Reducing Inpatient Hospital Falls Using Continuous Video Monitoring

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Inpatient hospital falls are unpredictable and costly occurrences, which can be detrimental to patient safety and care (Agency for Healthcare Research and Quality, 2021). Registered nurses (RNs) on inpatient units are in a unique position to implement and monitor innovative approaches to fall prevention. RNs often implement preventative interventions for inpatient falls but spend excessive amounts of time with high-risk patients. After a patient fall, RNs must notify the attending physician, perform interventions and complete fall documentation, which requires time away from direct patient care. A review of nursing literature, including decades of research, support various prevention measures such as purposeful rounding, fall risk screenings and assessments, bed and chair alarms, hourly rounding, bedside shift reports and sitters (Morris et al., 2022). However, use of these standard fall prevention measures has fallen short of meeting quality metric benchmarks set forth by the Centers for Medicare and Medicaid Services (Centers for Medicare and Medicaid Services [CMS], n.d.). Current inpatient demographic trends include an aging population and higher acuity of medical conditions, which increase the likelihood of falls, in the setting of persistent nursing staff shortages (Ghosh et al., 2022). More than 20% of inpatient hospital falls are preventable (Baez & Karl, 2022), so what can RNs do to prevent more falls without sacrificing patient care or losing certified nursing assistants (CNAs) to bedside sitting?

An innovative tool to assist inpatient RNs with monitoring fall risk patients is Continuous Video Monitoring (CVM). CVM is a successful adjunct to standard fall prevention tools, to reduce the number of inpatient hospital falls. CVM includes fixed or portable cameras with speakers and a trained healthcare sitter, who directly observes patients from a remote, centralized location. Two-way audio communication is initiated before or during potentially dangerous

patient behavior, and an alarm may be activated to alert nursing staff to respond immediately. After review of patient safety data in nursing literature, two recent research studies were highlighted and studied which concluded that use of CVM may reduce fall occurrences in the inpatient hospital setting at a cost savings for healthcare institutions and increased nurse and patient satisfaction (Cournan et al., 2018; Hogan Quigley et al., 2021).

The patient safety and fall reduction proposal includes instituting CVM on all identified inpatient units, with the goal of reducing inpatient falls by 20%, within two months of implementation. Each unit will receive two CVM portable cameras with large screens, two-way audio and a trained sitter observing from a central location within the healthcare organization. Each unit will include instructions for use, sitter contact information and a troubleshooting guide. Research has shown that RN engagement and motivation to successfully execute new hospital initiatives is attained in part through well-planned implementation periods and extensive educational resources (Hogan Quigley et al., 2021). So, to increase the likelihood of success, a mandatory instructional video with live chat, and an opportunity to ask questions, will be scheduled at four different times, two weeks prior to implementation, to disseminate the information. The questions and answers discussed in the live chat sessions will be documented and posted on all inpatient units and attached to the CVM units. Also, all inpatient nursing managers and RN clinical coordinators will receive additional education to become superusers of CVM. For the first two weeks of execution, the shift charge nurse and clinical nurse manager will determine which patients are at highest risk for falling. Determinants for CVM will include clinical presentation, history of falls, unsafe patient behaviors and current medical diagnoses. After the first two weeks, the primary RN will initiate CVM and place the unit in the patient's room. RNs will not need a physician order to execute virtual sitting and the RN can implement

CVM based on clinical judgement, trending behaviors and assessment findings alone, which encourages RNs to independently work within their scope of practice. Making these autonomous decisions at bedside may increase enculturation of CVM on inpatient units, leading to a high rate of usage and success of the initiative. RNs must continue to utilize standard fall risk prevention measures, screenings and assessments to align with evidence-based practice. The implementation stage is crucial to success of the program and unit RNs are integral to the adoption of this technology, along with clinical nurse managers, the hospital nurse informaticist and senior leadership. After two months of CVM utilization, fall rates will be evaluated and compared to baseline fall rates and the two months prior to CVM implementation, using data evaluation software and MIDAS reporting.

Obvious and unforeseen benefits of CVM were identified in the literature (Morris et al., 2022), and outweigh barriers to implementation of CVM and unfilled promises of the technology. The most significant impact to RNs was related to resources spent at the bedside of high fall risk patients. Instead of constantly redirecting patients, responding to bed and chair alarms and finding ancillary personnel to assist with tasks, RNs can better serve patients on the unit by executing CVM for certain patients. Additionally, CVM can be utilized instead of sitters in some circumstances, which reallocates certified nursing assistants (CNAs) to direct patient care (Cournan et al., 2018). RNs work in stressful patient environments, especially when CNAs are pulled away from patient care to sit with patients.

A more obscure benefit involves the amount of time charge RNs and nurse managers spend finding live sitters to work. The constant barrage of calls to ancillary personnel and nurses to fill sitter needs contributes to healthcare worker burnout (Yu et al., 2019).

Another benefit of CVM, to an inpatient RN, is the potential alleviation of some patient stressors. As patient medical conditions become more complex, RNs manage increasingly difficult patient assignments which further leads to burnout (Yu et al., 2019). CVM may allow the RN to safely, confidently and calmly perform direct patient care (Woltsche et al., 2022). CVM can also de-escalate aggressive behavior in some patients (Quigley et al., 2019).

In many cases, patient and family satisfaction increases with the implementation of CVM. RNs may see a decrease in complicated patients feeling ignored or upset with their care. The CVM sitter can request an RN with a phone call, for an urgent patient request, and provides more privacy than a live sitter (Abbe & O'Keeffe, 2020). The family may feel that constant observation keeps the patient safe, which augments the perception of safe, attentive and effective patient care. Importantly, the research suggests patient lengths of stay may decrease with the use of CVM (Hogan Quigley et al., 2021), leading to health benefits and decreased costs. Another potential benefit to patient families is an opportunity for respite to revitalize and practice self-care (Abbe & O'Keeffe, 2020).

A smaller benefit to consider, especially during high rates of Covid and Influenza, is the time required to don personal protective equipment (PPE) during an unsafe or volatile patient event. CVM can mitigate adverse patient outcomes by redirecting patient behavior in isolation rooms. This may allow enough time for RNs to safely enter the room with adequate PPE to assist the patient (Yu et al., 2019).

Lastly, CVM may reduce the risk of other adverse patient events such as pulling at lines, line entanglement, late awareness of deteriorating medical conditions and self-harm behaviors (Abbe & O'Keeffe, 2020; Sand-Jecklin et al., 2019).

Unfulfilled promises of CVM are evident in the literature, but overwhelmingly intrinsic in nature (Baez & Karl, 2022; Cournan et al., 2018; Hogan Quigley et al., 2021). Although the literature collectively concludes CVM decreases rates of falls, this technology does not eliminate falls (Cournan et al., 2018). As with other patient behaviors, intrinsic factors play a significant role in falls, such as medical diagnosis, physical limitations, cognitive impairment, deconditioning due to hospital stay, and attitudes towards healthcare. As mentioned, patient satisfaction is closely aligned with CVM, however, the use of CVM can cause escalation of violent or aggressive behavior, limiting the usefulness in some cases. Some patients and families may find CVM intrusive and lacking privacy, although CVM is unrecorded. As with sitters, unavailability of a centralized sitter may delay observation as would lack of enough units to accommodate RN requests. Another unfulfilled promise is lack of alternatives during technological events such as unexpected hardware maintenance and connectivity issues. Lastly, although an RN may request and implement CVM for a patient, this does not eliminate the need for standard fall risk measures and risk assessments.

CVM is a successful fall prevention tool inpatient RNs can add to their current practice to reduce falls and other safety events. CVM can increase RN satisfaction, decrease sitter costs and improve nursing care. Implementation is relatively simple with enough RN education and support, and tracking success is straightforward as well. By adopting, promoting and implementing CVM, RNs promote the concept of meaningful use and expand their ability to provide safe and effective patient care.

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