minutes for another hour. A CBC (complete blood count) is drawn when the patient returns to the unit and then repeated in four hours. If the patient is hemodynamically unstable or the post-procedure CBC shows ≥1g/dl change from baseline hemoglobin, the CBC is repeated every hour for four hours.

Order sets outlining pre and post-procedure orders have been developed and are available through the electronic order pathway. There is also a plan in place to audit compliance with the Plan of Care and the appropriate use of liver biopsies.

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SIBLING SUPPORT PROGRAM: MODEL FOR MULTIDISCIPLINARY INTERVENTION INITIATED BY NURSING

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According to research, healthy siblings are identified as the most disregarded and distressed of all family members affected by serious childhood illness. In an effort to increase communication and coping in these families, a multidisciplinary team at Columbus Children's Hospital implemented a sibling support program. The pilot group targeted siblings of children with cancer age 8-12. The program consisted of six modules related to facts about cancer, feelings, change, and support. The siblings were also exposed to areas of the hospital they may never see, including MRI, CT, XRAY, and the operating room. A coinciding parent group was conducted with a trained psychologist. A total of fifteen children and fifteen parents participated. Both parents and siblings were surveyed using a questionnaire developed by the multidisciplinary team. Eleven children and eight parents completed the survey. 72% of children reported that the group enabled them to talk more openly to their parents about their feelings. 82% stated that the group taught them more effective ways to cope with their ill sibling. The parent data indicated that 86% believed the group helped foster communication with their well child. All of the parents stated that the group helped their child cope more effectively with the illness of their sibling. This preliminary data suggests that a formal support program increases coping skills of the sibling, as well as fosters communication between parents and their well child. Future research, including a prospective study using the Sibling Perception Questionnaire, as well as development of an adolescent support group is planned.

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GATIFLOXACIN AS A POSSIBLE CAUSE OF HYPOGLYCEMIA IN A NON-DIABETIC STEM CELL TRANSPLANT PATIENT

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Introduction: Gatifloxacin, a broad-spectrum flouroquinolone with relatively benign adverse effect profile, and once-daily dosing, provides an easy and convenient regimen for patients treated both in and outside the hospital. Since the Food and Drug Administration approved the antibiotic in 1999, the prescribing information has been updated to include stronger precautions of possible disturbances of glucose homeostasis. With increased use of gatifloxacin comes reports of increased incidences of interruption of glucose homeostasis. Although gatifloxacin has been previously reported as a potential cause of both hypoglycemia and hypoglycemia, the exact mechanism is unknown.

Purpose: The process of diagnosis, collaboration with multisciplinary teams, and management of the patient as well the information learned from this experience with be shared with fellow colleagues.

Summary: A 61 year-old female with a history of lymphoma s/p allogenic stem cell transplant in 1999. She remains in remission from that disease but has been having chronic graft versus host disease of the eyes for which she has received chronic steroids as well as continuing photopheresis. More recently she is being treated for fungal pneumonia and chronic renal failure. The patient has been taking gatifloxacin for several years. However, a few weeks prior to developing symptomatic hypoglycemia, she had an acute worsening of her chronic renal failure. The patient presented to the clinic complaining of feeling weak, shaky, and dizzy and not feeling well, her fasting blood glucose was 37 at that time. She was given dextrose 50% and admitted for uncontrolled hypoglycemia and worsening fungal pneumonia. The patient was evaluated by endocrinology and her gatifloxacin was discontinued with normalization of her glucose without further interventions.

Implications for Nurse Practitioners: The temporal relationship of the gatifloxacin administration and the decreased glucose levels seems to correlate in our patient. The patient's renal insufficiency may have also contributed to the hypoglycemia. Gatifloxacin does exihibit an insulin-secreting property that is not fully understood, but is clinically significant. Therefore, clinicians should be aware of that possible adverse effect and act quickly if their patient develops hypoglycemia when taking gatifloxacin.

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FLEX TIME: AN OPPORTUNITY FOR EMPLOYEE SATISFACTION IN THE TRANSPLANT COORDINATOR TEAM

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The implementation of Flex Time was made in an effort to recognize overall employee satisfaction, maintain a seamless experience of nursing care for the patient, and maintain professional service to all collaborating teams. The proposal for flex time included advantages/disadvantages of flex scheduling, expectations for coordinator time off, and the measure of impact on clinic operations/ team satisfaction.

The advantages for a flex schedule would include; one day per week that can be utilized at the individual's discretion, an open opportunity for each coordinator to have time for personal achievement goals such as continuing their education for advanced professional degrees, as well as, a work schedule that is reflective of actual practice. Likewise, the disadvantages provide for potential increased risk of losing the seamless flow of patient care, colleagues unable to accept the routine absence of an individual coordinator, and the potential inability of the coordinator team to keep up with the workload. In addition, a list of expectations for the coordinator "flex day" were developed.

Survey tools were used to measure the impact of flextime on clinic operations and/or patient/team satisfaction. In the clinic, patient satisfaction is measured on a regular basis and monitored closely for comments related to coordination of care. In addition, the coordinator satisfaction tool was used to measure the quality of patient care specifically given by the coordinator. The responses were monitored for any short-term impacts and followed on a regular basis for any long-term effects of flex time.

The means for collecting the opinions come from both informal conversation and the distribution of an objective five-question survey, targeted towards physician's satisfaction in the coordination of care. The overall opinion of the group was surveyed prior to implementation to establish a base line from which to measure future satisfaction levels. The survey will be repeated periodically and results assessed for significant changes in satisfaction. The priority measurement goal was to emphasize that the quality of patient care and the core values set by the institution are maintained. Thus, the positive feedback from the patients/staff involved has led the coordinator team to provide seamless patient care with the added benefit of employee satisfaction.

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PEG-FILIGRASTIM POST-CHEMOTHERAPY TO MOBILISE PBSC IN PAEDIATRIC ONCOLOGY PATIENTS

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There is limited data available on the use of PEG-filigrastim for the mobilisation of peripheral blood stem cells (PBSC) in children. Initial clinical studies using PEG-filgrastim after chemotherapy have shown successful mobilisation of CD34+ cells in adults with haematological malignancies. PEG-filgrastim has been used at Children's Hospital at Westmead (CHW) since December 2002. At CHW we mobilise and harvest PBSC's from approximately 35

patients per annum following colony stimulating factors, predominantly GCSF +/- chemotherapy. We observed that in 5 patients after routine chemotherapy, PEG-filigrastim mobilised sufficient numbers of CD34+ cells for collection, with impressive CD34 counts both in the blood and in the final CD34/kg collected.

This has led to a 2 year prospective observational study since July 2006 to investigate the numbers of CD34+ cells in the blood of children following administration of PEG-filigrastim post chemotherapy. The aim is to determine the correlation between the recovering white cell count (WCC) and increasing CD34+ count. This will guide the commencement of PBSC harvesting after the use of PEG-filigrastim to mobilise PBSC's. All children in the oncology unit who are already scheduled to receive PEG-filgrastim are eligible. The dose of PEG-filgrastim is based on weight. It is not administered to children <10kg.

Twelve patients have been enrolled on the study since its commencement in July 2006.These patients received subcutaneous PEG-filigrastim following protocol driven chemotherapy. Five of the twelve patients achieved a peripheral CD34 count of $> 20 \times 10^6$/ml which is the minimum CD34 count required at CHW for commencement of PBSC harvest. Three of the 12 patients did not achieve a peripheral CD34 count $> 8 \times 10^6$/ml over a 20 day period with increasing WCC, the average CD34 count being $<1 \times 10^6$/ml. Four patients are awaiting count recovery post chemotherapy + PEG-filigrastim at time of report.

Early results from this study indicate that PEG-filigrastim may be considered for patients requiring PBSC harvest in the paediatric setting. The once only injection allows greater compliance with paediatric patients.

Optimum timing remains a question which should be answered with continued accrual of patient numbers into the study.

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THE DUKE PEDIATRIC BLOOD AND MARROW TRANSPLANT NURSING GRADUATE INTEGRATION PROGRAM

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Critical care nursing has a reputation of being both skillfully demanding along with emotionally challenging. To ensure the greatest quality of care to patients it is necessary to design orientation programs for new nurses that prepare them for the challenges that will arise. Rapidly advancing technology, busy and complex medication programs, and treatment modalities have resulted in a tremendous demand for highly trained and well educated nursing staff. The prolonged nursing shortage has greatly impacted the nursing work force. Historically highly specialized, critical care areas, hired only experienced nurses. The demand for nurses in these areas has far exceeded the supply and most institutions are now faced with the challenge of integrating new nursing graduates into highly complex work environments. The Duke Pediatric Blood and Marrow Transplant Unit is no exception. This type of work environment has been classified as one of the most intensive and complex in nursing. The patients are critically ill and the medical and supportive care needs have been known to overwhelm even the most experienced nurse. The integration of the new graduate into this type of environment has created unique challenges for both experienced staff and nursing leadership. The purpose of this abstract is to present the Duke Pediatric Blood and Marrow Transplant "Nursing Graduate Integration Program". The program was initiated in 2006 after two consecutive years of low retention (particularly among new graduates). The new graduates who left the unit described feeling overwhelmed, stressed and unprepared for the rigorous demands of these patients. Typically new graduates left the unit for jobs associated with decreased acuity and less stress. The poster will highlight the key components of our program including safety, multidisciplinary collaboration and moral support in attempt to increase quality of care and retention rates.

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ENGRAFTMENT SYNDROME: A COMPLICATION OF HEMATOPOIETIC STEM CELL TRANSPLANTATION

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Engraftment syndrome is an important complication causing early morbidity and nonrelapse mortality in children undergoing hematopoietic stem cell transplantation. It is used to describe the symptoms secondary to cytokine release as a reaction to chemotherapy and radiation therapy. In some cases, it cannot be distinguished from hyperacute graft versus host disease following transplantation. Conditioning regimens prior to transplantation cause tissue damage which produces release of cytokines. This production of cytokines leads to increase in capillary permeability resulting in loss of intravascular fluids into the interstitial space. Engraftment syndrome can occur before or along with neutrophil recovery following cytotoxic chemotherapy. In most cases, fever and erythroderma are the hallmarks of the syndrome. In severe cases, aseptic shock syndrome with multiple organ failure can occur. Clinical manifestations of engrafment syndrome include: fever without identifiable infectious etiology, erythematous rash, diarrhea, renal impairment, ascites, and non-cardiogenic pulmonary edema. High-dose systemic corticosteriods have been shown to decrease the duration and lessen the severity of complications related to this syndrome. Other treatment is supprotive. Nurses play an important role in recognizing early manifestations of engraftment syndrome by monitoring strict I & O's, daily weights, respiratory and hemodynamic status.

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DEVELOPMENT OF A MULTIDISCIPLINARY PROSPECTIVE STUDY TO EVALUATE THE PREVALENCE OF BK VIRUS IN HEMORRHAGIC CYSTITIS (HC) PATIENTS IN UNRELATED DONOR HEMATOPOIETIC STEM CELL TRANSPLANTATION (UD HSCT) RECIPIENTS

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HC is a severe complication associated with HSCT. Conditioning regimen, radiotherapy and use of cyclophosphamide are described as risk factors; we previously determined that UD HSCT is independently associated with higher prevalence of HC (El-Zimaity et al. Blood 2004).

Developed as a quality improvement project, the main goal of this prospective study is to evaluate whether BK viruria is a contributing risk factor for development of HC in patients submitted to UD HSCT. The APN role for this ongoing study is screening and enrolling eligible patients, and then ordering urine cytology for polyoma virus and PCR for BK virus in urine before the first day of conditioning regimen. APNs also participate in close follow-up during inpatient period, regarding symptons or signs of HC, education for interdisciplinary team members, and informing staff of ongoing results. Anticipated nursing implications include infusion of platelet concentrates, IVIG, and close monitoring of urine viral test.

Sixty-two consecutive patients who underwent UD HSCT from 09/05 to 05/06 have completed at least 60 days of follow-up post HSCT. Results with median follow-up of 97 days include: BK PCR was positive in 28 patients (45%) previously to transplant; 11 patients (18%) developed HC, at a median of 25 days after HSCT. In the PCR positive group, 7 patients (25%) had HC, versus 4 (12%) in the PCR-negative group (hazard ratio = 3.4 for a positive PCR; log-rank $p = 0.057$). 100-day cumulative incidence of HC is 30% for PCR-positive and 15% for PCR-negative patients (not a statistically significant result).

Conclusion: the role of BK viruria in this setting is unclear. This quality improvement project is an example of the importance of a multidisciplinary taskforce and the APN role in the development of clinical prospective studies in HSCT.