Solution: Implementing Bedside Medication Verification Barcode Technology to Improve Patient Safety

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IDENTIFICATION:
Safely administering medications is a complex process, which includes patient assessment, order verification, medication, dose and route verification and patient verification. The Institute of Medicine estimates a hospitalized patient experiences a medication error once a day. Koppel (2008) reviewed BMV implementation at five hospitals and recommended processes to avoid workarounds which minimize BMV effectiveness. Baseline data for medication administration included reported medication errors and direct observations of clinicians administering medications. Certain errors in patient/drug identification were both observed and reported. Additionally, nurses were surveyed concerning their perception of the medication administration process and utility of the pre-existing system.


PROCESS:
A multidisciplinary group (including nursing, pharmacy, IS, respiratory) investigated the feasibility and utility of adopting a bedside medication verification system. The current electronic medical record and Medication Administration record in the electronic medical record was analyzed for potential solutions. Multiple devices were considered prior to adoption of a specific solution. Frontline staff were encouraged to evaluate the hardware prior to its purchase and implementation. A multidisciplinary team was established to develop and implement the logistical steps, from initiating barcodes on medications in pharmacy to selection of hardware, to delineation of processes.

SOLUTION:
The solution included a pharmacy packaging system to barcode all medications not previously barcoded. Staff were asked to “name” the machine to increase awareness of the process. These processes were addressed in monthly multidisciplinary Medication Process Committee meetings, a group that includes nursing, pharmacy, risk, nursing education and others and includes levels from director to staff nurse. Bedside computers were installed in all rooms, and scanning devices were selected. An educational plan that included blended learning and super users included pilot units and a gradual implementation process. Implementation team meetings occurred regularly during the planning phase and daily during the implementation phase. Super users attended the meetings to discuss issues, recommendations and successes during the implementation processes. Changes were made as indicated. Ongoing support of staff during implementation verified processes used and monitored issues. During the implementation phase, daily reports from the electronic medical record system measured compliance with barcode medication administration. Consistently, most units met the benchmark established for 85% compliance in critical care units (to account for urgent, code type medications) and 90% on non-critical care units.
Follow up evaluations of medication administration observations and occurrence reports reflect success at implementing the processes with minimal workarounds observed. The ongoing responsibility for monitoring compliance rests with the Medication Process Committee, and unit managers.