Patient Safety Research: Conditions for adverse events

Rhona Flin

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A sunny day and all seems normal …

‘dropping one’s guard’    ‘forgetting to be afraid’

Consultant: “Where’s the hole? Can you see it? Well that’s no good, if you can’t see the whole hole, we can’t repair it, can we? If you can’t see it, we have to put the clamp on. Another vascular clamp please. Right. Think. Let’s just think here. This all started off so nicely didn’t it.”

Referring to a recent mishap in the operating room, one surgeon explained, “It’s the routine cases ... it’s like the ... bile duct injuries always happened in easy gall bladders, right? That’s what happened here. It was an easy case. We were chatting and obviously not being as diligent as we should have been.
Ingredients for a bad day in theatre?

• 2 gms of equipment malfunction
• 1 gm of missing equipment
• 4 tblsp of fatigue per person
• A pinch of friction between team members
• Add a sprinkling of grumpiness to taste

Set into a strong status hierarchy, with a delayed start to the list, a degree of time pressure and wait till boiling point
Organisational Resilience

“Organizational resilience is the characteristic of managing the organisation’s activities to anticipate and circumvent threats to its existence and primary goals. This is shown in particular in an ability to manage severe pressures and conflicts between safety and the primary production or performance goals of the organization”. (Hale & Heijer, 2006,p36)
Competing Forces

- Safety edge
- Economic pressures
- Workload pressures
Traditional safety approaches

• Focus on:
  – human fallibility/error
  – how components and barriers fail
  – post accident analysis, minor incident reporting

• Safety treated as an isolated phenomenon

• Insufficient attention paid to production demands and other competing drivers of organisational and human behaviour

• Need to understand the reality of work

• Resilience is about flexibility, adaptability to cope with these demands
• Human Factors approaches
• e.g. task analysis
• can show areas of strength/ resilience and potential threats/ areas of weakness

‘work as imagined vs work as done’
Regression analyses revealed that perceptions of staffing levels and managerial commitment were significant predictors for all the safety outcome measures.
NHS charge nurses trying to maintain resilience

“The reality is that I knew my staff were feeling pressure so I’ve actually taken away from their workload which is putting it a lot more on me because I can’t delegate work to them at the moment. I know they’re feeling pressured which is putting a lot of pressure on me because I have to do all the work so I’ve not been able to delegate anything to them.”

Senior charge nurses’ leadership behaviours in relation to hospital ward safety: A mixed method study

Agnew & Flin (2014)
Interviews; questionnaire survey
Doctors’ shift handovers – Acute Medical Assessment Unit (AMAU)

- Interviews with doctors – asking about an ‘ideal’ handover vs reality
- Observations of doctors – before, during and after handovers
- Two hospitals in Scotland
- Aim to produce a hierarchical task analysis of the ideal handover process
Doctors preparing to handover (AMAU) Task Analysis
Raduma, Flin, Yule & Close (2012)

0. To provide handover accurately and correctly.

1. Prepare to transfer patient care.

Plan 1: Do steps 1.1-1.4 in sequence.
Plan 1 is carried out by the post-take team's Fy1, except where indicated.

Plans 1.3 and 1.4 are to be carried out by the post-take team's Fy1.

1.1. Make patient list.
Plan 1.1: Do steps 1.1.1-1.1.3. in sequence.
Plan 1.1 is carried out by the post-take team's Fy1 or by the doctor who has the in-coming patient receiving bleep.

1.2. Update patient list.
Plan 1.2: Do steps 1.2.1-1.2.4 in sequence.
Plan 1.2 is carried out by the post-take team's Fy1, or if unavailable, the SHO.

1.2.1. Confirm patients that are diagnosed, waiting for transfer, or are still in the AMAU after 3pm.
1.2.2. Confirm patients that are diagnosed, waiting for transfer, or are still in the AMAU after 3pm.
1.2.3. Take notes of patients deemed unstable by registrar or consultant and highlights them on the patient list.

1.3. Print multiple copies of the patient list.

1.4. Move trolley with patient notes from the doctors' room to the doctors' meeting room.

1.4.1. Team Fy1 enters amended changes into the patient list following step 1.1.

1.1. Go to doctors' office.

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1.1.2. Copy each patient from the order in which they appear on the whiteboard onto the provided computer template.

1.1.3. Note jobs that are complete and incomplete.
**Pre-handover (AMAU) - key findings**


- Most activities required for a thorough handover (described by junior doctors), were not always performed (ideal vs reality).
  - Updating all aspects of the patient list (i.e. jobs pending, tests ordered/pending/received)
  - Timeliness for deciding which jobs to handover
  - Locating where patients have been transferred
  - Confirming test results

- **Importance of preparation phase (Available time?)**

- Blurred roles of who is responsible for preparing handover.

- Underlying issues re. workload, task understanding, **risk assessment**, shared mental model (teamwork)
Handover study 2 (from theatre)

Observational study of 117 handovers of patients from the operating theatre.

Typically anaesthetist to recovery room nurse. Observation rating scales, self reports of quality - correlated

Transferring information and responsibility. Assessments were key to quality – ‘more than just facts and figures’

Appreciating the needs of the receiving practitioner – shared understanding

Humans have limited resources

- Humans are very resourceful
  
  But have:
  
  - Limited cognitive resources
  - Limited emotional resources
  - Limited physiological resources

- Non-technical skills are about protecting these resources and decreasing risk of a never event
Non-Technical Skills

Situation Awareness
Decision Making
Leadership
Team Working
Coping with Stress and Fatigue

- **Identifying Key Skills**
- **Designing Training**
- **Assessment Methods**
Non-technical skills

• Formally trained and assessed in aviation, nuclear and other industries
• Cognitive and social skills to reduce error/ enhance safety
• Behaviour rating systems eg NOTECHS for pilots
• These have now been introduced for anaesthetists (ANTS), surgeons (NOTSS), scrub (SPLINTS) and anaesthetic practitioners (ANTS-AP), emergency physicians etc.
Non-Technical Skills for Anaesthetists (ANTS)

Flin, Fletcher, Glavin, Maran, Patey


[www.abdn.ac.uk/iprc/ants](http://www.abdn.ac.uk/iprc/ants)
Scrub Practitioners (SPLINTS)

• Non-technical skills for scrub nurses/ ODPs SPLINTS

• www.abdn.ac.uk/iprc/splints

Non-Technical Skills for Surgeons (NOTSS)

Yule, Flin, Maran, Paterson-Brown, Rowley, Youngson

(2006) Surgery;

www.abdn.ac.uk/iprc/notss
ANTS-AP
for anaesthetic nurses/ ODPs

(2015) Anaesthesia; JPP

www.abdn.ac.uk/iprc/ants-ap
Non-technical skills for beginners

• Start to establish safe behaviours/culture at the undergraduate level
  – by teaching about patient safety, human factors, non-technical skills
  – using simulation for demonstration, practice and reinforcement
Further details

email: r.flin@abdn.ac.uk

• www.abdn.ac.uk/iprc
  lists of projects and papers and reports