Improving Vexing Patient Safety
Issues with Lean Six Sigma

Joint Commission Center for Transforming Healthcare
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Learning Objectives

The Health Care Quality Challenge
Discuss why the Joint Commission created the Center for Transforming Healthcare (CTH)
Walk the Talk in Quality and Safety
Taking away ideas today that you can implement
How this work contributes to the greater good
The Health Care Quality Challenge

- More than 400,000 harmful, preventable bad outcomes occur in hospitals every year
  - Infections
  - Wrong site surgeries
  - Hand-off Communication issues
- The costs associated with unsafe care and poor quality in hospitals are unacceptable
- There is a strong demand from health care organizations for specific guidance on how to solve these problems
- Health care organizations want highly effective, durable solutions and are ready to implement them

The story starts with......
The Joint Commission has historically led the way nationally and internationally to identify and address the highest priority health care quality and safety problems.

With The Joint Commission’s National Patient Safety Goals, core measures, and state-of-the-art accreditation standards, health care organizations know where they should focus their efforts to gain the greatest improvements in safety and quality.

Many health care organizations already devote sizable resources to this end, but major shortfalls in quality and safety persist.
Why the Center was Created

- In keeping with its objective to transform health care into a high reliability industry and to ensure patients receive the safest, highest quality care they expect and deserve, the Joint Commission Center for Transforming Healthcare was established in 2009.

- A new approach is required to achieve the magnitude of improvement sought by The Joint Commission, health care organizations, patients and their families, physicians and other clinicians, and by other public and private stakeholders.

The Center for Transforming Healthcare
Developing Solutions with Leading Hospitals

- The Center aims to address health care’s most critical safety and quality problems, such as health care-associated infection (HAI), wrong site surgery, and medication errors which threaten lives and increase costs.

- The Joint Commission is teaming up with top hospitals and health systems across the country to use new methods to find the causes of and put a stop to dangerous and potentially deadly breakdowns in patient care.
The Joint Commission will share these proven effective solutions with the more than 17,000 health care organizations it accredits.

The Center relies on the extensive reach of The Joint Commission to spread the use of these solutions to its accredited health care organizations to improve the quality and safety of care.

Applying Robust Process Improvement Methods

The Joint Commission Center for Transforming Healthcare is developing solutions through the application of the same Robust Process Improvement™ (RPI) methods and tools that other industries rely on to improve quality, safety and efficiency.
The Center uses Lean Six Sigma and change management tools and methods to:

- Identify and uniformly define the most pressing safety problems
- Measure their impact
- Discover the contributing factors to failure
- Develop specific solutions targeted to each important cause, and
- Thoroughly test the solutions in real-life situations

Robust Process Improvement
Lean Six Sigma Roadmap

A Roadmap is a guide to navigate a Belt and team in applying RPI to breakthrough results.

The Roadmap’s value is like any roadmap – guiding you to your destination ….. a successful project.

We will use the roadmap to apply Lean Six Sigma to get to our destination…As easily as possible.

We will learn the Roadmap by applying it to real examples of projects at The Joint Commission.
The Center’s First Patient Safety Challenge

Eight leading hospitals and health systems volunteered to address hand washing failures as the Center’s first project:

- Cedars-Sinai Health System – Los Angeles, CA
- Exempla Lutheran Medical Center – Denver, CO
- Froedtert Hospital – Milwaukee, WI
- The Johns Hopkins Hospital and Health System – Baltimore, MD
- Memorial Hermann Health Care System – Houston, TX
- Trinity Health – Novi, MI
- Virtua – Marlton, NJ
- Wake Forest University Baptist Medical Center – Winston-Salem, NC

### Hand Hygiene Project: Participating Hospitals’ Characteristics and Project Details

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<th>Pilot Sites</th>
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*Implemeted throughout hospital
Health Care-Associated Infection Statistics

- Nearly two million patients in the U.S. contract a health care-associated infection (HAI) annually
- With nearly 100,000 deaths each year, HAIs are the fourth largest killer in the U.S. and cause more deaths every year than AIDS, breast cancer and auto accidents combined
- Two-thirds of those deaths result from bloodstream infections and ventilator-associated pneumonia
- HAIs add nearly $9,000 in expenses per infected patient in hospitals and cost U.S. hospitals between $4 to $29 billion each year to combat
Health Care-Associated Infections

- One proven way to combat HAIs is to improve hand hygiene compliance
- It is estimated that at least one-third of HAIs can be eradicated simply by following current guidelines and recommendations
- Studies have found that although it is the most basic, low-cost, low-technology infection prevention and control strategy, hand hygiene is not performed by half of health care workers

Robust Process Improvement Goes To Work

1. Measure
2. Manage to the Measure
3. Make-it-Easy
Hand Hygiene Compliance Data Not Collected or Reported Accurately or Frequently

- Lack of a measurement system that provides an accurate source of hand hygiene compliance data.
- Inability to provide timely information to health care staff on actual hand hygiene compliance rates and causes of failure.
- Staff and physicians wanted to know how they were doing. Staff felt like they were doing better than the secret shopper data indicated.
- Staff and physicians requested just-in-time feedback on performance. Secret Shopper audits cannot meet this need to stay consistent and secret.
- Availability of data to everyone in the organization. Visual indicator of performance compared to goal.

Findings

- The Center’s initial work demonstrated that random observation is an unreliable measure of compliance.
- It is believed that the high compliance rate that many hospitals are reporting is probably not accurate.
- In aggregate, these eight hospitals identified that staff wash their hands less than 50 percent of the time.
- A recent survey of America’s hospitals found that nearly 87 percent were not following recommended guidelines to prevent many of the most common HAIs.
Main Causes of Failure to Clean Hands

- Improper technique
- Insufficient time
- Failure to use soap
- Failure to dry hands
- Failure to use gloves

Comparison of WHO PHAC and local measures:

Hand Hygiene Compliance

- Local measures: 99%
- WHO PHAC: 98%

Impact on patient outcomes:

- Lower infection rates
- Improved patient satisfaction
- Reduction in healthcare costs

Reality? Solutions: Expectations

- Increasing staff awareness
- Providing adequate supplies
- Implementing hand hygiene policies
- Monitoring and feedback

Hand Hygiene Measures: Expectations

- Compliance rates
- Frequency of handwashing
- Use of alcohol-based hand rubs

Challenges:

- Staff resistance
- Time constraints
- Limited resources
- Lack of support from management
Safety Culture Does Not Stress Hand Hygiene Enough at All Levels

- All levels of hospital staff are not aware of the importance of hand hygiene and their role in improving compliance
- Hand hygiene compliance varies by health care worker role and responsibility
- Accountability for hand hygiene compliance varies across hospital staff based on role and perceived status
- Reluctance by staff to hold colleagues accountable for non-compliance

Hands Full

- Health care worker must carry essential supplies (i.e., supplies, linens, food trays, medications) into patient care area
- No area to place supplies while performing hand hygiene
  - Phlebotomy process
  - Food tray delivery and pick up
  - Taking Vital Signs
Health Care Workers Forget

- Rushing
- Workers have a great deal of information to process
- Hand hygiene is not routine; workers need repetition to make it a habit
- Health care worker forgets to wash hands upon room re-entry
- Competing priorities

Identifying Causes, Targeting Solutions

**Causes**
- Hand Hygiene compliance data are not collected or reported accurately or frequently
- Safety culture does not stress hand hygiene at all levels
- Ineffective placement of dispensers or sinks
- Hands full

**Solutions**
- Data provide a framework for a systematic approach for improvement
- Utilize a sound measurement system to determine the real score in real time
- Scrutinize and question the data
- Measure the specific, high-impact causes of hand hygiene failures in your facility and target solutions to those causes
- Make washing hands a habit – as automatic as looking both ways when you cross the street or fastening your seat belt when you get in your car
- Commitment of leadership to achieve hand hygiene compliance of 90+ percent
- Serve as a role model by practicing proper hand hygiene
- Hold everyone accountable and responsible – doctors, nurses, food service staff, housekeepers, chaplains, technicians, therapists

- Provide easy access to hand hygiene equipment and dispensers
- Create a place for everything; for example, a health care worker with full hands needs a dedicated space where he or she can place items while washing hands
Effective Hygiene is in Our HANDS

Habit

- Always wash in and wash out upon entering and exiting a patient care area and before and after patient care
- Make washing hands a habit – as automatic as looking both ways when you cross the street or fastening your seat belt when you get in your car

Active Feedback

- Coach and intervene to remind staff to wash hands
- Clearly state expectations about when to sanitize hands to all staff members
- Communicate frequently – provide visible reminders and ongoing coaching to reinforce effective hand hygiene expectations
- Engage staff – real-time performance feedback
- Tailor education in proper hand hygiene for specific disciplines
- Provide just-in-time training
- Use technology-based reminders and real-time feedback
- Celebrate improved hand hygiene

No One Excused

- Protect the patient and the environment – everyone must wash in and wash out
- Make it comfortable to wash hands with soap or use waterless hand sanitizer
- Identify proper hand hygiene as an organizational priority and performance expectation
- Hold everyone accountable and responsible – doctors, nurses, food service staff, housekeepers, therapists, therapists
- Apply progressive discipline from the top – managers must hold everyone accountable for proper hand washing
- Commitment of leadership to achieve hand hygiene compliance of 60+ percent
- Serve as a role model by practicing proper hand hygiene

Data Driven

- Data provides a framework for a systematic approach for improvement
- Utilize a sound measurement system to determine the real score in real time
- Use trained, certified independent observers to monitor appropriateness of hand hygiene
- Scrutinize and question the data
- Measure the specifics, high impact causes of hand hygiene failures in your facility and target solutions to those causes

Systems

- Focus on the system, not just on people
- Make it easy: examine work flow of health care workers to ensure ease of washing hands:
  - Provide easy access to hand hygiene equipment and dispensers
  - Create a space for everything; for example, a health care worker with full hands needs a dedicated space where he or she can place items while washing hands
  - Limit entries and exits from a patient’s room – make supplies available in room and eliminate false alarms that require staff to leave room to turn alarm off
  - Identify new technologies to make it easy for staff to remember to wash hands; i.e. radio frequency identification, automatic reminders, warning systems, real-time scoring

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Success and Sustaining....

- Hospitals achieved and sustained the initial goal of >50 percent improvement
- The Center’s Hand Hygiene solution system is being tested in a wide variety of hospitals now to validate value across the country
- The solution system portal is under development
  - Designed to provide free access to all accredited organizations
  - Guides step-by-step and does not require Lean Six Sigma resources
- The Center and participating hospitals are piloting technologies with leading companies to further improve
- Measurement and feedback are key

Hand Hygiene Measures: Expectations vs. Reality; Solutions Impact

[Graph showing hand hygiene compliance improvement in pilot sites]
Project: Wrong Sight Surgery

- Includes hospitals in the Lifespan system:
  - Project aims to improve safeguards to prevent patients from wrong site, wrong side and wrong patient surgical procedures
  - Project includes all procedures performed in an operating room commencing with scheduling a surgical procedure and ending with confirmation that the intended operation was performed
  - Solutions for this project are targeted for publication in June 2010

Wrong Site Surgery Robust Process Improvement

- The team organized leaders and staff, and began its journey down the RPI Roadmap to reduce the probability of wrong site surgeries

- The team from The Center and Lifespan:
  - Analyzed internal and external data
  - Prioritized failure modes and contributing factors
  - Created a quality and safety management system to measure the possible slips and close calls in the new processes
  - Decided on robust process improvements and controls
  - Chose the best ways to educate the entire staff
  - Created Standard Work and memory aides for staff
Wrong Site Surgery Robust Process Improvement

- Site marking and process improved
- Standard Work structure in Time Out
  - Defined roles and accountability
  - Use of primary documents
- Physical verification added to focus the entire team on the site and procedure
- Surgeon “opens the door” for staff to speak up with specific script and all members of team are given the opportunity to speak up

Surgery’s New Measure - Theory of Escaping Defects – Dr. Deming

[Graph showing trends in defects per opportunity over time]
Project: Hand-off Communications

The Center’s next project targets breakdowns in hand-off communications – the transfer and acceptance of patient care responsibilities achieved through effective communication.

The hand-off communications project involves safety experts and several leading hospitals:

- Exempla Lutheran Medical Center
- Fairview Health Services
- Intermountain Healthcare
- The Johns Hopkins Hospital and Health System
- Kaiser Permanente
- Mayo Clinic
- New York-Presbyterian Hospital
- North Shore-Long Island Jewish Health System
- Partners HealthCare System
- Stanford Hospital & Clinics

Hand-off Communications Project

Participants are currently measuring their baseline quality in hand-offs relative to patient safety, and the satisfaction of the receiver and sender.

Some are also measuring the patient satisfaction.

Project will result in improved patient safety and higher staff satisfaction in the hand-off project.
Our Sponsors

- The work of The Center is supported through an endowment
- The Center is grateful for the support of the following organizations that have demonstrated a commitment to eliminating preventable complications and transforming health care
Resources

- The Center web site will provide simple assessment tools for organizations without RPI capability to enable them to measure their processes, assess their specific causes of failures, and match validated interventions to their causes.

- In mid-2010, The Joint Commission Connect extranet will provide all Joint Commission accredited organizations with access to a new application that will provide a customized set of solutions targeted to the organization’s specific demographics – at no additional cost.

- If additional assistance is needed, publications and consultation will be available through Joint Commission Resources.

Resources

- Joint Commission surveyors will offer applicable solutions during the on-site survey or review.

- Surveyors will discuss potential causes of failures and share information about targeted solutions that might work at the organization.
Additional Information

- For information on the Center or to make a donation to the Center, contact Terri Tye, ttye@jointcommission.org or (630) 792-5626

- More information about the Center is available at:
  
  www.centerfortransforminghealthcare.org