Journal Club
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Background:
Falls in hospitalized patients are widespread and serious.
2% of hosp stays are complicated by a fall
25% of hosp falls result in injury
2% result in fracture
Medicare now eliminates payment for treatment related to falls
Since most falls occur in patients attempting to move without assistance, bed alarms proposed as preventative.
Alarm systems might allow restraint reduction

Hypothesis: A bed alarm intervention program will reduce falls on hospital units

Methods:
Setting: 16 Med-Surg units of Methodist Hospital
Design: Baseline 8 month calculation of fall rate, rank order
Pairs assigned down the order: 1 to intervention, 1 to control
Intervention period May 1 2006-Oct 30 2007
Consent waived
Device – commercial pad – bed or chair positioning
Usual care: admission risk assessment tool; standard hosp protocols,
Nurse interventionist rounded 15 min once/twice week to review standard protocol
Intervention: Educational program about alarms, daily team visits. Unit nursing judgement about patient selection
Outcome: falls: 1) page to fall evaluators, avail 24/7 2) incident reports
Injuries, restraint use (as ordered in EMR–not counting side rails)
Alarm use counted by direct observation, orders
Statistics: pair-matched cluster analysis with nursing unit as base
Risk Ratio \[ \frac{\text{falls on intervention units study}}{\text{falls on intervention units study}} / \frac{\text{falls during baseline}}{\text{falls during baseline}} \]
RR<1 favors intervention
Difference in Differences (DID) for absolute risk
\[ \frac{\text{falls on intervention units during study}}{\text{falls on control units during study}} - \frac{\text{falls on int units at baseline}}{\text{falls on controls at baseline}} \]
Adjusters: staffing, demographics, psychotropic meds

Results:
Figure 1 flow
Table 1 good matching
Figure 2 Very little alarm use on control units (no contamination)
  Increase on intervention unit, which decreased over time
  Insignificant difference in fall rate 5.76 vs 5.11 at baseline, 5.62 vs 4.56
during study period
  Table 2 No differences in fall rate, number of patients who fell, or
  restraint use, no staffing or demographic differences
  No harms described
Discussion: no evidence to support alarm use as a fall prevention measure

Limitations one hospital, selection issues, possible ideal usual care

Comments: Bigger issue in NH: Patient safety versus patient preferences
  Harms: act as restraints
  Sleep reduction
  Staff time for ‘false positives’
  Never really prevention – early case finding