

# Establishing an Evidence-Based Inpatient Medical Oncology Fluid Balance Measurement Policy

Lindsey Alexander, RN, BSN, OCN®, and Deborah Allen, RN, MSN, CNS, FNP-BC, AOCNP®

Fluid balance measurement (FBM) is a routine intervention in oncology, but accuracy and compliance issues have been documented. This article describes how a medical oncology nursing clinical practice committee used the Iowa Model for Evidence-Based Practice to establish a policy for FBM. Nursing and medical education was performed with emphasis on oncology-specific defaults in a computerized provider order entry system reflecting the new FBM policy. At two months of implementation, the policy effectively demonstrated improved staff compliance and satisfaction, as well as appropriate orders for patients requiring stricter FBM.

Intake and output measures are used commonly for evaluating fluid balance and have been standard practice for nurses in all settings. However, issues regarding the accuracy of intake and output measures and staff compliance in performing and documenting intake and output presented opportunities for establishing an evidence-based policy for fluid balance measurements (FBM) that may benefit medical care and staff satisfaction. Therefore, the Iowa Model for Evidence-Based Practice (Titler et al., 2001) guided a unit-based clinical practice committee to recommend a policy for FBM to nursing and medical leadership.

## Model for Change

The setting included two 31-bed medical oncology units in a large, academic, National Comprehensive Cancer Network-designated comprehensive cancer center. The hematology-oncology unit admits patients with hematologic disorders for chemotherapy induction and consolidation, accounting for more than 90% of admissions, whereas the medical oncology unit admits patients with solid tumor malignancies primarily for symptom management or palliative care, with 40% of patients admitted for chemotherapy or brachytherapy. The average length

of stay for the hematology-oncology unit is 8.3 days (induction 30 days; consolidation 5 days), whereas the average stay for the medical oncology unit is 4.4 days. The units' combined staff includes 101 full-time RNs and 25 nursing care assistants; 70% of RNs have more than two years of experience and 45% are oncology certified nurses.

The Iowa Model for Evidence-Based Practice (Titler et al., 2001) prompts staff in critical evaluation of problem- or knowledge-focused triggers. The process-improvement trigger of persistently poor compliance with intake and output documentation led the medical oncology clinical practice committee to begin a systematic examination. First, barriers to intake and output documentation were identified from a representative sample of nurses through structured interviews. Inconsistencies in practice, variability in reports from patients, and appropriateness of orders were principal categories.

Nurses often use estimations of intake and output, such as in the case of a patient spilling their drink or accidentally forgetting to void in the collection device. Meal trays may be removed from patients' rooms before measurement and documentation occurs. In addition, patients often do not report their intake and output. Because patients and families are encouraged to create a home environment within the walls of the hospital, they often inaccurately report intake and output. In a chart audit, 88% of patient records did not have intake and output documented throughout the shift. Nursing staff question the medical necessity of intake and output orders in select patient populations. For example, medical teaching services with first-year physicians may order intake and output because of habit or computerized physician order entry prompts without considering patient medical necessity or reviewing more relevant measurements such as serum creatinine and

Lindsey Alexander, RN, BSN, OCN®, is an inpatient medical oncology clinical nurse III and Deborah Allen, RN, MSN, CNS, FNP-BC, AOCNP®, is a clinical nurse specialist for the intermediate inpatient oncology units, both at Duke University in Durham, NC. The authors take full responsibility for the content of the article. The authors did not receive honoraria for this work. No financial relationships relevant to the content of this article have been disclosed by the authors or editorial staff.

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