

# Risk Factors Associated With Unplanned Hospital Readmissions in Adults With Cancer

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**H**ospital readmission is a major issue in the U.S. healthcare system because of an association with inadequate quality care, patient safety, and increased costs (MedPAC, 2007). In the United States, from 2007–2011, the 30-day, all-cause hospital readmission rate among Medicare beneficiaries remained stable at 19%, with a downward trend noted in 2012 (Gerhardt et al., 2013). The costs of 30-day hospital readmissions were estimated to be \$17.4 billion (Jencks, Williams, & Coleman, 2009). Although not all hospital readmissions are unplanned, many result from a fragmented health delivery system in which patients receive care by multiple providers in a variety of healthcare settings, which can lead to low-quality care (Pham, Schrag, O'Malley, Wu, & Bach, 2007). Numerous reports have reviewed factors associated with unplanned hospital readmissions in the general population and in patients with cardiovascular disease (Amarasingham et al., 2010; Desai, Stauffer, Feringa, & Schreiner, 2009; Jencks et al., 2009; Kansagara et al., 2011; Kind, Smith, Frytak, & Finch, 2007; Lichtman et al., 2010; Ross et al., 2008), but little research has focused on this issue with patients with cancer.

Patients with cancer experience a variety of medical, psychosocial, and comorbid conditions that may require hospitalization. The Healthcare Cost and Utilization Project (HCUP) reported 4.7 million hospitalizations related to adult cancers in the United States in 2009; of these, 1.2 million identified cancer as the main diagnosis (Price, Stranges, & Elixhauser, 2012). The total cost associated with hospitalizations among adults in 2009 was \$20.1 billion, accounting for 6% of hospital costs in adults (Price et al., 2012). Studies of hospital readmission for patients with cancer have focused mostly on patients who have had surgery, particularly for colon, thyroid, and gynecologic cancers (Greenblatt et al., 2010; Henretta, Scalici, Engelhard, & Duska, 2011; Tuggle, Park, Roman, Udelsman, & Sosa, 2010); and not

**Purpose/Objectives:** To identify risk factors associated with 30-day unplanned hospital readmissions in adults with cancer.

**Design:** Case-control study.

**Setting:** A teaching hospital in an urban center in the Mid-Atlantic region of the United States.

**Sample:** 302 adults with solid tumors: 87 readmitted within 30 days (cases) and 215 not readmitted (controls).

**Methods:** The Conceptual Model of Re-Hospitalization was used as a theoretic framework. Univariate logistic regression and multivariate logistic regression were conducted to identify risk factors for hospital readmission.

**Main Research Variables:** Risk factors included patient, clinical, hospitalization, and discharge-planning characteristics.

**Findings:** From November 2011 to November 2012, 29% of patients were readmitted within 30 days after discharge, and a higher percentage of those readmissions occurred within the first week of discharge. Several predictors for hospital readmission were identified in the univariate logistic analysis, but the most relevant in the final multivariate logistic model were moderate to high risk for falls and advanced stage disease (metastatic).

**Conclusions:** Hospital readmission is an indicator of quality care. Learning about risk factors allows opportunities to prevent hospital readmission by identifying those at high risk and implementing optimal discharge-planning systems and early referrals to palliative care.

**Implications for Nursing:** Oncology nurses are best positioned to develop strategic plans aimed at improving discharge planning and transitions of care that will decrease unplanned hospital readmissions.

**Key Words:** hospital readmissions; cancer; discharge planning; risk factors

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much on patients admitted to medical oncology units (Weaver et al., 2006). Those studies reported mostly on clinical and sociodemographic factors but did not