

Transplant Nursing

difficult for the transplant team to have complete assurance that the patient took every dose correctly and, if patients were admitted to the inpatient unit prior to completing therapy, to know exactly how many doses were given and how many remained. The HSCT Clinical Nurse Specialist led a process improvement effort to increase the safety of patient-administered oral Busulfan. A new form was developed, the Busulfan Medication Documentation Record. Patients and caregivers document Busulfan doses administered on the form, which becomes a permanent part of the medical record. Patient Education about Busulfan therapy was standardized and written resources were updated. A second new form was developed, the Busulfan Management Flowsheet, which serves as a record of nursing verification of all Busulfan doses. Outpatient nurses were trained to coach patients on the use of the Busulfan Medication Documentation Record, and inpatient nurses were trained to collect the form on admission to the hospital, which generally occurs the morning after the last dose of Busulfan is administered at home. If patients are admitted during Busulfan therapy, nurses know to collect the form to determine how many doses remain and ensure that no under- or overdosing takes place. Nurses updated the outpatient and inpatient Busulfan Nursing Policies and Procedures to reflect the system changes. The outcomes of the process improvement project have been positive. Nurses have a higher level of confidence that patients understand the importance of taking Busulfan correctly. On audit, 100% of Busulfan Medication Documentation Records have been completed perfectly by patients and caregivers. Additionally, a nurse discovered a Busulfan dosing error that did not reach the patient that could have been missed prior to the process improvement.

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TAILORING INITIAL CHEMOTHERAPY EDUCATION TO THE NEEDS OF HEMATOPOIETIC STEM CELL TRANSPLANT NURSES

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Hematopoietic Stem Cell Transplant (HSCT) nurses need specialized knowledge in chemotherapy administration. In addition to the knowledge and skills that all chemotherapy-trained nurses must possess, the HSCT nurse must have the ability to administer and manage toxicities for chemotherapy given at extremely high doses as well as in investigational regimens and for off-label indications. At the University of Washington Medical Center (Seattle Cancer Care Alliance), we have developed a Chemotherapy Skills Day that all nurses who are new to chemotherapy administration attend after the two-day didactic course, *Foundations in Chemotherapy Practice*. The HSCT Clinical Nurse Specialist (CNS), the Oncology CNS, and the HSCT/Oncology Staff Development Specialist offer the skills day as a collaborative effort of case-based learning. The nurses learn in a hands-on, informal environment where they assimilate new skills using applicable examples from clinical practice. The HSCT CNS leads the HSCT nurse-learners through specialized skill acquisition necessary for safe chemotherapy administration on the inpatient HSCT units. The HSCT nurses learn dose verification processes, patient teaching standards, safe handling practices, documentation guidelines and side effect management unique to the HSCT population for the chemotherapy agents that they will commonly encounter in their practice. The skills day is offered twice a year, in conjunction with the 2-day didactic course. Nurse managers and participants are extremely satisfied with the additional knowledge they gain at the skills day, and staff nurses on the HSCT and oncology units have noticed an increased level of skill and confidence in nurses who attend the Chemotherapy Skills Day than in previous nurses who attended just the 2-day didactic course.

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A UNIQUE STAFFING STRATEGY

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A successful BMT requires many elements, including consistent nursing care. Froedtert Hospital (FH) provides this consistency by utilizing a unique staffing strategy. Nurses on the BMT unit at FH

work 7/70. Seven seventy requires a nurse to work seven ten hour shifts in a row and then allows them seven days off. Working seven days in a row insures consistent nursing care. Seven seventy offers an extra six hours a day of nursing care to each patient. The overlap of shifts ensures time to provide extra nursing care, patient education, and emotional support. When extra time is not needed for patient care, the involved nurse may participate in projects to better the patients' quality of care. Patients benefit from the continuity of care 7/70 provides. Caring for a patient seven days in a row allows the nurse time to get to know the patient. Patients undergoing a BMT are vulnerable to many complications. Often the start of these complications is not obvious. A nurse becomes so familiar with their patients, the initial signs and symptoms of these complications can be noticed early. With these complications, time is of the essence and early detection is paramount. FH has traditionally staffed their units through a centralized nursing office. Unit managers would report unit activity to a staffing office that made the final decision. The hospital is currently amidst a pilot to decentralize staffing. Units were split into clusters and staff nurses were trained as shift coordinators allowing them to collaborate within their cluster to make staffing decisions. A decentralized approach to staffing allows the nursing staff more autonomy. The BMT unit is clustered with the Hem/Onc unit. The benefits of this cluster include; similar patients, shared physicians, and geographic proximity. Physicians have appreciated a decrease in float nurses unfamiliar with the nuances of cancer care. A limited number of float nurses allocated by the nursing office continue to be available when needed. During the 5 months prior to the pilot, the unit staffed themselves 211 times and during the first 5 months of the pilot, the unit has staffed themselves 372 times. By increasing unit and cluster availability, the hope is to see a rise in patient and nursing satisfaction as well as a decrease in errors. FH's unorthodox approach to staffing has provided consistency in patient care and we are hoping our new cluster model will enhance the quality of care already provided by the 7/70 model.

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THE DEVELOPMENT OF A PATIENT CLASSIFICATION TOOL ON AN INPATIENT BLOOD AND MARROW TRANSPLANTATION UNIT

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Patient classification systems (PCS) have been used as a tool to determine staffing levels in health care institutions for the past 30 years. The purpose of the PCS was to adequately staff patient care units without compromising care delivery. In the current health care arena, an increasing focus on rising health care costs, the shortage of nurses, and proposals for safer, mandatory staffing levels have led many hospital administrators and nurse managers to re-evaluate the standards in their own institutions. The use of Patient Dependency Systems (PDS) has presented an alternative to the PCS model. Rather than emphasize solely on the acuity of each patient, the PDS places a greater focus on the patient's dependency on staff to have their needs met. A patient classification tool utilizing the PDS model is currently being developed at our comprehensive cancer center. Each inpatient unit is actively involved in the process of creating a tool specific to their patient population. On the inpatient blood and marrow transplant unit, a committee comprised of nurse management and staff nurses was formed to evaluate our unit's needs. From this committee, 9 classification categories have been developed with defined criteria for each. A point system allocates a set number of points for each criterion in a particular category. Patients are then placed in a class level (1-5) based on their total points and reevaluated every shift. The second part of this model encompasses workload measurement. This process will assist in determining the hours of care required by each patient and quantifying the work done by the nurse during a particular shift. It will focus on both direct and indirect care activities, as well as routine activities on the unit. The goals of this project are:

- Optimal staffing levels for all inpatient units
- Appropriate use and allocation of resources
- Maintaining budget compliance

Greater ease in assigning patients on individual units

As the unit continues with the development of the tool, the importance of objectivity, statistical validity, documentation, and the ability to discriminate between patients is emphasized.

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BLOOD AND MARROW TRANSPLANTATION FOR HIGH-RISK SICKLE CELL DISEASE: CLINICAL CHALLENGES

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Patients with sickle cell disease (SCD) continue to have increased morbidity and mortality secondary to clinical complications. HLA matched sibling allogeneic bone marrow transplant (BMT) has been investigated in young patients with high risk SCD patients. Patients with high-risk SCD patients commonly have had a cerebral vascular accident (CVA), acute chest syndrome (ACS), or recurrent painful crisis (VOC). Our institution has performed 20 allogeneic BMT in children with high risk SCD. Patients with SCD have additional challenges beyond the standard BMT supportive care. Astute nursing assessment, management, and patient-family education specifically related to SCD BMT is crucial to a successful outcome. Education includes the treatments, side effects, and BMT routines. SCD patients are at increased risk for cerebral vascular accidents due to thrombocytopenia and hypertension. High-risk SCD patients have often received chronic transfusion therapy before BMT; many have developed antibodies to red blood cells and platelets. Careful screening of donor units is essential. It is suggested that hemoglobin be maintained >10 and platelets $>50,000$, so proactive planning is required to assure an adequate supply of blood products. In SCD, a determined attempt to prevent GVHD is warranted. Cyclosporine (CSA) is administered as GVHD prophylaxis, close monitoring of CSA pharmacokinetics is essential. CSA, especially at higher serum levels, often causes hypertension and decreased serum magnesium, which can lead to seizures if not treated promptly. Strict blood pressure parameters need to be observed and serum magnesium must be monitored closely. Compliance is essential during BMT; non-compliance has been shown to lead to GVHD, hypertension, and seizures. Families are counseled on the importance of compliance prior to BMT with reinforcement throughout the BMT process. Patients and families are given written, daily, medication schedules that require charting and review prior to discharge to help enhance compliance. BMT has been successful in high-risk SCD patients. However, vigilance must be maintained to avoid complications of BMT, which may be far worse than sickle cell disease itself.

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IMPLEMENTATION OF DISCHARGE VIDEOS FOR PEDIATRIC PATIENTS UNDERGOING BLOOD AND MARROW TRANSPLANTATION: BRIDGING THE GAP BETWEEN INPATIENT AND OUTPATIENT CARE

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The transition between inpatient and outpatient care for children post blood and marrow transplantation is a stressful time for their primary caregivers. Caregivers are required to provide complex care including intravenous infusions, intravenous medication administration, and physical care of central lines and other devices. Education of the caregiver requires a coordinated effort between the home care/home infusion company, the outpatient clinic, and the inpatient team. Ideally, teaching should begin weeks prior to discharge. The purpose of this abstract is to describe the Duke Pediatric Blood and Marrow Transplant Program's Discharge Teaching initiative. In conjunction with classes and one-on-one teaching by the home health discharge nurse, the key component of this program is an instructional DVD that provides detailed education on the key components of care that will be required after discharge. These include central line dressing changes, cap changes, and blood draws. The caregiver is required to view the instructional DVD prior to being discharged from the hospital.

The inpatient care nurse is responsible for providing additional education based on each caregiver's needs. Caregivers are then required to successfully demonstrate that they are able to perform these tasks prior to discharge.

The instructional DVD is the catalyst for the second phase of education which includes intravenous pumps and medications. The nurse discharge planner also begins that phase of teaching while the child is inpatient. The implementation of this video has greatly improved patient and staff satisfaction. Caregivers are able to watch the video and practice the skills on their own time. Staff articulated that their teaching time was more efficient and that caregivers were better prepared for the discharge process. The discharge planner was able to spend more time on the more complex issues such as intravenous infusions. Overall, this video has made teaching time more efficient and has improved parents' satisfaction in the discharge planning process.

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COMPASSION FATIGUE: CARE FOR THE CARING

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Compassion fatigue is the emotional and physical response, which can develop in individuals exposed, through their work or other types of support, to people who are suffering. It is commonly seen in health care professionals working with individuals suffering from the consequences of a serious illness, traumatic event, or death, particularly of a child. Professionals who work with people who are suffering must contend with not only the normal stress or dissatisfaction of work, but also with the emotional and personal feelings for suffering (Gentry, 2001). One group that is often overlooked in the aftermath of a traumatic event is the healthcare professional. Compassion fatigue can result in a preoccupation or tension with the individual or event. Healthcare professionals often report feelings of burn-out and frustration. Staff will experience physical and emotional manifestations of this syndrome. Many will leave the field because of compassion fatigue. The purpose of this poster is to describe compassion fatigue and the impact it has on the healthcare professional (specifically nurses). The signs and symptoms of the syndrome will be described. An additional goal of this poster will be to define strategies and coping skills for the management of compassion fatigue. Finally, the Duke Pediatric Blood and Marrow Transplant compassion fatigue model will be described. This program was developed in 2004 in an attempt to reduce burnout and turnover among nursing staff.

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PATIENT CONTROLLED ANALGESIA BY PROXY

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Patient controlled analgesia (PCA) is an effective and efficient method of controlling pain. When used as prescribed and intended, the risk of over sedation is low (JCAHO 2004). Pediatric BMT patients experience pain from mucositis, skin GvHD, VOD, and other complications. Effective pain management in a pediatric BMT unit is often complicated by the fact that many young patients are unable to either physically push the PCA button or developmentally understand the association of pain relief with pushing the button. In many BMT units, including our own, the parent administers PCA "by proxy". Recently JCAHO and other patient safety organizations have focused on PCA by proxy. Serious adverse events have been reported when family members, caregivers, and others administer the analgesic for the patient. The Joint Commission's Sentinel Event database contains only one medication error related to PCA by proxy. The U.S Pharmacopeia (USP) medication database reported fifteen cases of error with PCA by proxy. Twelve were from family/parent controlled PCA, 2 were RN administered, and 1 was by pharmacy (JCAHO 2004). One death involving a nurse administered PCA has been reported involving a post-op elderly patient with multiple medical issues. The purpose of this abstract is to describe the Duke Pediatric Blood and