Table of Contents

PART C. PROJECT STRATEGY

C.1 Overall Goals and Objectives

The National Marrow Donor Program® (NMDP) proposes a project titled, **Payor-Partnered Approach to Community-Based Referral for Hematopoietic Cell Transplantation (HCT)**. The goal of this project is to identify specific clinical practice gaps among community hematology/oncology physicians (hem/oncs) regarding referral of patients diagnosed with Acute Myeloid Leukemia (AML) for consultation for HCT, also known as blood and marrow transplantation. As part of this proposal, we will partner with payors to develop educational interventions for community providers that address gaps at the system level. The end product of this project will be a valid process measure of referral by community hem/oncs for HCT along with tailored educational interventions. These deliverables will result in increased frequency and proportion of patients with AML referred for HCT in 1st complete remission (CR1), when outcomes for HCT are expected to be better than HCT at a later stage of disease. Specifically our objectives are to: ***Objective 1)*** Characterize reasons for lack of or delayed referral of patients diagnosed with AML for HCT consultation among community hem/oncs, establish preferences for education on HCT, and obtain feedback on ways to build referral relationships between community hem/oncs and HCT physicians practicing at transplant centers ((hospitals with HCT programs). ***Objective 2)*** Develop and evaluate educational interventions tailored to meet the unique needs of the referring hem/onc community, including non-educational strategies, as identified by the needs assessment. ***Objective 3)*** With the expertise of the NMDP Advisory Group on Financial Barriers to Transplant (AGFBT), devise recommendations for health insurance companies on the implementation of educational, and potentially incentivized, programs focusing on optimal timing of referral for HCT consultation among hem/oncs in contracted provider networks.

C.2 Technical Approach

C.2.A Assessment of Need

HCT has been identified as an under-utilized therapy for patients with hematologic malignancies, including those with AML.[1] Given that HCT is performed only at select transplant centers in the US, referral relationships and practices are critical to patient-centered care and transplant outcomes as well as management of health system costs. As the need for HCT grows, it will be critical to ensure that the health system has the capacity to serve all patients eligible for this life-saving therapy.[2,3]

Outcomes Differential Based on Transplant Timing

AML is the single most common clinical indication for patients undergoing HCT each year. Classifications of AML disease risk factors based on cytogenetic and molecular abnormalities allow stratification into risk groups to select appropriate therapies. The National Comprehensive Cancer Network (NCCN) Clinical Practice Guidelines for AML state that patients with poor-risk and intermediate-risk cytogenetics should be assessed for referral to HCT after achievement of CR1. The NCCN guidelines for AML mirror recommendations published by NMDP and the American Society for Blood and Marrow Transplantation (ASBMT) on optimal timing of referral for transplantation consultation.[4] Despite these guidelines, almost half of

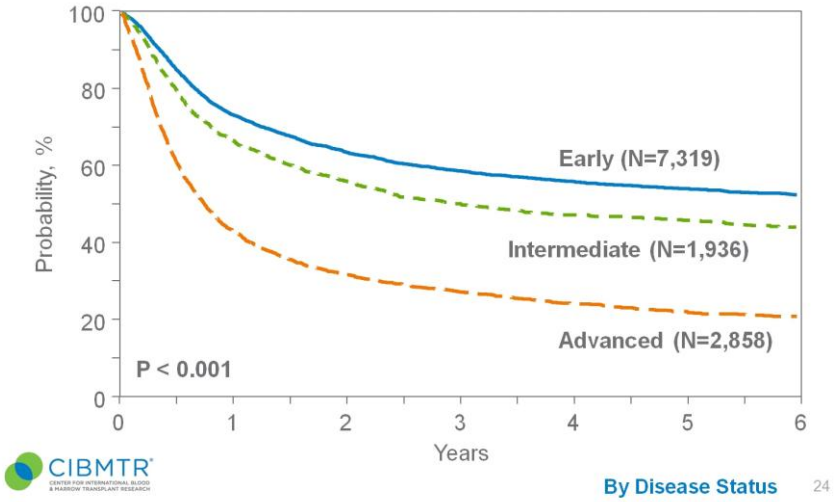
patients with AML who undergo HCT are transplanted during second complete remission (CR2) or later (unpublished data, CIBMTR 2008-2010). For those AML patients who have cytogenetic factors portending a poor outcome with chemotherapy alone, the delay in reaching a transplant program for consultation can prove fatal. Outcomes have improved dramatically in recent years for HCT recipients, making it a highly viable option for many patients, particularly those interested in a curative approach. **(Table C1)** (unpublished data on NMDP-facilitated HCT, CIBMTR 2012). Receipt of HCT (related or unrelated donors) early in AML disease stage (CR1) is associated with significantly higher survival **(Figures C1 and C2)**. A 2009 meta-analysis demonstrated a statistically significant survival benefit of allogeneic (donor cells) HCT for intermediate- and poor-risk AML in CR1 over chemotherapy and autologous (patient's own cells) transplantation.[5]

Table C1: Improved survival after unrelated donor HCT* for AML

Year	Number of Cases	1-Year Survival	2-Year Survival
2009-2011	3,178	58%	45%
2005-2008	2,687	55%	43%
2000-2004	1,614	42%	34%
1987-1999	1,111	28%	21%

* Hematopoietic cell transplantation (HCT)

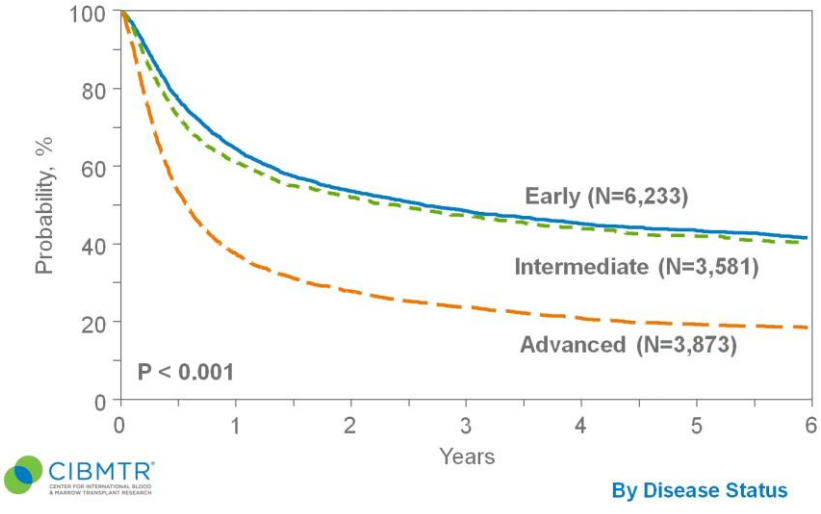
Figure C1: Survival after HLA-identical sibling donor transplants for AML (2001-2011)



Costs of Cancer Care

The National Cancer Institute (NCI) projects that US health care spending on leukemia (all types) will increase from $5.4 billion in 2010 to $6.95 billion in 2020, making it the sixth highest in terms of spending across various cancer types.[6,7] Half of the projected spending for leukemia patients is expected to occur in the last year of life, indicating that patients still experience expensive and frequent treatment during that time. In treating patients

Figure C2: Survival after unrelated donor transplants for AML (2001-2011)



with AML, appropriate referral for and timing of transplant will play an important role in decreasing unnecessary costs pre-transplant. In addition, patients with AML who undergo transplant later in their disease are at higher risk for complications, which research has shown drives higher costs of transplantation.[8,9]

Clinician Knowledge and Practice Gaps

The delay in timing of transplantation for appropriate HCT candidates likely reflects a number of knowledge gaps and/or negative perceptions of HCT on behalf of both the patient and the referring hem/onc. This project will build on baseline research conducted by NMDP.

Persistent clinical knowledge gaps

To assess reasons behind delayed or non-referral, NMDP conducted national, in-depth quantitative market research in 2006 and 2010-2011. A web-based survey was conducted with U.S. hem/oncs, all of whom diagnose patients with leukemia, lymphoma, MDS, or multiple myeloma and refer for transplantation (Survey response N=134 and 150, respectively). Physicians who perform transplants were excluded.

Using a commercial database of clinicians, potential participants were pre-screened for the following criteria:

- Primary specialty is hematology, oncology, or both
- Treated adult patients (pediatric-only providers excluded)
- Board certified in their specialty
- More than 1 year of practice experience, post-fellowship
- Must not personally perform allogeneic and/or autologous stem cell transplantation

Qualified clinicians were recruited to complete a 45-minute web-based survey until 150 responses were received.

The 2010 and 2006 findings were compared to determine progress made, and to identify new and persistent barriers to referral and appropriate transplant care. Key findings included: Perceptions of transplant and transplant outcomes grew significantly more positive over four years. Of the 18 items on perceptions of transplant that were included in both surveys, 15 showed improvement since 2006 (10-point Likert scale of agreement):

- In 2010, 74% agreed with the statement, “Patients over 60 years of age can benefit from transplantation”, compared with 47% in 2006.
- A 24% percent increase in agreement was shown from 2006 to 2010 with the following, “There have been major advances in transplantation in the past five years” (59% v. 35%).
- Agreement with the statement, “I have the information I need to understand when a patient should be referred for transplant consultation” increased over time (63% v. 42%).
- In response to, “I have the information I need to understand which patients are eligible for transplant,” 54% of participants agreed in 2010 vs. 34% in 2006.

Specific attitudes about transplant continue to correlate with likelihood to refer early, refer older patients, and refer for allogeneic unrelated donor transplant (2010 v. 2006):

- High frequency referrers (≥22% of patients) are more likely than low frequency referrers (<22% of patients) to agree that outcomes of related and unrelated donor transplants are similar (23% vs. 11%).
- Low referrers are more likely to report that concern over post-transplant complications is important in their decision not to refer (45% vs. 20%).
- High referrers were more likely to believe that HCT outcomes are better if the patient receives a transplant early in the disease process. In 2010, 37% disagreed or were neutral that "timing of when patients are referred affects transplant outcomes" (this question was not included in 2006).

Relationships between referring physicians and transplant centers are positive (77% agreed the relationship with transplant center was positive in both 2006 and 2010) but more can be done to help with transition before and after transplant. Before transplant, referring physicians indicate the need for guidelines on which patients should be referred (64% in 2010) and an effective referral process (69% in 2010). They also reported a need for proactive post-transplant care planning (72% in 2010). Credibility of NMDP as a provider of clinical education and other health professional services has increased over time; 77% viewed NMDP as a credible source for providing education on transplantation, compared with 69% in 2006. In comparison, NCCN was viewed as credible in this area by 81% of respondents in 2010 and 84% in 2006.

NMDP also conducted qualitative focus groups to provide context around the results of the quantitative study. Participants were recruited via telephone using the criteria outlined above. Five focus groups were conducted, with 3 participants each (N=15). The focus groups were conducted via telephone in July 2011, with guidelines shown and described via web for input. The recorded discussions were transcribed and analyzed. Key findings included:

- Seasoned hem/oncs reported relying on experience, established rules and training to make decisions on when to refer for transplant. Physicians felt that trained peers should know when to refer by committing the information to memory.
- However, some physicians also did not believe that firm data that shows earlier transplant provides superior outcomes compared to delayed transplant exists. This demonstrates that either their knowledge is not based on current research or they do not have confidence in the data or data source.
- Transplant centers should improve relationships with referring physicians by increasing the frequency and effectiveness of communications. Hem/oncs report that referral preferences are based on proactive and useful communications from transplant physicians.

Clinical practice gaps

The process for using an unrelated donor through the NMDP typically involves three steps:

1. Preliminary search for unrelated donor (preliminary search is a one-time search of Be The Match Registry® initiated by either the community hem/onc or transplant physician. The search identifies donors and cord blood units on the Registry that may potentially match the patient's human leukocyte antigen (HLA) markers.

2. Formal search (formal search is activated by the transplant physician when the patient decides to proceed with HCT. This is a detailed search of the Registry when donors or cord blood units are selected for high-resolution HLA testing to determine degree of match).
3. Transplantation.

To understand barriers to HCT, including community physician referral practice, we analyzed rates of unrelated donor transplantation for different diseases that are treated with HCT. Potentially HCT-eligible population utilizing Surveillance, Epidemiology, and End Results (SEER) Program cancer data and estimated proportions of patients that were candidates for HCT based on disease, donor availability, age, and co-morbidity factors. The eligible population for each disease was then compared to current rates of unrelated donor transplantation. Results showed that in 2012, there were an estimated 2,557 patients aged 0-74 years in need of an allogeneic transplant for AML **(Table C2)**. This indicates that many AML patients are referred for HCT consultation but do not proceed to HCT, likely for a variety of reasons. Anecdotally, we know that physicians may order a preliminary search without the patient's knowledge, before determining eligibility. In addition, the analysis found that of those patients with AML who need an unrelated transplant, only 62% ultimately receive a transplant.

Table C2: Rates of transplantation for AML by donor search stage in 2012

Disease	Need for Unrelated Transplant (years)		Receive Preliminary Search (years)		Proceed to Transplant (years)	
	Need (0-64)	Need (0-74)	% of Need (0-64)	% of Need (0-74)	% of Need (0-64)	% of Need (0-74)
AML	2,134	2,557	117%	122%	62%	62%

Late referral may be a factor for those patients whose condition deteriorates or who die prior to transplant. In 2008-2010, among patients with late referral who underwent transplantation (N=4,362), more than 47% were transplanted beyond CR1. More than 25% of patients received a transplant at 3rd complete remission (CR3) or greater (unpublished data, CIBMTR 2008-2010) a point at which HCT outcomes are decidedly inferior to HCT performed at an earlier disease stage.

Educational interventions were effective

By looking at rates of preliminary search over time, NMDP can measure the impact of disease-specific education efforts. The improvements in factors of interest show that education and non-education activities are successful, if targeted to known knowledge gaps. Monthly education programs and resources were developed based on research findings and delivered to hem/onc physicians. Programs focused on transplantation research in general as well as for specific diseases, selecting one disease per year. Preliminary search rates for AML rose

significantly in years when NMDP education focused on AML trends, outcomes, and importance of referral timing **(Table C3)**. The same was true for non-Hodgkin's lymphoma.

Table C3: Change in Preliminary Donor Search Rates in the U.S. by fiscal year

Disease	FY08-FY09		FY09-FY10		FY10-FY11		FY11-FY12	
	N	%	n	%	n	%	N	%
AML	74	2.96%	**339**	**13.19%**	81	2.78%	127	4.24%
NHL	25	2.18%	-5	-0.43%	**113**	**9.70%**	**101**	**7.90%**

C.2.B Intervention Design and Methods

As reflected in our objectives, there will be three phases to our proposed project:

Phase 1: Conduct Needs Assessment

To better understand reasons for persistent clinical practice gaps (delayed or non-referral of AML patients for HCT consultation) among community hem/oncs, we propose to conduct market research, using a mixed method to apply quantitative survey and qualitative focus groups simultaneously, but focused specifically on AML and factors influencing referral decisions at each stage. In addition, focus groups will be conducted to obtain deeper understanding of the trends in clinical practice gaps identified in the national market research. Our team has expertise in conducting focus groups of HCT health professionals (**Appendix A**).

Market Research Procedures and Analysis

The market research will utilize a survey to assess relative contribution of understanding of research results to clinical decision-making, patient decisions, competing therapies, impact of non-clinical factors such as insurance benefits, availability of caregivers, and more. Through this research, we will seek insight on the tools and education resources needed by community hem/onc clinicians. We will conduct a web-based, cross-sectional survey to assess changes in perceptions of the HCT and referral/practice behaviors among hem/onc physicians. Additional questions specific to knowledge and clinical practice for patients with AML will be included.

Quantitative analytic methods

We will target a minimum of 150 respondents in order to perform descriptive analysis and significance tests for assessing variations in physician characteristics and their association with knowledge and practice gaps. To identify the target sample, we will use a professional society list serve (e.g., American Medical Association or American Society of Clinical Oncology) or pre-existing research panel. We will randomly sample approximately 500 hem-oncs (non-transplant) from the list serve or screen the entire panel for eligibility. Based on previous work, we anticipate 30% response rate. Hence, we will have at least 150 participants complete the survey. Analyses will be performed using SAS Enterprise Guide Version 4.3. Honoraria will be provided to participants.

Focus Group Research Procedures

For this phase of the needs assessment, we will conduct 8-10 telephone focus groups consisting of 3-5 participants each. Separate focus groups of 60-90 minutes duration will be conducted for

referring hem/oncs and for HCT physicians. Participants will be asked to review the NMDP/ASBMT Referral Guidelines for HCT prior to the focus group and respond to the guidelines during the discussion. A moderator with background knowledge of hem/onc referral practice and HCT will guide the discussion utilizing a semi-structured discussion guide. Proceedings will be recorded and transcribed for thematic content analysis. Focus group participants will be recruited through a vendor with demonstrated access to community hem/oncs and HCT clinicians and provided an honorarium. To ensure that we obtain a wide spectrum of perspectives, we will consider several factors that can affect clinical practice in the selection of focus group participants. For community oncologists, these will include type of clinician and geographic location. For HCT clinicians, we will consider center size (based on transplant volume), number of patients treated having AML, geographic location and surrounding referral area.

Qualitative analytic methods

Systematic analysis will be utilized concurrently with data collection to identify saturation of themes across the data.[10] Two experienced reviewers will analyze the data in four steps. ***Step 1*:** The transcribed data will be organized by question in order to examine responses across all participants, looking for consistencies and differences. ***Step 2*:** Text will be segmenting into meaningful analytical units. We will use inductive codes developed through direct examination of the data.[11] ***Step 3*:** Validity and reliability of results will be assessed through intra-coder statistical analysis. A simple measure of agreement will be used. To correct for the possibility that coders might agree by chance, we will calculate the kappa statistic (>0.90).[12,13] A study team member will resolve any remaining inter-coder discrepancies in the text passages. ***Step 4*:** Coded textual data will be explored inductively using content analysis to generate categories and explanations.[11] Themes will be reported with quoted text included as support and context. Computer assisted qualitative data analysis software, NVivo, will be used. Findings will be reconciled by the project team and used to tailor the educational interventions.

Phase 2: Develop, Tailor and Evaluate the Educational Interventions

Because national market research can be generalized to the broad oncology population and based on preliminary evaluation results, we will utilize these findings to inform the development and implementation of educational interventions specific to the needs of the referring hem/onc community. The interventions will be serial in design and will include resources such as web-based CME modules focusing on key HCT data and outcomes information. We will ensure a captive audience through payor partnerships (Phase 3). This will result in an anonymous panel of hem/onc physicians who treat patients with AML from the contracted provider network.

Educational Strategies

All education programs will adhere to Accreditation Council for Continuing Medical Education (ACCME) criteria:[14]

- Needs assessment findings will be classified as knowledge-, strategy- or performance-causes of clinical practice gaps.
- Objectives of educational interventions will be tied directly to these causes.

- Learner objectives will focus on competency (e.g., advances in research and guidelines on appropriate utilization of HCT), performance (e.g., initiation of preliminary donor search and referral for HCT consultation), and patient-centered care (e.g., rates of HCT in CR1).
- Needs assessment findings (Phase 1) will inform the setting in which interventions are implemented.
- Educational interventions will be developed in the context of desirable physician attributes utilizing the NCCN guidelines for AML and the NMDP referral guidelines. These attributes will be tied directly to the practice gap(s).

Based on the findings from Phase I, we may determine that other resources will be more beneficial, such as clinical case forums, guidelines, facilitation of local or regional consensus panels or conferences, to bridge existing clinical practice gaps. We will look to both the referring hem/onc and transplant community to optimize education strategies. Through our extensive experience in developing highly rated CME programs and innovative, credible educational resources, we can expertly tailor interventions to include those strategies most desired and beneficial.

Non-Education Strategies

We will also utilize patient-focused resources and health professional outreach programs to supplement the clinical education activities. NMDP has existing programs in place for outreach to health professionals regarding patient education resources. Through the programs, we provide free, patient-friendly educational resources on specific diseases, clinical trials and treatment decision-making, HCT as a treatment option, planning for transplantation, and survivorship care (**Appendix C**). We disseminate these resources to community hem/onc and transplant health professionals through attendance at national, professional meeting of societies and associations (e.g., Oncology Nursing Society, Association of Oncology Social Workers, and Association of Pediatric Hematology/Oncology Nurses), peer-reviewed publications, via our website BeTheMatchclinical.org, and direct mail. These strategies can enhance changes in practice as well as promote patient-centered care.[14]

Phase 3: Partnerships to Implement and Evaluate Educational Programs

Through partnership with payors, we can better measure the effect of proposed NMDP education interventions on clinical knowledge and practice gaps.

Existing Framework for Systems-Level Quality Improvement

We have an existing framework for collaborating with payors through the NMDP Advisory Group on Financial Barriers to Transplant (AGFBT). The AGFBT is comprised of multi-disciplinary stakeholders within the transplant industry. The AGFBT includes representatives of major health insurance plans and third-party administrators (e.g., Blue Cross/Blue Shield, Anthem WellPoint, Aetna, Cigna and Multiplan) as well as leadership from transplant networks, such as LifeTrac and OptumHealth. Transplant program administrators and physicians are also actively involved in the AGFBT and ensure that clinical and patient-centered perspectives are addressed. This advisory group has produced several resources for use by the payor and health care purchaser community.[15]

Several payor organizations in the AGFBT are interested in developing programs to support appropriate referral for specialty care. In addition, health plan purchasers are interested in assisting health plan members become or remain healthy.[16] This is particularly true in the case of acute or chronic health care conditions that require specialized care, such as HCT. To help members choose where to receive specialty care, health insurance plans created information-only Centers of Excellence (COE) programs identifying specialty care centers for various medical subspecialties based on quality and outcomes data submitted by these hospitals. In recent years, many health plans have increased the financial incentives for patient utilization of these specialty centers by creating tiered medical benefit categories. As these referral strategies have been primarily on the side of informing and engaging the patient and consumer, health insurance plans are now considering new methods for reaching community physicians and modifying their referral behaviors, when needed. This framework ties directly with our project objectives and, if effective, our approach has the potential to positively impact clinical practice across multiple specialty care disciplines.

In Phase 3, we will collaborate with the AGFBT to investigate models for payor-based education, measurement and/or incentivization of community hem/onc referral practice and timing of transplant. We will sponsor a forum to initiate pilot projects that will address these issues. We will pilot at least one of the following systems approaches:

- Claims-based "flag" of patients with AML receiving chemotherapy to induce remission
- Requirement of participation in NMDP CME modules for hem/oncs in the payor network
- Financial incentives to refer early in the disease process, or
- Measurement of referrals for consultation for HCT among community hem/oncs and feedback as a performance indicator.

C.2.C Evaluation Design

The evaluation design will follow the Centers for Disease Control and Prevention (CDC) evidenced-based, six-step framework for program evaluation.[17] A logic model will be created to map learner objectives for the educational interventions to practice gaps identified through the needs assessment. Validated and/or benchmark measures will be used in data collection instruments to ensure correlation between measure and construct. Data sources will be determined in Phase 3 of the project but will likely include primary data from survey instruments, private payor administrative claims data and outcomes registry data (Stem Cell Therapeutic Outcomes Database (SCTOD) operated by the CIBMTR, the research program of the NMDP). Through our Health Services Research program, the AGFBT and the SCTOD, we have access to and expertise on analysis of these datasets.

Changes in measures of competence, performance and patient outcomes (see learner objectives defined in Phase 2) will be analyzed in partnership with a payor(s). We will compare data on clinical practice and physician attributes (e.g., NCCN Guidelines for AML and NMDP/ASBMT Referral Guidelines for HCT) from an anonymous cohort of hem/onc physicians from the contracted provider network(s). The needs assessment will characterize the expected degree of change due to interventions. We will compare rates of change from 2006-2010 and

then 2010-2014. We expect the interventions to improve practice gaps to at least the same degree as previous interventions. Audience engagement will be measured using Google Analytics, evidence-based measures of engagement[18] and qualitative feedback. For example, we could measure relationships between community physicians and local transplant centers, perceptions of the referral system, and/or rate of completion for serial educational interventions. We hypothesize that this systems approach to quality improvement will better address the multi-factorial barriers to transplant. For the two-year funding period, we will measure short-term outcomes. We plan to measure long-term outcomes, but as this requires at least one full year of follow-up, it is beyond the scope of the funding period. As part of utilization-focused evaluation strategy[19], we will report on findings and recommendations for broad implementation of educational interventions determined effective.

As described in the Detailed Work Plan and Schedule of Deliverables **(Section C3)**, we will disseminate the findings from the need assessment and evaluation and project deliverables using myriad formats and venues. We will submit abstracts for presentation at three national, professional conferences (BMT Tandem Meetings, ASH annual conference and NCCN annual congress); promote the availability of resources via our website, BeTheMatchClinical.org, and other target marketing and communications campaigns; e-newsletters and periodic emails; and submission of manuscripts for publication in peer-reviewed journals.

C.2.D References Cited

1. Yao S, Hahn T, Zhang Y, et al. Unrelated Donor Allogeneic Hematopoietic Cell Transplantation Is Underused as a Curative Therapy in Eligible Patients from the United States. *Biol Blood Marrow Transplant*. 2013;19(10):1459-1464.
2. Majhail NS, Murphy EA, Denzen EM, et al. The National Marrow Donor Program's Symposium on Hematopoietic Cell Transplantation in 2020: A Health Care Resource and Infrastructure Assessment. *Biol Blood Marrow Transplant*. 2012;18(2):172-182.
3. Denzen EM, Majhail NS, Ferguson SS, et al. Hematopoietic Cell Transplantation in 2020: Summary of Year II Recommendations of the National Marrow Donor Program's System Capacity Initiative. *Biol Blood Marrow Transplant*. 2012;19(1):4-11.
4. *HCT Guidelines for Referral Timing and Post-Transplant Care*. Minneapolis, MN: National Marrow Donor Program and American Society for Blood and Marrow Transplantation; 2013:6. Available at: https://www.bethematchclinical.org. Accessed March 5, 2014.
5. Koreth J, Schlenk R, Kopecky KJ, et al. Allogeneic stem cell transplantation for acute myeloid leukemia in first complete remission: a systematic review and meta-analysis of prospective clinical trials. *JAMA J Am Med Assoc*. 2009;301(22):2349-2361.
6. National Cancer Institute. National Expenditure for Cancer Sites: Cancer Prevalence and Cost of Care Projections. Available at: http://costprojections.cancer.gov/expenditures.html. Accessed March 5, 2014.
7. Mariotto AB, Yabroff KR, Shao Y, Feuer EJ, Brown ML. Projections of the cost of cancer care in the United States: 2010-2020. *J Natl Cancer Inst*. 2011;103(2):117-128.
8. Majhail NS, Mothukuri JM, MacMillan ML, et al. Costs of pediatric allogeneic hematopoietic-cell transplantation. *Pediatr Blood Cancer*. 2010;54(1):138–143.

9. Lee SJ, Klar N, Weeks JC, Antin JH. Predicting Costs of Stem-Cell Transplantation. *J Clin Oncol*. 2000;18(1):64-64.
10. Krueger RA, Casey MA. *Focus groups: A practical guide for applied research*. Sage; 2009.
11. MacQueen KM, McLellan E, Kay K, Milstein B. Codebook development for team-based qualitative analysis. *Cult Anthropol Methods*. 1998;10(2):31–36.
12. Carey JW, Morgan M, Oxtoby MJ. Intercoder agreement in analysis of responses to open-ended interview questions: Examples from tuberculosis research. *Field Methods*. 1996;8(3):1–5.
13. Gorden RL. *Basic Interviewing Skills*. Waveland Press Inc., Long Grove, IL; 1998.
14. Accreditation Criteria. *Accreditation Counc Contin Med Educ*. Available at: http://accme.org/requirements/accreditation-requirements-cme-providers/accreditation-criteria. Accessed March 6, 2014.
15. LeMaistre CF, Farnia S, Crawford S, et al. Standardization of Terminology for Episodes of Hematopoietic Stem Cell Patient Transplant Care. *Biol Blood Marrow Transplant*. 2013;19(6):851-857.
16. Rhonda Nussbaum, MD. Studies of Women's Health Care: Selected Results. *Perm J*. 2000. Available at: http://xnet.kp.org/permanentejournal/sum00pj/studies.html. Accessed March 5, 2014.
17. Koplan JP, Milstein RL, Wetterhall S. Framework for program evaluation in public health. *MMWR Recomm Rep*. 1999;48(RR-11):1–40.
18. Centers for Disease Control and Prevention G. *Evaluation Guide: Fundamentals of Evaluating Partnerships*. Atlanta, GA: US Department of Health and Human Services; 2008.
19. Patton MQ. *Utilization-Focused Evaluation*. SAGE; 2008.

C.3 Detailed Work Plan and Schedule of Deliverables

We will implement Phases 1-3 simultaneously as there are interdependencies across each **(Table C4).** Year 1 will focus on the design, conduct and analysis of the needs assessment (Phase 1). In addition, the AGFBT will begin deliberations on appropriate models for payor-based education and measures of clinical practice with an emphasis on systems thinking (Phase 3). At Year 1 end, we will produce a report on recommendations for the educational interventions that adheres to ACCME criteria (described in **Section C.2.B**). We will disseminate findings at national, professional meetings and through a peer-reviewed publication.

Each year we will submit progress and findings updates for presentation at the NCCN Congress: Hematologic Malignancies and ASH conferences, both of which have broad attendance by hem/oncs. We will also engage stakeholders including payors, health care purchasers and HCT administrators at the AGFBT monthly and annual meetings and the ASBMT/CIBMTR BMT Tandem Meetings. Year 2 will focus on the design and implementation of educational interventions (Phase 2). This includes continued engagement of the AGFBT to inform the timing of measures of clinical practice as well as the design of the evaluation plan. The final deliverables at Year 2 end will include a resource for payors on education to improve adherence to practice guidelines and measures at the health system level.

Table C4: Project work plan and schedule of deliverables

Phase	Deliverables	Timeline (months)											
		M	J	J	A	S	O	N	D	J	F	M	A
		1	2	3	4	5	6	7	8	9	10	11	12
Year 1													
N/A	Execute contract with NCCN												
3	Initial discussion of education and incentive models by AGFBT; identify sub-group												
1	Develop protocol for needs assessment												
3	AGFBT session at *Defining Quality and Value for Stem Cell Transplant* in Minneapolis, MN												
1	Submit protocol for IRB review												
1	Conduct quantitative market research												
3	Monthly meetings with AGFBT sub-group to vet proposed models												
N/A	Attend the NCCN Annual Congress: Hematologic Malignancies												
1	Analyze findings from market research; develop focus group discussion guides												
1	Recruit for and conduct focus groups												
N/A	Attend the American Society of Hematology annual meeting												
1	Analyze findings of needs assessment and provide recommendations												
3	Utilize market research findings to narrow options for payer-based model												
2	Develop educational interventions strategy and plan												
Year 2													
1	Develop manuscript highlighting results of needs assessment												
3	Continue to discuss payer-based models												
2	Design education interventions, evaluation and instruments as necessary												
3	AGFBT meeting, *Defining Quality and Value for Stem Cell Transplant,* location TBD												
2	Implement educational strategy and plan												
N/A	Attend the NCCN Annual Congress: Hematologic Malignancies												
N/A	Attend the American Society of Hematology annual meeting												
3	Develop guidance resource for payors on education and measures of clinical practice												
3	Develop manuscript on Phase 2 and Phase 3												