The Role of Nursing Informatics on the Collaborative Implementation Team: Secondary Telemetry Alarm Management - Using Smart Phone Technology

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Problem Statement: Aligned with our hospital's nursing strategic goals to identify a secondary alarm system replacement, address the Joint Commission National Patient Safety Goal regarding clinical alarms, respond to staff concerns about alarm fatigue and incorporate best practices, our project team implemented a four vendor solution using a Smartphone that alerts the clinician of actionable alarms and provides mobile access of static and live waveforms. **Methods:** Our multidisciplinary team composed of Nursing Informatics (NI), clinical nurses and Information Systems (IS) worked with the vendors and followed the System Development Life Cycle (SDLC) to implement the new technology solution. One of the primary roles of the Nurse Informaticist included obtaining the current state workflow of the secondary pager alarm management system, determining gaps in the process and creating the future state of the secondary Smartphone alarm management system. NI was integral in leading the collaborative team through performing unit, integration, and system testing. The system was regression tested for accuracy of GE Alarm data to the middleware server and client solution application. The new system allowed the team to analyze the current alarm data and create custom filters based on the type of alarms, length and frequency for when they will alert the nurse. To promote patient safety, all high level alarms were sent to the Smartphone without filters. Select high volume, medium level arrhythmia alarms commonly seen, most notably tachycardia, were filtered therefore presenting the nurse with more meaningful alarms. **Results:** Alarm data from a seven day period on one telemetry unit, M17 indicates 6,884 telemetry alarms were activated during that Timespan. The data also showed that Tachycardia represented 45% of all telemetry alarms being sent on this particular unit during that Timespan. By applying the filters created and approved by our nursing alarm management committee, our nurses on M17 received 869 of a total of 3,087 of Tachycardia alarms via the smart phone. Seventy-eight per cent of non-actionable Tachycardia alarms that were contributing to alarm fatigue were filtered to not be sent to the Smartphone. Patient safety was maintained. The secondary alarm management system was successfully implemented in five telemetry units in the organization. RNs on the 5 go live units were surveyed pre and post implementation regarding their perception of alarm management and alarm fatigue. The data shows a 16.2% reduction from pre to post survey of RNs agreeing/strongly agreeing that nuisance alarms occur frequently. There was a 16.4% increase pre to post in nurse's perception that alarms are adequate to alert staff of potential or actual changes in patient conditions. **Significance:** As the second institution in the country to successfully customize and implement the use of Smartphone technology with static/live waveforms for secondary alarm management, our nurses are now at the forefront of using technology to better manage the cardiac care needs of our complex oncology patient population. By filtering clinically actionable alarms to the phone we have made great strides towards decreasing alarm fatigue and providing clinical nurses with meaningful, real-time information to care for their patients.