

# The Lean Journey: Key Lessons Learned Along the Way



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# Lean Transformation is a Journey

- Developing a lean organization requires a long term view
- The effort is “a journey, not a destination”
- The drive to lean transformation is one that doesn’t have an “end”



# Lean Transformation: Common Themes

All organizations implementing lean management have to address a similar set of challenges

- Setting lean direction and strategies
- Introducing lean management principles, tools and systems into the organization
- Engaging and educating people
- Supporting culture change

# Our Lean Journey

10 years ago, Seattle Children's embarked on a journey to become the best children's hospital....



# Why would a children's hospital set out on a lean journey?



# Case For Change – Our Burning Platform

- Safety Concerns
- Improving Quality
- Service Deficiencies
- Competition
- Cost
- Culture



**We needed a way to  
transform our organization!**

# Our neighbors were doing some great work

Boeing was working on their 737 line



Virginia Mason was beginning to develop its “production system”

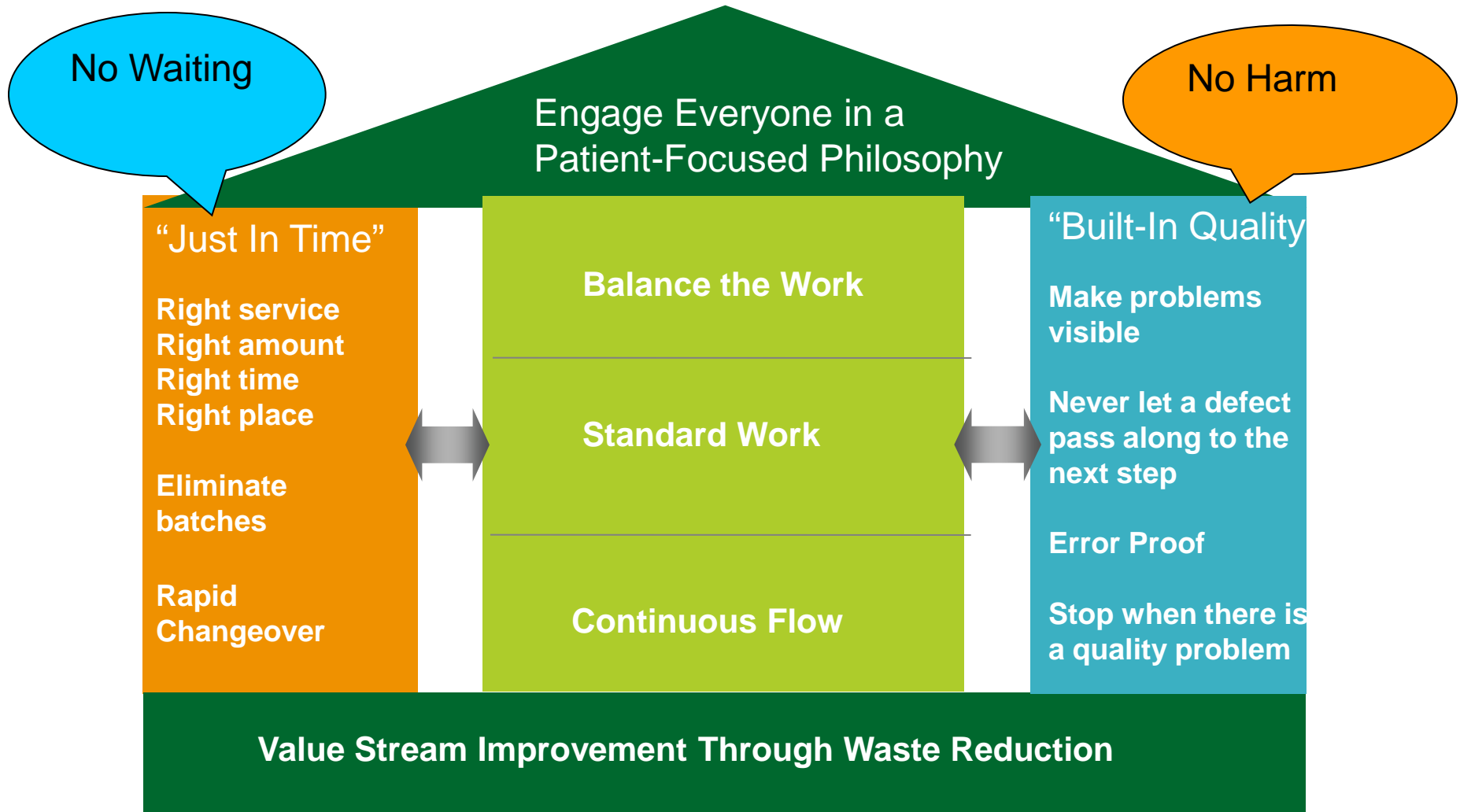


# We found a benchmark in Toyota

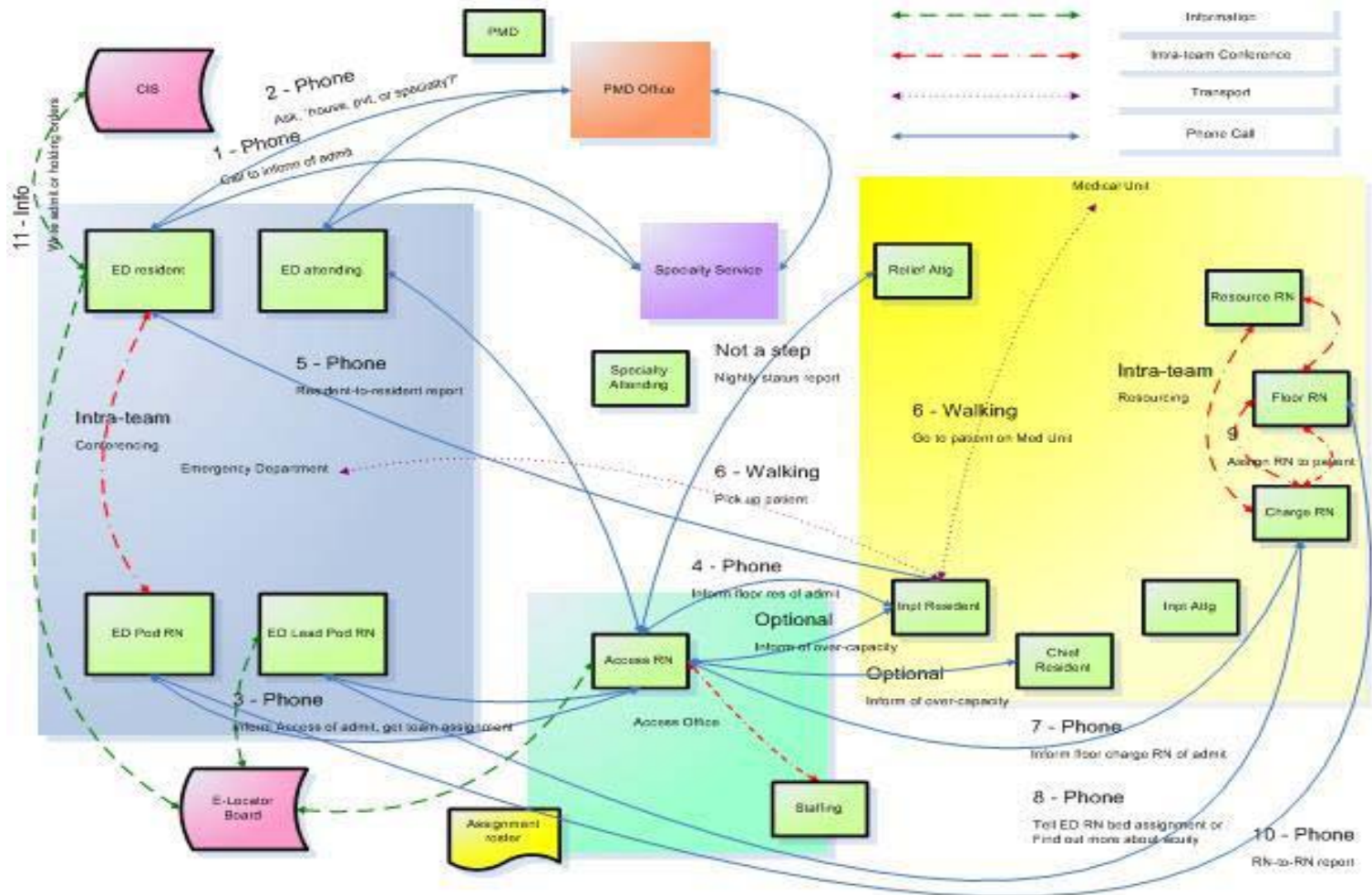
- High quality and reliability (best in industry)
- Safety record that far exceededed others in industry
- Cost effectiveness for customers
- Short response time to customers
- High levels of employee engagement and morale
- An organization-wide philosophy and management system



# Seattle Children's CPI Approach



# Our “Dizzying Complexity”: Admitting A Patient From the ER



# Key Principles: The Goal Is to Eliminate Waste

Waste is an activity that consumes resources but adds no value to a product or service (non-value-added)

**Waste comes in many forms often cleverly designed as real work**

Processing

Search Time

Correction

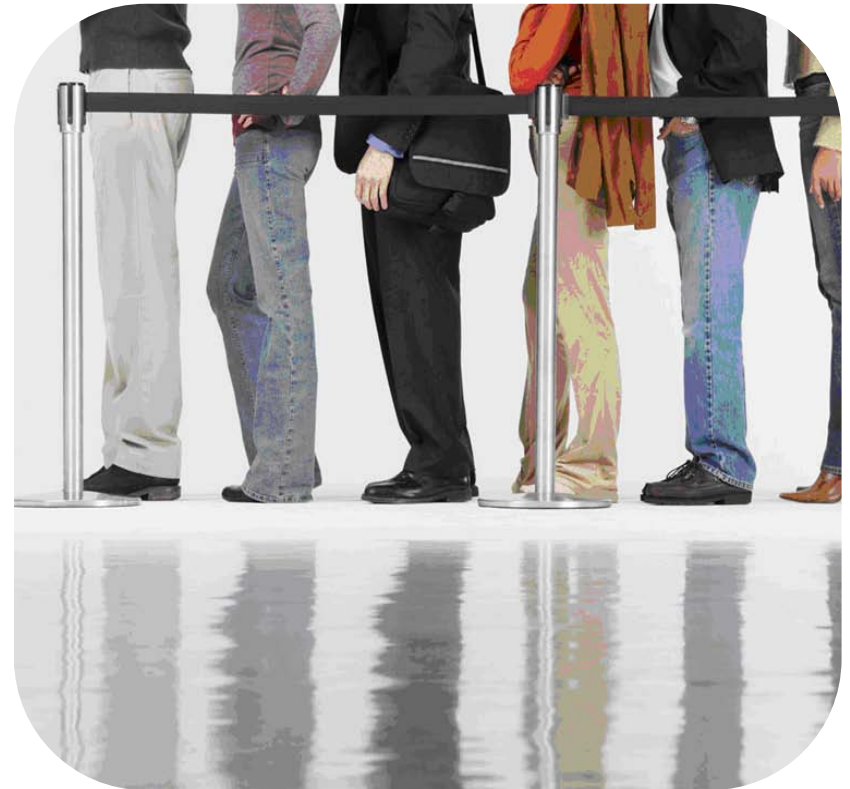
Transportation

Inventory

Space

Wait Time

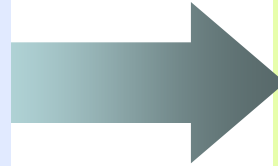
Complexity



# Our Lean Journey

## Point Improvement

- Clinic
- OR
- Pharmacy
- In-Patient
- Central Processing



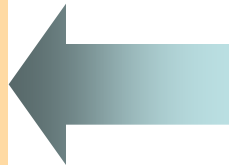
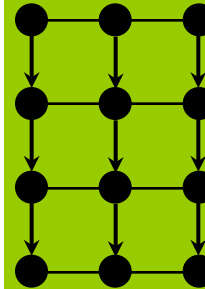
## Value Stream Improvement

From the Perspective of the Patient and Family

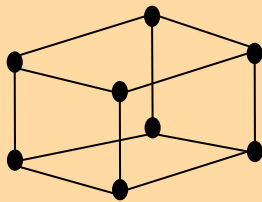


## Plane Improvement

Replicate throughout organization



## CPI Enterprise-Wide



Extend Beyond the Hospital

# First Wave: Point Improvements in Non-Clinical Areas



## 5S in the Loading Dock

**Sort**  
**Stabilize**  
**Sweep**  
**Standardize**  
**Sustain**



# Second Wave: Point Improvements in Clinical Areas

## Laboratory Example

### Tools

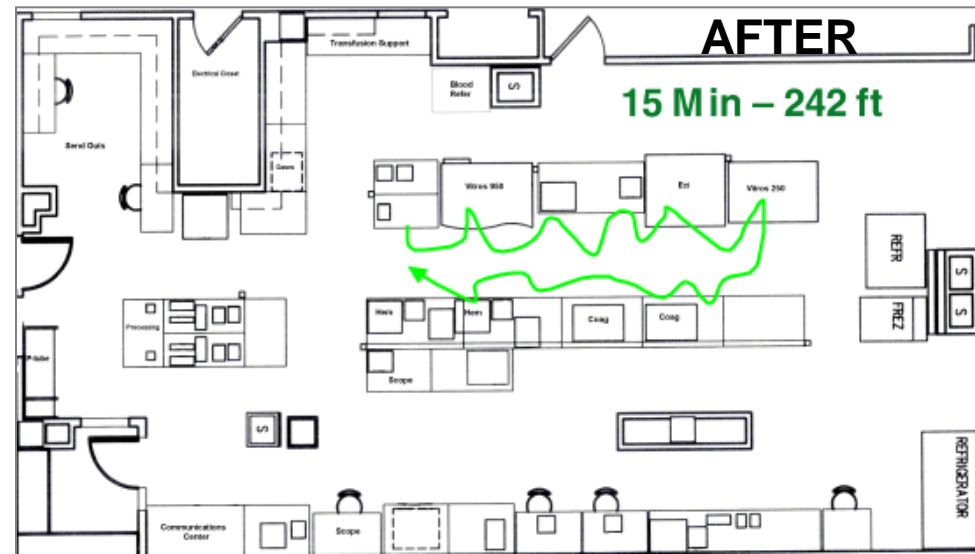
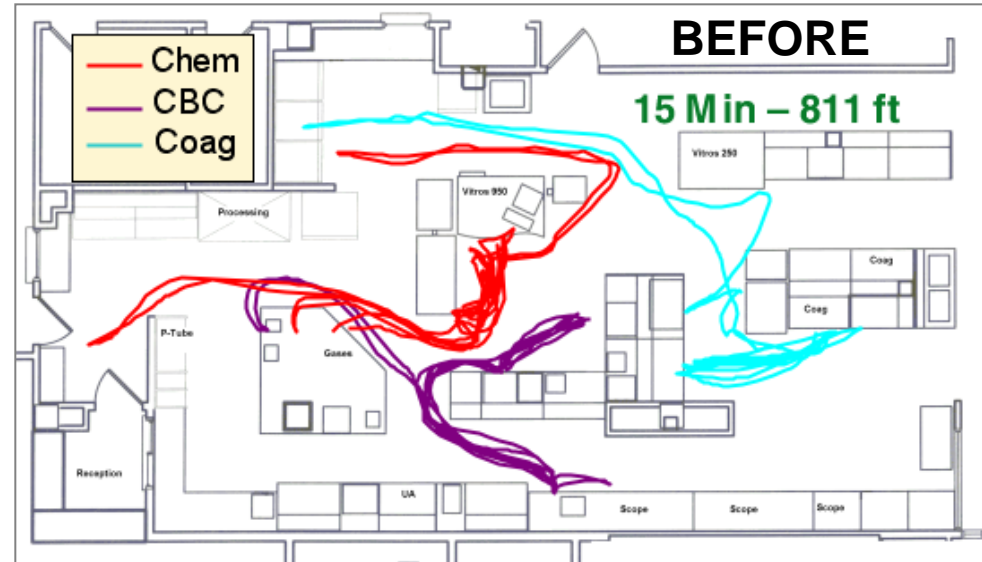
Process Mapping

5S

“Kaizen” techniques

5 day improvement workshop

In one year, improved cycle time leading to an elimination of the need for “stat” tests



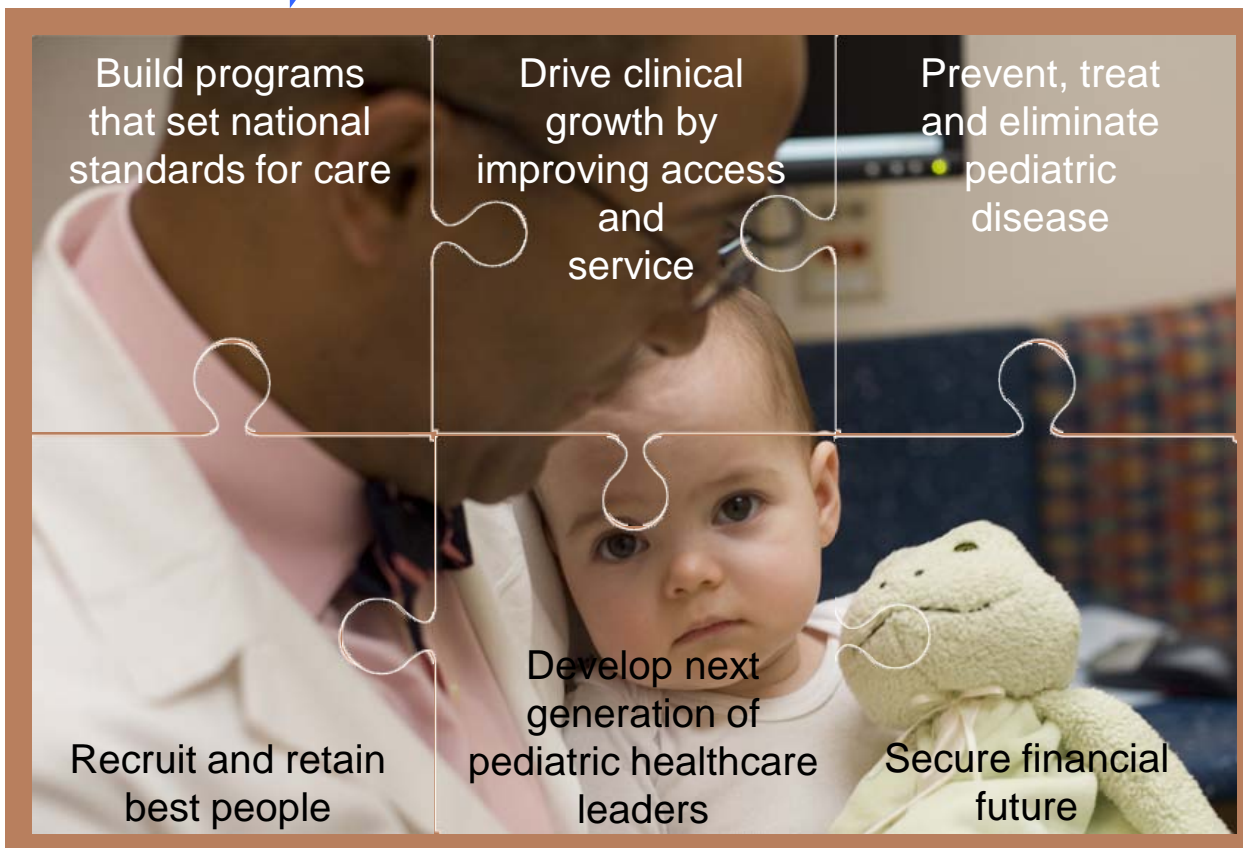
# Early Experience With Point Improvements

- “...we don’t make cars...”
- Understanding CPI philosophy and tools
- Tracking results difficult
- “Didn’t get it right” the first time
- Focus on iterative improvement rather than “the next thing”
- 5 day workshops too time consuming
- Developed relevant training materials
- Implemented Japan training and “lean leader” program
- Daily process audit
- Multiple iterations led to gradual improvement
- Early discussions of ways to sustain change
- Shorter events

# In 2006, Children's Implemented an Ambitious Strategic Plan

Become the

*institution of choice* for children's healthcare needs in WAMI



Become the

*nationally recognized leader* in pediatric health



# Third Wave: A Focus on Value Streams

- Strategy included plan to grow clinical programs to meet patient demands and improve quality
  - Needed to integrate all aspects of clinical services
  - Value stream approach required

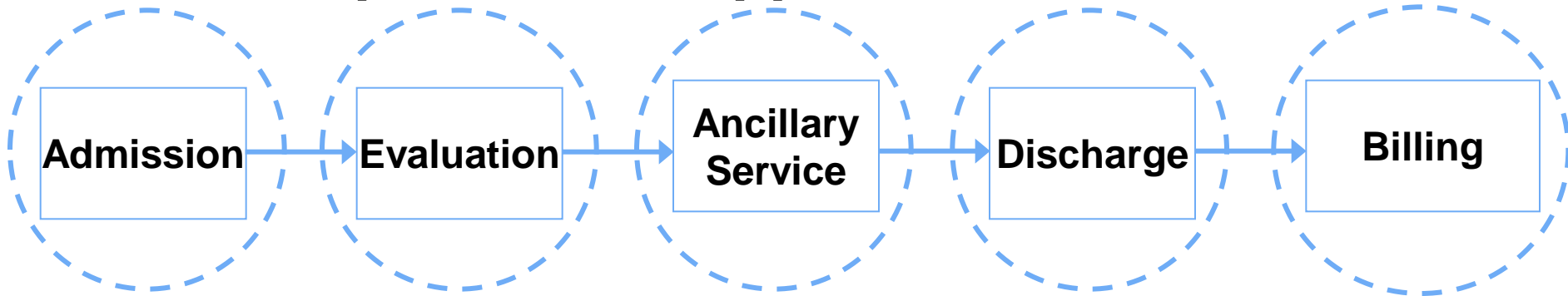


“Any damn fool can make a plan – it is the execution that messes you up”

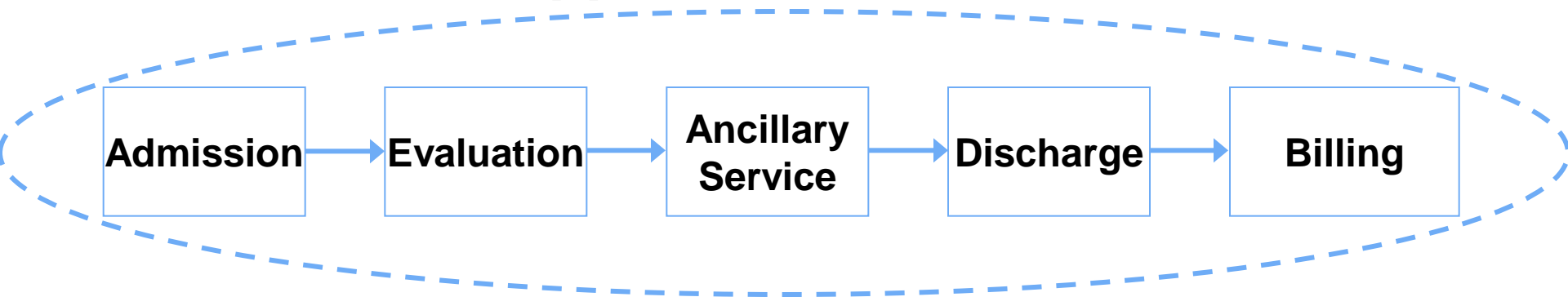
Col Harry G. Summers

# Understanding Value Streams Requires a Horizontal View

## Point Improvement Approach



## Value Stream Approach



# Value Stream Approach

## Hospital Patient Flow Example

### Tools

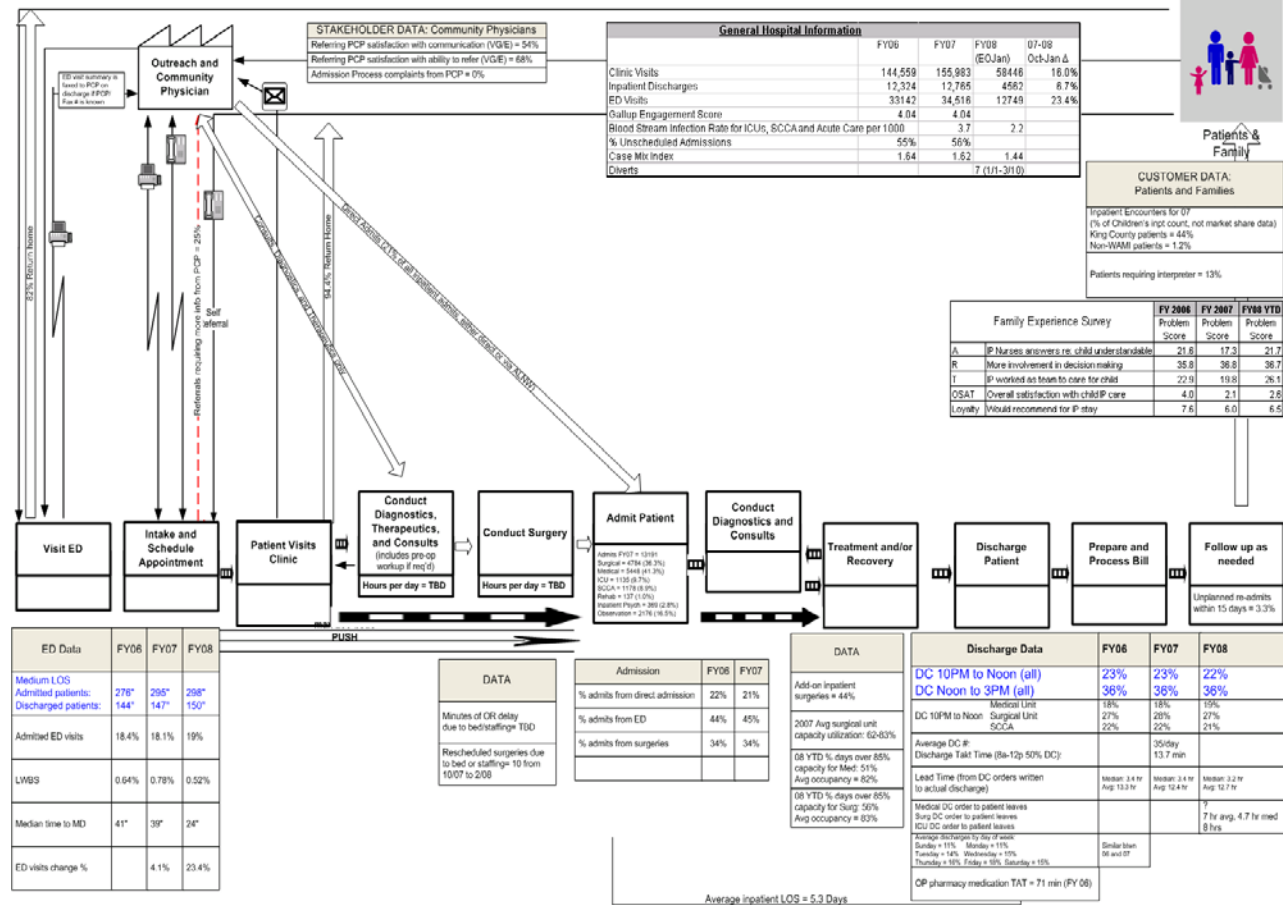
Value stream maps

X-matrix

3 day "design" events

Cross functional impact analysis

Root Cause Analysis



# Value Stream Approach: Supply Chain Management



## BEFORE

- Over and under-stocked supplies
- Finding and tracking items
- Excess inventory
- Special orders
- Hoarding



# CPI in the Supply Chain: Demand Flow



**AFTER**

Use of “Kanban” system

End-user removed from supplies management

Elimination of excess and obsolete supplies

Order placement is error-proofed

Product standards set and maintained

Cost per order line significantly decreased



A two bin supplies delivery system that uses visual triggers to deliver the right supplies, to the right place, at the right cost

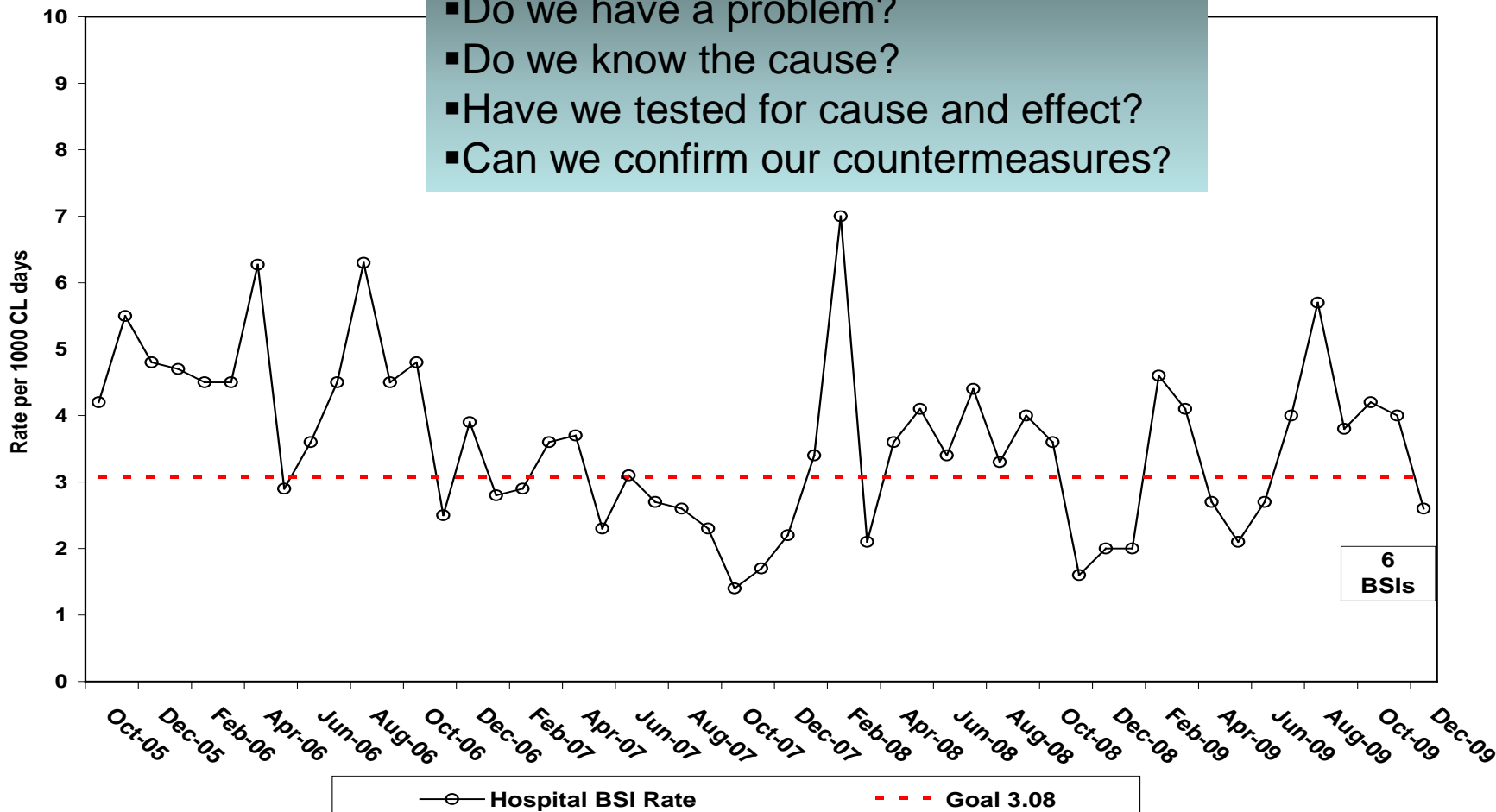
# Early Experience With Value Stream Improvement

- Working across functional areas highlighted “silos”
- Limited standard work made improvement difficult
- Sustaining change across the VS was challenging
- Hard to narrow scope of improvement work
- Need to identify and track the right operating metrics
- Need for “Paired accountability” model
- Initiated interdisciplinary “stand up” meetings
- Revealed need for standard work and daily management system
- Improved oversight process and scoping
- “Dashboard” development to track key metrics

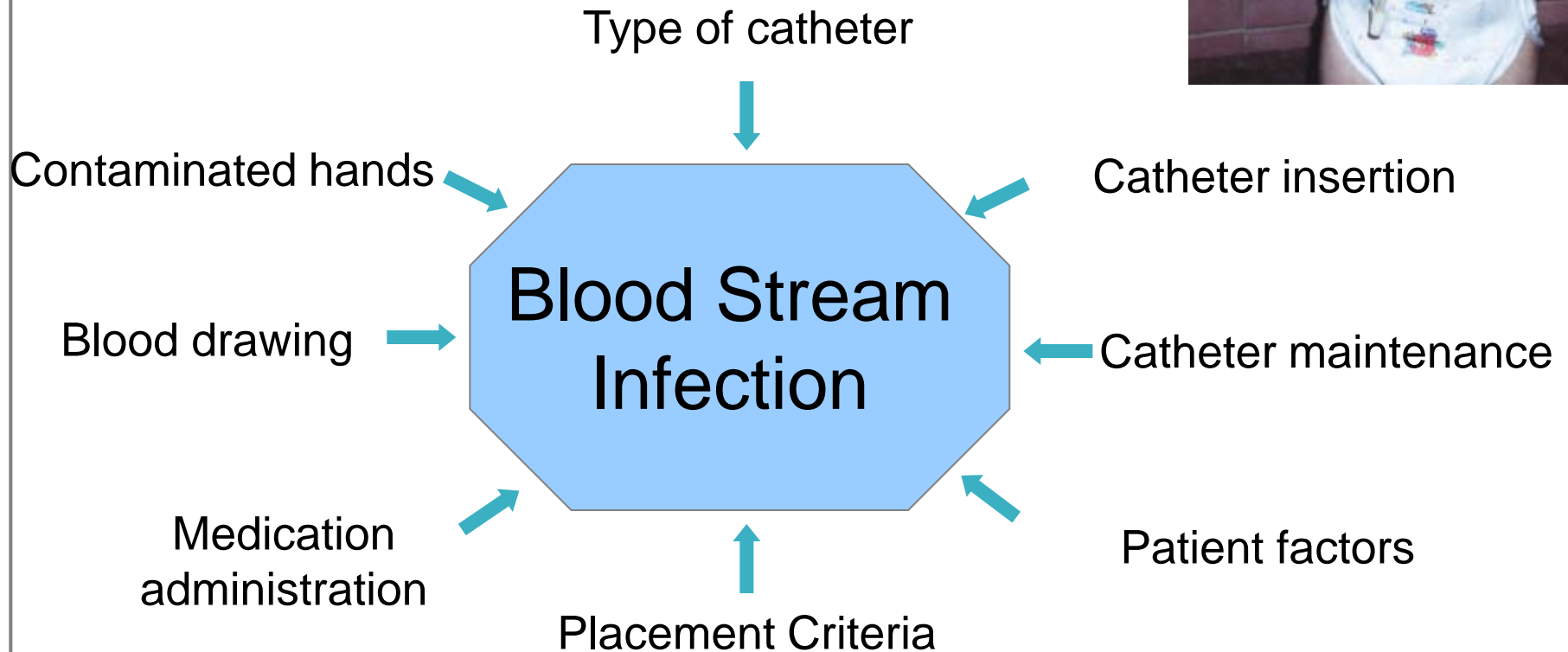
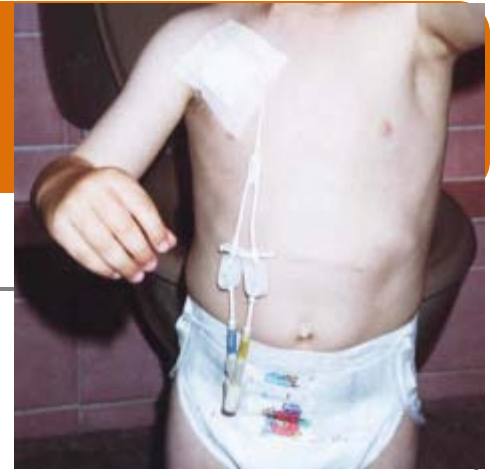
# A Cross Functional Approach to Improving Safety: Blood Stream Infections

## Hospital-Acquired Catheter-Associated Bloodstream Infections - All Units

- Do we have a problem?
- Do we know the cause?
- Have we tested for cause and effect?
- Can we confirm our countermeasures?



# Blood Stream Infections: Understanding Root Causes



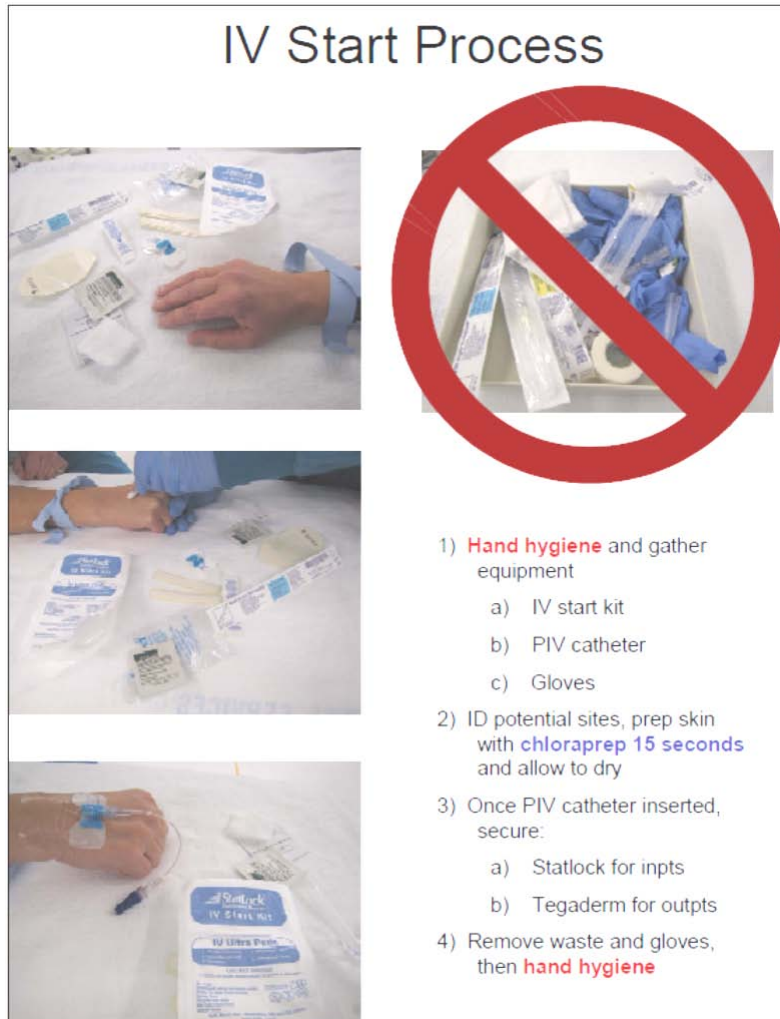
***Improvement requires cross functional approach***



# Blood Stream Infections: Countermeasure Example

## Standard work for IV starts

IV Start Process



- 1) **Hand hygiene** and gather equipment
  - a) IV start kit
  - b) PIV catheter
  - c) Gloves
- 2) ID potential sites, prep skin with **chloraprep 15 seconds** and allow to dry
- 3) Once PIV catheter inserted, secure:
  - a) Statlock for inpts
  - b) Tegaderm for outpts
- 4) Remove waste and gloves, then **hand hygiene**

Defined standard work process

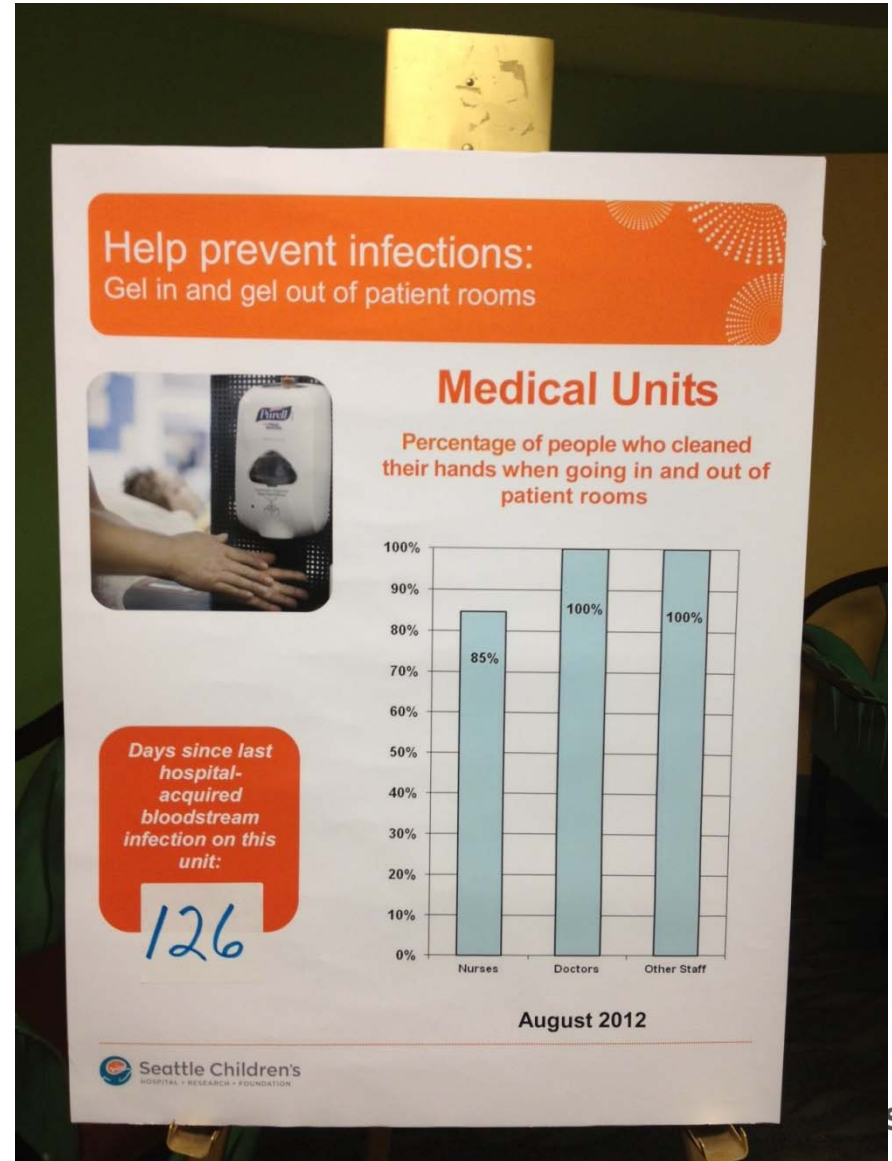
Developed “kit” including all needed supplies

Visual training aids for training

Process audits

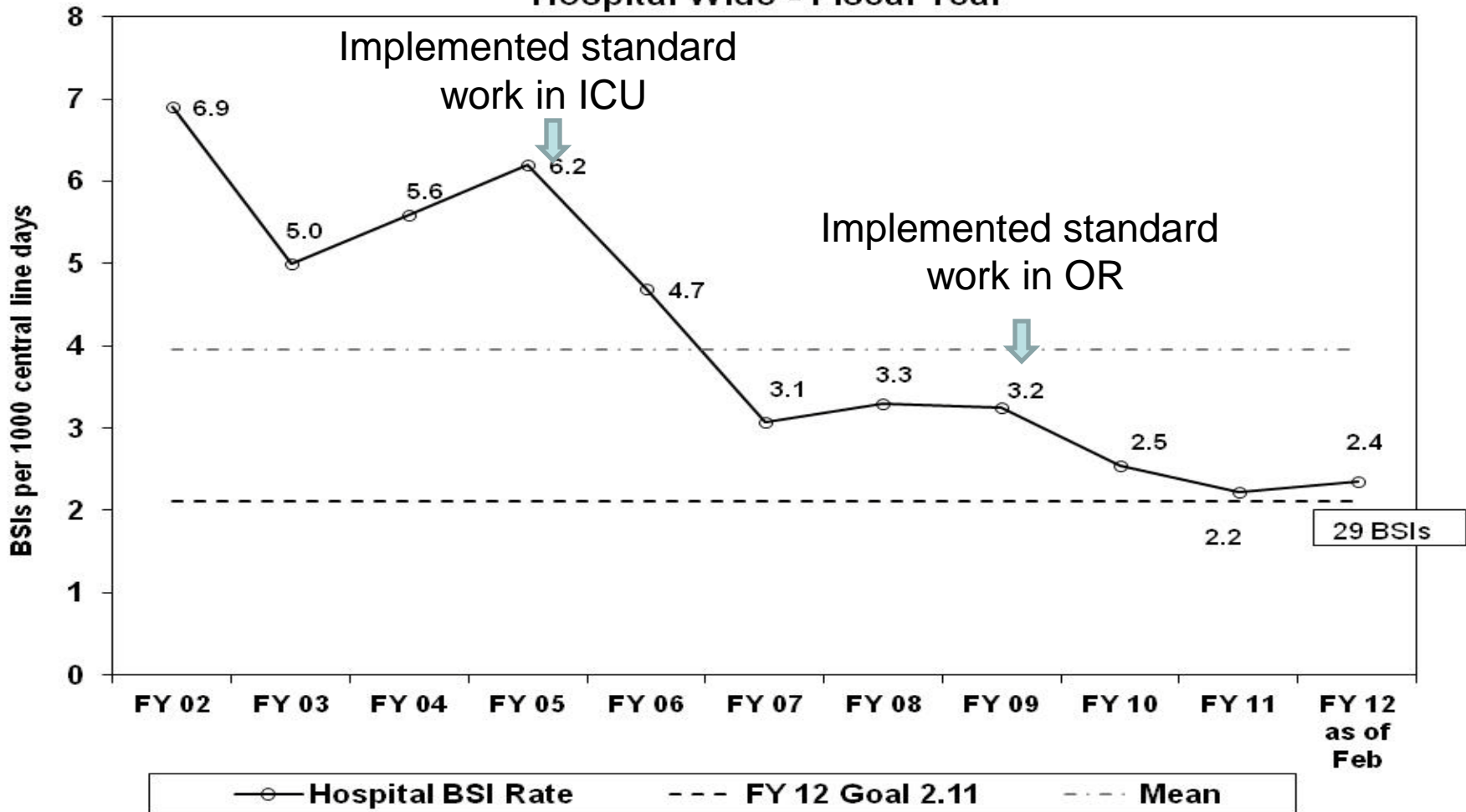
# Blood Stream Infections: Making the Problems Visible

- Institution wide effort to increase hand washing among doctors, nurses, and families
- Facility modifications - gel stations
- Coaching
- Auditing by “secret shopper”
- Results reported and posted in patient care areas



# Blood Stream Infection at Seattle Children's: Results

## Hospital-Acquired Catheter-Associated Bloodstream Infection Rates Hospital Wide - Fiscal Year



# Anticipating the Next Wave: A Changing Health Care Environment

$$\frac{\text{Safety} + \text{Outcomes} + \text{Experience}}{\text{Cost}}$$

## Today's World

- Episodic care
- High variability
- Errors and harm
- Gaps in access to care
- Runaway costs
- Patient /family dissatisfaction



## Future State

- Longitudinal care
- Standardized care
- Safer health care
- Improved access
- Bending the cost curve
- Coordinated care

**How can we use CPI to reliably accomplish and sustain these changes?**

# Children's Strategy: Providing Value Based Health Care

Provide the  
safest, most  
effective care  
possible

Control and  
reduce the  
cost of  
providing care

Find  
cures and  
educate  
clinicians and  
researchers

Grow  
responsibly and  
provide access  
to every child  
who needs us



# The Fourth Wave: A Management System to Accelerate and Sustain Improvement

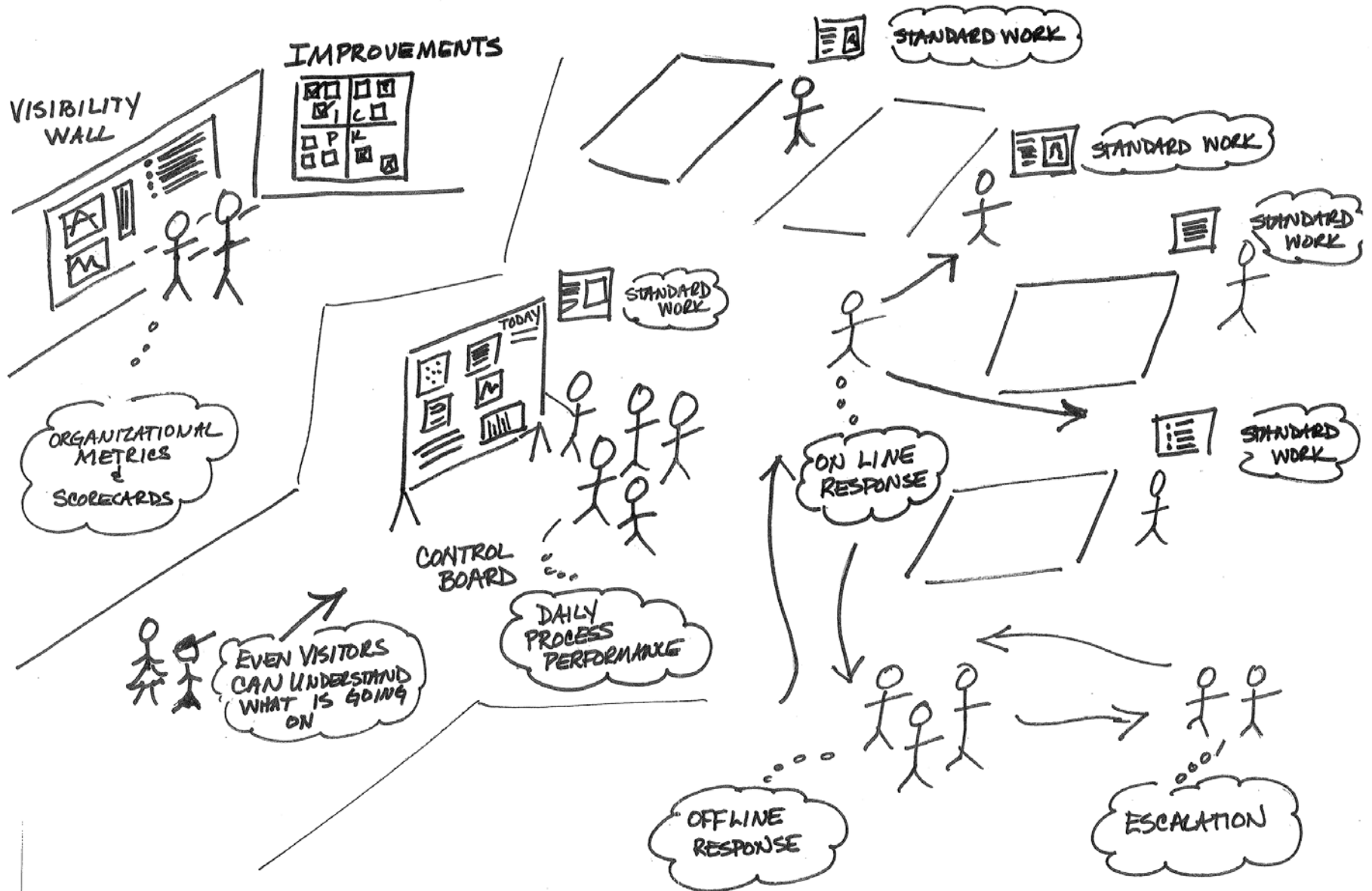
## Elements of the Management System

- Strategy Deployment
- Standard Work
- Daily Management
- A culture of improvement

## Key Tools and Techniques

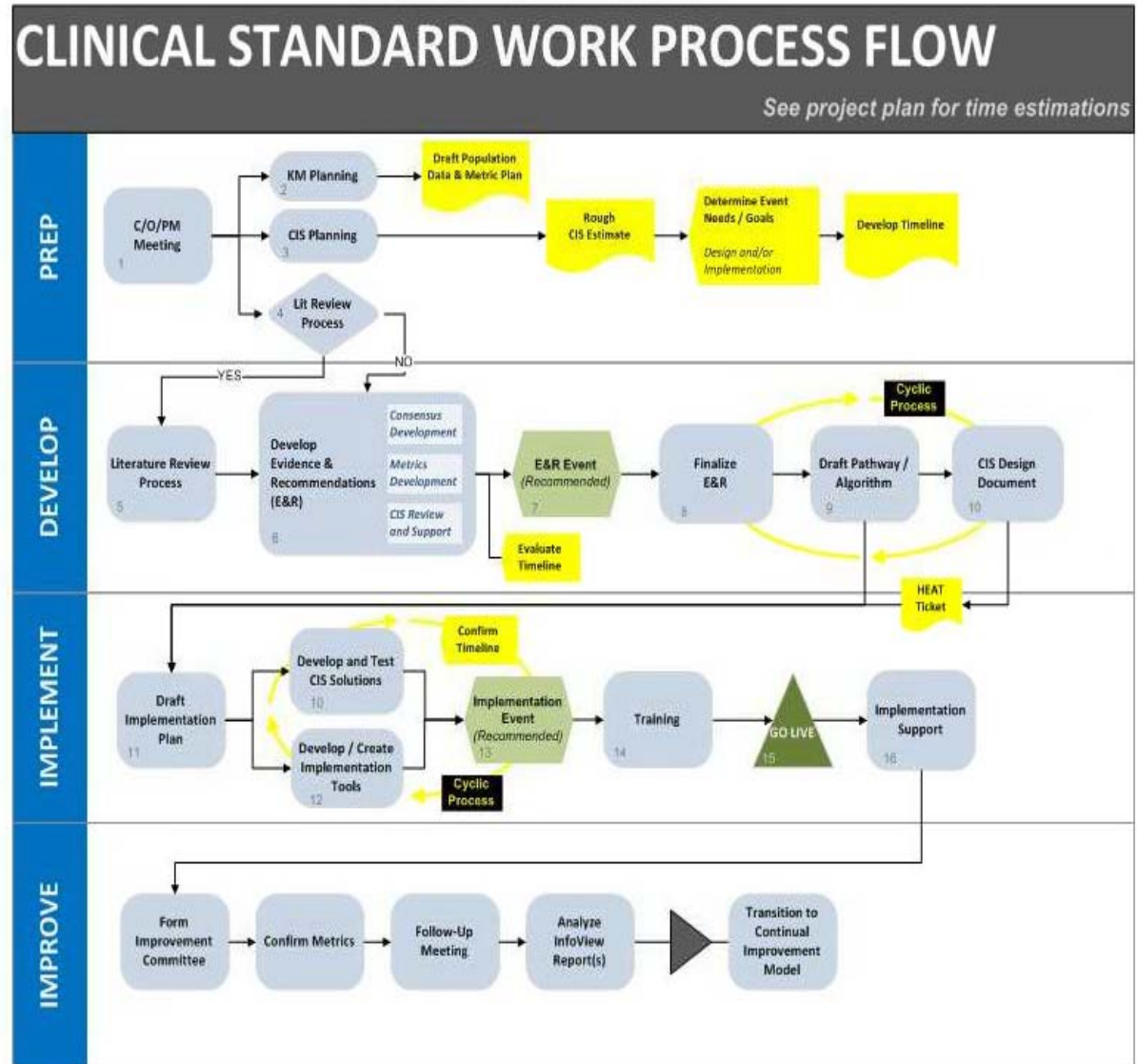
- “True North” metrics
- A3 problem solving
- Standard work audits
- Control and “visibility” tools
- Huddles
- Escalation

# Elements of A Daily Management System



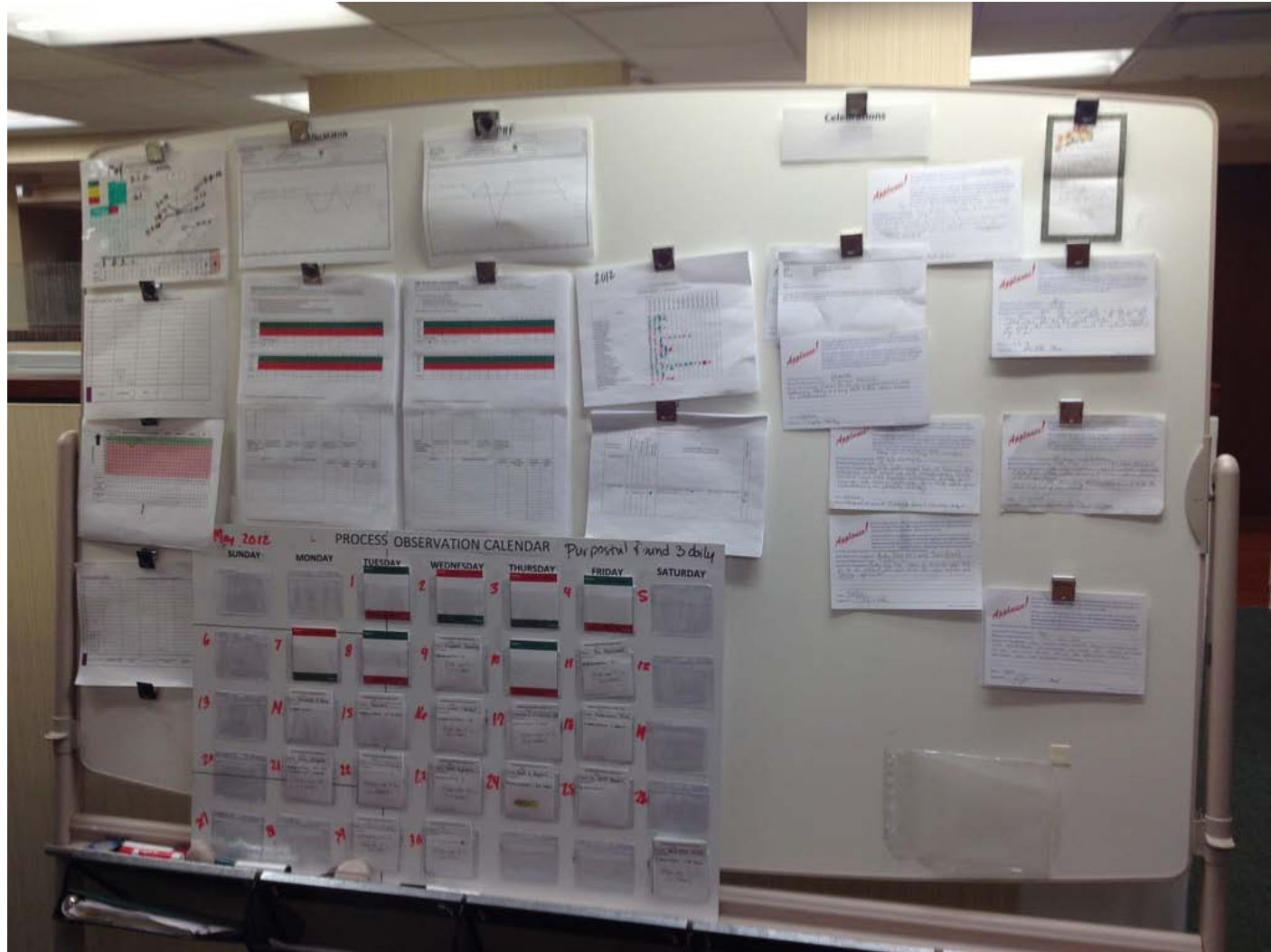
# A Management System to Sustain Improvement Starts With Standard Work

- Content
- Sequence
- Time
- Expected outcomes
- Embedded test (e.g checklist)
- Integrated into the work flow
- Owned by someone





# Daily Management Includes Auditing Standard Work



# Management System Requires Visibility and Transparency



- Use of “Visibility Boards” for status reporting
- Cascading information flow from front line to management
- Escalation process for problems and barriers

# Management System Mandates a Different Role for Leadership

- **Education** in CPI and engagement from leadership at all levels is critical
- Leader **skills** are focused more on coaching, mentoring, facilitating, removing barriers... rather than directing
- Supporting a **culture** of improvement
- Leader **standard work**
- Lean leadership requires **tenacity and patience**
- Change occurs in the **workplace**, not the conference room!
- Focus on **process and outcome**

# The Next Step of Our Journey: The Fifth Wave

In order to meet our future challenges we will.....

- Transition from **strategy development** and deployment to **daily management**
- Focus on **outcomes** and **cost** improvements through rigorous process improvement
- Develop the next generation of lean **leaders**
- **Incorporate CPI fully** into our clinical, research and educational missions
- **Engage our external partners** to support our efforts
- **Stay focused and persistent!**



# Lean Transformation: Steps to Help Ensure a Successful Journey

## Map your course

- Describe the imperative
- Identify the major problems
- Set the “future state” vision
- Communicate it widely
- Introduce the key concepts of lean



# Lean Transformation: Steps to Help Ensure a Successful Journey

## Set out

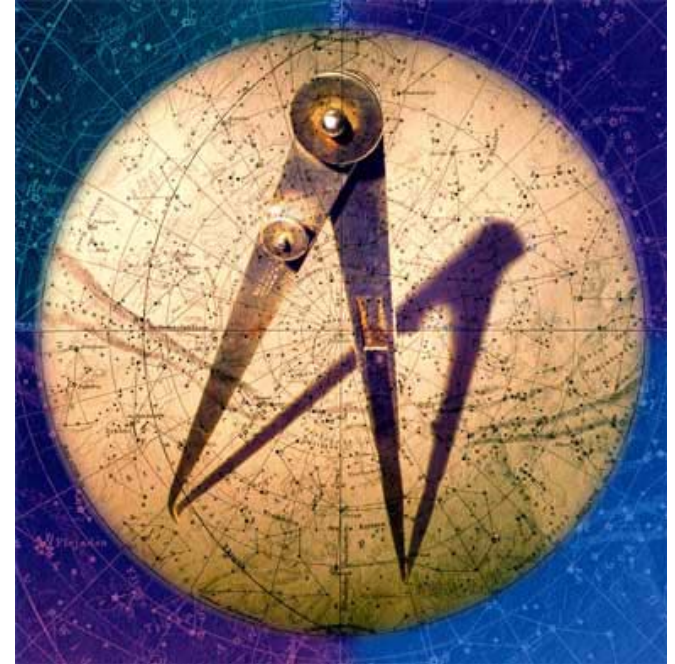
- Educate your staff and managers
  - “Learning to see”
- Start applying key tools
  - Standard work
  - Process mapping
  - A3 thinking
  - Improvement events
  - Management coaching
  - Daily management
- Early on, keep it simple - manage the scope
- Focus on your organization’s learning and let the people on the front line figure out the solutions



# Lean Transformation: Steps to Help Ensure a Successful Journey

## Keep track of where you are

- Measure, measure, measure
- Track progress and organizational trajectory
- Get people used to P-D-C-A
- Promote transparency and experimentation



# Lean Transformation: Steps to Help Ensure a Successful Journey

## When you get stuck or lost....

- Anticipate resistance and setbacks
- Be persistent
- Find a teacher to help guide you
- Keep your eye on your goals and focus on developing your people
- Be patient, lean transformation is a long term effort





Thank You !

