

Implementation of a gravimetric-based software system that used barcode verification and real-time alerts improved the detection of errors in the chemotherapy preparation process when compared with self-reporting” Reece et al (2016).

Abstract:

Purpose: The implementation and evaluation of a gravimetric i.v. workflow software system in an oncology ambulatory care pharmacy are described.

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Summary: To estimate the risk involved in the sterile i.v. compounding process, a failure modes and effects analysis (FMEA) in the oncology ambulatory care pharmacy was performed. When a volumetric-based process was used to reconstitute vials, the actual concentration was unknown since an assumption must be made that the exact volume of diluent was used when reconstituting the drug. This gap in our process was discovered during the FMEA and was resolved with the implementation of an i.v. workflow software solution. The i.v. software system standardized preparation steps and documented each process step, enabling a systematic review of the metrics for safety, productivity, and drug waste. Over the study period, 15,843 doses were prepared utilizing the new technology, with a total of 1,126 errors (7%) detected by the workflow software during dose preparation. Barcode scanning detected 292 (26%) of the total errors, the gravimetric weighing step detected 797 (71%) deviation errors, and 37 (3%) errors were detected at the vial reconstitution step. All errors were detected during compounding, eliminating the need to correct errors after production. Technician production time decreased by 34%, and pharmacist checking time decreased by 37%.

Conclusion: Implementation of a gravimetric-based software system that used barcode verification and real-time alerts improved the detection of errors in the chemotherapy preparation process when compared with self-reporting. Standardized workflow processes and the elimination of time-consuming manual steps increased productivity while vial



management decreased costs.

Reference:

Reece, K.M., Lozano, M.A., Roux, R. Spivey, S.M. (2016) Implementation and evaluation of a gravimetric i.v. workflow software system in an oncology ambulatory care pharmacy. American Journal of Health-System Pharmacy. 73(3), p.165-173.

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