



## Health Care Quality Improvement

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ORNAC 2007  
Victoria, BC

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## Health Care Quality

1. What is it?
  - ✓ Providing the patient what they need
  - ✓ Achieving the desired endpoint as a result of planning the right course of action and executing the plan
2. Should we be concerned?
3. Can we do anything to change?
4. How can we manage quality?
  - a) Plan and assess changes
  - b) Report outcomes

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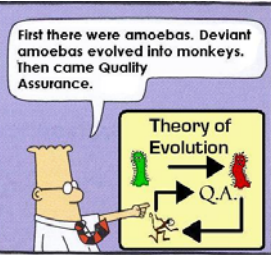
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## What others are saying...

First there were amoebas. Deviant amoebas evolved into monkeys. Then came Quality Assurance.



Theory of Evolution

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## Are Health Care Errors-

- Prevalent?
  - Chart reviews<sup>1</sup> 3-17% in Canadian, US and European studies
- Serious?
- Preventable?
  - 1/3 to 1/2 based on different study designs

<sup>1</sup>Baker, GP et al *The Canadian Adverse Events Study: the incidence of adverse events among hospital patients in Canada*  
CMAJ 170: 1678-1686

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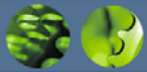
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## To Err is Human...

- Using data from 2 large US studies
- 44,000-98,000 annual deaths in US as a result of medical errors<sup>1</sup>

<sup>1</sup>US Institute of Medicine, *To Err Is Human: Towards Building a Safer Health Care System* 1999

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## Canadian Adverse Events Study Data

- Standardized chart review across Canada
  - 7.5% event rate identified
- Leading to estimates of
  - 9250-23,750 preventable deaths
- Medication errors and events related to surgical procedures most common causes

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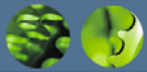
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## Public Perceptions

- Canadians surveyed (2004)
  - 1 in 4 believe that a family member experienced a preventable adverse event
  - Of these, 52% felt it had serious consequences
- Only 7% thought over 10,000 **9250-23,750 from<sup>1</sup>** deaths a year in Canada could be attributed to preventable adverse events

<sup>1</sup>Baker, GP et al *The Canadian Adverse Events Study* CMAJ



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## Process Improvement

- Continuous improvement
- Avoid the 'name and blame game'
- Involvement of all the front-line players



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## The "Cycle"

- Plan the course
- Do -Act upon the plan
- Study the results (data collection and analysis)
- Act upon the results to refine plan




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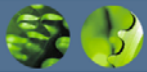
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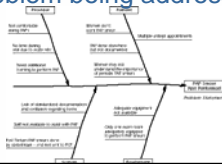
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## Root Cause Analysis

- Fishbone (or Ishikawa) diagrams encourage broader thinking
- Not just the 'pointy end' of the problem
- Involve all players and ensure they agree on the problem being addressed




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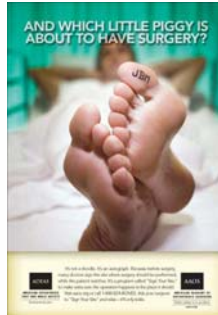
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## Include the team

- Marking the surgical site
  - Surgeon initials or marks site
  - Patient marks own site/ limb pre-amputation
- Sticky-dot system in Ophthalmology OR




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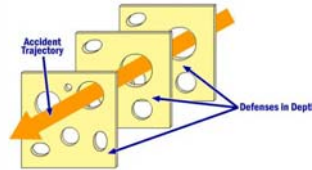
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## Barriers against Adverse Events ("AE")

- No impenetrable 'wall' against AE's
- Set up multiple layers of defense



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## Medication Errors

- Look-alike drug packaging
- Sound-alike drug names
- Illegible handwriting



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## Surgical Site Infections

- SSI account for about 1 in 5 hospital-acquired infections
- Programs to reduce them incorporate a multidisciplinary team and best practices
  - No shaving, normo-thermia, appropriate antibiotic prophylaxis, good glycemic control
  - Include surgeon, OR Manager, Infection Control, Patient Safety officer

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### Surgical Site Infections- Cardiac Surgery example

- Compliance with clinical guidelines
- Forming the Team
- Setting Goals




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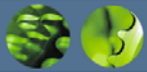
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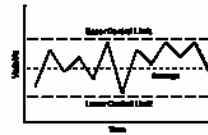
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### Quality Improvement

- Organizational behaviour
- Engineering (process control)
- Psychology
- Statistics




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### Outcomes of QI Initiatives

- Surgical site infections less than 1%
  - Fauquier Hospital, Warrentown, VA
- 2 years without Ventilator-Associated Pneumonia
  - BLGH Medical Centre, Lincoln, NE
- 85% of CHF patients receive optimum (evidence-based) care
  - Healthy Heart Society, Vancouver BC
- 50% reduction in Cardiac Arrest calls after implementing Rapid Response Team
  - Trillium Health Centre, Mississauga, ON

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- Brainstorming to produce a 'Fishbone diagram'
  - Identify and eliminate sources of foreign material in the eye
    - Drapes, gowns, tissues, ventilation, instrument handling and cleaning in CSR (wipes), reusable instruments
    - Improved HVAC ventilation required
- Results

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### Toxic Anterior Segment Syndrome (TASS)

- Non-infectious, severe inflammatory condition of the anterior segment
- Noted 24-48 hours following Cataract surgery
- Etiology multifactorial



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### TASS

- Outbreaks have been reported across North America
- Sept/06 Toronto-area hospital ORs closed due to a series of cases
- Recent investigations support the development of a multi-disciplinary team to study surveillance, prevention and rapid response

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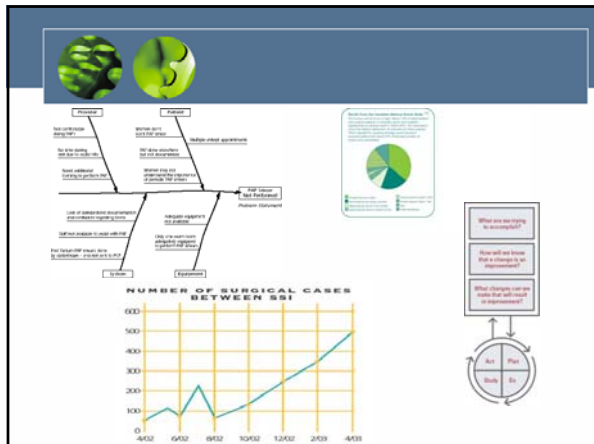
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## Resources

- Information sources- [www.cihi.ca](http://www.cihi.ca)
- Technical resources
  - Institute for Healthcare Improvement [www.ihl.org](http://www.ihl.org)
  - Canadian Patient Safety Institute [www.patientsafetyinstitute.ca](http://www.patientsafetyinstitute.ca)

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## Summary

- Health care delivery, like all other areas of human endeavor, is associated with error
- Prevalence of serious, preventable adverse events is considerable
- By using a systematic approach and existing tools, process improvement can be made

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Thank you



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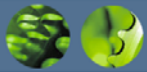
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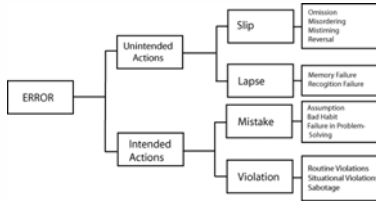
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### Taxonomy of Errors



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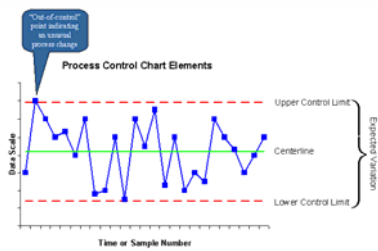
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### Control Charts



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