

Case Study:

Barnes-Jewish Hospital

Barnes-Jewish Hospital Implemented Bed-Check® Fall Management Solution as Part of Fall Reduction Program, Resulting in Decreased Fall Injury Rates and Improved Staff Satisfaction

Overview

The Need

Patient falls were the largest category of adverse events reported at Barnes-Jewish Hospital. Progress in meeting targets for reducing falls and fall injury rates had been static despite multiple efforts. One component of the hospital's Fall Reduction Program was a portable bed exit alarm system—a Bed-Check Classic-Check® control unit (CU) with Sensormat® pressure sensitive mat—widely used throughout the hospital. Due to high demand by staff, the CU was often not available, resulting in delayed care delivery and staff dissatisfaction. Loss or damage due to handoff between staff and the central service department resulted in additional resources and costs.

The goals: to examine the effect on patient falls and fall related injuries by mounting the CU above the patient bed, and to investigate whether staff would recommend other divisions to have the device mounted.

The Solution

To begin the controlled test, portable bed exit alarm devices were mounted and secured above each bed on 2 medical nursing divisions (intervention units).

The Results

In six months, the fall rate on one intervention unit decreased from 4.48 to 1.96. The other intervention unit saw a slight decrease in their fall rate during the same time period (3.89 to 3.68); however, their injury rate decreased significantly from 1.56 to 0. Additionally, mounting the Classic-Check CU above the bed reduced costs related to loss and damage of units, improved staff satisfaction, and decreased resources needed to catalog and track the devices.



About Barnes-Jewish Hospital

Barnes-Jewish Hospital was formed by the 1996 merger of Barnes Hospital and The Jewish Hospital of St. Louis, Missouri. Barnes-Jewish provides 1,167 staffed beds and is the adult teaching hospital for Washington University School of Medicine. A member of BJC HealthCare, Barnes-Jewish has achieved The Joint Commission Accreditation Gold Seal of Approval and has been ranked among the best hospitals in America by *U.S. News & World Report* for 20 years.

Solution Implemented

- Bed-Check Fall Management

Strategy

A six month trial was undertaken, in which the Classic-Check CU of the bed exit alarm system was secured in a holster and mounted above each patient bed on two medical nursing divisions (14500 and 12200, the intervention group). A total of 43 CUs were mounted. The usual standard of care was practiced on each of their sister divisions (14400 and 12100, the control group), whereby staff retrieved the system from the division supply room. If the system was not available, an order was placed to the hospital central service department.

Prior to installation, Barnes-Jewish Hospital's Clinical Engineering inspected each CU. Carpentry provided hardware for mounting the holsters to the wall, and housekeeping staff were inserviced on cleaning the CUs and disposal of the Sensormats after discharge.

Monthly fall rates and fall injury rates (per National Database of Nursing Quality Indicators definitions) on the four divisions were tracked. Staff surveys were distributed on the intervention group divisions regarding whether they would recommend other divisions to have the device mounted above the bed.

By mounting a control unit above each bed and storing a Sensormat pressure sensitive mat at the point of care, use of the Bed-Check alarm system became more proactive.



Wall-mounted Classic-Check control unit above a bed



Sensormat pressure sensitive mat installed and ready for use



Results and Conclusions

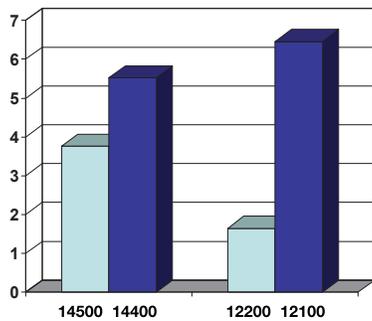
The Mann-Whitney U test was used to compare fall rates and injury rates between the intervention and control groups:

- Mean fall rates and injury rates were lower in the intervention group.
- There was a significant difference in the number of falls ($p = .015$) and the fall rate ($p = .01$) on one pair of sister divisions (12200 / 12100).
- There was a significant difference in the number of injuries and injury rate ($p = .02$) on the other pair of sister divisions (14500 / 14400).

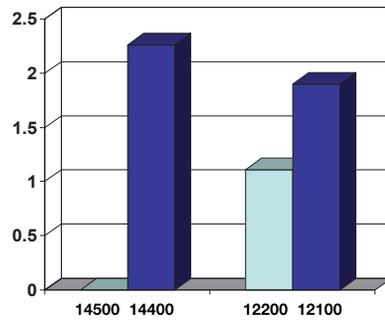
Mounting the CU of the Bed-Check bed exit alarm system at the point of care had a positive effect on fall rate and injury rate. Division ownership for the CUs improved staff accountability and monitoring of the equipment. Management, cleaning and distribution of the CU by the central service department was eliminated, and the Bed-Check alarm system was used more proactively.

Of the eight staff surveys returned, 100% recommended other divisions to have the device mounted above the bed.

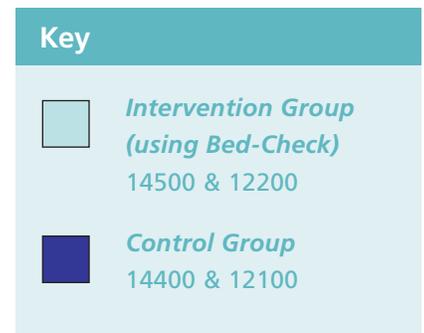
Following the trial, an additional 9 divisions, including the control group, had wall-mounted CUs above the bed.



Mean Fall Rate, January–June 2009



Mean Injury Rate, January–June 2009





Lessons Learned

Guidelines were developed from the trial that worked best for Barnes-Jewish:

- Mount the CU to the wall with hardware vs. adhesive.
- Zip tie the CU to the holster, stencil CU with division name and place a “Do not remove” sticker.
- Determine location of the CU on the wall to accommodate use of the alarm in the chair.
- Utilize the 8 ft., as opposed to 5.5 ft., cord length Sensormat.
- Store the Sensormat at the point of care.
- Inform hospital staff that interact with the system about the intervention.

For limitations of this trial, falls were self-reported events. Although each pair of sister units were similar regarding nurse manager, staff, patient population and had similar fall and injury rates, they were not statistically matched.

// *Of the eight staff surveys returned, 100% recommended other divisions to have the [Bed-Check] device mounted above the bed.*

About STANLEY Healthcare

STANLEY Healthcare provides over 5,000 acute care hospitals and 12,000 long-term care organizations with enterprise solutions that transform safety, security and operational efficiency. The STANLEY Healthcare solution set enables customers to achieve organizational excellence and superior care in five critical areas: Patient Safety, Security & Protection, Environmental Monitoring, Clinical Operations & Workflow and Supply Chain & Asset Management. These solutions are complemented by consulting, training, implementation and integration services. STANLEY Healthcare is proud to be part of Stanley Black & Decker, Inc. For more information, visit www.stanleyhealthcare.com.

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