Social Determinants Working Group

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Working Group Approach

• Are there new approaches to account for social determinants of health beyond those currently assessed in risk adjustment model?

• Outline:
  – Review deliberations on this topic from 2014 Center Outcomes Forum
  – Review currently available socio-demographic data from CIBMTR
  – Review work done by CIBMTR to account for socio-demographic variables
  – Review working group discussion
  – Review working group recommendations
  – Open discussion
Socio-demographic Factors Currently Considered In Center Survival Analysis

- Data collected on all US HCT recipients
  - Recipient ethnicity/race (self-reported)
  - Socioeconomic status (median annual household income based on ZIP code of residence)
    - Included as variable starting with 2018 analysis
    - Categorized as deciles (<10\textsuperscript{th} percentile [$37K] to ≥90\textsuperscript{th} percentile [$>100K])
    - Well captured overall (2019 analysis: unknown in 2\% patients)
2014 Center-Specific Outcomes Forum

• Recommendations around socio-demographic/SES factors
  – Number of factors were discussed (income, education level, insurance status, social support, occupation, employment status, literacy, etc.)
  – Reviewed value of variable vs. difficulty to implement
  – Data fields identified as important and most feasible to consider collecting on all US HCT recipients for inclusion in future risk adjustment models:
    • Insurance status (Medicaid, Medicare, commercial, self-pay, un-insured)
    • Zip Code
    • Race/ethnicity (already collected and included)
    • Level of education
    • Marital status
Recent CIBMTR Studies: Community Health Status and Outcomes After Allogeneic HCT

• Used community health status based on County Health Rankings and Roadmap (collaboration b/w Univ of WI Population Health Institute and RWJC www.countyhealthrankings.org)
  – Annually updated information on county level health factors and outcomes that can serve as surrogate measures of disparities among communities
  – “Health Factors” summary score: weighted composite of four components: health behaviors, clinical care, social and economic environment, and physical environment
  – Macro (county) level indicator of community health status

S Hong et al, Cancer 2020 (published online)
Recent CIBMTR Studies: Community Health Status and Outcomes After Allogeneic HCT (Cont.)

• 18,544 adult allo HCT recipients at 170 US centers (2014-2016)
• Community risk score assigned to each patient (PCS) and center (CCS)
  – Higher PCS score associated with inferior survival (HR per 1 SD increase: 1.04 [1.00-1.08], P=0.0089)
  – In subset of patients with hematologic malignancies, PCS trended towards inferior survival (1.04 [1.00-1.08], P=0.012) and higher NRM (1.08 [1.02-1.15], P=0.0004)
  – CCS not significantly associated with survival, relapse, or NRM

S Hong et al, Cancer 2020 (published online)
Recent Studies: Marital Status and Outcomes After Autologous and Allogeneic HCT

• Adult (>40 years) autologous (N=5,714) and allogeneic (N=10,226) HCT recipients (2008-2015)
  – No difference in survival by marital status for autologous and for allogeneic recipients (married vs. single vs. separated/divorced vs. widowed)
  – Compared to married patients, divorced/separated patients had higher risk of grade 2-4 acute GVHD, but not for chronic GVHD
  – No interaction between marital status and recipient sex

J Tay et al, Current Oncology (in press)
Working Group Discussion: Framework

• Considerations regarding inclusion of additional socio-demographic variables in risk adjustment model
  – Parsimony: balance center effort vs. benefit of collecting data
  – Overlap: among variables and their independent contribution to survival
  – Feasibility: of collecting data (completeness, reliability, etc.)
  – Validation: evaluate how much candidate variable enhances model before collecting universally on TED forms
  – Impact: variables that may inform interventions to improve outcomes

• Access to HCT – identified as important issue but beyond scope of this working group
Can Any Variables From CRF Be Moved To TED To Better Inform Patient Socio-demographic Characteristics For Center Survival Analysis?
Socio-demographic Variables Collected on CRF

• Evaluate if any high-quality CRF variables are independently associated with center survival and need to be captured on TED
  – Evaluate completeness of data
  – Evaluate contribution of these variables to risk adjustment model (beyond race/ethnicity and ZIP code defined SES)
  – Priority of variables to test: health insurance >>> others
  – Add categories and/or allow variables to capture pediatric specific data (i.e., information on parent/guardian occupation, education, and work status)
Socio-demographic Data Collected By CIBMTR

- TED Forms
  - Ethnicity/race
  - ZIP code of residence

- Comprehensive Report Forms
  - Ethnicity/race
  - ZIP code of residence
  - Marital status
  - Occupation
  - Work status
  - Highest education
  - Health insurance
  - Gross household income (six categories)

Already considered in Center Specific Analysis

Evaluate completeness of variables and their contribution to center survival model
Are There Patient Socio-demographic Variables That Need To be Added To CRF For Future Evaluation In Center Survival Analysis?
Future State: Variables Considered

• Variables to explore in context of socio-demographic status
  – Distance to transplant center (interaction with urban/rural status and SES)
  – Caregiver support
  – Health literacy
  – Poverty (PRO: Food Insecurity Screen)
  – Need for interpreter
  – Use of NMDP grants (e.g., donor search, patient financial assistance)

• Data on some variables already available (distance by ZIP Code of residence) or may be relatively easily derived (NMDP grant use)

• Consider Working Group framework when adding new variables
Future State: Patient Reported Data

• Socio-demographic data are best captured directly from patients
  – Explore possibility of using CIBMTR PRO platform to capture current and new variables that may inform risk adjustment model in the future
  – Explore possibility of capturing data on CIBMTR consent form/process (e.g., add key questions on consent form for patients to complete)
    • Pros: will increase data completeness (given high compliance of consent completion) and reliability (given patient self-report)
    • Cons: consent/survey burden for patients, varying center workflows for consenting patients
Working Group Recommendations: Summary

• Evaluate if any high-quality CRF socio-demographic variables are independently associated with center survival and need to be captured on TED

• No recommendation to add new variables to CRF → prioritize feasibility and contribution of existing socio-demographic variables in refining risk adjustment model

• Consider pilot studies evaluating feasibility of capturing socio-demographic information directly from patients
Questions and Discussion