# Creating a Safer Future For Canadian Health Care

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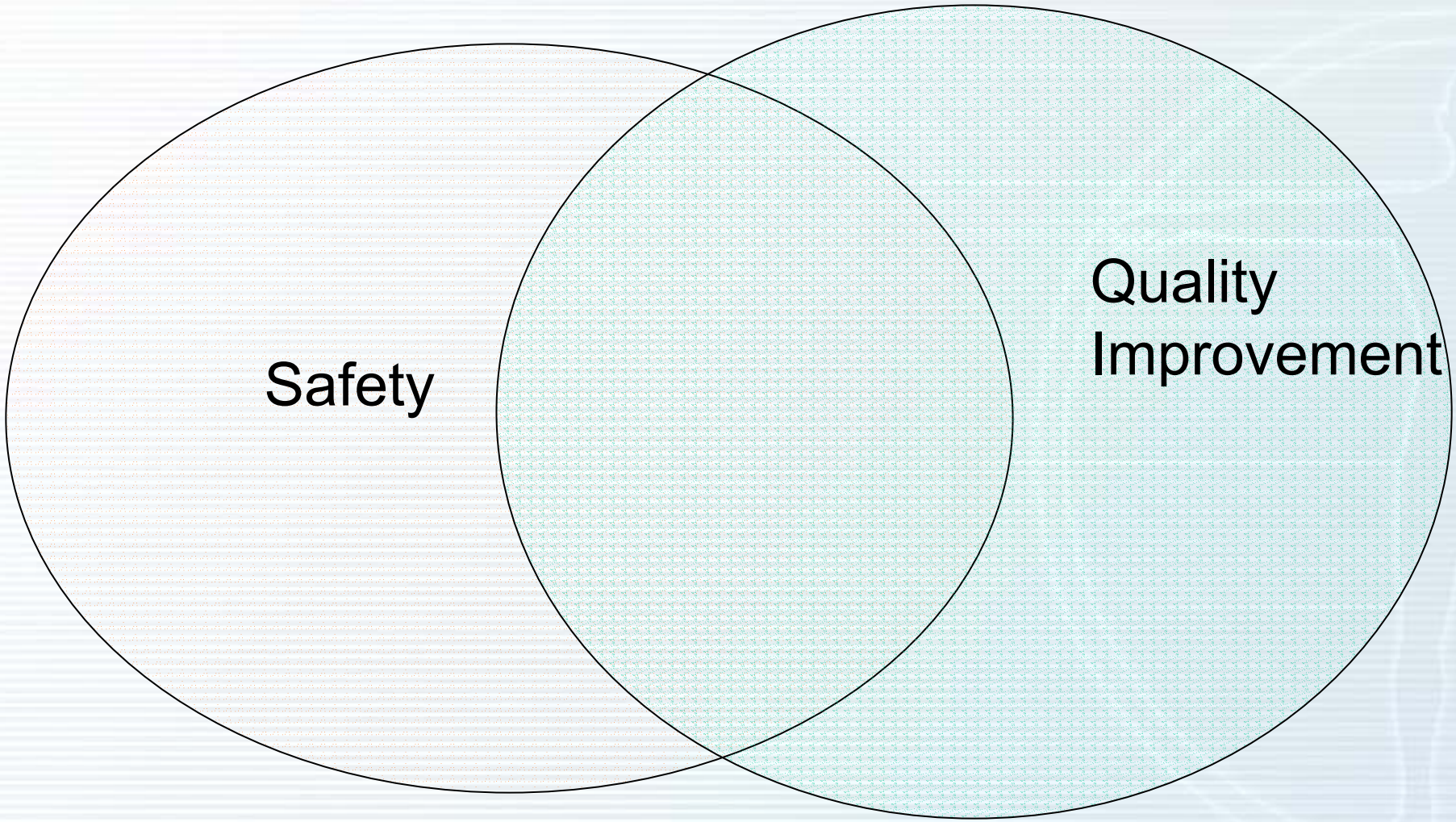
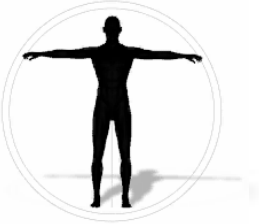
# Patient Safety: New Direction or New Jargon?

- Traditional view of quality of care is based on improving structure, process and outcomes
- Focus on professional practitioner as key actor
- Safety focuses on care but also requires understanding how the system support or undermine effective action by practitioners

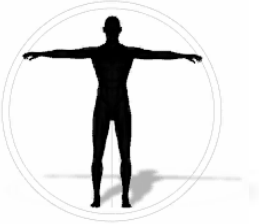

Safety
Quality
Improvement



# Patient Safety Interventions

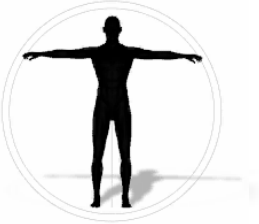
- Key interventions to improve patient safety go beyond quality improvement tools such as guidelines and evidence-based practices
- Improving patient safety requires both a redesign of care processes and a review of current staffing, technology, teamwork and support systems

# So… what's the evidence?



# Incidence from chart review studies

| Country | N | Year | Incidence of AE | Preventable |
|---|---|---|---|---|
| USA – NY Harvard | 30,121 | 1990 | 3.7% | - |
| Australia | 14,000 | 1995 | 16.6% | 51% |
| USA (Utah & Colorado) | 15,000 | 2000 | 2.9% | - |
| England | 1014 | 2001 | 11.7% | 50% |
| New Zealand | 1326 | 2001 | 10.7% | 71.8% |
| Denmark | 1097 | 2001 | 9.0% | 40.4% |



# Canadian Adverse Events Study

- Funded by CIHR & CIHI
- Uses the established chart review method to identify adverse events and assess whether these events might be preventable
- Two stage chart review – triggers and then decision re AE and error
- Project started in June 2002 with expected results by 1Q 2004
- Will give the following
  - Rate and type of AEs in acute care
  - Teaching vs. Large vs. Rural
  - Medicine vs. Surgery

# Adverse Drug Events

- David Bates examined the incidence and distribution of medication AEs at 2 Boston teaching hospitals
  - 247 ADEs and 194 Potential ADEs in 4,031 admissions (28% of ADEs were classified as preventable)
  - Most common stages where errors occur were ordering and administration

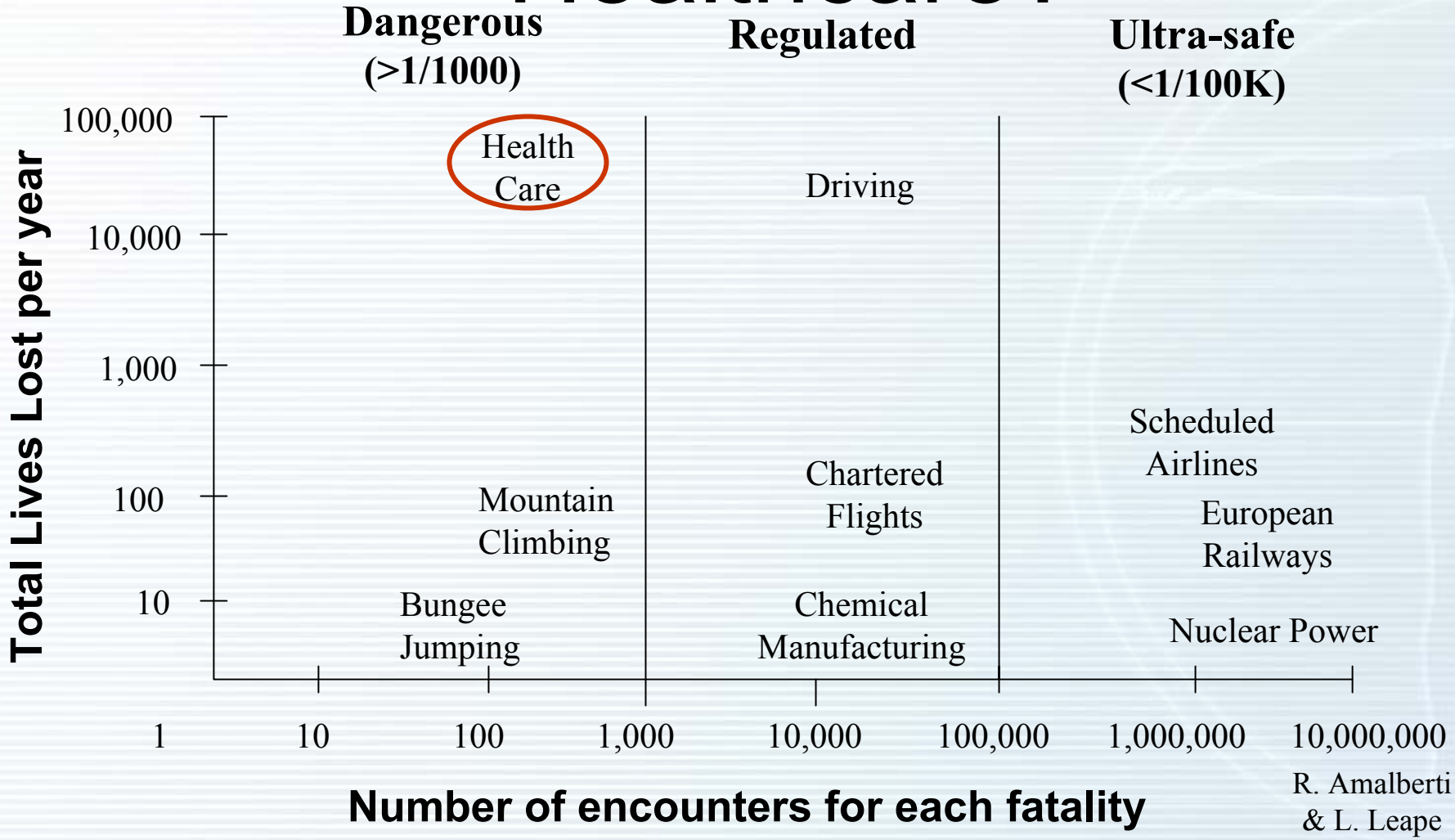
JAMA 1997 Jan 22-29;277(4):307-11

# Patient Are At Risk After Discharge

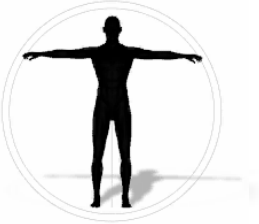
- Study of 400 consecutive patients discharged from a US tertiary care teaching hospital
- Seventy-six patients (19%) had adverse events after discharge [CI 15% to 23%]
- Of these, 23 were judged preventable and 24 ameliorable
- Adverse drug events were most common (66%); procedure-related injuries (17%)

Forster, et al. *Annals of Internal Medicine 2003; 138:161-167*

# How Hazardous is Healthcare?



# What is going on in other jurisdictions?



# A Review of Policies, Institutional and Funding Frameworks, and Current Initiatives

- Prepared for the Advisory Committee on Health Services Working Group on Quality of Health Care Services
- Australia, the UK and the USA
- Paul Gardner, Ross Baker, Peter Norton & Adalsteinn Brown

# U.S. Activities

- Federal government funding limited to research and program funding for *VA*
- Little state funding of patient safety
- Research funding on incident reporting systems
- Hospitals bearing the costs of patient safety work
- Private sector funding being used as a driver
- Considerable focus on technology solutions such as computerized order entry systems, drug bar-coding etc.
- JCAHO accreditation includes patient safety program review
- Efforts largely limited to hospitals and drugs

# UK Activities

- *Department of Health* and *National Health Service* in charge
- Initiatives under way in governance, regulation, accountability and reporting, funding and research
- Provider and institutional-based accountability to national centralized bodies
- National safety organizations set up by government
  - to set clinical policy (NICE)(NSF)
  - run incident reporting system (NPSA)
  - assess physicians (NCAA)
  - assess and investigate institutions (CHI)(NCSC)
- Clinical governance to ensure local quality and safety
- National mandatory incident reporting and root cause analysis
- Program scope includes hospitals and primary care
- Both public and private healthcare included

# Australian Activities

- Leadership and majority of the funding from the federal government with significant state buy-in and funding
- A national *Safety and Quality Council* providing policy direction and building federal/state consensus and co-operation
- Many *Safety and Quality Council* policy papers
- Emphasis on incident reporting systems and root cause analysis
- Most efforts currently focused on hospitals
- Patient safety issues included in accreditation systems
- Most *Safety and Quality Council* funding going to culture change

# And in Canada ….

# Building a Safer System

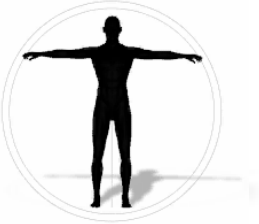
A National Integrated Strategy for Improving Patient Safety in Canadian Health Care

http://rcpsc.medical.org/english/publications/

National Steering Committee on Patient Safety
Comité directeur national sur la sécurité des patients

# National Steering Committee on Patient Safety

- Created by Royal College of Physicians and Surgeons of Canada following September 2001 conference
- Areas of focus
  - System Issues
  - Regulatory Issues
  - Measurement And Evaluation
  - Education and Professional Development
  - Information and Communication



# Recommendations

- **Establish a Canadian Patient Safety Institute to Facilitate a National Integrated Strategy for Improving Patient Safety**
- **Improve Legal and Regulatory Processes**
- **Improve Measurement and Evaluation Processes**
- **Establish Educational and Professional Development Programs**
- **Improve Information and Communication Processes**

# Cost

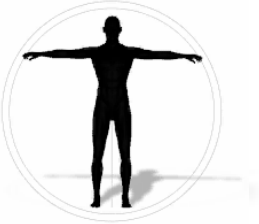
- $500,000 for startup
- $10,000,000 per year for 10 years
- To compare
  - Australia will spend AUS$660 million over the next 5 years – about 60/40 split between federal and state
  - UK budget is about £47.1M (= $116M Can.) annually

# Health Canada Study

- Carried out in 2001-02 by Peter Norton and Ross Baker
- Use surveys to identify current best practices in patient safety in Canada
- Identify initiatives elsewhere based on literature review and other sources
- Recommend steps to improve patient safety in Canadian healthcare
- http://www.hc-sc.gc.ca/english/care/report/intro.html

# Data Sources for Health Canada Study

- Telephone interviews with 79 individuals across Canada identified as leaders in patient safety using “snowball technique”
- Mail survey of a random sample of 102 healthcare delivery organizations and 69 professional associations and colleges



# Key Findings I

- Pleas for leadership at local, regional and national levels.
- The current limitations on human and financial resources addressed to patient safety are a major barrier to progress.
- Fear of litigation is an important issue in many organizations but is less dominant than might be expected from anecdotal information.
- Punishment, fear and possible professional censure are major barriers to identifying and investigating adverse events at the local level.

# Key Findings II

- Lack of systematic processes to collect information on adverse events and errors in Canadian healthcare organizations.
- There is little information available about programs and techniques to enhance patient safety in Canadian healthcare organizations.
- Large numbers of organizations reported that historical surveillance systems – death reviews, incident analysis, etc. – were not functioning well or were not present at all.
- Almost 50% of health care delivery organizations felt that they could not effectively enhance patient safety.

# Key Findings III

- Respondents identified the need for
  - formal training in specific tools like Root Cause Analysis
  - development of systems to allow regional and national sharing of changes made to improve safety
  - education among health care professionals concerning patient safety issues
  - a focus on systems and the prevention of error

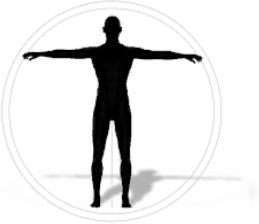

# What's up doc? – what can you do?

# Learn from others…

# Some Canadian Initiatives

- Hospital districts in Saskatchewan are developing formal root cause analyses to identify system issues and disseminate changes between districts
- Hospital patient safety teams have been created at Toronto Hospital, UHN and Sunnybrook and Women's and other healthcare organizations
- ISMP Canada has created a Canadian system for hospital medication incident reporting
- Disclosure policies developed and in implementation at S & W, HSC, Winnipeg RHA and McGill
- VON developing a national strategy for reduction of AEs and disclosure
- Providence system in Vancouver worked in an IHI collaborative to reduce medication error

# Understand why errors occur…



# Some Reasons Why Errors Occur

- Complexity of health care processes and hospital work environments
- Limited knowledge, poor application of knowledge, fatigue, sub-optimal teamwork and other human factors
- Poor communications including indecipherable handwriting
- Lack of consistency in ordering and administration practices

# Think about human factors …

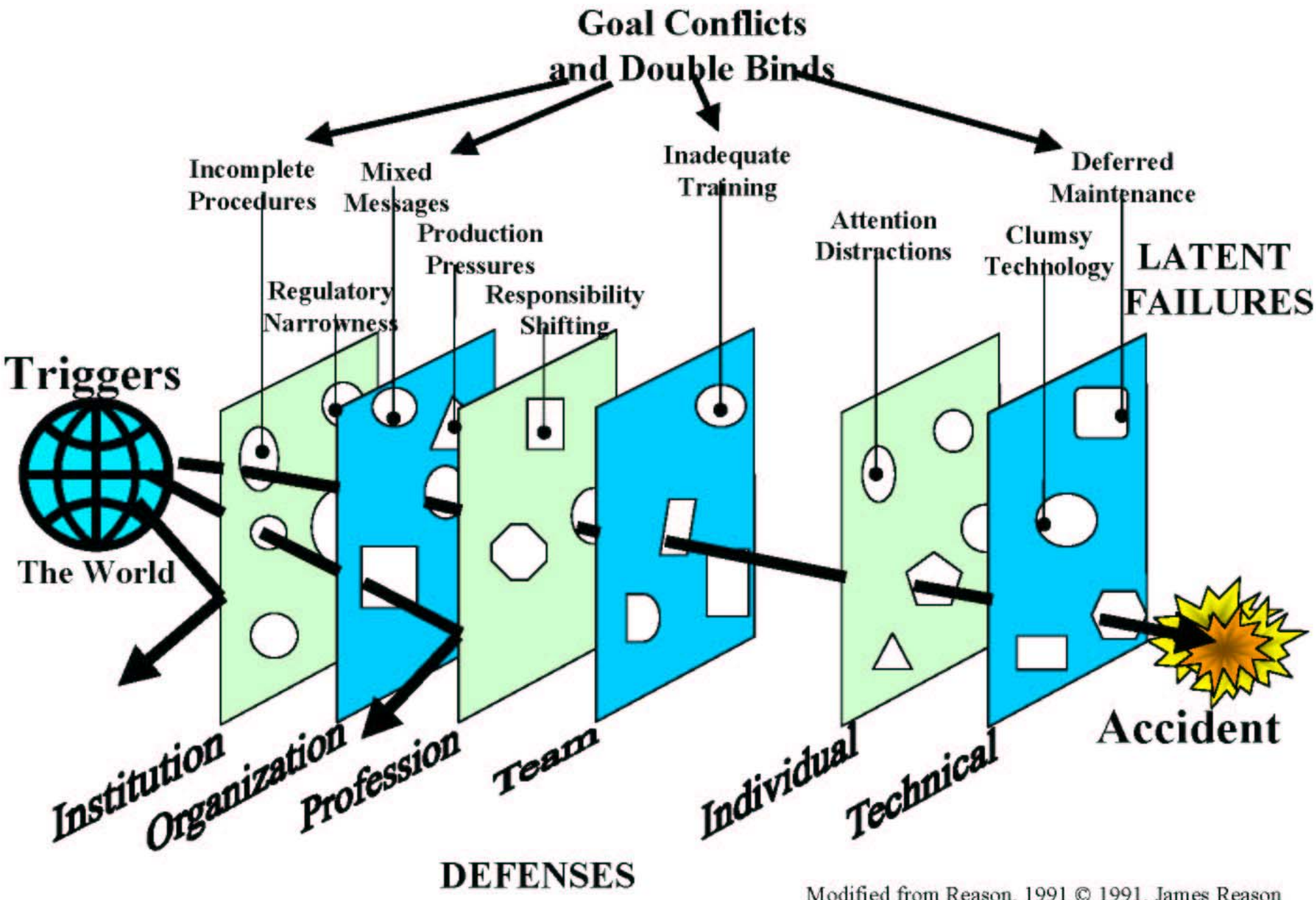
# Mark Twain

"Man, a creature made at the end of the week when God was tired."

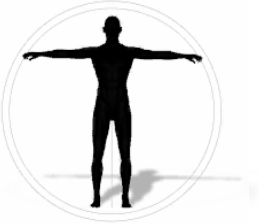
# James Reason

Professor of Psychology at the University of Manchester

# Swiss Cheese Model




Modified from Reason, 1991 © 1991, James Reason



# Human Factors

- While system and process flaws are the source of many health care errors, a human dimension is cited as a contributing factor in 60 to 80 percent of all medical errors.
- Inadequate knowledge or training, fatigue, sub-optimal teamwork or communication, and other factors are among the human elements known to be associated with accidental injury to patients.

# Approximations of system performance and potential performance using nominal error rates developed by specialists in human factors

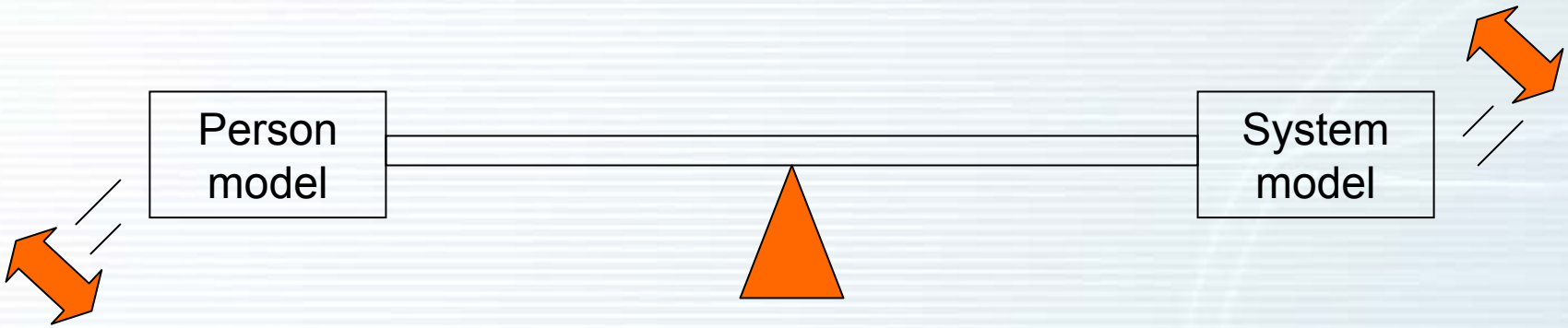
| *Activity** | *Probability of human error* |
|---|---|
| General error of commission for example, misreading a label | 0.003 |
| General error of omission in the absence of reminders | 0.01 |
| General error of omission when items are embedded in a procedurefor example, cash card is returned from cash machine before money is dispensed | 0.003 |
| Simple arithmetic errors with self checking but without repeating the calculation on another sheet of paper | 0.03 |
| Monitor or inspector fails to recognise an error | 0.1 |
| Staff on different shifts fail to check hardware condition unless required by checklist or written directive | 0.1 |
| General error rate given very high stress levels where dangerous activities are occurring rapidly | 0.25 |

Thomas W Nolan BMJ 2000;320:771-773

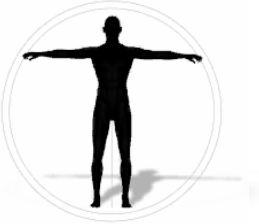
* Unless otherwise indicated, assumes the activities are performed under no undue time pressures or stress.

# Even when there is human involvement …the system is often also at fault …

"In many organizations managing the human risks has concentrated on trying to prevent the recurrence of specific errors and violations that have been implicated in particular local mishaps….[but] most performance enhancement measures are not directly focused on what goes on inside the heads of single individuals. Rather they are directed at team, task, situation and organizational factors" James Reason, 1995

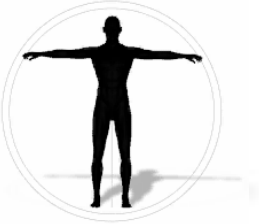



*“important to get the balance right” (Reason, 2002)*



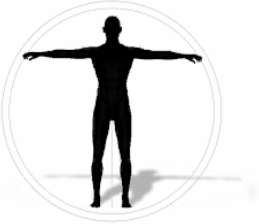
# Causes of active errors – human factors

- Habit
- Interruptions
- Hurry
- Fatigue
- Anger
- Anxiety
- Boredom
- Fear



# Conditions that Create Errors

- Reliance on memory
- Reliance on vigilance
- Non-standard processes
- Excess number of handoffs
- Variable information available
- Excessive work load
- Spotty feedback



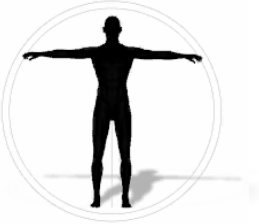
# Something you can do

## Reason's work on errors of omission

- Reason J. Combating omission errors through task analysis and good reminders.  Qual Saf Health Care 2002;11:40–44
- Leaving out necessary task steps is the single most common human error type

## Exercise

How did you error proof your life in the last week?

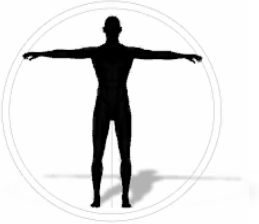


# Something you can do

## Reason's work on errors of omission

- Reason J. Combating omission errors through task analysis and good reminders. Qual Saf Health Care 2002;11:40–44
- Leaving out necessary task steps is the single most common human error type
- Task characteristics most likely to afford omissions are termed "affordances"
- There are 8 important affordances
  - Steps following unexpected interruptions
  - Necessary steps that follow the achievement of the main task

# Choosing and attaching a reminder

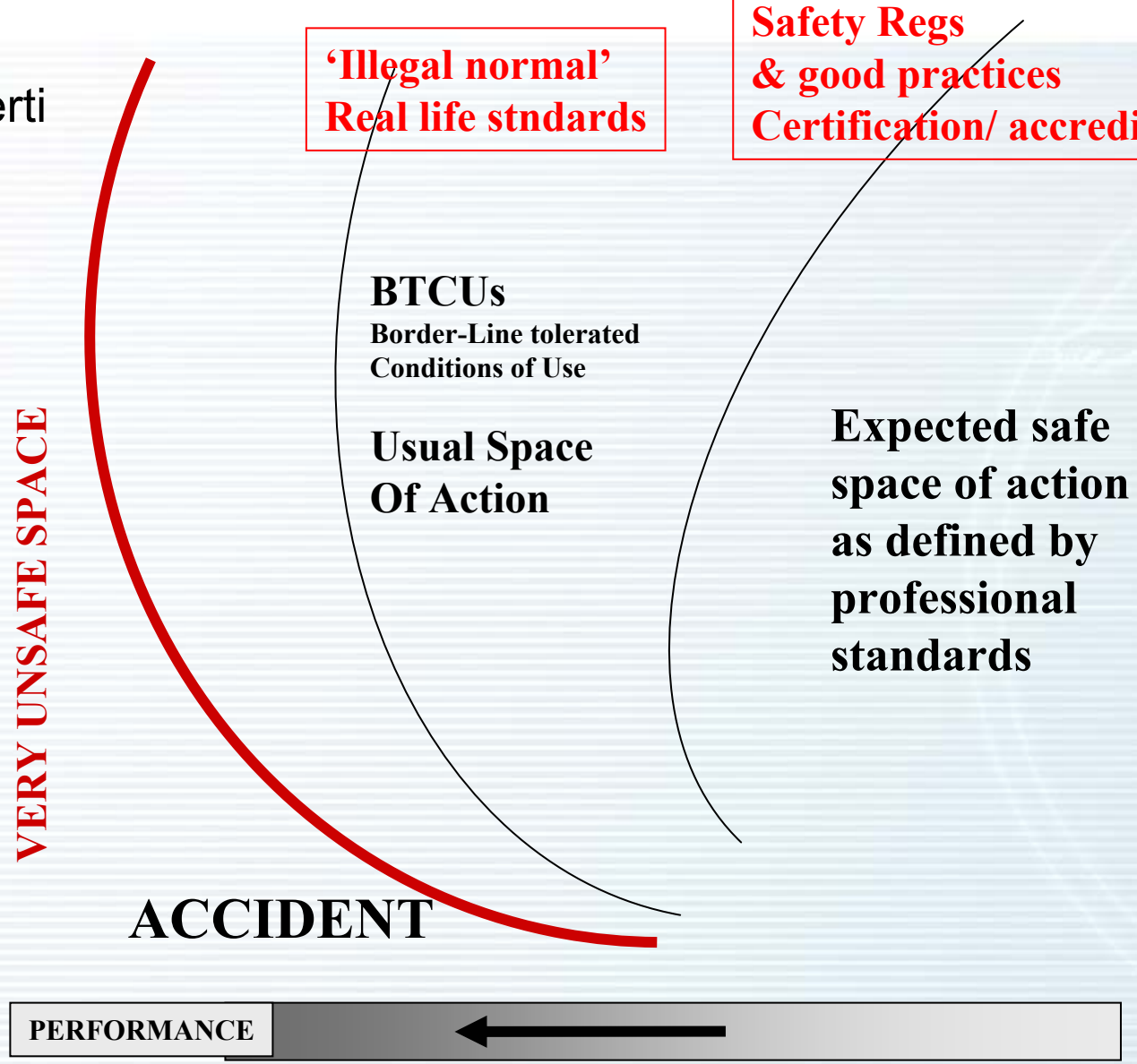


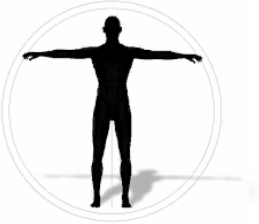
# Types of reminders

- Notes and post- carried around or else attached
- Diaries including filofaxes, notebooks
- Lists for that day
- Writing on hand with a ballpoint pen.
- Object positioning - locating objects requiring action in a prominent position
- Getting others to remind them
- Calendars and timetables
- Mental checking entails a routine that takes place either before sleeping or on waking in which the person runs through a mental list of the day's tasks
- Mental rehearsal involves saying over and over the action that has to be done
- Forming associations links items to be remembered to images of familiar places or objects
- Visualising the performance of some act to be remembered
- Clocks and watch alarms set to ring at the time when some action item has to be performed

# Systemic Migration to Boundaries

R. Amalberti

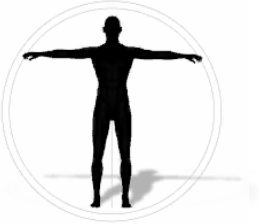




# Key Steps

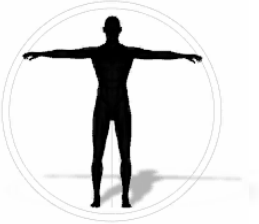
The key steps in making healthcare safer:

- **Recognition** that improving safety is a priority
- Improving the **reporting** of errors and near misses
- Increased focus on **system** changes
- Gaining greater **knowledge** about safer systems **–** much already exists
- **Leadership** is needed on all levels



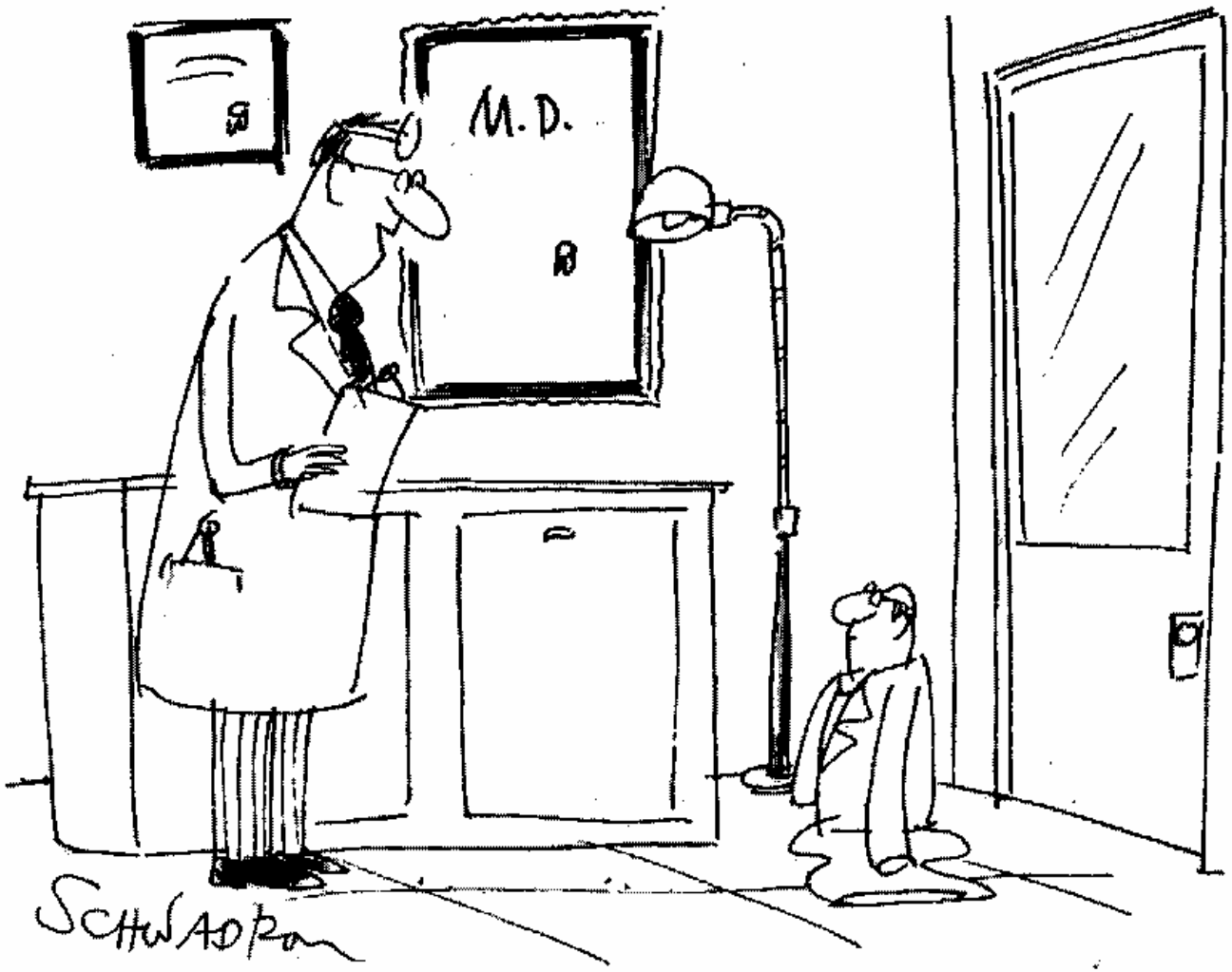
# Apply Change Tools

- Simplify
- Standardize – *"More important to do it right than to do it my way"*
- Decrease reliance on human memory
- Teams without authority gradient
- Constraints and forcing functions
- Automate carefully

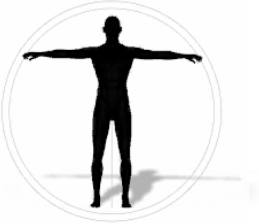


# So What Will You Do?

- Turn to the person next to you and introduce yourself if you don't know each other
- Taking turns, identify one or two useful ideas, projects or tools that you have learned here
- Ask each other what the next steps could be for each useful idea, project or tool:
  - Additional information or learning needed
  - Possible adaptations or changes to make it useful in your environment
  - Other people you want to involve
- Be prepared to share one or two of these ideas




*"But you have to admit, the new drug did shrink your prostate, Mr. Eilers."*



# Some Cautions

- The cultural barriers to recognizing safety issues are strong
- Foresight is more challenging than hindsight
- Importing lessons from other organizations is not simple
- Knowledge from human factors science and cognitive psychology will need to be applied
- Other competing goals and financial pressures mitigate against improvements

Error will never be eliminated, but we can hope to improve the conditions under which people work so as to eliminate the more dangerous affordances for error and to increase their chances of detecting and recovering those errors that will inevitably still occur

James Reason