failures while still adhering to the transition timeline. Clinician assessment of the FMEA process using a 5-point Likert scale found that participants felt the ‘rapid-cycle’ model was effective and efficient. Post-transition assessment of patient engraftment, graft failure, and safety event reports provide initial confirmation that product and patient safety were maintained during this transition.

### Traditional vs. “Rapid-cycle” FMEA

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Traditional FMEA</th>
<th>“Rapid-cycle” FMEA</th>
</tr>
</thead>
<tbody>
<tr>
<td>A systems-oriented, prospective approach that identifies potential process fail-points, assesses their level of risk, and helps prioritize response with the goal of reducing error occurrence and/or mitigating harm.</td>
<td>Coordinate FMEA. Prepare initial process flows. Begin failpoint identification. Calculate risk priority numbers and categorize failure modes (high, moderate or low severity).</td>
<td>Focus on failure mode identification, scoring and correction.</td>
</tr>
<tr>
<td>Facilitator responsibilities</td>
<td>Coordinate FMEA meetings - provide expertise and accountability.</td>
<td>Identify and categorize failure modes.</td>
</tr>
<tr>
<td>Group member (Clinician) responsibilities</td>
<td>Perform process mapping, identify and score failure modes.</td>
<td>Calculate risk priority numbers and categorize failure modes (high, moderate or low severity). Identify corrective actions.</td>
</tr>
<tr>
<td>Meeting requirements</td>
<td>6-12</td>
<td>2</td>
</tr>
<tr>
<td>Timeline</td>
<td>4-12 months</td>
<td>2-4 months</td>
</tr>
</tbody>
</table>

### Critical Components of Patient Satisfaction in Large Stem Cell Transplant Outpatient Clinic

Adornetto-Garcia, D.L., Sorensen, S.H., Stevens, C. UT M.D. Anderson Cancer Center, Houston, TX

Measuring patient satisfaction in the outpatient clinic of one of the largest stem cell transplant centers in the country is important to ongoing improvement of the program. It is also a key activity of clinical administrative staff in their quest to improve clinic functions. Nursing leaders in the Stem Cell Transplant Outpatient Clinic identified and measured three targeted patient satisfaction areas, and based on their findings, implemented changes. The focus areas included phone communication, continuity of care, and “wait times”. A patient survey process and questions were developed. Survey questions included items about ease of contacting clinic staff, how long they were placed on hold, and if staff returned calls. Patients were asked if they knew their team, were informed of tests, and received consistent information. They were also surveyed about length of wait times and time from arrival to seeing their physician, perceptions of acceptable wait times and whether they were kept informed. Over 100 patients have been surveyed at 6-month intervals with return rates exceeding 80%. Based on survey findings in these areas, improvements were made including installation of a new phone system, voicemail guidelines, a team member sheet, and revision of education materials. Measurement and evaluation of patient satisfaction continues to be an important role for the SCT leaders. Utilizing the survey process, the team is able to review results and implement action plans for improvement. Staff involvement has been key to the success of this process. Discussion of results, action plans, and outcomes are done at staff meetings. Continual follow-up and evaluation are necessary to assure improvements are sustained. The findings and improvements made by the SCT leadership team may be useful to other nurse leaders and staff in their efforts to improve patient satisfaction, a key component to the success of the SCT journey.

### Transplant Nursing: Research

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A HEMATOPOETIC STEM CELL TRANSPLANT QUALITY, CLINICAL, CELLULAR DASHBOARD: WHAT IS THE EVIDENCE?

Cartwright, F., Andersen, S., Cervone, K.K., Feldman, T., Mondez, S. New York University Langone Medical Center, New York, NY

Identifying HSCT clinical, quality, cellular indicators with valid benchmarks is essential to evaluate quality of care and provides direction for program management and growth (strategic planning). Indicators and benchmarks are selected based on level of evidence (clinical trial results, survey reports, international and national research data bases), best practices among centers, and institutional reports. This paper describes the process that an academic institution used to develop and maintain an up-to-date HSCT clinical, quality, cellular dashboard. Using a review of the above literature, HSCT indicators were evaluated based on the following categories: 1) level of priority (relevance), 2) established benchmarks, 3) relationship between process and outcomes, 4) measurable with numerator and denominator, and 5) ease of data collection. To explore how variations in institutional and administrative infrastructure, patient population served, and practice and treatment patterns influences outcomes and establishment of benchmarks, a critique of the literature that examined the following indicators was conducted: microbial contamination of product, blood stream infections, time to engraftment, ICU admissions, length of stay, mortality, grade 3 – 4 toxicities. The dashboard guides the Quality & Performance Improvement Agenda. Opportunities for improvement are identified.

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COLONIZATION OF TOTAL PARENTERAL NUTRITION ADMINISTRATION SETS IN IMMUNOCOMPROMISED CHILDREN

Norcliffe, R.1 Lee, D.2, Hyde, A.3, Hurcuff, R.4, Marilyn, H.2; 1Texas Children’s Hospital, Houston, TX; 2Texas Children’s Hospital, Houston, TX; 3Texas Children’s Hospital, Houston, TX; 4Texas Children’s Hospital, Houston, TX; 5Baylor College of Medicine, Houston, TX

**Purpose:** To determine the incidence of bacterial and yeast colonization in total parenteral nutrition (TPN) fluid administration sets in immunocompromised children and to explore the incidence of infusate-related bloodstream infection (BSI) in this group of patients.

**Background:** Routine replacement of IV administration sets has been advocated to prevent infectious complications of IV therapy (deMoissac, 1998). Research studies to date provide no data for infusate-related BSI that compares administration set changes at intervals of 72 hours and 96 hours among patients receiving TPN (Gillies, 2004).

**Sample and Methods:** The sample included 14 immunocompromised children who were receiving TPN. Five infusate fluid samples were collected from each patient for a total of 69 samples. Qualitative cultures of the TPN fluid were obtained to determine the incidence of colonization with bacteria and yeast. A 1 ml sample of TPN fluid was obtained at times 0, 24, 48, 72 and 96 hours after a new TPN administration set change. Specimens were obtained from the injection port immediately above the filter. TPN fluid bags were changed every 24 hours.

**Results:** Twelve bone marrow transplant patients and two oncology patients with double lumen central lines participated in the study. None of the TPN infusate fluid samples were colonized with bacteria or yeast at any of the data collection time points.
Two patients had a positive blood culture during the study time period; however, the blood cultures were not associated with the TPN fluid or administration set change since all fluid samples remained negative for bacteria or yeast.

**Implications for Nursing:** This study was the first to describe no occurrence of TPN infusate colonization over time in immunocompromised children. Findings from this study support the current practice for TPN tubing administration set change at the study institution.

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**449 A QUALITATIVE AND OBSERVATIONAL STUDY OF POST-MODERN PARENTAL ROLES DURING THE CHILD’S HAEMATOPOIETIC STEM CELL TRANSPLANTATION (HSCT) TREATMENT**

Larsen, H.B.1,4,5, Heilmann, C.J.2,3, Johnson, C.1, Adamsen, L.4,5 Rigshospitalet, Copenhagen, Denmark; 2 Rigshospitalet, Copenhagen, Denmark; 3 Cancer Society Danish, Copenhagen, Denmark; 4 The University Hospitals Centre for Nursing and Care Research, Copenhagen, Denmark; 5 University of Copenhagen, Denmark

**Purpose:** Parents to children undergoing treatment with allogeneic HSCT in protective isolation, experience distress related to the child’s care. Parents struggle to cope with the stress related to the child’s disease; this includes anxiety related to survival potential, side effects, treatment complications and the child’s reaction to the hospitalisation. The aim of this study was to investigate the parents’ experiences and reflections about their role in caring for their child.

**Materials and methods:** Sixteen interviews with parents were held using convenient sampling and based on the availability of parents in the outpatient clinic. The interviews were analysed using a theoretical ideal type construction inspired by Max Weber and an interactionist approach inspired by Arlie Hochschild.

**Results:** Three types of approaches emerged 1) expertise-minded, 2) dialogue-minded and 3) socially challenged parents. Expertise-minded parents base their care and interactions on medical knowledge. To “dialogue parents” it’s important that emotions are incorporated in the rationale for care. When expertise-minded and dialogue-minded parents experience that their approaches to care are not meet, conflicts arise with the child, between the parents or with the medical staff. Being able to manage the expertise-minded or the dialogue-minded approaches requires emotional work in the form of both surface- and deep acting (to induce or suppress feelings in order to sustain outward countenance that coaxes an appropriate state of mind in others) by the parents. Socially challenged parents fail to adopt either of the two above-mentioned approaches and often fail to manage the required emotional work. Socially challenged parents are performing to the best of their abilities but experience conflicts and distress in the care related to their child.

**Conclusion:** The three described types of approach may provide a new perspective on the interactions that occur between parents, child and staff during treatment with HSCT. Better understanding these complex interactions may potentially diminish parents and children’s levels of distress. Furthermore, understanding of the interactions help medical staff to identify socially challenge parents and provide parents with the assistance and guidance they need to manage the care for their child.

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**450 EFFECT OF ORAL CROTHERAPY ON MUCOSITIS-RELATED PAIN AND PATIENT FUNCTIONING IN HEMATOPOIETIC STEM CELL TRANSPLANT RECIPIENTS RECEIVING HIGH-DOSE MELPHALAN**

Robenolt, J.1, Trovato, J.1, Thompson, J.1, Gordon, S.2, de Vera, M.3 1 University of Maryland Medical Center, Baltimore, MD; 2 University of Maryland Dental School, Baltimore, MD; 3 University of Maryland Medical Center, Baltimore, MD

**Purpose:** Cryotherapy is recommended as prophylaxis for mucositis in the Multinational Association of Supportive Care in Cancer (MASCC) guidelines (Level II evidence, grade A recommendation), for patients receiving high-dose melphalan. This is a randomized, prospective study investigating the effects of oral cryotherapy in patients who are receiving melphalan doses ≥140 mg/m², either alone or as part of the BEAM regimen followed by autologous hematopoietic stem cell transplant (HSCT).

**Methods:** This study is approved by the Institutional Review Board at the University of Maryland Marlene and Stewart Greenbaum Cancer Center. The goal is to enroll 40 adult patients 18 years of age or older undergoing high-dose melphalan treatment alone or as part of the BEAM regimen followed by autologous HSCT. Subjects meeting the eligibility criteria, following informed consent, will be randomized to receive cryotherapy or no cryotherapy (1:1 ratio). Cryotherapy will be administered five minutes prior to the initiation of high-dose melphalan, during the infusion, and for thirty minutes post infusion. The primary objective of this study is to collect and compare the intensity of mucositis-related pain in HSCT patients receiving high-dose melphalan or BEAM chemotherapy with or without oral cryotherapy for 14 days. The secondary objectives include measuring patient functioning (swallowing, eating, and talking); documenting the grade of mucositis; and documenting complications related to oral cryotherapy.

**Result/Conclusion:** Cryotherapy group reported significantly less mucositis related pain “Right Now” (p = 0.027) and over “Past 24 Hours” (p = 0.033) beginning on study day 8 continuing through study day 14. No subjects in the cryotherapy group reported oral functioning (swallowing, talking, eating) as “Very Much” impaired. No subjects in either group developed grade 3/4 oral mucositis based on WHO Oral Mucositis Scale. Administration of oral cryotherapy was well tolerated.

**Limitations:** Variability of PPQ and/or cryotherapy administration.

Future directions: Examine risk factors for development of oral mucositis such as mg/kg dose exposure, gender, and renal function.

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**Oral Functioning Impairment**

<table>
<thead>
<tr>
<th>Oral Functioning Impairment</th>
<th>SWALLOWING</th>
<th>EATING</th>
<th>TALKING</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-point Likert Scale</td>
<td>No Crotherapy (%)</td>
<td>Cryotherapy (%)</td>
<td>No Crotherapy (%)</td>
</tr>
<tr>
<td>Not At All</td>
<td>12 (60)</td>
<td>12 (60)</td>
<td>11 (55)</td>
</tr>
<tr>
<td>A Little Bit</td>
<td>3 (15)</td>
<td>6 (30)</td>
<td>4 (20)</td>
</tr>
<tr>
<td>Quite A Bit</td>
<td>2 (10)</td>
<td>2 (10)</td>
<td>2 (10)</td>
</tr>
<tr>
<td>Very Much</td>
<td>3 (15)</td>
<td>0 (0)</td>
<td>3 (15)</td>
</tr>
</tbody>
</table>

Max value per patient Study Days 0-14.