Background: Use CXCR4 inhibitor Plerixafor for autologous hematopoietic progenitor cell (HPC) mobilization in myeloma (MM) and lymphoma has been associated with reduction of mobilization failure. However, poor mobilization (mobilopathy) still results in multiple days of collection, increased resource utilization, morbidity and overall lower numbers of HPCs. Mobilopathy is associated with exposure to some chemotherapeutic agents, older age and female sex. Ferraro et al recently postulated a diabetes-associated mobilopathy. We analyzed mobilization patterns in a retrospective cohort of 221 patients undergoing mobilization prior to autologous transplantation for MM (136) or lymphoma (84).
Methods: Our algorithm for mobilization: A rescue ("just in time") plerixafor strategy was used after daily GCSF 10ug/kg x5 days in those failing to develop adequate (<10 /uLCD34+HPC in peripheral blood (n=8) or failing to mobilize 1e6 CD34+HPC/kg on day 1of collection (n=34). For those predicted to be poor mobilizers based on prior myelotoxic therapy or low platelet counts, 2 strategies were used - planned Plerixafor after 5 days of GCSF or chemotherapy followed by GCSF for those with no insurance coverage for plerixafor.

Only 2 pts (<1%) failed to collect > 2e6 CD34+HPC/kg. Major outcomes of interest for the remaining 219 pts were: Collection of >2e6 CD34+HPC/kg on day1 and total CD 34+HPC collected over entire collection episode. Multivariate regression models were used to evaluate potential predictors of poor mobilization. Diabetes requiring drug therapy (n=32) was considered in all models.
Results: Majority (75%) pts collected >2e6 CD34+HPC/kg on day1. Among the 32 pts with diabetes, inadequate day 1 mobilization occurred in 40% (13/32) compared to 21% (40/187) without diabetes. The use of HyperCVAD chemotherapy was associated in 50% cases with inadequate CD34+HPC on day1. In multivariate models, successful mobilization on day1 was associated with absence of diabetes (odds ratio 2.49, $P = .04$) and lack of HyperCVAD exposure (odds ratio 4.14, $P = .02$).

Interestingly, although a significant number received "just in time" plerixafor, its use improved the total CD34+HPC collection significantly (odds ratio 2.98, 95% CI $P = .0038$) in all pts including 12 diabetic recipients.

In multivariate analysis, lower total yield of CD34+HPC/kg was associated with increasing age (P=0.0002) and the use of conventional chemotherapy.
Conclusions: In our analysis of an unselected cohort of pts undergoing mobilization, diabetes was an independent predictor of slower mobilization with its effects mitigated by plerixafor.

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Reducing Inappropriate Testing Following NCCN and IDSA Guidelines in Autologous Stem Cell Transplant (SCT) Patients

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Background: Health care institutions are identifying strategies to reduce unnecessary testing, employ better utilization of resources, and decrease patient risk. Both NCCN and IDSA guidelines recommend reserving CXR for febrile neutropenic (F+N) patients with respiratory symptoms. A retrospective review from 2010 showed that 11 of 237 (4.6%) Non Hodgkins Lymphoma and Multiple Myeloma SCT patients had respiratory signs or symptoms when they presented with F+N. Despite national guidelines, 97 of 237 (41%) patients without symptoms also had a CXR when they presented with F+N. None of the CXR in asymptomatic patients showed an active pulmonary process. Based on these results and in accordance with nationally recognized guidelines, we aimed to reduce CXR in asymptomatic autologous F+N patients to less than 10%.
Methods: A series of education sessions with clinical staff including MDs, PAs, nocturnists and moonlighters were implemented. Both oral and written materials were prepared for pass-off between the PAs and nocturnists. Study Population: We evaluated all patients admitted to the Dana-Farber Cancer Institute Bone Marrow Transplant PA service (BMT-PA) for autologous SCT between June 1, 2012 and Aug 31st 2012.
Results: During the first three month study period, 69 patients were admitted to the BMT-PA service. Of the admissions, 11 (23%) had a CXR without indication. Seven CXR were ordered by PAs and 4 were ordered by nocturnist.
Conclusions: While we did not reach our target of 10% in the first Plan-Do-Study-Act (PDSA) Cycle, we were able to reduce the number of unnecessary CXR in asymptomatic F+N SCT patients by close to 50%. This reduction includes a cost savings of approximately $23,000, as well as a reduction in radiation exposure, overall resource utilization, time off protected air flow units and patient inconvenience. Our second PDSA cycle will include a clinician perception analysis to identify why clinicians may feel it is necessary to order a CXR in asymptomatic SCT patients with F+N, despite the nationally recognized guidelines. We will provide ongoing education sessions and continue toward our aim of less than 10%.

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The Family Experience Following Bone Marrow/Blood Cell Transplantation

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***Aim*:** This is a report of a study which explored how families with children at home managed four to 12 months after an adult family member was discharged from the hospital following bone marrow/blood cell transplantation.
***Methods*:** This study was a descriptive, qualitative, one-point-in-time study. Content analysis in relation to the three conceptual components of the Family Management Style Framework was employed; inductive thematic analysis determined the emergent conceptual dimensions present in the data.
***Results/Findings*:** The three conceptual components of the Family Management Style Framework, (1) definition of the situation, (2) management behaviors and (3) perceived consequences, were validated as relevant for this sample across all participants. New conceptual dimensions were also present, inclusive of: recovery view, support base, financial picture, management domains, perceived consequences to the whole family and perceived consequences to the dyad relationships.
***Conclusion*:** Implications for nursing practice include a better understanding of how adult patients and their families manage during the recovery phase. Future research should include use of The Family Management Style Framework throughout the entire transplant experience.