Sustainability: Who’s Got the Answer?

Alide Chase, BS, MSN  
Consultant, LLC

Uma Raman Kotagal  
Senior Executive Leader, Population and Community Health, Cincinnati Children’s Hospital Medical Center

Patti Harvey, RN, MPH, CPHQ  
Senior Vice President, National Hospital and Health Plan Quality; Executive Director, Care Management Institute; Kaiser Permanente

#IHIFORUM
Presenters

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Uma Raman Kotagal
Senior Executive Leader, Population and Community Health, Cincinnati Children’s Hospital Medical Center
Understanding Why Some Programs Succeed and Others Fail

Do we have...

A “Knowing” Problem  OR  A “Doing” Problem?
Diagnostic on a Program/Project

Pick a program/new behavior that you personally led/participated in. Which of the following did you spend the most time on?

A. Doing an investigation of best practices prior to program design
B. Getting elements of program “just right” (testing)
C. Evaluating program elements for success
D. Planning a communication approach
E. Planning for spread (if applicable)
F. Planning for scale (if applicable)
G. Planning for sustainability
Examples of Improvement Efforts Underway

- Acute low back pain protocol
- Hospital readmission
- Standardized discharge planning
- Interdisciplinary councils
- Infrastructure for safety/quality
- Use of safety huddles
- Dissemination of patient safety reports/learning to top leaders and front line staff
- Creating patient and safety officer role
- Creating lean processes in supply chain
My Program…

A. Went up in smoke
B. Blew away on a warm summer night
C. Died a slow death
D. Spread like wild fire
E. Stuck like glue
F. Is now the “way we do business”
The Initial Start-Up Phase: “Getting It Right”

- **Quality Planning**: You develop a new process using the principles of reliability from the beginning.
  - Example: plan the process to deliver antibiotics to patients 60 minutes before surgical incision

- **Quality Control**: You monitor the process to be certain that it is working as designed. Does it continue to deliver the outcome you want?
  - Example: monitoring delivery of antibiotics to patients 60 minutes before surgical incision

- **Quality Improvement**: The process is not delivering the outcomes as designed so it must be improved.
  - Use quality improvement methods to test and implement the new process; spread improvement
Quality Planning

• Designing a PHI sensitive outreach method to use test messages as reminders for prevention screening tests
• Centralizing appointment and advice services 24/7
• Incorporating “self made” appointment booking into appointment system
• Developing an electronic critical lab values alert system
Monitor the process to be sure it is reliably delivering the outcome. Example: you put the process in place and you monitor the results and you find:

- **Week 1**: 100%
- **Week 2**: 95%
- **Week 3**: 75%
- **Week 4**: 72%
Quality Improvement

The process is not delivering the outcome you intended. Using the example data, you can see that the process is less and less reliable. You would now decide that the process is “NOT IN CONTROL” and needs improvement.
Patti’s Case Study: Inpatient Quality Management at Kaiser Permanente
Kaiser Permanente: By the Numbers

• 7 regions serving 8 states and the District of Columbia
• More than 11.8 million members
• More than 21,000 physicians
• 201,000 employees, including more than:
  54,000 nurses
• 39 hospitals
• 677 medical offices
• $64.6 billion operating revenue (2016)
• $2.5 billion given in 2016 to the community through programs, grants and donations
Inpatient Quality Management: An Idea is Born at Kaiser Permanente Southern California

John M. Bigley, M.D.

Beatrice H. Quezada, M.D.
What Problem Were They Trying to Solve?

Before IQM was developed, Patient Day Rate (PDR) measured an average of 302 in Kaiser Permanente’s Southern California Region.

\[
PDR = \frac{(\text{Acute Inpatient Days} + \text{Inpatient Psych Days} + \text{L&D Days})}{\frac{\text{Average membership for the time period}}{\text{Number of days in the time period} \times \text{Number of days in a year} \times 1000}}
\]

**Patient Day Rate:**
- Demonstrates the aggregate effect of all patient care interventions.
- Is an ideal composite score for quality at the broadest level.

With PDR as a tracked performance indicator, KP Southern California developed IQM, with a focus on:
- Improving care
- Improving the patient experience
- Containing Costs
The focus of IQM aligns with that of the IHI Triple Aim

**IQM**
- Improve Care
- Contain Costs
- Improve Patient Experience

**The IHI Triple Aim**
- Population Health
- Experience of Care
- Per Capita Cost
GENETIC MAKE-UP

Emergency Department
Admit Process
Inpatient Care
Discharge Process Transitions of Care

Long View of Care • Communication/Collaboration (Patient Engagement)
Appropriateness of Care • Timeliness of Care
Real Time Peer Review • Real-Time Escalation

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What Were the Results of IQM?

• The Baldwin Park Medical Center, Kaiser Permanente Southern California, showed marked efficiency gains after implementation:
  • Patient Day Rate (PDR) measured 229 versus the average of 302 for the region.

• Decision was made to spread IQM model throughout the region.
IQM Results: 2011 - 2016

Post-Inpatient Quality Management Model Region A

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Let’s Get to Work

1. Identify a improvement effort/program you are currently involved in leading or planning to lead.

2. Share brief description of improvement effort/program at your table.
Uma’s Case Study: Early Efforts at Reducing Catheter Associated Blood Stream Infections at Cincinnati Children’s Hospital Medical Center
Reducing Blood Stream Infections

- In 2002-2003 we began work on reducing BSI
- Populations at risk identified
- Initial work began in the NICU and PICU
- Subsequently extended across all sites including CICU, Oncology, Home Health, OR etc.
- Initial Pediatric Bundle developed based on “best current” evidence
- Co-led by MD, Nursing Lead at each Microsystem
- Eventually put a System Wide team together
Reducing Blood Stream Infections

CCHMC Central Venous Catheter (CVC) Associated Laboratory Confirmed Bloodstream Infections (LCBIs)
July 2003 thru February 2006

<table>
<thead>
<tr>
<th>Infections per 1000 Device Days</th>
</tr>
</thead>
</table>


| Infections | 18 18 19 24 22 32 27 23 7 10 7 11 8 7 8 6 7 7 14 15 14 6 14 5 12 7 7 | Device Days | 6003 6772 7958 7557 7572 8401 8154 5098 2835 2943 3091 2973 2722 3176 3115 3148 3064 3148 2871 2848 3005 3017 3215 2795 |
Results

PICU CA-BSI Rate Jan04 - Feb08

Events per 1000 Device Days

Baseline - PreCollaboratives
Rate = 3.5

CCHMC Bundle fully implemented
Rate = 2.9

NACHRI Collaborative fully implemented
Rate = 1.5
PIZZA PARTY
BSI Deterioration

CCHMC Central Venous Catheter (CVC) Associated Laboratory Confirmed Blood Stream Infections (LCBIs)

This is a one year snapshot from a three year time frame. Control limits are based on data from previous timeframes.

What Happened Here?
Reducing Blood Stream Infections

Cap for Catheter

When not activated, the Spiros is in a closed position.

Activation only occurs when attaching the Spiros to a needlefree connector, thus activating the fluid path.
Reducing Blood Stream Infections

Eliminating CA-BSI a function of Pathophysiology

Intraluminal & Extraluminal catheter contamination / colonization

Maintenance Care Focus
Reducing Blood Stream Infections

How to Fix relates to CA-BSI Pathophysiology

External catheter colonization from within the bloodstream
# Key Driver Analysis

## Key Drivers

**Insertion Bundle**
- Excellent Hand Hygiene
- Use of maximal sterile barriers
- Appropriate use of CHG for site preparation.
- No Iodine skin prep.
- Use of observer and Insertion checklist (stop and mitigate if not following insertion bundle)

**Catheter Maintenance Bundle**
- Excellent hand hygiene
- No Iodine ointment used
- Catheter Hub/Cap/Tubing Care per CDC Guidelines
- Dressing Change per CDC guidelines
- Lipid Infusions complete within 24 hours
- Daily Assessment if line is necessary

**Continuous Learning Culture on Unit**
- Five additional factors to be tested in 2007 on multiple units using a factorial design.
  - Bipatch applied at insertion and dressing change
  - Limit line entries/day
  - CHG scrub for cap/line entry
  - Antibiotic Lock
  - Antibiotic coated catheter

## Intervention/Change Concepts

**Insertion Change Concepts**
- Insertion Cart or Box or Tray in each insertion area to facilitate compliance
- Standardize Insertion Practice across unit. This will include training of all staff and revising policies to reflect use of insertion bundle

**Maintenance Change Concepts**
- Collect process data via observation and review monthly feedback reports with staff
- Stock only Polyurethane and Teflon catheters
- Prepackaged dressing change kit available on unit
- Collect process data via self-report of staff and review monthly feedback reports with staff
- Color coded labels on cap to identify next cap change date

**Maintenance Care Interventions**
- Standardize Maintenance practice across unit. This will include training of all staff and revising policies to reflect use of maintenance bundle
- Prepackaged dressing change kit available on unit
- Collect process data via self-report of staff and review monthly feedback reports with staff
- Color coded labels on cap to identify next cap change date

**Outcomes**

- Eliminate Catheter Associated Blood Stream Infections in PICU patients
- Continuous Learning Culture on Unit
BSI Deterioration

Central Venous Catheter (CVC) Associated Laboratory Confirmed Bloodstream Infections (LCBIs)

Infections per 1000 Catheter Days

Device Days, Quarter

- Actual Rate
- Mean
- Control Limits
- Goal
Implementation/Sustain Plan Status

Activity:

• CHG antisepsis of hubs/ports
• MicroClave® cap & D/C T-piece
• 2% CHG/alcohol for HCW hand washing
• New science and products
• CVC bundle compliance
• Reduction of patient skin flora
• Reduce CVC/IV line entries per 24 hours
• Manage GI tract colonization
• Selection of optimal CVC based upon patient condition and treatment plan

Status:

• Completed
• In-process; supply issues
• Completed, interval observation

• Review current products and submit to VAP Products Group
• Collaborate with VAP BSI Task Force
• Collaborate with VAP BSI Task Force
• Collaborate with VAP BSI Task Force & NACHRI HEM/ONC Collaboration
• Collaborate with VAP BSI Task Force
• Collaborate with VAP BSI Task Force
What Else Could Happen?

- Change in leadership
- Change in protocol
- Process reliability
- Staffing changes
- Change in census
- Change in equipment
- Change in rounding practice
- Change in scrub supplies
- Change in data collection and frequency
- Something out of the blue
Back to Alide
## Spread, Scale and Sustainability

<table>
<thead>
<tr>
<th>Spread:</th>
<th>Scale:</th>
<th>Sustainability:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actively disseminating set of practices/behaviors and knowledge from one setting to other care settings.</td>
<td>Moving from unit to unit dissemination of a set of practices/behaviors and knowledge to entire system or beyond</td>
<td>Locking in the outcomes that prototype units/hospitals have made already and continually building upon them. “When new ways of working and improved outcomes become the norm.”</td>
</tr>
</tbody>
</table>
Keys to Spreading Interventions

Laying the Foundation for Spread
- Send a clear message about the spread
- Designate an executive Sponsor
- Appoint a leader and establish a spread team
- Share results of successful pilots

Developing an Initial Plan for Spread
- Establish an aim
- Utilize your organizational structure
- Develop a communication plan
- Build a measurement system

Refining the Plan
- Make adjustments in the spread plan
- Accelerate the adoption of interventions
Examples of Spread

- Moving Central Line bundle of care from ICU to Med Surg Unit
- Moving prototype discharge instructions/use of read backs from one Med Surg Unit to the next
- Reduction of appointment types in Primary Care from one module to the next module
KP Northern California’s Adoption of Inpatient Quality Management (IQM)

- 2008 - KP Northern California’s leadership adopts IQM for the region
- Leaders added key elements to the IQM model, built quality initiatives around it, and renamed it Care Without Delay (CWD)

Key Elements:
- Multi-disciplinary rounding including bedside nursing
- Clinical Decision Areas
- 7-day hospitals

Quality Initiatives:
- Sepsis
- Critical Care
- C. diff
Building on Success

Kaiser Permanente Northern California Evolves the Model and Spreads Throughout the Region

NCAL adopts Baldwin Park

1:1 Pairing of MDs and PCCs: Enable clear and open lines communication between HBS and PCCs.

HBS Consultants and HBS Inpatient Rounders: Separation of admitting and rounding roles.

HBS Consultants physically present in ED: Provide early consultation on appropriateness of admission and plan of care.

7 day rotations for HBS Rounders: Minimize the “weekend effect.”

Round robin assignment and no redistribution of patients: Removes the disincentive to discharge patients.

Added to Over Time

Multi-Disciplinary Rounds (MDR): Daily bedside rounding with HBS, PCC, and RN (with SW optional) to discuss current status, update on treatment plan, and goals for discharge with the patient.

Managing to Volume: HBS flexes staffing based on seasonable variability and surges in census.

PCC Staffing Model: PCC staffing model created which set requirements for the ED and Inpatient settings 7-days a week.

HBS Co-Management with Surgical Specialties: HBS assumes medical management of orthopedic and select other surgical patients during their inpatient stay, per local agreement.

New to NCAL model in 2017

Palliative Care Services: Incorporated and added Palliative Care Services as a central component of the HMOC.

Patient Care Services (Nursing): Formally added Chief Nursing Executives, Beside Nurses, Assistant Nurse Managers, and House Supervisors as a key players within the HMOC.

Clinical Decision Area (CDA): Specific recommendations were created to support the creation of dedicated medicine observation areas.

Credit: KP Northern California HMOC Implementation Playbook
KP Northern California Results: After Adoption

CWD coupled with clinical quality improvement work and 7-day hospital strategic initiatives have together resulted in a 30% decline in hospital utilization from 2008 - 2017 in KP Northern California.
KP Northern California Results: After Adoption

KP Northern California strategy and methods decreased PDR and PDR variation.

Adjusted PDR by Medical Center

NCAL Average in Black
Quality Outcomes: Care Without Delay
Table Top Exercise
Break: Back in 30 Minutes

BREAK TIME 2:30PM - 3PM
Getting Results at Scale
Going to Scale

**Scale**: Moving from unit to unit dissemination of a set of practices/behaviors and knowledge to an entire system or beyond
Examples of Going to Scale

• Replacing all pressure-free mattresses across several hospitals
• Standardizing OR Briefings using same format and checklist in all MHS hospitals
• Reducing appointment types across all of Primary Care to four appointment types
• Embedding self appointment capability in portal
What Factors Need Consideration When Moving from Spread to Going to Scale?

• Leadership
• “Receivability” on new teams (Readiness)
• Understanding context/culture
• Additional funding
• Clear accountability
The Learning Health Care System
The Learning Health Care System

Network-Based Production
The Learning Health Care System

Effective use of technology to reduce costs of data collection

John Hutton, MD; Keith Marsolo, PhD; Charles Bailey, MD; Christopher Forrest, MD, PhD; Marshall Joffe, MD, PhD; Wallace Crandall, MD; Mike Kappleman, MD, MPH; Eileen King, PhD
The Learning Health Care System

Creating *transformative* Learning Health Networks

1. Focus on outcome
2. Build community
3. Effective use of technology
4. Learning system
   - System science, QI, qualitative research,
Innovate ImproveCareNow

Design
Prototype
Pilot
Implement
Scale Up & Spread

- E-CONSENT
- Emma
- IBD Volunteers
- Passive PRO
- IBD Handbook
- Engagement Portfolio
- Team Science
- YouMeIBD
- SHRINE

- Comparative Effectiveness Research
- MyIBD
- PLS
- SNA
- Communications
- Data Quality

- Electronic Data Transfer
- Registry IRB
- PVP
- Population Management
- IMPROVECARENOW EXCHANGE
- #C3N
Improving Outcomes with A Learning Health System

Point of Care
Learning Engine

EHRs
Patient-Reported Data
Biospecimens

Registry Database
Registry Applications

Standardize Care Process
Reduce Variability in Care
Customize Care to Patient Needs

Patient Outcomes

Patients and Families

Clinicians
Adverse Drug Event Rate

Children's Hospitals’ Solutions for Patient Safety
Every patient. Every day.

Adverse Drug Event Rate - Level E (NCCMERP Scale)

SPS Network Aggregate

Annotations

This document is part of the quality assessment activities of Ohio Children’s Hospitals Solutions for Patient Safety Learning Network and, as such, it is a confidential document not subject to disclosure pursuant to Ohio Revised Code Section 3307.11, 3307.12, 3307.13, and 3307.23. Any committee involved in the review of this document, as well as those individuals preparing and submitting information to such committees, shall all privileges and protection afforded by CRC Sections 3307.01, 3307.02, 3307.03, 3307.08 and 3307.23 and any subsequent legislation. The information contained is solely for the use of the individual or entity intended. If you are not the intended recipient, be aware that any disclosure, copying, distribution or use of the contents of this information is prohibited.

P55
Catheter Associated UTI Rate

Catheter Associated Urinary Tract Infections Rate

SPS Network Aggregate

Annotations
- 02/18: CA-UTI moves to orbiting phase
- 01/15: Ip Date Change - NHSN
- 10/14: Release Clinical Indicators
- 09/14: Leadership 1@80 Challenge
- 07/14: Best Practice - Nurse Driven Protocol
- 06/14: Release SPS Prevention Bundle
- 09/13: National Learning Session - Initial Results
- 01/13: Phase II Hospitals Join Network
- 12/12: Reliability Challenge
- 09/12: Recommended Bundles Released

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Building Reusable Network Infrastructure

**Goal:** Create and Sustain 5x (25) Effective Learning Networks by 2020
Maturity Model: 5 Domains, 1-4 Scale
Sustainability

Locking in the progress that has already been made and continually building upon it:

1. **Supportive Management Structure**
   - Set quality/safety as a high priority and regularly devote attention to the effort
   - Create accountability systems for improvement

2. **Structures to “Foolproof” Change**
   - Build structures that make it difficult for providers to revert to old ways
     (T Systems, packaged materials that support a given system)
Locking in the progress that has already been made and continually building upon it:

3. Robust, Transparent Feedback Systems
   • Understand performance on key indicators
   • Review information generated by a measurement system
   • Provide data to stakeholders at every level in the organization
   • Compare performance against clear standards
Sustainability (cont.)

Locking in the progress that has already been made and continually building upon it:

4. **Shared Sense of the Systems to Be Improved**
   - Stakeholders share an understanding of the processes and systems that they are seeking to improve
   - Clear on their contribution to the sought-after improvement

5. **Culture of Improvement and a Deeply Engaged Staff**
   - Shares a sense of pride around performance and improvements
   - Deep knowledge and awareness on quality/safety improvement initiatives
Locking in the progress that has already been made and continually building upon it:

6. **Formal Capability and Capacity-Building Programs**
   - Executives/staff training is a high priority
   - Build organization-wide skill in application of quality/safety improvement methods
   - Create a culture where improvement work is seamlessly integrated into day-to-day activities
Questions to Consider at the Outset

1. What is the nature of the change that you are seeking to sustain?

2. What is the nature of the context in which you are trying to build a sustained change?

3. What are the implications?
Patti’s Case Study: Sustainability
Spreading the Work of Care Without Delay Nationally

- Model developed by Drs. John Bigley and Beatrice Quezada at Baldwin Park Medical Center.
- Baldwin Park showed marked efficiency gains, with a patient day rate of 229 versus the SCAL average of 302.

- In 2008, NCAL adopted core elements of the Baldwin Park Model (now Inpatient Quality Management, or IQM, in SCAL) into the Hospital Model of Care.
- NCAL Patient Day Rate (PDR) dropped from 341 in 2007 to 321 in 2009 as a result of adopting this model.

- In 2016, SCAL updated IQM.
- NCAL adapted the updated model into a reinvigorated Hospital Model of Care (HMOC), augmenting areas most relevant to our teams and our members.
- Program Office is spreading IQM/HMOC across all regions, under the branding of Care Without Delay (CWD).

Credit: KP Northern California HMOC Implementation Playbook
## Xcelerating Learning & Spread (XLS)

### DESIGN EXCELLENCE

#### FOCUS

- **Strategic Intent**
  - What matters most?
- **Themes**
  - Big strategic breakthroughs

#### UNDERSTAND

- **Problem Definition**
  - Strong scanning capabilities
- **Scanning**
  - Generate portfolios

#### DESIGN

- **Prototype & Test**
  - Visit.

#### INTEGRATE

- **Demonstrate**
  - Can this work?
- **Operationalize**
  - How will this work?
- **Implement**
  - Does it work?

### KEY QUESTIONS

#### Focus
- Where do we need to make strategic progress?
- What are our clinical, operational and breakthrough strategies?
- Are we willing to commit resources?

#### Understand
- What is the problem?
- What is the customer/user experience?
- What effective practices currently exist?

#### Design
- What portfolio of solutions can address the opportunity?
- Which solutions might delight patients and members?
- What toolkit will we use in operations?
- What information will we need to learn and spread?

#### Integrate
- Can the solution work in operations?
- Are we ready to move to 3-5 sites?
- What can we stop doing?
- Did we transform behaviors and the experience in a meaningful way?
- Do we proceed to full spread & scale?
CWD: “Right Place, Right Care at the Right Time”

High Reliability Hospitals
High-Quality Affordable Health Care

- CWD in Core and Non-Core Hospitals
- Clinical Effectiveness
- Hospital Organization and Capacity
- Roles, Responsibilities, Accountability
- Non-KP Hospital and Post-Acute Partnership
- Workforce Development
- Measurement

Engaged Peer Groups

KFH/PMG Joint Ownership
Sustainability: Key Components

1. Supportive Management Structure
2. Structures to “foolproof” Change
3. Robust, Transparent Feedback Systems
4. Shared Sense of the Systems to be Improved
5. Culture of Improvement and Deeply Engaged Staff
6. Formal Capability and Capacity-Building Programs
Care Without Delay Dashboard

FOR ILLUSTRATIVE PURPOSES ONLY
Why Scaling and Spreading is Worthwhile

• 1:10-14 range of Patient Care Coordinators (PCCs) & physicians to inpatients means patients receive **better quality of care and fewer delays**.
• With both PCCs and physicians working on patients allows for a focus on **social and medical needs of the patient**.

---

### Better Care

Fewer delays means patients **get better and go home quicker**, and are **exposed less to hospital acquired infections**.

### Improved Health

In Southern California alone, if all medical centers maintained a patient day rate (PDR) equivalent to the best performer there would be **304 beds a day** available across the region.

### Lower Costs

Without this model the Northern California region would have had to have build **2 new hospitals** in the last seven years to manage capacity.
Spreading Care Without Delay: Challenges and Bumps Along the Way

- Spread delayed/failed in some regions because of:
  - Lack of leadership support
  - Lack of engagement or champions (culture)
  - As a hospital-based operation model, CWD requires strong partnerships with contract facilities in non-hospital regions, ensuring coordinated care across the continuum.

- Sustaining gains takes constant and consistent vigilance
  - Site visits
  - Regular performance calls
  - Weekend spot checks
  - Review and integration of best practices

- Willingness to adapt and change
CWD: Looking Forward

• Continue spread to regions
• Kaiser Permanente in Southern California and Colorado are adopting CWD in skilled nursing facilities and other continuum settings
• KP Southern California is exploring ambulatory space (i.e. home health, behavioral health)
Most Importantly: Patient at the Center of Care

“We are stretching the boundaries around how care is delivered by integrating with the member’s life.”

— Bernard J. Tyson
Chairman and CEO
Kaiser Permanente
Sustainability: Cincinnati Children’s
Case Study: Sustainability

Variation from standard of care that results in:

**Serious Safety Event**
Event that reaches the patient and results in death, life-threatening consequences, or serious physical or psychological injury
*Cause Analysis Level: RCA*

**Precursor Safety Event**
Event that reaches the patient and results in minimal to no harm
*Cause Analysis Level: ACA or RCA*

**Near Miss**
Event that almost happened - the error was caught by one last detection barrier
*Cause Analysis Level: Trend, ACA*
Harm At Cincinnati Children’s

• Serious Safety Events
  • Catheter-Associated Bloodstream Infections
  • Ventilator-Associated Infections
  • Surgical Site Infections
  • Codes outside the PICU
  • Adverse Drug Events
  • Other Adverse Events
    (IV infiltrates, unrecognized deterioration, Pressure ulcers)
  • Failure of Safe Practices
    (Hand washing, Handoffs, etc.)
• All preventable harm

Some words are capped here, inconsistency in text
Initial Steps:

Achieving High Reliability on Key Processes

- Building QI expertise
- Building QI into daily work
- Learning basic engineering principles of reliability design
- Learning we can prevent harm
Sensitivity to Operations
Beyond reducing harm: Moving toward Eliminating Harm

- **Reliability Culture**
  - Core values & vertical integration
  - Behavior expectations for all
  - Hire for fit
  - Fair, just, and 200% accountability

- **Process Design**
  - Evidence-based best practice
  - Focus & Simplify
  - Tactical improvements (e.g. process bundles)

- **Human Factors Integration**
  - Intuitive design
  - Obvious to do the right thing
  - Impossible to do the wrong thing

Journey to Reliability – The Next Zero
Reduce Serious Safety Events
0.2/10,000 Adjusted Patient Days by 6/30/10

Outcomes

Key Drivers

Lessons Learned Program

Improved Safety Governance

Error Prevention System

Cause Analysis Program

Specific Tactical Interventions

Intervention/Change Concepts

• Safety Stories
• Transparency
• Reinforce Culture Change
• Spread story beyond organization
• Patient Safety blog
• Share all Action plans

• Patient Safety Oversight Group
• Cabinet Leadership
• CSI annual goals
• CCHMC Board focus

• Error Prevention Training
  • Adoption of Behaviors
  • Safety Coaches
  • Procedural Safety
  • Simulation training
  • Leadership Behaviors
  • Situation Awareness
  • Family Engagement

• RCA- continuous improvement
• Transition to Action
• Common Cause data to drive Strategy
• Effective Action Plans

• 100% UP in OR
  • UP for all procedures
  • IV infiltrate reduction
  • Monitor reliability pilot
  • Announce and Count
Effective Error Prevention System

**Outcome**
- Error Prevention training
- Safety Coach program
- Procedural Safety
- Simulation Training
- Leadership Behaviors
- Situation Awareness
- Family Engagement

**Key Drivers**

**Interventions**
- Leadership training*
- Staff training*
- Community MD training
  - New staff training (achieve 95%)
- Initial pilot units*
- Spread to all units*
- Monthly Safety Coach support
- Focused Safety Coach enhancements
  - Unit Level Plans
- Initial focus in ED*
  - Expand capability of Sim Center
  - Pilot expansion*
  - In-situ across IP
- Increased event reporting
  - Use of Lessons Learned in microsystem
  - Support safety Coaches
  - Unit level Safety outcomes
- Patient SA across IP
  - Microsystem SA spread
  - Organization SA pilot
- Family Engagement Bundle spread
  - MRT Activation: revise
Journey to High Reliability: HROs

- Preoccupation with Failure
- Reluctance to Simplify Interpretations
- Commitment to Resilience
- Deference to Expertise
- Sensitivity to Operations
- Find loopholes in system’s defenses, barriers and safeguards on the frontline
- Maintain Situation Awareness
Serious Safety Events per 10,000 Adj. Patient Days
Rolling 12-Month Average

** The narrowing thresholds in FY2005-FY2007 reflect increasing census. Adjusted patient days for FY07 were 27% higher than for FY05.

Desired Direction of Change

- Error Prevention Training
- Simulation Training Expands
- Patient Safety Tracker
- Safety Coach Program
- Surgical Safety Begins
- Tenants of Surgical Safety
- aSSERT Began
- aSSERT begins

Events per 10,000 Adj. Patient Days

|--------|--------|--------|--------|--------|--------|

SSEs per 10,000 Adj. Patient Days

Baseline [ 1.0 (FY05-06) ]

Fiscal Year Goals (FY07=0.75 / FY08=0.50 / FY09=0.20)

Threshold for Significant Change

** Each point reflects the previous 12 months. Threshold line denotes significant difference from baseline for those 12 months (p=0.05).
Simulation Training Expands
Error Prevention Training
Root Cause Analysis Program

Serious Safety Events per 10,000 Adj. Patient Days
Rolling 12-Month Average

Desired Direction of Change

Events per 10,000 Adj. Patient Days

aSSERT Began July 2006

Axis Title

SSEs per 10,000 Adj. Patient Days
## SSE COMMON CAUSES

Total Number of Times each Safety Element Failed  
(FY07 – Jan. 2010)

<table>
<thead>
<tr>
<th>Failure Type</th>
<th>Count</th>
<th>% of times this failure occurred</th>
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<tr>
<td>Coordination of Care</td>
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<tr>
<td><strong>Situation Awareness</strong></td>
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<tr>
<td>Reliable Escalation</td>
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<td>Family Engagement</td>
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</table>
Background: Conceptual Model

Clinical status

Anticipated Recovery

SA Bundle
Night talks
PEWS
MRT

Effort needed to return to recovery

Code
Situation Awareness Model

- Bedside Team
  - Intern
  - Bedside nurse
- Microsystem Team
  - Watchstander Senior Resident
  - Watchstander PCF/Manager
- Organization Team
  - MRT
  - Safety Team (MPS and SOD) at 800, 1600 & 100
- Reliable escalation of risk
  - Rapid assessment and communication with primary team

Hypotheses to Improve SA

1. Gather Information “Perception”
2. Recognize & Understand “Comprehension”
3. Anticipate “Projection”

- Miss Important Information
- Systematically Identify High Risk Patients
- Miss Context as Info Not Integrated
- Communicate Each Risk to Watchstander
- Wrong Prediction
- Predict/Mitigate/ Escalate as Team

Right Decision! Decide Act
Robust Planning

Identify the Patient, Make a Specific Plan

Elements of “Robust Plan”
- Identifying the problem or concern
- Making responsible parties aware
- Forming a plan
- Predicting an expected outcome within a fixed amount of time
- Deciding on an escalation and contingency plan if outcome is not met in time
3 Level High Reliability Huddle System

**MICRO LEVEL (Unit Huddle)**
Look back: individual providers report on unexpected events, medical response team calls
Look forward: individual providers report on individual patients at risk for safety events
Integration: charge nurse considers overall unit status, planned discharges, staffing needs

**MESO LEVEL (Inpatient Huddle)**
Look back: charge nurses from each microsystem report on unexpected events, transfers to higher levels of care
Look forward: individual microsystems report on higher risk patients in mesosystem, overall unit status
Integration – Manager of Patient Services (MPS) works with charge nurses to develop plans and predictions for highest risk patients, develop capacity plan through system, predict and mitigate experience failures

**MACRO LEVEL (Daily Operations Brief)**
Look back: mesosystem leaders report on unexpected outcomes over last 24 hours, resolution of concerns raised at previous brief
Look forward: mesosystem leaders predict and plan for big issues of day with focus on problems at intersections of mesosystems
Integration: administrator of the day identifies responsible party(ies) for each concerns and sets clear follow-up
# Patient Risk Shifts

## % of Shifts Mitigating or Escalating Patient Risk (Reliability)

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- Empty Cells: Late submittal or No data submitted
- Green Cells: Value greater than 90%(goal)
- Red Cells: Values less than 90%(goal)

Reliability is defined by the percent of Watchstanders/PCF shifts that verified that they followed the SA algorithm for identified safety concerns.
SA Bundle Concerns

Not Fully Addressed SA Bundle Concerns

- Escalations
- Average Weekly Escalations
- Control Limits

5/2/10 Change in data collection process
MRT Transfer Rate

MRT Transfer Rate per 1000 non-ICU Patient Days

Rate per 1000 non-ICU Patient Days

Month

- Monthly MRT Transfer Rate
- Average Monthly MRT Transfer Rate
- Control Limits
Hospital Wide System for Safety

3 Times - Every Day

Individual Room / Floor / System Predictions – Capacity and Safety

Floor Huddles
PeriOp Huddle
ED Huddle
ICU Huddles

Institutional Wide Bed Huddle – Capacity Management

Pharmacy
Pt. Transport
Facilities

Institutional Wide Safety Call

System Prediction – Mitigation Strategy

Leadership Outcomes and Prediction Meeting
CEO, CFO, CMO, CNO, SIC, Sr VP’s, Safety Director
Rate of UNSAFE Transfers

UNrecognized Situation Awareness Failure events
Per 10,000 Non-ICU Base Inpatient Days

- Situation Awareness project go-live
- Robust plan and prediction

Updated June 13 2012 by K. Simon
James M. Anderson Center for Health System's Excellence
What You Need to Know About H1N1 Influenza

The Centers for Disease Control answers your questions and debunks the myths about the H1N1 swine-associated influenza virus. Full Story

More Links

- CDH Novel Influenza A H1N1 Testing Overview -- Effective June 1

CenterNews

Expert on Kangaroo Mother Care Visits RCNIC

Nils Bergman, MD, travels the globe advocating that infants do best when they’re in skin-to-skin contact with Mom. Full Story

Cincinnati Children’s Announces Formation of Cancer Institute

Aim is to integrate research and clinical care with institutional support to deliver better outcomes, experience and value for patients and their families. Full Story

Give Blood, Save Lives

Just 30 minutes of your time can mean the difference between life and death for someone in need. Full Story

More Links

- Cincinnati Children’s, UC, University Hospital Launch Cancer Consortium
- Child Life Celebrates 75th Anniversary
- Recycle Electronics Using e-GO
- Epic Update

Dr. Steve’s Patient Safety Journal: Safety Reporting?

What safety reporting is and is not all about. Full Story

Safety Action Story: Dental Clinic Focuses on Time Out Now

A serious safety event during a dental surgery led to a focus on time out now.
Excellent Coordination of Care Saves Child

An infant was recently brought in to Liberty for a routine outpatient procedure and was found to have one of the most emergent conditions in pediatric surgery besides trauma - a twisted bowel. Once diagnosed, surgeons have about three hours to untwist the bowel.

Radiologist Steve Kraus, MD, made the initial diagnosis, called Jackie Beigel, patient advocate, Emergency Services, and got the child to Liberty's ER, where Nathan Timm, MD, Emergency Medicine, and his team quickly prepared him for transport to the Burnet Campus. The transport team notified our NICU for their involvement postoperatively, and when Beigel told the OR about the patient the staff immediately made a room available.

Anesthesia was given during transport, the baby landed in the holding area, and within about 30 minutes of arrival surgeons were working to correct the problem (all within about one hour from the radiologist's first call). Surgery went very well and the baby is fine today.

Lessons Learned
Excellent Coordination of Care was key to saving this child’s life.

"I am convinced that this institution's well-oiled machine led to this result, which in many other settings would not have worked out so well," Beigel says. "At least 30-40 individuals all came together on different campuses and from multiple disciplines to accomplish the goal of saving this child.

"This is truly an example of how good we can be when everyone comes together with the same goal and mission - to save a child. This is how we change the outcome. Thanks to all for such great team work!"

If you have a patient safety story to share, please use the convenient online form to tell us about it.

Comment on this story
## Timeline of Huddles

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
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</table>
| 2005-6 | • Started SSE work  
• Started talking about HROs  
• AHRQ HRO Learning Network |
| 2007-8 | • Flow, MPS started 8:00 Huddles, focused on flow and staffing  
• Moved from unit directors to charge nurses in attendance  
• More front line |
| 2009  | • SA work to 4 units with safety concerns discussed at huddle  
• Created Safety Officer of Day (SOD)  
• Expanded from 1 to 4 physicians |
| 2010  | • Started “safety rounds” at 4:30 and midnight (MPS)  
• Added 4:30 huddle  
• Began Daily Operations Brief  
• OR Huddles |
| 2011  | • Focused on robust mitigation plans with coaching at huddle  
• Began tracking SA concerns in Epic |
| 2012  | • Began midnight huddles  
• Hospital Medicine faculty co-lead midnight huddle  
• Began pilot work on unit huddles |
| 2015  | • Unit based staffing huddles and escalation |
Serious Safety Events per 10,000 Adj. Patient Days
Rolling 12-Month Average

Desired Direction of Change

aSSERT Began
July 2006

AUG 2012: 0.174

FY05 FY06 FY2007 FY2008 FY2009 FY2010 FY2011 FY2012

Events per 10,000 Adj. Patient Days

SSE Rate per 10,000 adjusted patient days

Chart Last Updated SEP 12 2012 by T. Bracke, AC

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Serious Safety Events

![Graph showing Serious Safety Events per 10,000 Adjusted Patient Days Rolling 12-Month Average CCHMC System. The graph indicates a downward trend with occasional spikes.](image)
Factors Affecting Sustainability

- Person on point (accountability)
- Capability for improvement, leadership, oversight
- Distributed leadership but a systems viewpoint
- Senior Leadership active engagement
- Data – qualitative and qualitative
- Rhythm of daily work to hardwire habits
- Clear roles and responsibilities
- Mitigation systems robust
- Escalation plan clean
- Accountability for process and outcomes
- Understanding failures
Lessons for Sustainable Changes

• Determine the people and system to sustain
• Engage staff who do the work in developing the changes
• Build the changes into existing work
• Ensure that change has achieved acceptable levels of capability and reliability, then turn to sustainability
• Maintain feedback systems. Continuous ongoing control measurement
• Return to improvement if process falls out of control
Exercise

1. Using problem you selected, identify issue that resulted or could result in deterioration of desired outcome.

2. Prioritize three actions that you would take to prevent deterioration and help sustain improvement efforts.
Sustainability at Scale

- Community engagement
- Coproduction
- Setting the table right
- Making it simple
- Data Support and Feedback
- Rhythm of testing and learning
- Capability building
- Engaging Macro, Meso and Microsystems
Sustainability at Scale

• Build community
• Design for Scale from the beginning
• Early prototypes to find clues to solve tough outcomes
• Generosity, optimism and Transparency
• Co-production - Letting go - Parents and kids at the table
• Innovators
• Data, leadership etc.
• Celebrations – ALL WIN
## Factors to Consider

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<th>POSITIVE</th>
<th>NEGATIVE</th>
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<tr>
<td>• Sustained attention</td>
<td>• Lack of focus</td>
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<tr>
<td>• Committed leadership</td>
<td>• Lack of or change in leadership</td>
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<tr>
<td>• Aligns with strategic aims</td>
<td>• Competing priorities</td>
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<td>• Aligns with culture</td>
<td>• Incomplete implementation</td>
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<td>• Continued monitoring</td>
<td>• No monitoring</td>
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<tr>
<td>• Data systems</td>
<td>• No accountability</td>
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<tr>
<td>• Committed team</td>
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<td>• “Clear ownership”</td>
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