The Implementation of Call Bells and Exit Alarms on a Psychiatric Unit

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Introduction

Basic overview of project

- Communication is difficult between staff & patients considered high fall risks.
- Here we implemented call bells and exit alarms on a psychiatric unit for patients identified as fall risks, monitoring:
  - Falls prevented
  - Where they prevent falls
  - If nurses felt they improve communication between nursing staff & patients and work load
- Analysis: pre/post fall scores and survey of nursing staff
- Implications:
  - Change practice and impact outcomes
  - Support their use in the psychiatric setting
  - Prevent unnecessary falls
  - Savie hospitals from reduced reimbursement or costly fall treatment

Background

Problem

- Greater rates of falls in psychiatric units (Scanlan, 2012)
- Unique influences of falls in psychiatric units:
  - Psychiatric medications cause falls due to:
    - Altering awareness of surroundings, gait, body awareness, changes in mental status (Xu, 2015)
  - Medical medications that cause falls as well (Lavsa, 2010)
  - Degenerative brain disorders like Alzheimer's and Parkinsons (McMinn, 2016)
  - Delirium from withdrawal alcohol and benzodiazepines (McMinn, 2016)

Need/Feasibility Assessment:

- Falls happen regardless of current interventions
- Call bells/exit alarms are used at other Psychiatric Units in the Hospital System but have not been tested

What we currently know:

- There are very few studies on implementing fall prevention strategies in mental health (Bunn F, 2014)
- Call bells reduce falls (Hoke, 2016)
- Exit alarms reduce falls and work load (Subermaniam, 2017)

Significance

- Call bells and exit alarms are effective and practical in psychiatric units in reducing falls.
- RWJBH hospitals that already use these should continue to.
- Reduced painful and physically harmful falls
- Prevention of reductions in reimbursement/cost of falls for hospitals
- Change in practice/policy to include them for fall safety not only hospital but system wide

Methods

Phase 1 (education)

- proper use of call bells and exit alarms
- when it may not be appropriate to use them
- study documentation (handouts, presentation, and demonstration)

Phase 2 (deployment)

- Provided patients who score as high on the Wilson Sims Falls Scale (7 or greater) with call bells (bedside/bathroom) and exit alarms (bed and/or wheelchair)
- Nurses wrote in a paper log who received/did not receive the call bells and exit alarms and why.
- Hospital data from 4 months before and after implementation was collected including the number of falls in each of the categories of where falls occurred

Phase 3 (survey)

- RN staff received a questionnaire discussing their opinion of the effectiveness of using call bells and exit alarms, if they improve communication, and their effects on work load.

Phase 4 (Data analysis)

- primary outcomes of interest are the number of, and locations of falls during the two 4 months periods before and after implementation of the intervention compared with frequencies and percentages.
- Analyses took into consideration the reasons for patient exclusions from participation.
- Separate analyses examined nurses' perceptions of the communication between nursing staff & patients, falls prevention, and work load.

Example Patient Log Book Page
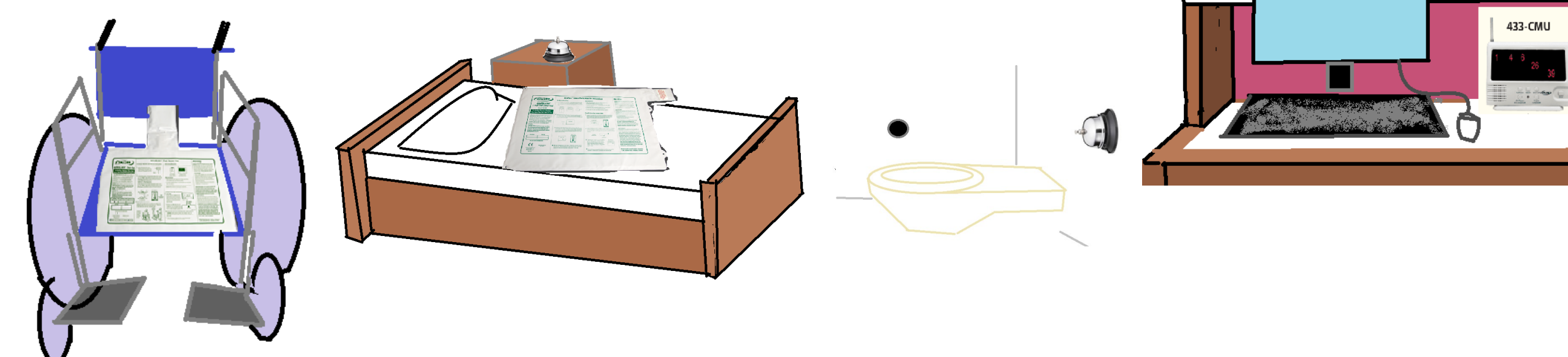
Exan Instructions: If patient meets criteria of 7 or higher on the Wilson Sims just place the patient's information sticker and date. If the they have a 7 or higher but are not given call bell and/or exit alarm circle one and fill in the black if necessary.

Sticker	Date	If meets criteria but not given call bell and/or exit alarm
"Example"		a. Patient was agitated and may throw device b. patient unwilling to sleep in the bed c. Patient unwilling to use the devices d. Only using the call bell or only using the bed alarm
	4/7/19	because:_____
		e. other with a fill in the blank_____

Nursing Staff Survey

Do you feel that using call bells and exit alarms was helpful to communicate your patients' needs?

A. Yes   B. No   C. Maybe

why do you feel that way?

_____

Results

	June 26, 2019 to October 26, 2019	October 27,2019 to February 27, 2020
Demographic Information for all high fall risk patients		
Gender female	28	12
Gender male	38	19
Gender female percentage	42.4	38.7
Gender male percentage	57.6	61.3
Average age	51.7	48.6
Demographic Information for those who fell (excluding falls due to seizure)		
Gender female	3	0
Gender male	3	2
Average age	55.6	62
Total falls including seizures	6	3
Total falls not including seizures	6	2
Total falls in those that received the intervention	NA	1
Total number of patients scoring 7 and above	66	31
Location (excluding falls due to seizure)		
Bathroom and bathroom	6	0
Outside of the room	0	2
Location (Bathroom vs Bedroom)		
Bathroom	4	0
Bedroom	2	0
Total Number of Patients that did not receive the interventions		5
Total Number of Patients that received the interventions		26
Number of Patients that received only call bells		4
Number of Patients that received only exit alarms		2
Number of Patients that received both interventions		20
Ratio of falls (not including seizures) in high fall risk patients : total number of high fall risk patients	0.09	0.06
Ratio of falls in high fall risk patients who had outside the room related falls (not including seizures) : total number of high fall risk patients	0	0.06
Ratio of falls in bathroom and bedroom (not including seizures) in high fall risk patients : total number of high fall risk patients	0.09	0
Ratio of falls in high fall risk patients who had bathroom related falls (not including seizures) : total number of high fall risk patients	0.06	0
Ratio of falls in high fall risk patients who had bedroom related falls (not including seizures) : total number of high fall risk patients	0.03	0
Ratio of falls (not including seizures) in high fall risk patients who received both interventions : total number of high fall risk patients	N/A	0.03

Reasons for removal

a. Patient was agitated and may throw device	0
b. Patient unwilling to sleep in the bed	0
c. Patient unwilling to use the devices	3
d. Only using the call bell or only using the bed alarm	6
e. Other with a fill in the blank	2

Survey Data

	Total	Percentage
Do you feel that using call bells and exit alarms was helpful to communicate your patients' needs?		
A – yes	14	73.7%
B – No	0	0%
C - Maybe	5	26.3%
Do you feel call bell and exit alarms helped to prevent patients from falling?		
A – yes	15	78.9%
B – No	0	0%
C - Maybe	4	21.1%
Do you feel exit alarms or call bells, both, or neither are more effective in preventing falls?		
A – Call Bells	2	10.5%
B - Exit Alarms	2	10.5%
C – Both Call Bells and Exit Alarms	14	73.7%
D – Neither Call Bells or Exit Alarms	1	5.3%
Do you feel that using call bells and exit alarms has reduced your work load?		
A – yes	5	26.3%
B – No	7	36.8%
C - Maybe	7	36.8%
Total number of nurses	41	
Total number of respondents	19	
Percentage of respondents		46%

Discussion

- Total falls were fewer 4 months after the implementation compared to the 4 months prior.
- Falls in the bedroom bathroom reduced.
  - Although these results did not establish significance due to the length of the study, limitations on number of participants, and related falls.
- Patients in general did not refuse to use call bells and exit alarms and very few used them inappropriately and did not receive them or had them taken away
- The majority of staff express that they are effective.
- It is undecided if nurses felt that call bells and exit alarms reduce overall workload

Implication

- Call bells and exit alarms in patients who are high fall risk:
  - May be effective tools
  - Are accepted by nurses
  - There is evidence to further study them.
- The unit has decided to continue their use, but further expanded testing is necessary to substantiate significant results of the falls reduction.
- After further testing, could spread their use throughout the hospital system.
  - This has the potential to save money on costly falls and reductions in reimbursement, which should also be studied in the future.
- Further study is needed to provide significant results that support improvements in patient care and safety with fewer falls and potential cost savings for the hospital system.

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