Zero Hero[SM]

Create a safe day. Every day.

Quality Improvement Requires Change

Leaders Make Change Inevitable

Richard J. Brilli, M.D., F.A.A.P., M.C.C.M.

John F. Wolfe Endowed Chair in Medical Leadership and Pediatric Quality and Safety

Chief Medical Officer - Nationwide Children's Hospital

Professor, Pediatrics

Division of Pediatric Critical Care Medicine - Ohio State University College of Medicine

….Sepsis has always been with us…

yet only recently have we begun to think…

"we can change outcomes with quality improvement tools"

Saturday 18 March 2000

BMJ

March, 2000

Safe health care: are we up to it?

We have to be

1999 – 2000: if you **were doing** QI and safety you were an **odd-ball outlier**

REPORT BRIEF APRIL 2015

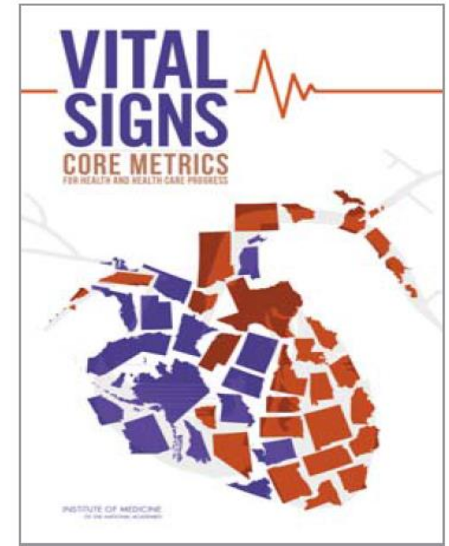
April, 2015

INSTITUTE OF MEDICINE
OF THE NATIONAL ACADEMIES

Advising the nation • Improving health

For more information visit www.iom.edu/vitalsigns

Vital Signs
Core Metrics for Health and Health Care Progress



2018: if you're **NOT doing QI** and safety you are an **odd-ball outlier**

Effective Leaders must be Everywhere

You are Leaders

Microsystem leaders, QI leaders, Chiefs

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Effective Leaders Know Where They are Going

To drive change, leaders must . . .

1. Articulate and Sell a Vision
2. Describe an Organizing Framework
3. Create and Manage Teams
4. Articulate a Method to Achieve Results
5. Achieve Results; Celebrate Success; Make Data Information

1. Articulate and Sell a Vision

- clear
- simple
- effectively communicated
- create a burning platform
- put a face to the problem

Articulate and sell a vision

"People buy into the leader before they buy into the vision"

John Maxwell

"Great leaders are great simplifiers who can cut through argument, debate, and doubt to offer a compelling solution everybody can understand."

Colin Powell

Zero

Children's Hospital Colorado

Children's National Health System

Simple

Branded, if appropriate

Nationwide Children's Hospital

Lucile Packard at Stanford

Articulate and Sell a Vision

Burning platform

Wherein action is *required*, not *optional*

Nationwide Children's Hospital
514 events of serious harm in 2007

In 2009 446 children suffered preventable harm at Nationwide Children's Hospital

Preventable harm events such as:

1. Catheter-associated blood stream infections
2. Serious adverse drug events
3. Serious Pressure ulcers
4. Falls with injury
5. Cardiopulmonary arrests outside the ICU
6. Catheter-associated urinary tract infections
7. Surgical site infections
8. **ONE serious safety event every 11 days**

In 2009 446 children suffered preventable harm at Nationwide Children's Hospital

1.4 Children injured per day

Preventable harm events such as:

1. Catheter-associated blood
2. Serious adverse dru
3. Serious Press
4. Falls wi
5. C arrests outside the ICU
6. sociated urinary tract infections
7. S gical site infections
8. **ONE serious safety event every 11 days**

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THE JOURNAL OF PEDIATRICS • www.jpeds.com COMMENTARY

The Preventable Harm Index: An Effective Motivator to Facilitate the Drive to Zero

Richard J. Brilli, MD, FAAP, FCCM, Richard E. McClead, Jr., MD, Terrance Davis, MD, Linda Stoverock, RN, MSN, NEA-BC, Anamarie Rayburn, MSPH, CPHQ, and Janet C. Berry, RN, MBA

Nearly a decade ago, the Institute of Medicine's (IOM) report on the state of American Healthcare focused attention on the need to develop systems and processes to improve patient safety in hospitals.[1,2] Although initially debated, it is now generally accepted that preventable medical errors are common and preventable deaths occur.[3,4]

personnel. Furthermore, it suggested that the tool for measuring its success or failure needed to be straightforward and understandable by individuals at all levels in the organization. In other words, the answer to the question, "How will we know when we get there?" demands a metric that is accurate, understandable, and motivational.

Ascension used a "priorities for action" tool consisting of 8

J Pediatr 2010 v157p681

2018 – 137 Children's Hospitals aiming for Zero Preventable Harm

Vol. 38 No. 4 July/August 2016

Ohio Children's Hospitals' Solutions for Patient Safety: A Framework for Pediatric Patient Safety Improvement

Anne Lyren, Richard Brilli, Michael Bird, Nicholas Lashutka, Stephen Muething

J Health Care Qual 2016 v38

Children's Hospitals' Solutions for Patient Safety Collaborative Impact on Hospital-Acquired Harm

Anne Lyren, MD, MSc,[a] Richard J. Brilli, MD,[b] Karen Zieker, MS,[c] Miguel Marino, PhD,[d] Stephen Muething, MD,[c,e] Paul J. Sharek, MD[f]

Pediatrics 2017 v140

Put a Face to the Problem

Rebecca

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Every hospital has a *Rebecca* either in their past or ….

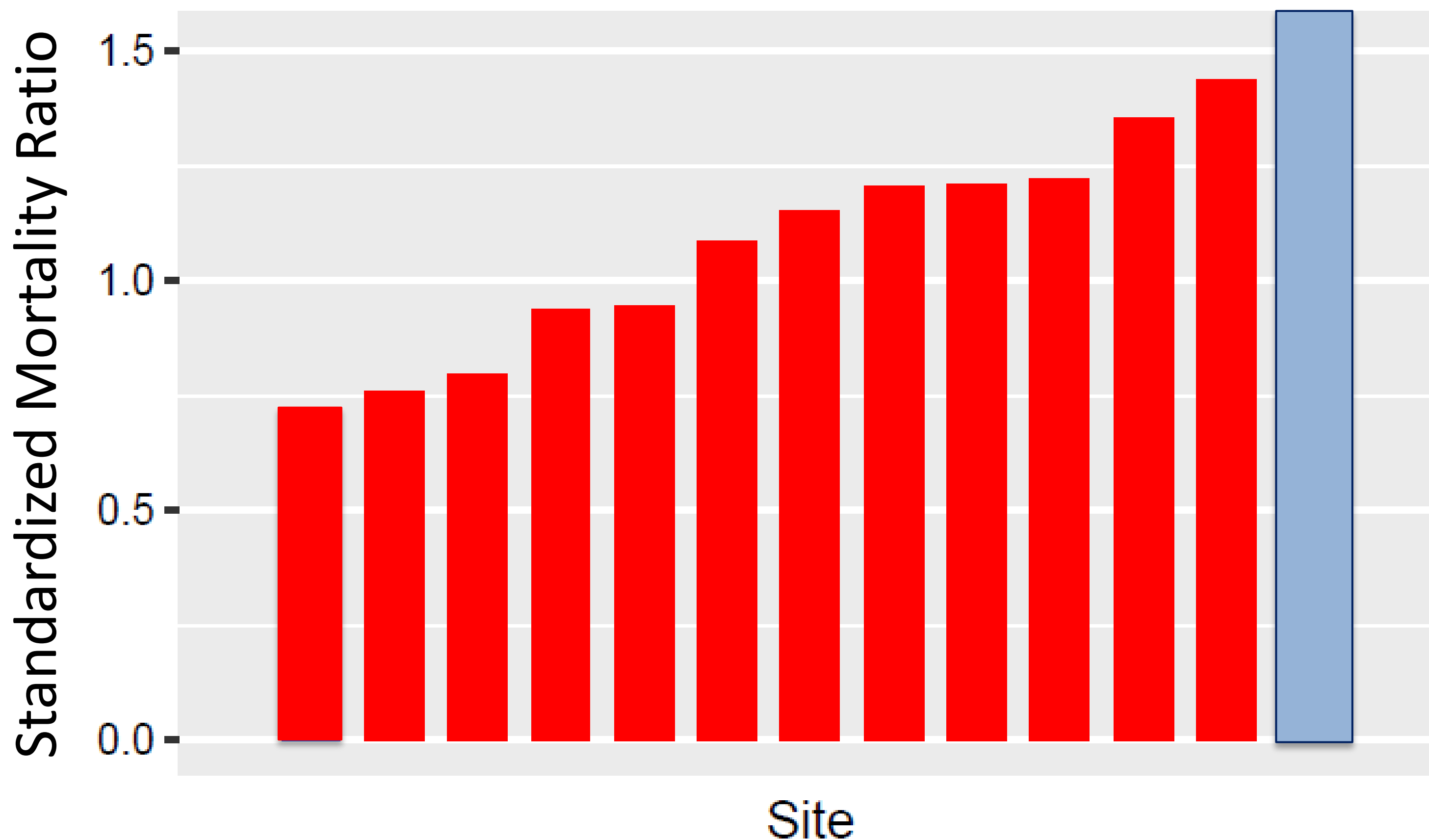
IN THEIR FUTURE!!

Increase the percentage of new patients in OP psychiatry scheduled within 30 days from 11% to 20%, by 10/31/17 & sustain for 6 months.

Why This Project?

- Current wait times for Psychiatry range from:
  6 months for ***urgent*** appointments to
  8 months for routine appointments

- Serious harm potential
  Recent RCA – Suicide, deemed not preventable



ESCH

Children are dying in our PICU, unnecessarily

2. Describe an Organizing Framework

Institute of Medicine

Transformational Domains of Quality Care

Safe | **Effective** | **Patient Centered**

Timely | **Efficient** | **Equitable**

Access | **Care Coordination**

Patient/Family Centered Quality Strategic Plan

Keep Us Well	Navigate My Care	Do Not Harm Me	Heal Me Cure Me	Treat Me w Respect
IMPROVE	TRANSFORM	ELIMINATE	TRANSFORM	TRANSFORM
Population Health All Children Achieve Their Full Potential	Throughput Access	Preventable Harm **Zero Hero**	Outcomes • Chronic illness • Acute illness	Patient experience • Family interactions • Professional relationships

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Patient/Family Centered Quality Strategic Plan

Keep Us Well	Navigate My Care	Do Not Harm Me	Heal Me Cure Me	Treat Me w Respect
Equitable	Timely	Safe	Effective	Patient Centered
Access	Efficient			Equitable
Coordinated	Coordinated			

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Patient/Family Centered Quality Strategic Plan

Keep Us Well

57

- School Based Asthma Tx (SBAT)
- Prevent prematurity by improving pre-natal care
- School based BH therapists in South Side schools
- Increase obesity identification & enroll i

Navigate My Care

55

- Decrease 7 day readmission rate
- Standardize chronic Trach Patient care
- Increase neurology patients discharged before 2:30 PM
- Improve handoff process for CF pts >17.5 yo to adult CF team

Do Not Harm Me

68

- Decrease ICU's CLABSI rate
- Reduce employee sharps injuries
- Reduce ACT preventable codes outside ICUs
- Watch-stander program roll out to all units
- Antibiotic

Heal Me Cure Me

41

- Clinical Indices Development in multiple services
- Cutting edge appendicitis care
- Improve survival for single ventricle patients
- Improve outcomes for patients with depression

Treat Me w Respect

17

- Improve ED Press Ganey "Patient Experience" scores
- Decrease patient grievances
- Improve quality of life for Patients w concussion
- Reduce seclusion-restraint use on T5A

> 250 active projects in all domains

> 50 MOC QI Projects

PEDIATRICS PERSPECTIVES

Revisiting the Quality Chasm

AUTHORS: Richard J. Brilli, MD, FAAP,[a,b] Steve Allen, MD, MBA,[a,c] and J. Terrance Davis, MD[a,d]

[a]Nationwide Children's Hospital, Columbus, Ohio; and Departments of [b]Pediatrics, [c]Anesthesiology, and [d]Clinical Surgery, The Ohio State University College of Medicine, Columbus, Ohio

KEY WORDS

strategic plan, patient-family centeredness, Institute of Medicine quality domains, quality improvement, patient safety, patient harm, efficient care, equitable care, pediatrics

Strategic plans provide the roadmap by which organizations achieve their vision. To effectively serve as that roadmap, strategic plans must have certain essential characteristics. These include the ability to inspire and motivate while remaining action-oriented and understandable to all personnel. More than a decade ago, in *Crossing the Quality Chasm*,[1] the Institute of Medicine (IOM) suggested organizing transformational efforts in 6 domains: Safety, Effectiveness, Patient-Family Centeredness, Timeliness, Efficiency, and Equity. Recently 2 additional domains have been added: Access and Care Coordination. Since that

***Pediatrics* 2014. v133(5);p763**

3. Create and Manage the Team(s)

- Doctor and nurse co-leads when possible; parent
- Multidisciplinary - always
- Constructive Professional Ground-Rules
- May need to remove toxic or non-constructive individuals
- Need the Independent Thinker (the “nay-sayer”)

Clint Eastwood
“The Grand Torino”

Manage the Team(s)

- Change will generate resistance

Expect excuses:

- "I don't believe the data – it must be wrong."
- "We are so busy taking care of the patients we don't have time to focus on that."
- "We're already do that, no need to change."
- "There is no evidence for this."

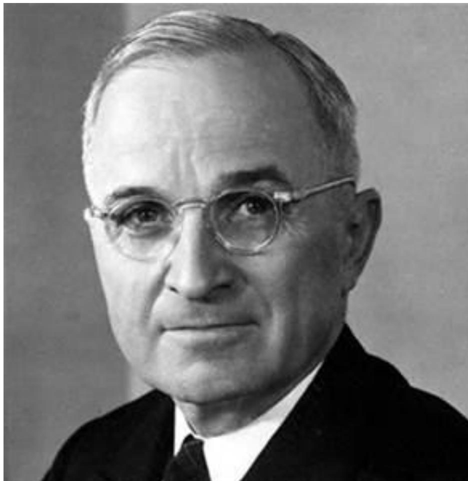
Manage the Team(s)

"Leadership is getting others to do what **you** want them to do because **they** want to do it."

Dwight Eisenhower

Manage the Team(s)

Empowering and giving credit to others



"It is amazing what you can accomplish if you do not care who gets the credit."

Harry S Truman

Manage the Team(s)

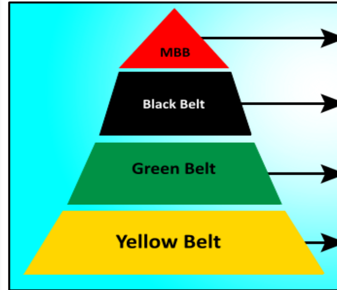
Reward and Demand Accountability

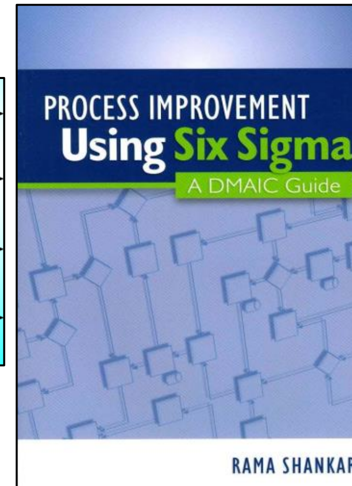
"Being responsible means sometimes pissing people off."

Colin Powell

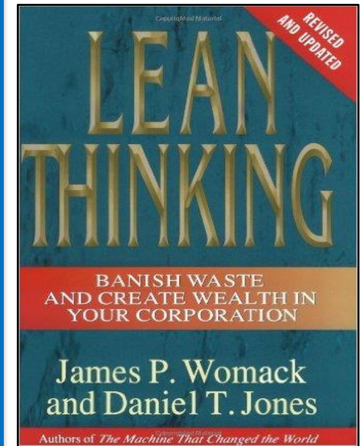
4. Articulate a Common Improvement Methodology

Model for Improvement

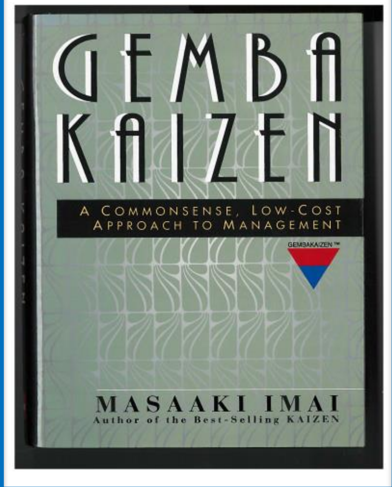




Six Sigma - DMAIC



Lean



Train leaders and Front Line Staff

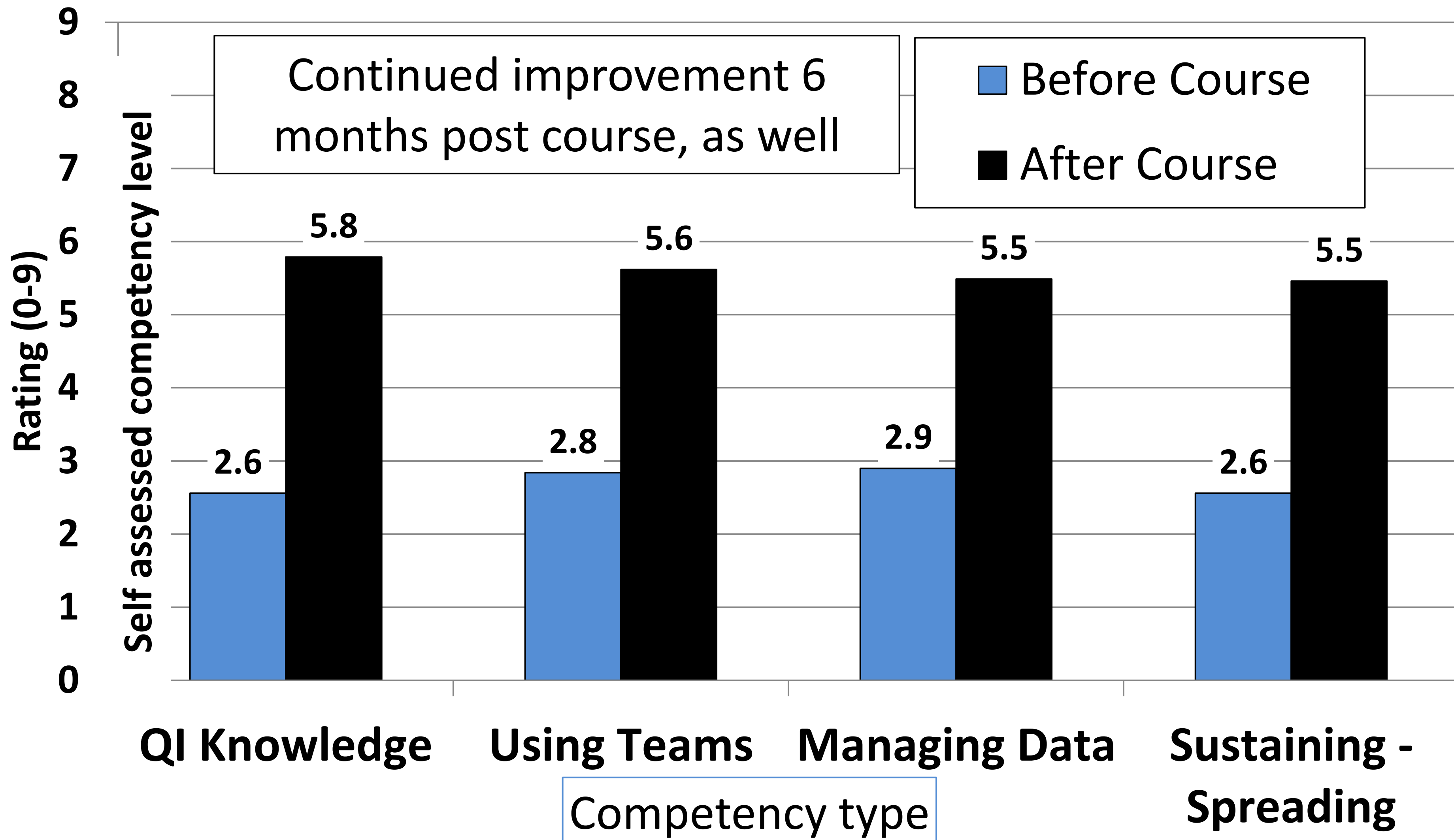
Quality Improvement Essentials

15th Class August 22, 2018

300+ internal students trained (MD, RN, RT, Administrators)

Training both NCH internal students and from other organizations as well

QIE Course: Competence



Acad Med. 2018 Feb;93(2):292-298

Research Report

Interprofessional QI Training Enhances Competency and QI Productivity Among Graduates: Findings From Nationwide Children's Hospital

Thomas Bartman, MD, PhD, Karen Heiser, PhD, Andrew Bethune, Wallace Crandall, MD, Richard McClead, MD, MHA, J. Terrance Davis, MD, and Richard J. Brilli, MD

Abstract

Purpose

Significant resources are expended on quality improvement (QI) training courses. The authors sought to determine whether education provided from 2012 to 2014 to gauge change in participants' self-assessed QI competency after course completion. Four competency domains were evaluated: QI knowledge; testing and

Results

Course participation more than doubled participants' self-assessed QI competence across all four domains. Gains continued after the course,

Acad Med. 2018 Feb;93(2):292-298

Proud to announce for the first time ever, that NCH has developed and is now publishing a Unique Model for Driving Change

(Paper forth coming in NEJM, next month)

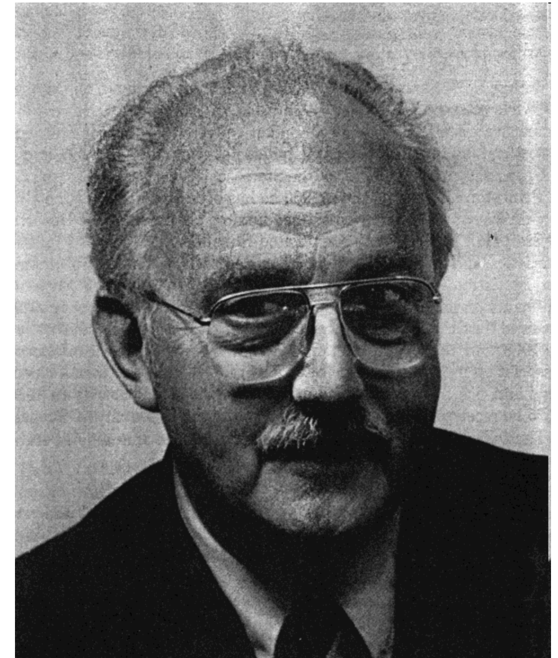
We have demonstrated that this methodology works every time to change staff behavior and drive toward expected performance (or else).

"Essentially, all models are wrong … but some are useful."

Standardize the Approach (Model)

Model for Improvement

George E. P. Box (1919-2013)
Professor Emeritus of Statistics
University of Wisconsin in Madison



Improvement Methodology

Two Fundamental Drivers

System Culture

- Expected Behaviors
- Accountability
- Reliability Principals

Microsystem Teams

Standardized Improvement methods

- IHI Model for Improvement
- Lean
- Six Sigma (DMAIC)

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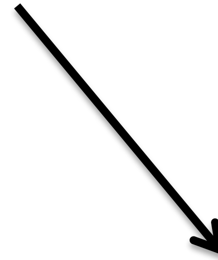
Improvement Methodology

Two Fundamental Drivers



<u>Microsystem Teams</u>

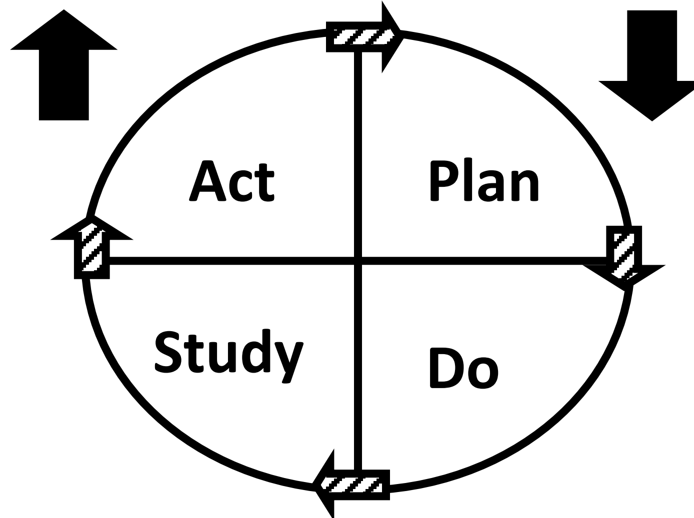
Standardize Improvement methods

- IHI Model for Improvement
- Lean
- Six Sigma (DMAIC)

The Improvement Model

AIM	What are we trying to accomplish?
Run & Control Chart (Data)	How will we know that a change is an improvement?
Key Drivers & Interventions	What changes can we make that will result in improvement?

Testing Change Ideas to Achieve Results



Increase Interventions for Poorly-Controlled Asthma

Project Leader: Dane Snyder, MD; Stephen Hersey, MD; Judy Groner, MD

Aim

Increase percent of patients with step up therapy (adding or increasing pharmacotherapy) in poorly-controlled asthma patients* from 50% to 60% by end December 2017.

Decrease ED visit rates for asthma by PCC patients

Increase Interventions for Poorly-Controlled Asthma
Project Leader: Dane Snyder, MD; Stephen Hersey, MD; Judy Groner, MD

Aim

Increase percent of patients with step up therapy (adding or increasing pharmacotherapy) in poorly-controlled asthma patients* from 50% to 60% by end December 2017.

Decrease ED visit rates for asthma by PCC patients

Key Drivers

Proper assessment of asthma control

Physician feedback

Physician education

Interventions

Proper assessment of asthma control:
- Develop metric to assess proper impression of poor control
- Sustain current ACT process
- Increase time spent for Asthma plus Well Child to allow physician adequate time for assessment and treatment

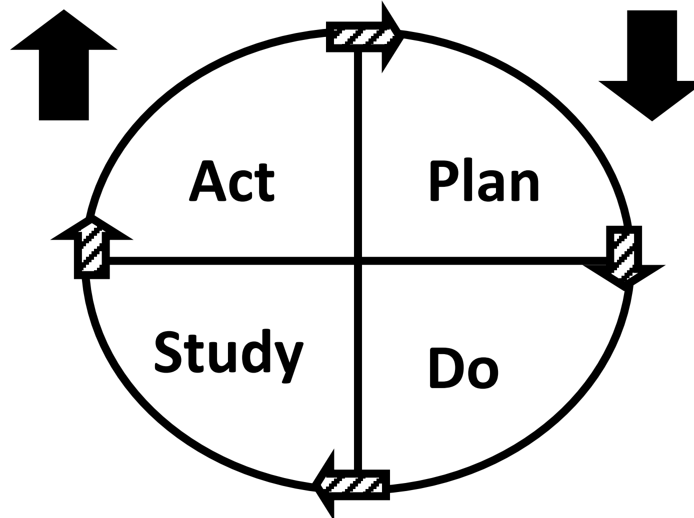
Physician feedback:
- Report % of documented interventions to individual physicians
- Inform providers on positive impact of step up therapy on outcomes
- Evaluate if successful interventions relate to improved outcomes

Physician education:
- Introduce goal to physicians at section meeting and clinic site visits
- Use successful data to motivate physicians
- Increase resident education with lectures, short modules, and time spent clinically at PCN asthma special sessions

The Improvement Model

AIM	What are we trying to accomplish?
Run & Control Chart (Data)	How will we know that a change is an improvement?
Key Drivers & Interventions	What changes can we make that will result in improvement?

Testing Change Ideas to Achieve Results



PCN: Poorly Controlled Asthma Patients
Step-up Pharmacotherapy

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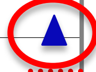
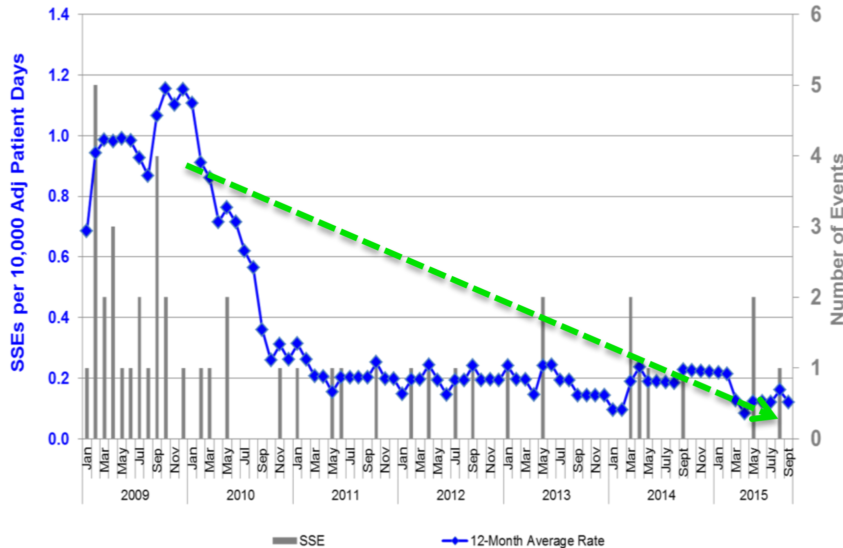
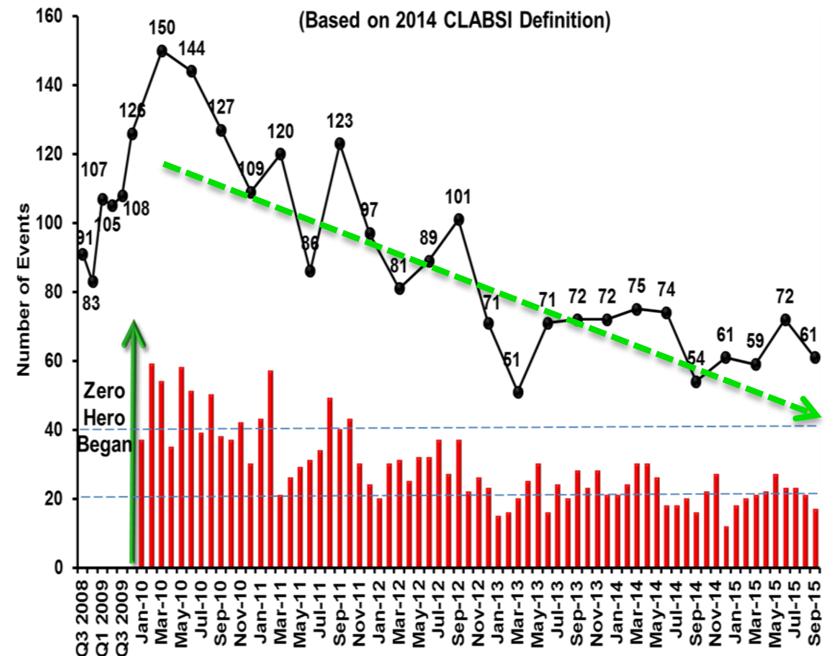


5. Celebrate Success/Achieve Results

"Nothing succeeds like success"

Sir Arthur Helps, 1868



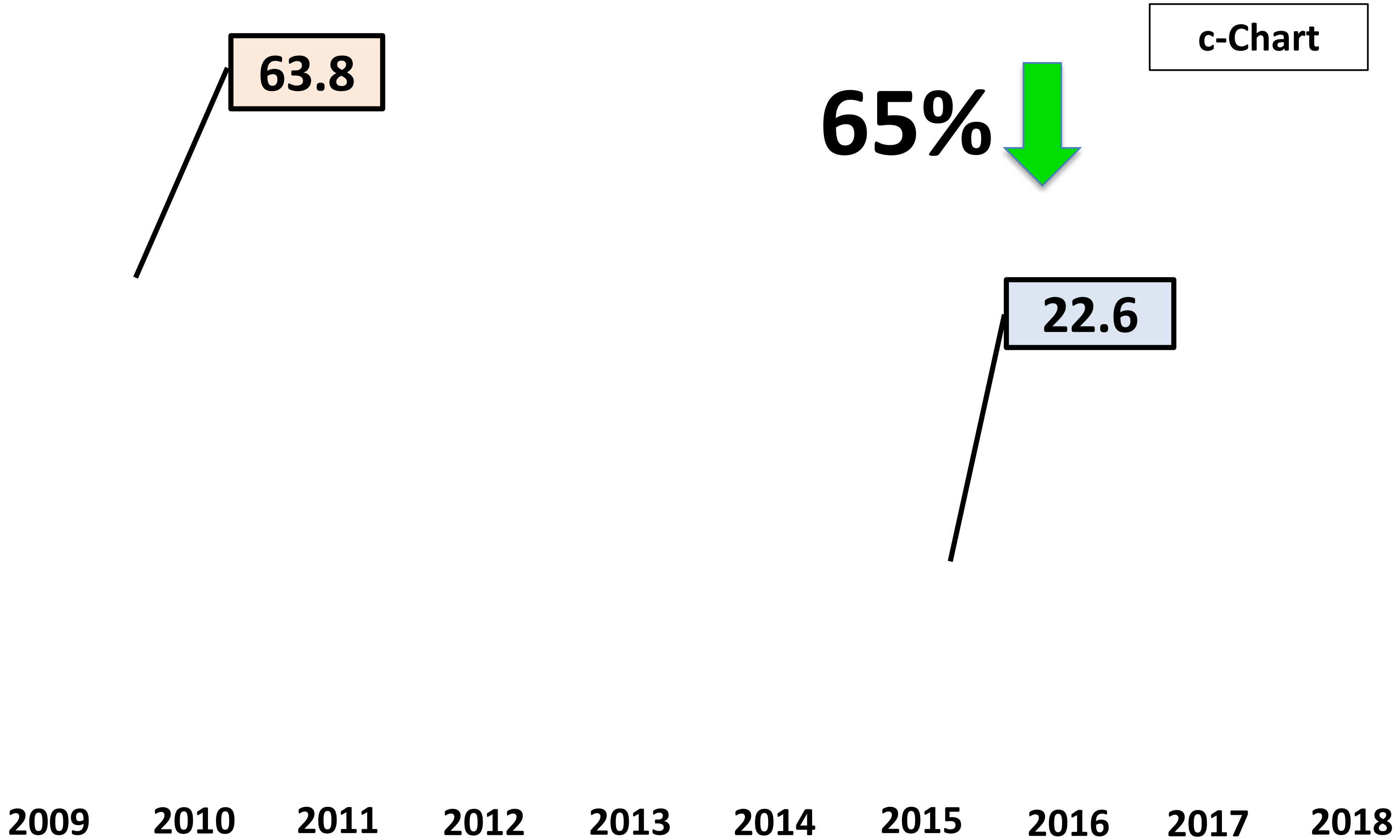


Serious Safety Event Rate

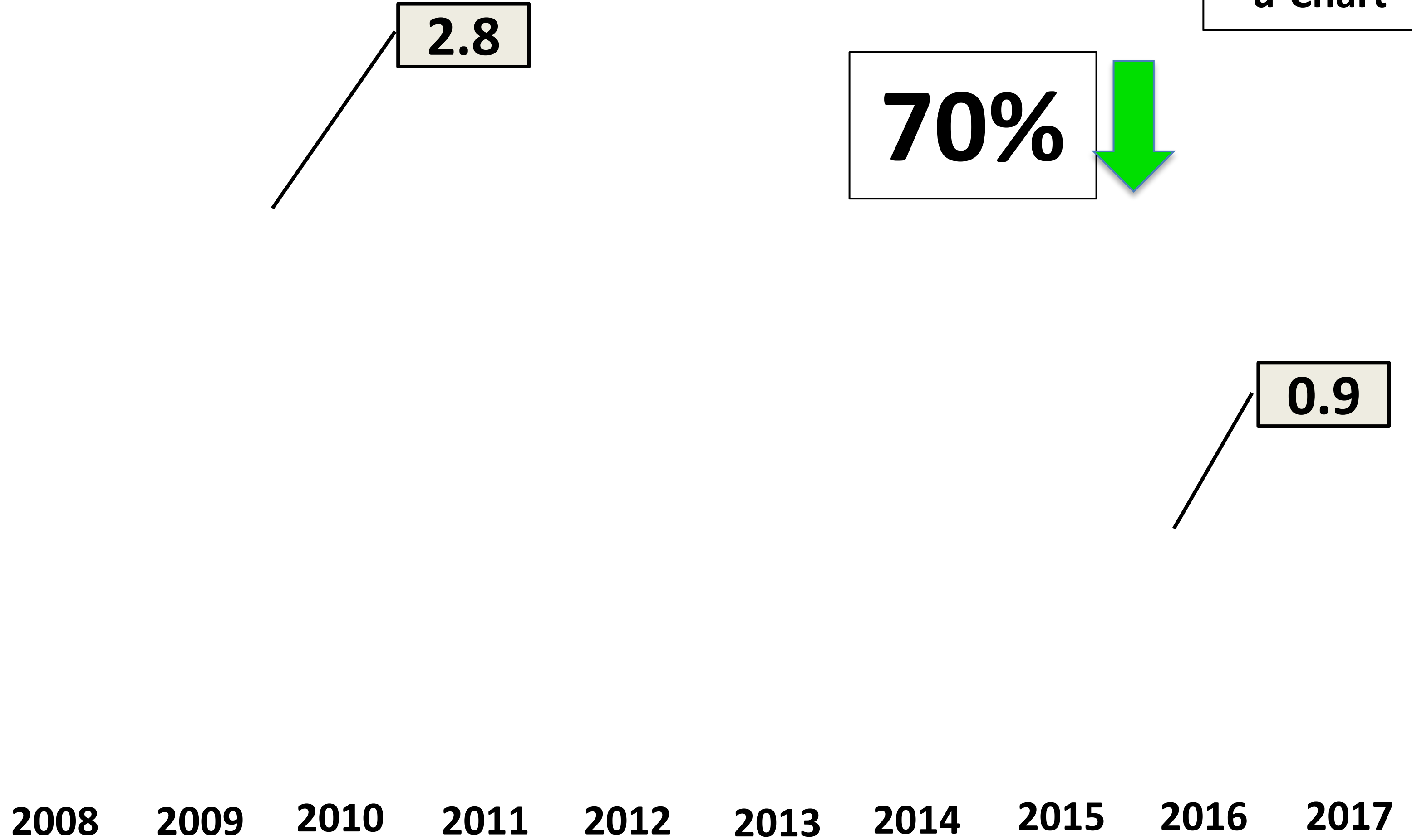
Rate decreased by >85%

2009 **2013** **2018**

Serious Preventable Harm



All Preventable Harm Rate



NCH Mortality Rate 2004-2016

Severity Adjusted Hospital Mortality

17% decrease in severity adjusted hospital mortality
241 deaths prevented

Celebrate Success -- External Validation

Patient Safety Category Winner:
2013 -- Pediatric Quality Award

American Hospital Association – McKesson
Quest for Quality Prize®

Hospitals in Pursuit of Excellence

The American Hospital Association:
2015 -- McKesson Quest for Quality Prize, Citation of Merit

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ORIGINAL ARTICLES

The JOURNAL of PEDIATRICS

A Comprehensive Patient Safety Program Can Significantly Reduce Preventable Harm, Associated Costs, and Hospital Mortality

Richard J. Brilli, MD, FAAP, FCCM[1,2], Richard E. McClead, Jr., MD[1,2], Wallace V. Crandall, MD[1,2], Linda Stoverock, RN, MSN, NEA-BC[3], Janet C. Berry, RN, MBA[3], T. Arthur Wheeler, MS, MSES, MBA[1], and J. Terrance Davis, MD[1]

Objective To evaluate the effectiveness of a hospital-wide initiative to improve patient safety by implementing high-reliability practices as part of a quality improvement (QI) program aimed at reducing all preventable harm.

Study design A hospital wide quasi-experimental time series QI initiative using high-reliability concepts, microsystem-based multidisciplinary teams, and QI science tools to reduce hospital acquired harm was implemented. Extensive error prevention training was provided for all employees. Change concepts were enacted using the Institute for Healthcare Improvement's Model for Improvement. Compliance with change packages was measured.

Results Between 2010 and 2012, the serious safety event rate decreased from 1.15 events to 0.19 event per 10 000 adjusted hospital-days, an 83.3% reduction ($P < .001$). Preventable harm events decreased by 53%, from a quarterly peak of 150 in the first quarter of 2010 to 71 in the fourth quarter of 2012 ($P < .01$). Observed hospital mortality decreased from 1.0% to 0.75% ($P < .001$), although severity-adjusted expected mortality actually increased slightly, and estimated harm-related hospital costs decreased by 22.0%. Hospital-wide safety climate scores increased significantly.

Conclusion Substantial reductions in serious safety event rate, preventable harm, hospital mortality, and cost were seen after implementation of our multifaceted approach. Measurable improvements in the safety culture were noted as well. *(J Pediatr 2013;163:1638-45)*.

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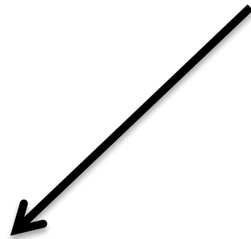
Driving System Change

Two Fundamental Drivers



System Culture

- Expected Behaviors
- Accountability
- Reliability Principals

Culture and Outcomes

....

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Culture and Outcomes

Safety Attitudes Questionnaire

	2009	2011	2013	2015	2017
Safety Climate	71	75	79	80	82
Teamwork Climate	71	72	73	75	77

8000 surveys
82% response rate

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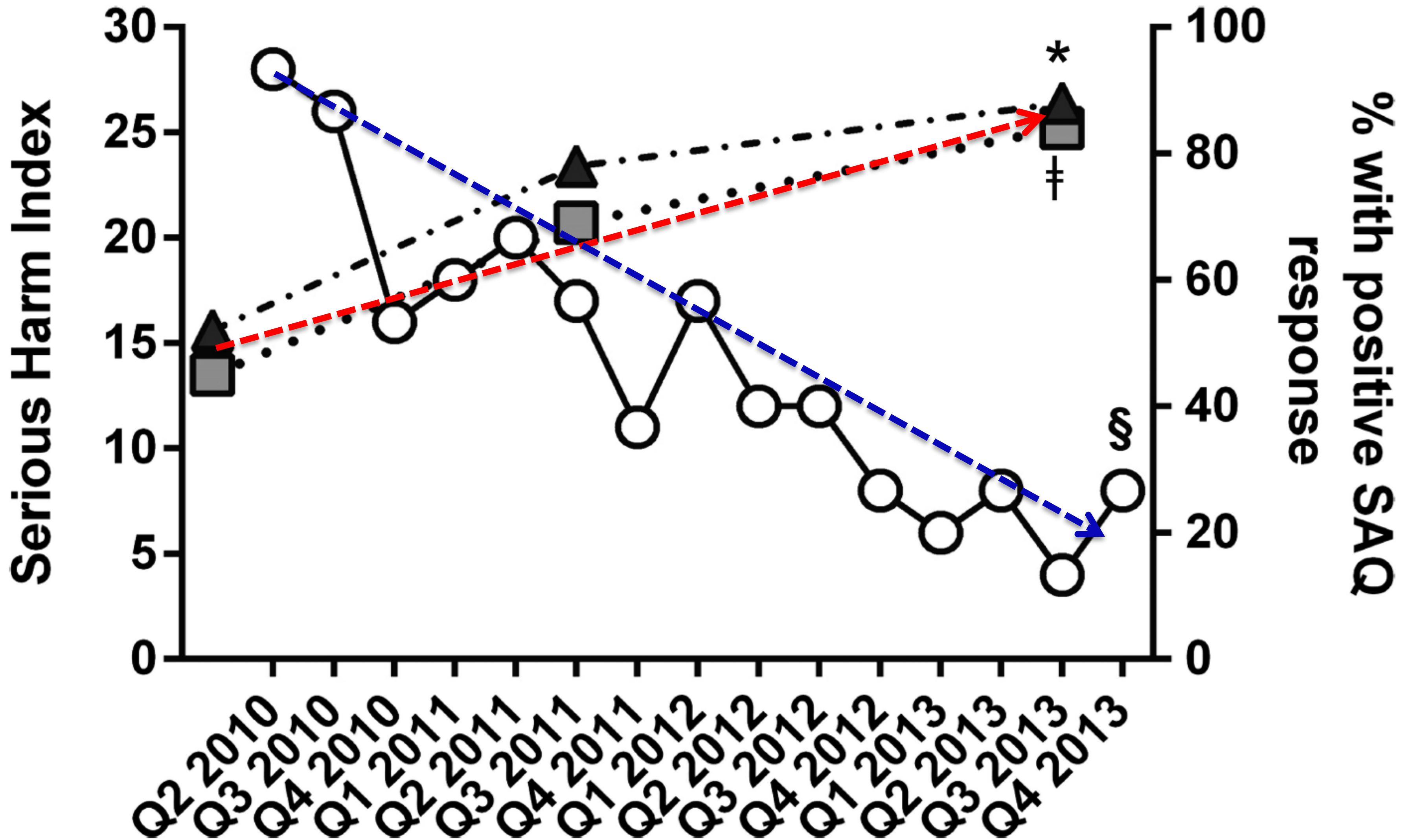
Improved SAQ and Serious Harm Reduction - PICU



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Copyedited by: Jay Bagcal

J Patient Saf 2016; ePub Jan 7

ORIGINAL ARTICLE

Improved Safety Culture and Teamwork Climate Are Associated With Decreases in Patient Harm and Hospital Mortality Across a Hospital System

*Janet C. Berry, DNP, RN, MBA,**†‡ John Terrance Davis, MD,‡§ Thomas Bartman, MD, PhD,‡||¶ Cindy C. Hafer, MBA, MHA, CPHQ,‡ Lindsay M. Lieb, BSH,‡ Nadeem Khan, MD,** and Richard J. Brilli, MD, FAAP, MCCM‡§¶***

Objectives: Improved safety and teamwork culture has been associated with decreased patient harm within specific units in hospitals or hospital groups. Most studies have focused on a specific harm type. This study's ob-

in 2009. Before our study, SAQ results of culture change had only been reported in specific unit types (e.g., intensive care unit) in multiple institutions. [12] Furthermore, safety outcome metrics in

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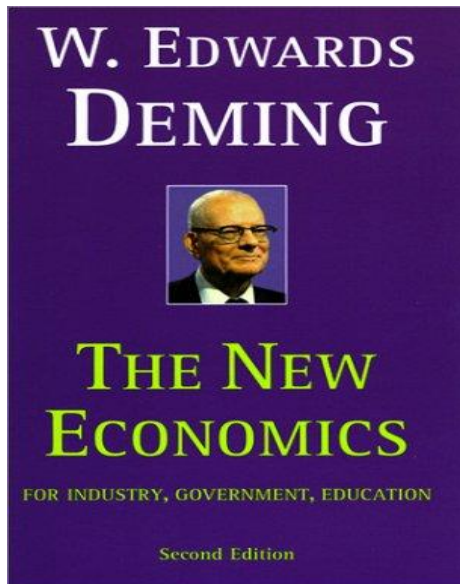

"In God we trust, all others bring data."

W. Edwards Deming

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… to drive change, data must tell a story

… an excel spread sheet almost never tells a story

… bar charts can tell a story, but sometimes can be misleading

… **data over time** can usually (and accurately) tell the story you need, to inspire change …

QI Data Charts – humor me!

Bar Charts – Good

Bar Charts – not so Good

SPC Charts

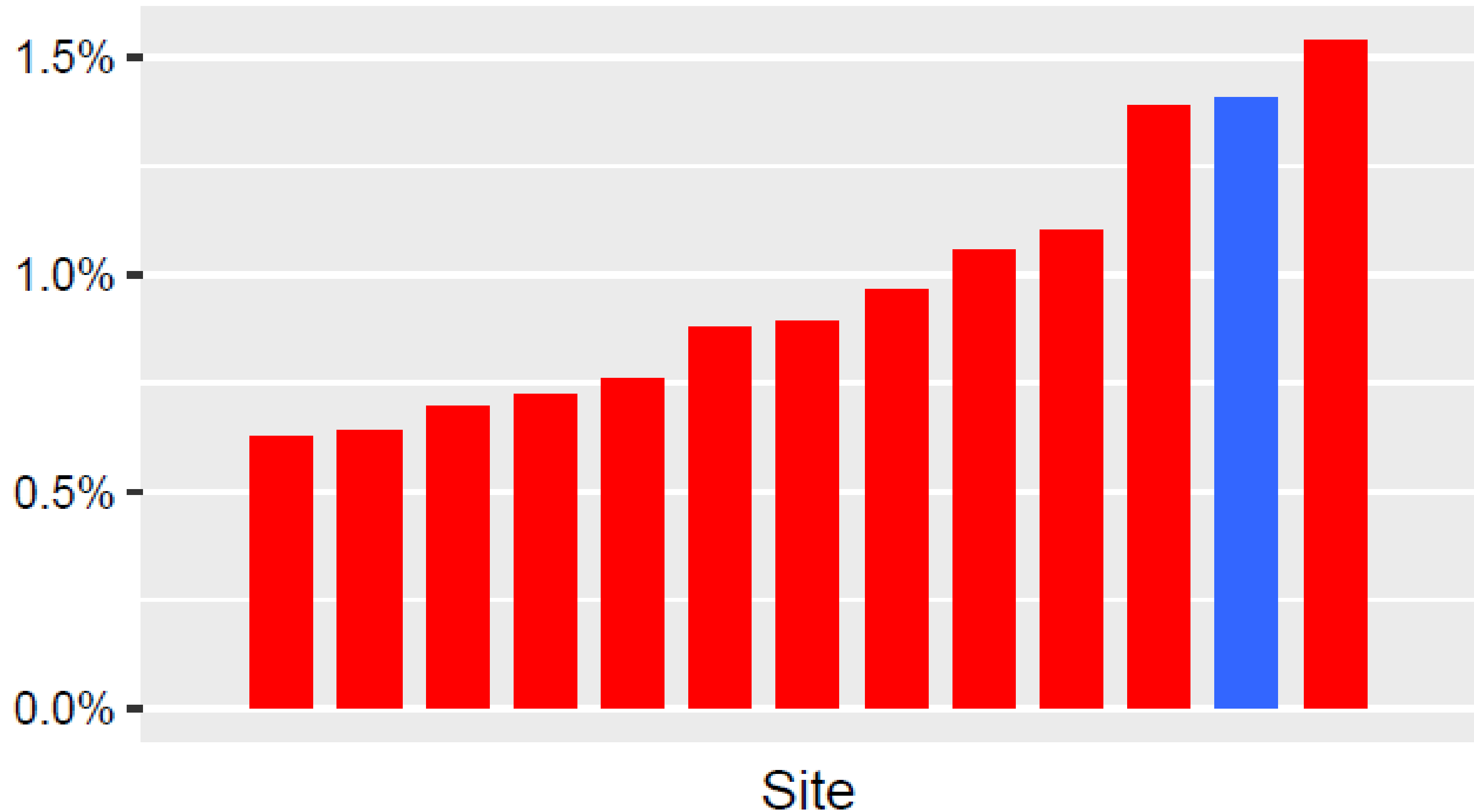
IPSO

Compare Ourselves to Others

1.5
1.0
0.5
0.0
Site

We're the best – celebrate …. and continue $$ and personnel support for VPS participation

Compare Ourselves to Others



We're close to the worst – we need more resources to improve

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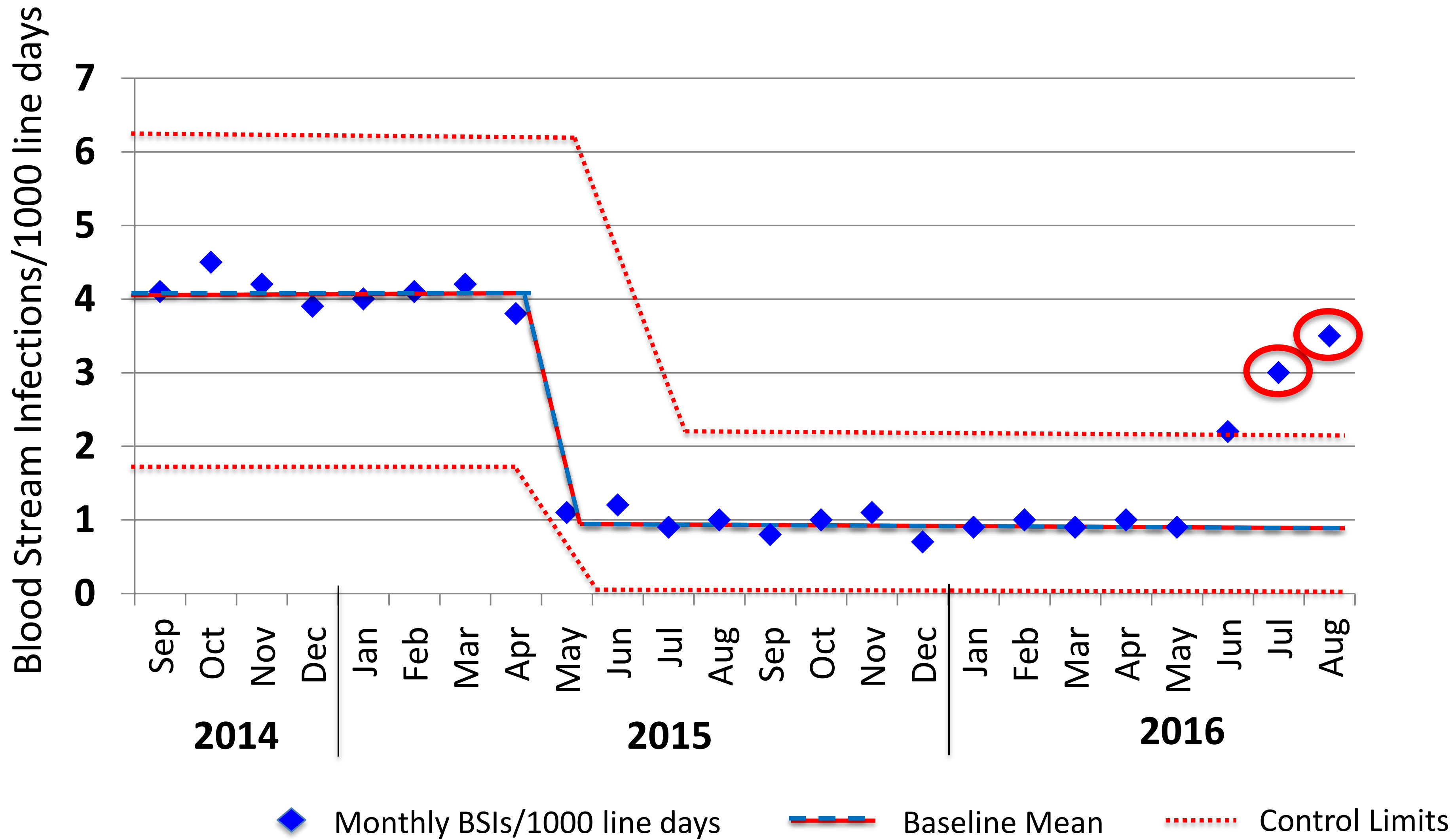
Blood Stream Infections/1000 line days



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Challenge sepsis.
Change lives.

Improving Pediatric Sepsis Outcomes (IPSO)

Goal

- Improve Pediatric Sepsis outcomes using QI Science
- Not really been tried before

Challenge sepsis.
Change lives.

Two Global Goals

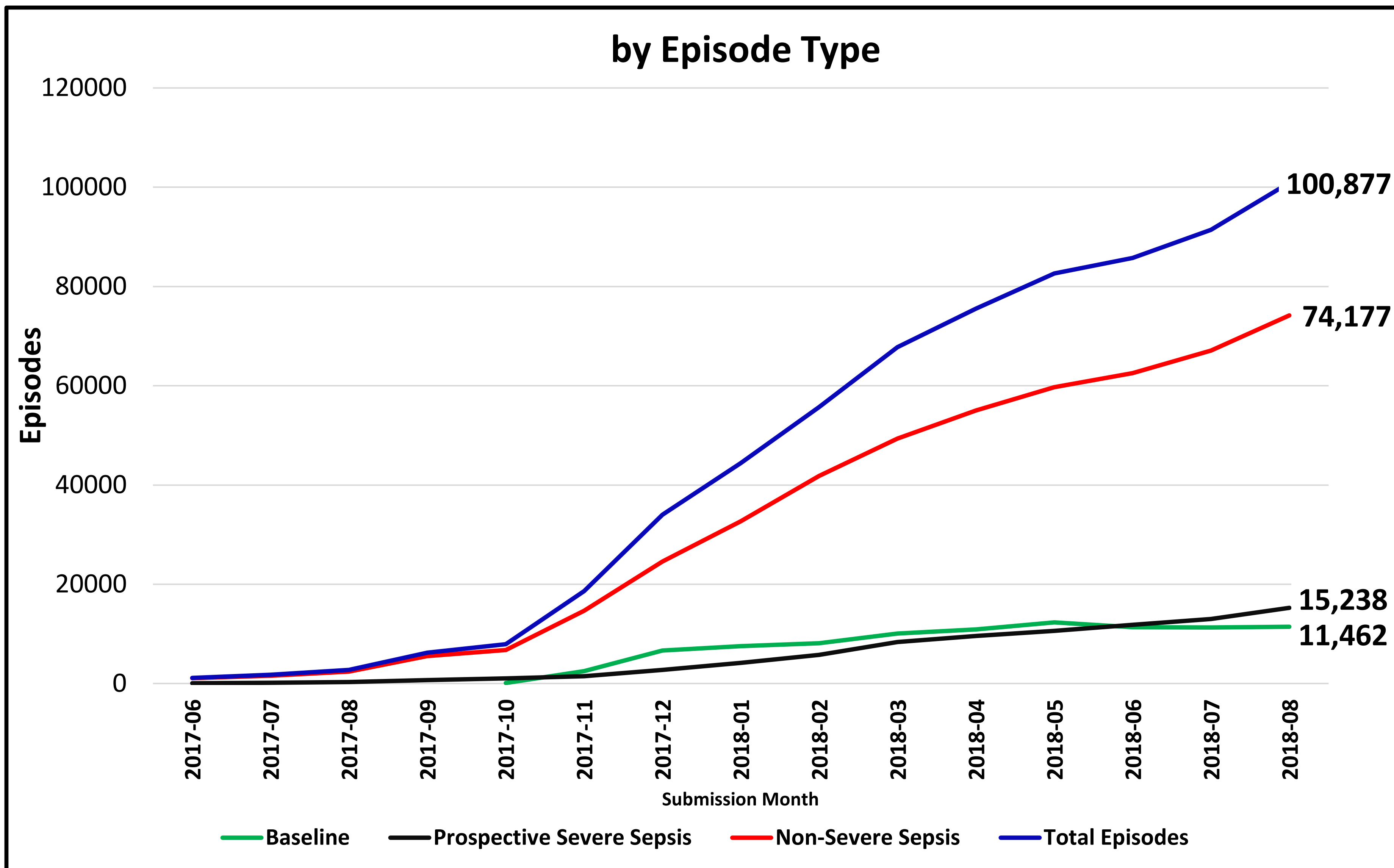
- Decrease the incidence of hospital-onset Severe Sepsis/Septic Shock
- Decrease mortality rate for Pediatric Severe Sepsis/Septic Shock using standardized sepsis treatment strategies
  - Measure compliance with sepsis care strategies
- Includes: Emergency Dept, Inpatient units, Heme-Onc units, Critical Care units. Excludes NICUs for now

IPSO Participating Hospitals (51 as of July 2018)

SEPSIS HEROES

CHILDREN'S HOSPITAL ASSOCIATION

Cumulative Sepsis Episodes Submitted



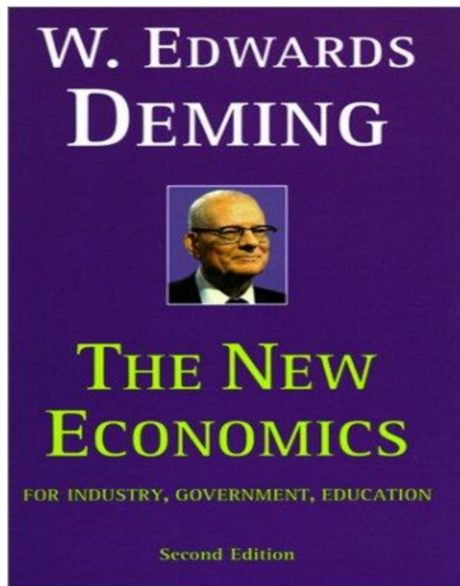
Challenge sepsis.
Change lives.

Five Key Process Measures

1. Sepsis Trigger Activations
2. Sepsis Huddle Activations
3. Sepsis Order Set Utilization
4. Time to First Fluid Bolus
5. Time to First Antibiotic Administration

SEPSIS HEROES

CHILDREN'S HOSPITAL ASSOCIATION



"It is not necessary to change. Survival is not mandatory."

W. Edwards Deming

Zero Hero℠
Create a safe day. Every day.

To influence and drive change, leaders must . . .

1. Articulate and Sell a Vision
2. Describe an Organizing Framework
3. Create and Manage Teams
4. Articulate a Method to Achieve Results
5. Achieve Results; Celebrate Success; Make Data Information

Pediatric Quality and Safety

Dedicated to Quality Improvement Projects
Bettering the Lives of Children

Pediatric Quality & Safety is an international, peer-reviewed, open access, online periodical dedicated to providing healthcare professionals a forum to disseminate the results of quality improvement and patient safety initiatives that impact the lives of children from newborn to young adulthood.

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Leaders Navigate the Forks in the Road

Making Change

“Just How We Do Business”