



Relationship of Hospital Room Design to Pain Medication Usage and Pain Perception

Timothy Reilly, PharmD, BCPS, CGP, FASCP^{1,2}, Janice Allunario, RPh²
¹Rutgers, The State University of New Jersey, Ernest Mario School of Pharmacy
²Princeton Health Care System



Princeton HealthCare System

Background

- This study is part of a larger evidence-based hospital room design study at the University Medical Center at Princeton (UMCP)
- Design elements central to the design of the new room include:
 - Private room
 - Nurse Server
 - Improved location of hand washing sink and patient bathroom
 - Integration of IT and other technologies into the physical setting
 - Space to support interdisciplinary communication and practice

Objective

To determine if architectural improvements in hospital room design affect opiate usage after orthopedic surgery.

Methods

- IRB approval was obtained.
- Inclusion Criteria
 - 8-65 years
 - Received a total hip arthroplasty (THA) or total knee arthroplasty (TKA)
- Exclusion Criteria
 - for the purposes of this analysis, patients who were **NOT** opiate naïve
- Random assignment to:
 - standard private hospital room (standard room)
 - private hospital room with architectural improvements (redesigned room);
- Endpoints:
 - mean opiate usage during hospital stay
 - mean percent reduction in pain scale
- Analysis stratified by use of adjunctive analgesia; Student's t-test used to compare means.

Table 1: Mean Opiate Usage

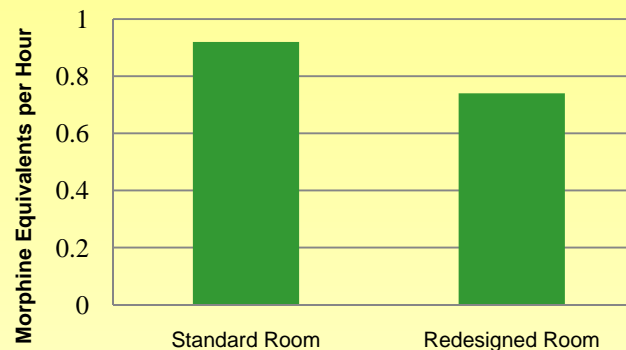
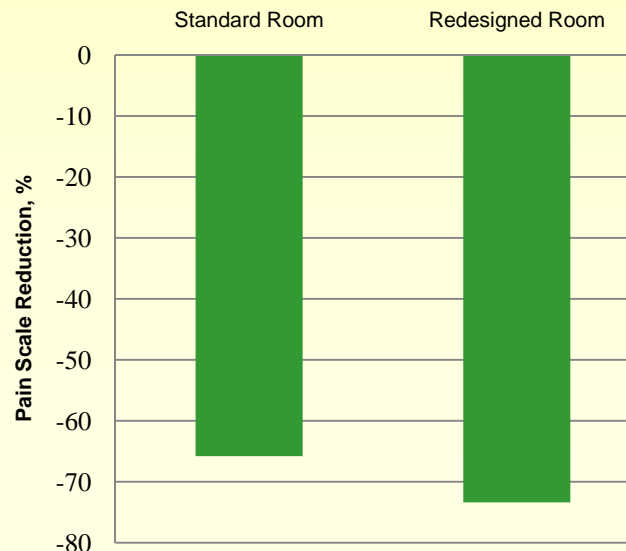


Table 2: Pain Scale Reduction



Results

- 49 patients were enrolled
 - 25 patients in the standard room
 - 24 patients in the redesigned room
 - 35 patients received a peripheral nerve block
- Average length of stay: 70.8 hours (SD=18.44 hours).
- Opiate Usage and Pain Perception:
 - No difference observed in mean opiate usage ($p=0.36$).
 - No difference observed in pain scale reduction ($p=0.19$).
- Results remained not significant when stratified by use of peripheral nerve block.

Conclusion

- Architectural improvements in hospital room design did not significantly impact pain medication usage or patient perception of pain in our preliminary data set.
- This study may have been underpowered to detect a difference.

Disclosure

The authors of this presentation have the following to disclose concerning possible financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation:
Timothy Reilly: Spouse—employee/stockholder—Johnson & Johnson
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