Safer Healthcare Now!

Improving Patient Safety in Canada

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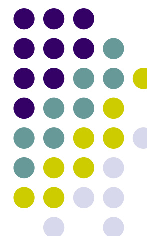
Spring Forum QHN
April 28, 2005



Overview

- Why has progress been slow to improve safety?
- The current strategy emphasizes better reporting and local redesign
- Next stage requires large scale change for more reliable care
- 100k lives and Safer Healthcare Now!
- Getting started – success strategies for Canadian teams

Some Key Numbers from the Canadian Adverse Events Study

- The overall AE rate found in the study was 7.5% [CI 5.7 -9.3] – this means 1 in 13 adult hospital patients in year 2000 experienced an AE
  - 2.8% of patients had one or more *preventable* AEs [CI 2.0 – 3.6] (i.e. 37% of AEs are preventable)
  - An estimated total of 1.6% of people hospitalized in Canadian hospitals in 2000 had an AE and died [CI =0.9 to 2.2%] or approximately 16,000 per year [CI= 9250 to 23, 750]
- Assuming an average LOS of 3.5 days and 95% occupancy, then a 500 bed Canadian hospital would have an average of 100 preventable AEs per month
  - Based on a large hospital estimate of 2.5% of patients with preventable AEs [CI= 1.7 to 3.3%]
- Each adverse event was responsible for an average extra 5 to 6 days stay (1521 days estimated for 255 patients who experienced 289 AEs)

Frequency of Adverse Events in Canada

Type of Event	# Exposed Per Event
Adults with health problems who report being given the wrong medication or wrong dose in last 2 years	9
Adults contracting a nosocomial infection in acute care	9
Children contracting a nosocomial infection in acute care	11
Med/surg patients experiencing AE in acute care	13
Third/fourth degree tears during childbirth	20
Adverse transfusion reactions	299
Foreign object left in after procedure	6,667
Blood transfusion transmitted infections: Hepatitis B	72,046
Blood transfusion transmitted infections: HIV	10,000,000

CIHI, 2004 from a variety of sources

Key Canadian Patient Safety Developments

- National professional organizations have released policy statements identifying patient safety goals
- CAES helped to provide an impetus to the early work of Canadian Patient Safety Institute
- Several provinces have invested in provincial patient safety initiatives
  - Saskatchewan has trained staff in root cause analysis and is sharing results of investigations across the province
  - The Calgary region has created patient safety collaborative and strengthened incident reporting and investigation
  - Ontario Ministry of Health has invested in patient safety efforts particularly in medication safety
  - Similar efforts are ongoing elsewhere including Alberta, Quebec, Manitoba and Nova Scotia
- Number of supportive efforts from healthcare associations, ISMP Canada and others
- Two important key drivers:
  - Accreditation standards in patient safety now under development
  - Patient Safety performance indicators are likely to be used in national and provincial reporting

So what should healthcare organizations do now to improve patient safety?

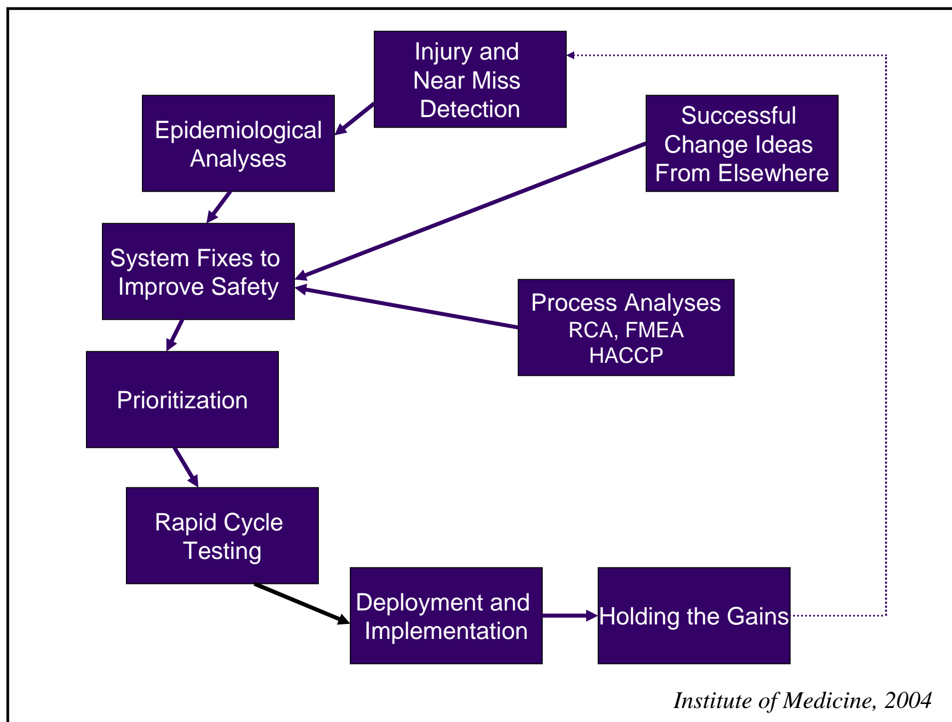
How can we ensure that patient safety is not lost in the struggle to ensure sustainability, reduce waits and improve human resources in healthcare?

US experience

- The IOM report, *To Err is Human*, released in November 2004
- Considerable activity resulted
  - Tremendous media coverage
  - Government regulation and accreditation changes
  - Large investments in training, equipment and computer systems
  - Leapfrog group pushes for hospital changes
  - $50 million committed to research on patient safety reporting, technology and culture

Limited Results

"In the past five years, many promising [patient safety] efforts have been launched, but the task is far from complete. If we do not expand and accelerate current efforts, we can expect future surveys to reveal a persistent lack of confidence in the safety and quality of the nation's health care system." (Altman, 2004)

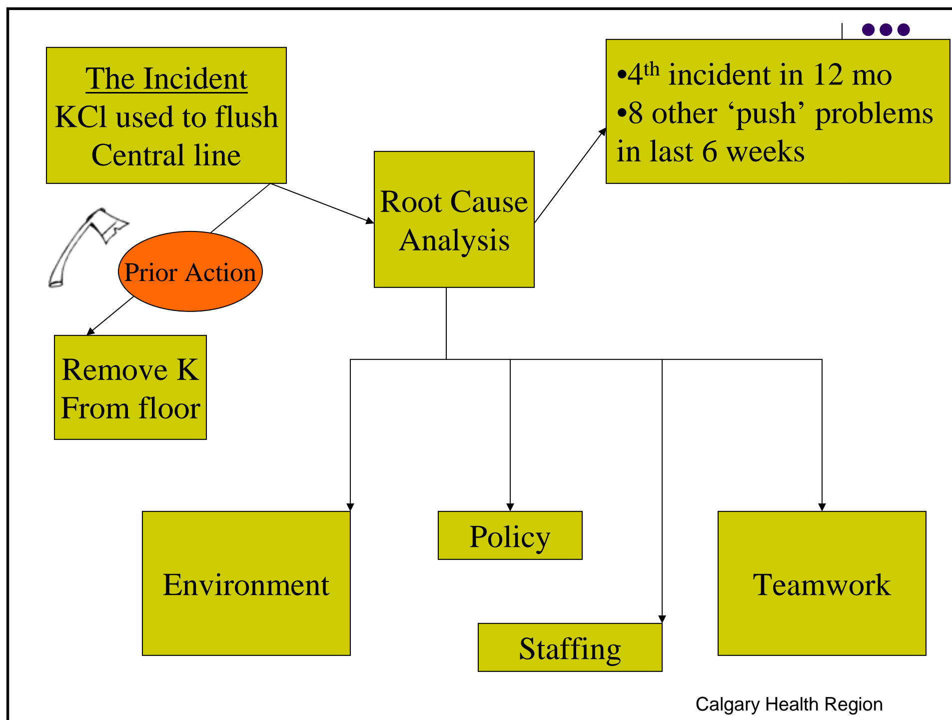


Injury and Near Miss Detection

- First key issue is determining current performance and deciding where to focus our efforts
- Improving data collection to identify adverse event areas is challenging
  - Most organizations have poorly used incident reporting systems
  - Sustained efforts to increase reporting typically yield an 8 to 12 fold increase in reports
  - Barriers are complex and include substantial cultural resistance to improved reporting

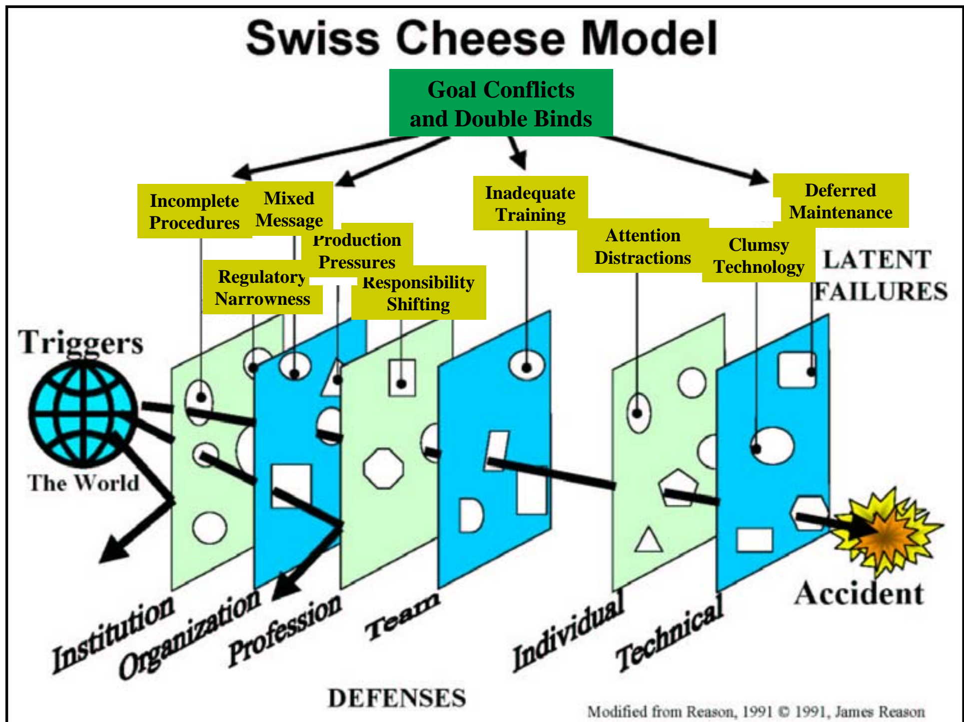
Root Cause Analysis

- A set of tools and an approach to determine
  - What happened?
  - Why did it happen?
  - What do you do to prevent it from happening again?
- RCA is based on the premise that people do not come to work to do a bad job or make an error, but given the right set of circumstances any of us can make a mistake
- It forces us to look past the easy answer that it was someone's fault - to answer the tougher question as to why the error occurred.
  - It is seldom a single reason



Calgary Health Region

Environment
Calgary Health Region


Swiss Cheese Model
Goal Conflicts and Double Binds
Incomplete Procedures
Mixed Message
Production Pressures
Regulatory Narrowness
Responsibility Shifting
Inadequate Training
Attention Distractions
Clumsy Technology
Deferred Maintenance
LATENT FAILURES
Triggers
The World
Institution
Organization
Profession
Team
Individual
Technical
Accident
DEFENSES
Modified from Reason, 1991 © 1991, James Reason

Safety Tools

- Education
  - Staff orientation
  - Continuing education
- Simulation
- Teamwork and communication skills
- CPOE
- Medication safety tools
  - Bar coding
  - MAR
- Clinical practice guidelines
- Standardization of equipment
- Human Factors review of equipment
- Review of high risk areas
- Quality improvement
- Local problem solving
- Organizational collaboratives

Reliability

"The measurable capability of a process, procedure or health service to perform its intended function in the required time under commonly occurring conditions"

Berwick and Nolan, 2004

Strategies for High Reliability

- Level 1: Intent, vigilance and hard work
  - Standardized protocols, feedback, training, checklists
  - Attention to environment and work factors influencing safety, e.g., scheduling and fatigue
- Level 2: Design informed by reliability science and research in human factors
  - Changes in care tasks, protocols and information to improve outcomes
- Level 3: Design of high reliability organizations
  - Fundamental redesign of the system

Redesign of Care for Ventilated Patients

- "Bundle" for mechanically ventilated patients
  - Head of bed elevated at least 30°
  - Daily interruption of sedative infusions
  - DVT prophylaxis
  - Stress ulcer prophylaxis
- Plus resources to:
  - Respiratory therapy assessment of readiness for weaning
  - Anti-microbial foam at bedside

IHI Critical Care Collaborative

Spreading Improvement

- Pace of change has been too slow: team by team, hospital by hospital
- How do we engage more teams in more organizations to create a quantum change in safety?

100K Lives Campaign

- At the December 2004 National Forum Don Berwick launched the campaign to “save 100,000 lives”
  - “Some Is Not A Number, Soon Is Not A Time”
  - Builds on the work of many organizations and carefully reviewed evidence on the effectiveness of a number of interventions
- Goals:
  - Enlist 2000 US hospitals
  - Work for the next 14 months on implementing key interventions to reduce mortality in US hospitals

6 Key Interventions

- Deployment of Rapid Response Teams
- Delivery of reliable, evidenced based care for acute myocardial infarctions
- Prevention of ADEs by Medication Reconciliation
- Prevention of central line infections
- Prevention of surgical site infections
- Prevention of ventilator- associated pneumonia

Rapid Response Teams

- A RRT can be summoned by anyone at anytime to assist in the care of a patient who appears acutely ill before the patient has a cardiac arrest or other adverse event
- No prior permission required
- Most often initiated by nurse worried about a patient
- Goal is to reduce preventable mortality from hospital cardiac arrests
  - Currently 0.6% of patients have a cardiac arrest in hospital and less than 1 in 5 survive
- Evidence based on trials in Australia, US & UK

Improved Care for AMI patients

- One-third of patients who experience an AMI die during the acute phase
- Evidence based guidelines for AMI care are not well implemented
- Key steps:
  - Early administration of aspirin
  - Aspirin at discharge
  - Beta-blocker at discharge
  - ACE inhibitor or angiotensin receptor blocker at discharge for patients with systolic dysfunction
  - Timely initiation of reperfusion
  - Smoking cessation counseling

Prevention of Adverse Drug Events

- Goal: Use Medication Reconciliation to reduce adverse drug events
- Transitions in care are create key vulnerability for ADEs
  - 46% of medication errors occur at transitions
- Medication reconciliation ensures that patients receive all intended medications, and no unintended medications

Prevention Of Central Line Associated Blood Stream Infections

- Forty-eight percent of ICU patients have central venous catheters
- There are 5.3 CR-BSIs per 1000 catheter days in ICUs
  - The attributable mortality for CR-BSIs is 18% with 14,000 to 28,000 deaths each year in US hospitals

CR-BSI Interventions

- The “central line bundle” interventions are all part of a broader guideline issued by CDC
- ICUs that have implemented these changes have nearly eliminated such infections
- Five components:
  - Hand hygiene
  - Maximum barrier precautions
  - Chlorhexidine skin antisepsis
  - Appropriate catheter site and administration systems
  - No routine replace of catheters

Prevention of Surgical Site Infections

- SSI account for 14% to 16% of hospital acquired infections
  - 40% among surgical patients
  - Up to 20% of patients undergoing intra-abdominal procedures
  - Patients with SSIs are twice as likely to die as other surgical patients
- Three interventions:
  - Guideline based use of prophylactic antibiotics
  - Appropriate hair removal
  - Perioperative glucose control

Prevention of Ventilator Associated Pneumonia

- VAP is an important source of morbidity and mortality in critically ill and post operative patients receiving mechanical ventilation
- VAP occurs in up to 15% of patients on ventilators
- A variety of evidence-based guidelines exist from CDC and professional organizations
  - These have not been reliably implemented in many organizations

Ventilator Bundle

- Elevation of the head of the bed to at least 30 degrees
- Periodic “sedation vacations”
- Daily assessment of readiness to extubate
- Peptic ulcer prophylaxis
- Deep vein thrombosis prophylaxis

What is the Evidence?

- There is very good evidence about the impact of some of these interventions
  - Antibiotic prophylaxis to reduce SSI
  - Aspirin and beta blockers post MI
  - Elevation of the head for ventilated patients
- **All of the interventions** have been shown in case studies to be effective, some over long term
  - But not all have been the subject of RCTs
  - RCTs have generally focused on elements of these interventions, not bundles

The Evidence Dilemma

- Evidence about safe practices is highly weighted toward technical advances
- Error prevention and especially system strategies to reduce error have not been well studied in healthcare
  - Evidence on the efficacy of most safety practices is still limited
- Where evidence is limited, there are excellent examples of individual hospitals that have used these interventions to improve care
  - Hackensack University Medical Center used Med Reconciliation to reduce ADEs from 3.5 per 1000 to 1 per 1000 doses
- Key point: None of the interventions identified as part of *Safer Healthcare Now!* are likely to harm patients

Safer Healthcare Now!

- Key focus for SFN! is NOT assessing the efficacy of practices designed to reduce mortality and morbidity
- Rather, the focus is on solving the complex issues of implementing these practices into the daily work life of staff in Canadian hospitals
  - We know that timely administration of antibiotics can reduce SSI, but in most hospital across the country this is not achieved for many patients
- Key issue is solving the implementation issues that stand between our knowledge of "what works" and our ability to reliably provide this standard of care for all patients
- *Safer Healthcare Now!* aims to provide quality improvement ideas and advice to hospital teams across the country with the goal of providing safer care

Supports for SFN

- Safer Healthcare Now! will be providing a variety of supports for organizations that enroll in the campaign
- Builds on strong foundation of work by IHI
  - IHI has opened access to their efforts and is providing advice to SFN steering committee on key issues
- Experience gained by Canadian teams and collaboratives is also being tapped
  - ICU Collaborative
  - QHN
  - Western Health Quality and Safety Councils
- CPSI playing coordinating and sponsorship role across the country

Measurement

- Measurement will be an important component of the SFN! Initiative
- The key outcome measure will be the assessment of the impact of these interventions on hospital based mortality
  - Raw mortality
  - Hospital Standardized Mortality Ratios
- Data on process measures include assessments of the degree to which hospitals successfully implement the interventions will also be collected
- Measurement data will NOT be used to identify individual organizational performance, except where hospitals provide permission
- Measurement at the aggregate level will be an important input to future safety efforts

How does SFN! Fit with CCHSA Goals and ROPs

- CCHSA released Patient Safety Goals and *Required Organizational Practices* in December 2004
  - Reviewed the literature to determine major patient safety risk areas and safety best practices
  - Reviewed related activities within other accrediting bodies
  - A significant number of the current standards are patient safety related.
- Patient Safety Advisory Committee (PSAC) was formed to advise CCHSA priority areas for patient safety

CCHSA

- Five priority areas were identified:
  - Culture
  - Communication
  - Medications
  - Workforce and worklife
  - Infection control

http://www.cchsa.ca/pdf/patientsafetyQAJan05.pdf

CCHSA

- New goals and practices came into effect in January 2005
  - CCHSA expects that organization will have implemented or be working on implementation of all the goals and practices in 2005
  - Award recognition levels for organizations surveyed in 2005 will not be affected by these goals and practices but may result in feedback from surveyors.
  - Reward recognition levels will be affected beginning January 1, 2006

Strategic Alignment

- CCHSA has worked with CPSI and other stakeholders to ensure that the new PS standards and ROPs will be consistent with Safer Healthcare Now!
- Two shared areas
  - Medication reconciliation
  - Infection control
- Additional patient safety goals from CCHSA are likely to be highly influenced by SHN experience

Why Should Canadian Hospitals Participate?

- Patient safety efforts are slow
- Attention is focused elsewhere
- IHI has created an audacious project and providing considerable resources for this work
- Early leaders will have a considerable advantage
- Efforts are underway to develop resources to support Canadian hospitals

Canadians Respond

- Safer Healthcare Now! launched April 12th by Informational call
- 203 organizations in attendance
- 62 Ontario health care organizations
- Campaign is guided by a Canadian Steering Team with representation from the Nodes

  (Western, Ontario and Atlantic region), CIHI, CCHSA and Academic and Clinical Leaders and the Canadian ICU Collaborative

What is the Ontario Response

- As of April 18, 2005 sixteen Ontario

Hospitals have enrolled from acute care

(teaching and community); long term care, ambulatory, rehabilitation

- Target: 30 – 40 health care organizations
- Least frequent intervention identified: Surgical Site Infections
- Most frequent intervention identified: Medication Reconciliation

Supporting the Ontario Node

- Led by Quality Healthcare Network a health care improvement community
- Content experts & Clinical Teams
- Quality Professionals
- Measurement Expertise
- Funding from 4 hospitals, Canadian Patient Safety Institute, QHN (in kind) and OHA (in kind) - and (hopefully) the Ontario Ministry of Health & Long Term Care

Conclusions

- Safer Healthcare Now! represents an important tipping point for Canadian healthcare
- Strong efforts by hospitals across the country will help to demonstrate the higher levels of performance that are possible in providing safe, high quality care
- Leadership is needed at all levels
- We know where to start, and we are hopeful for the finish, but what lies between is still uncertain