



Reducing Fall Rates in Rehab Units: A Success Story From VA North Texas Health Care System

In October 2019, the VA North Texas Health Care System faced a significant challenge: an average fall rate of 4.13 falls per 1,000 patient days, compared to the National Database of Nursing Quality Indicators (NDNQI) average of 2.5. This high fall rate posed a serious risk to patient safety, leading to potential injuries, increased length of stay and higher medical costs.

Key Factors Contributing to High Fall Rates Identified by Hospital Leadership:

- **Incapacity for patients to call for assistance** due to confusion and forgetfulness.
- **Limited ability to maintain privacy** for patients while using the restroom while also monitoring them without being in the restroom with the patient.
- **Inconsistent use of purposeful hourly rounding** using the 5P's (Pain, Potty, Position, Possessions and Plan).

Objectives:

In May 2020, the facility implemented the Parasol Wireless Fall Prevention system in a 30-bed rehab unit with the aim of enhancing patient safety and reducing fall-related injuries. The primary goal was to lower the fall rate from 4.13 to the national average of 2.5. To achieve this, the facility used the Parasol wireless chair sensor, commode/toilet sensor and seatbelt exit alarm sensor. Additionally, leadership aimed to improve the nurse call light response time, which averaged 1 minute and 20 seconds before the intervention.

Improving Patient Safety While Also Improving Patient Privacy:

VA management recognized that their existing practice of having staff present in the restroom with patients was not being adhered to, as patients were uncomfortable with staff watching them. Consequently, staff would leave patients alone to maintain their privacy. However, without direct visual monitoring or another method to ensure patient safety, patients often attempted to get off the toilet to dress themselves, leading to falls. To overcome both the privacy and patient monitoring challenges, the Parasol wireless commode/toilet sensor was implemented.

Engaging Staff by Driving a Culture of Safety:

To develop a sustainable hospital fall prevention program, leadership identified the importance of not only using the right products but also fostering a culture that prioritizes staff-driven fall prevention.

Education and Data-Driven Decision Making:

To enhance the success of the fall prevention initiative, the team implemented several education and training measures:

- Formed an interprofessional collaborative fall prevention team, headed by a fall champion within the Rehab unit.
- Educated and trained 65 nursing staff on the Parasol Wireless Fall Prevention System.
- Developed audit tools to monitor weekly progress and drive success.
- Re-educated staff on the facility's fall prevention protocols and appropriate interventions.

Trial Data Summary: Proven Success in Fall Prevention:

- **Reduced Falls:** During the three-month study, the total fall rate decreased from 4.13 to 1.49 in the Rehab unit, a 64% reduction.
- **Faster Staff Response Time:** The staff call light response time decreased from 1 minute and 17 seconds to 59 seconds, a 23.5% reduction. This means staff were alerted and addressed the patient almost 20 seconds faster.
- **Reduced Injuries and Cost Savings:** The facility reported approximate cost savings of over \$170,000 by preventing just five falls during the study period.

U.S. Department of Veterans Affairs
Veterans Health Administration
VA North Texas Health Care System

Fall Prevention by Utilizing Parasol Chair/Commode Alarm in Rehab

Introduction

Fall Statistics:

- ❑ More than 800,000 patients per annum require hospitalization due to a fall injury (AHRQ, 2017).
- ❑ Over 95% of hip fractures are the result of a fall.
- ❑ Falls are the number one cause of traumatic brain injuries.
- ❑ Across U.S. hospitals, there were between 3.3 to 11.5 falls per 1,000 patient days (CDC, 2017).

Medical Costs:

- ❑ A hospital fall: \$4,294 dollars approximately (AHRQ, 2017, Masahiro, 2018).

Goal/Objectives

Goal:

- ❑ To reduce the falls in 30-bed rehab unit from 4.13 to 2.5 by utilizing the Chair/Commode/ Seatbelt Exit alarm at the end of September 2020.

Objectives:

- ❑ To prevent risk of patient safety and injury from falls by developing a sustainable hospital fall prevention program.
- ❑ To improve the call light response time.
- ❑ To reduce the cost for falls with injury.
- ❑ Engage staff to drive a culture of safety by
 - ❑ Recognizing the high fall risk Veterans.
 - ❑ Activating the bed alarm/Chair/Commode/ Seatbelt alarm.
- ❑ Hourly rounding using 5 Ps such as Pain, Potty, Pumps, Preferences and Position.

Background

Problem Statement:

Since October 2019, Rehab at VA North Texas Health Care System has had an average fall rate of 4.13 (Falls per 1,000 patient days) compared to the (NDNQI) fall rate (National Database of Nursing Quality Indicators) of 2.5, resulting in a continued risk of patient safety and opportunity for significant injury causing in an increased length of stay and increased medical costs.

Root Cause Analysis:

- ❑ Incapacity of the Veterans to call for assistance due to confusion and forgetfulness.
- ❑ Limited ability to maintain the privacy of the Veterans while using the restroom
- ❑ Inconsistent use of purposeful hourly rounding process using 5Ps.

Method

- ❑ Pilot Chair/Commode/Seatbelt exit Alarm from May 2020 to September 2020 to alert the nursing staff to respond immediately to Veterans' needs.
- ❑ Interprofessional collaborative fall prevention team formed in Rehab.
- ❑ Educated and trained 65 nursing staff in Rehab on chair/Commode/ Seatbelt alarm usage, cleaning, storage and reuse.
- ❑ Created audit tool for checking weekly.
- ❑ Re-educated the staffs on facility fall prevention protocol and interventions per policy.

Criteria for Inclusion:

- ❑ One of the following three criteria including the Morse Fall Scale higher than 45.
 - ❑ Criteria 1: Age greater than 75/ CVA old/new/ One-person assistance
 - ❑ Criteria 2: Dementia or confused
 - ❑ Criteria 3: History of falls

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Parasol Chair/Commode/Seatbelt Alarm

Chair pad
 Seatbelt
 Monitor
 Nurse Call
 Commode Pad

Video: <https://youtu.be/6zNayqtHUCao>

Conclusion

The wireless fall prevention system is an additional resource to reduce falls in high-risk patients. The utilization of the wireless chair/commode/ non-restraint seatbelt was effective to decrease the fall rate in a 30-bed rehab unit.

Follow-up Actions:

- ❑ Continue to utilize the Chair/Commode/ Seatbelt exit alarm in Rehab
- ❑ Fall Champion continues to audit weekly.
- ❑ Begin replicating fall prevention interventions to acute care units.
- ❑ CNL continues to see the Navicare call light response data and fall data post implementation.
- ❑ Fall Prevention Meeting monthly.

Acknowledgement

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Features of Parasol Fall Prevention System

Patient Fall Prevention System

Pad Sensor Quick Start

Bed Pad Positioning

- Place pad across the width of the mattress, parallel the head end.
- Position the sensor pad so that the sensor detects in the center of the pad.
- Chair pad and the bed pad should not overlap.
- Do not fold or tuck the pad in the way showing sensor located.
- Connect the pad to the monitor bed pad pin in use.

Chair Pad Positioning (Over Wheel Chair)

- Place the pad across the width of the chair, parallel to the center of the pad.
- Position the sensor pad so that the sensor detects in the center of the pad.
- Do not fold or tuck the pad in the way showing sensor located.
- Connect the pad to the monitor bed pad pin in use.

Potty/Commode Pad Positioning

- Place the pad on the top of the commode, parallel to the center of the pad.
- Position the sensor pad so that the sensor detects in the center of the pad.
- Do not fold or tuck the pad in the way showing sensor located.
- Connect the pad to the monitor bed pad pin in use.

Testing Pads

- Select bed and chair for the sensor.
- Verify sensor is in the correct position.
- Verify the sensor is in the correct position.
- Remove sensor from sensor area about 200mm without stopping.
- Verify message is received, padlock and indicator turn on.

Mounting Options

- Mount the sensor on the wall or on the top of the bed.
- The sensor should be in a well-ventilated place.
- Do not use the sensor in a high humidity area.
- Place the sensor in a safe, stable, and secure place.

(Parasol Medical LLC, 2019)

Results

❑ From May 2020 of Pilot Study to September of 2020, the fall rate decreased from 4.13 to 1.49 in Rehab.

❑ Call light response time decreased from 1.17 to 0.59 seconds.

❑ The approximate cost saving is 171,470 dollars for five hospital fall.

Results

Rehab Fall Rate

Month	Fall Rate
May 2020	4.13
Jun 2020	2.50
Jul 2020	2.50
Aug 2020	2.50
Sep 2020	1.49

Call Light Response Time

Call Light Response Time in Rehab

Month	Call Light Response Time
May 2020	1:17
Jun 2020	1:00
Jul 2020	1:00
Aug 2020	1:00
Sep 2020	0:59

Continued Improvement:

Following the three-month study, leadership continued to track fall metrics and call light response time. Both metrics saw significant improvement as staff became more familiar with the system. From September 2020 to December 2020, the Rehab unit saw a fall rate of zero in three of the four months. Staff call light response time continued to drop, reaching 42 seconds in December 2020, an improvement of 35 seconds from the pre-study time of 1 minute and 17 seconds.

Impact on the Hospital:

The implementation of the Parasol wireless fall system at the VA North Texas Health Care System's rehab unit not only significantly reduced fall rates but also improved response times and generated substantial cost savings. This study highlights the importance of innovative solutions and consistent monitoring in enhancing patient safety and care quality. The success of this initiative has had a profound impact on the hospital, demonstrating the value of investing in advanced technology and fostering a culture of safety. The reduction in fall rates and improved response times have led to better patient outcomes, decreased length of stay and lower medical costs, ultimately contributing to the overall efficiency and effectiveness of the healthcare system.

To learn more about our patient-safety innovations, please [contact us](#).