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# Hematopoietic Stem Cell Transplantation Nursing: A Practice Variation Study

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**H**ematopoietic stem cell transplantation (HSCT) is an aggressive therapeutic option for many malignant and nonmalignant diseases. About 40,000 transplantations are performed worldwide each year (Rizzo et al., 2006). Specialized nursing care, which is required to prevent and manage the expected and unexpected toxicities of HSCT (Colombo, Solberg, Vanderhoeft, Ramsay, & Schouten, 2005; Tabbara, Zimmerman, Morgan, & Nahleh, 2002), has been reviewed in many articles and textbooks (Buchsel & Kaputsay, 2005; Buchsel, Leum, & Randolph, 1997; Ezzone & Schmit-Pokorny, 2007; Ford & Eisenberg, 1990). Infection following HSCT, which is associated with significant morbidity and mortality, has been a leading cause of unscheduled hospital admissions in this population (Grant, Cooke, Bhatia, & Forman, 2005; Moya et al., 2006). Therefore, infection prevention is critical to improving outcomes following transplantation.

The risk of infection is based on multiple variables, including the type of transplantation (autologous or allogeneic), source of hematopoietic cells (related or unrelated donor, peripheral blood, bone marrow, or cord blood), underlying disease, disease status (remission or relapse), intensity of the preparative regimen (ablative or nonmyeloablative), prior infections, endogenous microflora, and environmental exposure to micro-organisms. In addition, risk may vary based on infection control measures used by transplantation centers. Practices in infection control, such as type of isolation, dietary restrictions, and antimicrobial prophylaxis, vary widely among transplantation centers (Dadd, McMinn, & Monterosso, 2003; Kruger et al., 2001; Poe, Larson, McGuire, & Krumm, 1994) and affect the psychosocial well-being of transplantation recipients (Sasaki et al., 2000). Nurses are pivotal in implementing practices to prevent and manage infections and associated effects following HSCT.

**Purpose/Objectives:** To examine practice variation in hematopoietic stem cell transplantation (HSCT) nursing and to identify the gap between recommended standards of practice and actual practice across settings. Additional practices relevant to HSCT nursing also were explored.

**Research Approach:** Cross-sectional, descriptive survey.

**Setting:** National and international cancer centers.

**Participants:** A convenience sample was obtained from the 2006 Oncology Nursing Society Blood and Marrow Stem Cell Transplant Special Interest Group membership list (N = 205). Most participants were women (94%) with a median age of 45 years. The primary role was bedside nurse (46%), with an adult-only population (78%) in an academic (84%), inpatient (68%–88%) center. 39 (94%) U.S. states and 7 (6%) non-U.S. countries were represented.

**Methodologic Approach:** Survey development was guided by Dillman Mail and Internet survey design. Electronic questionnaires were conducted with Zoomerang™ Market Tools.

**Main Research Variables:** Infection control practices across bone marrow transplantation settings.

**Findings:** Descriptive statistics revealed minimal practice variation regarding infection control across transplantation types or conditioning regimens. Practices regarding implementation of restrictions on patients' hygiene, diet, and social interactions varied by phase of transplantation, with the greatest variations occurring during the post-transplantation phase. Sixty-two percent of respondents reported using published guidelines; 72% reported using organization-specific policies.

**Conclusions:** Although published standards are under consideration, practice variation exists across transplantation centers. Whether the variation is caused by a lack of compliance with published guidelines or by the poor delineation of details for providers to translate the guidelines into practice is not known.

**Interpretation:** Identifying gaps in the literature and inconsistencies in HSCT practices is an important first step in designing evidence-based projects that can be used to standardize practice and link best practices to improved patient outcomes.