

**Future:** These good clinical practices are leading to error reduction and increased data validity. Our objective for the 2016 audit is to demonstrate below 1% total errors and attain reciprocal data between electronic medical records, internal databases, and CIBMTR by implementing one innovative process per quarter.

## TRANSPLANT NURSING-ADMINISTRATION ORAL

### 112

#### Implementation of an Electronic Form for Hematopoietic Stem Cell Transplant (HSCT) Infusions Improves Documentation Compliance

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**Background:** Historically, Hematopoietic Stem Cell (HSC) Infusion was documented on a standard paper form available from a document library throughout the institution. Once complete, the form remained in the patient's chart until discharge at which time the chart was scanned into the EMR. This limited the availability and portability of the information. Completion of this form was the responsibility of the clinician infusing the HSC product. Additionally, HSC infusions are conducted in a variety of units throughout MSKCC. These areas have been divided into 5 major groups.

The Bone Marrow Transplant Quality Assessment Committee (BMT QAC) conducted a compliance audit of infusion documentation. The timeframe used for the audit was October 2010 through March 2011, which included a total of 194 transplants. A random selection of 50 transplants (10 from each major group) during this 6 month period was reviewed; resulting in a total of 60 forms (10 of which were double cord transplants requiring 2 forms). Seven key elements of the form were identified based on regulatory and institutional requirements and audited for completeness. The results of the audit indicated that documentation compliance was 77%.

**Intervention:** To improve documentation compliance of HSC Infusions, we developed an electronic infusion form. The building and testing of the form lasted approximately one year. Simultaneously, we modified our vital sign monitoring parameters for better standardization between different cell types. During this time period, infusion Standard Operating Procedure (SOP) was revised to incorporate use of the electronic document and standardized vital sign parameters. The design of the electronic form required all fields to be complete prior to final electronic signature and acceptance of the form. Additionally, Infusion vitals entered into the electronic flowsheet by the RN were imported into the note by the documenting clinician. Subsequent to distribution of the SOP and training of Stem Cell Transplant service (Physicians, Nurse Practitioners, Registered Nurses and Cell Processing Technicians) the form went live in March 2012. Three weeks post roll out to all areas, the paper form was removed from the document library; however the form will be available during system downtime.

**Outcome:** A follow up audit was conducted to measure compliance post implementation of electronic documentation. The timeframe for the audit was April 2012 through July 2012, a total of 209 transplants. Similar to the pre-implementation audit, a random selection of 50 transplants from the 5 major groups during this 4 month period were reviewed for a total of 60 forms. The same 7 key elements of the form were audited for completeness. The results of the post implementation audit indicated that compliance of

documentation improved from 77% to 92%, an improvement of 15%.

Key Element	Pre	Post
1. Is date time of Infusion Complete ?	84%	98%
2. Is use of Hydration and Premedications indicated (time of premeds) ?	68%	100%
3. Is Adverse Events completed ?	74%	100%
4. Is product type and cell dose complete ?	72%	95%
5. Is form signed by and Attending ?	95%	94%
6. Is the Start and Stop times completed ?	78%	98%
7. Are the vital sings completed per policy ?	67%	59%
<b>Overall Results</b>	<b>77%</b>	<b>92%</b>

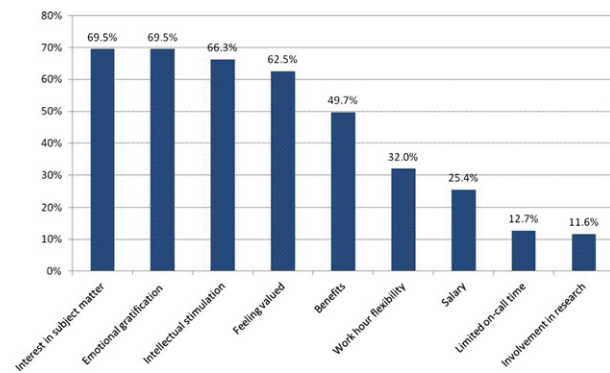
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#### Blood and Marrow Transplant (BMT) Outreach Presentation Promoting BMT Nursing As a Career Choice: Pre and Post Survey Results

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The System Capacity Initiative (SCI), sponsored by the National Marrow Donor Program (NMDP), was convened to evaluate and provide recommendations for addressing workforce and infrastructure challenges for current and future utilization of blood and marrow transplant (BMT). The Nursing Workforce Group (NWG) was established to address projected shortages of BMT nurses. After surveying BMT nurses, the NWG identified several priority challenges, including the recruitment of nurses to the BMT field. In an effort to increase the number of BMT nurses, an outreach presentation entitled 'Introduction to BMT' was developed and delivered to nursing students throughout the U.S. The one-hour presentation describes the BMT process, identifies various nursing roles in BMT, and describes the benefits of working in this area. A brief pre and post survey is administered to assess the students' change in awareness of BMT as a career option, nursing career preferences, likelihood of pursuing a BMT career, and previous education/training in BMT after listening to the presentation. To date, the presentation, and pre and post surveys, was delivered to a total of 181 nursing students. The majority of students had not previously considered a career in BMT (56.9%). However, the presentation significantly increased nursing students' interest in pursuing a BMT career (N=61;  $P < .0001$ ). Additionally, students indicated that 'feeling valued' (62.5%), 'intellectual stimulation' (66.3%), 'emotional gratification of providing patient care' (69.5%) and 'interest in subject matter' (69.5%) were very important career aspects (see Figure 1). The NWG in partnership with Oncology Nursing Society (ONS) and American Society for Blood and Marrow Transplantation (ASBMT) is continuing to promote the presentation to increase awareness of BMT nursing as a career option. It will be available for professional

development of licensed nurses and continuing nursing education credit will be provided.



**Figure 1.** Most Important Aspects of Nursing Career for Nursing Students Surveyed (N=181)

## TRANSPLANT NURSING—CLINICAL ORAL

### 114

#### Implementation and Maintenance of Practice Guidelines to Decrease Central Line Associated Bloodstream Infections by Minimizing Line Manipulation

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**Background:** The adult blood and marrow transplant population is at high risk for central line associated bloodstream infections (CLABSI). CLABSI remains a large cause of morbidity, increased cost, prolonged hospitalization and mortality in this population. One source of these infections is line manipulation; specifically at the central venous access device (CVAD) needleshub. Several studies have consistently found yeast and heavy bacterial contamination on the surface of the CVAD hub. Our aim was to decrease line manipulation in order to decrease our unit's CLABSI rate.

**Implementation:** In late 2010 our unit practice council created new guidelines for accessing and maintaining central lines. These guidelines included: patients on continuous IVs will not be disconnected to shower, walk, etc. and patients whose lines are accessed greater than two times a day (excluding labs) will remain connected continuously at a provider prescribed rate. Our definition of each access included one connection and disconnection. Nursing staff were educated about the new guidelines via email and staff meetings. Providers were educated during a Blood and Marrow Transplant Program Quality Improvement Committee meeting. In February of 2012, these guidelines were revised to include the continuous connection of all neutropenic patients receiving any IV fluids or medications. When not neutropenic, we continued to have patients with greater than two accesses per day connected continuously.

**Evaluation:** During the 2010 calendar year our inpatient BMT unit had 13 CLABSI, resulting in a 3.35 CLABSI rate per 1000 patient days. During the 2011 calendar year our inpatient BMT unit had 5 CLABSI, resulting in a 1.27 CLABSI rate per 1000 patient days. There was a 62 percent reduction in CLABSI from 2010 to 2011. For the first nine months of the 2012 calendar year our inpatient BMT unit has had 3 CLABSI, resulting in a 1.07 CLABSI rate per 1000 patient days. There was a 16 percent reduction in CLABSI from 2011 to the first 3 quarters of 2012.

**Discussion:** We were able to successfully implement a best practice based intervention through creating new guidelines for accessing and maintaining central lines and saw a significant decrease in our CLABSI rate.

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#### Improving Reliability of Immunosuppressant Sampling Techniques

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**Problem:** The Colorado Blood Cancer Institute BMT Program at Presbyterian/St. Luke's Medical Center, a member of the Sarah Cannon Blood Cancer Network, performed 242 hematopoietic cell transplants in 2011. The program noted 14 confirmed TAC/CSA lumen contaminations in 2010. In March 2011, auditing revealed 5 additional contaminations. This prompted a process improvement initiative. Goals were to improve quality outcomes by increasing reliability of TAC/CSA levels and resulting dose adjustments and improve patient satisfaction with the process (lumen contamination necessitates peripheral sampling causing increased discomfort and risk for patients).

The BMT Leadership team reviewed potential causes: Forty new staff hired; census and acuity were higher; Travelers and float staff were utilized. A process was needed to ensure TAC/CSA levels were reliable and bedside caregivers had appropriate knowledge to manage TAC/CSA infusions and samplings.

**Intervention:** Immediate efforts focused on nursing staff re-education.

1. Upon admission, nursing to designate a lumen for TAC/CSA infusion.
2. No TAC/CSA sampling will be drawn from designated lumen.
3. TAC/CSA infusion is primary line infusing into dedicated port.
4. TAC/CSA infusion turned off 10 minutes prior to level sampling.

The unit-based council led this initiative. They recommended alerts to the special nature of these drugs. While under review, another contamination occurred. Additional recommendations made:

1. BMT Float guidelines reviewed -TAC/CSA process added.
2. TAC/CSA process included in traveler orientation
3. RN Resource assigned to new hires, floats, and travelers.
4. TAC/CSA education poster displayed on BMT units.

In February 2012, another contamination was noted. The BMT Leadership team and unit-based council convened to review additional opportunities.

1. Mandatory Healthstream education developed. Healthstream is an electronic education system which includes documentation of compliance.
2. Clamp unused lumens during sampling process.
3. Interdisciplinary collaboration to create a pop up screen when medication is scanned—"Infuse in designated lumen ONLY. For help, see your charge nurse."