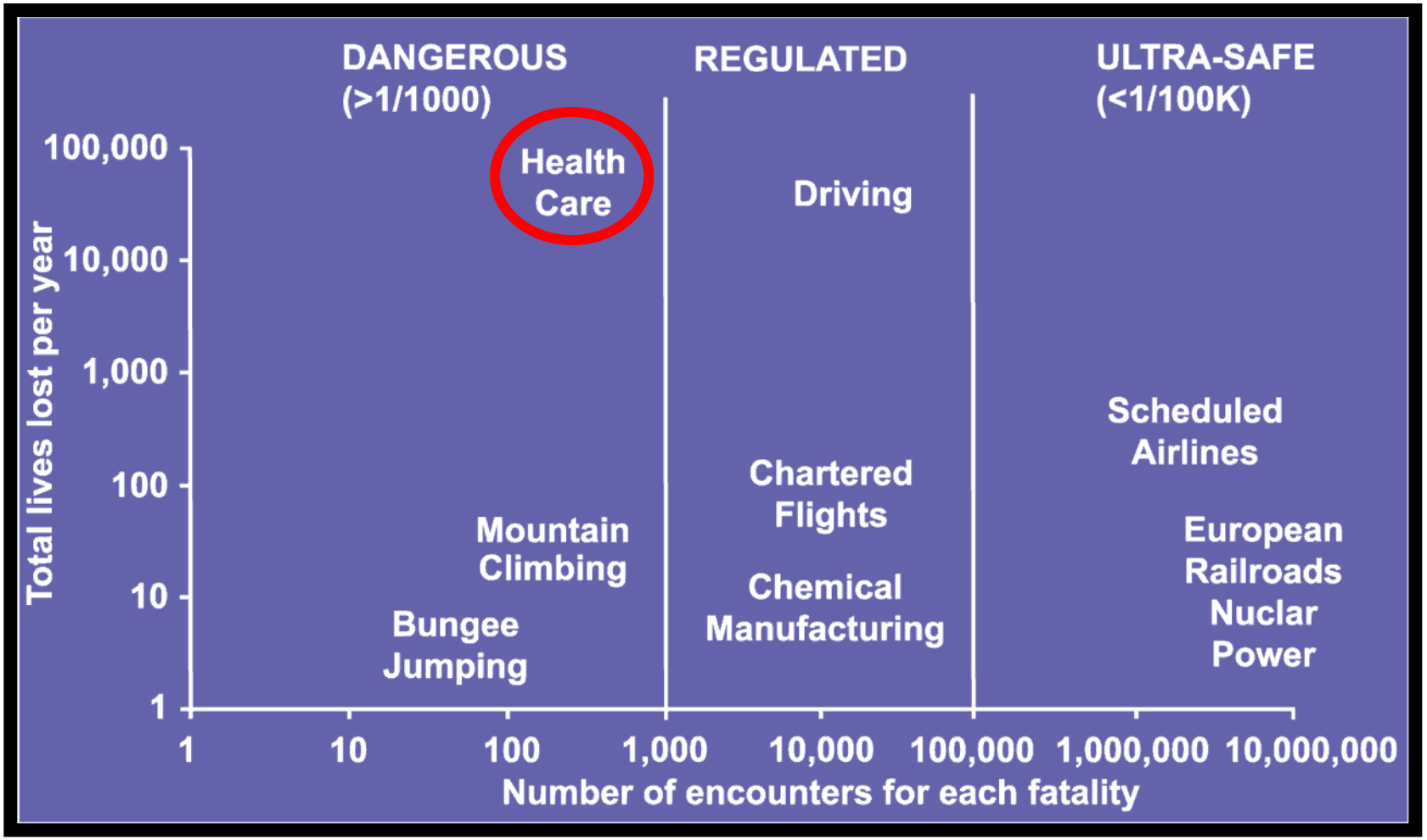
Incident reporting, analysis, investigation, risk management and learning from human error

Annual error risk in UK Healthcare

- 400 deaths involving medical devices
- 10,000 experiencing adverse drug effects
- 1,150 psychiatric patients commit suicide
- 97,500 written complaints in 2010/11
- £1.2 billion paid out for NHS litigation claims in 2011/12 (HSJ 4 Jul12)
- The cost of additional days in hospital as a result of adverse events is £2 billion

So how dangerous is it?

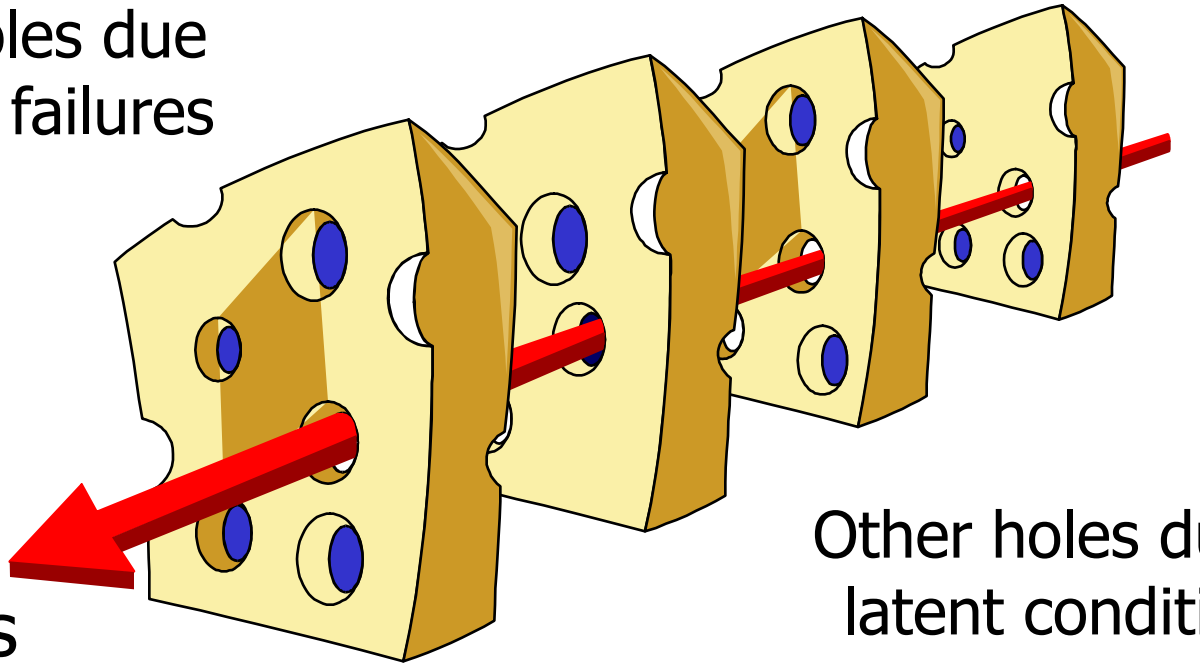


Some error traps are obvious

- A primary function of an incident reporting system is to identify your recurrent error traps.
- Identifying and removing these traps is one of the main functions of error management.

Swiss Cheese Effect

Some holes due to active failures



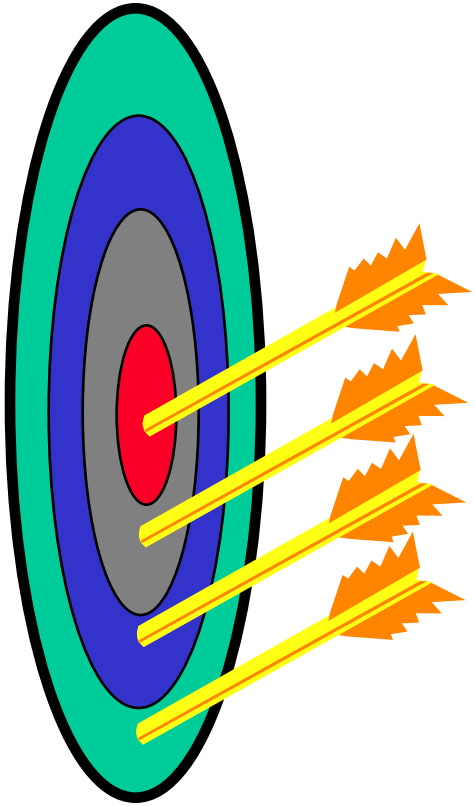
Hazards

Losses

Other holes due to latent conditions

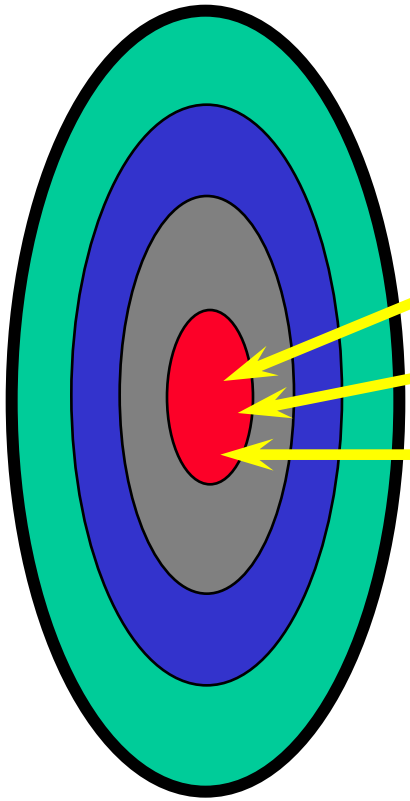
Successive layers of defences, barriers, & safeguards

Error management: What do you aim for?



Person
Task
Workplace
Organisation

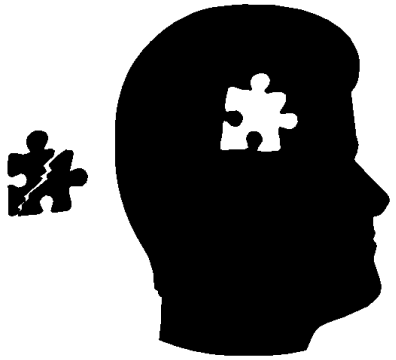
Most organisations go for the person



Blame, shame and retrain

Write another procedure

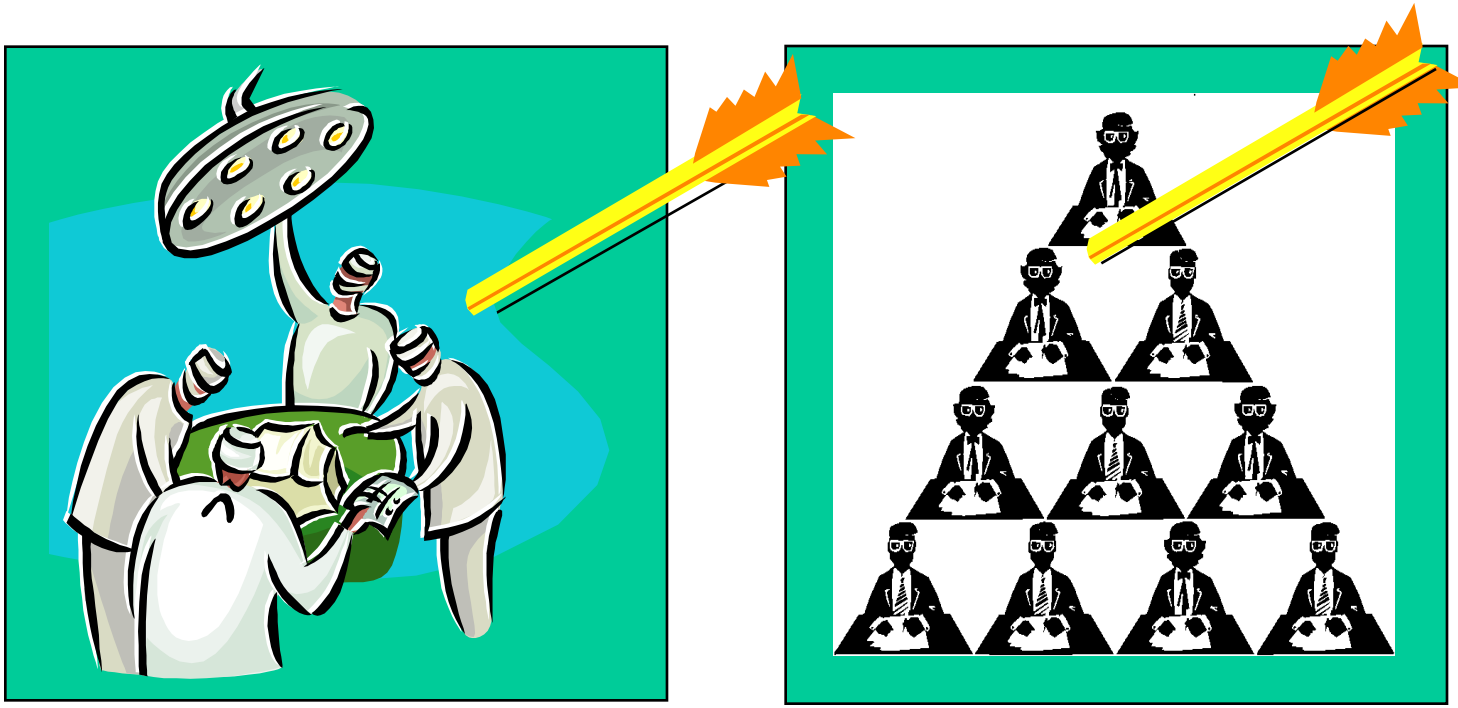
Search for ‘missing piece’



Why the urge to blame individuals is so strong

- Attribution error
- Illusion of free will
- Just world hypothesis
- Hindsight bias
- Managerial convenience
- Legal convenience
- Appeasement of patients & relatives

But it's better to aim for



Task + Workplace + Organisation

Incident reporting

Volunteers are responsible for:

- Being aware that adverse incident reporting is a part of their own accountability for governance;
- Reporting any adverse incident or near miss to the Exec Com, by completing an adverse incident form

Reporting

- All incidents are to be reported either verbally to Hester – Hon Sec (who will then complete an adverse incident report form) or in writing by the volunteer completing the adverse incident report form.
- Adverse incident report forms will be made available online, hard copy direct to members and within HFR vehicles.
- All Adverse incident report forms will be received by the Hon Sec who will make a judgement as to whether an extraordinary Exec meeting needs to be called, otherwise the Adverse incident report forms will be discussed at the next Exec Com meeting.

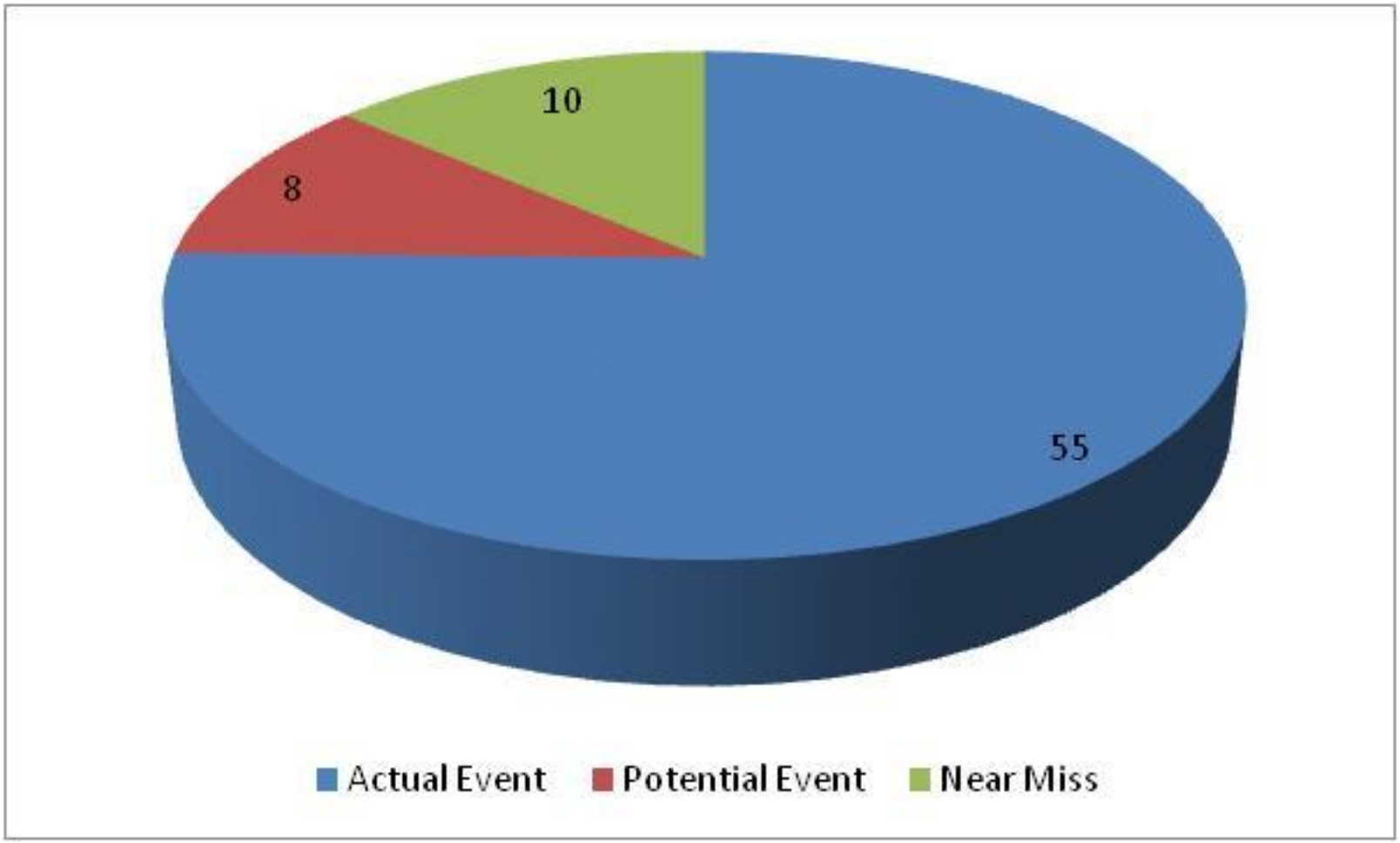
HFR Incident Reporting

- Actual event
- Potential event
- Near Miss

	2008	2009	2010	2011
Incidents reported	10	9	18	30

- Forms in ambulance

HFR Incidents/Near misses



HFR Incident Form

21. Adverse Incident Report Form – *to be completed by HFR volunteer*

A. Incident			
Does this report relate to: (Please circle)	An Actual Event	A Near Miss	A Potential Event
B. What happened?			
C. Where and when?			
Date:	Time (24hr clock):		
Geographical location/first aid event:			
Exact Location e.g. vehicle:			
D. Who was affected?			
Name:	Male ☐ Female ☐	Date of Birth	
Address: Post Code: Tel No:			
E. What actions were taken?			
Did the injured person (if any) receive any medical attention? **YES / NO**. If YES please circle appropriate source			
First Aider	Referred to A&E	Seen by paramedic	Other (state)
F. Witnesses: List all names and contact details			
1.			

22a. GRADING: Judgement about the actual or potential impact and likelihood of reoccurrence of this event. Use the risk matrix (circle to indicate rating)					
Impact	1. None/negligible	2. Low	3. Medium	4. Very High	5. Extreme/death
Likelihood	1. Rare	2. Unlikely	3. Possible	4. Likely	5. Almost certain
Risk Rating	**LOW**	**MODERATE**	**HIGH**	**EXTREME**	

22b. LOSSES? (time lost/absence/increased patient stay/property or equipment damage)			
Person	Has the person been absent from work, or unable to work as usual, as a result of this incident? **YES / NO** If YES is the absence over 3 days? (include non working days) **YES / NO / NOT YET KNOWN**		
PROPERTY / EQUIPMENT	Describe any damage to property or *non-medical* equipment as a result of the event:		
INFORMATION or DATA LOSS	Describe any data lost, corrupted or disclosed as a result of the adverse event:		
MEDICAL EQUIPMENT	Identify medical equipment involved in Clinical Incidents: (equipment error/failure)		
	Current location of equipment:		
	Product name:	Serial No.	Product No.
	Manufacturer/supplier:	Batch No.	Expiry date:

Incident Severity

Severity of incident	Injury / Illness	Patient Experience	Systems / project / targets/ objectives	Complaints / Claims	Financial Loss	Adverse Publicity
Catastrophic/ Death	Death or major and permanent incapacity or disability	Totally unsatisfactory patient outcome	Failure of critical system/ project/targets/ objectives	Multiple claims or a single major claim	£1,000.000+	Nationwide multimedia coverage
Serious/ Severe	Major injuries, or long term incapacity or disability	Patient outcome or experience significantly below reasonable expectation across the board	Partial failure of critical systems, projects, objectives or target achievement.	Above excess claim, multiple justified complaints	£50,000 - £1,000,000	Extensive local coverage and widespread media coverage.
Moderate	Significant injury or ill health – medical intervention necessary – some temporary incapacity.	Patient outcome or experience below reasonable expectation in one or more areas.	Resolvable problem with critical system, project, target or objectives achievement Partial failure of important system, project, target or objective achievement. Failure of peripheral system/project/target or objective achievement.	Justified complaint involving the lack of appropriate care, or below the excess claim.	£5,000 - £50,000	Coverage throughout the organisation and / or some public coverage
Minor/ Low	Minor injury or ill health – first aid or self treatment – no incapacity.	Patient experience temporarily unsatisfactory – rapidly resolved.	Resolvable problem with important system, project, target or objective achievement.	Justified complaint peripheral to clinical care (e.g. Car parking / access	£500 - £5,000	Coverage limited to elements within the organisation (e.g. trade unions and /or some external stakeholders)
Negligible / None	Injury or illness not requiring intervention	Single resolvable problem in patient experience.	Resolvable problem with peripheral system, objective or project.	Low value claim	£0 -£500	Awareness limited to individuals within the organisation

RIDDOR - Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995

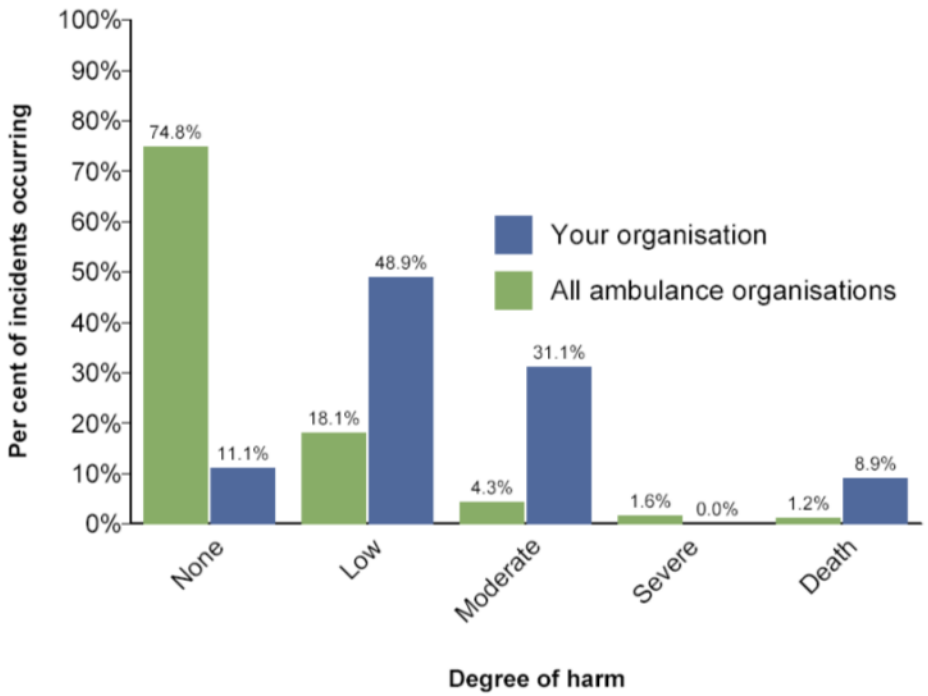
- **Fracture** other than to fingers, thumbs or toes;
- **Amputation**;
- **Dislocation** of the shoulder, hip, knee or spine;
- **Loss of sight** (temporary or permanent);
- chemical or hot metal **burn to the eye** or any penetrating injury to the eye;
- Injury resulting from an **electric shock** or electrical burn leading to unconsciousness or requiring resuscitation or admittance to hospital for more than 24 hours;
- Any other injury: leading to **hypothermia**, **heat-induced illness** or **unconsciousness**; or requiring resuscitation; or requiring admittance to hospital for more than 24 hours;
- Unconsciousness caused by **asphyxia** or **exposure** to a harmful substance or biological agent;
- Acute illness requiring medical treatment, or loss of consciousness arising from **absorption of any substance** by inhalation, ingestion or through the skin;
- Acute illness requiring medical treatment where there is reason to believe that this resulted from **exposure to a biological agent** or its toxins or infected material.
- **Over-seven-day injuries -** where an employee, or self-employed person, is away from work or unable to perform their normal work duties for more than seven consecutive days (not counting the day of the accident).

Needle stick injury

- The object should be placed as soon as possible carefully into a sharps box.
- The wound should be encouraged to bleed by gentle pressure around it.
- The wound should be cleaned with soap and water, and a medi-wipe and covered with a plaster.
- Where possible we should obtain name, address and contact number of patient whose body fluid is on any sharp involved in a needle stick injury.
- The patient should seek medical advice at the first available opportunity.
- The sharps box should be disposed of as clinical waste as soon as possible after use.
- Every needle stick-type injury must be reported to the ICO and an incident report form completed.

Degree of harm
SCAS vs. SECAmb

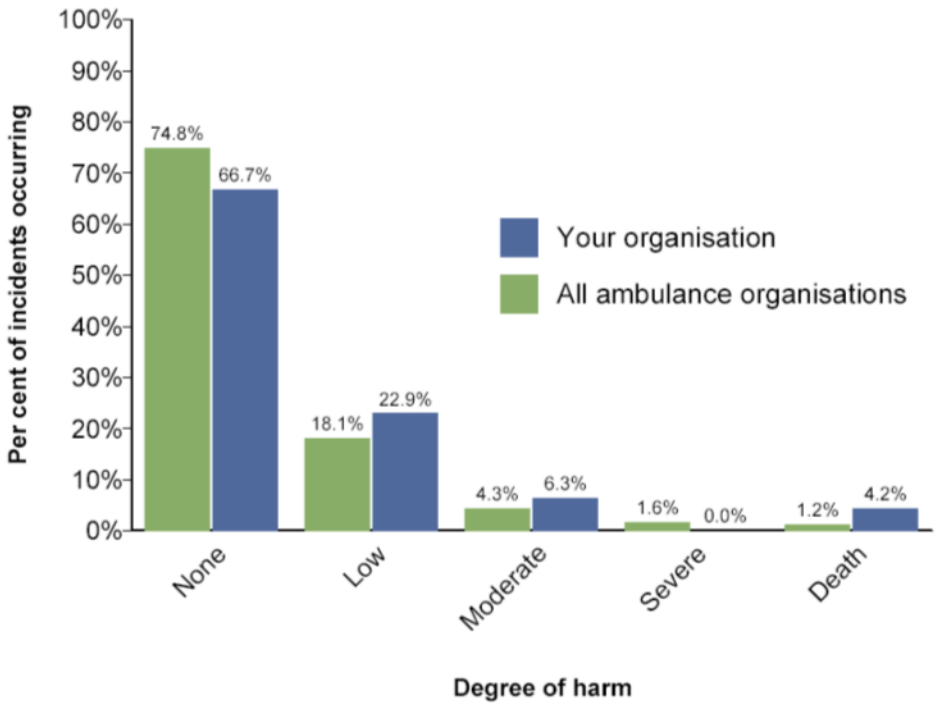
Figure 2: Incidents reported by degree of harm for ambulance organisations



Your figures:	None	Low	Moderate	Severe	Death
	5	22	14	0	4

SCAS

Figure 2: Incidents reported by degree of harm for ambulance organisations

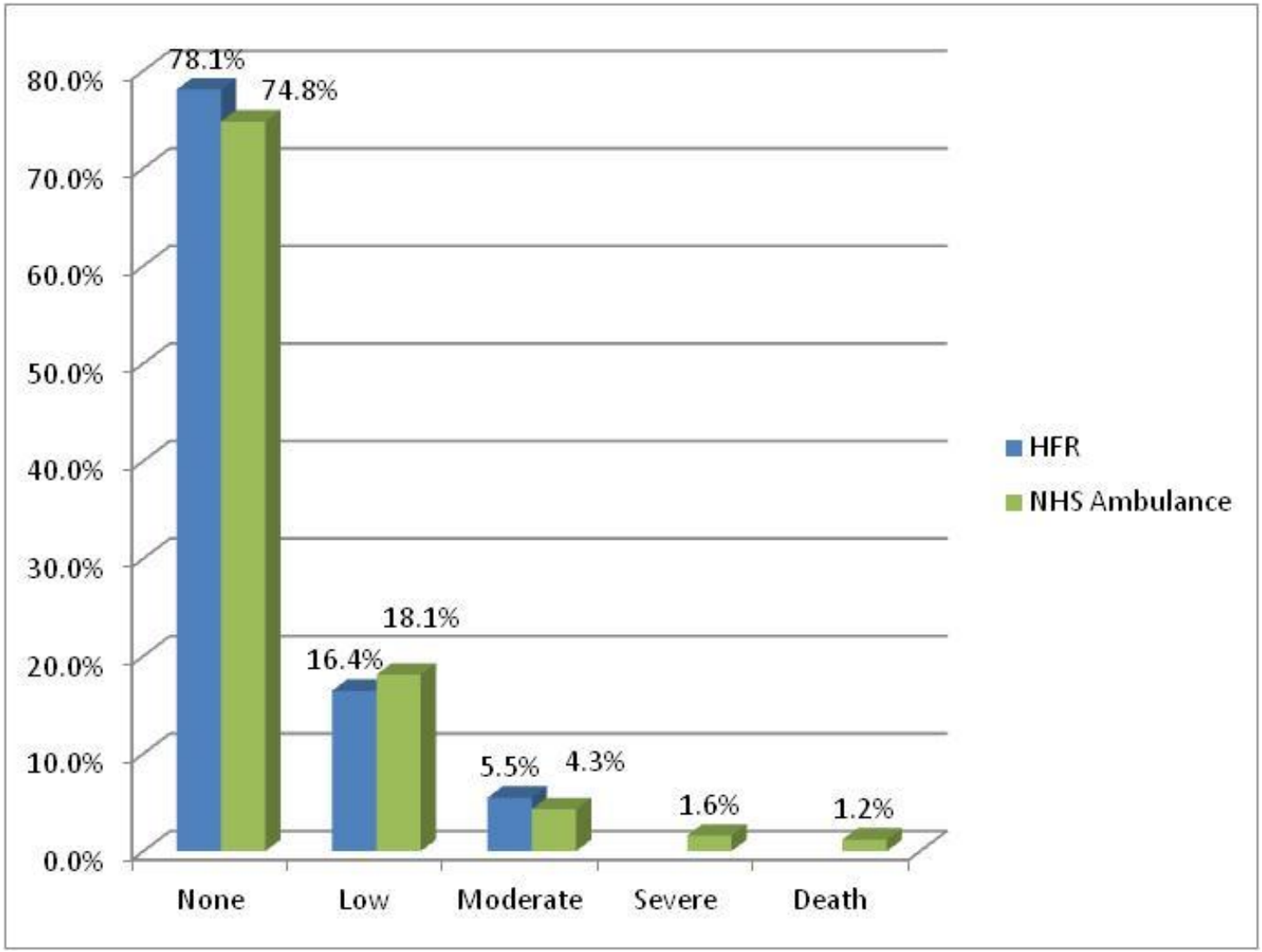


Your figures:	None	Low	Moderate	Severe	Death
	64	22	6	0	4

SECAmb

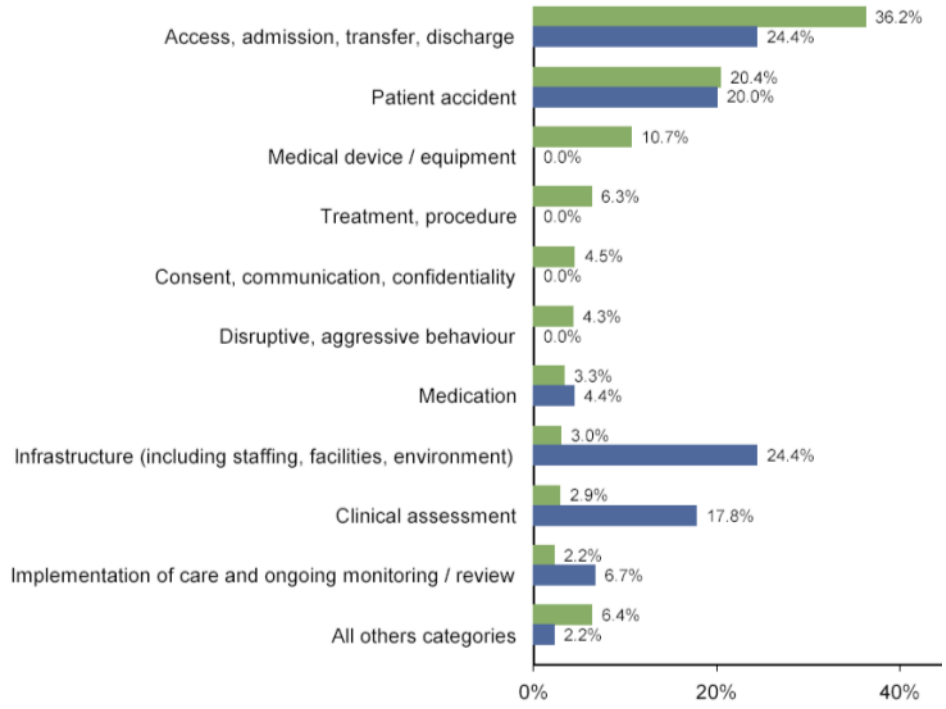
Data period: 1 October 2010 to 31 March 2011

Degree of harm - HFR



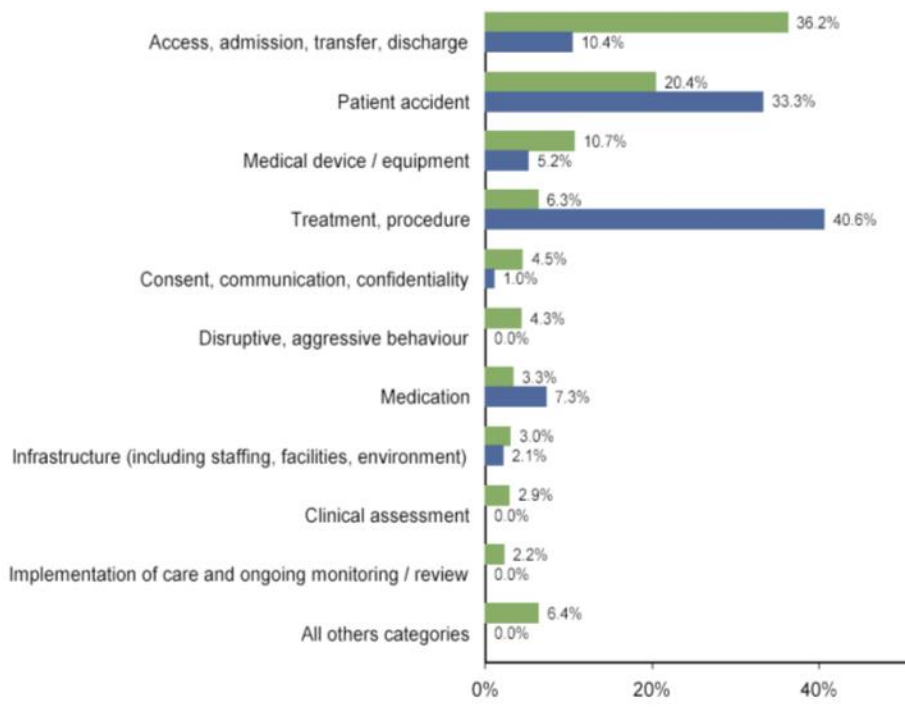
Top 10 incidents SCAS vs. SECAmb

Figure 1: Top 10 incident types



SCAS

Figure 1: Top 10 incident types



SECAmb

Data period: 1 October 2010 to 31 March 2011

Your organisation

All ambulance organisations

Common Pre-hospital Incidents

- **Ambulance crashes.** Ambulances, despite their sirens and lights, are one of the most dangerous vehicles on the road. In fact, an ambulance is 13 times more likely to crash than other vehicles. In some cases, accident victims may be further harmed when the EMTs that are trying to save them get into a wreck on the way to the hospital.
- **Medication mistakes.** When you only have a few seconds to react to a medical emergency, you may make the wrong decision. When an EMT received over-the-phone orders from the doctor to give a patient a certain medication, he accidentally gave her 200 times the correct amount - and then watched his patient go into fatal cardiac arrest.
- **Wrong diagnosis.** EMT often have to act as soon as they are on the scene - whether they are sure of what is going on or not. A person may receive emergency care for the wrong condition, which can be extremely dangerous.
- **Miscommunication** with the hospital. If the EMT does not accurately report to the hospital what treatment an accident victim has had, the patient may not receive the proper care - or may receive a double dose of treatment. Both are dangerous.

Ref: http://www.brentadams.com/library/ems-mistakes-common-ambulance-errors.cfm

Paramedic self-reported medication errors

BACKGROUND: Continuing quality improvement (CQI) reviews reflect that medication administration errors occur in the prehospital setting. These include errors involving dose, medication, route, concentration, and treatment.

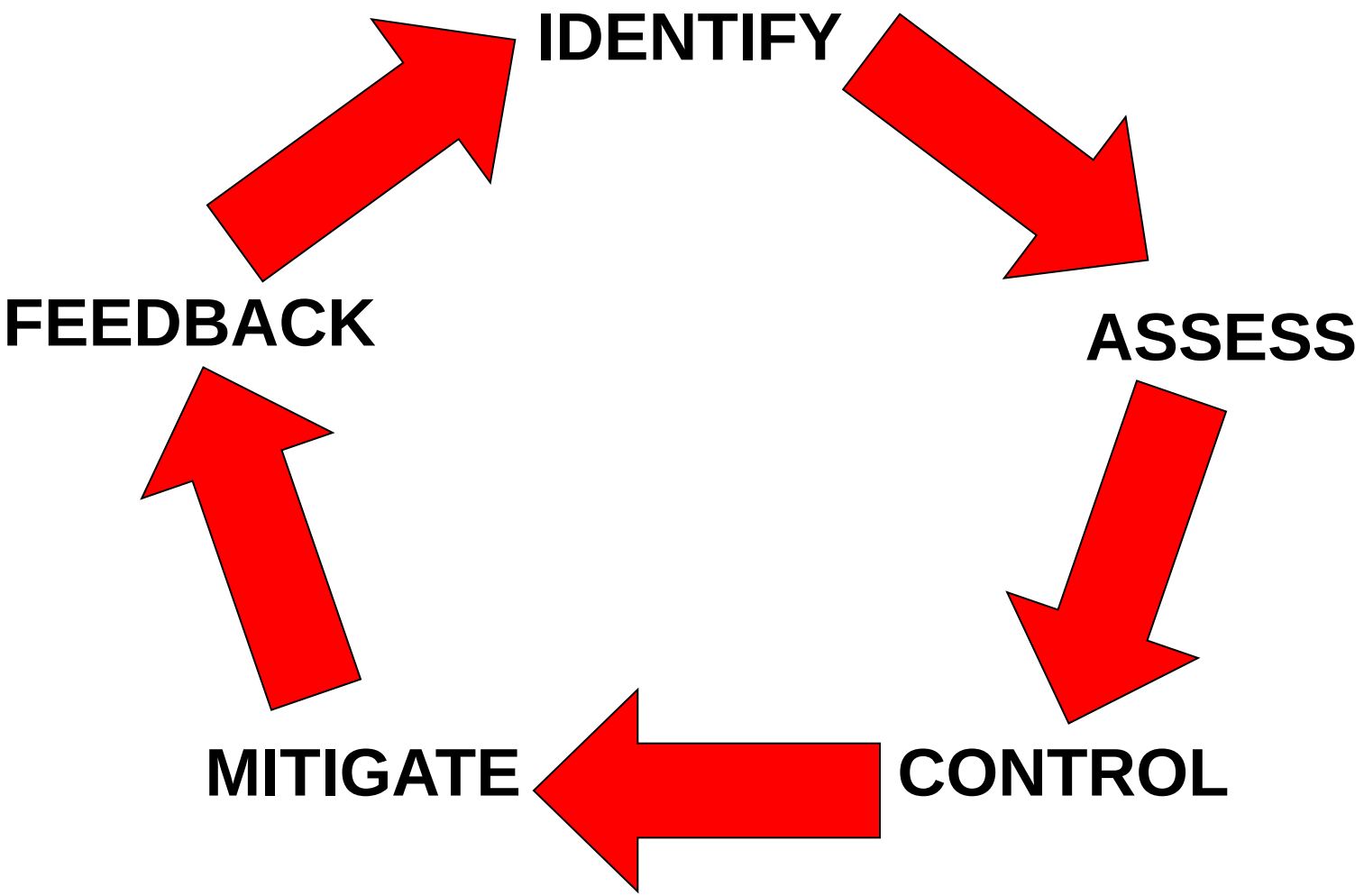
METHODS: A survey was given to paramedics in San Diego County. The survey tool was established based on previous literature reviews and questions developed based on previous CQI data.

RESULTS: A total of 352 surveys were returned, with the paramedics reporting a mean of 8.5 years of field experience. They work an average of 11.0 shifts/month with an average shift length of 25.4 hours and 6.7 calls/shift. Thirty-two responding paramedics (9.1%) reported committing a medication error in the past 12 months. Types of errors included dose-related errors (63%), protocol errors (33%), wrong route errors (21%), and wrong medication errors (4%). Issues identified in contributing to the errors include failure to triple check, infrequent use of the medication, dosage calculation error, and incorrect dosage given. Fatigue, training, and equipment setup of the drug box were not listed as any of the contributing factors. The majority of these errors were self-reported to their CQI representative (79.1%), with 8.3% reported by the base hospital radio nurse, 8.3% found on chart review, and 4.2% noted by the paramedic during the call but never reported.

CONCLUSIONS: Nine percent of paramedics responding to an anonymous survey reported medication errors in the past 12 months, with 4% of these errors never having been reported in the CQI process. Additional safeguards must continue to be implemented to decrease the incidence of medication errors.

Ref: Prehosp Emerg Care. 2006 Oct-Dec;10(4):457-62

The Safety Loop…



5 Step risk assessment

- Identify the hazards
- Identify who can be harmed
- Identify the current controls and decide if more is required?
- Record your findings
- Review as necessary

Risk assessment legislation

- Risk assessments are required by law, implicitly in law such as the Health and Safety at Work Act and more explicitly in particular regulations, e.g.
- Control of Substances Hazardous to Health 1989
- Noise at Work 1989
- Manual Handling 1992
- Display Screen Equipment 1992
- Personal protective equipment 1992

Hierarchy of risk control

1. Eliminate the hazard
2. Substitute the hazard
3. Contain the hazard at source
4. Remove employee from hazard
5. Reduce exposure to hazard
6. Safe working procedures
7. Warning signals
8. PPE
9. Discipline

Risk assessment scoring

Severity	Negligible/ None 1	Minor/ Low 2	Moderate 3	Serious/ Severe 4	Catastrophic /Death 5
Probability/ Likelihood					
Almost certain 5	Yellow (5)	Amber (10)	Red (15)	Red (20)	Red (25)
Likely 4	Yellow (4)	Amber (8)	Amber (12)	Red (16)	Red (20)
Possible 3	Green (3)	Yellow (6)	Amber (9)	Amber(12)	Red (15)
Unlikely 2	Green (2)	Yellow (4)	Amber (6)	Amber (8)	Amber (10)
Rare 1	Green (1)	Green (2)	Green (3	Yellow (4)	Yellow (5)

Actions relating to risk

- **Red** – Immediate action by a member of the HFR Executive Committee (with notification to the chair). Mitigating measures to be implemented within five days, and report to be generated with long term actions and agreed by the HFR Executive Committee within one month.
- **Amber** - Immediate action by a member of the HFR Executive Committee (with notification to the chair). Mitigating measures to be implemented within five days, and report to be generated with long term actions and agreed by the HFR Executive Committee within one month.
- **Yellow** - Notification to the HFR Executive Committee at next meeting. Mitigating measures to be implemented within two-months of meeting.
- **Green** - Notification to the HFR Executive Committee at next meeting. Mitigating measures to be implemented within six-months of meeting.

Acknowledgments

- Professor James Reason
- National Patient Safety Agency
- http://www.ic.nhs.uk/pubs/nhscomplaints1011
- http://www.hsj.co.uk/news/nhs-pays-out-12bn-in-litigation-claims/5046704.article?blocktitle=Legal-News&contentID=563