

# Risk Management

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# What are we going to discuss?

- Definition of Risks
- Prevalence and nature of risks in health care setting
- Factors contributing to errors/risks
- Definition of Risk management
- Safety culture



# Definition of Risk

- Possibility or chance of meeting danger, suffering loss, injury etc. (Oxford Advanced Learner's dictionary)
- In health care setting, it refers to risk of having accidents, risk of having harms.



# Definition of Risk

‘A measure of Probability and severity of adverse effects’

Lowrence-Of acceptable risk: Science and determination of safety

“The chance of something happening that will have an impact upon objectives. It is measured in terms of consequences and likelihood.”

Joint Australian/New Zealand standard on risk management 4360:1999  
(AS/NZS 4360:1999)



# Prevalence of adverse incidents- actual harm

Range of such incidents in in-patients: 2.9%-  
16.6%, e.g.,

California Medical Association (1974)

Mills et al 4.6%

Harvard Medical Practice Study (1991)

Brennan et al 3.7%

Quality in Australian Health Care Study (1995)

Wilson et al 16.6%

University College London (2000)

Vincent et al 11%

**27-51% preventable**

**3-13.6 causes fatality**

**2.6-16.6% causes permanent disability**



# Risk to patients

Adverse events 10% admissions

Potentially preventable adverse events 5%

Preventable cost 5% of healthcare budget

Human costs

Deaths 10,000 pa in Australia

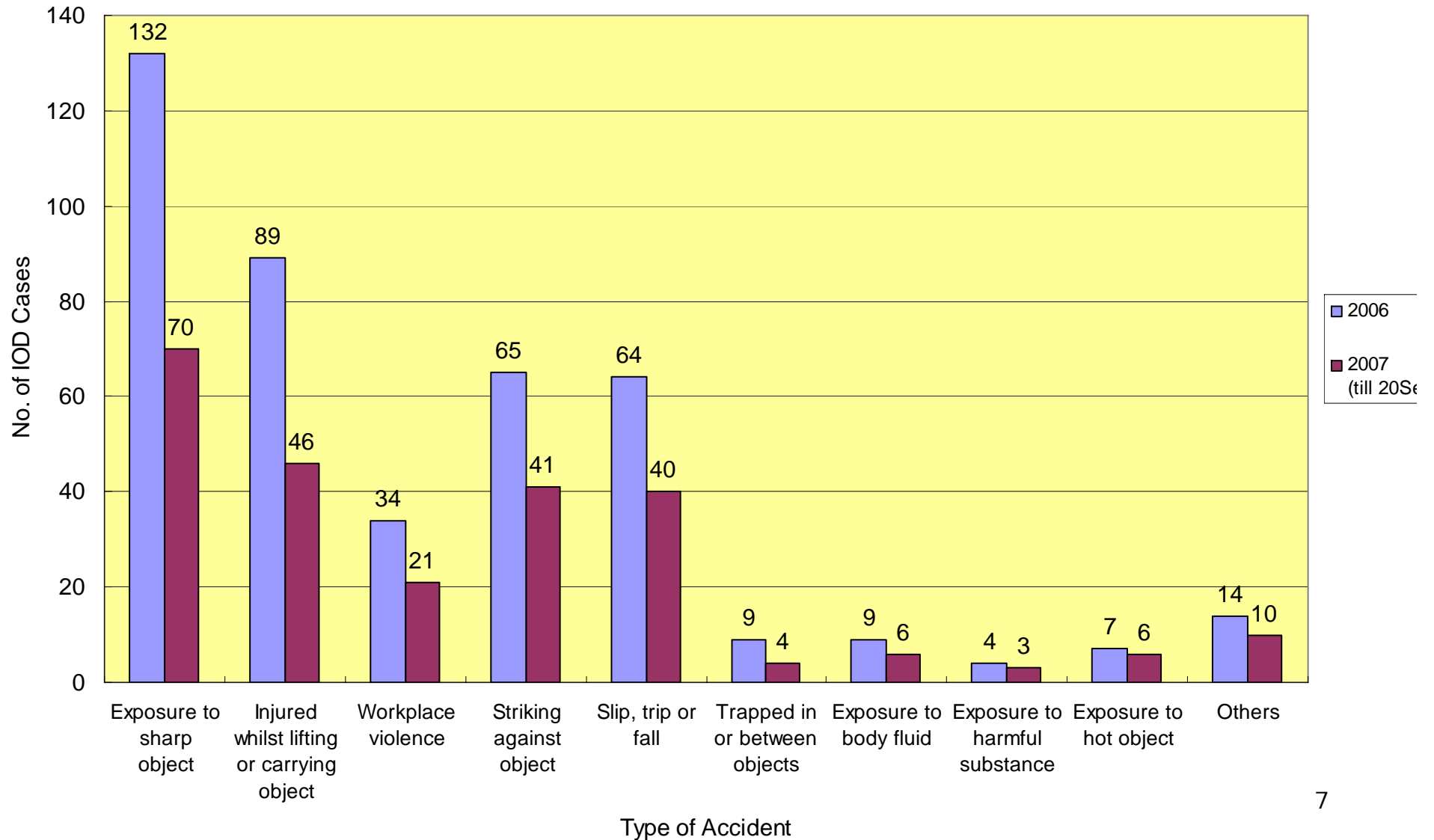
38,000 pa in UK

98,000 pa in USA (8<sup>th</sup> cause of death)

Loss in Trust in the Health Care System

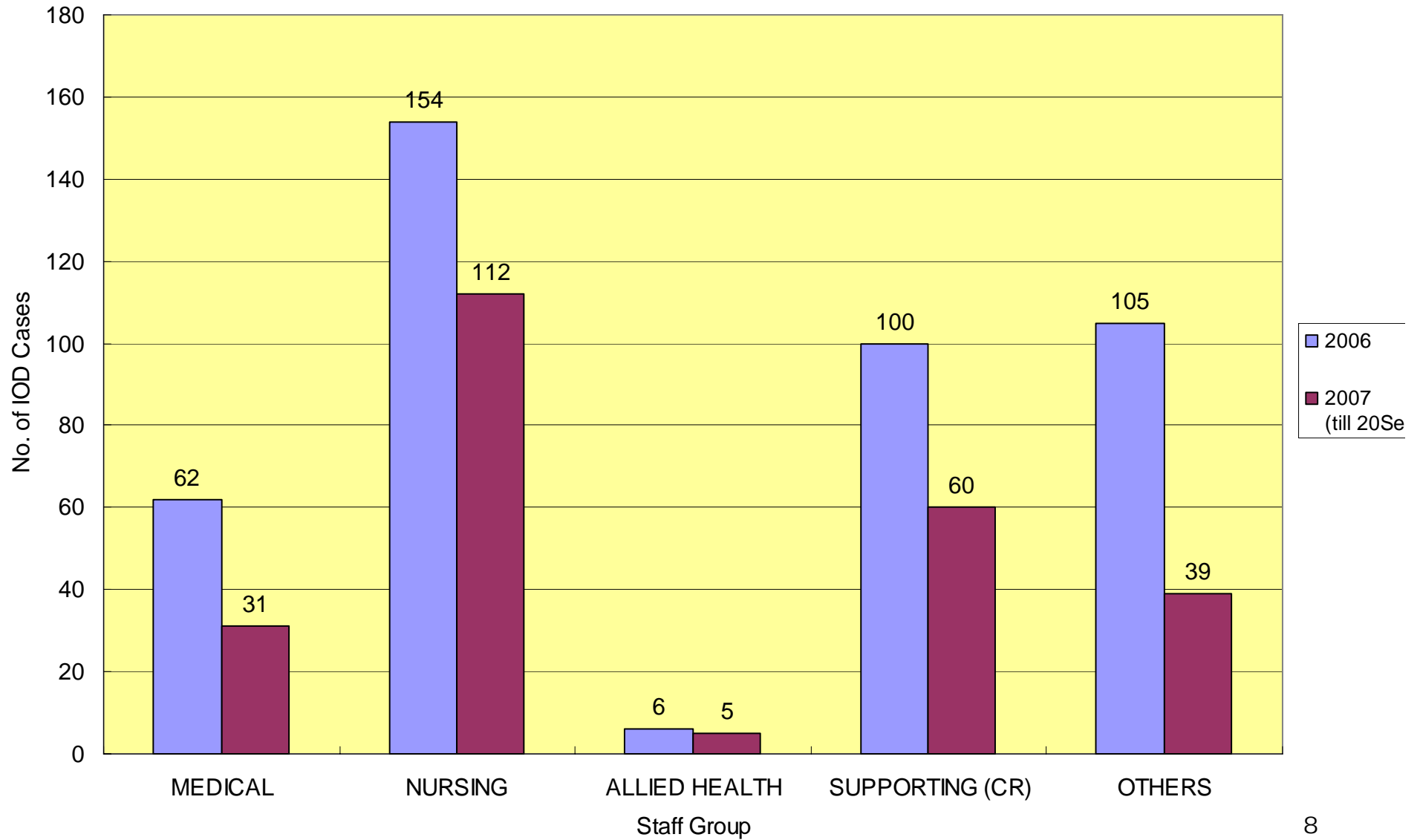
# Risks to staff (QMH data)

No. of IOD Cases by Type of Accident



# Risk to staff

No. of IOD Cases by Staff Group





# Risk to staff

- Under-reporting!
- Especially for medical grade

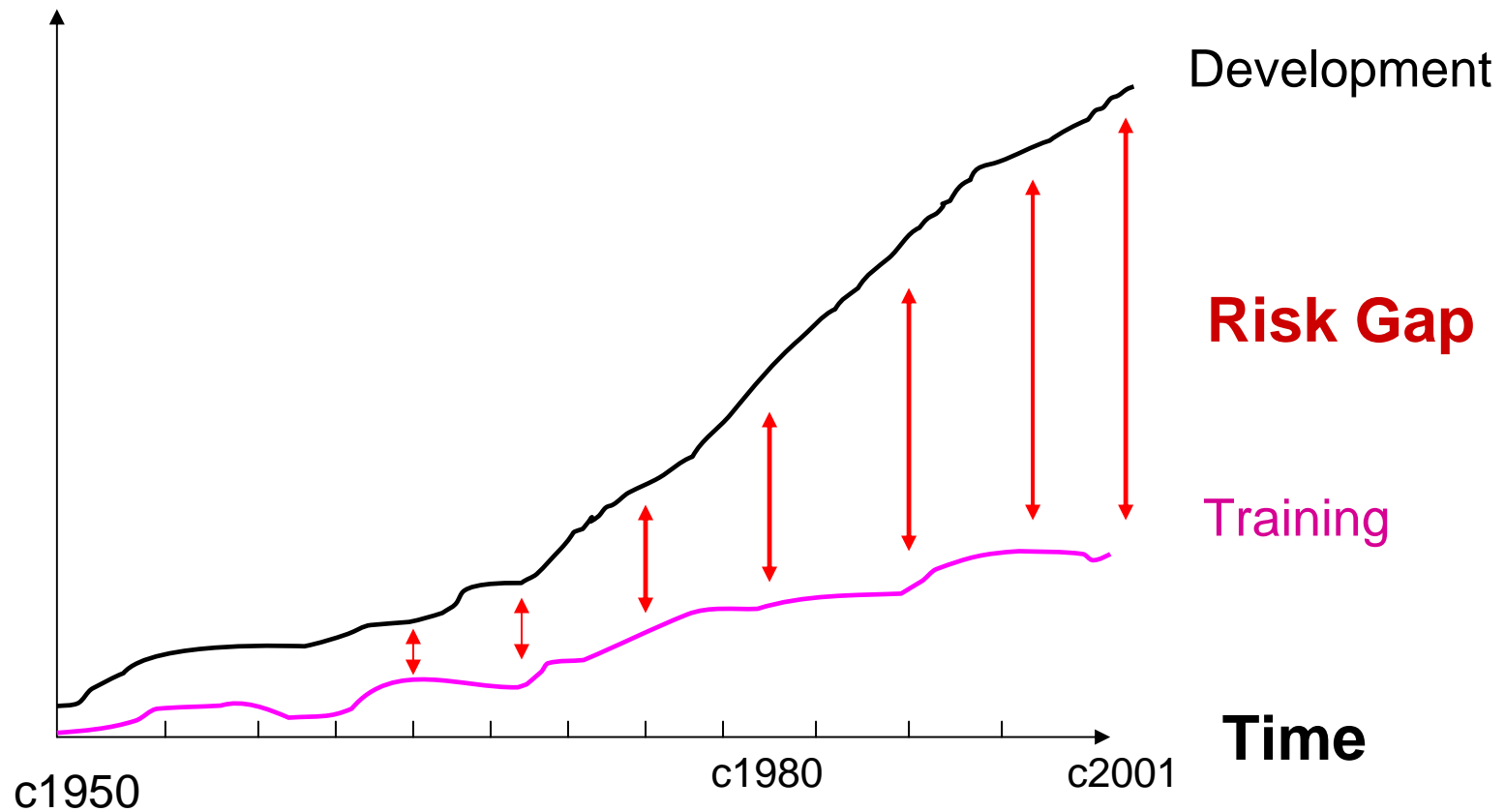


# Factor contributing to errors

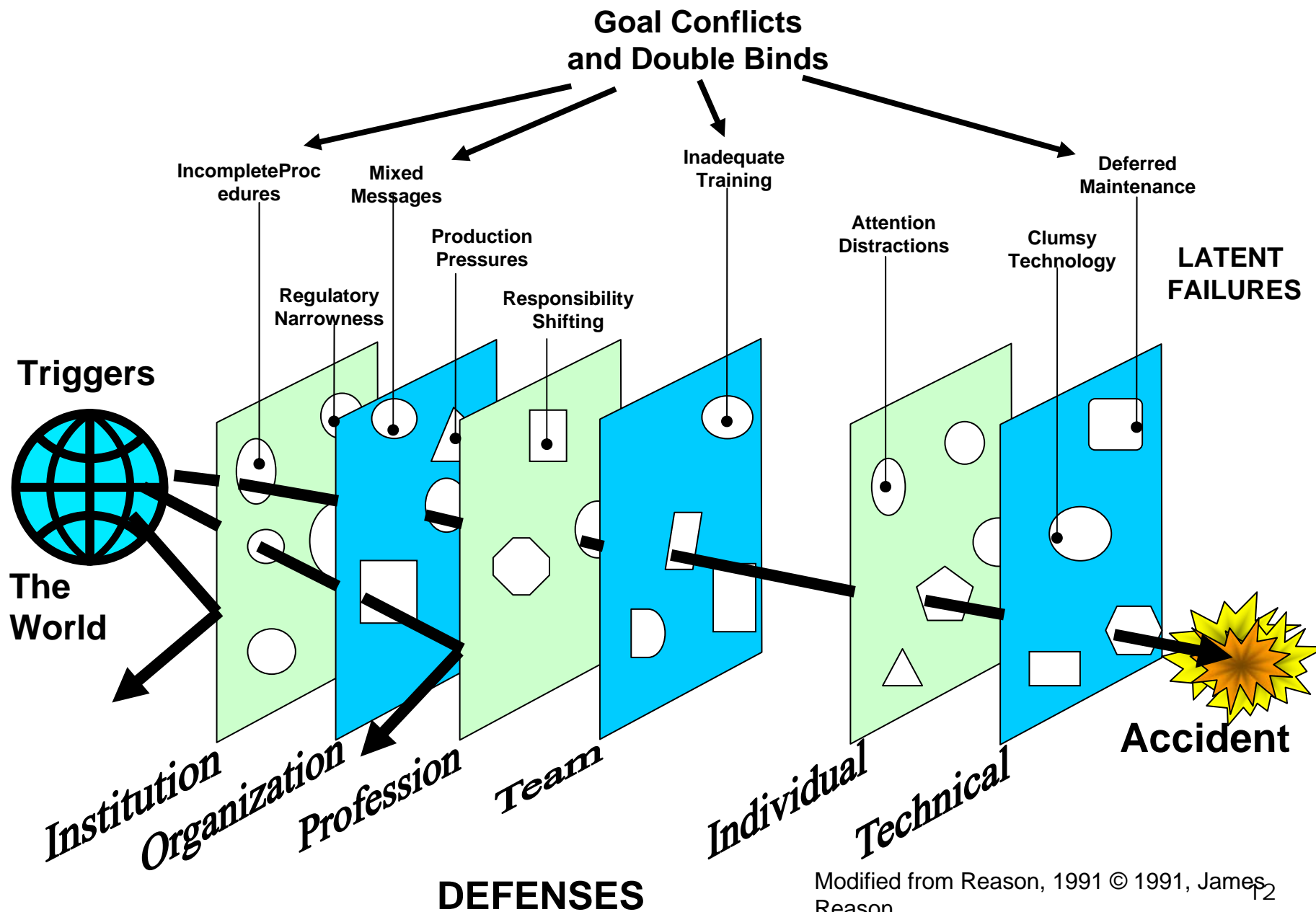
- Human factors
- Environmental factors (hardware)
- System errors (software)
- Culture

# Technology Development and Risk in Healthcare

## Technology Development

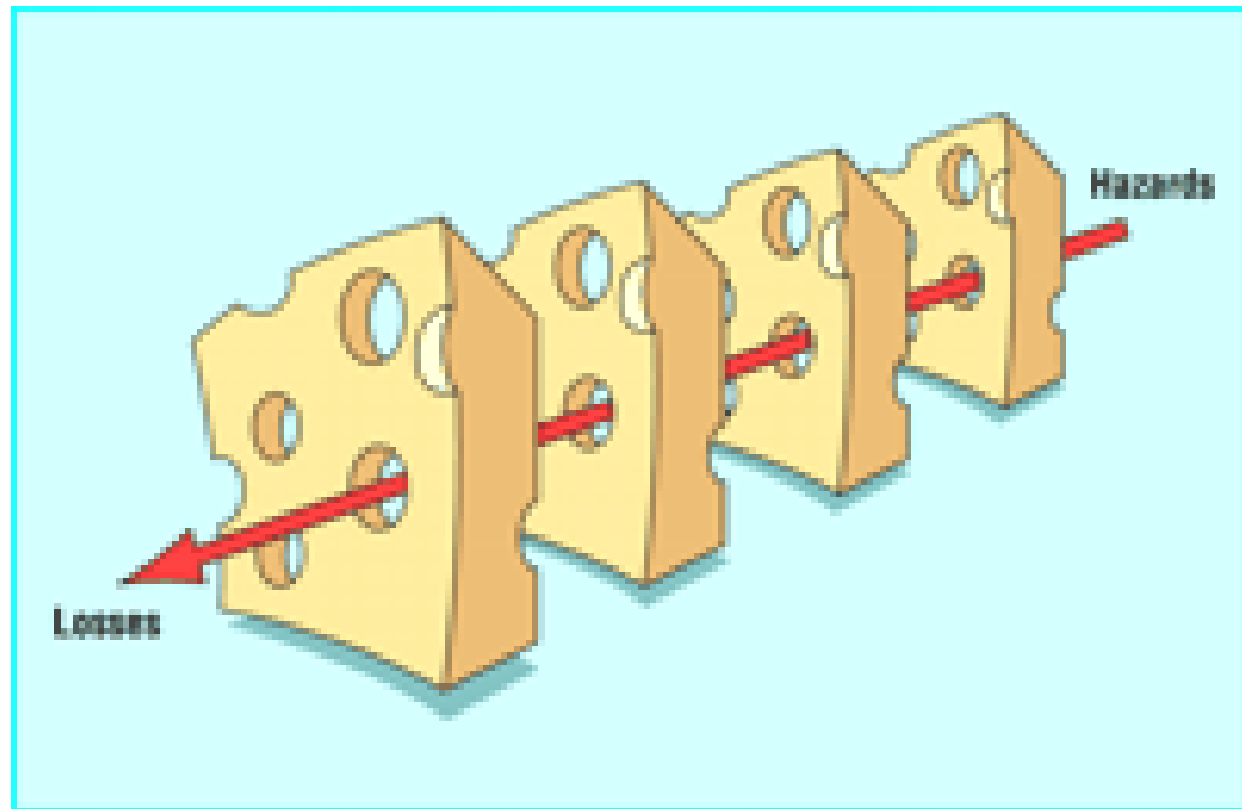


# Swiss Cheese Model



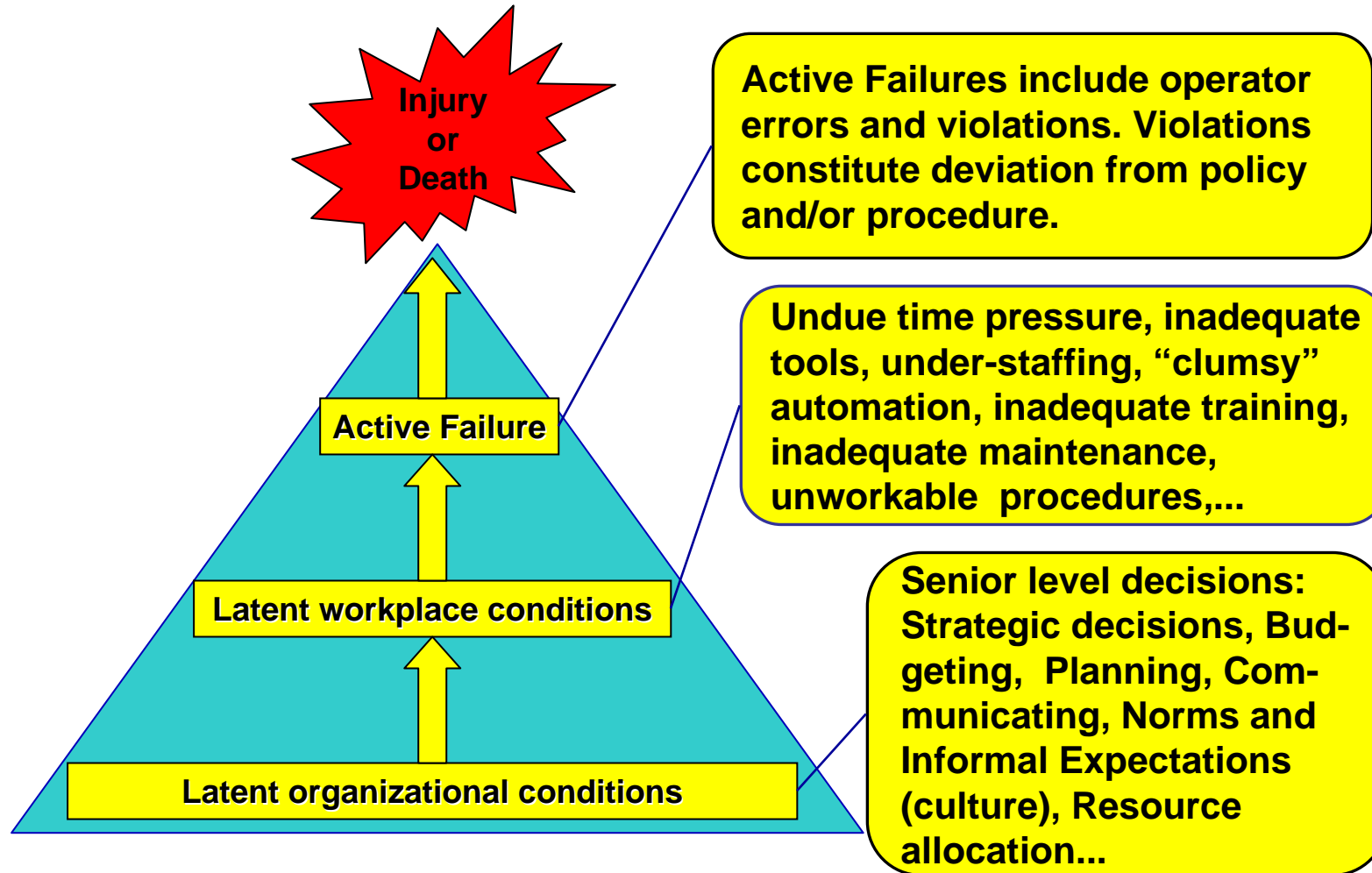
**The Swiss cheese model of how defense, barriers, and safeguards may be penetrated by an accident trajectory**

**Human errors: Model and management**



# The Failure Sequence in High Risk Systems

(What Root Cause Analysis Consistently Demonstrates)



# “Unsafe” Journey through the Hospital

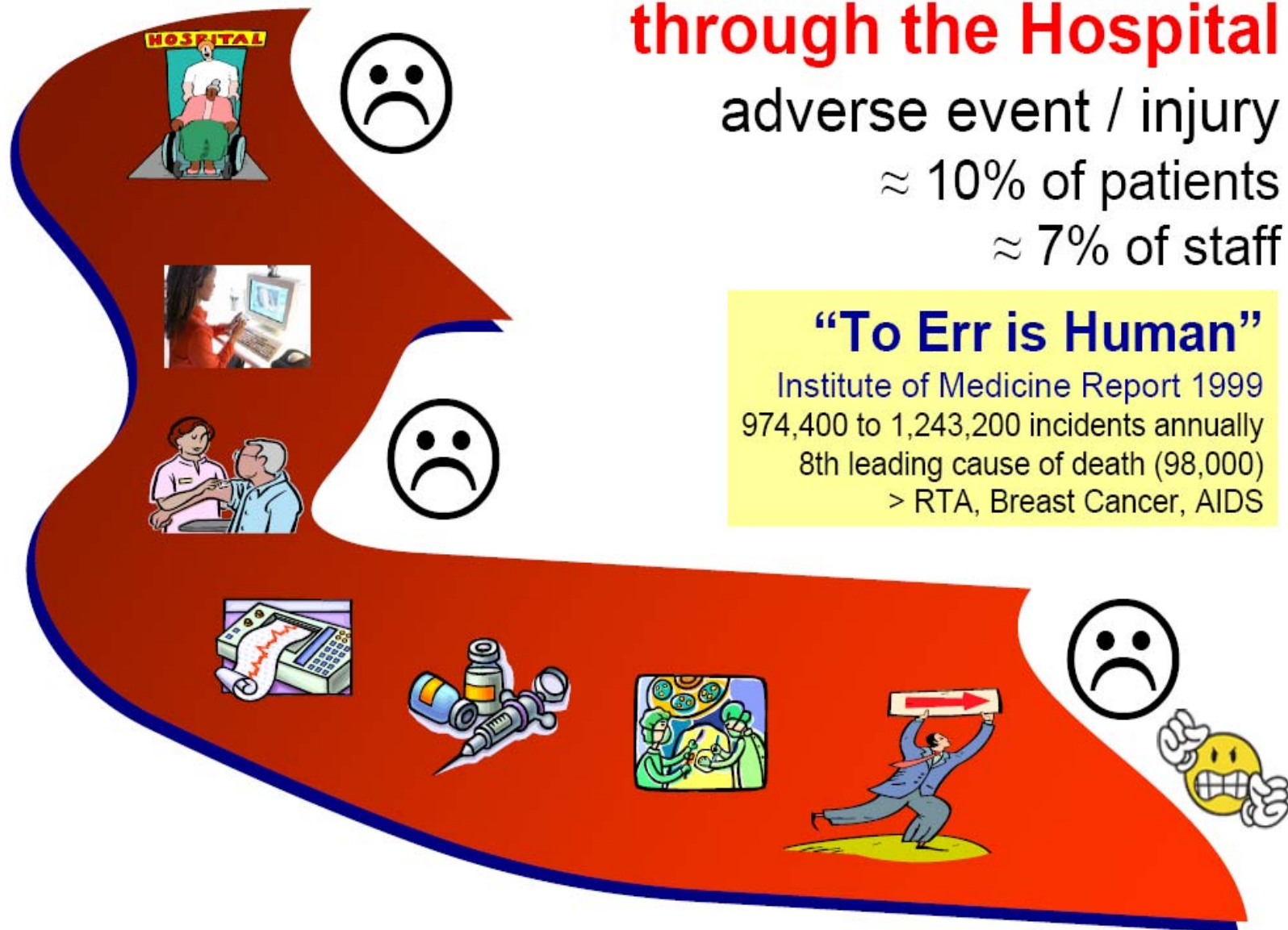
adverse event / injury

≈ 10% of patients

≈ 7% of staff

## “To Err is Human”

Institute of Medicine Report 1999  
974,400 to 1,243,200 incidents annually  
8th leading cause of death (98,000)  
> RTA, Breast Cancer, AIDS





# Definition of Risk Management

*AS/NZS 4360:1999*

The **culture, processes and structures** that are directed towards the effective management of potential opportunities and adverse effects”



# Managing incidents

- Surveillance, incidents reporting
- Root cause analysis: human factors, system fault
- Remedial actions: mitigating action, training & education, system review



# Error-producing conditions

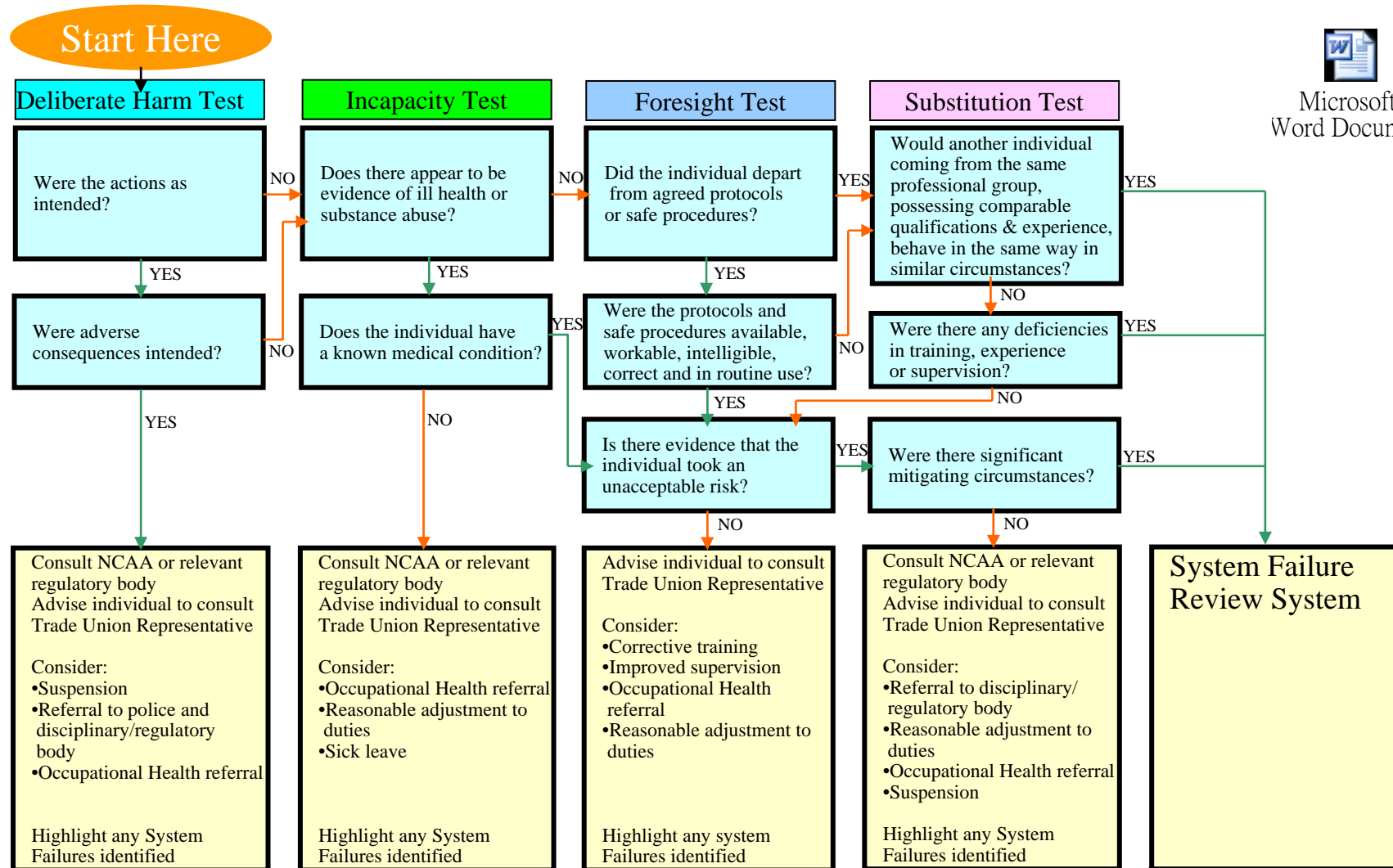
- Unfamiliarity with the task (x17)
- Time shortage (x11)
- Poor signal :noise ratio (x10)
- Poor human-system interface (x8)
- Designer-user mismatch (x8)
- Information overload (x6)
- Negative transfer between skills (x5)
- Misperception of risk (x4)
- Poor feedback from system (x4)
- Inexperience (not lack of training) (x3)
- Poor instructions or procedures (x3)
- Inadequate checking (x3)
- Educational mismatch of person with task (x2)
- Disturbed sleep patterns (x1.6)
- Hostile environment (x1.2)
- Monotony and boredom (x1.1)

Source: Williams, J. A data-based method for assessing and reducing human errors to improve operational performance, IEEE, (1988)

# Incident Decision Tree

National Patient

Safety Agency



Microsoft Word Document

*By Prof James Reason*



# Human errors: Model and management

**J. Reason BMJ 2000; 320:768-770**

**Approach to the problem of human fallibility**

Person Approach	System Approach
Focus on unsafe act of people	Focus on condition of work
Unsafe acts is the cause of errors, unsafe acts arise from aberrant mental processes: forgetfulness, inattention, poor motivation, carelessness, negligence, recklessness	Upstream systemic factors are the causes of errors, human fallibility are unavoidable
Error management by reducing unwanted variability in human behaviour, change human condition.	Error management by building up system defences, change condition of work.
Uncouple a person's unsafe act from any institutional responsibility	Recognize that 90% errors are blameless
Isolate unsafe acts from the system context—recurrent errors	Remove error provoking properties of the system

# Neither/nor, but both

Have to look at systems

AND

Human factors





# High Reliability Organizations

Examples:

US Navy nuclear aircraft carriers

Nuclear power plants

Air Traffic Control centres

- HROs have carried out very demanding tasks with low incident rates and an almost complete absence of organizational accidents
- Prime example of system approach.





# CRM

- 5th generation: Threat and error management
- Human & System errors: identification, prevention and management
- Errors inevitable and an invaluable source of information.
- normalizing errors, adopt non-punitive approach.
- CRM as countermeasures of errors with 3 lines of defence : Avoid errors, trap errors, mitigating consequence of errors.



Adobe Acrobat  
Document



# Aviation industry and Healthcare industry

Errors in Healthcare industry: patients suffer (what about SARS, needle prick injury, medicolegal consequence?)

Errors in Aviation industry: the whole crew suffer

CRM successful in Aviation Industry, does it work in healthcare industry?

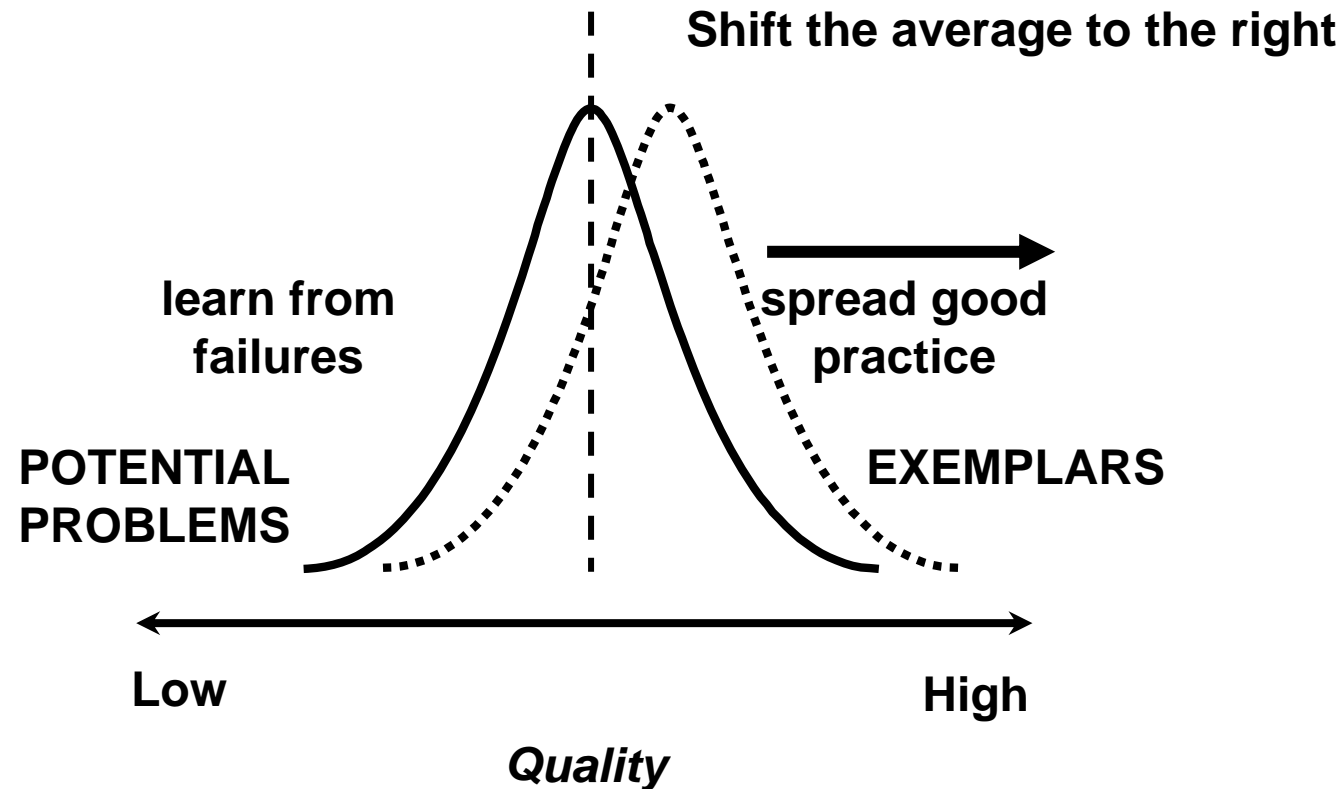
## **Chapter 44. Crew Resource Management and its Applications in Medicine**

**Laura Pizzi, Pharm.D. Neil I. Goldfarb  
David B. Nash, M.D., M.B.A.**

Thomas Jefferson University School of Medicine and Office of Health Policy & Clinical Outcomes

- Team responsibility for patients.
- A belief in clinician fallibility.
- Peer monitoring.
- Team member awareness of patient status, team member status and institutional resources

# What are we trying to achieve?



(adapted from Donaldson & Scally, 1998)



# What is a 'safe' culture

- A safe culture = an informed culture
- An informed culture is one that knows where the 'edge' is without having to fall over it first
- An informed culture is preoccupied with the possibility of failure and works continuously to become more resilient to its operational hazards



# Safety culture

“The product of individual and group values, attitudes, perceptions, competencies, and patterns of behaviour that determine the commitment to, and the style and proficiency of, an organization's health and safety management”

UK Health & Safety Commission

A safe culture = an informed culture  
consisting of many interlocking elements

Reporting  
culture



Just  
culture



Flexible  
culture



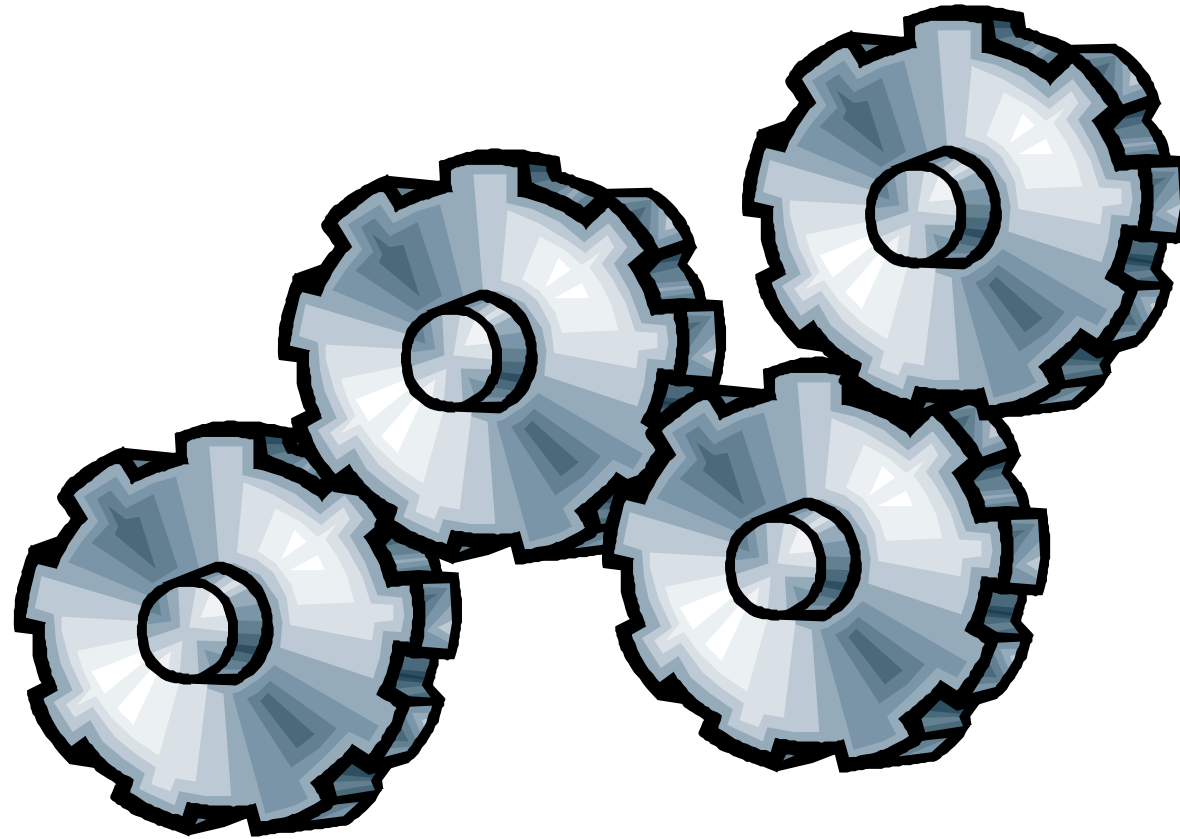
Learning  
culture



From: James Reason



# The elements must work in harmony

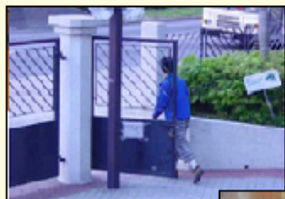




# Culture of Safety

- Where openness and participation are encouraged;
- Where people learn from failures and blame is the exception rather than the rule;
- Where good practice and new approaches are freely shared and willingly received; and
- Where education and research are properly valued.

# Hospital Authority Advanced Incidents Reporting System



## Login Authentication

 Please enter the Domain Id and Password

Domain Id:

Password:

[Check Your NEW CORP Domain ID](#)  
[AIRS Training Material](#)  
[IOD-related forms/notes](#)



Information  
on AIRS

Version 2.0 - Copyright © 2004 NTE Cluster ITD. All rights reserved. PMH 30<sup>th</sup> Anniversary



# FUNTCION (1) INPUT (REPORTING)

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What to report ?

Who to report ?

Who to filter?

Who receive the information?

When to report ?

Where to report ?

How to report ?



# *Reportable Incidents 1*

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## **Patient safety related incidents**

### **Human error/ mishap / process deviation**

associated with provision of care or services

- Adverse events (harm)
- Near Miss

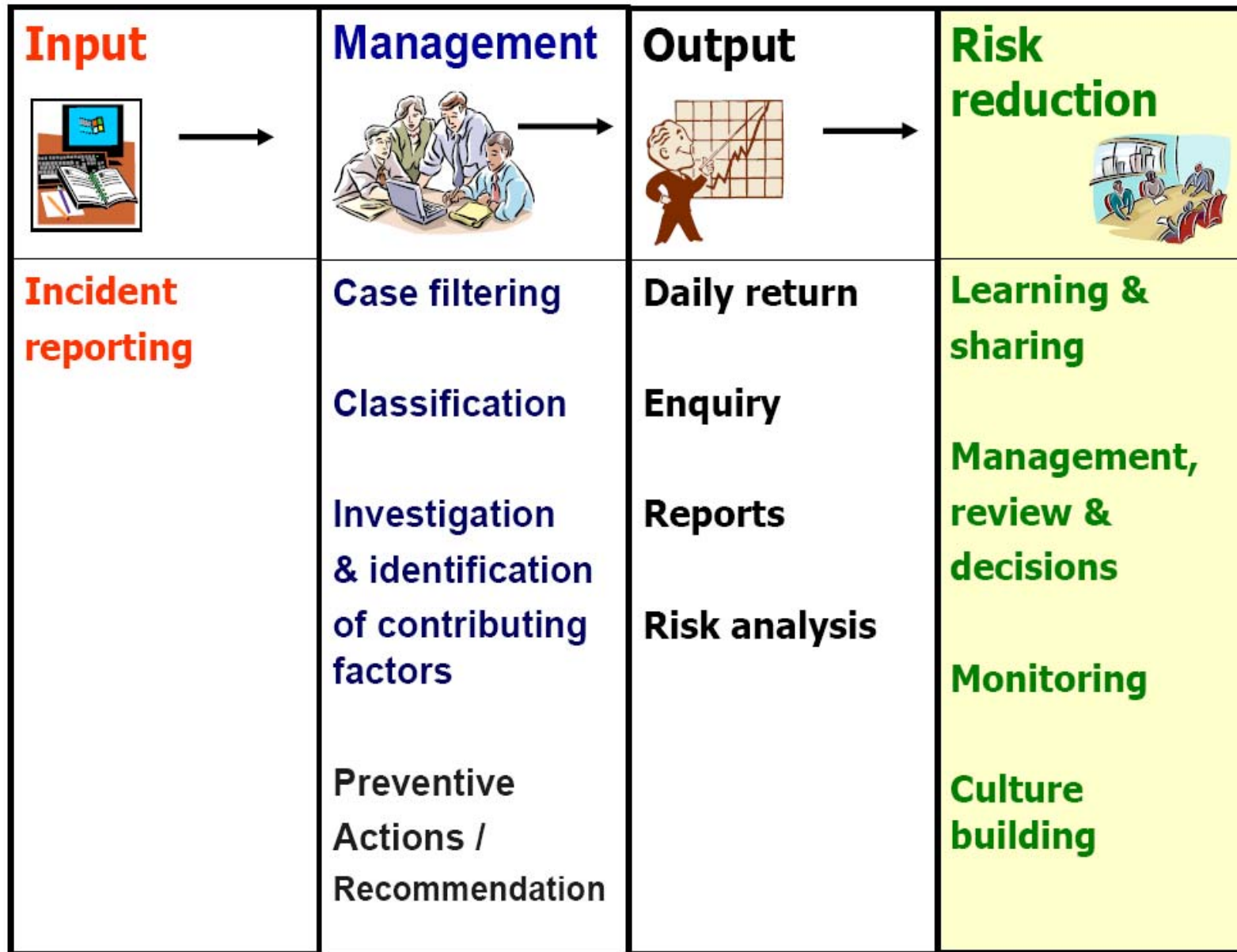
### **Unexpected events / complications**

involving death or serious injury  
that are unrelated to a patient's natural course  
of illness / underlying condition and  
no human error / mishap was involved.



# Purpose of incident reporting

- To learn
- To avoid harm to future patients
- Aspire to excellence
- To safeguard the Trust's and your reputation
- Reduce costs
- To be the best





# Data analysis of Medication incidents

## CONTRIBUTING FACTORS OF THE INCIDENTS

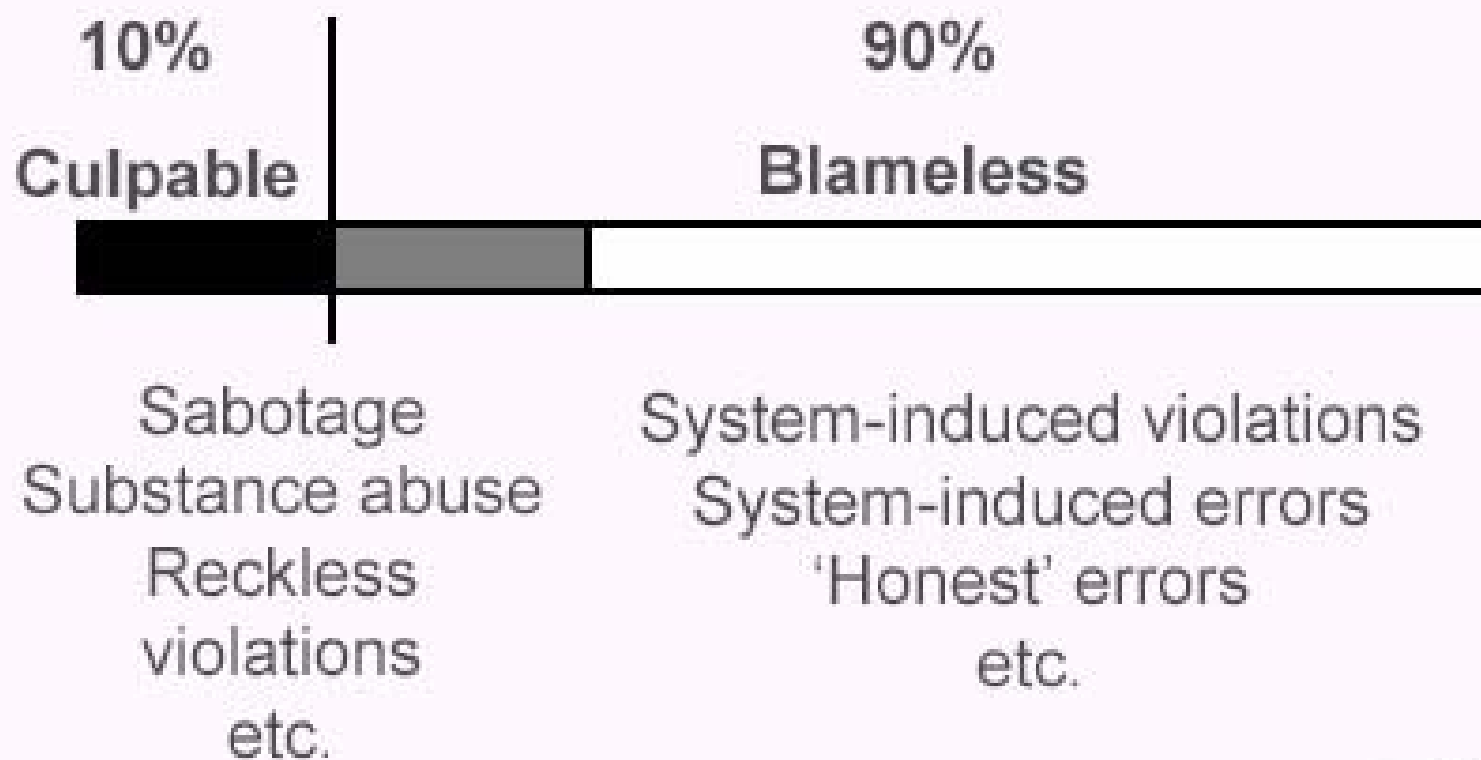
NATURE		GROUP		TYPE	
<b>STAFF FACTORS</b>	<b>82</b>	<b>Competence</b>	<b>6</b>	Inadequate knowledge and/or skill	5
				experience	1
		<b>Compliance</b>	<b>56</b>	Failure to comply with policies and procedures	56
		<b>Personal</b>	<b>20</b>	Lapse of concentration	13
				Violation	1
				Fatigue	1
				Attitude	4
Others	1				
<b>COMMUNI-CATION</b>	<b>6</b>	<b>Communication between staff/ agencies</b>	<b>6</b>	Incomplete documentation	1
				Incomplete / absent information	2
				Illegible	1
				Poor quality of information in the notes / documentation	2
<b>WORK ENVIRONMENT</b>	<b>3</b>	<b>Equipment/supplies</b>	<b>2</b>	Malfunction/failure/reliability (suspected)	2
		<b>IT</b>	<b>1</b>	System design	1
<b>PROCESS FACTORS</b>	<b>6</b>	<b>Medication related</b>	<b>4</b>	Complicated dosage design	2
				Drug infusion / administration process	2
		<b>Protocol</b>	<b>2</b>	Unavailability of protocols	2



# Just Culture

- Fair Blame
- Open Disclosure

The behavioural range: Incident Decision Tree guides decisions in the grey area





# Open Disclosure



# Disclosure

- Disclosure is defined as an open and honest 2 way communication with your patient (and their family when appropriate) regarding expected and unexpected outcomes of their care
- Disclosure is a component of informed consent



## What do patients and families need from their caregivers after an adverse event

- What happened?
  - Uncertainty itself is painful
  - silence is easily interpreted as lack of respect and compassion.
- An apology
  - they need to hear someone say that they are truly sorry for what they have suffered.
- Is something being done to prevent similar tragedies in the future?
  - Knowing that some good may come despite their tragedy helps mitigate their suffering.
- Medical and financial assistance, ± financial compensation