

Practice patterns for evaluation, consent, and care of related donors and recipients at hematopoietic cell transplantation centers in the United States

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Conflict of interest may arise when 1 physician serves 2 persons whose medical care is interdependent. In hematopoietic cell transplantation (HCT) from unrelated donors and in the setting of solid organ transplantation from living donors, the standard of care is for donors and recipients to be managed by separate physicians to provide unbiased care. However, the practice patterns of evaluation and care of related donors and recipients are not well described. A survey of HCT

centers in the United States was conducted by the Donor Health and Safety Working Committee of the Center for International Blood and Marrow Transplant Research to determine the type of provider involved in medical clearance, informed consent, and medical management of hematopoietic cell collection and the relationship of that provider to the HC transplant recipient. The response rate was 40%. In greater than 70% of centers, transplantation physicians were involved

or potentially involved in overlapping care of the HC transplant donor and the recipient. These patterns were similar between transplantation teams caring for adult or pediatric donors and recipients. Among responding centers, medical management of recipients and their related donors by the same provider is common, a practice that has the potential for conflict of interest. (*Blood*. 2010;115(24):5097-5101)

Introduction

Foster¹ has written eloquently about conflict of interest that can arise in a clinical setting when a subtle bias of a physician may unknowingly affect their sound judgment in caring for a vulnerable person. Trust placed in the physician by a patient may be jeopardized by such physician bias, real or perceived. In each allogeneic hematopoietic cell transplantation (HCT), there are 2 patients; one is the transplant recipient for whom the procedure may be lifesaving and the other is the donor, who may have nothing medically to gain from the donation procedure. When the donor and the recipient are relatives, most often siblings in HCT, unique issues arise about medical risks, familial responsibilities, emotional burdens, and privacy. These issues may be further complicated if a single physician has overlapping care responsibilities for both the donor and the recipient. For example, a prospective donor being evaluated by a sibling's transplantation physician may feel disinclined to admit reluctance or fears of donation, given the enormity of the sibling's medical issues. Or, if these issues are broached, they may be underevaluated by the physician who is committed to completing the sibling's transplantation, and who may see no alternatives for the donor. At another extreme, a highly committed donor and transplantation physician may collaborate to gloss over medical issues that create significant donor risk.

In the evaluation and care of unrelated hematopoietic cell donors, the situation about potential conflict of interest is clear. Both standard 9.3313 of the National Marrow Donor Program

(NMDP)² and standard 6.07 of the World Marrow Donor Association (WMDA)³ state that the medical evaluation of the unrelated donor must be performed by a physician who is not a member of the transplantation team that is caring for the patient. A similar guideline applies to related or unrelated solid organ donation.⁴ Whereas most US HCT centers are accredited by the Foundation for the Accreditation of Cellular Therapy (FACT), the issue of whether the donor and recipient care should be managed by distinctly separate providers is not addressed explicitly by FACT–Joint Accreditation Committee–ISCT (International Society for Cellular Therapy) and EBMT (European Group for Blood and Marrow Transplantation) (JACIE) Standards.⁵

The practice patterns of evaluation and care of related donors and recipients at centers performing allogeneic HCT currently are not well described. We hypothesized that overlapping care of related donors and recipients by a single physician may be common practice in the United States. If true, this would create the opportunity to educate HCT teams on the potential risks of such practices and to develop strategies for mitigating those risks. To address our hypothesis we surveyed US HCT centers within the Center for International Blood and Marrow Transplant Research (CIBMTR) to determine how closely existing practice patterns for related donors followed the donor safety

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guidelines of the NMDP, WMDA, or of the solid organ transplantation field.

Methods

Subjects

A total of 265 medical directors representing 222 transplantation teams received invitations to participate in the survey between December 2007 and July 2008. A total of 239 medical directors were identified from the CIBMTR transplantation teams, and an additional group of 35 medical directors were also invited from teams participating in the Children's Oncology Group.

Centers were grouped according to their geographic location in the analysis. US regions included: New England (ME, NH, VT, MA, RI, CT), Mid-Atlantic (NY, NJ, PA), South Atlantic (DE, MD, DC, VA, WV, NC, SC, GA, FL), East North Central (OH, IN, IL, MI, WI), East South Central (KY, TN, AL, MS), West North Central (MN, IA, MO, ND, SD, NE, KS), West South Central (AR, LA, OK, TX), Mountain (MT, ID, WY, CO, NM, AZ, UT, NV); and Pacific (WA, OR, CA, AK, HI).

Survey instrument

An internet-based survey questionnaire (supplemental Appendix, available on the *Blood* Web site; see the Supplemental Materials link at the top of the online article) was created and administered through a secure hyperlink (www.surveymonkey.com). The survey's objectives were (1) to determine the type of provider involved in 3 different aspects of donor care: medical clearance, informed consent, and medical management of hematopoietic cell collection and (2) to determine the relationship of that provider to the HC transplant recipient. The types of providers identified were those associated with the transplantation team (transplantation physician, midlevel practitioner, or nurse) and those not associated with the transplantation team (internal/family medicine physician, hematology/oncology physician, or pediatrician). Donor medical clearance is the process of determining that the donor is medically fit for donation of bone marrow or peripheral blood stem cells, as well as identifying any risks that donor cells might pose for the intended recipient, eg, infectious disease transmission. Medical management of the donor cell collection concerns the actual donation process, management of donation-related adverse events, and donor follow-up.

Six invitations to participate in the survey were sent, and an incentive to participate was offered to increase the response rate. All procedures were approved by the CIBMTR Institutional Review Board. See supplemental Tables 1 and 2 for tabulation of survey data.

Results

Response rate

A total of 115 responses were received. Excluding 3 responses from centers that did not perform allogeneic transplantations and 14 duplicate responses, there were 98 evaluable responses from 88 transplantation programs, which resulted in a response rate of 40%.

Center characteristics

Characteristics of responding centers are shown in Table 1. Approximately half of the centers performed transplantations for both adult and pediatric patients. The remaining centers were divided equally between centers that performed transplantations for only adults or only children. The combined programs performed significantly more transplantations from related donors than programs that performed transplantations for only adults or only children. Most centers were FACT-accredited and also were transplantation centers affiliated with the NMDP. Almost all centers had a written policy for management of related donors.

Responding vs nonresponding centers

Characteristics of those centers who responded to the survey and those who did not are compared in Figure 1. Responding centers were distributed across the center-size spectrum, whereas nearly 70% of nonresponding centers were from those performing fewer than 30 transplantations per year. (Figure 1A). No differences were observed in the geographical distribution of responding and nonresponding centers (Figure 1B).

Providers involved in donor care

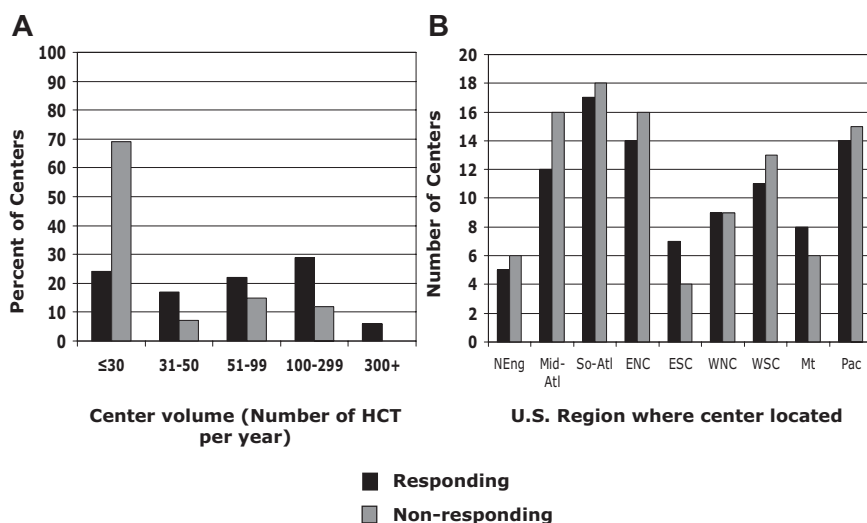
The role of the provider in the care of donors is shown in Figure 2. In greater than 80% of centers surveyed, a transplantation physician was involved in the medical clearance, obtaining informed consent, and/or medical management of the donor (Figure 2A). In greater than 70% of centers surveyed, the same physician caring for the donor had either simultaneous responsibility for the care of the recipient or might be involved in the care of the recipient (Figure 2B).

Table 1. Characteristics of responding centers

	Adult only (n = 21)	Both (n = 56)	Pediatric only (n = 21)	P
Median related donor transplantations per year (range)	18 (2-150)	25 (1-400)	10 (3-60)	.010
Related donor transplantations per year, n (%)				.13
Fewer than 10	8 (38)	18 (32)	13 (62)	
11-40	11 (52)	24 (43)	7 (33)	
41-70	0 (0)	5 (9)	1 (5)	
71 or more	2 (10)	9 (16)	0 (0)	
Median total transplantations per year (range)	68 (30-360)	90 (5-600)	40 (10-270)	.023
Total transplantations per year, n (%)				.07
Fewer than 30	3 (14)	13 (23)	8 (38)	
31-50	7 (33)	5 (9)	5 (24)	
51-99	5 (24)	12 (21)	5 (24)	
100-299	4 (19)	22 (39)	3 (14)	
300 or more	2 (10)	4 (7)	0 (0)	
FACT-accredited center, n (%)	16 (76)	48 (86)	21 (100)	.19
NMDP transplantation center, n (%)	17 (81)	53 (95)	21 (100)	.17
Written policy for related donor management, n (%)	20 (95)	52 (93)	21 (100)	.75

FACT indicates Foundation for the Accreditation of Cellular Therapy; and NMDP, National Marrow Donor Program.

Figure 1. Characteristics of responding and nonresponding centers. (A) Distribution of transplantation volumes at responding and nonresponding centers. (B) Geographic distribution of responding and nonresponding centers. US regions: NEng indicates, New England; Mid-Atl, Mid-Atlantic; So-Atl, South Atlantic; ENC, East North Central; ESC, East South Central; WNC, West North Central; WSC, West South Central; Mt, Mountain; and Pac, Pacific.



Center volume effect

The effect of center volume on the role of the physician caring for the donor in the care of the recipient is shown in Figure 3. In greater than 75% of centers surveyed in which the total transplantation volume was fewer than 100 per year, the physician responsible for medical clearance of the donor also had either simultaneous responsibility for the care of the recipient or might be involved in the care of the recipient (Figure 3A). In transplantation centers performing 100 or more transplantations per year there tended to be less involvement of the donor’s attending physician in care of the recipient. In centers performing 100 to 299 transplantations per year, 30% responded that the donor’s physician was affiliated with the transplantation center but not involved in the care of the recipient. This number increased to 50% in centers performing 300 or more transplantations per year. Similar results are shown for the physician responsible for the medical management of the donor (Figure 3B). However, in approximately 20% to 30% of large transplantation centers (≥ 100 transplantations per year) the donor’s physician also had simultaneous responsibility for care of the recipient. The process of informed consent also followed the same practice pattern (data not shown).

CIBMTR to determine the practice patterns of evaluation and care of related donors and recipients, practice patterns that had not been assessed previously. Although no difference was observed in geographical distribution of responding and nonresponding centers, almost 70% of nonresponding centers were small centers performing 30 or fewer transplantations per year. Of some concern was the finding that a few transplantation centers (5%) did not have written policies for management of related donors. Not surprisingly, 80% or greater of related donors in responding centers received care by physicians whose primary role was the care of patients undergoing HCT. However, we found that in greater than 70% of responding centers, physicians who were involved in the care of the recipient also were apt to be involved in the medical clearance, informed consent, and medical management of the recipient’s donor. An effect of center size was observed because direct involvement of the same physician in both the recipient’s and donor’s care occurred less frequently in centers performing 100 or more transplantations per year. Because the same physician was more likely to be involved in the care of both donor and recipient at small centers, our survey results may actually underestimate the extent of the prevalent practice pattern we observed. However, the survey response rate was only 40%, so it is difficult to generalize our results to the entire transplantation community. Staffing issues could be one explanation for the observed center effect in smaller transplantation centers in which the number of transplantation physicians available for independent donor care may be limited.

Discussion

Transplantation center directors in the United States were surveyed by the Donor Health and Safety Working Committee of the

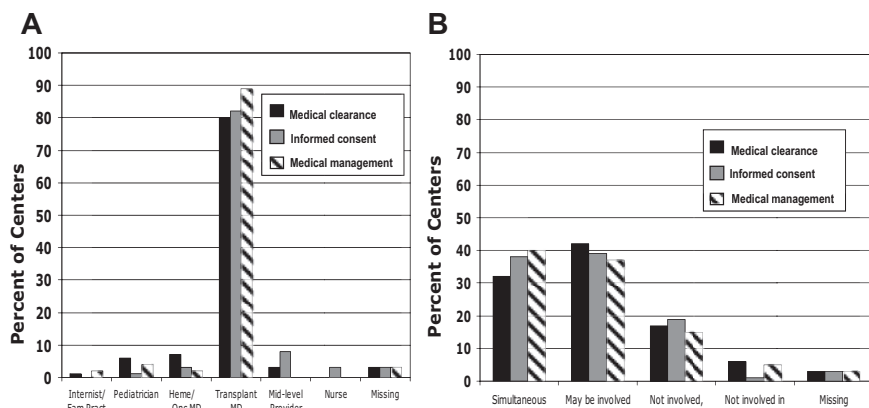


Figure 2. Provider responsible for donor care. (A) Providers associated with the transplantation team (transplantation physician, midlevel practitioner, or nurse); providers not associated with the transplantation team (internal/family medicine physician, hematology/oncology physician, or pediatrician). (B) Involvement of donor’s provider in care of the recipient.

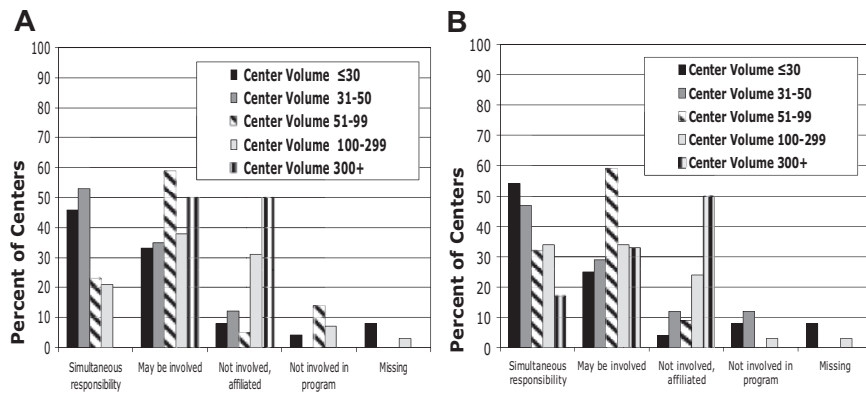


Figure 3. Effect of center volume on donor care patterns. (A) Role of provider responsible for donor medical clearance in care of recipient. (B) Role of provider managing donor medical care in care of recipient.

Contrary to the prevalent practice, specific transplantation expertise may not be required to perform evaluation, consent, and management of donors. Thus, when staffing is problematic, uninvolved providers, eg, internists, pediatricians, or physician extenders with the appropriate expertise, could be used who would not necessarily need to be in the same practice location. Nontransplantation providers could easily be trained to understand relevant transplantation and donation issues. An independent provider and advocate could be especially important in the case of pediatric donors whereby there is an inherent conflict of interest in the decision making of the consenting parent.

The findings of our survey suggest that there exists a potential for physician conflict of interest in the management of related HC transplant donors at a substantial number of transplantation centers in the United States. Although actual conflicts of interest may occur infrequently, these findings are of concern because a potential or perceived conflict of interest could be as damaging as an actual conflict of interest by jeopardizing trust in the physician. This potential may be even more significant, because the related donors themselves may be willing participants who knowingly (or not) obscure or ignore medical concerns that could preclude donation. There is no direct medical benefit to the stem cell donor other than the possible diagnosis of an unrecognized medical problem discovered during evaluation, so the potential for biased decision making by a conflicted physician could result in harm, especially to the increasing number of older donors who may have significant comorbid conditions.

Several possible assumptions about related donors made by the transplantation community could explain the reported practice patterns. One is that care of related donors and recipients is not interdependent, which may obviate a concerted effort by transplantation centers to have an uninvolved provider assume care of the donor. Another is that hematopoietic cell donation is ordinarily a low-risk procedure, akin to blood or platelet donation, and conceptually different from solid organ donation. An unsubstantiated assumption is that related donors are willing to accept greater risks because of the positive emotional benefit they receive by the knowledge of helping a family member with a life-threatening illness. Although it may be acceptable for a related donor to accept greater risk in the donation process, disclosure of such risks should be delivered by a provider without bias or perception of bias by involvement with the recipient's care. However, one must also consider the possibility of negative emotions such as feelings of coercion, anxiety, anger, and guilt, especially if the transplantation was not successful or if there were serious transplantation-related complications. There are limited studies of psychologic risks to related donors with small numbers of subjects, especially adult donors.⁶⁻¹⁰ A common experience of both pediatric and adult

donors in these studies was the feeling that their needs and concerns were subservient to those of the recipient.⁸⁻¹⁰ It is possible that the prevalent practice of care of related donors and recipients by the same physician shown by our survey might contribute to such negative feelings held by donors. No studies address the psychologic consequences of being found an unsuitable donor. Physical and psychologic issues may be difficult to address during the evaluation, consent, and management phases of donor care if the physician is perceived as focused primarily on the care of the recipient.

Given the highly prevalent practice pattern of donor care shown by this study, we encourage the transplantation community to conduct a careful review of their donor practice patterns and to consider taking the necessary steps to minimize, and preferably eliminate, the potential for conflict of interest. For example, the guidance for the FACT Standards, 4th edition, was revised recently⁵ to recommend involvement of an independent physician in donor care similar to a recent recommendation by the WMDA.¹¹ We feel that it is time for an explicit FACT-JACIE Standard to this effect. HCT donors and their recipients are probably served best by receiving all aspects of their care from different physicians whose fiduciary responsibility is to only 1 person as is required by the NMDP and WMDA for unrelated donors and by the solid organ transplantation field.

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Authorship

Contribution: P.V.O. and D.L.C. supervised the project; P.V.O., T.L.P., D.L.C., J.D.R., M.A.P., S.L., and P.A. designed the survey; P.V.O. drafted the manuscript with critical review provided by D.L.C., J.D.R., M.A.P., D.S., S.L., and P.A.; and T.L.P. provided statistical analyses.

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