

Over the Bed and Out of the Woods

Bed exit alarms at the point of care reduce patient falls

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Introduction

Patient falls are the largest category of adverse events reported in our 1,200 plus bed tertiary care academic medical center. Progress in meeting targets for reducing fall and fall injury rates was static despite multiple efforts. One component of our Fall Reduction Program includes a portable bed exit alarm system (Bed-Check® Classic-Check® control unit [CU] with Sensormat® pressure sensitive mat [PSM]).

The alarm system is widely used throughout the hospital. Due to high demand by our staff, the CU was often not available, resulting in delay in 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 goal of this project was to examine the effect on patient falls and fall related injuries by mounting the CU above the patient bed. An additional goal was to investigate whether staff would recommend other divisions to have the device mounted.

Strategy

- A 6 month trial began in December, 2008 whereby the 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, 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, 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, Clinical Engineering inspected each CU. Carpentry provided the hardware for mounting the holsters to the wall and housekeeping staff were in-serviced on cleaning the CUs and disposal of the PSMs after discharge.
- Monthly fall rates and fall injury rates (per NDNQI definitions) on the 4 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.

Continued on reverse



Control unit (CU) secured in wall mounted holster



Pressure sensitive mat (PSM) 29 x 3.5 in. with 8 ft. cord length

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continued

Results

- 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).
- 100% of the staff surveys returned recommended other divisions to have the device mounted above the bed.

Conclusions

- Mounting the CU of the bed exit alarm system at the point of care had a positive effect on fall rate and injury rate.
- Division ownership for the CUs has improved staff accountability and monitoring of the equipment.
- Management, cleaning and distribution of the CU by the central service department was eliminated.
- The alarm system is used more proactively.
- Since this trial, an additional 9 divisions, including the control group, have wall mounted CUs above-the-bed.

Lessons Learned

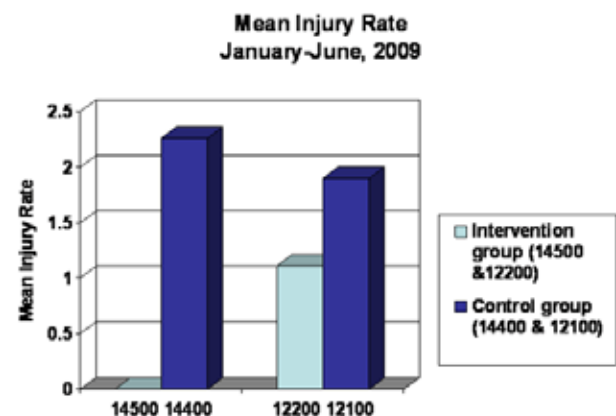
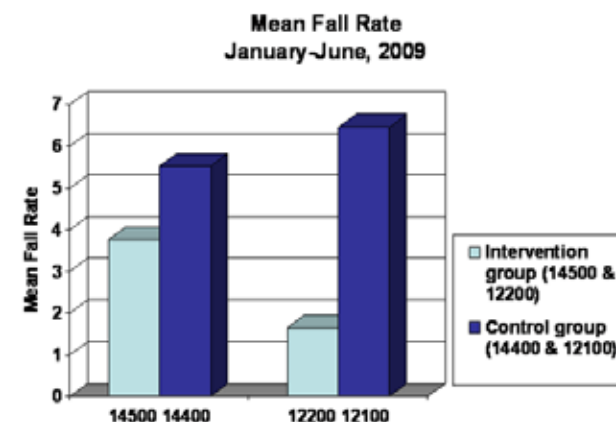
- Mount the CU to the wall with hardware vs. adhesive.
- Zip tie the CU to the holster, stencil CU with division name and place a "Do not remove" sticker.
- Determine location of the CU on the wall to accommodate use of the alarm in the chair.
- Utilize the 8 ft. vs. 5.5 ft. cord length PSM.
- Store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



Limitations

- Falls are 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.

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