

The purpose of this poster is to describe how UNC Hospitals' began its Patient and Family Support Program and how this program has impacted patient outcomes and patient satisfaction.

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#### STEM CELL TRANSPLANTATION PATIENT FAMILY CAREGIVERS: A PROGRAM FOCUSED ON "CARING FOR THE CAREGIVER"

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One of the most important aspects of Stem Cell Transplantation (SCT) is identifying a family caregiver to care for the patient during the transplant journey. At one of the largest transplant centers in the county, the focus is to develop a comprehensive SCT Caregiver Program. The program is based on current caregiver literature and on the qualitative research of Dr. Loretta Williams. The program is based on six themes identified in Dr. Williams's research and includes commitment, expectation management, role negotiation, self care, new insight and role support.

There are three components of the SCT Caregiver Program. The first component is the development of a comprehensive Caregiver Manual. The manual will contain both education and resource information focused specifically towards the family caregiver. The second component is to provide caregivers with expressive art materials such as journals, photo albums and scrap books. Researchers have suggested that psychological symptoms rather than physical symptoms are the most overwhelming to most caregivers and that 20 – 30% suffer from these symptoms. The use of creative activities may promote feelings of well being, provide comfort, and lower anxiety. The third component is to conduct quarterly Caregiver Appreciation Weeks. During one week of each quarter, caregivers are offered opportunities to participate in a variety of activities. The activities include massage, journaling, scrap booking and bingo. Providing this recognition is our way to acknowledge the caregiver as an important person in the SCT journey.

In summary clinicians can provide support to family caregivers by providing them with education and expressive arts, and by acknowledging their unique contributions to the SCT patients. The development of the SCT Caregiver Program will provide the framework to meet the needs of the family caregiver throughout their SCT journey.

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#### NURSING CARE OF THE BONE MARROW TRANSPLANT PATIENT IN SEPTIC SHOCK WITH ACUTE RESPIRATORY DISTRESS SYNDROME

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**Purpose:** Provide a case study of a complex bone marrow transplant (BMT) patient in septic shock with Acute Respiratory Distress Syndrome (ARDS). To educate nurses about the pathophysiology of and nursing interventions for a patient in septic shock with ARDS. **Rationale:** Due to the immunocompromised nature of the BMT patient, sepsis and ARDS are more frequently seen in this population. The effects can be devastating and often result in multi-system organ failure and death. Nurses can play a key role in patient outcomes by recognizing the signs and symptoms of septic shock and ARDS. It is necessary for nurses to understand the current treatments and interventions to provide high quality patient care. **History:** The case study is based on a thirty-eight year old male diagnosed with Hodgkin's Lymphoma who underwent autologous and allogenic bone marrow transplants. He was admitted to the BMT unit with worsening renal insufficiency. The night before he was scheduled to have a Mahukar placed, he aspirated some water with his nighttime medications. Throughout the night his oxygen requirements increased. While having the Mahukar placed, his oxygen level dropped and he was intubated. **Interventions:** The patient required critical care interventions, including multiple

vasopressors, frequent ventilator changes, and continuous renal replacement therapy (CRRT). He was medically paralyzed and required advanced cardiac life support. **Implications:** BMT nurses need a current knowledge base in the care of the septic and ARDS patient. Nurses should be aware of the risk factors for sepsis and ARDS and be able to recognize the signs and symptoms of both conditions. It is important for nurses to be knowledgeable of the current treatment and interventions for septic shock and ARDS in order to take quick action in these emergency situations.

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#### SUCCESSFUL INTEGRATION OF COMPLEMENTARY THERAPIES IN A COMBINED ADULT AND PEDIATRIC BONE MARROW TRANSPLANT UNIT

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The University of North Carolina Hospitals' Bone Marrow and Stem Cell Transplant Program was established in 1992. Since that time, hundreds of transplants have been performed. Many changes have occurred: new regimens, new chemotherapies and other medications, and the addition of biotherapies. Unfortunately, the side effects of pain and discomfort during treatment still exist. Pain medications have been part of the transplant process since the beginning. Morphine, Hydromorphone, Fentanyl, and others have helped smooth the rough road of transplant. Antiemetics have been used to reduce the side effects of nausea and vomiting. Recently, complementary therapies have further paved the way to a more easily tolerated transplant experience.

At UNC Hospitals, the Bone Marrow and Stem Cell Transplant Program has incorporated massage therapy, relaxation and meditation exercises, pet therapy, aromatherapy, healing touch, singing bowls, and prayer labyrinths into its practice for those patients interested in combining complementary therapies with medication to decrease the intensity of pain with treatment. Patients may have massages in their rooms. They may use a prayer labyrinth to become grounded and connect with their spiritual selves. They also have the opportunity to use singing bowls to focus energy. Our recreational therapists guide patients into meditation exercises using guided imagery, biofeedback, diaphragmatic breathing, and relaxation tapes to calm fears and relieve discomfort.

The purpose of this poster is to describe the complementary therapies utilized by UNC's Bone Marrow and Stem Cell Transplant Program and the ways in which patients undergoing transplants have benefited from these therapies.

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#### PREVENTING FALLS FOR HEMATOPOIETIC STEM CELL PATIENTS

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In accordance with Joint Commission's National Patient Safety fall prevention goal, we have focused on decreasing falls in our hematopoietic stem cell (HSCT) patients. The medications and side effects that accompany HSCT place this population at high risk for falls. Sustained low platelet counts following transplant place the patients at greater risk for life threatening injuries in the event of a fall. In attempt to decrease our fall rate, we reviewed incident reports and conducted post fall patient interviews. We identified the high risk group to be the alert and oriented patients in their 50's and 60's, most involving toileting issues. Interviews determined the most frequent reasons for not calling for assistance were not acknowledging increased weakness and a desire to maintain personal dignity and independence with toileting. We initiated an extensive education program to help patients gain an understanding of their fall risk and the potential seriousness of related injuries. Patient/family education begins pre-transplant, is followed up on by the

admitting nurse and reinforced throughout HSCT. Posters in each room reinforce the importance of calling for help to avoid falling. We involve family caregivers in monitoring patients' status. Institutional guidelines require nursing staff to assess patients' fall risk at least every twelve hours using the Schmid risk assessment tool. Precautionary measures are implemented if the patient is determined to be at risk. We inform patients about the possible side effects and the potential need for help when toileting in an attempt to maintain their dignity while at the same time keeping them free from harm. We have teamed with the physicians to modify our c-difficile protocol, decreasing the patients' risk of dehydration, fatigue, and frequent toileting. In addition, we have partnered with our pharmacists to identify medications that place our patients at risk for falling and to ensure chemotherapy and diuretics are initiated at times that will be least likely to interfere with the patients' rest patterns. This combination of team members working together has enabled us to decrease our fall rate from June 2006 to June 2007 and maintain the dignity and independence of our HSCT patients while ensuring their safety.

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#### **BECOMING A PRIMARY SITE FOR THE RADIATION INJURY TREATMENT NETWORK (RITN): ARE YOU PREPARED?**

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**Background:** The Radiation Injury Treatment Network (RITN) has been established to provide primary treatment facilities for radiological or nuclear emergencies resulting in hematopoietic system injury or failure. As a primary site for the RITN, Siteman Cancer Center needed to build a comprehensive plan to successfully meet the milestone objectives, as well as to ensure integration of the protocol into the hospital's own preparedness plan. **Objectives:** To establish Siteman Cancer Center as a primary site within the RITN the development committee identified four objectives which included: early involvement by senior leadership; collaboration with hospital/university based environmental health and safety programs; coordinated updates to inpatient and outpatient transplant teams regarding RITN milestones and preparedness planning; and outreach to surrounding states within our region by educating and involving the cancer center's governmental liaison. **Method:** The senior leadership team was actively involved in the initial review of the RITN participation agreements, as well as requirements associated with becoming a primary site. This early involvement secured the ongoing resources and support that the developmental team needed to build new policy and process. Bringing information about the RITN to the hospital's broad based environmental health and safety group allowed for efficient integration of the network's processes into the mass casualty and radiation injury policies, and into the emergency command center that the institution had already in place. Frequent updates brought to both the inpatient and outpatient teams developed the awareness and knowledge of the roles that clinicians would take in the event of this type of disaster. To ensure that regional states within the territory were aware of our preparedness initiatives through the RITN, the governmental liaison to the cancer center was invited to participate in planning efforts. This participation allowed Siteman to reach out to state and regional agencies and make its unique capabilities as an RITN site known. **Results:** As a Level One Trauma center and part of the National Disaster Medical System, Barnes-Jewish Hospital has a well defined emergency preparedness program. Now as one of the thirteen primary RITN sites, Siteman Cancer Center of Barnes-Jewish Hospital holds a comprehensive clinical and organizational plan for emergencies resulting in hematopoietic system injury or failure.

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#### **PASS IT ON**

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Transfer (hand-off) of patient care has been identified as a high risk period for hospitalized patients. In health care there are numerous types of hand-offs including, but not limited to nursing shift changes, physicians transferring on-call, and temporary re-assignment of patient responsibility for breaks. The JCAHO 2008 National Patient Safety Goals demand the implementation of "a standardized approach to 'hand-off' communications, including an opportunity to ask and respond to questions."

In 2005 the Duke Pediatric Blood and Marrow Transplant Unit (PBMTU) Nursing Committee developed a protocol for nursing hand-offs that occur during shift change, with the goals to minimize interruptions and provide complete, concise information to the oncoming nurse. Standardizing the nursing shift change hand-off on the PBMTU was critically important, as the nurses on this unit administer over 19,000 medications and 500 blood products each month. The key component of every shift change is a customized report sheet and safety checklist. This tool provides uniformity in shift change report as all systems are covered, intervascular infusions are identified, labs are reviewed, and doctor's orders are double checked. A human centered engineering group described the PBMTU nursing hand-off in 2007 as "remarkably efficient and effective". Their analysis recommends that "the PBMTU shift hand-off among nurses should be treated as a model for other types of hand-offs within the unit and across Duke Medical Center."

The purpose of this poster is to describe the protocol for hand-offs on the Duke Pediatric Blood and Marrow Transplant Unit.

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#### **EFFECTS OF GUIDED IMAGERY ON HEMATOPOIETIC STEM CELL TRANSPLANTATION PATIENTS**

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The present research is a quasi-experimental study based on non-equivalent control group pretest-posttest design, which was proposed to examine the effects of guided imagery therapy on immune cells, fatigue and emotional state in hematopoietic stem cell transplantation patients.

For patients admitted to 8-person hospital rooms for hematopoietic stem cell transplantation, we conducted guided imagery therapy for 4 weeks from a week before the hematopoietic stem cell transplantation to three weeks after, and three times per week and 13 minutes each time. The subjects were 37 patients (20 in the experimental group, 17 in the control group) who had received hematopoietic stem cell transplantation at C University Hospital during the period from October 2006 to April 2007.

We measured neutrophils count, total leukocyte count and lymphocyte count for immune cells. In addition, fatigue was measured with the Piper Fatigue Scale (PFS) modified for this study, and stress was measured with Kim Hyung-sook's tool modified and supplemented for this study.

Collected data were analyzed using SAS through  $\chi^2$ -test, Fisher's exact test, t-test and repeated measures ANOVA. The results are as follows.

1. The total leukocyte count, the neutrophils count and the lymphocyte count decreased until week 1 from the transplantation and then began to increase from week 3 in both the experimental group and the control group, but the experimental group showed a significantly larger increase in the neutrophils count.
2. After the experiment, fatigue increased more in the control group than in the experimental group, but the difference was not significant.
3. After the experiment, stress increased more in the control group than in the experimental group, and anxiety and depression decreased more in the experimental group than in the control group, but the differences were not significant.

According to the results of this study presented above, the guided imagery therapy promoted the recovery of immune cells and reduced anxiety and depression in hematopoietic stem cell transplantation patients. Because guided imagery therapy is convenient and