CASE STUDY:

Preventing Falls with Hello Nurse®

Wireless Patient Monitoring System

Major Benefits:

- Health and well-being of residents
- Operational efficiencies for staff
- Cost savings for facilities
- Performance data for administrators
- Supporting evidence to defend against potential litigation

According to the CDC, nursing home residents fall frequently. About 1,800 older adults living in nursing homes die each year from fall-related injuries and those who survive frequently sustain injuries that result in permanent disability and reduced quality of life. Fear of falling can cause further loss of function, depression, feelings of helplessness, and social isolation.

The problem is a big one. More than 1.4 million people 65+ live in nursing homes. That's about 5% of that population, but nursing home residents account for about 20% of deaths from falls in this age group. Each year, a typical nursing home with 100 beds reports 100 to 200 falls. Many falls go unreported.

Between half and three-quarters of nursing home residents fall each year. Residents often fall more than once. The average is 2.6 falls per person per year. About 35% of fall injuries occur among residents who cannot walk.

This is one of the major challenges we are trying to address with the Hello Nurse® Wireless Patient Monitoring System.

Help is on the way.

OBJECTIVE:

A clinical study was conducted to measure the effectiveness and operational characteristics of an innovative new device intended to reduce the incidence of falls in elderly nursing home residents at high risk of falling. The complete **Hello Nurse** system consists of both software and hardware. A pressure pad (for chair or mattress) detects the movement of a resident, as they may be attempting to stand. An alert is transmitted wirelessly to both a pager or cell phone carried by the on-duty staff member and the **Hello Nurse** central monitoring screen displayed on any PC or laptop running Windows XP or higher available at the Nurses' Station. The software features a "Grid/ Matrix" view of sensor status, a "Floor Plan" view of sensor status, a Sensor/Patient event log, Detail and Summary Reports, as well as a Quick Glance Patient Summary.

The pads are waterproof, shockproof, and unobtrusive. Once the system is set by having the resident put weight on the chair or bed, the sensor will send an alarm when the weight of the resident is removed, such as when he or she attempts to get out of bed or stand up. Because most residents struggle or make multiple attempts to stand, the alerts which are usually triggered at the first attempt, give the caregivers ample time to respond. There is no audible signal at the site of the pad in order not to alarm or frighten the resident. Instead, the caregiver is summoned by the audible signal emitted by the pager or cell phone. The alert sends the resident's name, room number and the type of alert, so that the caregiver knows exactly where to go, who to look for and what, if any, supplies to bring.

DESIGN:

The study was designed to compare the fall rates of residents while being monitored by the Hello Nurse system with the fall rates of residents not being monitored AND typical fall rates experienced at the facility without the system in place. The residents selected to participate in the study were at the highest risk for falls, as determined by staff based on their observations and experience. Selected residents were monitored for fall activity for a four month period from March 1, to June 30, 2015. The fall rates were compared to those of unmonitored residents as well as to fall rates during the previous four month period from November 1, 2014 to February 28, 2015.

PARTICIPANTS:

The study was conducted between March 1, 2015, and June 30, 2015, in a 66-bed Skilled Nursing Unit of a Continuing Care Residential Community in western Pennsylvania. The Hello Nurse system was installed on two of the three floors of the facility. These floors housed residents with the highest risk for falls. The number of residents being monitored each month varied slightly. Therefore, the fall rates are reported in the aggregate.

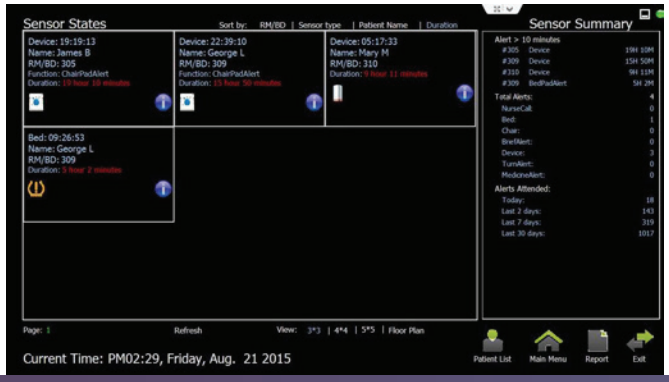
MEASUREMENTS:

The main outcome measure was comparative fall rate per month for residents with and without monitoring. Qualitative observations, including degree of caregiver and resident/family acceptance of the system, were also included.

The results indicate that among the monitored residents over the course of the study, six falls occurred, compared to the 54 falls experienced by the unmonitored residents. Also potentially significant is the number of alerts over the four-month period. The 12,563 alerts spread over the 2,928 total hours of the monitoring study (122 days multiplied by 24 hours per day) indicates an average number of alerts of 23.3 per hour. Each of these represents a potential fall occurrence.

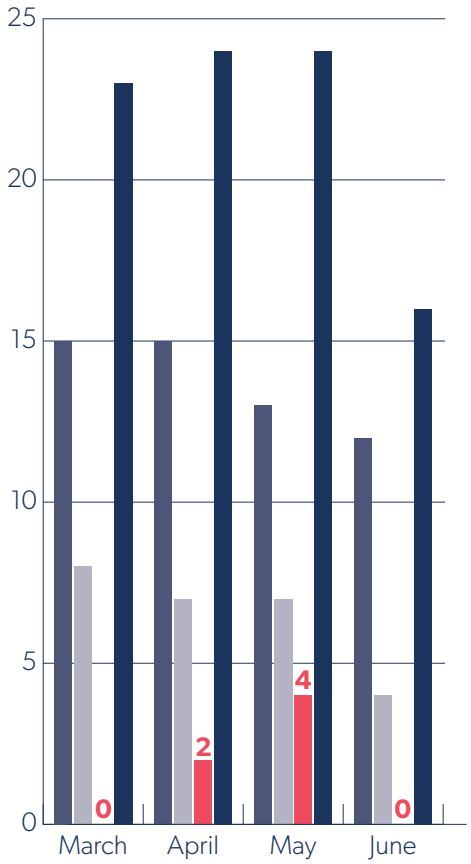
"When I visited my mother and saw that some other residents were on a fall prevention system, I asked to have Mom included. It seemed so smart to me. I didn't see any reason not to have it!"

K.S.
daughter of a resident



Providence Point Fall Data

March–June 2015



- Residents not being monitored by Hello Nurse system
- Resident falls while Hello Nurse transmitters de-activated by facility staff*
- Resident falls while Hello Nurse system activated
- Total Falls

*As a result of this study, the Hello Nurse system transmitters have been redesigned to prevent de-activation by staff or residents.

"Nothing can do our jobs for us or completely prevent all mishaps, but Hello Nurse has been wonderful at making it easier. We wish we could have everyone on the system."

J.W.
ADON Clinical Coordinator

RESULTS:

The number of residents being monitored, over the course of the four month study, varied from six to seventeen based on residents entering or leaving the facility. Total number of days of observation were 122 during the four month period of the study, as compared to 120 days in the four months preceding the monitoring. False alarms were quantitatively measured as nil and qualitatively reported to be low or nonexistent, and patient and caregiver acceptance of the system was reported to be high. In one case, a visiting physician who observed the system in use requested (and subsequently wrote a prescription for) his high-fall-risk patient to be added to the study. In another case, a new resident who constantly tried to stand up from her chair was put on the Hello Nurse system. The data collected showed a frequency of 137 alerts in a 48 hour period indicating her attempts to stand up unassisted. Demonstrating the fall-risk that this presented, the staff and family were able to convince her insurance provider to cover the expense of a better chair that lowered her risk of climbing out.

No adverse effects caused by the Hello Nurse monitoring system were noted. Cognitively impaired residents who had difficulty remembering to call for assistance, appeared to particularly benefit.

Three additional benefits of the system that were noted by administrators are:

1. The Hello Nurse monitoring system gave management the ability to quantitatively measure the performance of the staff.
2. The Hello Nurse monitoring system collected and stored empirical data which proved useful in responding to questions from residents' family members.
3. The Hello Nurse monitoring system allowed staff to set alerts for specific bed-bound patients that needed to be regularly repositioned.

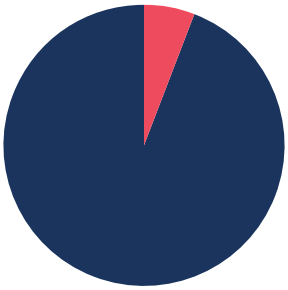
CONCLUSIONS:

The Hello Nurse patient monitoring system appears to have a large impact on reducing fall risk in nursing home residents, with minimal to no adverse effects. The contributions and implications can be enormous — from increased health and well-being for the resident — to significant operational efficiencies and cost savings for the facility.

Additionally, the increased efficiency and cost savings to facilities utilizing the Hello Nurse system can be dramatic for each fall that is prevented. With residents on the system,the caregiver gets an immediate alert reporting the resident's name and room number, so there is never any confusion about who needs help.

Typically, when a fall occurs, there are administrative protocols and procedures that must be followed, even in the absence of any apparent injury. When an injury occurs, the stakes are significantly higher, including everything from transfer to a diagnostic facility, to hospital admission, to death.

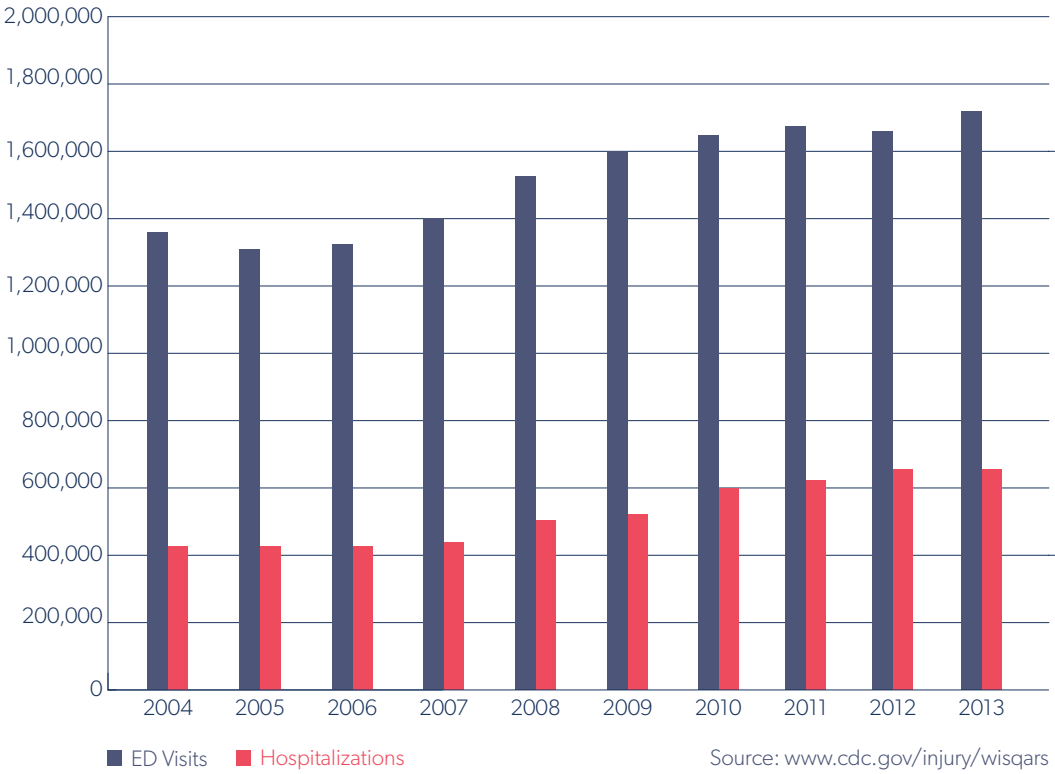
Of the total fall incidents reported (87) only 6 or less than 7% happened with patients who were being actively monitored.



Falls cost a fortune:

Every fall avoided saves a facility thousands of dollars.

Adults 65+ Emergency Department Visits and Hospitalizations for Fall Injuries



Source: www.cdc.gov/injury/wisqars

The direct expenses related to falls, which can produce long-term disability, reduced functioning, and complications from **necessary treatments, can total more than $7,300^{00} for a non-fatal event.**

Source: http://healthitanalytics.com/news/ehr-predictive-analytics-flag-32-of-nursing-home-patient-falls

Learn more at: **hellonursemed.com**

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Wireless Patient Monitoring Technology

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