Medication Safety Through MAK

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Tufts medical Center nurses are on the forefront of changing healthcare for the better and improving patient safety one click at a time. After three months since completing inpatient implementation of the Medication Administration Check system (MAK), Tufts Medical Center noted that medication administration errors decreased by 70% and medication transcription errors decreased by 66%. Our objective for this project was to determine whether or not MAK had an impact in reducing medication errors in the four steps of the medication process: order writing, transcribing, dispensing and administration. In addition we sought to identify which step in the process would see the biggest impact. The methodology used to provide data for comparing medication error rates per 1000 doses dispensed was to mine Doctor Quality for medication errors. Doctor Quality is the self-reporting error program employed at Tufts Medical Center. Comparing error rate per 1000 doses dispensed allows benchmarking against the industry standards. Medication errors per 1000 doses dispensed from 2008, 2009, and 2010 were reviewed and compared. It is recognized that there are some inherent flaws in using the Doctor Quality system as this is a self-reporting program and therefore some errors or near misses may be under-reported. Our findings demonstrated that the overall error rate decreased dramatically from 2008 through 2010. It is believed that this reduction may have been directly related to the implementation of MAK. Overall there was a 66% reduction in the number of medication errors reported through Doctor Quality. To analyze for statistical significance, a standard Shewhart Individuals Control chart was used, using 2 standard deviations. Values outside the Upper Control Limit (UCL) and Lower Control Limit (LCL) are considered “large shifts” and therefore significant. Eight points on one side of the median indicates a probable shift due to a change in process (MAK for our purposes). Downward shifts in the mean and the UCL and LCL indicate a reduction in the number of medication errors as reported via Dr. Quality. Error rates clustering around the mean (beginning in Feb 10) indicated practice was becoming consistent within the process. To our greatest expectations, the impact of MAK on medication administration based on overall reported errors resulted in a decrease by 70%. Also noted was transcription errors had reduced significantly by 66%. It was anticipated that MAK would have its largest impact on administration. The transcription process has moved from the unit coordinator to the pharmacist. Both of these process changes appear to have contributed to the downward trends illustrated in the control charts. Additionally, the administration and transcription control charts demonstrate a change in the UCL and the LCL which indicate a stabilization of the process around the mean. MAK was not expected to have any impact on medication dispensing errors or order writing errors. While dispensing errors show a significant downward trend the changes are most likely due to other process changes occurring within the pharmacy. As we celebrate our accomplishment we prepare of phase II of MAK implementation. This includes MAK roll-out to interventional areas, infusion centers, the Emergency Department, the OR, and outpatient areas. The authors acknowledge that the successful roll-out of MAK would not have been possible without the collaboration between pharmacists, nurses, respiratory therapists, the Tufts Medical Center IT department, MAK trainers, MAK super-users, Security, and Facilities. The perfect blending of these disciplines combined with staff that upholds the highest standards of professionalism will remain key to the continued success of MAK implementation.