

Transplant Center Survey

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CIBMTR Health Services Research Program

Conducted in Partnership with Be The Match® Patient and Health Professional Services



A research collaboration between the National Marrow Donor Program (NMDP)/Be The Match and the Medical College of Wisconsin

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Background

- National survey of US transplant centers conducted in 2012
 - To understand and describe center capacity, infrastructure, personnel and models of care delivery
 - To investigate the association of center characteristics with 1-year survival for allogeneic HCT recipients



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Survey



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Survey Instrument

- 42 item web-based instrument
- Directed towards center medical directors
- Piloted at 5 sites
- Administered in summer 2012



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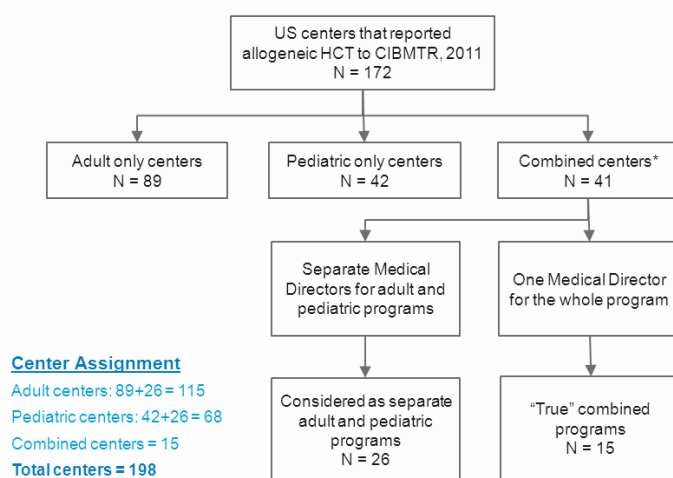
Survey Domains

Healthcare Provider Characteristics	Transplant Program Resources	Care Team Structure and Processes	Medical Center Characteristics
<ul style="list-style-type: none"> - Transplant physicians - Midlevel providers (e.g. nurse practitioner, physician assistant) - HCT/physician and HCT/mid-level provider ratios - Nurse staffing ratio on inpatient unit - Availability of other personnel (e.g. social workers, pharmacists) 	<ul style="list-style-type: none"> - Center volume - Availability of dedicated inpatient unit for HCT - Number of beds for HCT - Outpatient clinic facilities - Presence of stem cell processing facilities - FACT accreditation - Participation in national cooperative clinical trial groups 	<ul style="list-style-type: none"> - Structure of inpatient and outpatient medical team - Role of mid level providers and trainees on transplant team - Role of other providers (e.g. pharmacists) - Models of care - Models of care for patients needing critical care support - Transition of care 	<ul style="list-style-type: none"> - Location of center (rural vs. urban) - Teaching status - Ownership status (Govt. vs. private) - Inpatient hospital beds - NCI cancer center designation - Patient population (pediatric vs. adult)



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Center Assignment



* Reported both adult and pediatric HCT to the CIBMTR



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Response Rate

- 188 centers included in analysis
 - 10 centers ineligible (inactive or no allogeneic HCT b/w 2008-2010)
- Response rate 81% (152/188 centers)
 - 79% response rate for adult centers
 - 82% response rate for pediatric centers



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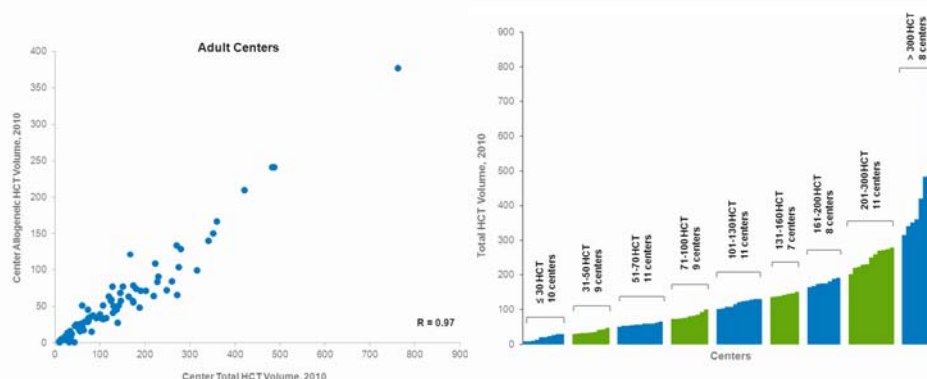
Adult Transplant Center Characteristics



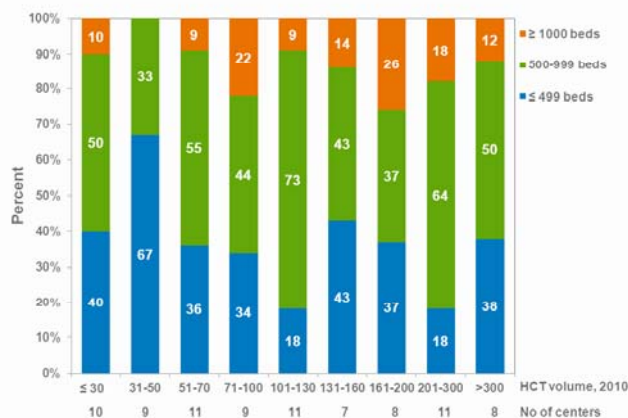
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Center Size Categories

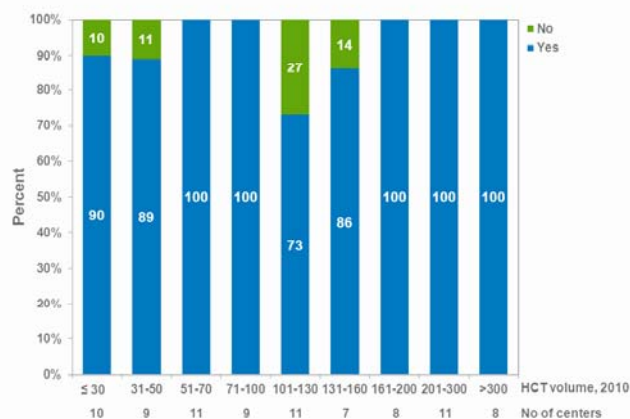
- Based on 2010 total HCT volume (N=84 centers)



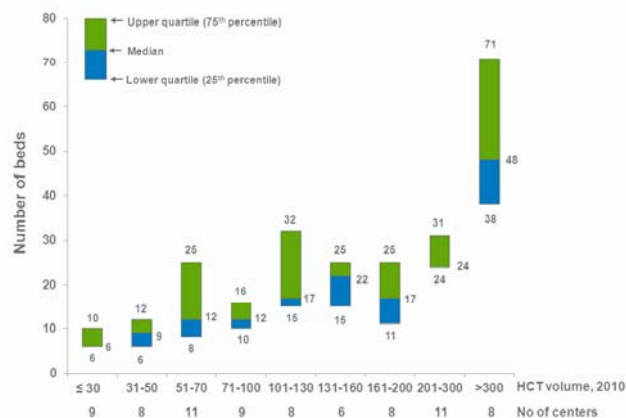
Hospital Size



Dedicated Inpatient Beds for HCT

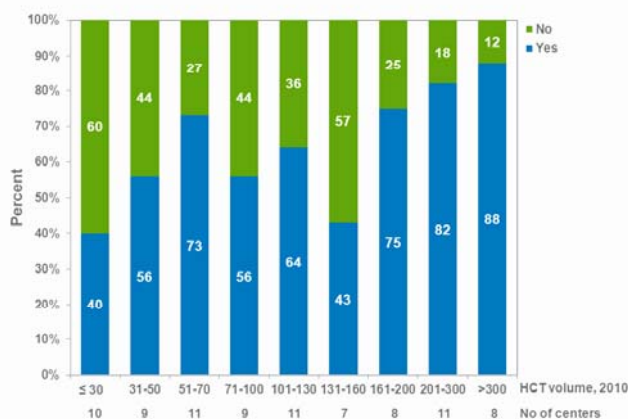


Number of Inpatient Beds

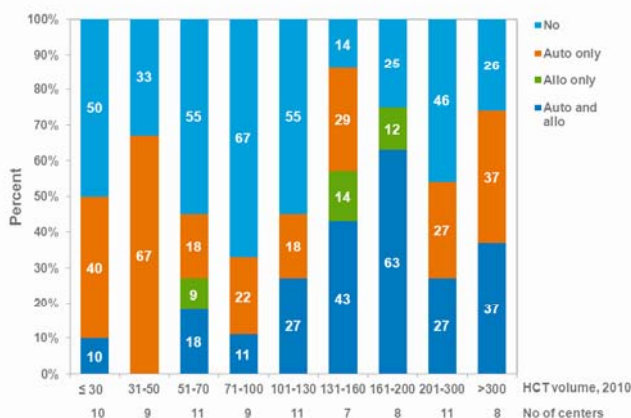


* N=78 centers with dedicated inpatient beds for HCT

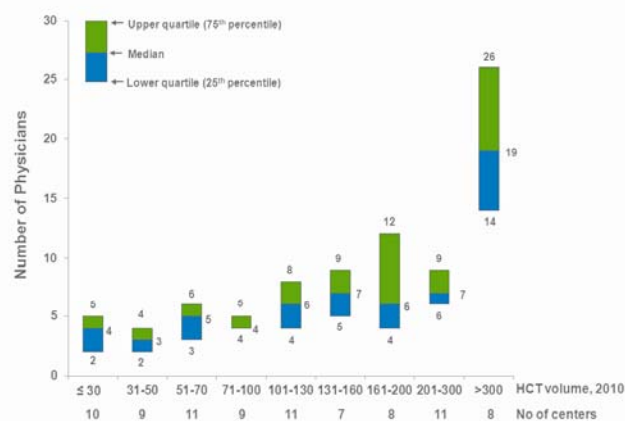
Dedicated Outpatient Clinic for HCT



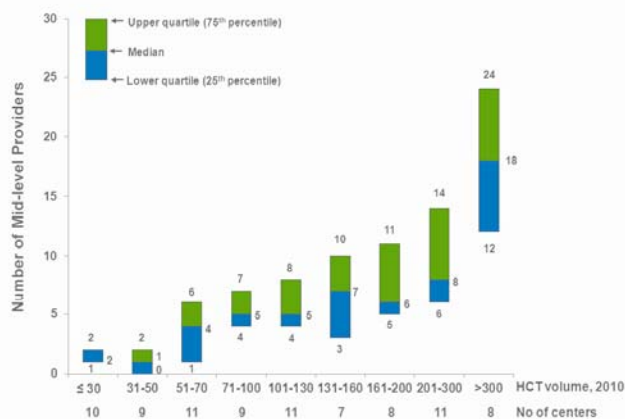
Outpatient Transplants



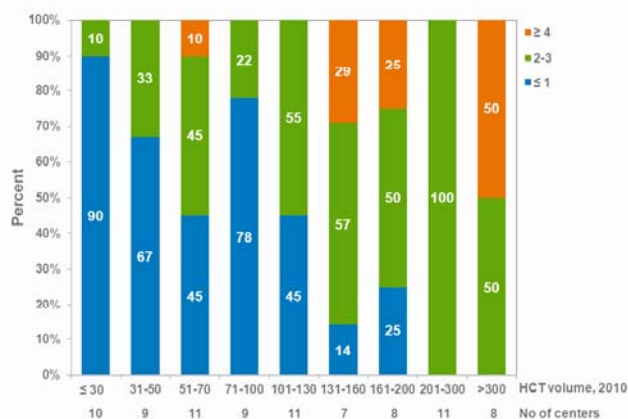
Transplant Physicians



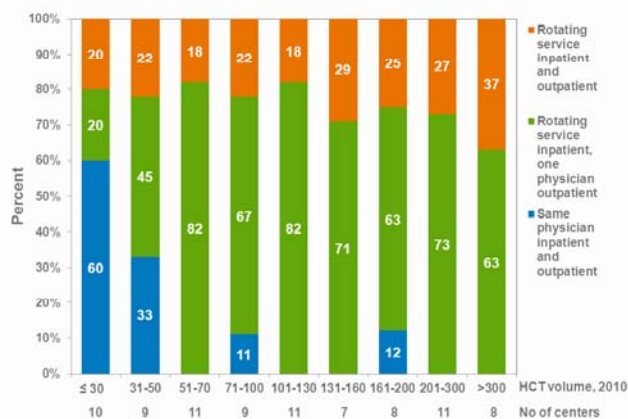
Mid-level Providers



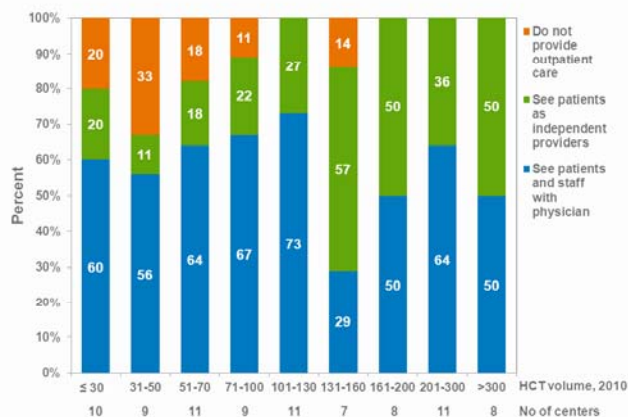
BMT Pharmacist FTEs



Physician Care Model



Outpatient Mid-level Care Model



Center Characteristics and Allogeneic HCT Survival

Objective and Methods

- Evaluate association of center characteristics with 1-year survival for adult allogeneic HCT recipients
 - 2008-2010 Center Specific Outcomes dataset
 - Center size categories based on 2010 allogeneic HCT volume (≤ 40 vs. >40)
 - Patients alive and with <11 mos followup excluded
 - Final population included 11,537 patients from 83 adult transplant centers



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Multivariate Analysis

Patient Variables	1-year model
Recipient age	x
Recipient race	x
Karnofsky performance score	x
Disease group	x
Resistant disease (NHL and HL only)	x
Recipient CMV	x
Time from diagnosis to transplant	x
Donor type	x
Graft type	x
HLA match	x
Donor age (unrelated donor only)	x
Conditioning regimen intensity (by disease)	x
Donor recipient sex match	x
Prior auto transplant	x
Sorrow score	x



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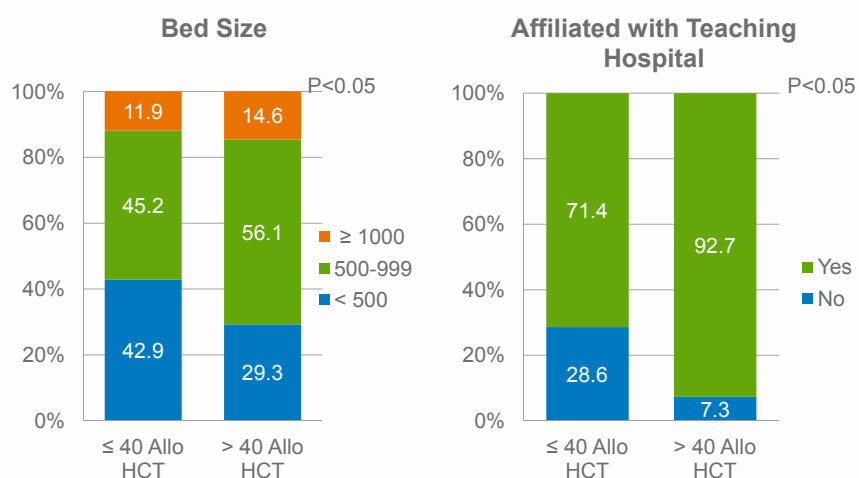
Patient Characteristics

Variable	≤ 40 Allo HCT	>40 Allo HCT	P-value
Centers/Patients	42/1900	41/9637	
Median allo HCT volume (IQR)	21 (7-29)	72 (57-108)	
Median age	52 years	52 years	<.01
KPS score ≥ 90	59%	62%	<.01
Acute leukemia	53%	49%	<.01
HLA identical sibling donor	39%	35%	<.01
HCT CI score 0	44%	38%	<.01



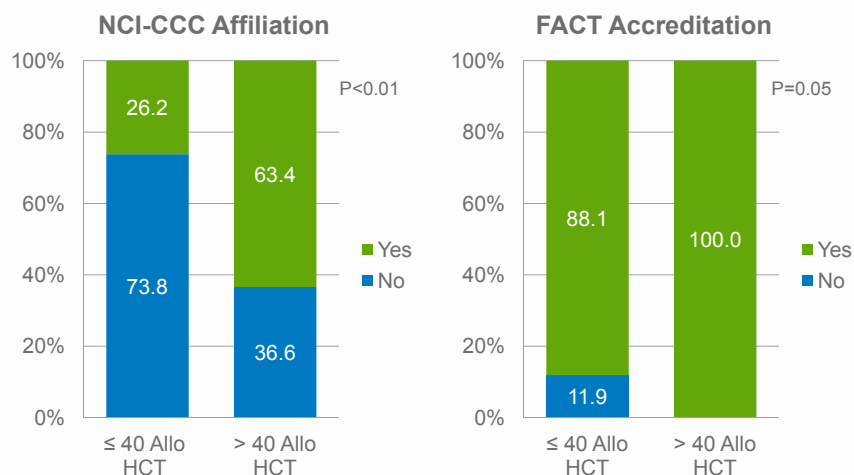
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Center Characteristics



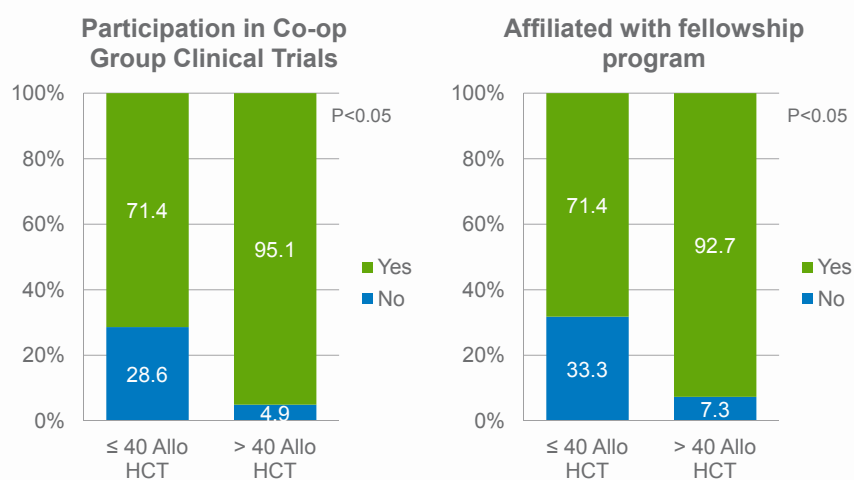
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Center Characteristics



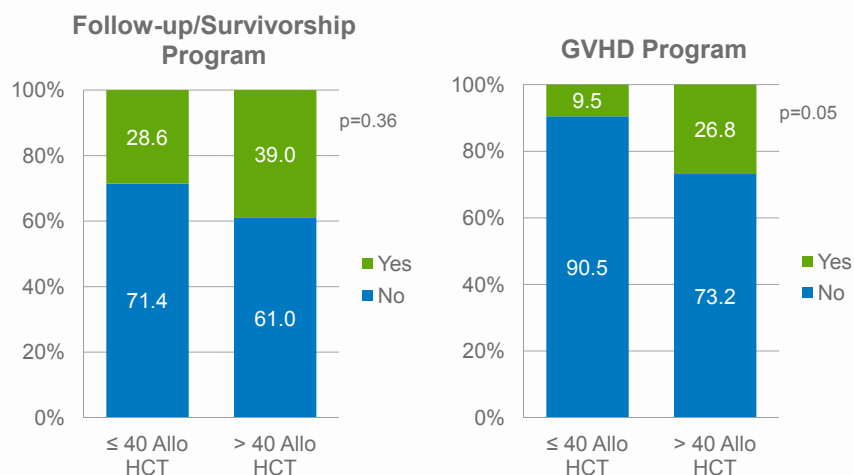
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Center Characteristics



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Follow-up/Survivorship & GVHD Program



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Center Characteristics

Personnel	≤ 40 Allo HCT	>40 Allo HCT	P-value
Median BMT MD's (IQR)	4 (3-5)	8 (6-12)	<.01
Median mid-levels (IQR)	2 (1-5)	8 (5-14)	<.01
≥ 4 FTEs HCT coordinators	14%	78%	<.01
≥ 4 FTEs pharmacists	2%	20%	<.01
≥ 2 FTEs social workers	38%	88%	<.01



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Center Characteristics Associated with 1-year Overall Survival

Center Characteristics	Level	Patient	No. of Centers	OR	95% CI	P-Value
Allo HCT volume in 2010	≤ 40	1900	42	1		
	> 40	9637	41	1.32	1.12-1.55	0.0005
Long-term follow-up/survivorship program	No	5941	55	1		
	Yes	5596	28	1.23	1.05-1.43	0.0085

OR=Odds Ratio; CI: Confidence Interval

Note: Adjusted for patient characteristics and disease status.



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Summary



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Center Characteristics

- Substantial variation in transplant center characteristics
- Larger centers (not surprisingly) have more resources to perform more transplants
- Centers have different models of care to optimize use of available resources
- Data will help centers understand resource needs and capacity



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Center Characteristics and Survival

- Centers reporting adult allo HCT to CIBMTR
 - >40 allo annual HCT in 2010 associated with better 1-year survival
 - Most center factors not associated with survival
 - Total allo volume likely represents a complex construct that is highly associated with center structural characteristics and care processes
- Limitations and challenges
 - Survey limitations
 - Centers change over time



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Center Characteristics and Survival

- Analysis lays foundation for more research
 - Comprehensive investigation of center characteristics and care models
 - More research on care coordination
 - Reconcile findings with Center Outcomes Analysis



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Acknowledgements

Protocol Team

- J Doug Rizzo, MD, MS
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System Capacity Initiative

Survey Respondents



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