Not for publication or presentation

MINUTES AND OVERVIEW PLAN
CIBMTR WORKING COMMITTEE FOR DONOR AND RECIPIENT HEALTH SERVICES WORKING COMMITTEE
San Antonio, TX
Wednesday, February 21, 2024, 1:00 – 3:00 PM CT

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1. Introduction

Members present: Heather Stefanski, Rafeek Yusuf, Brent Logan, Minoo Battiwalla, Leslie Lehmann, Hemalatha Rangarajan, Fotios Michelis, Megan Herr, Ruta Brazauskas, Gabrielle Schmidt, Jinalben Patel

a. Minutes from February 2023 DSWC and HSWC Tandem meeting sessions

Meeting was commenced by Heather at 1:00 P.M. CST. All present members introduced themselves.

Leslie presented the welcome slides. Previously, we were two committees—donor health/safety and health services—but this year we merged into Donor and Recipient Health Services Working Committee (DRSWC). The merger was completed to ensure the continuation of new collaborations and novel research ideas. The CIBMTR industry funding disclosure was presented. All members of the committee were listed, including those that were unable to attend this year—Jack Hsu and Sandhya Panch. Jack's departure from the committee was announced, and no additional chairs would be added to the committee this year. Conflict of interest (COI) policy was stated, and each chair's COI disclosure was announced. Only Sandhya, Hemalatha, and Minoo had disclosures this year. Leslie revealed the 120 CIBMTR publicly available research datasets, and emphasized the great opportunity was geared towards researchers at various levels—entry through senior. CIBMTR's vast data in the research datasets would propel junior researchers in their career. The utilization of these datasets only required a specific citation to be listed. DRSWC's consistent search for new members was announced. Leslie illuminated the importance of having junior researchers signing up for the opportunity. The goals and expectations of the committee was announced—have high impact studies and provide the status of studies/timelines. A current limitation for the committee was the lack of data for all participating international countries. CIBMTR previously wanted to merge data from other countries, but the difference in data collection processes proved to be operationally and analytically difficult. Since this was also the first year as a merged committee, it was noted there was potential for increased limitations in comparison to prior years.

Leslie presented the scoring process and scoring guide prioritization for the members voting on the proposals. She also noted the components the committee looked for in proposals did reflect the new changes occurring in the field. When members decide to be an author, they were agreeing to engaging and committing substantial contributions, drafting, final approval of the manuscript, and accepting to be accountable for all aspects of the study. Additional information was presented: ongoing studies, working committee information and materials, working committee continuing education credits, and the CIBMTR website.

CIBMTR's source of HCT data was presented. In total, there are two sources of data that come in—pre- and post-transplant. Of those two sources, the data could be on either the TED or CRF track. TED level data is mandatory to report. While the CRF is not mandatory, it does have in-depth questions that are established by CIBMTR leadership. The data collection process only allowed a 3% error rate, and if a center goes above that threshold during an audit, then corrective measures were put in place. Leslie proceeded to describe the flowchart illuminating how cellular therapy data was captured on the forms and put into the database. If members design a project and want to become familiar with that emerging area of research, then they were welcome to look at the information available on the CIBMTR website. There has been a new focus on patient reported outcomes (PRO) data, and the organization has been trying to gather that data in an equally robust way. Social health, mental health, financial toxicity, and other social equity measures are captured at various time points throughout the transplant process. Currently, there are over 1,000 patients enrolled in the PRO protocol that are followed longitudinally with over 2,000 surveys administered. CIBMTR dedicates many resources to engaging early career investigators in the research process. The Working Committee Training and Leadership (WCTL) program was created for individuals three to seven years from fellowship. A two-year commitment is required, and applications are accepted every other year with the next one being in 2025. Participants in this program are introduced to the CIBMTR proposal process through participation in working committee activities.

2. Accrual summary

Hemalatha introduced the accrual summary at 1:13 P.M. CST. The first table on the accrual summary contained data between 1988 and December of 2022 for domestic unrelated NMDP donors. The total number was 69,933. Reported bone marrow transplants were 26,498, while PBSC reported 43,435—almost double the amount of bone marrow transplants. Across all graft types, majority of donors were aged 18-29. Males comprised 60% of all donors. Hispanics comprised about 10% of the donors and 70% of donors were Caucasian. The form completion of the baseline data has been collected for 63.2% of the cohort, with a higher percentage of data collected for PBSC donors. Hemalatha then encouraged the audience to utilize the provided information to inform their decisions while voting.

3. Presentations, Published or Submitted papers

Introduced by Fotios at 1:14 P.M. CST. "The association of ABO mismatch with the outcomes of allogeneic hematopoietic cell transplantation for acute leukemia"—DS13-02—was introduced first. It was published in the American Journal of Hematology. The cohort had almost 5,000 patients diagnosed with AML and ALL for their allogeneic HCT. In the multivariate analysis, major ABO mismatch was associated with worse overall survival, inferior platelet engraftment, and higher graft failure rate.

The next study, HS18-02, was published in the journal of Transplantation and Cellular Therapy the past year. This study investigated racial and socioeconomic disparities in long-term outcomes ≥ 1-year post-allogeneic hematopoietic cell transplantation. The cohort was comprised of almost 5,500 U.S. patients that had survived at least 1 year post transplant. Multivariate analysis results revealed no association between race/ethnicity or poverty level in relation to overall survival, progression free survival, relapse, and non-related mortality.

Fotios then proceeded to list the papers in the submission in-progress category. "Trends in utilization and outcomes of autologous and allogeneic hematopoietic cell transplantation in racial and ethnic minorities" (HS16-01a) was under consideration at Blood Advances. "Relationship of race/ethnicity and survival after single and double umbilical cord blood transplantation" (HS16-03) was submitted to JAMA Oncology. "International collaborative study to compare the prognosis for acute leukemia patients transplanted with intensified myeloablative regimens" (HS18-01) was under review at Transplantation and Cellular Therapy.

a. **DS13-02** Guru Murthy GS, Logan BR, Bo-Subait S, Beitinjaneh A, Devine S, Farhadfar N, Gowda L, Hashmi S, Lazarus H, Nathan S, Sharma A, Yared JA, Stefanski HE, Pulsipher MA, Hsu JW, Switzer GE, Panch SR, Shaw BE. Association of ABO mismatch with the outcomes of allogeneic hematopoietic cell transplantation for acute leukemia. **American Journal of Hematology. 2023 Apr 1; 98(4):608-619. doi:10.1002/ajh.26834. Epub 2023 Jan 6. PMC10290878.** ***Published.***
b. **DS19-02** Farhadfar N, Ahn KW, Bo-Subait S, Logan B, Stefanski H, Hsu J, Panch S, Confer D, Liu H, Badawy S, Beitinjaneh A, Diaz M, Hildebrandt G, Kelkar A, Lazarus H, Murthy H, Preussler JM, Schears R, Sharma A, Poel MV, Bruce J, Pulsipher M, Shaw B, Wingard J, Switzer G. The impact of pre-apheresis Health Related Quality of Life on peripheral blood progenitor cell yield and donor's health and outcome: Secondary analysis of Patient-Reported Outcome Data from the RDSafe and BMT CTN 0201 Clinical Trials **Transplantation and Cellular Therapy. doi:10.1016/j.jtct.2022.05.042. Epub 2022 Jun 7**. ***Published.***
c. **HS18-02** Blue BJ, Brazauskas R, Chen K, Patel J, Zeidan AM, Steinberg A, Ballen K, Kwok J, Rotz SJ, Diaz Perez MAD, Kelkar AH, Ganguly S, Wingard JR, Lad D, Sharma A, Badawy SM, Lazarus HM, Hashem H, Szwajcer D, Knight JM, Bhatt NS, Page K, Beattie S, Arai Y, Liu H, Arnold SD, Freytes CO, Abid MB, Beitinjaneh A, Farhadfar N, Wirk B, Winestone LE, Agrawal V, Preussler JM, Seo S, Hashmi

S, Lehmann L, Wood WA, Rangarajan HG, Saber W, Majhail NS. Racial and socioeconomic disparities in long-term outcomes in ≥1 year allogeneic hematopoietic cell transplantation survivors: A CIBMTR analysis. **Transplantation and Cellular Therapy. 2023 Nov 1; 29(11):709.e1-709.e11. doi:10.1016/j.jtct.2023.07.013. Epub 2023 Jul 22.** ***Published.***

d. **HS16-01a** Nandita Khera, Theresa Hahn, Sikander Ailawadhi, Wael Saber, Jinal Patel, Ruta Brazauskas. Trends in Utilization and Outcomes of Autologous and Allogeneic Hematopoietic Cell Transplantation in Racial and Ethnic Minorities. ***Submission in-progress.***

e. **HS16-03** Karen Ballen, Naya He, Tao Wang. Relationship of Race/Ethnicity and Survival After Single and Double Umbilical Cord Blood Transplantation. ***Submission in-progress.***

f. **HS18-01** Yasuyuki Arai, Yoshiko Atsuta, Shingo Yano, Naya He, Ruta Brazauskas. International Collaborative Study to Compare the Prognosis for Acute Leukemia Patients Transplanted with Intensified Myeloablative Regimens. ***Submitted to BMT.***

4. Studies in-progress

Introduced by Minoo at 1:17 P.M. CST. Proceeded to list all the studies in-progress: DS20-01 was in the data analysis stage, DS23-01 was in the protocol development stage, HS16-01b was in the manuscript preparation stage, HS19-01 was in the datafile preparation stage, HS19-03 was in the data collection stage, HS19-04 was in the data analysis stage, and HS20-01 was in the protocol development stage.

a. **DS20-01** Acute Toxicities of Bone Marrow Donation in Donors with Sickle Cell Trait (Nosha Farhadfar; John Wingard) **Analysis.**

b. **DS23-01** Unrelated Donor Collection Efficiency and Adverse Events During the COVID-19 Pandemic (Mathew Seftel) **Protocol Development.**

c. **HS16-01b** Trends in Utilization and Outcomes of Autologous and Allogeneic Hematopoietic Cell Transplantation in Racial and Ethnic Minorities (N. Khera/ T. Hahn/ S. Ailawadhi / W. Saber) **Manuscript Preparation.**

d. **HS19-01** Factors Associated with Clinical Trial Participation Among HCT Patients: A CIBMTR Analysis (T. F. Gray/ A. El-Jawahri) **Datafile Preparation.**

e. **HS19-03** Haploidentical Stem Cell Transplantation for Malignant and Non-malignant Hematological Diseases in Patients Without Sibling Donor: A Multicenter Prospective and Longitudinal Study of the Brazilian Bone Marrow Transplantation Study Group (SBTMO) (N. Hamerschlak/ M. N. Kerbauy/ A. A. F. Ribeiro) **Data Collection.**

f. **HS19-04** Outcomes After Allogeneic Stem Cell Transplants Performed in Brazil from HLA-matched Siblings, Unrelated and Mismatched Related Donors. Retrospective Study on Behalf of the Brazilian Bone Marrow Transplantation Society (SBTMO), GEDECo (Brazil-Seattle Transplant-related complications Consortium), Hospital Israelita Albert Einstein (AmigoH), Associação da Medula Óssea do Estado de São Paulo (Ameo), Programa Nacional de Apoio à Atenção Oncológica (Pronon), and CIBMTR (A. Seber/ N. Hamerschlak/ M. E. Flowers/ M. Pasquini) **Analysis.**

g. **HS20-01** Resource Intensity of End-of-Life Care in Children After Hematopoietic Stem Cell Transplant for Acute Leukemia: Rates and Disparities (E. E. Johnston/ C. W. Elgarten/ L. Winestone/ R. Aplenc/ K. Getz/ V. Huang/ Y. Li) **Protocol Development.**

5. Future/proposed studies

Introduced by Minoo at 1:19 P.M. CST and the future studies below were announced. "Health care utilization and costs of haploidentical allogeneic stem cell transplants in a contemporary cohort of pediatric patients with acute leukemia and myelodysplastic syndrome" (HS22-01) was accepted at Tandem in 2022. "Community health status and long-term outcomes in 1-year survivors of autologous and allogeneic hematopoietic cell transplantation in the United States" (HS23-01) was accepted at Tandem in 2023. The proposed studies were then announced: "Determining the barriers leading to inferior survival for Black and Hispanic patients with Hodgkin lymphoma" (2302-01), "Racial and ethnic disparities in safety and efficacy of chimeric antigen receptor T-cell therapies in B-cell acute lymphoblastic leukemia, multiple myeloma or non-Hodgkin's lymphoma" (2310-13; 2310-140; 2310-215; 2310-222; 2310-225; 2310-263), "Impact of social determinants of health on outcomes in pediatric patients undergoing haploidentical stem cell transplantation for acute leukemia" (2310-44), "Outcomes for Medicaid beneficiaries following allogeneic hematopoietic cell transplantation: exploring the impact of variable Medicaid eligibility criteria" (2310-47), and "The effect of social determinants of health on allogeneic transplant outcomes: a study of the impact of social vulnerability index on outcomes for allogeneic transplant for acute myeloid leukemia" (2310-64).

a. **HS22-01** Health Care Utilization and Costs of haploidentical Allogeneic Stem Cell Transplants in a Contemporary Cohort Of Pediatric Patients With Acute Leukemia and Myelodysplastic Syndrome. (H. Rangarajan / P. Satwani)

This is a previously presented study waiting for statistical hours to be assigned; therefore, the PI did not present again.

b. **HS23-01** Community health status and long-term outcomes in 1-year survivors of autologous and allogeneic hematopoietic cell transplantation in the United States. (B. Hamilton; S. Hong)

This is a previously presented study waiting for statistical hours to be assigned; therefore, the PI did not present again.

c. **PROP 2302-01** Determining the Barriers Leading to Inferior Survival for Black and Hispanic Patients with Hodgkin lymphoma (E. Mobley; R. Mailhot-Vega)

The study was introduced by Dr. Raymond Mailhot Vega at 1:21 P.M. CST. No COIs were disclosed. Raymond proceeded to discuss how Hodgkin lymphoma (HL) was unique through its impact on individuals of all ages—children, young adults, and older adults. Black and Hispanic patients had worse survival outcomes than White patients amongst all impacted age groups, despite each group receiving distinct therapy. To date, there was no biological data indicating genetic ancestry influenced risk of relapse. Optimum care for these patients was through participation in a trial to receive combined modality therapy and undergoing HSCT at relapse. This plan of care was occurring less frequently for Black and Hispanic patients, which raised concerns about outcomes being associated with race. The proposal proposed a merger between PCORnet and CIBMTR data. PCORnet is a data network of patient level electronic health records, administrative claims, and tumor registry data. The network collected longitudinal encounter data from more than 30 million people across the U.S. from 2010 -2020. The PCORnet CRN site partners for this protocol range in geographical representation. The proposal sought for an overrepresentation of patients and survivors who identify as Black and Hispanic.

Based on the recent census of 2022 in a Brookings Institute analysis, generally Hispanic patients are overrepresented in Florida, Texas, and the Southwest. It was traditionally thought that Black populations are more overrepresented in the southeast like Alabama, Georgia, and North Florida.

With the identified data, researchers would determine how social determinants of health (SDOH) factors relate with poor HL survival outcomes in Black and Hispanic patients. Raymond claimed identifying SDOH factors that were predictive of worse HL survival among Black and Hispanic patients would provide conceptual framework for the design of targeted interventions. Aim one of the study examined differences in the receipt and quality of HL treatment for initial diagnosis and relapse by race, ethnicity, and social factors (e.g., insurance). Aim two examined the receipt and quality of survivorship care by race, ethnicity, and social factors (e.g., insurance). Aim three evaluated patient beliefs, concerns, and attitudes regarding their upfront, relapse, and survivorship care using qualitative interviews with survivors. Aim one focused on the receding quality of HL treatment, specifically with the other databases previously mentioned. There was a real gap of knowledge in understanding the access patients had to stem cell transplant. Aim two focused on survivorship care and the patients receiving the appropriately recommended survivorship care steps presented in an electronic medical record. Aim three was qualitative, which established the proposal as mixed methods, and focused on how the patients felt about their role in medical decision making.

In the overall design portrayed on the slides, aim one focused on treatment and assessed factors under initial treatment and relapse. The main interest was a collaboration to better understand the aspects of stem cell transplant and how it was captured in the CIBMTR database. Aim two focused on survivorship. Both aims were a mediation analyses; it was thought that race or ethnicity lead towards survival, but it was being mediated by other social factors. Aim three was qualitative. Many partnerships were established to strengthen both the representation of Black and Hispanic patient survivors, as well as adolescents and young adults (AYA): Leukemia and Lymphoma Society, Stupid Cancer, Live like Bella, Elephants and Tea, and Cactus Cancer Society. The proposal was adapted by the identification of key social factors through Anderson's behavioral model—the progress model—and the NIH research framework, which considered predisposing, enabling, and need based factors. The estimated sample size from PCORnet was estimated to be 26,233 across the entire U.S. geography; samples from CIBMTR should be around 9,290. PCORnet would address the gap in knowledge and enhance the understanding around causes that lead to worse outcomes for Black and Hispanic patients. Presenter was notified of reaching time limit at 1:28 P.M. Opened to audience for questions.

First question: How would the proposal account for migration of patients in and out of PCORnet? Patients don't always get their care in a certain setting, and if PCORnet impacts 10% of the population of the U.S. then there were concerns about missing some data. Raymond responded stating the proposed data was prey to that issue. In some health care systems, like Florida, there are not many sites where someone could leave one center and not be captured in the main network. For pediatric cancer survivors, PEDSnet has committed to collecting data from all sites which involved Seattle children, Stanford, and other large organizations. While patients can equally leave, it was less common in the pediatric situation. The proposal was limited to at least two encounters with a certain diagnosis, but they would be susceptible to patients moving away.

Second question: Please elaborate on CIBMTR's role in this study and the data being put together. Raymond then acknowledged the lapse of information being presented on the data linkage was due to time constraints. He elaborated that PCORnet has different participating center sites, and the collected information from centers would get sent out to PCORnet. The centers were interested in

participating because the gap in knowledge has been understated for someone diagnosed with HL; someone may be dying from the disease compared to someone who is getting access to stem cell transplant. The main cohort that met the proposal's specific criteria would be provided from CIBMTR. A de-identified data linkage through PCORnet would occur to enhance the understanding of which patients followed through with stem cell transplant. That data could be available at CIBMTR, but PCORnet contained a stronger depth of data regarding those factors.

Third question: The question holder stated Raymond might miss some critical questions that determine survival. CS data for myeloma makes it look like Blacks and Hispanics reported worse survival outcomes; however, if one was to compare this data to the VA, where insurance and delivery of care is the same, Blacks outpace other races for survival in some instance. Those findings indicate survival was highly dependent on socioeconomic status and the kind of coverage a patient has. The granularity needed to identify what are the true causes for outcomes may not be feasible given the dataset limitations. The results may be an impression of the true outcome but would not be generalizable. Drilling down on the proposal to capture some of these nuances of the U.S. health care system would be best. For example, health care in California was very different than Tennessee where Medicaid was not provided. Raymond responded and agreed with the individual's stated hypothesis being that at no point was race or ethnicity a direct cause of survival. The study was supposed to demonstrate this. Raymond wanted to express the proposed hypothesis is not if Black or Hispanic patients are dying more for any genetic ancestry reason; instead, those disparities are due to social determinants of health with the benefit of this study being that the prior samples are all cross sectional. With PCORnet, a person would gain an understanding of how these factors change across time. They would have access to the datapoints they want to specifically evaluate, like insurance type. By focusing on those key factors via meditation analysis, it is believed that race and ethnicity would be associated with the inferior outcomes as a function of insurance. The data and the findings from the mediation analysis would then inform policy.

Fourth question: What was the ask of CIBMTR here? Was this proposal looking for just the data, or did it also require the resources for statistical support? Raymond responded saying they need CIBMTR to prepare the data. The data would then be merged through Datavant to prevent HIPAA violations from occurring. The actual analysis would be conducted by Dr. Amy Crisp.

Fifth question: How would they identify who didn't get a transplant? Raymond stated the goal would be to have 26,000 patients who had HL, and then identify relapse occurrence from that group. They would also need to determine this from EHR steps, perhaps looking at chemotherapy. If someone was starting on ABVD and they are suddenly receiving ICE, they would determine if a stem cell transplant was ever evident. He acknowledged there was no easy way to determine who didn't get a transplant, but they could also extrapolate data. For example, if those are the patients who had stem cell transplants, and those patients when compared to PCORnet are more likely to have specific factors, then those findings would also be meaningful. The question holder also stated patients get a transplant if they have good disease control. They agree it may not be genetic, but a patient could also not get to transplant because they didn't get the disease control, lacked access to care, or didn't have insurance. Even though the proposal has a lot of patients, probably only 10% of the cohort would relapse—dropping the population rapidly. Raymond did not provide a comment, and the presentation concluded.

d. **PROP 2310-13; 2310-140; 2310-215; 2310-222; 2310-225; 2310-263** Racial and Ethnic Disparities in Safety and Efficacy of Chimeric Antigen Receptor T-cell Therapies in B-cell Acute Lymphoblastic Leukemia, Multiple Myeloma or Non-Hodgkin's Lymphoma (H. Hashmi; S. Usmani; J. Ligon; N. Shah; D. Modi; E. Biltibo; A. Kassim; L. Gowda; A. Mirza)

Dr. Eden Biltibo presented at 1:37 P.M. CST and commenced the presentation by listing the proposal title. Most minority or underrepresented populations in medicine have not participated in clinical trials, which made it difficult for researchers to glean information on those subgroups. The most common solution was merging results from multiple clinical trials to conjure an assessment on those populations. Two different trials were then quoted. The first trial represented on the slide was from NIH and it was five different phase one studies compiled together. Most of the patients in the trial are B-ALL patients, and the survival data in the multivariate analysis (MVA) was completed for the B-ALL patients. There were 139 patients who participated in the trial across nine years. In the five phase one studies, 55.4% of those were White, 28.8% were Hispanic, and 3.6% were Black. The results of this study indicated there were higher CRS amongst Hispanics in the U.S. with an odds ratio of 4.5. The efficacy results had comparable CR rates across all ethnicities. The second and third population groups were relapsed refractory multiple myeloma (RRMM) (n=24) and non-Hodgkin's lymphoma (NHL) (n=23). An MVA could not be completed due to the low sample size. The researchers did observe two cases of severe CRS for Hispanic patients—one NHL and one RRMM. The second study was a retrospective study assessing the U.S. Multiple Myeloma CAR-T Consortium. It was a consortium of 11 higher institutions that brought their patients together. All 207 patients were diagnosed with RRMM, and of that cohort 72% were White, 11% were Hispanic, and 17% were Black. Higher CRS rates and longer median hospital stays were observed in the Black patients of the population. Lower overall response rate among Hispanic patients was also observed—58% vs 86% in the rest of the population—but there was no overall survival difference.

The hypothesis for the proposal was race and ethnicity influenced safety and efficacy outcomes among recipients of CAR-T therapies for B-cell Acute Lymphoblastic Leukemia (B-ALL), NHL, and multiple myeloma (MM). The specific aim was to evaluate racial and ethnic disparities in progression-free survival of B-ALL, MM, and NHL patients treated with CAR-T. The second aim was to explore the racial and ethnic disparities in the CAR T-cell therapy associated outcomes overall response rates (ORR, CR, MRD negativity rate and OS), and side effect profiles (CRS, neurotoxicity, cytopenia's, infection, second primary malignancy, and non-relapse mortality) among B-ALL, MM, and NHL patients. The inclusion criteria consisted of patients of all ages that received CAR-T for B-ALL, MM, and NHL. Patients with missing racial and ethnic information were excluded. The primary and secondary endpoints were a close repetition of the specific aims.

The preliminary data from CIBMTR consisted of 8,413 CAR-T infusions given at 210 centers to 1,143 B-ALL, 6,971 NHL, and 299 MM patients. Kymriah, Yescarta, Tescartus, Breyanzi, Abecma, and other not-specified CAR-T products were used. A large portion of the population (96.6%) had single cell infusions, and 233 patients had two infusions. Some patients had three infusions, and one case reported five infusions. A healthy representation of the elderly population was captured with 21.9% reported being 70+ years old, and 64% were male. There were 1,100 Hispanic or Latino patients across all disease groups, and close to 7,000 reported as not Hispanic or Latino. There were 6,927 White, 520 Black, 384 Asian patients along with a few remaining race groups.

The impact of the study was then presented. To understand the safety and efficacy profiles of CAR-T infusions in racial and ethnic minorities with B-ALL, NHL, and MM patients—a historically underrepresented population in clinical trials. Motivate racial and ethnic minority patients to utilize

CAR T-cell therapies within or outside of clinical trials. Finally, to identify patterns of CAR-T associated adverse effects in the patient population allowing for anticipation, early detection, and treatment of potential side effects in the clinical setting. The presenter then opened the floor for questions.

First question: What was the proposed hypothesis and what was driving the differences? Does the presenter think it was early outcomes, late outcomes, or disparities in care? If that is the case, then the proposal should look at socioeconomic status, distance to center, etc. If they think there are some differences that might lead to different rates of CRS, ICANS, and outcomes then they may have to include some other parameters as well. Eden responded with a reference to the second study she quoted earlier. The identified study looked at baseline Ferritin and CRP levels, and those factors were associated with increased rate of CRS in that patient population. She indicated there were some baseline differences in the patient population attributing to the difference in the toxicity. Patients without initial access to CAR-T would not be included. The researchers were aware they would be excluding a major patient population with the focus on only patients that received CAR-T infusion.

Second question: Are we surprised to see Hispanics did not have any worse outcomes in the referenced studies; an outcome that has been reported with traditional therapy, including allogeneic stem cell transplant and B-ALL? If the patients can access CAR-T it is possible the outcomes are comparable. The question holder proceeded to say the outcome may just be a function of biology—especially with B-ALL—and it is known for Hispanics to have a different molecular characteristics and cytogenetic risk group. The second comment was how the proposal would adjust for attribution of allogeneic transplants, especially in the B-ALL cohort. The limitation of the donor availability or not having a fully matched donor was also raised, and they noted it might be a good idea to censor. Eden responded with CIBMTR data should be able to account for this.

Third question: Look within CIBMTR because Fred Lock already presented a very similar proposal at ASCO with only diffuse large B-cell patients. A look for overlap would be necessary, but MM is the only disease that has not been researched within this question. No comments were made by the presenter.

Fourth question: There were several variables that should be considered in the MVA. The numbers are very small at the different racial groups, and they questioned if there was enough power to look at the outcomes on all these diseases. Presenter stated there are statistical methods that can be used when the sample size is low.

Fifth question: There should be a lot of heterogeneity in outcomes based on the product that was used. For example, the protocol cannot compare Abecma to other products. Stratifying by product would be necessary since it was known to be such a powerful driver for both toxicity and survival. Was there a way to address the primary hypothesis without focusing on something common across all products? The presenter responded stating they will have to divide it among the disease groups since that was a major factor affecting survival and the side effect profile. They noted it was important to take the product into consideration.

e. **PROP 2310-44** Impact of Social Determinants of Health on Outcomes in Pediatric Patients Undergoing Haploidentical Stem Cell Transplantation for Acute Leukemia (L. Davis; P. Satwani)

It was presented by Dr. Davis on behalf of the group with Dr. Satwani attending in-person. This study hypothesizes that pediatric patients with leukemia of non-white ethnicity will have decreased overall survival (OS) and increased transplant related mortality (TRM) compared with patients of white ethnicity undergoing Haploidentical hematopoietic stem cell transplant (HCT). The primary exposure of interest will be to determine the impact of social determinants of health (SDOH) on outcomes in pediatric alloHCT patients for leukemia and the primary outcomes of interest will be overall survival. Covariates of interest will include disease status, disease type, comorbidities, pre-transplant infection, conditioning, year. Treatment related mortality and leukemia free survival stratified by ethnicity will also be investigated as secondary outcomes. Subgroup analysis of patient and transplant related factors will be performed. Study will include survival probability at Day 100 and one-year post transplant using Kaplan Meier analysis which will be stratified by ethnicity and risk factors.

Comments from the audience: Dr. Khera raised her concerns for limiting population to peds only and suggested if study can include both peds and adults or AYA up to 40 years. She asked if SDOH variables would be looked at individually or as a composite variable for multivariate analysis. Dr. Davis confirmed that for the mentioned variables, the study will look individually and mentioned about neighborhood poverty, area deprivation index. Dr. Lehman asked if T cell depletion meaning Alpha cells as PtCY would have center effect with alpha and beta. Dr. Majhail asked if there would be difference in outcome for other donors other than haplo and mentioned similar publication. Presenter answered the question referring to the hypothesis and added that similar publication looked for non-halpo donors so this study will add knowledge. One of the attendees asked how social determinants analytically fit into this study.

f. **PROP 2310-47** Outcomes for Medicaid Beneficiaries Following Allogeneic Hematopoietic Cell Transplantation: Exploring the Impact of Variable Medicaid Eligibility Criteria (P. DeMartino; N. Majhail)

It was presented by Dr. DeMartino on behalf of the group with Dr. Majhail attending in-person. This study hypothesizes that heterogeneity in state Medicaid eligibility criteria influence the association between HCT outcomes and insurance status and that analyses describing inferior outcomes for Medicaid enrollees in aggregate (nationally) are of limited utility. The primary outcomes of interest will be overall survival, treatment related mortality, and relapse. Covariates of interest will be race/ethnicity, neighborhood-level poverty, performance score, disease type, donor age, conditioning intensity, HLA matching, GVHD prophylaxis. Acute-GVHD (2-4) and Chronic-GVHD will also be key secondary outcomes.

Comments from the audience: Dr. Hann asked if study is going to incorporate a cost of living index or adjustment for the heterogeneity and eligibility across states like North Dakota and New York. Dr. DeMartino agreed to the point and confirmed adding that to the study. One of the attendees suggested considering Medicaid as whole instead of expansion or not and look at their survival using an existing sickle cell disease study as an example. Another attendee asked if study is considering duration of Medicaid enrollment. Dr. DeMartino responded by stating that CIBMTR- CRF forms would provide the insurance status by time and added the study would be able to look for dual enrollments.

g. **PROP 2310-64** The Effect of Social Determinants of Health on Allogeneic Transplant Outcomes: A Study of the Impact of Social Vulnerability Index on Outcomes for Allogeneic Transplant for Acute Myeloid Leukemia (K. Ballen; I. Varadarajan)

It was presented by Dr. Ballen on behalf of the group. This study hypothesizes patients who live in counties with high social vulnerability index (above the median) will have lower two-year overall survival compared to patients who live in counties with lower social vulnerability index; and within the Social Vulnerability Index, the household composition and racial/ethnic subgroups will have the most impact on overall survival after HCT. The primary outcome of interest will be two-year overall survival after HCT for AML. 100-day transplant related mortality, Acute GVHD Grades II-IV, Chronic GVHD at one year, GVHD free, and relapse free survival at one and two years after transplant will be key secondary outcomes.

Comments from the audience: Dr. Battiwalla raised a concern for similar publication and asked if proposed study would be different than previous publication. Dr. Ballen mentioned about the small dataset used in prior study and this study will expand to national dataset. Dr. Majhail mentioned similar publication with Community Health Status and outcomes for Leukemia survival completed by CIBMTR. Presenter answered the concern by stating SVI looks at other areas like housing and transportation not only race and ethnicity. One of the attendees asked how study will consider for donor status and caregiver and their financial toxicity. Dr. Ballen agreed with the concern but shared that it's not possible to look at some factors as transplant is already done and added that it is not a part of the index primarily. Chairs raised concern for only pediatric population and one of the scientific directors, Dr. Yusuf, raised concern for interactions between 16 sub variables of SVI.

6. Proposed studies; not accepted for consideration at this time

a. **PROP 2310-74** Disparities in Multiple Myeloma Between Hispanics and non-Hispanics—Real World Outcomes
b. **PROP 2310-133** Impact of Socioeconomic Factors on Allogeneic Stem Cell Transplant Outcomes
c. **PROP 2310-149** Donor Race as a Determinant of Outcomes in Allogeneic Hematopoietic Stem Cell Transplantation for Myeloid Malignancies
d. **PROP 2310-161** Longitudinal Investigation of Financial Toxicity and Association with Health-Related Quality of Life Indicators in Hematopoietic Stem Cell Transplant Recipients
e. **PROP 2310-79** Racial and Ethnic Discrepancies in Clinical Outcomes of Autologous Hematopoietic Cell Transplantation in Multiple Myeloma in non-Hispanic Black and Hispanic Populations as Compared to Caucasian Patients

7. Other business

a. HaploQol donor study

Heather introduced Dr. Galen Switzer's topic at 2:23 P.M. CST. Galen introduced the Donor HRQol and physician decision-making in the context of haplo stem cell transplantation (HaploQol). He noted it was a newly funded study from his team and group of co-investigators. It focused on donor health related quality of life and decision making in the context of haplo transplantation. The study was funded by NHLBI in January with project coordination coming from University of Pittsburgh.

The basic rationale for focusing on haplo donors was because recent medical advances have allowed parent-to-child and child-to-parent donations. It was also known that the number and percentage of

those types of donations have increased dramatically across time. However, health related quality of life among donor populations have not been described or compared to that of other donor groups. It was also unclear how physicians make transplant-related decisions in the context of haploid donation. Health related quality of life among haplo donor population in both parents and kids, and how physicians make decisions about donor choice in the context of haploid donation was the information they sought after.

The goals of the study were to conduct the first systematic, nationwide effort to describe health related quality of life and factors associated with health-related quality of life among haploid donors. Then to compare the haplo donor quality of life to other related and unrelated donors. Quality of life scores on related and unrelated donor cohorts were collected from a prior study Galen conducted a few years ago. With that data they can look at haplo donors in comparison to those two kinds of existing cohorts. The final goal was to describe transplant physician decision making. The first study aim would be qualitative, and it would be conducted with adult and adolescent children or parents-to-child donors. At one year post donation they would conduct six focus groups. The basic goal of that step is to optimize the interview stage—the more quantitative data collection phase. In the second aim, they will finalize the interview script. Phone interviews would then be conducted with a cohort of adult and adolescent parent-to-child haplo donors. At one year post donation there would be 300 adult participants and 50 adolescents from about 30 geographically diverse transplant centers. Part of the goal was to get interest from people going through haplo transplants because they would be reaching out and trying to recruit centers as the next phase in the research study. The third aim is looking at physician decision-making regarding the use of haplo donors. There would be three focus groups with physicians. They would probably try to convene some focus groups at Tandem next year. Otherwise, they may conduct them via video conference. The three focus groups would get a better idea about how the decision making takes place. After the focus groups adjourn, a web-based survey would be sent to all 170 U.S. based centers that perform haplo transplants to gain a more systematic idea from as many centers as possible.

There would be startup and onboarding activities like IRB activation, service agreements, site documentation, and training. Then they would ask centers to identify eligible participants and contact them with a brief study description that can be done by phone, text, or mail. Contact information would then be shared with University of Pittsburgh for donors that have agreed to a focus interview or the interviews themselves. Each site would be paid $2,000 for startup/administrative costs and $150 per haplo donor enrolled in the study. It would be a four-year study, but data collection is expected to take a much shorter time, with the analytic phase at the end.

First question: They would like to get a clear idea of what exactly Galen wanted from the centers. The center gets the study to the IRB, they identify the donor, then does Galen's team complete the rest of the work? Galen responds that these prior assumptions were correct. The question holder proceeds to ask if the study requests only English-speaking donors? Galen responds that they would take English and Spanish-speaking donors. He also asserts that centers can decide internally the best way to contact the haplo donors. The research committee had decided to allow centers to do an opt-out procedure as well.

Second question: If one was to look at haplo transplants demographically, the donors are probably much older than the donors from NMDP. It is already skewed because the comorbidities those patients bring on board is a slightly elevated. Would the study control for that or account for it in the data collection? The second point made was the inability to avoid putting race into the study. Galen stated that it is expected that we know there are differences between related and unrelated donor

populations from the RD Safe study that was published. They have both related and unrelated donor populations, so the related donor population would expect to be like what we would get from the haplo donor population. Galen then addressed the second question that was posed. In all the recent studies, they ensured to have a representation of at least 15% of each ethnic minority groups in the U.S.—five groups in total. That representation provides the ability to look at differences among those categories and the ability then to statistically match it to either related donor samples or the unrelated donors—if desired. The question was then expanded to ask one of the reasons some centers give to doing haplo was due to the easy accessibility to family members. Overall, NMDP's trigger and collection time has shortened, so one can get donors even quicker. The aim three has nothing to do with availability of donors. Galen then states those are the aspects they would certainly explore and how perceptions about time to donor selection would be a factor that is asked about. End of presentation.

Minoo then instructed the audience on voting procedures for Tandem 2024 and thanked everyone for their attendance.

Meeting concluded at 2:34 P.M. CST.

Working Committee Overview Plan 2024-2025		
Study Number and Title	**Current Status**	**Chairs Priority**
HS18-03 Racial/ethnic disparities in receipt of hematopoietic cell transplantation and subsequent resource utilization in children with acute leukemia (*PI: Lena Winestone/ Richard Aplenc/ Kelly Getz; MS: TBD; PhD: TBD*)	Protocol Received	1
HS19-01 Factors associated with clinical trial participation among HSCT patients: a CIBMTR Analysis (*PI: Tamryn Gray/ Areej El-Jawahri; MS: Jinal Patel; PhD: Ruta Brazauskas*)	Protocol Development	2
HS16-01A Trends in volumes and survival after hematopoietic cell transplantation in racial/ethnic minorities (*PI: Nandita Khera/Theresa Hahn/Sikander Ailawadhi/ Wael Saber; MS: Jinal Patel; PhD: Ruta Brazauskas*)	In Press	1
HS16-01B Trends in utilization and outcomes of autologous and allogeneic hematopoietic cell transplantation in racial and ethnic minorities (*PI: Nandita Khera/Theresa Hahn/Sikander Ailawadhi/ Wael Saber; MS: Jinal Patel; PhD: Ruta Brazauskas*)	Manuscript Preparation	1
HS20-01 Resource Intensity of end-of-life care in children after hematopoietic stem cell transplant for acute leukemia: Rates and disparities (*PI: Emily E Johnston/ Caitlin W. Elgarten/ Lena Winestone/ Richard Aplenc; MS: TBD; PhD: TBD*)	Protocol Received	4
HS22-01 Health Care Utilization and costs of haploidentical allogeneic stem cell transplants in a	Protocol Received	4

contemporary cohort of pediatric patients with acute leukemia and myelodysplastic syndrome. *(PI: Hemalatha / Satwani; MS: TBD; PhD: TBD)*		
HS19-03 Haploidentical stem cell transplantation for malignant and non-malignant hematological diseases in patients without sibling donor: a multicenter prospective longitudinal study of the Brazilian bone marrow transplantation study group (*PI: Nelson Hamerschlak/ Mariana Kerbauy/ Anrezea Riberio; MS: Jinal Patel; PhD: TBD*)	Analysis	3
HS19-04 Outcomes after allogeneic stem cell transplants performed in Brazil from HLA-matched siblings, unrelated and mismatched related donors. Retrospective study on behalf of the Brazilian Bone Marrow Transplantation Society (SBTMO), GEDECo (Brazil-Seattle) (*PI: Adriana Seber/ Nelson Hamerschlak/ Mary Flowers/ Marcelo Pasquini; MS: Naya He; PhD: TBD*)	Manuscript preparation	3
HS23-01 Community health status and long-term outcomes in 1-year survivors of autologous and allogeneic hematopoietic cell transplantation in the United States. *(PI*: *Betty Hamilton; Sanghee Hong; MS: TBD; PhD: TBD)*	Protocol received	3
DS20-01: Acute toxicities in Donors with Sickle Cell Trait	Analysis	1
HS16-03 Relationship of race/ethnicity and survival after single and double umbilical cord blood transplantation (*PI: Karen Ballen; MS: Naya He; PhD: Tao Wang*)	Submitted	1
HS18-01 International collaborative study to compare the prognosis for acute leukemia patients transplanted with intensified myeloablative regimens (*PI: Yasuyuki Arai/ Yoshiko Atsuta/ Shingo Yano; MS: Naya He; PhD: Ruta Brazauskas*)	Submitted	1
DRS24-01 Outcomes for Medicaid beneficiaries following allogeneic hematopoietic cell transplantation: Exploring the impact of variable Medicaid eligibility criteria *(PI*: *Patrick DeMartino; Navneet Majail; MS: TBD; PhD: TBD)*	Protocol Pending	4

Not for publication or presentation

Working Assignments for Working Committee Leadership (March 2024)	
Fotios Michelis	**DS20-01** Acute toxicities in Donors with Sickle Cell Trait **HS18-01** International collaborative study to compare the prognosis for acute leukemia patients transplanted with intensified myeloablative regimens (*PI: Yasuyuki Arai/ Yoshiko Atsuta/ Shingo Yano; MS: Naya He; PhD: Ruta Brazauskas*)
Sandhya Panch	**HS16-03** Relationship of race/ethnicity and survival after single and double umbilical cord blood transplantation (*PI: Karen Ballen; MS: Naya He; PhD: Tao Wang*)
Hemalatha Rangarajan	**HS18-03** Racial/ethnic disparities in receipt of hematopoietic cell transplantation and subsequent resource utilization in children with acute leukemia (*PI: Lena Winestone/ Richard Aplenc/ Kelly Getz; MS: Jinalben Patel; PhD: TBD*) **HS19-01** Factors associated with clinical trial participation among HSCT patients: a CIBMTR Analysis (*PI: Tamryn Gray/ Areej El-Jawahri; MS: Jinalben Patel; PhD: Ruta Brazauskas*) **DRS24-01** Outcomes for Medicaid beneficiaries following allogeneic hematopoietic cell transplantation: Exploring the impact of variable Medicaid eligibility criteria
Leslie Lehmann	**HS16-01B** Trends in utilization and outcomes of autologous and allogeneic hematopoietic cell transplantation in racial and ethnic minorities (*PI: Nandita Khera/Theresa Hahn/Sikander Ailawadhi/ Wael Saber; MS: Jinal Patel; PhD: Ruta Brazauskas*) **HS16-01A** Trends in volumes and survival after hematopoietic cell transplantation in racial/ethnic minorities (*PI: Nandita Khera/Theresa Hahn/Sikander Ailawadhi/ Wael Saber; MS: Jinal Patel; PhD: Ruta Brazauskas*) **HS20-01** Resource Intensity of end-of-life care in children after hematopoietic stem cell transplant for acute leukemia: Rates and disparities (*PI: Emily E Johnston/ Caitlin W. Elgarten/ Lena Winestone/ Richard Aplenc; MS: Jinalben Patel; PhD: TBD*) **HS22-01** Health Care Utilization and costs of haploidentical allogeneic stem cell transplants in a contemporary cohort of pediatric patients with acute leukemia and myelodysplastic syndrome. *(PI: Hemalatha / Satwani; MS: TBD; PhD: TBD)*

Minoo Battiwalla	**HS19-03** Haploidentical stem cell transplantation for malignant and non-malignant hematological diseases in patients without sibling donor: a multicenter prospective longitudinal study of the Brazilian bone marrow transplantation study group (*PI: Nelson Hamerschlak/ Mariana Kerbauy/ Anrezea Riberio; MS: Naya He, Jinalben; PhD: TBD*) **HS19-04** Outcomes after allogeneic stem cell transplants performed in Brazil from HLA-matched siblings, unrelated and mismatched related donors. Retrospective study on behalf of the Brazilian Bone Marrow Transplantation Society (SBTMO), GEDECo (Brazil-Seattle) (*PI: Adriana Seber/ Nelson Hamerschlak/ Mary Flowers/ Marcelo Pasquini; MS: Naya He; PhD: TBD*) **HS23-01** Community health status and long-term outcomes in 1-year survivors of autologous and allogeneic hematopoietic cell transplantation in the United States. *(PI*: *Betty Hamilton; Sanghee Hong; MS: TBD; PhD: TBD)*