Chemotherapy Safety

Reducing errors with a nurse-led time-out process

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BACKGROUND: Nurses represent the last line of defense in preventing the occurrence of chemotherapy errors; it is important to assess error rates and implement quality improvement initiatives to reduce nurse-initiated chemotherapy administration errors.

OBJECTIVES: The purpose of this project was to assess the rates of chemotherapy administration errors before and after a two-nurse chemotherapy time-out process was implemented and the frequency of prevented errors in the postintervention and maintenance periods.

METHODS: This retrospective quality report used pharmacy administration records and chemotherapy safety events to determine chemotherapy administration errors during three time periods.

FINDINGS: The overall rate of chemotherapy administration errors was initially low (preintervention) and similar to published reports of error rates after interventions were applied to reduce error rates. The error rate remained low at the two postintervention assessment periods.

KEYWORDS
chemotherapy; drug administration; safety; medication error; patient safety

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CHEMOTHERAPY HAS BEEN USED SINCE THE 1940s. It was discovered in World War I after use of a chemical warfare agent, nitrogen mustard (Haylock, 2011). Since then, chemotherapy has been rigorously studied and used to treat many types of cancer. Chemotherapy has the potential to cure some cancers and keep others at bay. Chemotherapies are high-risk medications, and they are listed as hazardous agents (U.S. Department of Health and Human Services, 2014). The process of administering chemotherapy is complex and requires many different safety checkpoints to prevent errors. A chemotherapy administration error can be a mild adverse effect (Hronek & Reed, 2016), or it can be lethal (Schneider et al., 2014). Widely publicized chemotherapy errors, such as the incident of a young woman's death after receiving an overdose of cyclophosphamide (Schneider et al., 2014), raised awareness of administration safety issues and reinforced the need for program development to ensure optimal safety in chemotherapy administration processes.

In four articles on chemotherapy safety and nursing processes (Ashley et al., 2011; Chung, Collins, & Cui, 2011; Sheridan-Leos, 2007; Womer et al., 2002), the authors discussed the use of interprofessional teams to address chemotherapy safety concerns. Interprofessional teams were composed of physicians, pharmacists, clinical nurses, clinical nurse specialists, and directors of nursing. To determine components of chemotherapy errors, team members evaluated chemotherapy orders, the transcription of the orders, and the administration of the chemotherapy.

In one article, authors found fewer errors after creating chemotherapy ordering sanctuaries for physicians, implementing standardized order sets, reviewing previous errors, and decreasing distractions for nurses by using a message board rather than using a telephone or paging system (Womer et al., 2002). In another report, authors had new nurses who administered chemotherapy complete competency and education processes to decrease chemotherapy errors (Sheridan-Leos, 2007). Authors also used a time-out process immediately before administration to involve patients and families in confirming the chemotherapy agents used, patient identity, and treatment dates; however, authors did not discuss the effect of interventions on chemotherapy errors quantitatively (Sheridan-Leos, 2007). In a third article, pharmacists standardized orders and protocols, and nurses updated policies