

Researching the relationship between patient safety and design

Design and Health: World Congress, Exhibition, Academy Award and Study tour (Boston, 6- 10th July 2011)

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Presentation Overview

- The debate
- The project: scope & approach
- Findings
- Conclusions





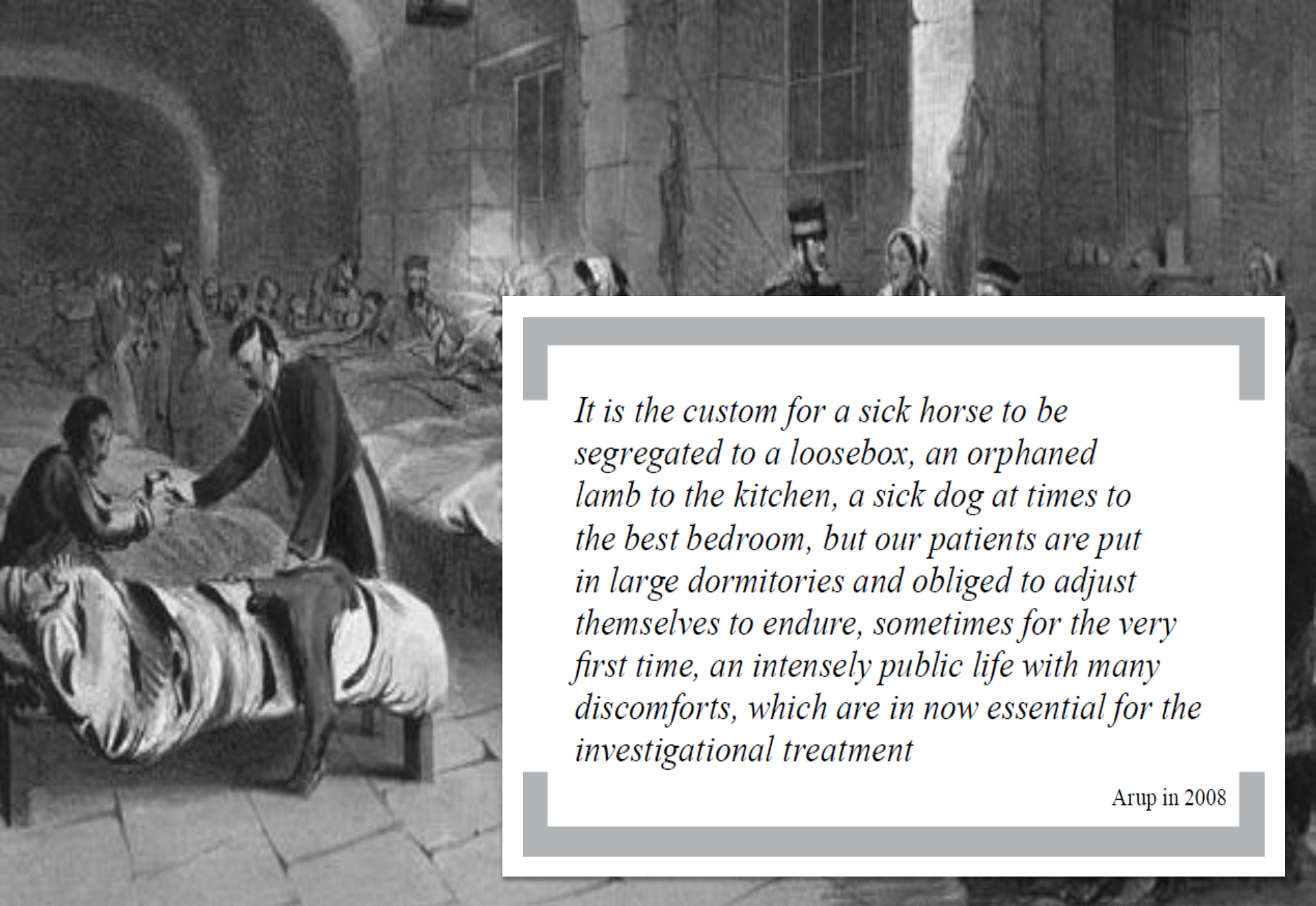
The Debate

National Health Service (NHS) - a comprehensive service, available to all, free at the point of use, based on need, not ability to pay aims to:-

- put the patients at the heart of everything the NHS does;
- focus on continuously improving those things that really matter to patients - the outcome of their healthcare;
- empower and liberate clinicians to innovate, with the freedom to focus on improving healthcare services

Equity and excellence: Liberating the NHS

Published: 12 July 2010

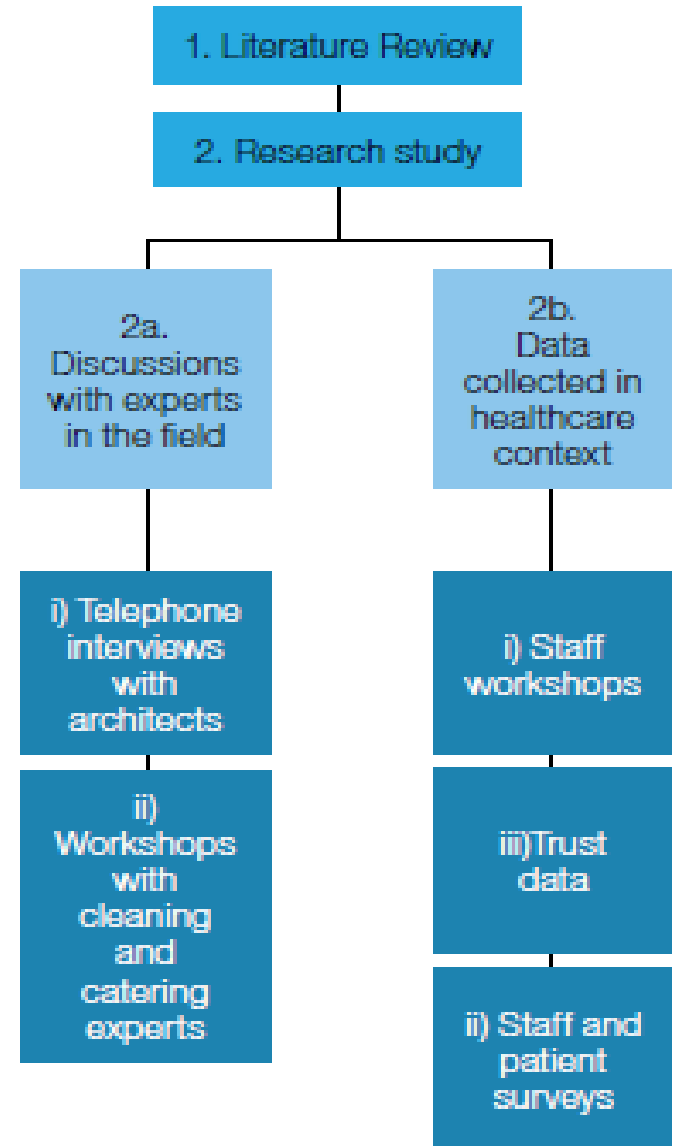


It is the custom for a sick horse to be segregated to a loosebox, an orphaned lamb to the kitchen, a sick dog at times to the best bedroom, but our patients are put in large dormitories and obliged to adjust themselves to endure, sometimes for the very first time, an intensely public life with many discomforts, which are in now essential for the investigational treatment

Arup in 2008

Project Approach

- **Research question:**
what room type is better for patient safety?
- **Research aims:**
to review the literature and conduct a research study to inform this debate.





Findings

Literature review findings

Benefits for single-bed rooms:

- Reduced slips, trips and falls
- Reduced medication errors

Disadvantages of single-bed rooms include:

- Reduced observation of patients
- Reduced opportunities for social interaction



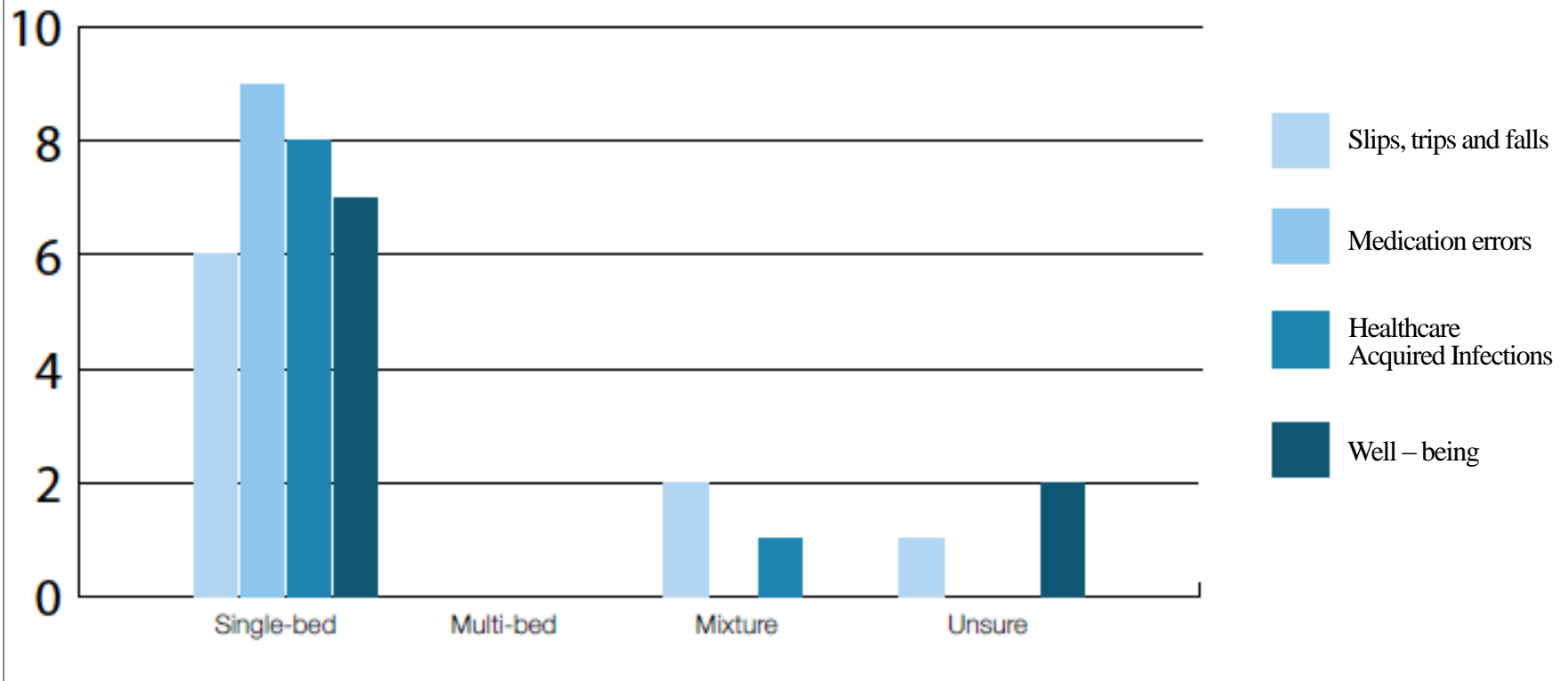
Literature review ‘gaps’

- Most evidence is not empirical
- Little research based upon UK / European hospitals
- Most evidence is single-bed centric



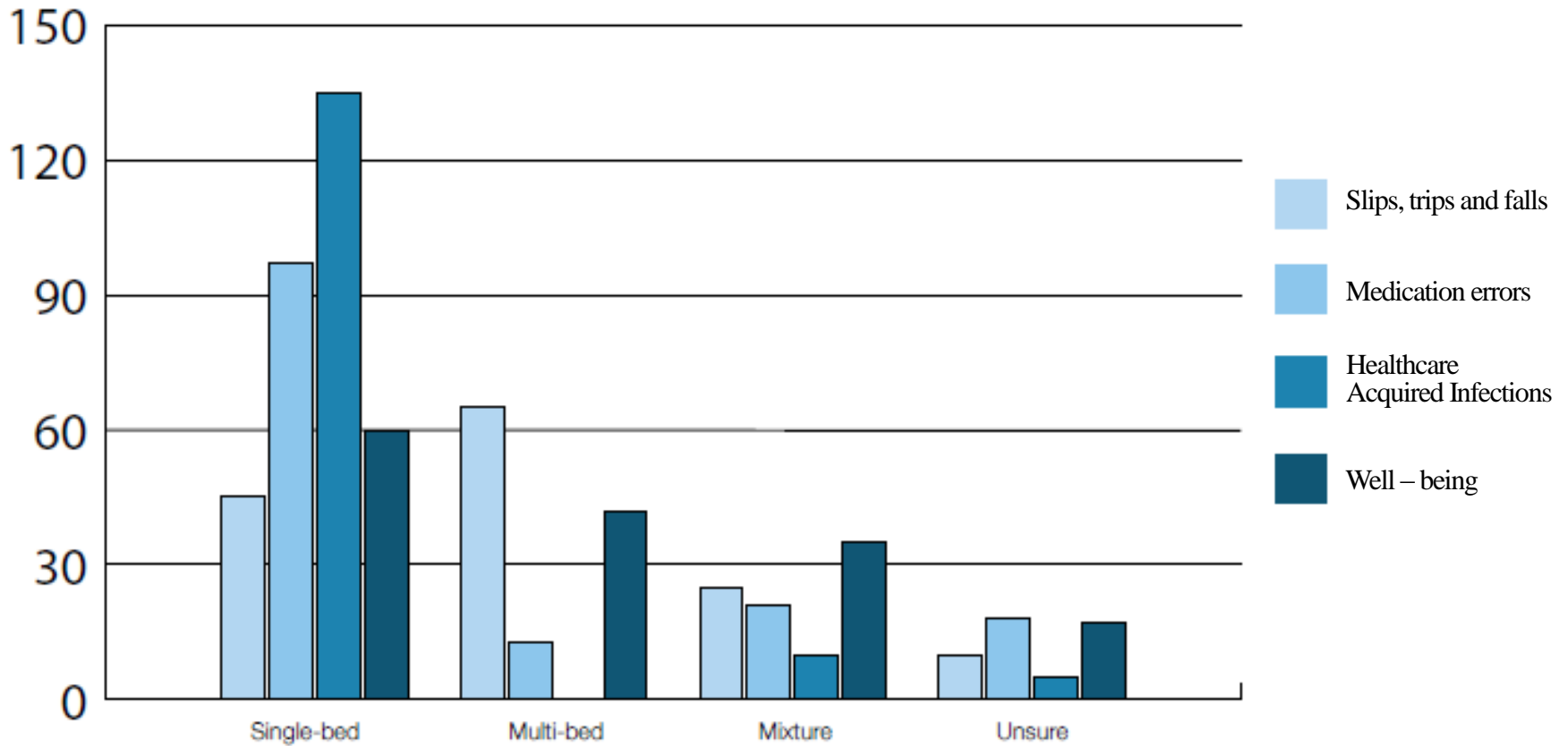
Research study findings: Architects & Design Specialists

Architects & Design Specialists: which room type is perceived as best for patient safety?



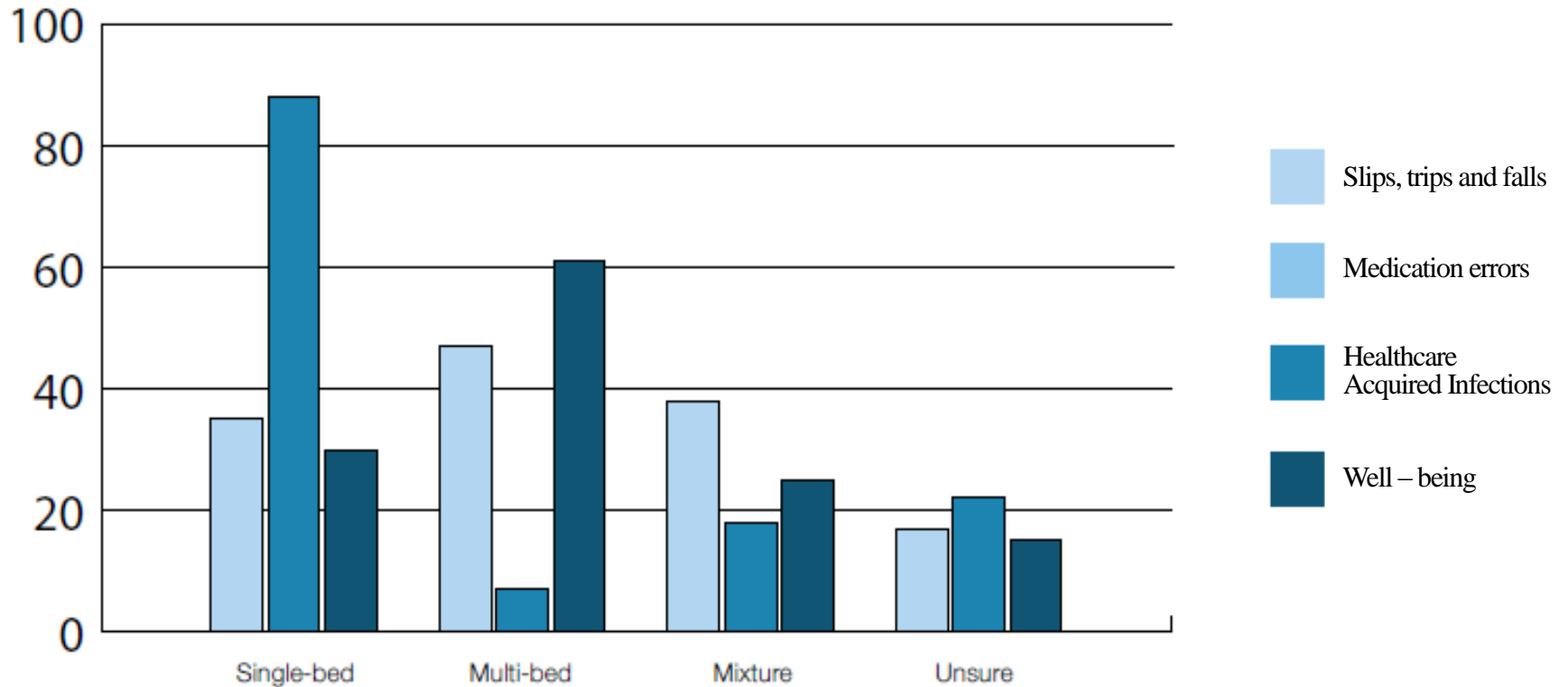
Research study findings: Hospital staff

Staff survey: which room type is perceived as best for patient safety?



Research study findings: Patients

Patient survey: which room type is perceived as best for patient safety?



Slips trips and falls

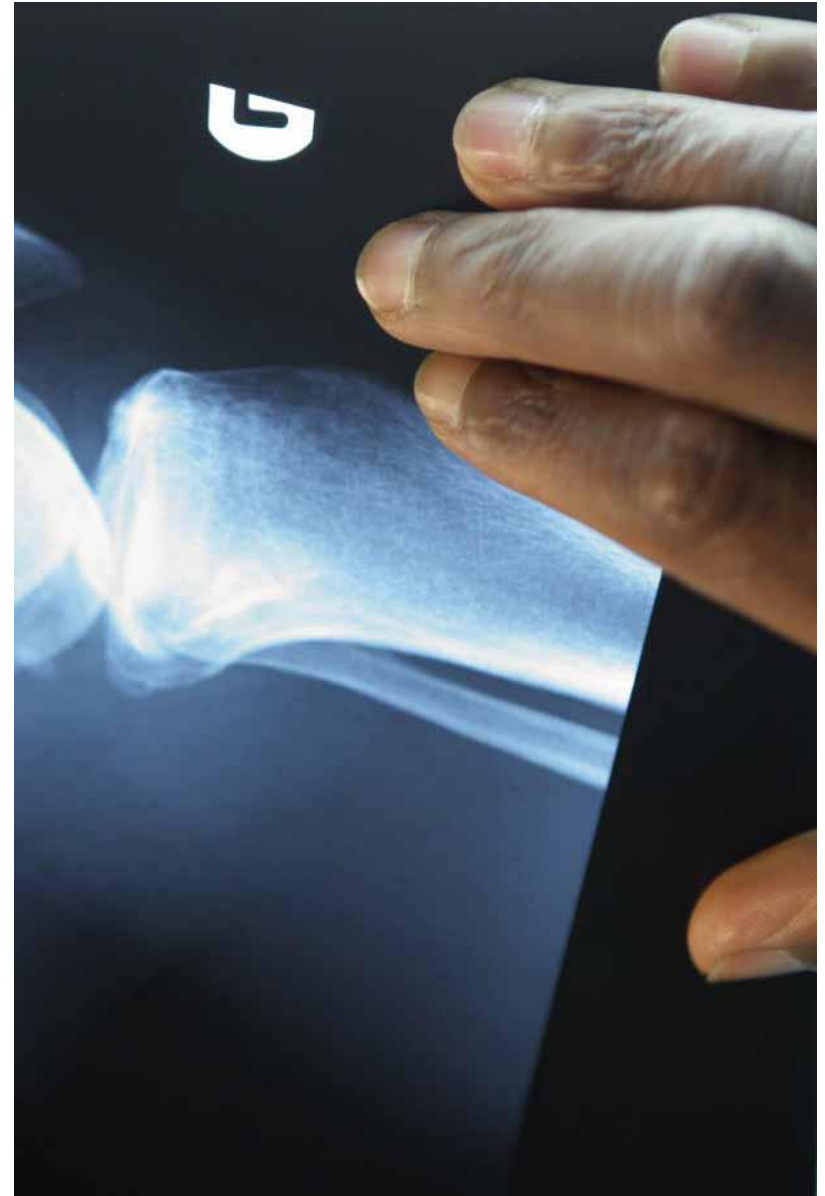
- Staff and patients had mixed views
- Slightly more in favour of multi-bed rooms

Single-bed rooms

- Reduced trip hazards
- Accommodate visitors
- Design factors

Multi-bed rooms

- Increased observation from patients



Slips trips and falls

In multi-bed rooms, patients act as eyes and ears for nurses and will let us know if another patient has fallen

Staff at Workshops

Medication errors

- Majority of staff view **single-bed rooms** are better for preventing medication errors
- Fewer distractions
- Reduction in challenges posed by issues of confidentiality
- Self-directed patient movements
- Reduced confusion of patient medicines



Medication errors

In single bed rooms individual information could be displayed on a board (including confidential information) to reduce incorrect medication being given or nil by mouth mistakes

Staff at Workshops

Healthcare Acquired Infections

- Majority of staff and patients view that **single-bed rooms** provide the most advantages for HAIs
- Opportunity for deep cleaning
- Hand-washing behaviours
- Occupancy pride
- Reduced contact
- Reduced sharing of equipment and facilities

“ Equipment will be less likely to be shared in single-bed rooms, which will reduce the likelihood of cross-infection between patients ”

Staff at workshops

Well-being

- Staff and patients had mixed views

Multi-bed rooms:

- Social support for patients
- Visibility / supervision of staff

Single-bed rooms:

- Accommodation of visitors
- Reduced noise
- Patient control
- Less disturbances

*“In single-bed rooms
you get
less disruption from
other people and 1:1
attention if your
condition is critical”*

Staff at workshops

Conclusions

Mixed findings

- Overall preference for single-bed rooms but it depends on the variable
- Differences
 - Professional group
 - Demographics and condition

“It depends on the patients condition and speciality. For example in a stroke department multi-bed rooms may be better as it allows for social interaction”

Staff at workshops

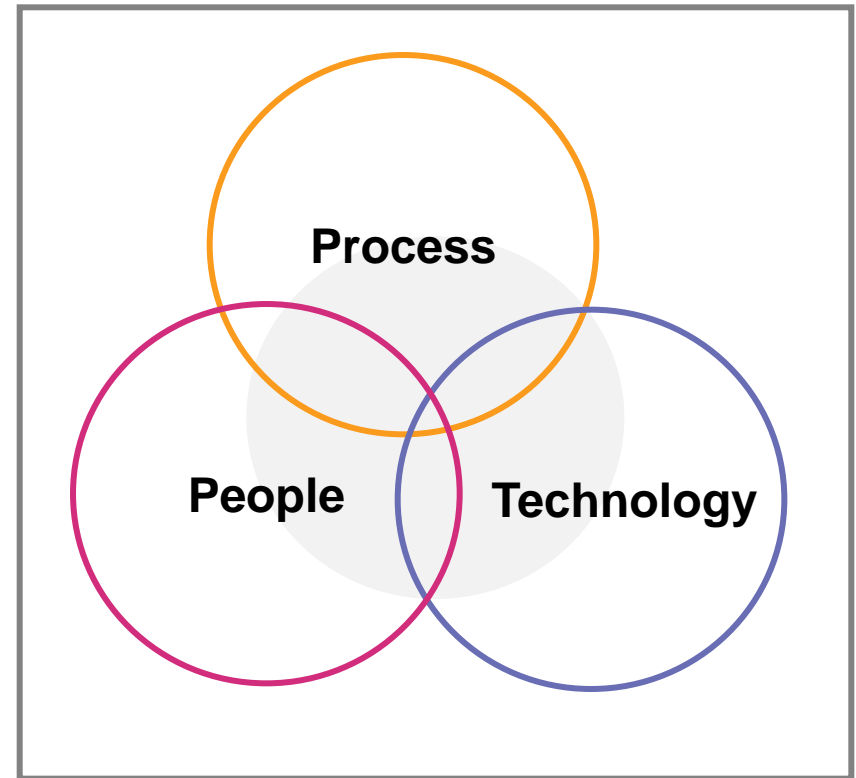
Influencing variables

- Complex environment
- Trade-offs
- Moderating factors
 - Design
 - Operations / Management



Summary

- Adds to existing evidence
- Data limitations
- Patient choice
- Holistic view required in a complex environment
- Balance of demands



Balance of demands:
social versus individual.

Next steps

- More rigorous research to inform future design of hospitals
- Strength and direction of variables
- Other healthcare contexts
- Other countries and healthcare systems?



“Single bed rooms need shared **social areas**”

“Single bed rooms need to provide easy and accessible **viewing** for nurses”

“Single-bed rooms can accommodate **cultural** issues”

“Mixture of single and multi rooms may increase **bed blockages**”

“Shared rooms may be **best of both worlds**”?