

Dr. Melissa Accordino

Title: Electronic educational alert to reduce overuse of Granulocyte Colony Stimulating Factor in patients hospitalized for febrile neutropenia

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Abstract: Febrile neutropenia (FN) as a result of chemotherapy is associated with significant morbidity, mortality and medical costs. Randomized trials have not shown mortality reduction with use of therapeutic Granulocyte Colony Stimulating Factor (GCSF) in the setting of FN. Current guidelines by the American Society of Clinical Oncology (ASCO) recommend against empiric use of GCSF in low risk patients and are controversial in higher risk patients for treatment of FN. Despite recommendations against empiric therapeutic use, population based studies suggest significant overuse in low risk patients. In a study performed by our group using inpatient data, 62% of low risk FN patients received GCSF amounting to costs of \$9 million over 10 years. At teaching hospitals, 60% of patients with FN received GCSF. Several studies outside of oncology have shown quality improvements can be achieved with electronic ordering alerts. We hypothesize that instituting an electronic alert upon inpatient ordering of filgrastim (Neupogen) which displays current guidelines will reduce overuse of GCSF in the setting of treatment for FN and will lower medical costs in this setting. We will conduct a study utilizing a quasi-experimental design at New York Presbyterian Hospital (NYPH), a multi-site, metropolitan, tertiary care center to test this hypothesis. Data will be obtained by query of the Clinical Data Warehouse (CDW) based on ICD codes for neutropenia (288.0) and fever (780.6). We estimate 260 FN admissions at NYPH annually and therapeutic GCSF use in FN of 50%. Our specific aims are to: 1) To determine frequency, indication and patient characteristics of inpatient filgrastim use by retrospective review of the electronic health record (EHR) over a 12 month period; 2) Institute an educational alert triggered by filgrastim order entry and then determine efficacy of our alert with regards to order frequency in total and low risk patients with FN and associated hospital charges by review of the EHR; 3) To determine predictors of aborted filgrastim order entry. This study will determine if an educational alert is a successful tool to influence delivery of guideline based medical care as an effective means to decrease medical costs related to medication overuse.