PATIENT SAFETY IMPROVEMENT: THE WAY FORWARD

Hong Kong
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Former CEO, CPSI

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Background

- Canadian population in 2006 was 32.5 million
- Canadian healthcare spending for 2007 will reach $160.1 billion
- Public sector healthcare spending forecast projected to reach 70.6%
- Private sector healthcare spending forecast projected to reach 29.4%

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Mission & Vision

Mission:

To provide national leadership in building and advancing a safer Canadian health system

We envision a Canadian health system where:

- Patients, providers, governments and others work together to build and advance a safer health system
- Providers take pride in their ability to deliver the safest and highest quality of care possible
- Every Canadian in need of healthcare can be confident that the care they receive is the safest in the world

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Milestones of the Modern Era

1991	Harvard Medical Practice Study
1992	Quality in Australian Health Care Study
1996	Annenberg conferences begin
1999	Colorado / Utah Study
1999	IOM Report: **To Err is Human** 
2000	BMA/BMJ London Conference on Medical Error
2000	SAEM: San Francisco Conference on EM Error
2001	British study
2001-3	Halifax Symposia on Medical Error
2001	RCPSC National Steering Committee on Patient Safety
2002	RCPSC Report: **Building a Safer System** 
2003	Canadian Patient Safety Institute & Baker Norton Study
2006	6th Canadian Symposium on Patient Safety (Vancouver)

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What We Know

One in ten adults contract infection in hospital

One in ten patients receive wrong medication or wrong dose

More deaths after experiencing adverse events in hospital than deaths from breast cancer, motor vehicle and HIV combined

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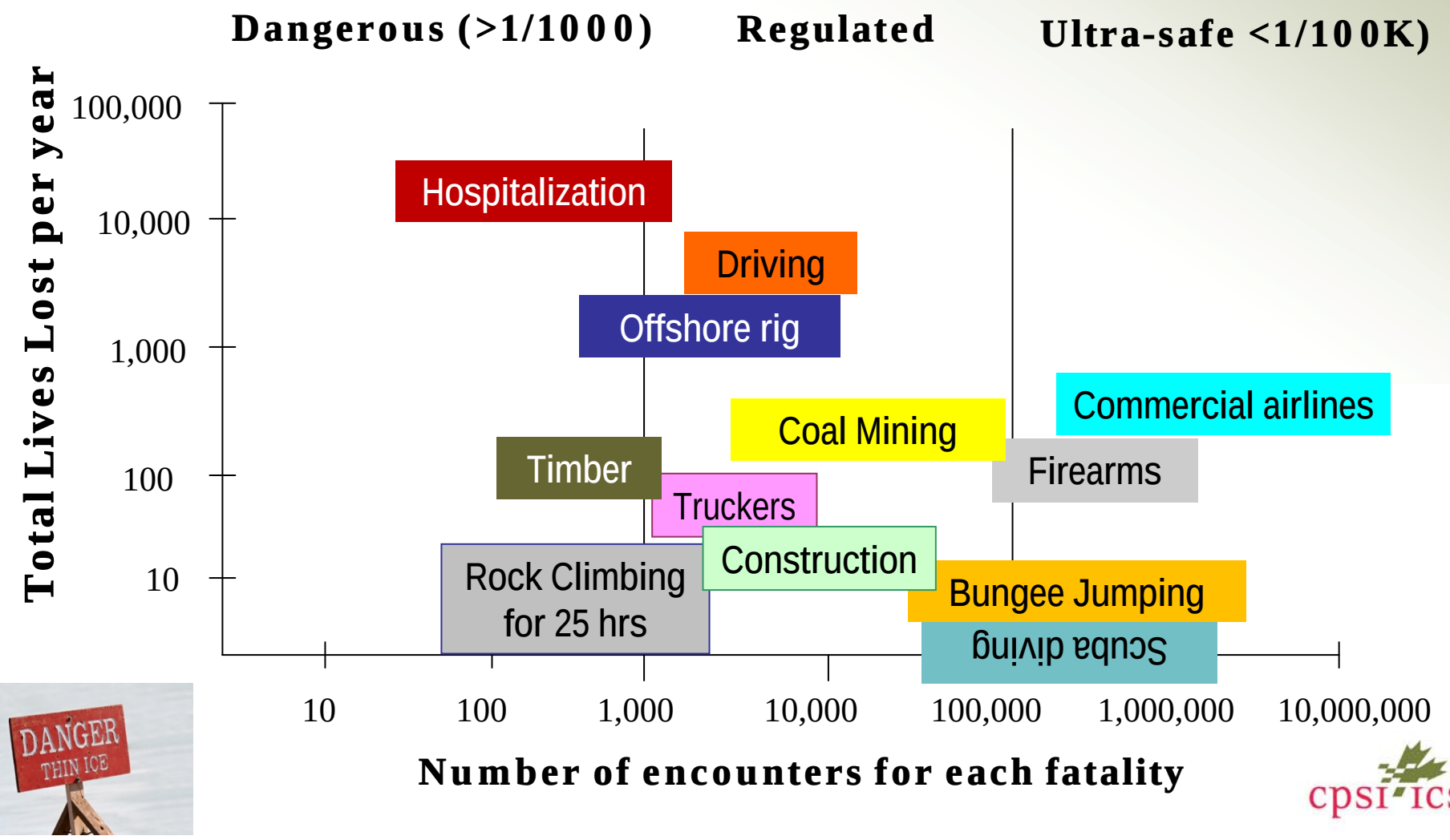
IT SAYS HERE THAT THE RATE OF MEDICAL ERRORS IS STUNNINGLY HIGH.
THAT EXPLAINS MY HYSTERECTOMY.
MIKE SMITH

Risky Activities: *Adapted by Dr. Philip Hebert*

15,000 deaths/yr



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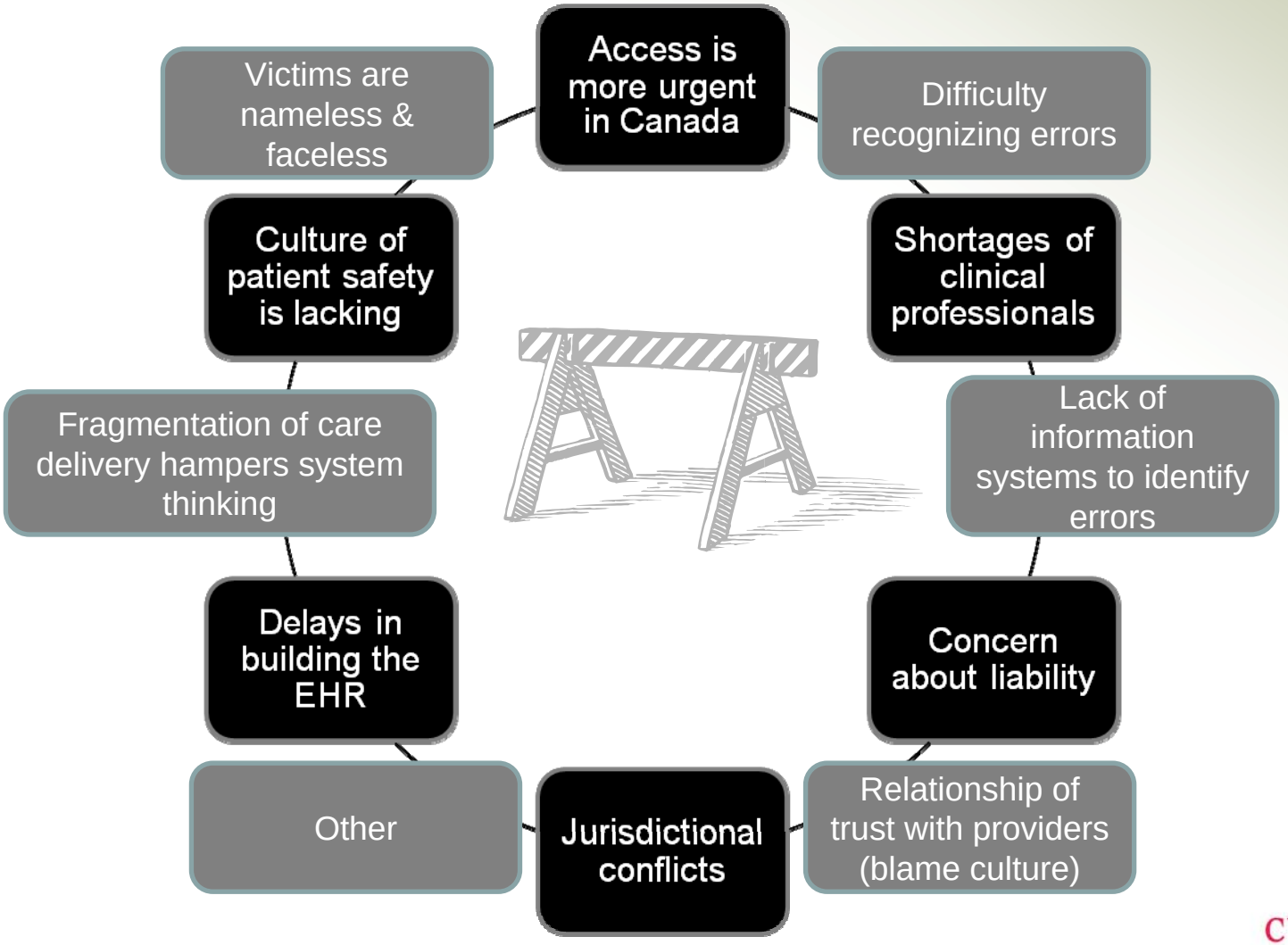
Patient Safety: *Barriers to Action*



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A Culture of Safety

Sexton J. B., Thomas E. J., & Helmreich R. L. *Error, stress and teamwork in medicine and aviation: cross sectional surveys.* British Medical Journal, 3-18-2000.

Survey of 31,033 Pilots, Surgeons, Nurses and Residents		
Questions (% Positive Responses)	Pilots	Medical
Is there a negative impact of fatigue on your performance?	74%	30%
Do you reject advice from juniors?	3%	45%
Is error analysis system-wide?	100%	30%
Do you think you make mistakes?	100%	30%
Easy to discuss/report mistakes?	100%	56%

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Human Factors: *Fatigue*

Leonard, M. (Nov. 2005). *safer healthcare now! Presentation.*

24 hours without sleep	• Is equivalent to a blood alcohol level of 0.10, a 30% decrease in cognitive processing
After 12 hours on the job	• Nurses are 3 times more likely to make mistakes
When on traditional 24 hour call schedules	• Interns made 30% more errors in ICU patients

- **Teamwork is the best countermeasure for fatigue**
- Three major disasters related to night time workers: (1) Exxon Valdez, (2) Chernobyl, and (3) Three Mile Island

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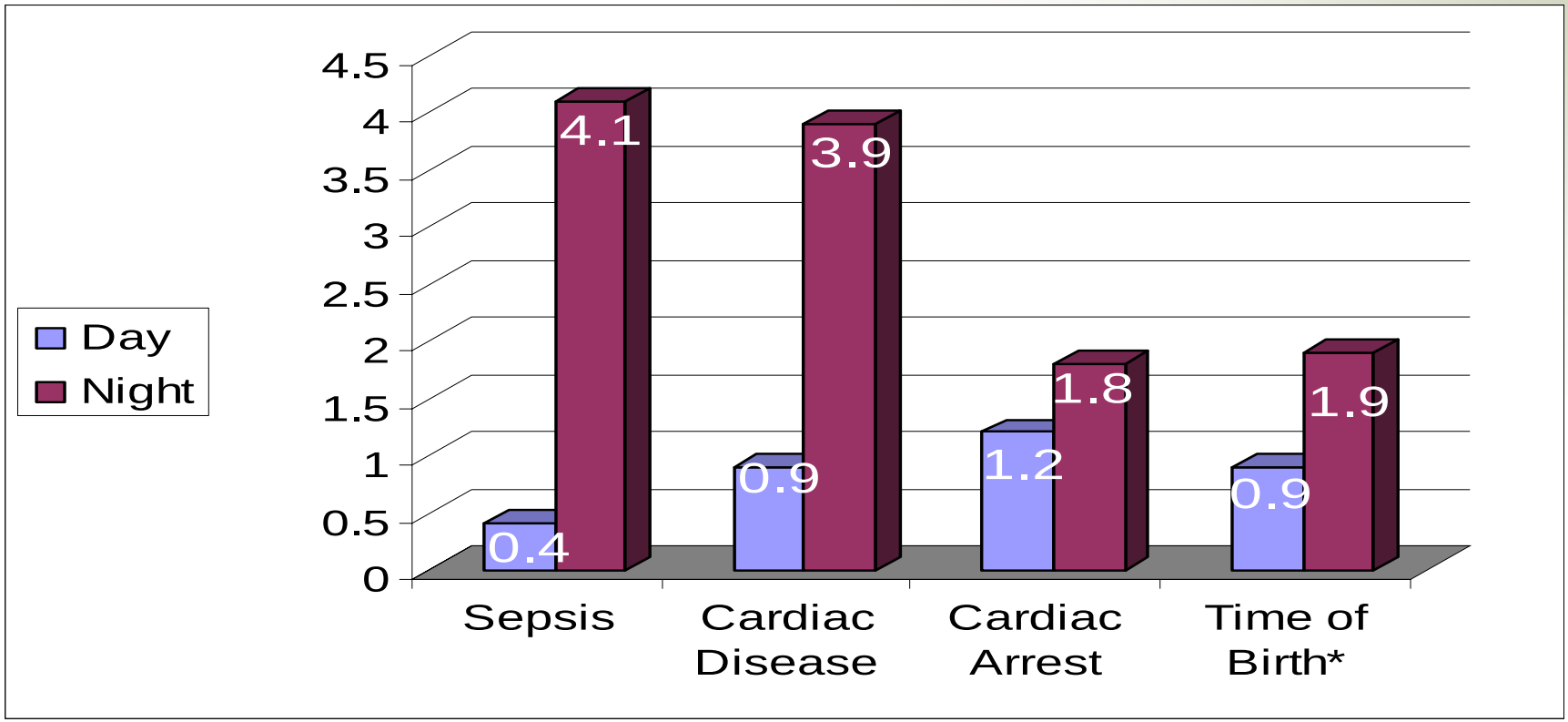
Association Between Evening Admissions and Higher Mortality Rates in the Pediatric Intensive Care Unit

Arias, Y., Taylor, D. S. & Marcin, J. P. (2004). *Pediatrics*. 113: 530-534.



Human Error – the New View

Dekker, S. (2002). *The Field Guide to Human Error Investigations.*

"The point of an investigation is not to find where people went wrong.

It is to understand why their assessments and actions made sense at the time."

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Human Error: The New View

Dekker, S. (2002). *The Field Guide to Human Error Investigations.*

"Human errors are symptoms of deeper trouble"

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Safety Issues: *Look Alike, Sound Alike Drug Names*

Epinephrine

Ephedrine

Amrinone

Amiodarone

Phenylephrine

Phentolamine

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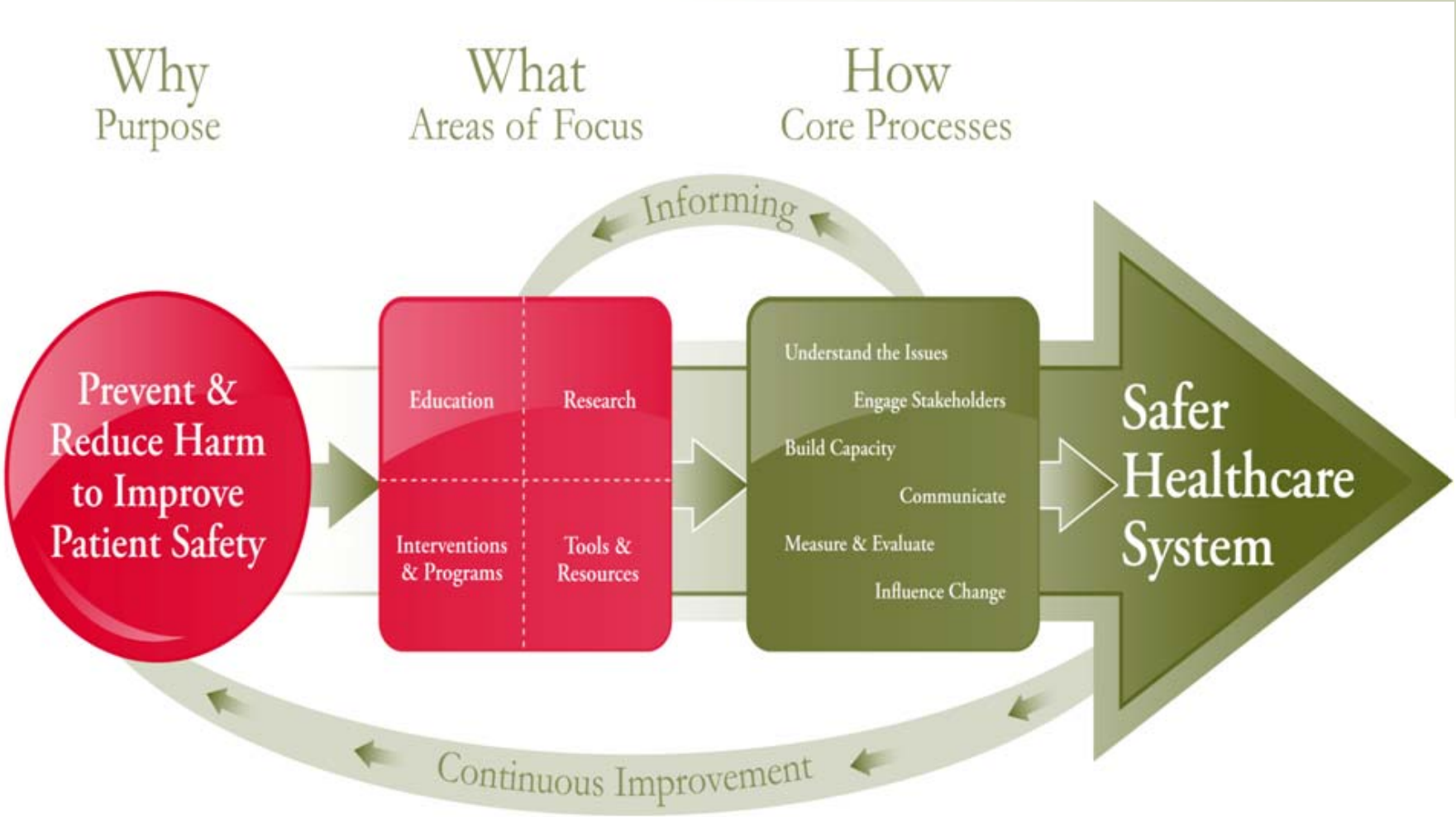
Then we have human factors . . .

A *Systems* Approach

Reason, J. T. (2001).

"The systems approach is not about changing the human condition but rather the conditions under which humans work."

CPSI Strategic Direction



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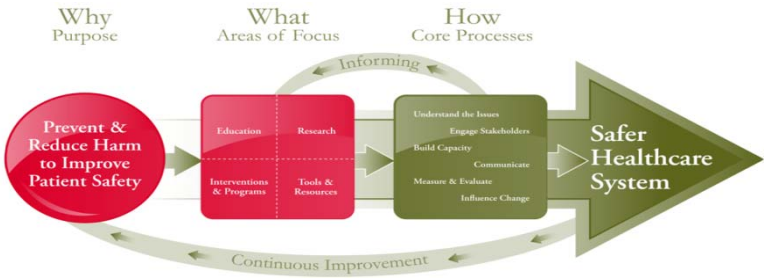
Strategic Direction

Why? *Purpose*

- **Prevent and reduce harm to improve patient safety**

What? *Area of Focus*

- **Education**
- **Research**
- **Interventions & Programs**
- **Tools & Resources**



How? *Core Processes*

- Understand the issues
- Engage stakeholders
- Build capacity
- Communicate
- Measure & Evaluate
- Influence change

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CPSI Strategic Direction

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Education

Boards, Chief Executive Officers and Senior Managers

- Initial series of engagements across Canada in 2005-2006
- Developing a more extensive set of *Tools and Resources* for Boards
  - Being piloted and will be presented at ISQua 2010 Conference

Canadian Patient Safety Officer Course

- Successful third cohort completed Nov. 2009
- 130 graduates from across Canada

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Education

Simulation

- Business plan unanimously approved at stakeholder roundtable Sept. 2008
- Established a national coordinating group
- Promote and endorse simulation and provide a foundation for collaboration across Canada *(or: "framework for the sharing of resources")*

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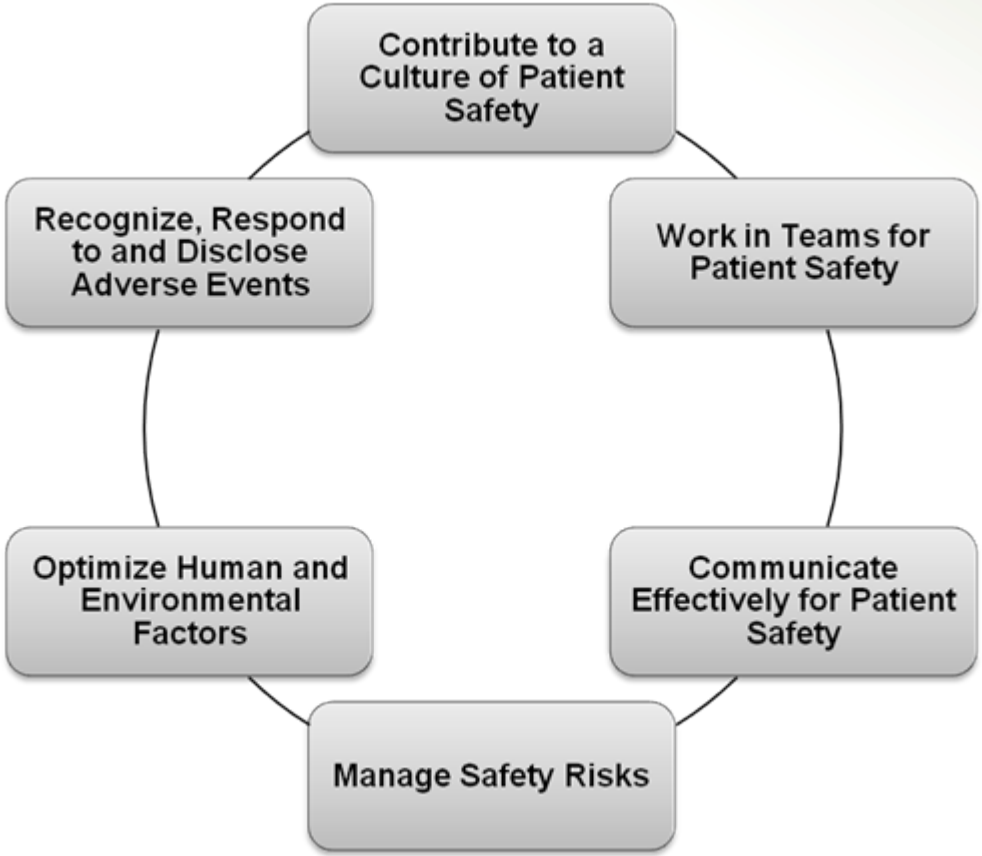
Education

Patient Safety Competencies

First edition released September 2008 (dissemination underway)



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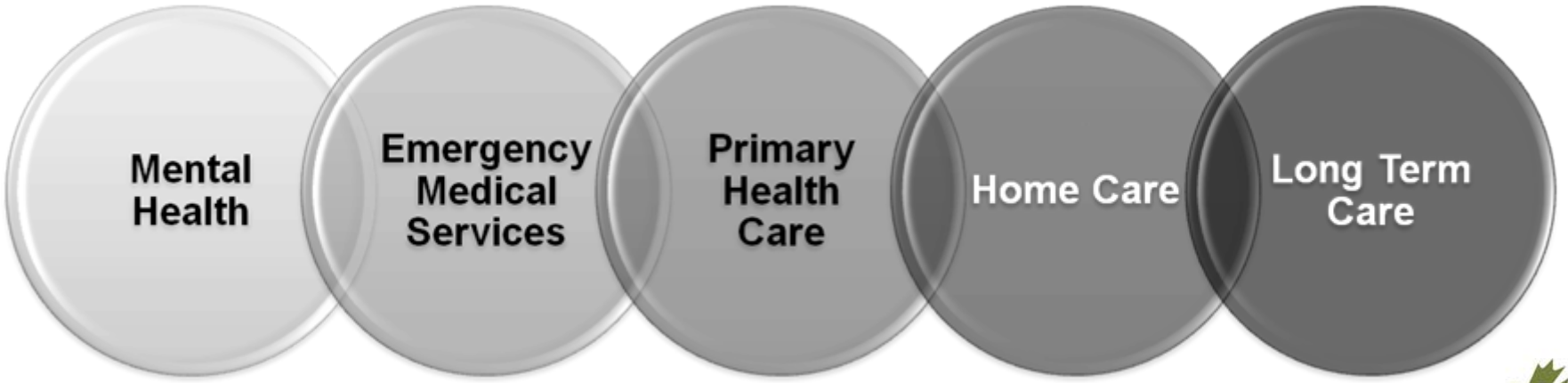
Research: *Building Capacity*

- Over **60** research and demonstration projects have been funded in the last three years
  - Form the basis for new knowledge of Canadian patient safety challenges and solutions
- Development of background papers
  - To identify the current state of knowledge, future research priorities, key issues, strategies and opportunities for action and improvement



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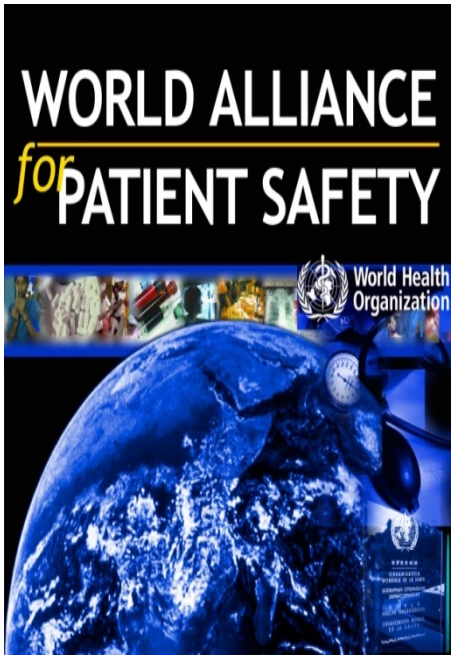
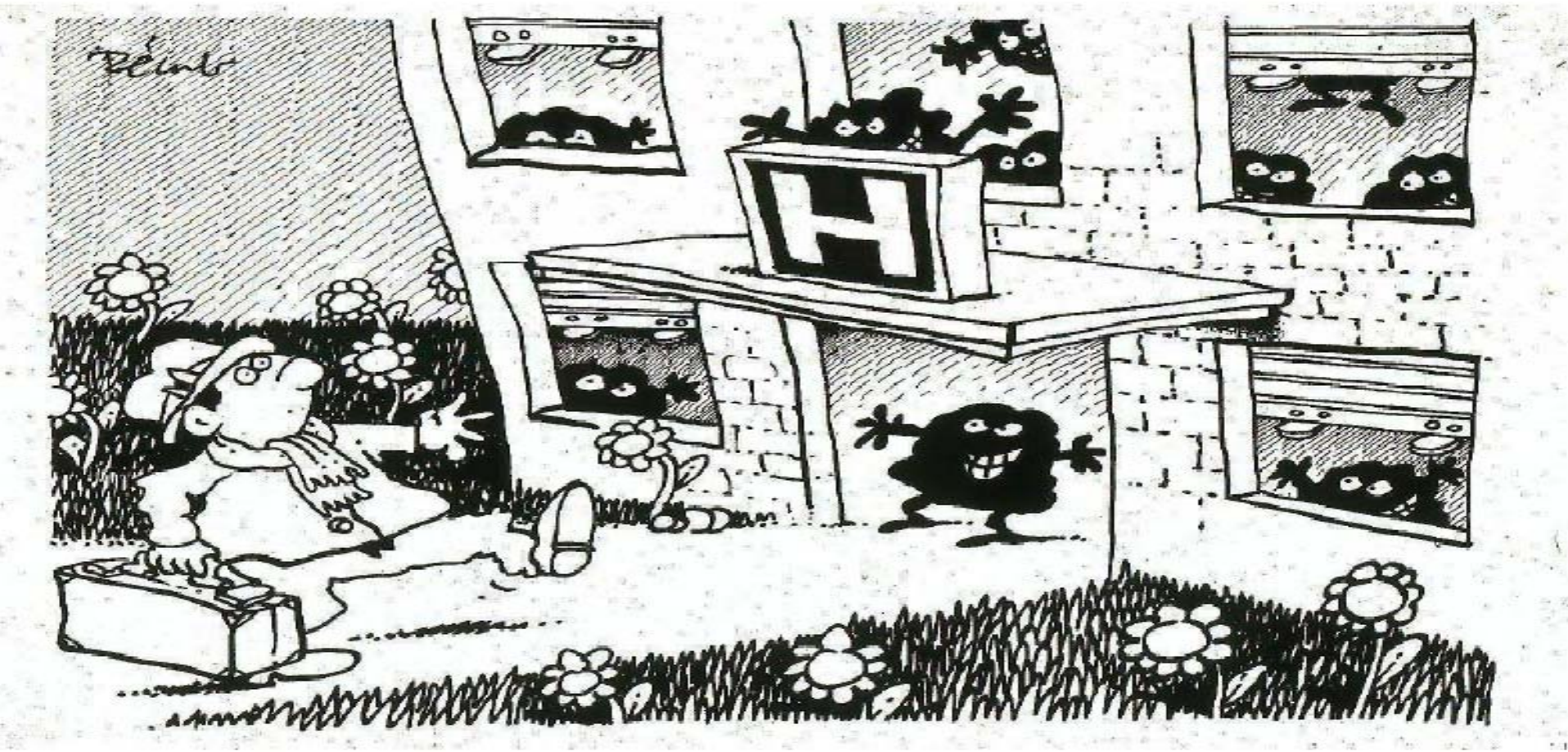
Patients for Patient Safety: *Why?*



- **More to offer than simply the 'victims' story of tragic medical error**
- **Consumers offer the richest resource of information** related to medical errors
  - Many have witnessed every detail of system failures from beginning to end
- **Patients want to know:**
  - The truth when things go wrong
  - Be treated with honesty and openness rather than face a closed door of denial

Infection Control



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Hand Hygiene Campaign

Hand Hygiene Campaign Goals

- Promote the importance of hand hygiene in reducing the occurrence of healthcare associated infections
- Respond to the needs of healthcare organizations for capacity building and leadership development by creating and providing them with tools to help promote good hand hygiene

MRSA Intervention Goals

safer healthcare now!

- Enable healthcare organizations and caregivers to prevent patient harm from MRSA
- Reduce MRSA infection rates

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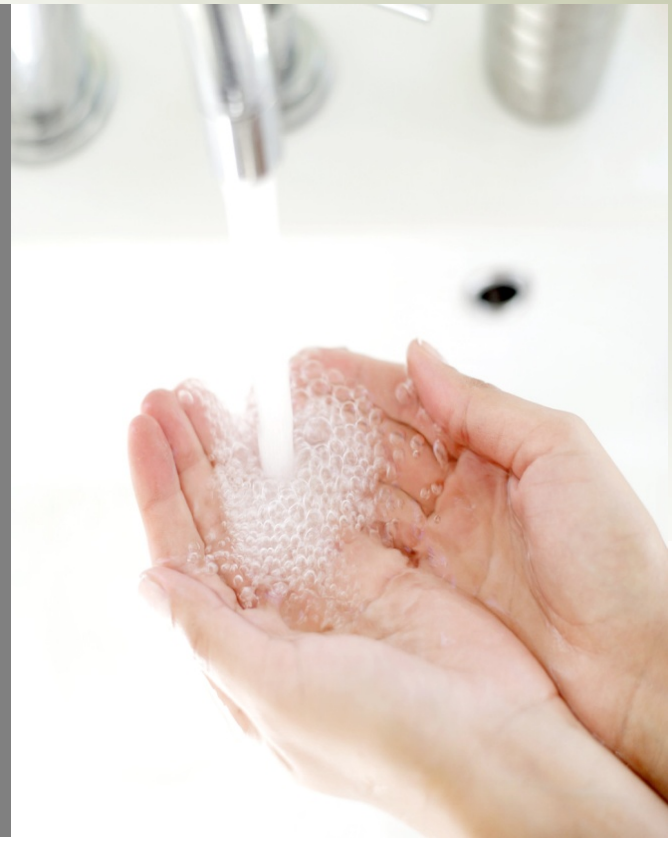
Hand Hygiene Campaign

4 Moments for Hand Hygiene

1. *Before* initial patient/patient environment contact
2. *Before* aseptic procedure
3. *After* body fluid exposure risk
4. *After* patient/patient environment contact



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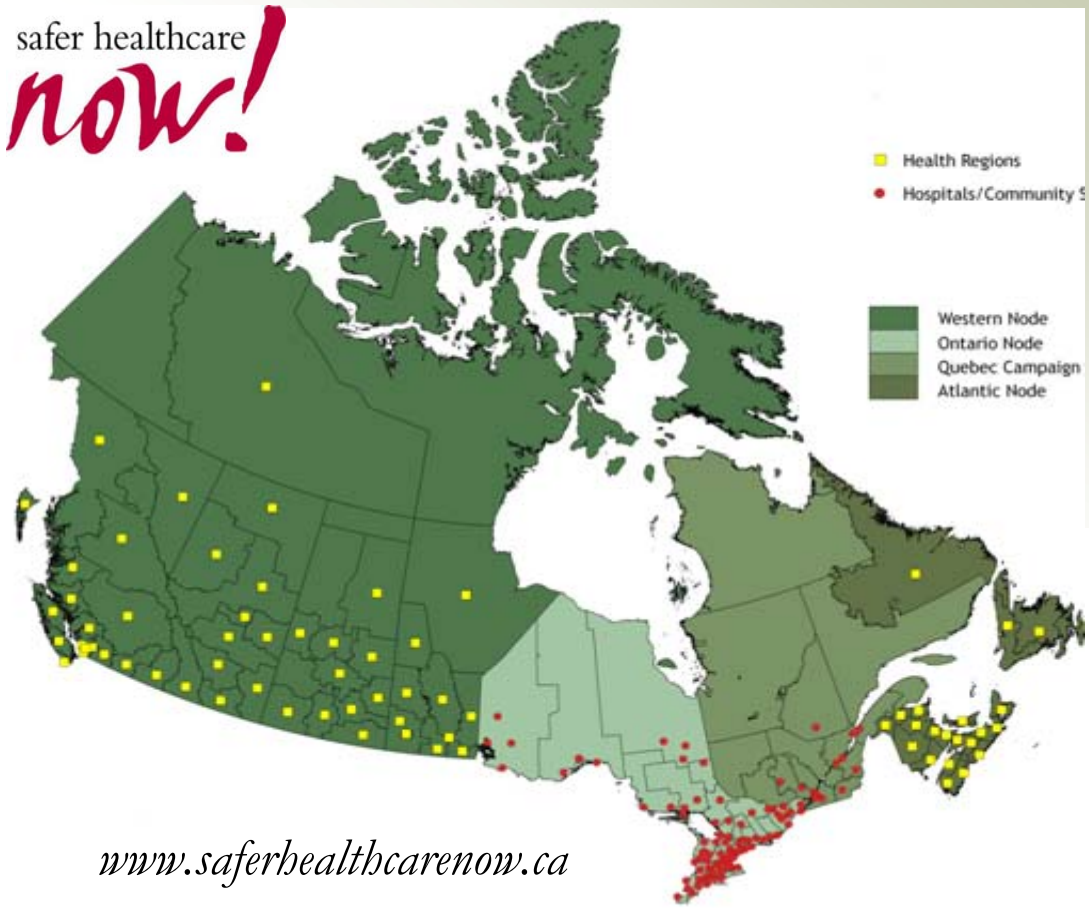
Interventions & Programs

In Canada . . .

- 33 million people
- 10 interventions + 2 pilots
- 1144 teams enrolled
- 80% of acute care hospitals enrolled
- All regional health organizations outside of Quebec enrolled Aim
- Reduce adverse events by 40-100% according to intervention



www.saferhealthcarenow.ca

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safer healthcare now! Interventions

Initial Interventions

- Improve Care for Acute Myocardial Infarction
- Prevention of Central Line Associated Bloodstream Infection
- Medication Reconciliation
- Rapid Response Teams
- Prevention of Surgical Site Infection
- Prevention of Ventilator-Association Pneumonia

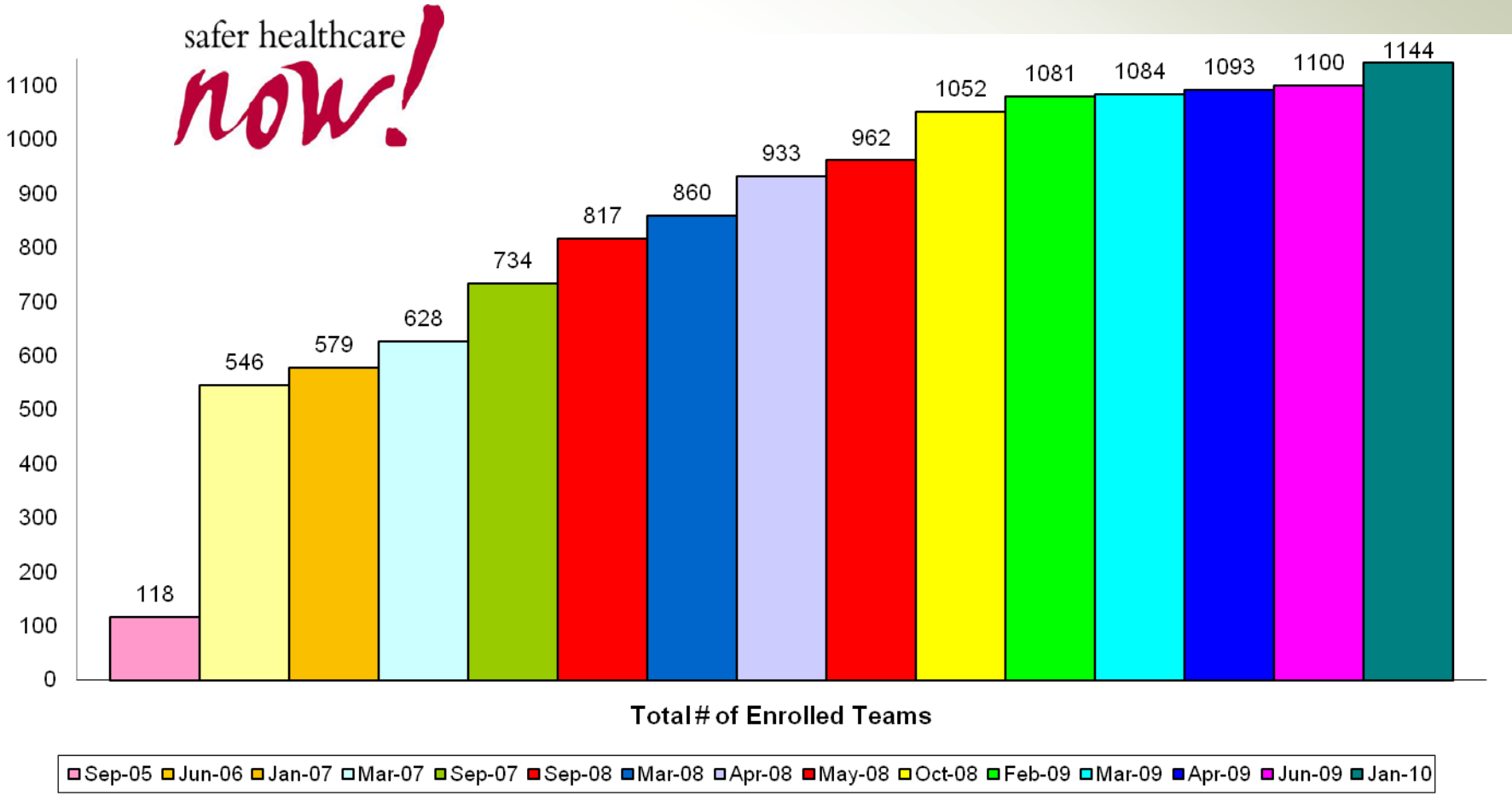
New Interventions

- Prevention of Adverse Drug Event in Long-Term Care
- Prevention of Harm from Falls in Long-Term Care
- Prevention of Harm from MRSA
- Improve Care for Venous Thromboembolism (VTE)

Pilot Projects

- Prevent Adverse Drug Events Related to High Risk Medication Delivery in Paediatrics
- Prevent Adverse Drug Events Through Medication Reconciliation in Home Care

Teams Continue to Enroll



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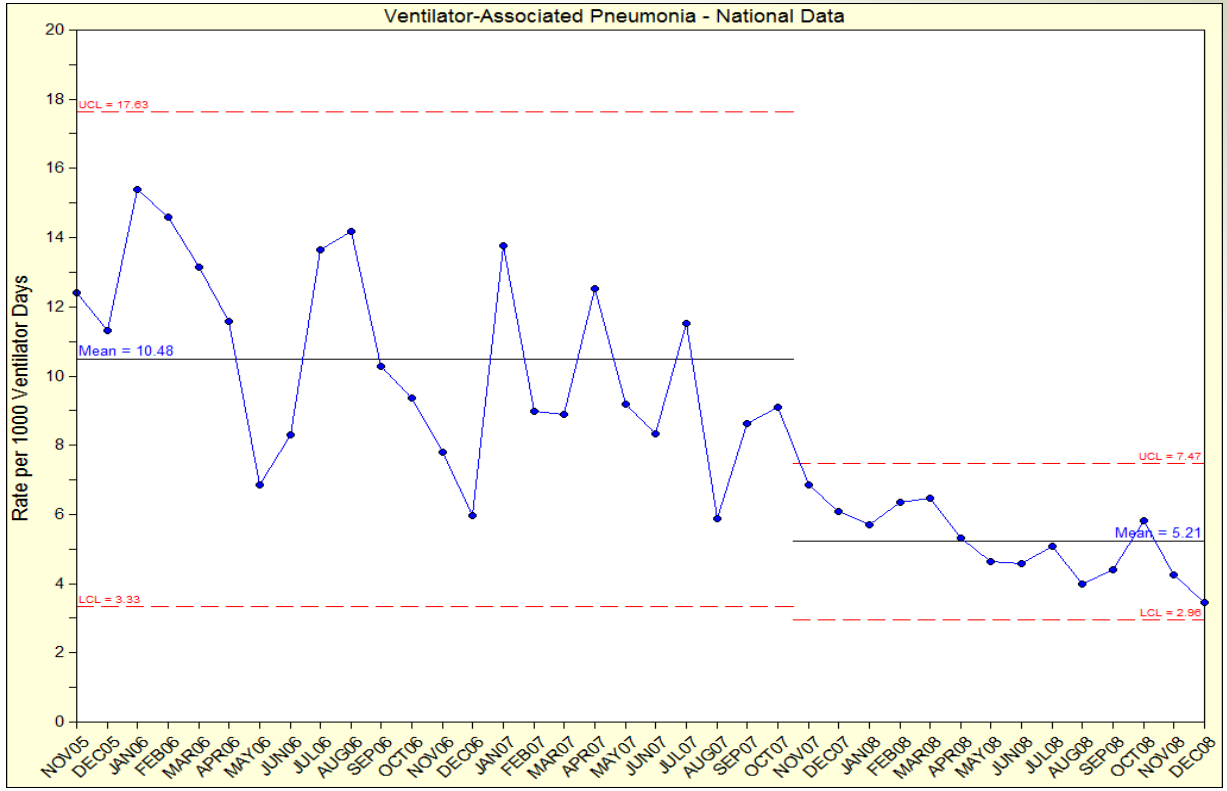
Ventilator-Associated Pneumonia

- Between Nov/05 and Oct/07, *safer healthcare now!* teams decreased the rate of ventilator-associated pneumonia (VAP) per 1000 ventilator days by **more than 50 per cent**
- **VAP rate has dropped from an average 10.48 to 5.21**
- The average number of teams reporting monthly data to *safer healthcare now!* has increased from 31 in the first two years to 50 last year

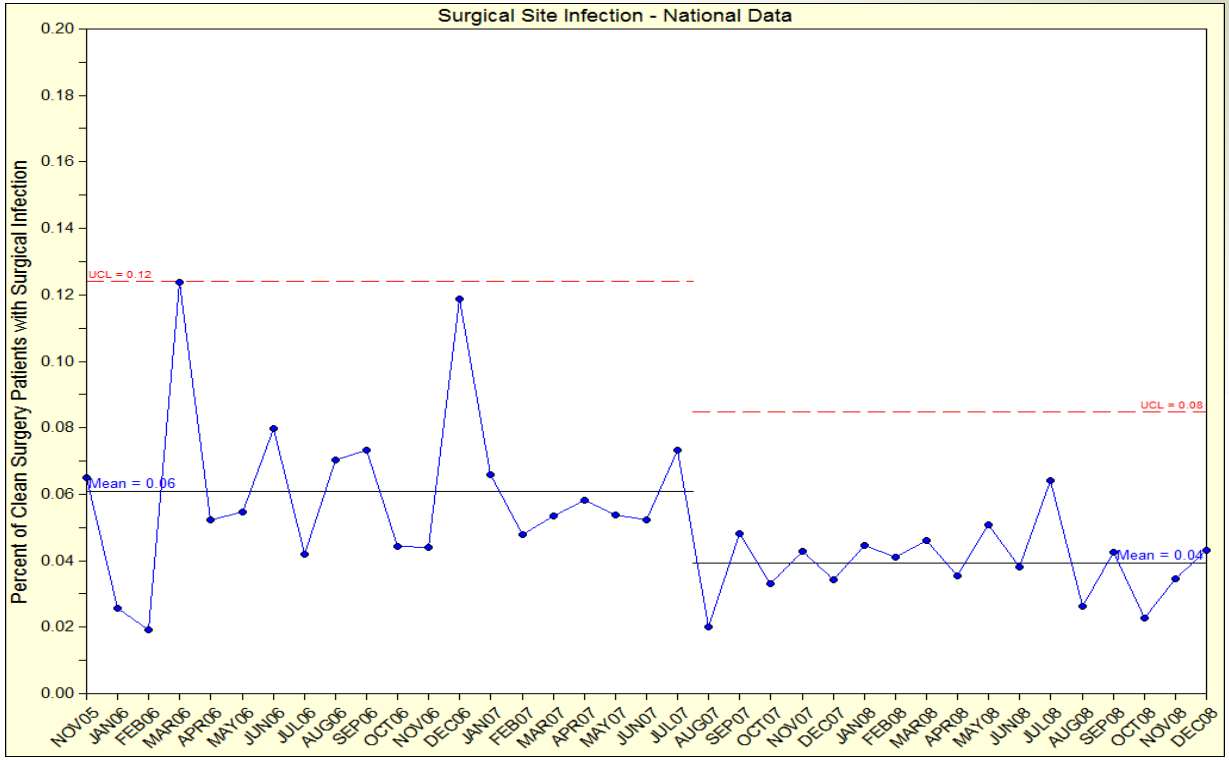
***safer healthcare now!* teams improve care to ventilated patients**



Surgical Site Infections

- Teams enrolled in the Surgical Site Infection (SSI) intervention have decreased the number of post-operative infections in clean surgical patients **from 6% to 4%** in the first 18-months of working with *safer healthcare now!*

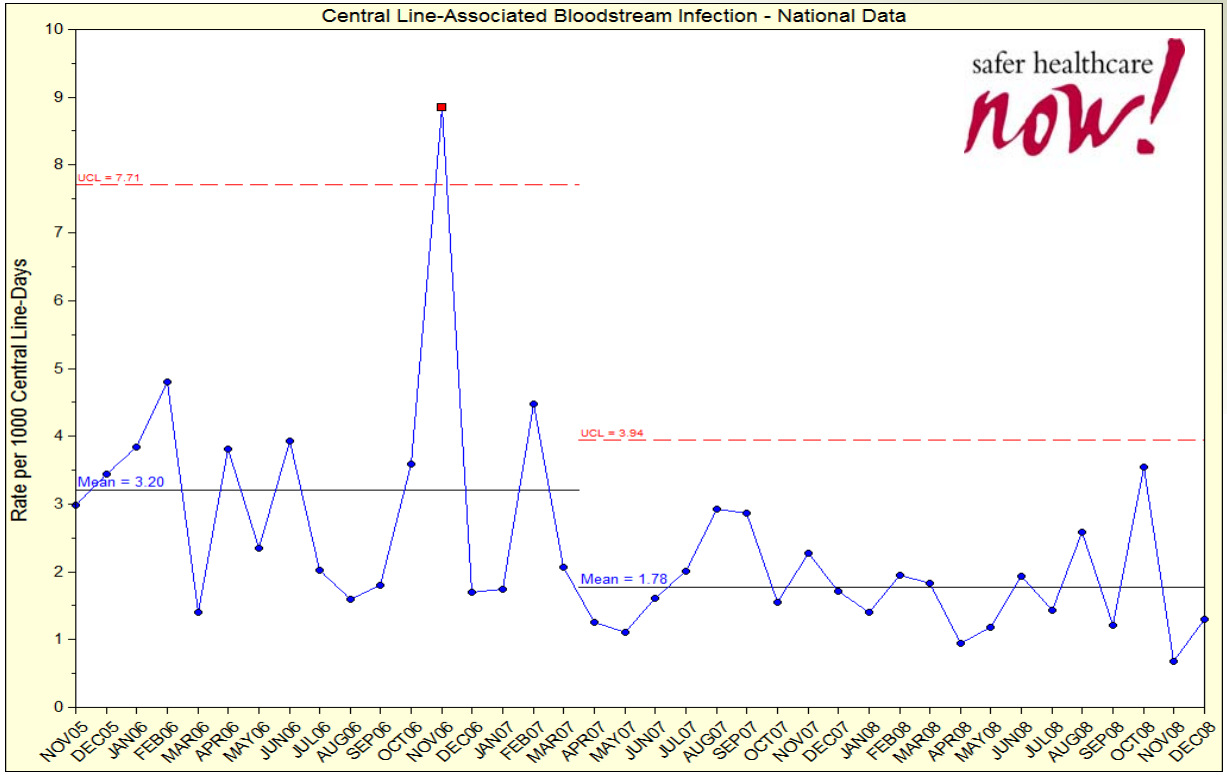
Surgical infections are declining within safer healthcare now! teams



Central Line Associated Bloodstream Infections

safer healthcare now! teams participating in this intervention have reported a reduction in the rate of central-line associated bloodstream infections per 1000 central line days **from an average of 3.2 for the first 17 months of *safer healthcare now!*, to 1.78 over the subsequent 19 months**

safer healthcare now! teams have reduced the rate of central-line associated bloodstream infections



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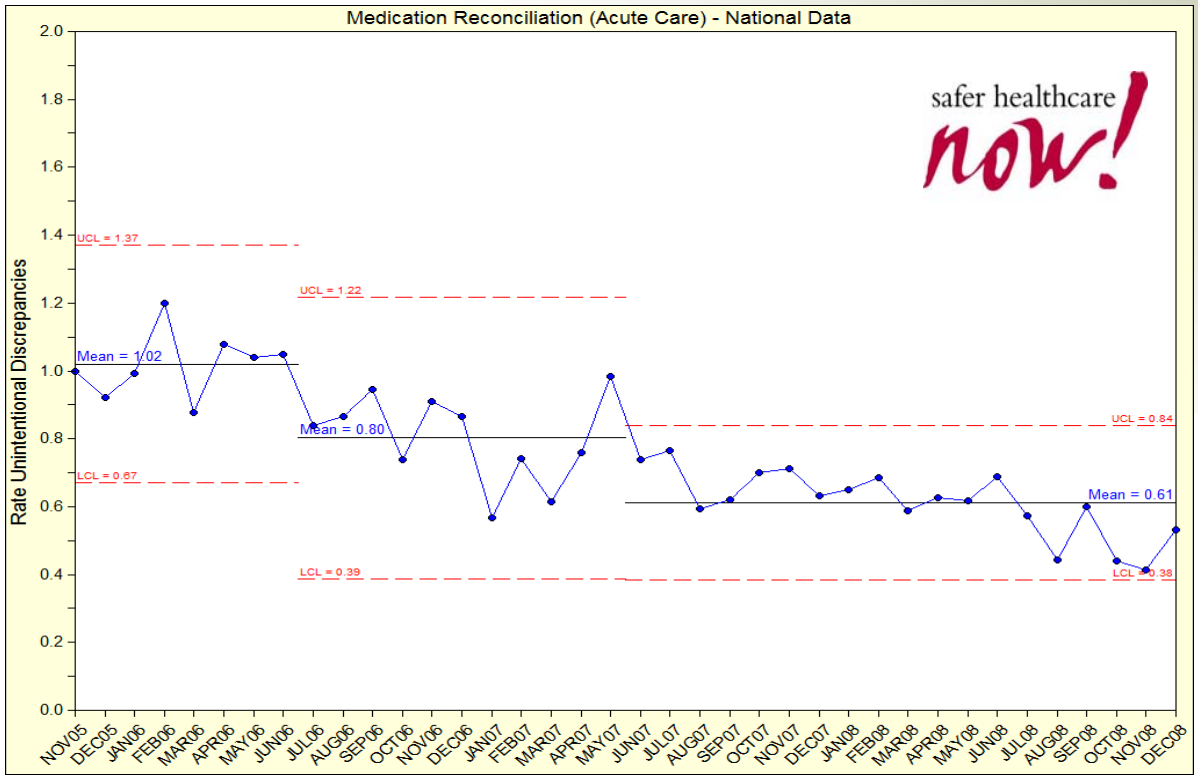
Medication Reconciliation

- Discrepancies occur when the prescriber has unintentionally changed, added or omitted a medication a patient was taking prior to admission
- By completing best possible medication histories and by implementing the process of medication reconciliation, **the rate of unintentional discrepancies has decreased by 50 per cent** since the initiative was introduced
- **The average rate of discrepancies decreased from 1.02 between November 2005 and June 2006, to an average rate of 0.61 discrepancies between May 2007 and December 2008**

Adverse drugs events are being reduced through medication reconciliation



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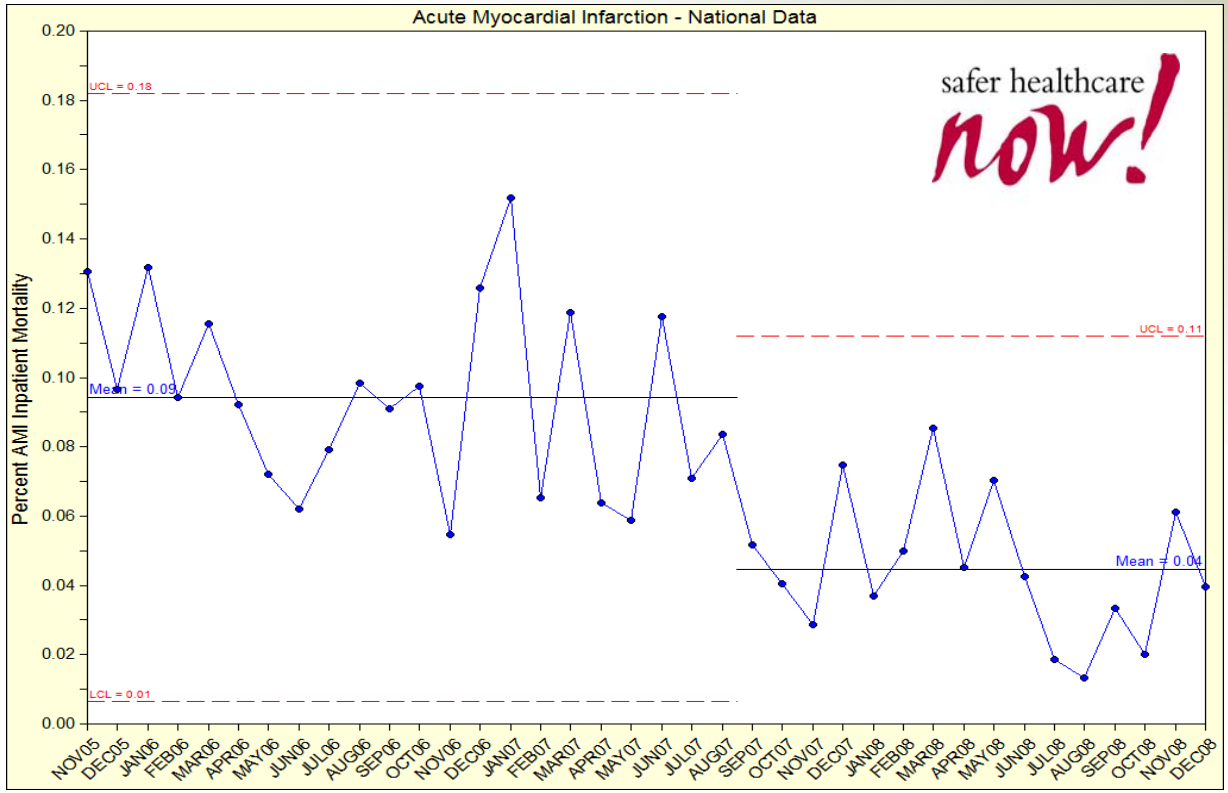
Acute Myocardial Infarction (AMI)

- Although the decrease in AMI mortality rate cannot be solely attributed to *safer healthcare now!*, participation has made an impact
- The mortality among AMI inpatients has decreased from **nine per cent in November 2005, to four per cent** in Sept/07
- Of the 7640 AMI patients for whom data was submitted to *safer healthcare now!* in the first 24 months, 640 died
- In the following year, the morbidity rate decreased to, 247 of 4063 patients

The number of patients dying after admission to the hospital with a heart attack has decreased by almost 50%



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Tools & Resources

Event Analysis

- The French adaptation for the Canadian Root Cause Analysis Framework is completed and will soon be posted on the CPSI website

Electronic Health Record

- Plans are underway to examine the role of EHR as it relates to the process of medication reconciliation

Canadian Disclosure Guidelines

- Available on the CPSI website
- Plans for further dissemination currently in development

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Tools & Resources

Canadian Adverse Event Reporting and Learning System (CAERLS)

- Consultation paper available on CPSI website
- Consultation throughout Canada is currently underway

Human Factors

- Key strategy is building human factors capacity

WHO Safe Surgery Saves Lives

- Safe Surgery Checklist currently being adapted and adopted by large hospitals across Canada

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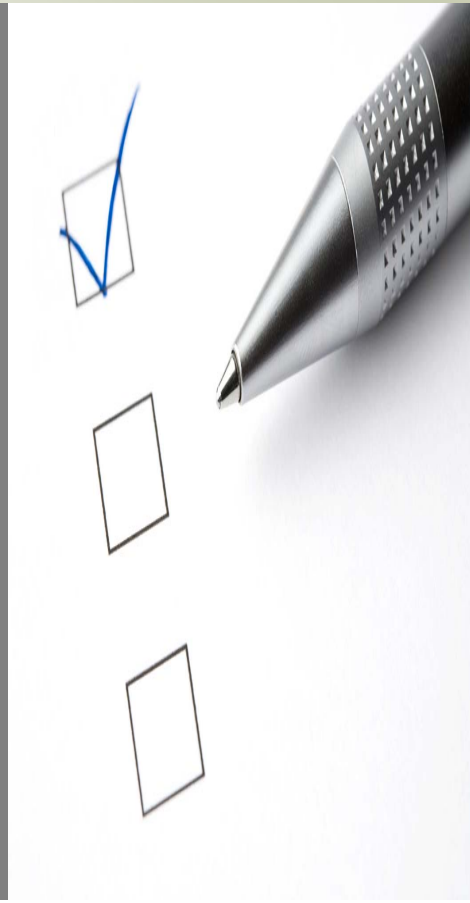
Tools & Resources

Advantages:

- Customizable to local setting and needs
- Deployable in an incremental fashion
- Supported by scientific evidence and expert consensus
- Evaluated in diverse settings around the world
- Ensures adherence to established safety practices
- Minimal resources required to implement a far-reaching safety intervention



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Effective Communication & Teamwork

- The overwhelming majority of untoward events involve communication failure
- Somebody knows there's a problem but can't get everyone "in the same movie"
- The clinical environment has evolved beyond the limitations of individual human performance

Accountability: *More Important Now than Ever Before*

The Robert Wood Johnson Foundation (1996).

"Our current methods of organizing and delivering care are unable to meet the expectations of patients and their families because the science and technologies involved in health care

- the knowledge, skills, care interventions, devices, and drugs –
have advanced far more rapidly than our ability to deliver them safely, effectively, and efficiently."

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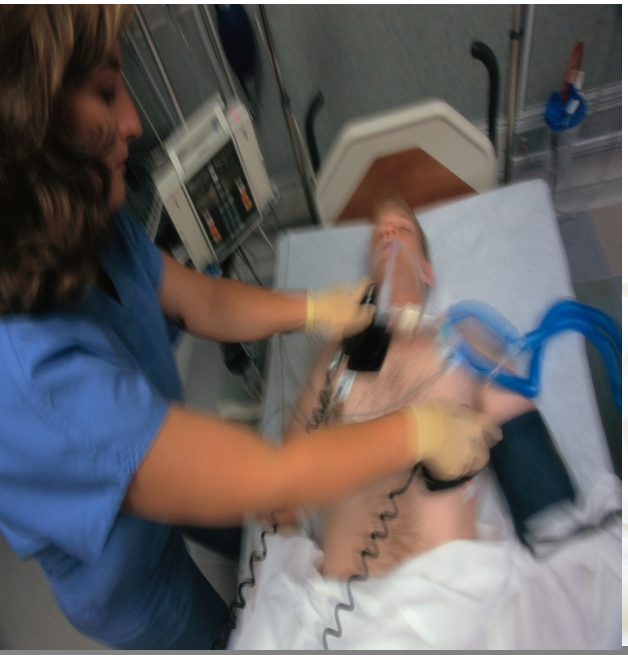
Patient Safety . . .



“Is it getting better?”

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What is HSMR?

- Hospital Standardized Mortality Ration (HSMR) track **changes in hospital mortality rates** in order to:
  - Reduce avoidable deaths in hospitals
  - Improve quality of care
- Developed in the UK in mid-1990s by Sir Brian Jarman of Imperial College
- Used in hospitals worldwide (i.e. UK, Sweden, Holland and US)

What Does *Average* Mean for Canada?

(Results from Baker & Norton)

9-23,000

Deaths among patients with preventable adverse events

1,100,000

Extra hospital days associated with adverse events

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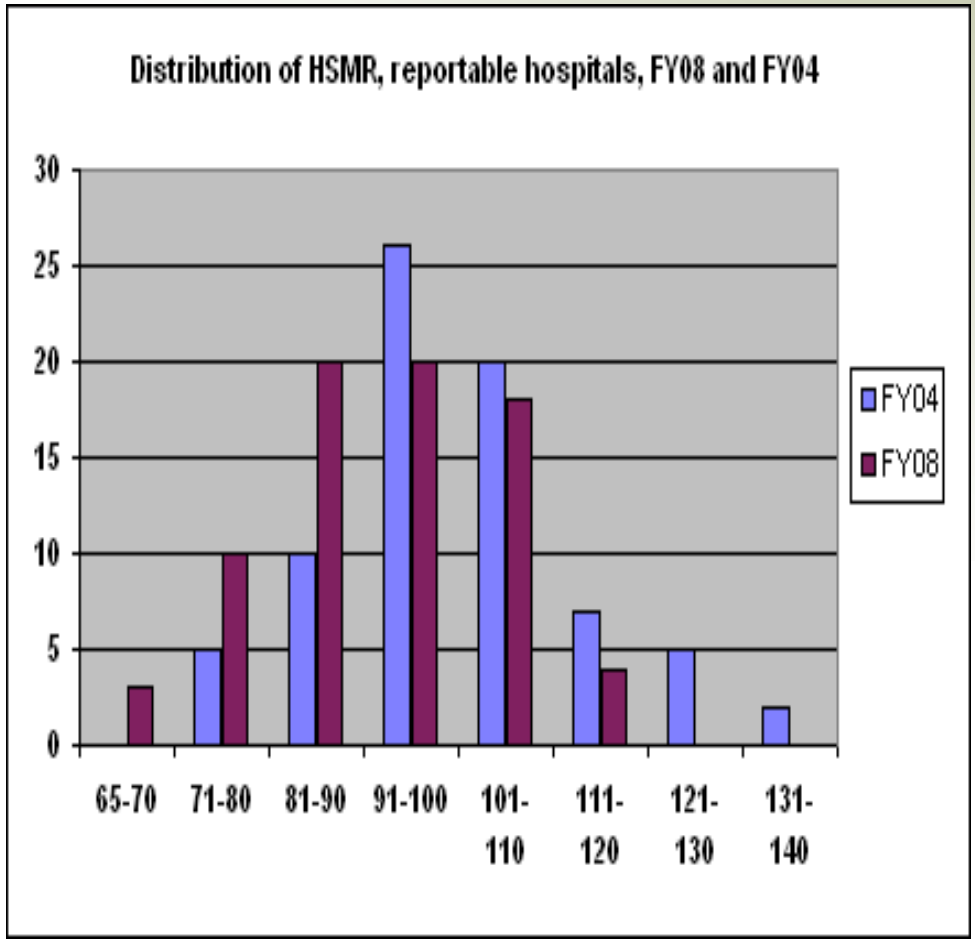
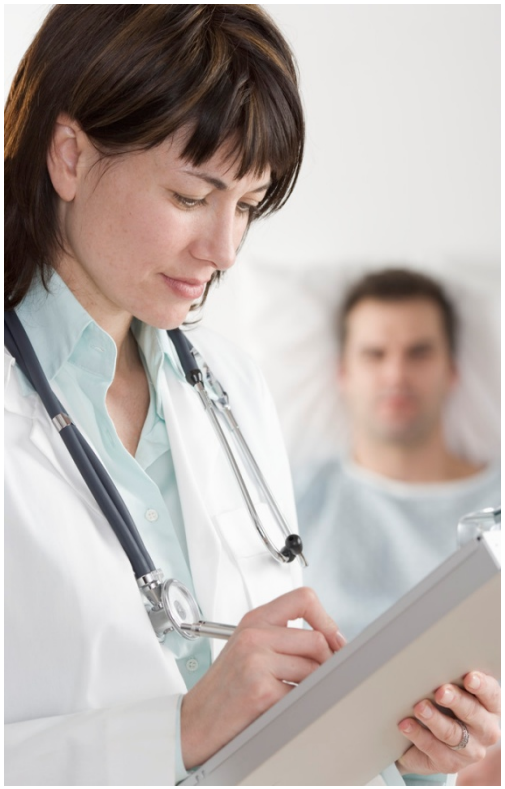
HSMR

- The distribution of HSMR for facilities with at least 2,500 HSMR cases
  - The purple bars reflect fiscal year 2008-2009
  - The blue bars reflect fiscal year 2004-2005
- The chart provided refers to HSMR, formerly referred to as *HSMR All Cases*
  - The chart in the 2007 HSMR public report is for HSMR excluding Palliative Care which has been discontinued



Commitment to Our Patients



"**. . . there are some patients we cannot help,**

there are none we should harm. . ."

Dr. Ken Stahl (n.d.)

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