Rubinstein in 1995 (method 1). Ours (method 2) pretend to increase more than 10 fold the dilution of cryopreserved HSCs in the standard washing solution (5% albumin + dextran 40). Methods 1 and 2 were compared to determine viability by means of total-nucleated-cell (TNC) count by trypan blue and flow cytometry at the time of collection, cryopreservation, thawing, and after removing the DMSO, as well as the patient's day of engraftment.

Results: Results are shown in Tables 1 and 2.

Conclusions: A greater dilution of cryopreserved HSCs in the washing solution, as a new thawing method, may decrease cell death; therefore a greater number of HSCs will be infused to the patient. Studies with a larger number of thawing procedures are needed to make this assertion.

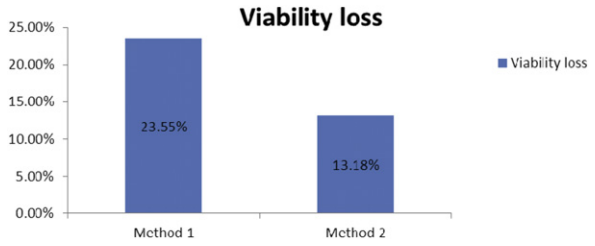

Figure 1. Viability loss

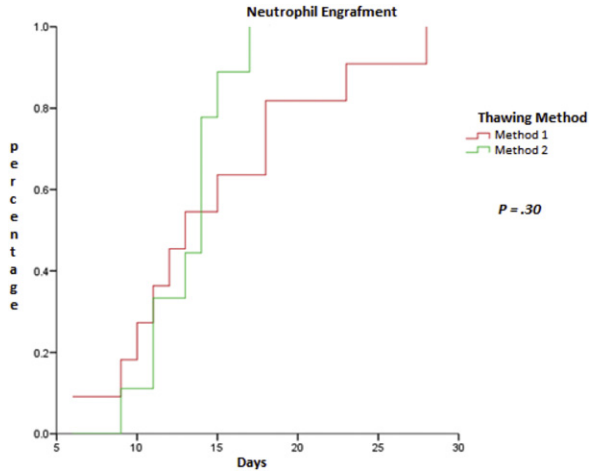

Figure 2. Neutrophil engrafment

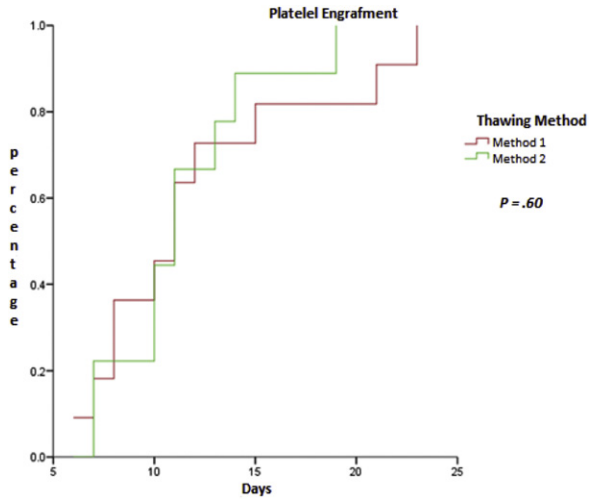

Figure 3. Platelel engrafment

Table 1
Patient's demographic data

	Global	Method 1	Method 2	P
Total (n)	26	13	13	
Transplant (n)				.43
Autologous	12	5	7	
Allogeneic	14	8	6	
Receptor age (years)				.75
Median (range)	26 (3-56)	27 (5-55)	25 (3-56)	

Table 2
Overall results in the study

	Global	Rubinstein's Method	New Method	P
Viability before thawing. Mean (SD)	97.28% (6.55)	99.01% (1.08)	95.56% (9.04)	.30
Viability after thawing. Mean (SD)	78.92% (11.69)	75.46% (12.5)	82.39% (10.12)	.15
Viability loss. Mean (SD)	18.36% (12.11)	23.55% (12.74)	13.18% (9.21)	.02
Engrafment days >20,000 Platelets. Median (range)	11 (6-23)	11 (6-23)	11 (7-19)	.60
Engrafment days >500 Neutrophils. Median (range)	13.5 (6-28)	13 (6-28)	14 (9-17)	.30

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Dissection of the Human Multipotent Adult Progenitor Cell (MAPC) Secretome by Proteomic Analysis

Richard T. Maziarz [1], Laura F. Newell [2], Annelies Bogaerts [3], Jef Pinxteren [4], Robert Deans [5], Gregory Burrows [6]. [1] BMT/Center for Hematologic Malignancies, Oregon Health and Science University; Wouter Van't Hof, Athersys, Inc., Cleveland, OH; [2] BMT/Center for Hematologic Malignancies, Oregon Health & Science University; [3] Regenesis, Inc; [4] Regenesys, Inc; [5] Regenerative Medicine, Athersys, Inc, Cleveland, OH; [6] Oregon Health & Science University

Multipotent adult progenitor cells (MAPC; Multistem®) are adult adherent stromal stem cells currently being assessed in acute GVHD clinical trials with demonstrated immunomodulatory capabilities and the potential to ameliorate detrimental autoimmune and inflammation-related processes. Our previous studies documented that MAPC secrete factors that play a role in regulating T cell activity. Here we expand our studies using a proteomics approach to characterize and quantify MAPC secretome components secreted over 72 hours in vitro under steady-state conditions and in the presence of inflammatory triggers IFN-gamma and LPS, or a tolerogenic CD74 ligand, RTL1000. MAPC differentially respond to each of the tested stimuli, secreting molecules that regulate the biological activity of the extra-cellular matrix (ECM), including proteins that comprise the ECM itself, proteins that regulate its construction/de-construction, and proteins that serve to attach and de-attach growth factors from ECM components for redistribution upon appropriate stimulation. MAPC secrete a wide array of proteases, some detectable in their zymogen forms, as well as protease inhibitors that serve to poise the ECM in a state of repose, ready to respond

appropriately to differential exogenenous stimuli consequential to local physical injury to tissue or infiltration by various cell types. MAPC also secrete chemokines and cytokines that could provide molecular guidance cues to various cell types including neutrophils, macrophages and T cells, as well as secrete factors known to be involved in maintenance of a homeostatic environment and regulating such diverse programs as innate immunity, angiogenesis/angiostasis, targeted delivery of growth factors, and the matrix-metalloprotease cascade.

POSTER SESSION 2: TRANSPLANT NURSING-ADMINISTRATION

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Standardizing Education and Competencies Across a Network

Tonya Cox [1], Peter McSweeney [2], Rocky Billups [3], Penny Odem [1], Molly Sutton [4], Carole Elledge [5], Alison CollingsNP-C [2], Cristie Gilbreth [6], Darby Siler [7], Kristen Barber [3]. [1] BMT, Presbyterian/St. Luke's Medical Center, Denver, CO; [2] Colorado Blood Cancer Institute, Denver, CO; [3] Sarah Cannon Cancer Services, Nashville, TN; [4] Oncology/BMT, Medical City Dallas Hospital, Dallas, TX; [5] BMT, Methodist Hospital, San Antonio, TX; [6] Pharmacy, Presbyterian St. Luke's Medical Center, Denver, CO; [7] Pharmacy, TriStar Centennial Medical Center, Nashville, TN

Background: Five geographically distant Hem-BMT programs came together to form the Sarah Cannon Blood Cancer Network (SCBCN) in 2011. The programs are FACT accredited with a Network volume of about 750 transplants per year. Each program had diverse methods of demonstrating and documenting competency and providing staff education.

Objectives:

1. Advance quality by standardizing core competency and education content through harnessing the expertise in each program.
2. Leverage the network approach to create a significant education resource gain for each program.

Interventions: A multidisciplinary, multi-institutional work group was created with the goal of standardizing professional education across the SCBCN to include initial and annual competencies and clinical education. This workgroup was divided into discipline-based sub-groups (Nursing, Pharmacy, Mid-Level Practitioners and Physicians) that were charged with creating discipline-specific competencies based on FACT and professional organization standards. The intent was to create core competencies that could be expanded but not reduced.

Results:

1. Comprehensive core initial competency grids with Learning Options tool completed for Nursing, Mid-Level Practitioners, and Pharmacists across the SCBCN.
2. Standardized annual competencies for 2013 created for Nursing, Mid-Level Practitioners, Pharmacists and Physicians. Competencies and credentialing requirements were developed using FACT requirements and SCBCN Programs needs assessment data.
3. Six comprehensive education modules in development across the network using SCBCN nursing and pharmacy experts to be implemented for 2013 staff education via Healthstream (an electronic education program which includes documentation of compliance). Idea generation for modules came from the network clinical experts who created the draft content with network feedback.

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What Tools are in Your Toolbox to Promote Change?

Barbara Ann Cuccovia [1], Leslie Lehmann [2], Steven Margossian [3], Stephanie Buia-Amport [1], Christine Rosati [4]. [1] Nursing, Boston Children's Hospital, Boston, MA; [2] Pediatric Stem Cell Transplant, Dana Farber Cancer Institute, Boston, MA; [3] Pediatric Oncology, Dana Farber Cancer Instituite/Children's Hospital Boston, Boston, MA; [4] Pediatric Stem Cell Transplant, Dana-Farber Cancer Institute

The landscape of healthcare is changing as healthcare providers continue to be faced with providing proficient care to complex patients as well as meeting standards and requirements established and endorsed by federal agencies, insurance companies and our patients. Hospitals are striving to ensure they create an environment that promotes safety, accessibility, efficiency, affordability and overall cost-effectiveness. Leaders in healthcare are challenged to look for innovative and efficient ways to provide this care. The manufacturing industry has effectively used Lean and Six Sigma methodologies as the backbone of their quality improvement initiatives. They have a slight different approach but combined can be effective tools to be used for problem solving, developing rapid improvement cycles, lowering costs and increasing productivity. Lean methods attempt to eliminate non-value added waste in a process with the goal of improving performance and lowering costs. Six Sigma is an approach that uses mathematic techniques to reduce process variation. In today's healthcare environment it would be prudent to look at other industries for new methods to improve processes that affect patient and staff safety, workflow, costs and overall efficiencies. At Dana-Farber Children's Hospital Cancer Center within the Hematopoietic Stem Cell Transplant program there has been significant increase in the patient volume. This increase has placed new demands on the multidisciplinary staff and contributed to delays in workflow particularly with chemotherapy ordering and communication breakdowns. With the increase in patient volume it became apparent that in order to increase efficiency, the admission process needed to be evaluated; from when the patient is identified as a candidate for a stem cell transplant to their admission to the inpatient unit. Using the Lean and Six Sigma methodology and applying it to the typical autologous, allogeneic related and allogeneic unrelated transplant referrals we identified 125 process steps and 66 gaps in our admission processes. These gaps are areas of potential risks. A risk priority matrix was used to prioritize areas of improvement and the most important 5 issues were then categorized into common themes, which are related to institutional information systems, multiple ways for patient referral and dissemination of internal information. Small workgroups are being formed to address the issues. The potential impact on medical care, cost savings and improved information flow will be demonstrated in this presentation as well as potential for adapting Lean and Six Sigma methodology to other medical academic institutions.