

# Examining Healthcare Costs in Chemotherapy Induced Nausea and Vomiting: A Retrospective Analysis

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## Background

- Chemotherapy-induced nausea and vomiting (CINV) is a major adverse effect of chemotherapy and has a significant impact on patients' quality of life.
- Chemotherapeutic agents are categorized into 4 emetic risk groups: high, moderate, low, and minimal based on the guidelines of the National Comprehensive Cancer Network

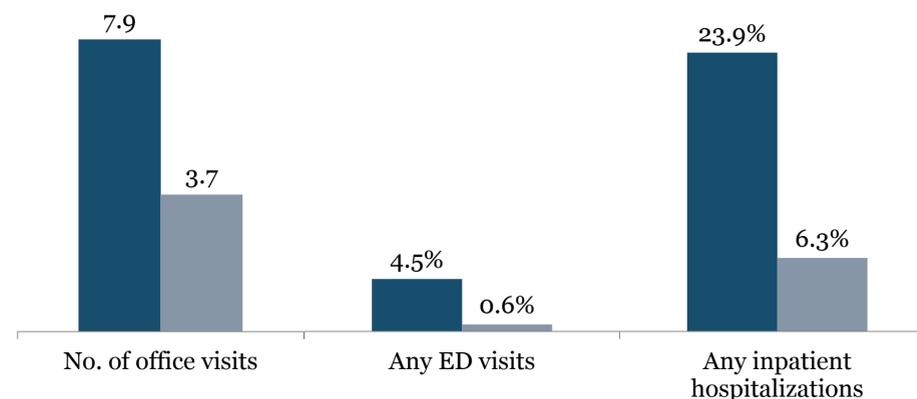
## Objective

To examine CINV related health care utilization and costs incurred during the first cycle of chemotherapy by patients treated with highly emetogenic chemotherapy (HEC) or moderately emetogenic chemotherapy (MEC).

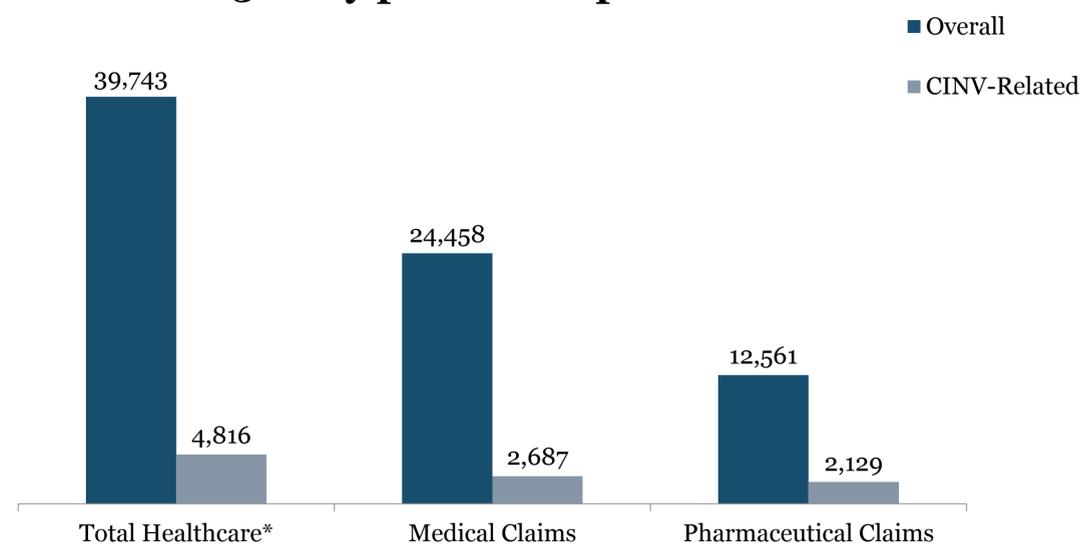
## Methods

- Retrospective cohort analysis of claims from the i3 Ingenix LabRx database. Patients were identified during the period of 4/1/08 to 3/31/09.
- Inclusion criteria: Age  $\geq 18$  years with a medical or Rx claim for HEC or MEC during the identification period; AND had a medical claim with diagnosis of breast, lung, or colon in any diagnosis field; AND received a 5-HT<sub>3</sub>-RA on the index date.
- Exclusion criteria: Chemotherapy in the pre-index period; OR not continuously enrolled; OR received  $\geq 2$  5-HT<sub>3</sub>-RAs on the index date.
- Index date was the Day 1 of chemotherapy and patients were followed until the next cycle of chemotherapy or 30 days after the index date.
- CINV was defined on medical claims with a ICD9 code of nausea/vomiting (787.0x), or dehydration/volume depletion (276.5x) as a primary diagnosis.
- CINV-related utilization was identified on medical claim with a primary diagnosis of CINV. CINV related costs also included the cost of all antiemetic treatment.

## Healthcare utilization in patients with CINV in the 30 day post-index period



## Healthcare charges in patients with CINV during 30-day post-index period



\*Total healthcare charges are the sum of Medical and Pharmaceutical Claims

## Results

- A total of 9,558 patients were identified.
- Mean age was 55.8 years old and 71.8% female.
- Of those identified, 28.7% treated with HEC and 71.3% with a MEC regimen.
- Cancer tumor type was 51.3% breast, 34.3% lung, and 21.8% colon.
- Overall, 10.7% (294/2,739) of patients on the HEC regimen experienced CINV compared to 13.2% (901/6,819) of those on the MEC regimen.
- Patient with CINV incurred \$39,743 in health care charges in the first 30 days of treatment vs. \$34,696 in those without CINV (p < .001).

## Discussion

- CINV related utilization in the first month after chemotherapy, including office visits and hospitalizations, was common.
- Patients with CINV incurred almost \$5,000 more in costs than patients without CINV.
- True costs and actual numbers of visits may be higher, as this analysis considered only costs where the primary diagnosis was CINV.
- Higher rates of CINV in patients using MEC compared to HEC may reflect more aggressive prophylactic treatments
- Analysis considers only first cycle of chemotherapy; further research examining cost in later cycles is underway.
- Limitations: data for billing purposes, lack clinically relevant information, potential for systematic reporting/coding error, results may not be representative of individuals without commercial health insurance.

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