Single Rooms and Patient Safety

National Patient Safety Agency

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www.npsa.nhs.uk
• 24/7 medical facility
• Infection control issues
• Latent conditions
• Adverse events
• Complex systems
• Highly trained specialist staff
• Ageing population
• 100% single room occupancy
Florence Nightingale

“the very first requirement in a Hospital [is] that it should do the sick no harm”

Notes on Hospitals 1863
Getting to the source of the problem

1 million people receive specialist mental health services

160,000 admissions to hospital

Vulnerable to potential risks

Safety risks from treatment, care & environment
Why Focus on Patient Safety

what is the problem?

In acute care;

• The NHS treats 9 million patients a year

• 11% of all acute admissions suffer an incident

• 8% of those incidents prove fatal

• 50% of incidents thought to be avoidable

Vincent et al
Societal acceptability

“a large number of incidents spread over a wide area is much more acceptable than if the same effect took place at one time in one place”

Royal Academy of Engineering, The Societal Aspects of Risk
The Role of the NPSA and the National Reporting & Learning System

capture and analyse incidents

learn from mistakes

change practice & system factors to reduce risk

improve patient safety in the NHS
Roll out of the NRLS – reported incidents and number of reporting trusts

Source: reports to the NRLS database from November 2003 up to the end of June 2006.
Air Safety Reports
But we all make mistakes!

If we accept to err is human how do we solve the patient safety issue?
6Ps
The health care system

Providers
Includes doctors, nurses, paramedics and all other clinical staff that might provide a health care service and is progressively including the patients themselves.

Patients
An increasingly important factor and often the experts of their own condition and in certain situations contributors to their own harm.

Procedure
The medical procedure being carried out will have its own risks depending on its nature and the complexity of the task.

Peripherals
Almost every element in the health care setting can contribute to the risk of patient harm including ventilation systems, light and sound levels, floor finishes etc.

Products
The quality, variety and complexity of modern mechanical and electronic medical devices can be a factor in patient risk and harm.

Policy
The delivery process, rules and regulations governing behaviour and procedure provide a layer of defence against error but can also add an extra layer of complexity.

*It is recognised that micro systems such as purchasing and testing and the "work a round" prioritisation process that clinical staff adopt are also potentially significant patient safety factors in the health care system.
Who gets the blame?
Only two things are infinite, the universe and human stupidity, and I'm not sure about the former

Albert Einstein
Bad Design!
What to do?

- Change the system
- Create open and fair culture
- Design out the problem
Why is design important?

“you cannot change the human condition, you can only change the conditions in which people work”

Reason and Hobbs 2003
Safe Design Principles

Team
- Early & continuous engagement of stakeholders

Process
- Design around major organisational processes

Hazards
- Identify & mitigate against

Principles
- Focus on systems

Evaluate
- Evaluate the design with real users & learn
We need to consider the unexpected
Evidence Based Design

- An Inclusive Process
- Focus on Precarious Events
- Address Latent Conditions
An Inclusive Process

- Patients/families/staff involved in the design process
- Design for the vulnerable patient
- Human Factors & risk assessment at each stage
- Establish a checklist for current/future needs
Focus on Precarious Events

• Inpatient suicides
• Deaths of patients in restraints
• Ligature points
• Hospital acquired infections
• Events relating to medication error
• Patient falls
Address Latent Conditions

- Reduce noise levels
- Reduce patient stress
- Avoidance of blind-spots and corners
- Flush mounted fixtures
- Safe glazing
- Improve ventilation
- Access to natural lighting and full spectrum lighting
- Reduce staff walking and fatigue
- Accessibility to patient information
- High level of observation
Assessing Results

- Patient Safety Indicators
- Evidence Based Solutions
- Measurements

![Risk Pyramid]

- Risk broadly acceptable: 1:10,000,000
- Risk tolerable: 1:100,000
- Risk not acceptable: 1:200
The Debate

“single patient rooms are cited as one of the most promising facility design investments to enhance patient safety”

Berry, Parker, Coile, Hamilton, O’Neill & Sadler, 2004
....for 100% single patient rooms

- Reduction in Healthcare Associated Infection
- Improved Staff to patient communication
- Patient confidentiality and privacy
- Family support
- Patient stress (noise and sleep deprivation)
- Reduction in patient transfers
- Bed availability
- Patient satisfaction
- Wider range of treatment options in situ
...against 100% single patient rooms

- Increased nursing resource required
- Greater staff travel distances
- Reduced staff to patient observation
- Reduced social interaction
- Patient Isolation
- Space hungry
- Increased Capital Cost
Impact of design considerations

% Single Room Provision

Dowdeswell, Erskine, Heasman: Hospital Ward Configuration: 2004
Single Patient Rooms

Review of the Evidence

Concerns

• Increased capital costs
• Increased staff levels and travel distances
• Reduced staff – patient observation
• Increased slips, trips & falls
• Patient isolation
Travel Distances & Observation

- **Radial Layout**
  Nurse travels 9.66 feet per minute

- **Linear Layout**
  Nurse travels 33 feet per minute

*Bobrow & Thomas (2000)*
Key Drivers for Patient Safety

• Observation
• Patient Specific drugs & linen storage
• External & internal views
• Decentralised nurse base
Key Drivers for Patient Safety

- Standardised equipment
- Standardised Environment
- Access to patient
- Relative Location of ensuite
- Patient specific clinical work area
- Acoustically absorbent finishes
- Handrails
Key Drivers for Patient Safety

- Impact absorbing flooring
- Air treatment systems
- Patient ambience controls
- Family area
- Inclusion of Art
- Built in Furniture
If you think you can’t afford good design, ask yourself how much bad design costs
A final thought

every system is perfectly designed to achieve exactly the results it gets.....which means badly designed labels, machines, environments and processes are perfectly designed to harm patients by ensuring a specific, low but inevitable, rate of user error

Donald Berwick
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