

# Improving Patient Safety With Error Identification in Chemotherapy Orders by Verification Nurses

Abigail Baldwin, MSN, RN, OCN®, and Elizabeth S. Rodriguez, DNP, RN, OCN®



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**Background:** The prevalence of medication errors associated with chemotherapy administration is not precisely known. Little evidence exists concerning the extent or nature of errors; however, some evidence demonstrates that errors are related to prescribing. This article demonstrates how the review of chemotherapy orders by a designated nurse known as a verification nurse (VN) at a National Cancer Institute–designated comprehensive cancer center helps to identify prescribing errors that may prevent chemotherapy administration mistakes and improve patient safety in outpatient infusion units.

**Objectives:** This article will describe the role of the VN and details of the verification process.

**Methods:** To identify benefits of the VN role, a retrospective review and analysis of chemotherapy near-miss events from 2009–2014 was performed.

**Findings:** A total of 4,282 events related to chemotherapy were entered into the Reporting to Improve Safety and Quality system. A majority of the events were categorized as near-miss events, or those that, because of chance, did not result in patient injury, and were identified at the point of prescribing.

Abigail Baldwin, MSN, RN, OCN®, and Elizabeth S. Rodriguez, DNP, RN, OCN®, are both nurse leaders in the Department of Nursing at Memorial Sloan Kettering Cancer Center in New York, NY. The authors take full responsibility for the content of the article. This study was supported, in part, by a National Institutes of Health/National Cancer Institute Cancer Center Support Grant (P30 CA008748). The content of this article has been reviewed by independent peer reviewers to ensure that it is balanced, objective, and free from commercial bias. No financial relationships relevant to the content of this article have been disclosed by the independent peer reviewers or editorial staff. Baldwin can be reached at [baldwina@mskcc.org](mailto:baldwina@mskcc.org), with copy to editor at [CJONeditor@ons.org](mailto:CJONeditor@ons.org). (Submitted January 2015. Revision submitted March 2015. Accepted for publication April 9, 2015.)

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The exact pervasiveness of medication errors linked to the administration of chemotherapy is unknown (Bonnabry et al., 2006; Gandhi, Weingart, et al., 2005; Ranchon et al., 2012), and a national benchmark for chemotherapy-related errors does not exist (Walsh et al., 2009). Surprisingly little evidence is available about the extent or nature of these errors, which demonstrates how safety issues related to the administration of chemotherapy are under-researched (Kullberg, Larsen, & Sharp, 2013). Despite the lack of research, some evidence suggests that errors are related to prescribing (Aita et al., 2013; Ranchon et al., 2012).

In 1995, a report of a patient death from an overdose of chemotherapy at a major medical center prompted many cancer centers to reexamine their processes for safe chemotherapy administration (Schulmeister, 2005). At the same time, care delivery shifted significantly from the inpatient to the outpatient setting, presenting new challenges related to higher volumes, time constraints, and lower levels of clinician control (Gandhi, Bartel, et al., 2005). The heightened awareness of the risks in chemotherapy administration processes brought on by this ma-

ior error, coupled with the transition of care to the outpatient setting, hastened the need to explore ways to reduce risk and increase safety in chemotherapy prescribing, dispensing, and administration.

Measures to reduce the incidence of medication errors range widely, such as the implementation of computerized physician order entry (CPOE), computerized clinical decision support systems, standardization of prescribing vocabulary, communication improvements, and barcode technology (Ranchon et al., 2012; Schulmeister, 2005; Watts & Parsons, 2013). Recommendations like CPOE may improve safety related to the use of standardized templates, as well as the opportunity to imbed alerts when deviations from the guidelines occur (Bonnabry et al., 2006; Cheng et al., 2012; Kullberg et al., 2013). However, the sophistication of such a system is largely dependent on the extent to which it is maintained and updated. The system's implementation can further influence its function by allowing advanced entry of orders and copying of previous orders to a future date if these orders are identical.

Although the actual rate of chemotherapy errors reported in the literature is low (Walsh et al., 2009; Watts & Parsons, 2013),