

**Title:**

Impact of Diluent Overfill on Accuracy of Antineoplastic Preparation and Administration

**Authors:**

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**Purpose:**

Failing to account for the overfill volume of intravenous fluid bags during the medication preparation and administration processes may contribute to inaccuracies in adult antineoplastic infusions. This study is designed to identify areas of quality improvement in the institution's current processes.

**Methods:**

This study is a retrospective, single-institution, descriptive analysis of de-identified adult intravenous antineoplastic infusions administered from August 19, 2020 to November 17, 2020. All adult antineoplastic infusions were included. Infusions were excluded if they had incomplete data in the infusion pump records. The primary outcome is the percentage of antineoplastic infusions that are completely infused after adjusting for overfill within an acceptable 5% error according to the institution's standards. The secondary outcome is the nurses' perceptions of current antineoplastic administration processes measured with anonymous paper survey responses. Data collected includes the name of the antineoplastic agent infused, size of the intravenous fluid bag, volume to be infused, number of infusion interruptions, and nurses' anonymous questionnaire responses. Results will be analyzed using descriptive statistics.

**Results:**

There were a total of 146 infusions included in the primary data analysis. After adjusting for overfill volume, it was found that 71.9% of adult antineoplastic infusions were considered complete within a 5% allowable error. However, it was found that 94.5% of infusions were considered complete using a confirmatory 10% allowable error. For the secondary outcome, 12 voluntary nursing surveys were collected. Out of all the nurses that were surveyed, 66.7% nurses reported some level of confusion with the current administration processes. The results of this study will be used to compile education and a standardized protocol for nursing regarding the administration processes.

**Conclusions:**

Accounting for diluent overfill is important in maintaining a high level of accuracy during the preparation and administration of antineoplastic infusions.