

# Reducing Unplanned Admissions

## Focusing on hospital admissions and emergency department visits for patients with head and neck cancer during radiation therapy

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**BACKGROUND:** Head and neck cancer (HNC) treatments cause severe toxicities, leading to high rates of emergency department (ED) visits and unplanned hospital admissions (UHAs).

**OBJECTIVES:** The study aimed to evaluate a quality improvement project to reduce ED visits and UHAs.

**METHODS:** A weekly nurse/nurse practitioner–led symptom management clinic was created for patients with HNC receiving radiation therapy deemed at high risk for an ED visit or UHA. Primary quality metrics were rate of visits or unplanned admissions. Time-to-event actuarial analysis and log-rank tests (two-tailed) were performed to compare observed to historic rates.

**FINDINGS:** Rates of ED visits and UHAs were 11% and 16%, respectively. Having more symptom management visits marginally correlated with reduction in UHA. The authors estimate six ED visits and four UHAs were prevented, which is a \$176,848 cost reduction.

### KEYWORDS

quality; unplanned hospital admissions; radiation therapy; emergency department visits

### DIGITAL OBJECT IDENTIFIER

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**THE UNITED STATES CONTINUES TO SPEND MORE THAN** any other country on health care. Healthcare expenditures were about 17.2% of gross domestic product (GDP) in 2012 and are expected to grow to 19.3% of GDP by 2022 (Centers for Medicare and Medicaid Services, 2012). These figures have driven efforts to reduce unnecessary or avoidable expenditures while maintaining quality of care. A major target for these initiatives is hospital readmissions. Unplanned hospital admissions (UHAs) result in an estimated \$12–\$17 billion annually in potentially preventable healthcare costs (Jencks, Williams, & Coleman, 2009). In an effort to avoid monetary penalties, providers have conducted studies to identify at-risk patient populations and system inefficiencies associated with preventable hospital readmissions (Basoor et al., 2013; Kocher & Adashi, 2011; Rochefort & Tomlinson, 2012; Saunders et al., 2015).

A related issue is UHAs for patients undergoing outpatient treatment. In the cancer population, multimodality cancer treatment with surgery, radiation therapy, and chemotherapy often causes significant acute toxicities that may lead to UHAs (Chan, Soh, Ko, Huang, & Chiang, 2014; Saunders et al., 2015). A study conducted in patients with lung cancer demonstrated that a large portion of patients visited the emergency department (ED); 113 patients visited the ED 143 times during two years (Kotajima, Kobayashi, Sakaguchi, & Nemoto, 2014). This results in treatment delays and higher healthcare spending, which can negatively affect patient outcomes and hospital systems (Kotajima et al., 2014; McKenzie et al., 2011; Peterman, Cella, Glandon, Dobrez, & Yount, 2001). Another study conducted with patients with head and neck cancer demonstrated that inpatient costs for complications were two to three times more than outpatient support for the same complications (\$1,840–\$1,966 versus \$452–\$1,049, respectively) (Peterman et al., 2001).

In an analysis of 1,116 patients treated for cancer with radiation therapy (with or without chemotherapy) in 2010 at North Carolina Cancer Hospital in Chapel Hill, about 20% experienced a UHA (Waddle et al., 2015). Among the head and neck cancer subgroup, the ED visit and UHA rates were 18% and 21%, respectively. Forty-seven percent of admitted patients were seen in the clinic within two weeks of UHA, and 61% of those patients had complaints related to their subsequent admission diagnosis at that time. Therefore, an