

Using risk analysis to ensure patient's medication safety during hospital relocations and evacuations

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Abstract

Objective: To ensure patient safety and the preparedness of medication processes during hospital relocations and evacuations by using Failure Modes, Effects, and Criticality Analysis (FMECA).

Methods: The relocation of six regional hospitals to a single building, resulting in 400 beds being moved, could be compared with an emergency evacuation. An FMECA was performed on the hospital group's internal medicine and intensive care units (IMU and ICU), examining how medication processes would be affected by a hospital relocation or evacuation.

Results: We identified 59 hospital relocation and 68 evacuation failure modes. Failure modes were ranked based on their criticality index (CI; range, 1-810). The higher the CI, the greater the patient related risk. Average initial IMU and ICU hospital relocation criticality index scores were 160 (range, 105–294) and 201 (range, 125–343), respectively, subsequently reduced to 32 (-80%) and 49 (-76%) after mitigation measures. Average initial IMU and ICU evacuation CI scores were 319 (range, 245–504) and 592 (range, 441–810), respectively, subsequently reduced to 194 (-39%) and 282 (-52%). Most mitigation measures (17/22; e.g., checklists) could be implemented in both situations. Due to their unpredictable nature, five measures were specific to evacuation situations.

Conclusions: This study highlighted the value of using an FMECA on medication processes to anticipate potential negative impacts on patient safety during hospital relocations or evacuations. Preparation for a hospital relocation can provide useful knowledge and an opportunity to test mitigation measures that might prove useful in evacuations.

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