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Executive summary

Design Powered By Research

Improving Patient &
Caregiver Safety Through
Evidence-Based Design

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When hospitals design and implement changes into their environment of care, there is an opportunity to address and solve some of the current clinical problems they face. Bed frames – which can be a solution to these challenges – are a critical element within the environment of care, and warrant careful consideration to ensure optimum selection is achieved for each individual patient.

In this white paper, three key facets of care are explored that should be considered when selecting a bed frame for your patient population: **fall and injury prevention, optimized clinical workflows** and **patient mobility in conjunction with caregiver ergonomics**.

It is the opinion of the author, if hospitals gain a better understanding of the risk factors related to patient falls and staff injuries – and acquire beds which better consider the needs of the patient – significant progress can be achieved in improving patient and caregiver safety in the environment of care.

Magnitude **of the problem**

Fall and injury prevention

Problem

Each year, between 700,000 and 1,000,000 people in the United States fall in the hospital[1]. Approximately one third of falls lead to patient harm with 4-6% of those resulting in serious injury[2]

Solution

Achieving a low bed position is important and was designed to help reduce the severity of injuries when patients fall from bed. Additionally, beyond the concept of bed exit alarms, monitoring could also include alerts for other indicators related to the bed, such as bed height or side rail configuration, which could put the patient at a higher risk for a fall[3].

Clinical Workflow and Technology

Problem

Most falls occur in the patient's room (50-85%) on or near the bed while unassisted (79%)[2,4]. Monitoring of patients can be labor intensive and difficult to implement with limitations of available staff.

Solution

Integrating wireless bed communication, bed data, and bed exit alarm systems offers hospitals a proactive approach for improved fall prevention programs and compliance to best practices in prevention[3].

Patient mobility and caregiver ergonomics

Problem

Patients depend on their caregivers for mobility needs and physical demands consequently place risk on both the patient and the caregiver. Evidence indicates many patients are being assisted from supine lying to sitting up using manual techniques, which is placing the caregivers at risk of injury[5-6].

Solution

Providing optimum ergonomic bed siderail design facilitates safe mobility practices for both the patient and the caregiver by providing accessible grab points that serve as a patient aid to facilitate mobility tasks, such as supine to sit and sit to stand[3].

Seeking improvements **through proper bed selection**

Integrating proper design features into bed frames can be a very important factor to encourage patient mobilization and minimize risk factors related to patient falls. When selecting beds for the care environment, some important considerations related to facilitating mobilization and preventing falls are as follows:[3]

- A bed exit alarm system which employs the **latest sensor technology** and can be **customized per a patient's fall risk** identified during assessment.

- Ability to achieve a very **low position**, which can reduce the potential severity of injury if a patient were to roll out of bed.

- Technological solutions using **wireless communication** and smart bed technology to help enhance the benefits of **monitoring bed status** and can be integrated with the bed exit alarm system, nurse call and other communication systems in the hospital.

- Ability to easily achieve **optimum bed egress height** and position for each individual patient.

- One touch, on-the-bed control that automatically positions the bed at the **optimum egress height for the general patient population**, with the ability to make minor adjustments as needed to accommodate smaller and larger patients.

- Bed siderail design, with **accessible grab points to facilitate mobility** and safe bed egress for both the patient and the caregiver.

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Dr. Fragala has over 45 years of experience as a healthcare professional and is recognized as one of the pioneers of Safe Patient Handling and Mobility efforts in the United States. He has lectured throughout the world and is a recognized international expert in the application of ergonomics to the healthcare setting and has influenced much of the work today related to healthcare ergonomics and safe patient handling and mobility programs.

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