Wadsworth Fall Injury Prevention Device

Lead Lankenau Institute for Medical Research Inventor

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Unmet Need

Falling is a significant cause of mortality or injury among patients recovering from surgery, the elderly and the infirm, especially within a hospital or a caregiving facility. In-patient falls cost US health systems over $34 billion annually.[1]

Despite the prevalence of fall reduction programs in hospitals, fall rates in US hospitals range from 3.3 to 11.5 falls per 1,000 patient days.[2] Multiple internal and external studies show falls and the resulting injuries very frequently occur in the bathroom[3] during toileting activities. On average, patients who sustain a fall while at the hospital incur costs over $13,000 greater than patients who do not fall.[2] With implementation of the Centers for Medicare and Medicaid Service No-Pay Policy for expenses related to hospital-acquired falls, hospitals are responsible for all fall-related costs.

While there are many devices and procedures to prevent falls (such as handrails, risk assessment, and toileting supervision), hospital and long-term-care facility management and staff believe there is an urgent need for a fall-prevention device that can be used in facility bathrooms.

The Wadsworth Fall Injury Prevention Device, which is designed to detect, protect, and prevent injury in the case of a fall, is that solution.

Opportunity

Injuries and death due to falls are an issue that every hospital in the world faces. An estimated 1 million falls occur in North American hospitals annually.[3]

The increasing age of the US population all but ensures hospital costs associated with falling incidents will increase in the future if more robust injury-prevention measures are not put in place. Current fall-reduction programs are insufficient, as even with caretaker visual supervision and a risk-assessment grading system in place, a substantial number of costly falls still occur in hospital bathrooms.

This unique fall-prevention device easily can be used in any hospital bathroom or patient room and will reduce the need for supervision during toileting activities, thus improving patient safety. With the Wadsworth Fall Injury Prevention Device, hospital fall-reduction programs will no longer have to focus solely on preventing a fall, but also could help patients avoid injury in the case of a fall. Injuries related to falling incidents in hospital bathrooms no longer need to be a part of the inherent cost of doing business as a hospital.

The inventor, and industry specialists, believe the device provides a global market opportunity.

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[1] Falls Cost U.S. Hospitals $34 billion in Direct Medical Costs; Johns Hopkins Medicine Healthcare Solution. April 22, 2015.
[2] Falls Among Adult Patients Hospitalized in the United States: Prevalence and Trends. Bouldin EL, et al. J Patient Saf. March 1, 2013.
[3] Main Line Health System internal study. November 2019.

Invention Description

The device comprises a sensor capable of detecting when an individual is in a fall condition and a compact airbag / cushion-deployment device that can be mounted in various at-risk areas around a bathroom or positioned in a movable device on the floor.

When the sensor detects a patient in a fall condition, it quickly transmits data to the appropriate airbag-deployment module that releases the airbag, preventing an injury during the fall.

This device can be used to both ensure that patients are safe from falling in an unsupervised context and to prevent injury or death should a fall occur while a patient is being supervised.

Unique Attributes

The inventor, Barbara Wadsworth, is Senior Vice President of Patient Services and the Chief Nursing Officer of Main Line Health. Dr. Wadsworth has over 30 years of executive nursing experience and in her current role is responsible for the leadership of all areas of patient care services throughout the 5-hospital, 10,000-employee, 1,240-bed health system.

As an industry leader in developing and implementing fall-protection protocols, she designed the fall prevention device to offer a utility currently unavailable on the market. Its features include:

- A sensor system capable of receiving, analyzing and transmitting data that can recognize and respond instantly to a fall condition.
- Dynamic airbag deployment modules that are versatile and are designed to be adaptable for installation in various physical iterations to adapt to the variations among various different healthcare facility environments.

Clinical Applications

- Bathrooms in all acute care, rehabilitation and long-term-care hospital settings.
- Other rooms in hospital-care settings where falling risk is increased, such as proximate to beds.
- Potential exists for modification to be valuable in homes and residential facilities.

Stage of Development

Conceptual prototype.

Intellectual Property

Patent pending: US Provisional Patent Application has been filed.

Collaboration Opportunity

Seeking partner or licensee for commercial development. Hospital system available for clinical trials.

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