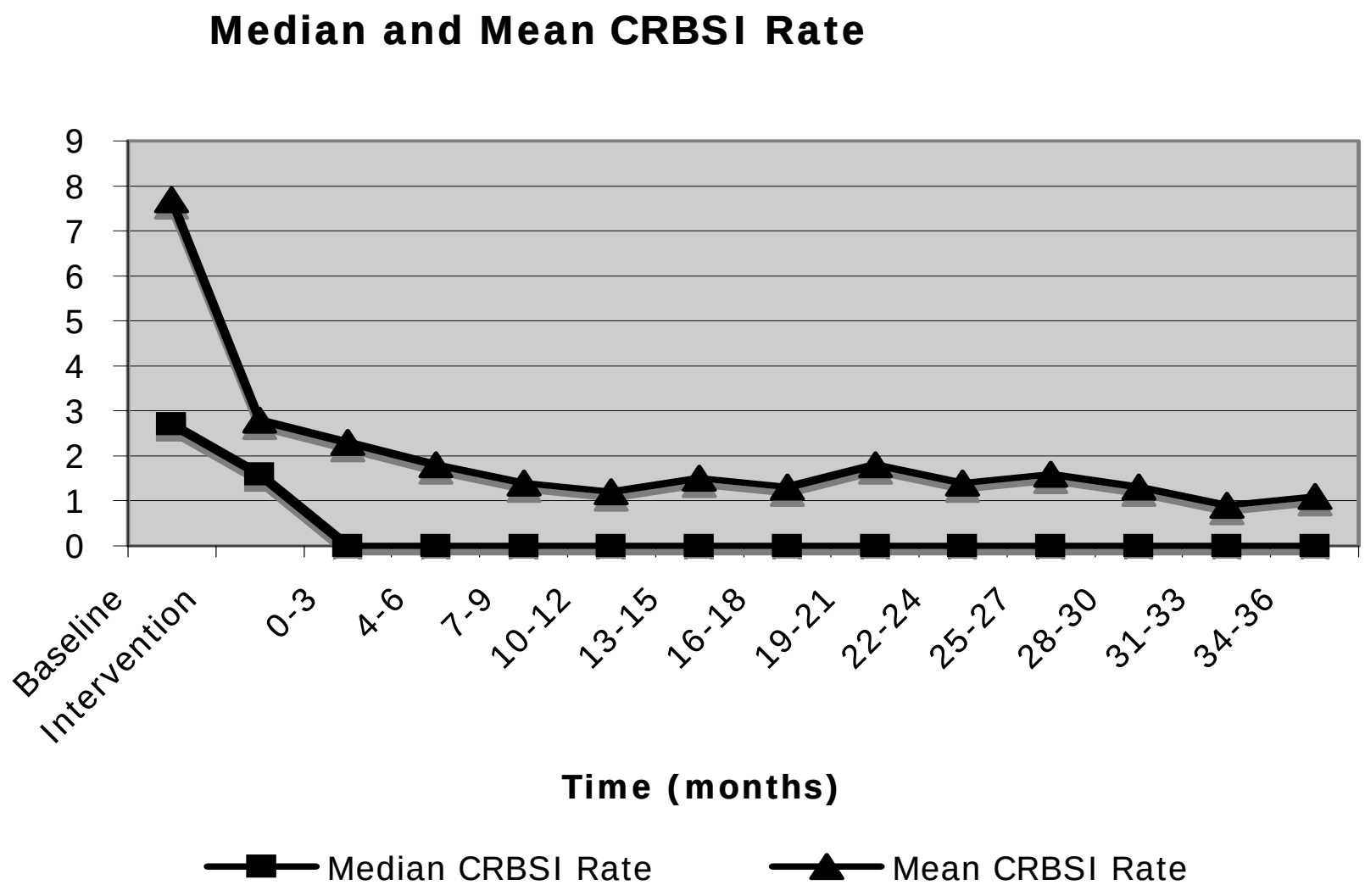
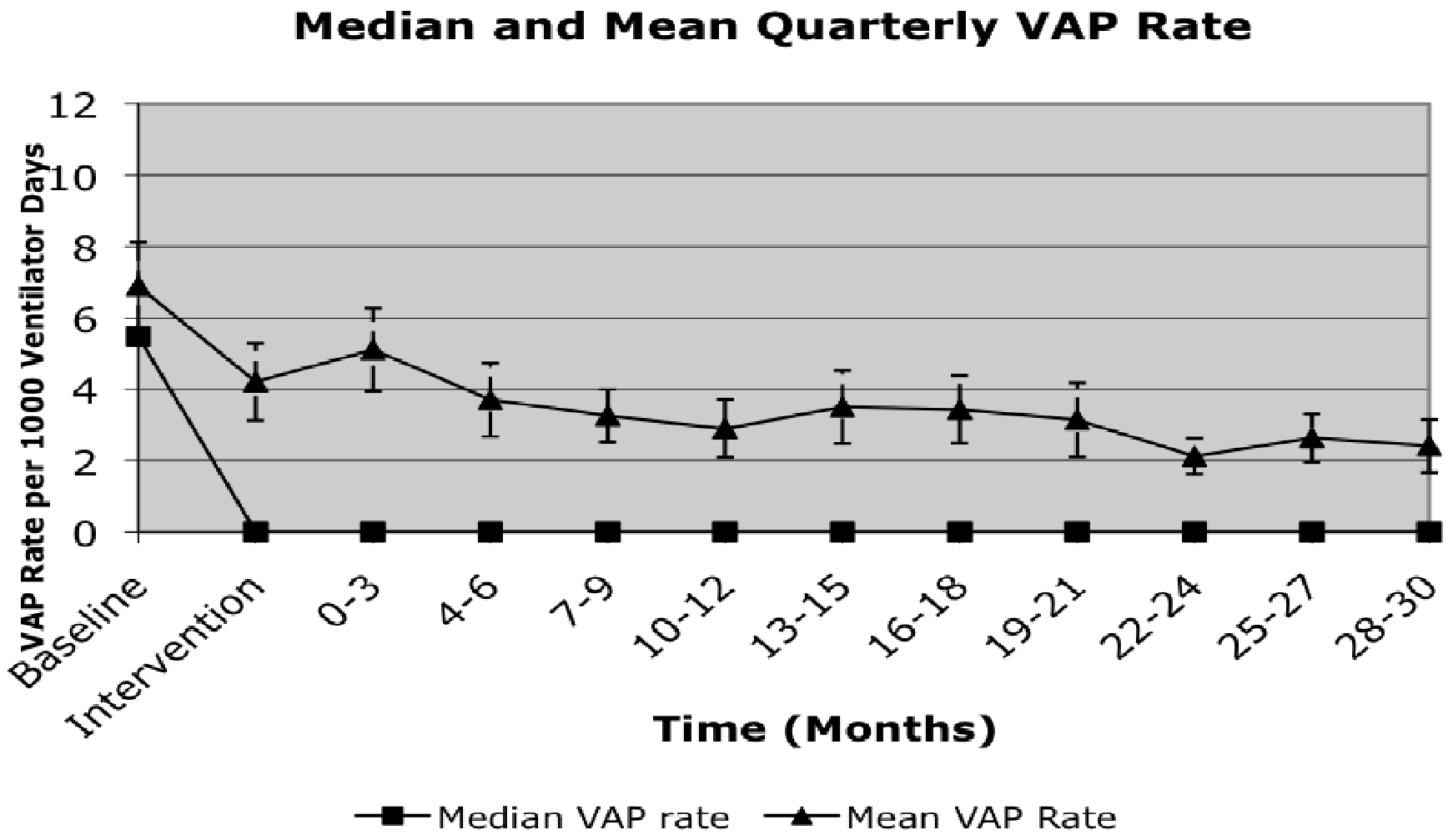
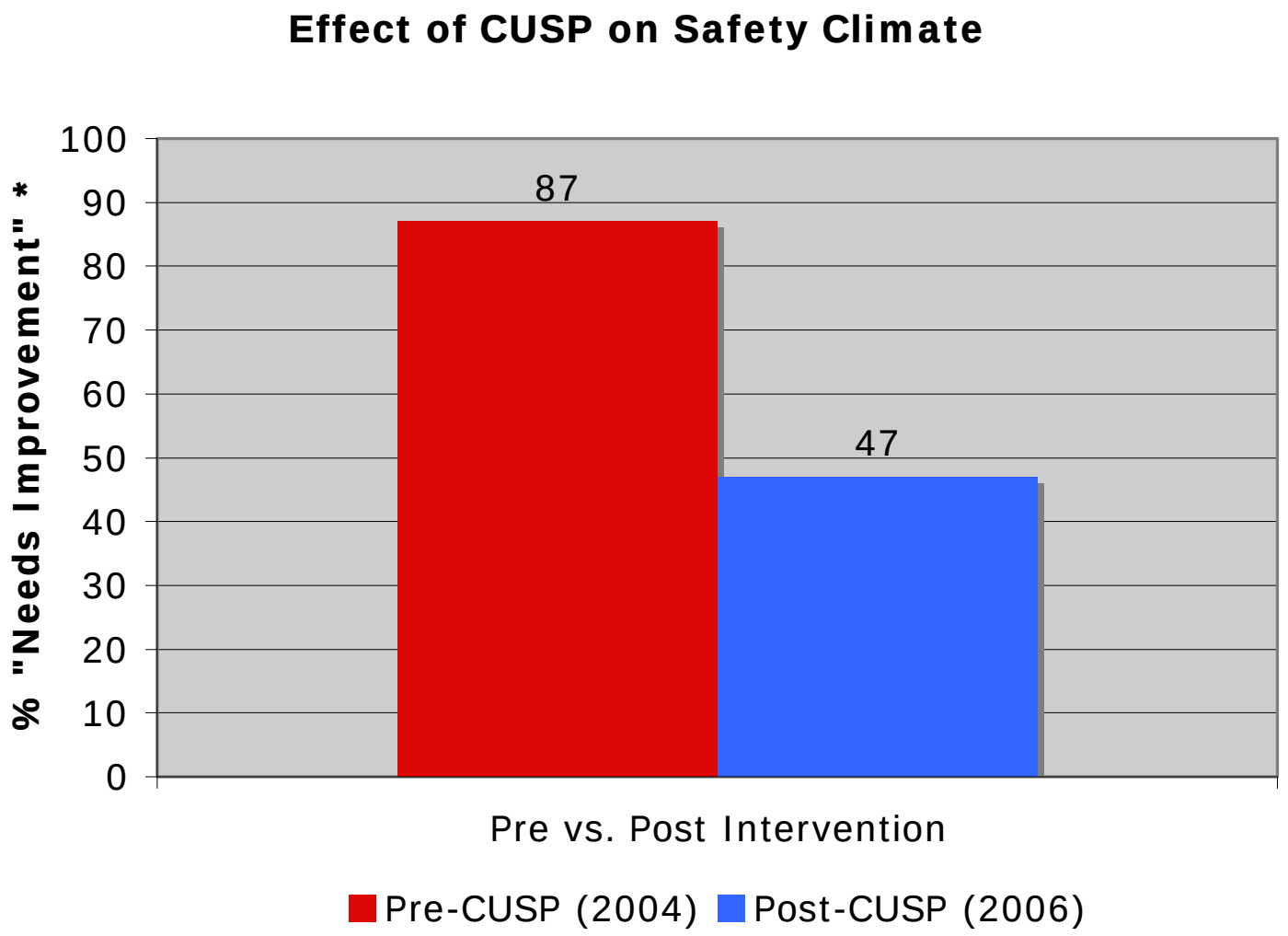
CRBSI Rate Over Time



VAP Rate Over Time

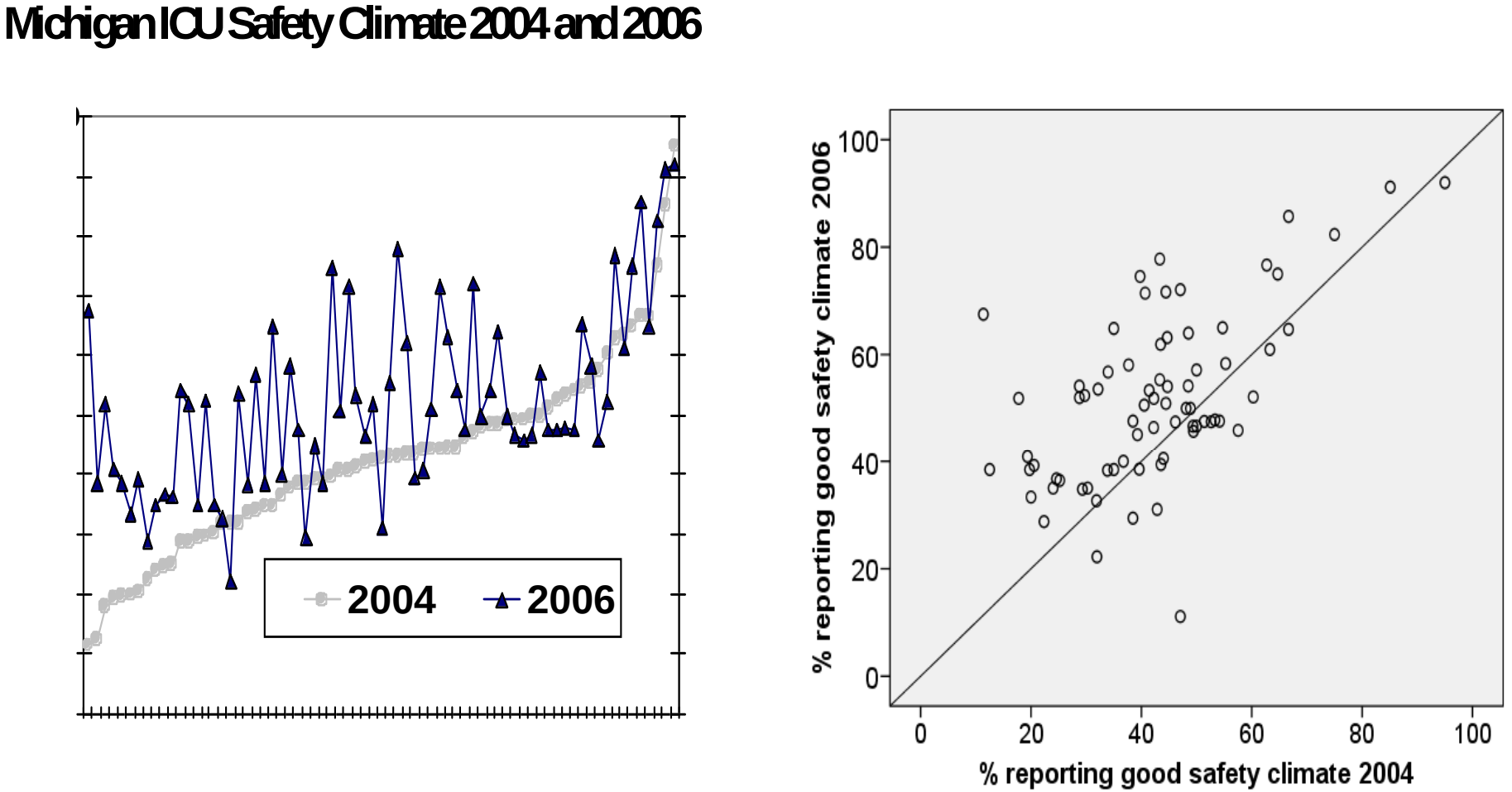


Michigan ICU Safety Climate Improvement



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

Michigan ICU Safety Climate Score Distributions



Focus and Execute

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