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Communicating Effectively About Organ Donation: A Randomized Trial of a Behavioral Communication Intervention to Improve Discussions About Donation

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Background. Families' refusal to authorize solid organ donation contributes to the organ deficit in the United States. The importance of communication to reducing refusal to requests for solid organ donation at the bedside and thus increasing the supply of transplantable organs cannot be overstated. This research compares 2 versions of an innovative communication skills training program for organ procurement organization request staff, Communicating Effectively About Donation (CEaD), designed to improve the quantity and quality of organ donation discussions with family decision makers of deceased patients. **Methods.** We conducted a parallel group randomized controlled trial of the CEaD intervention, comparing an online only version of the training (CEaD1) with the online version bolstered with in-person practice and feedback (CEaD2). Survey and interview data were collected from 1603 family decision makers and 273 requesters to assess the impact of both versions of the CEaD on requesters' communication skills and behaviors; the rate of family authorization to solid organ donation was obtained from administrative data provided by 9 organ procurement organizations. **Results.** Results revealed higher rates of authorization for requesters with less tenure (78% to 89%, $P < 0.03$) for both versions; however, CEaD1 also increased authorization rates for requesters with 3 or more years of experience (89% to 92%, $P < 0.03$). Both conditions resulted in an improvement in overall communication quality. **Conclusions.** We conclude that the CEaD was effective in improving requesters' communication skills, rates of family authorization to organ donation, and the overall quality of the donation experience.

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Refusing requests for solid organ donation at the bedside is a major barrier to increasing the supply of transplantable organs. Nationwide, it has been estimated that requests for organ donation result in family authorization rates of approximately 65%.[1] Data from a study of 30 organ procurement organizations (OPOs) conducted by the association of OPOs reported widely varying referral and request rates ranging from 65% to 99%.[2] Little has changed in the past decade, with recent reports from two geographically distinct OPOs placing authorization rates at 58%.[3,4] The importance of this issue is memorialized in the numerous legislative attempts to improve the request process since the 1980s[2,5-9] and the Institute of Medicine report emphasizing the need to improve the quality of the authorization process and the success of donation requests.[10]

Communication Is Key to Successful Requests

Successful requests for organ donation involve communicating with families about the option to donate in a way that provides sufficient information to make an informed decision. Obtaining authorization does not consist of simply asking families if they wish to donate. Effective requests require adequate time for requesters to assess each family's unique situation and plan an approach that acknowledges and supports their grief but still achieves the goal of obtaining authorization. Families also need to be prepared for the request.

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L.A.S. received funding from NIH/NIDDK (R01 DK081118-01A1). A randomized trial of the ERRA intervention to increase consent to organ donation. The major goal of this project is to test both elements of the Early Referral and Request Approach (ERRA) intervention to help increase the rates of organ donation and alleviate the organ shortage. It targets two key factors that can make a difference to consent to organ donation: 1) time-sensitive referrals by hospitals of potential donor patients to the OPO; and 2) use of effective communication techniques by OPO requesters to discuss organ donation with donation-eligible patients' families. L.A.S. also received funding from HRSA (R390T10581). This project will develop prototype educational materials to train OPO requesters to communicate better with families of deceased donors about organ donation. These materials will be tested in a group-randomized test of whether the materials are effective in raising the skill levels of requesters.

The authors declare no conflicts of interest.

L.A.S. participated in research design and performance, data analysis, and writing the manuscript. H.M.T. participated in research design and performance, and writing the manuscript. M.W. participated in data analysis and writing the manuscript.

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Families who are surprised by the donation request or who feel harassed or pressured to make a decision are less likely to donate than families who do not.[1] Once the request is made, families also need time to ask questions and discuss the request.[11] Displays of empathy, sensitivity, and support contribute to families' receptiveness.[12,13] Discussion of key topics, including brain death, how the body is handled, funeral arrangements, patient's wishes concerning donation, donation cost and providing statistical information about the benefits of donation, is critical because many Americans have fears and beliefs that are impediments to organ donation.[2,14-24]

Communicating Effectively About Donation Intervention

Communicating Effectively About Donation (CEaD) is designed to provide didactic and skills-based training to OPO staff through exposure to the theoretical bases for relational and instrumental communication and key communication skills and behaviors proven effective in obtaining authorization for organ donation. Originally developed as an in-person communication skills training program, using simulated cases,[25] the CEaD was adapted for online delivery in recognition of the limited availability and expense of simulators and the time constraints of OPO staff. This paper reports on a national test comparing two versions of the CEaD—online plus in-person training versus on-line training only. Requesters assigned to CEaD1 viewed a series of 4 donation scenarios of increasing difficulty embedded within a web-based tutorial (www.ceadtraining.org; Website access may be secured through written request to the first author). Each scenario depicted trained medical simulators using basic communication skills in approaches to families of potential brain dead eligible patients (see Appendix for descriptions). An accompanying workbook detailed the specific skills needed to effectively initiate the request, gather information from families and give information about donation, elicit donation beliefs, build relationships, and close the discussion.

Requesters assigned to the CEaD2 condition received the same training described above supplemented with live practice and feedback using simulated family scenarios (see Appendix). All simulators participated in a day-long training session and were instructed to allow requesters' behavior to dictate the donation decision. If the requester addressed concerns raised about donation and appropriately employed a majority of the CEaD skills, the simulators authorized donation. After the simulation, requesters were provided with feedback about their performance.

Our primary hypothesis was that either version of the CEaD would increase the rate of family authorization for organ donation *and* improve the quality of OPO requesters' communication with families. We also hypothesized that OPO requester characteristics would be associated with training effectiveness.

MATERIALS AND METHODS

Overview

Nine OPOs from geographically diverse areas of the United States were empaneled. At the study's outset, the crude donation rates of participating OPOs ranged from 59.4% to 79.8%, representing OPOs both above and below the national average in 2009 (69.4%).[26] The preintervention period spanned January to December 2009; a 5-month training period followed. Postintervention data collection started in June 2010 and ended in March 2012. This parallel-group randomized controlled trial with participant requestors, serving as their own controls, was used to determine the effects of the intervention on requesters' communication skills and behaviors, and on family authorization to organ donation. Figure 1 depicts the study flow diagram.

Donor-Eligible Patient Case Finding and Participant Recruitment

To recruit and enroll OPO request staff, initial informational meetings describing the nature and purpose of the study were held at each OPO. All OPO staff who could potentially request donation from the families of donor-eligible patients were invited to participate. Newly employed requesters were referred and enrolled into the study on a rolling basis. A total of 273 requesters were enrolled. In a given month, the 9 OPOs collectively employed approximately 311 request staff eligible

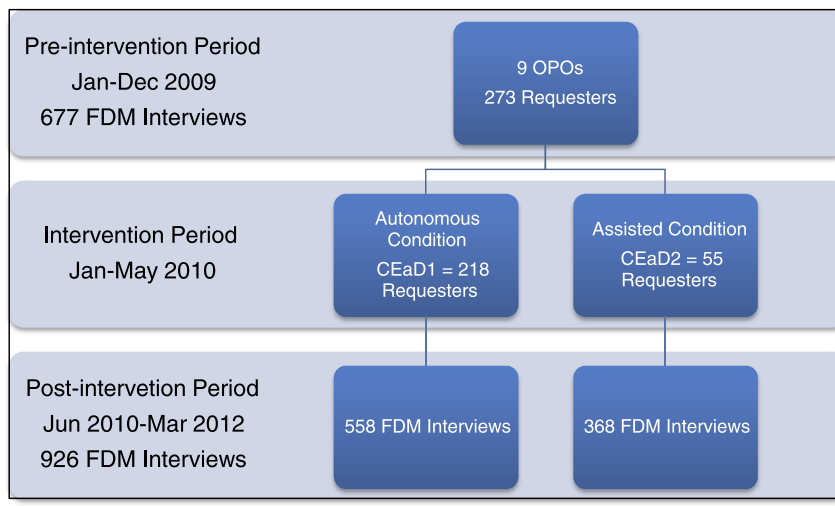

FIGURE 1. Study flow diagram. Across all years, 4634 patient cases were received, along with family decision maker (FDM) name and contact information; 2402 (51.8%) FDM were unable to be contacted. Of the remaining 2232 (48.2%), 629 FDM refused participation (28.2%), and 1603 consented (71.8%).

for participation in this research, an estimated participation rate of 87.8%. All requesters completed the online version of the training and a random sample (n = 55) received additional in-person training using simulators. Randomization was performed using a computerized randomization scheme. Because of the cost of facilitating and implementing the simulations, only 1 round of simulated training was held at each OPO, and requesters employed after this were automatically enrolled in the CEaD1 condition.

To recruit family decision makers (FDMs), we used a well-validated contact and interview protocol.[1,5] Two months after the request for organ donation (3 months for pediatric patients), FDMs were mailed recruitment materials (eg, letter and consent documents). In the absence of any communication indicating refusal, FDMs were contacted 2 weeks later by telephone to invite participation. Accrual of FDMs across the 9 OPOs ranged from 5% to 13%. The University's Institutional Review and Privacy (Health Insurance Portability and Accountability Act) Boards approved all aspects of the study and informed consent was obtained from all subjects.

Methods and Measures

OPO Administrative Data

Administrative data on deceased patients (eg, mechanism of death—brain or circulatory), FDMs (ie, contact information), and donation approaches (authorized/refused) were collected from participating OPOs on individual cases on a monthly basis. Because the objective of the research was to examine whether the intervention improved communication skills and authorization, rather than whether all potential eligible cases were identified, we used data obtained directly from the OPOs, who acted as their own controls, on eligibility and authorization outcomes. All OPOs that participated in this study used the UNOS definition of eligibility: death of a patient 70 years or younger who ultimately is legally declared brain dead according to hospital policy independent of family decision regarding donation or availability of next-of-kin, independent of medical examiner or coroner involvement in the case, and independent of local acceptance criteria or transplant center.

Requester Surveys

Paper surveys collected requesters' demographic data and length of time employed as a requester. Requesters' tenure was calculated from duration of employment and classed as novice (≤12 months), mid-level (13–36 months) or senior (>36 months). Within 1 week of each donation request, requesters completed a web-based survey capturing the process of identifying, approaching, and requesting donation. Two 7-point Likert-type measures assessed requesters' general comfort discussing and answering questions about organ donation with FDMs; higher values represent greater levels of comfort.

FDM Interview

Semistructured telephone interviews were conducted using a previously developed and validated guide.[1,5,25] The instrument collected FDM sociodemographics (age, race, sex, religion) and relationship to the patient. The FDMs were also asked if he or she was "mostly raised in the US or outside US?" as an indication that the FDM was an immigrant or less acculturated to U.S. society, norms, and customs.

Questions also captured FDMs' perceptions of the quality of the request and requesters' communication skills using a 5-point response scale (1 = never, 5 = always). Reported are the findings for the individual items (1 = strongly disagree; 5 = strongly agree) as well as the averaged responses for the shortened 12-item Relational Communication Scale[27]; Cronbach α, was 0.90. The FDMs also reported requesters' discussion of 17 donation-related topics (yes/no) during requests. These items were drawn from past research on donation.[14,28] Authorization to donation (yes/no) was also ascertained and verified against OPO records.

Analytic Plan

Descriptive statistics summarize requesters', FDMs', and patients' demographics. Requesters assigned to the 2 CEaD conditions are compared to assess randomization. Frequencies and percentages are presented for categorical-level variables and means and standard deviations for interval-level variables. Contingency tables determined whether the samples from before and after the intervention differed significantly on rates of authorization; these comparisons included an examination by CEaD training condition and requester tenure. Associations between authorization rates and variables reported in previous research as influential in obtaining consent, including donation after circulatory declaration of death (DCD), race of the FDM (black vs all others), and sex of the patient, were examined using contingency tables (pre-/post-CEaD1/post-CEaD2 × requester tenure). Given the small number of participants in each condition with any given characteristic, we excluded cases having the characteristic of interest (one at a time) to determine if the conclusions regarding authorization rates were stable. Statistically significant differences in the distribution of authorization are noted.

Mean scores on continuous variables were compared preintervention and postintervention using the GLM procedure to afford protection from unbalanced n. Results of the GLM are reported with F test, *P* value with significance set at 0.05 and least squares means, and associated standard errors. The χ^2 test statistic was used to examine the effect of the intervention on dichotomous-dependent variables (eg, discussion topics). Analyses were rerun excluding requestors who joined the study after the in-person training was completed and results were unchanged. Analyses were conducted using SPSS (SPSS, Inc., Chicago, IL) 19.0 for Windows and SAS 9.3 (SAS Institute, Cary, NC).

RESULTS

Recruitment and Study Samples

Recruitment

Contact was attempted with all FDMs connected to 4634 total patient cases. No contact information was available for 343 FDMs (7.4%), and we were unable to make contact with 2059 (44.4%) FDMs after multiple attempts. Of the remaining 2232 (48.2%) FDMs successfully contacted, 629 (28.2%) actively refused participation and 1603 (71.8%) agreed to be interviewed (Figure 1).

For these analyses, 1603 requests (677 preintervention and 926 postintervention) and 139 requesters who submitted at least 1 donor-eligible patient case preintervention and postintervention were included.

Requester Sample

Requesters had, on average, 4 years of job experience; the sample comprised 39% novice, 26% midlevel, and 35% senior requesters. On average, requesters reported 11.5 requests (SD = 11.7) during the study. The majority were female, Christian, and married with a mean age of 40 years (Table 1). The CEaD1 and 2 requesters did not differ significantly with respect to sociodemographics, but a higher proportion of male requesters received the CEaD2 training (23.0% vs 30.0%; χ^2 (1) = 10.3, $P < 0.01$). The vast majority of "drop outs," who are not included in these analyses, left their employment before the inception of the training. Only 13 (15.0%) ended their employment after the intervention began.

FDM and Patient Samples

The majority of FDMs were female, Christian, with an average age of 48 years. The plurality of FDMs was the patient's spouse or significant other (34%), or parent (32%). Approximately 10% of the FDMs reported being raised mostly outside the United States. Approximately 20% of the patient sample was DCD-eligible (n = 328), and 29.5% (n = 472) died as a result of trauma. The majority of FDMs (84%) authorized donation (16% declined). Only 22% of adult patients had a driver's license authorizing donation (see Table 1); if these first-person consent cases are excluded the FDM authorization rate is 80.0%.

Effects of the CEaD Intervention on FDM Authorization

The CEaD training was associated with increased FDM authorization rates (see Table 2). Specifically, novice requesters exhibited a statistically significant increase in authorization after completing the training (78% pre-CEaD vs 83.0% post-CEaD), with the greatest increase found for requesters in CEaD2 (89.0%). Likewise, midlevel requesters' pre-CEaD authorization rate of 81% increased to 88% posttraining CEaD2. In contrast, senior requesters demonstrated significantly higher authorization rates after CEaD1 training (89.0% pre- vs 92%).

Examination of potential confounders (ie, patient sex and cause (trauma) and mechanism (DCD) of death; FDM race, and place of residence in childhood) revealed changes in the distribution of authorization rates pre- and post-CEaD training for 4 variables. First, novice tenure requesters demonstrated a considerable increase in authorization from pre-CEaD2 (74% n = 20) to post-CEaD2 (90% n = 36) for DCD. Second, midtenure requesters exhibited a lower authorization rate for black FDM (72%) post-CEaD1. In all other conditions, black authorization was at least as high as for other races. Third, midtenure requesters had a lower consent rate for female patients (75%) post-CEaD1. Finally, rates of authorization for trauma-related causes of death were higher preintervention for mid- (86% trauma vs 81% overall) and

TABLE 1.

FDM, patient, and requester sample descriptives

			Requesters			
Characteristic	**FDM**	**Patients**	**Requester total**	**Novice**	**Mid-level**	**Senior**
Age, mean (sd)	46.6 (14.8)	42.3 (15.7)	39.6 (9.4)	36.4 (8.9)	39.1 (10.1)	43.1 (8.8)
	% (n)	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**
Sex: female	65 (1042)	40.0 (642)	74 (103)	84 (45)	81 (29)	60 (29)
Race						
Black/African American	18 (282)	17 (268)	12 (17)	11 (6)	14 (5)	12 (6)
Asian	1 (16)	1 (16)	4 (5)	2 (1)	6 (2)	4 (2)
White	65 (1042)	65 (1042)	76 (106)	83 (45)	69 (25)	73 (36)
Other or mixed race	16 (263)	18 (295)	8 (11)	4 (2)	11 (4)	11 (5)
Hispanic/Latino	17 (268)	16 (245)	18 (24)	10 (5)	25 (9)	21 (10)
Born outside the United States	10 (167)					
Education						
< High school	11 (175)					
High school	26 (410)					
Some college/associates degree	33 (536)		22 (30)	15 (8)	22 (8)	29 (14)
College or higher	30 (482)		78 (109)	85 (46)	78 (28)	71 (35)
Marital status						
Never married	14 (219)		22 (30)	11 (16)	7 (10)	3 (4)
Married	36 (571)		62 (86)	23 (32)	16 (22)	23 (32)
Divorced	36 (583)		14 (19)	4 (5)	2 (2)	9 (12)
Widowed	14 (230)		3 (4)	<1 (1)	2 (2)	<1 (1)
Religion						
Christian	85 (1361)		81 (113)	81 (44)	75 (27)	88 (43)
Jewish	3 (47)		2 (2)	2 (1)	3 (1)	
Other	12 (195)		17 (24)	37 (10)	22 (8)	12 (6)

Education, marital status, and religion not collected for patients; percentages and counts reported unless noted otherwise.

TABLE 2.

Authorization rates by CEaD condition and requester tenure

	Preintervention n = 677	Postintervention All Cases, n = 926	Postintervention CEaD1, n = 558	Postintervention CEaD2, n = 368	x^2, *P*
Novice % (n)	78.0 (144)	83.0 (329)	80.0 (192)	89.0 (137)[a]	7.55, 0.03
Midlevel % (n)	81.0 (158)	80.0 (152)	76.0 (101)	88.0 (51)[a]	2.89, 0.004[b]
Senior % (n)	89.0 (266)	88.0 (299)	92.0 (170)[a]	83.0 (129)	7.38, 0.02
Total % (n)	84.0 (568)	84.0 (780)	83.0 (463)	86.0 (316)	NS

[a] Significant difference ($P < 0.05$) as compared to preintervention consent rate.

[b] Reported as Fisher exact due to the smaller cell count.

high tenure (93% trauma vs 89% overall) requesters. There was no statistically significant change in authorization rates preintervention and postintervention for foreign born FDMs (χ^2 (1) = 2.16, $P > 0.25$); foreign born FDMs had comparable authorization rates to the rest of the sample (85%).These findings should be interpreted with caution given the modest cell sizes.

Effects of the CEaD Intervention on Requesters' Communication Skills and Behaviors

Requesters completing either CEaD training demonstrated significant improvements in the quality of their donation conversations.

Quality of the Request

The FDMs had improved ratings of the quality of the request after the intervention (Table 3) including feeling that the requester listened carefully and gave the family enough time to say important things, took FDM concerns seriously, behaved professionally, treated FDM courteously, and expressed empathy and support. Although frequency ratings for undesirable behaviors were low previously, these too showed improvements after the intervention including requestors being less likely to be rated as making the FDM feel inferior, having a negative attitude toward the FDM, and making the FDM feel unwelcome or behaving rudely.

Relational Communication

The FDMs reported improved ratings of the emotional and persuasive tone including the requester being more relaxed and conveying higher levels of sincerity, honesty, willingness to listen, and cooperation. The FDMs were also less likely to feel the requester was trying to persuade him/her and more likely to report being treated as an equal after training (Table 3).

Donation-Related Topics

On average, FDMs reported discussing 10.8 (sd = 4.1) of the 17 donation-related topics during requests (results not tabled). No statistically significant difference was found in the total number of topics discussed pretraining and posttraining. However, more comprehensive discussions of certain donation topics, such as explanations of brain death (χ^2 (1) = 10.5, $P < 0.005$), the patient's donation wishes (χ^2 (1) = 4.62, $P < 0.05$), and provision of the timeframe for the donation decision (χ^2 (1) = 6.2, $P < 0.04$), were found.

Requester Self-Reported Communication Comfort

Requesters themselves reported significantly greater comfort answering FDMs' donation-related questions after the training (F (1, 1602) = 4.25, $P < 0.005$). No significant difference was detected in requesters' self-reported comfort discussing donation ($P = 0.20$).

DISCUSSION

This study is the first to demonstrate in a large controlled trial that using a systematic communication skills training program can improve OPO staff performance in discussing organ donation with the families of deceased patients. How the opportunity for donation is conveyed plays a critical role in affecting the availability of transplantable organs. Although first-person consent is contributing to organ availability, nearly 80% of our cases lacked documentation of the patients' wishes. This leaves the donation decision to the family's discretion in the majority of cases.[29] This study demonstrated that communication training can improve authorization rates and improve the quality of the communication about organ donation.

The *overall* authorization rates did not change from pre- to post-CEaD training. However, an even more notable finding was the statistically significant interaction between training and requester experience. Importantly, novice requesters' preintervention authorization rates rose by10 percentage points after the training, indicating the need to approach the training of OPO staff in a more consistent way before communication styles and habits are established. Although more modest, CEaD also improved authorization rates of more senior requesters, underscoring the importance of continuing education for all staff. A plausible explanation for the differential effects of the CEaD training between requesters is that inexperienced requesters may have been more open to the development and acquisition of communication and donation-related skills, whereas experienced request staff may have resisted changing deeply ingrained behaviors.[30] We note that although the CEaD did not include instruction on requests for donation after DCD, some improvement in requesters' approaches to these FDMs was observed. Such requests must be sensitive to the unique circumstances surrounding the declaration of death and recovery of donated organs, and training requesters to communicate about this type of donation and its associated processes is needed.

The most pronounced effects of the training were found in the requesters' overall ability to communicate compassionately and effectively during requests. No matter which training condition was assigned, FDMs' blind rating of the quality of the request increased after training. Specifically, posttraining ratings indicated that requesters listened more carefully to FDM concerns, took the concerns more seriously, gave FDMs more opportunity to talk about issues of personal importance,

TABLE 3.

FDM ratings of requestors relational communication

	Preintervention mean (StdEr)	Postintervention Mean (StdEr)	F(df), *P*
Request item quality ratings			
Have trouble understanding OPO requester because he/she spoke too fast	1.68 (0.08)	1.47 (0.08)	F (1, 1602) = 0.92, $P > 0.43$
Requester made you feel inferior	1.35 (0.03)[a]	1.16 (0.04)[a]	F (1, 1602) = 6.21, $P < 0.0003$
Feel discriminated against because of your race or ethnicity	1.09 (0.03)	1.03 (0.02)	F (1, 1602) = 2.49, $P > 0.05$
Requester listened carefully to what you had to say	4.55 (0.04)[a]	4.71 (0.03)[a]	F (1, 1602) = 2.10, $P < 0.03$
Requester behaved rudely to you	1.2 (0.03)[a]	1.08 (0.04)[a]	F (1, 1602) = 2.35, $P < 0.02$
Requester took your concerns seriously	4.4 (0.05)[a]	4.71 (0.05)[a]	F (1, 1602) = 5.63, $P < 0.0008$
Requester had a negative attitude toward you	1.21 (0.03)[a]	1.15 (0.03)[a]	F (1, 1602) = 2.10, $P < 0.04$
Requestor made you feel as if you weren't welcome	1.17 (0.03)[a]	1.08 (0.06)[a]	F (1, 1602) = 2.09, $P < 0.04$
Requester used medical terms you did not understand/were not familiar with	1.39 (0.06)	1.42 (0.05)	F (1, 1602) = 0.31 , $P > 0.82$
Requester ignored what you told them	1.29 (0.04)	1.22 (0.04)	F (1, 1602) = 2.13, $P < 0.09$
Requester treated you in a friendly and courteous manner	4.51 (0.05)[a]	4.74 (0.04)[a]	F (1, 1602) = 5.06, $P < 0.002$
Requester gave you enough time to say what you thought was important	4.49 (0.06)[a]	4.69 (0.05)[a]	F (1, 1602) = 2.99, $P < 0.03$
Feel discriminated against because of your education or income	1.1 (0.02)	1.09 (0.03)	F (1, 1602) = 0.93, $P > 0.42$
Requester summarized to check his or her understanding	3.87 (0.08)	3.90 (0.08)	F (1, 1602) = 0.60, $P > 0.61$
Requester encouraged you to continue talking	3.65 (0.09)	3.74 (0.07)	F (1, 1602) = 1.09, $P > 0.35$
Requester offered to provide additional assistance	3.11 (0.10)	3.27 (0.12)	F (1, 1602) = 0.68, $P > 0.56$
Requester appeared knowledgeable and professional	4.65 (0.04)[a]	4.77 (0.04)[a]	F (1, 1602) = 1.99, $P < 0.05$
Requester responded to strong emotions with sensitivity and empathy	4.38 (0.06)	4.49 (0.06)	F (1, 1602) = 1.71, $P > 0.16$
Requester explored the source of the emotion	3.23 (0.12)	3.2 (0.13)	F (1, 1602) = 0.22, $P > 0.88$
Requester expressed empathy and support	4.3 (0.05)[a]	4.49 (0.05)[a]	F (1, 1602) = 2.04, $P< 0.04$
Requester behaved appropriately for the situation	4.62 (0.04)	4.73 (0.04)	F (1, 1602) = 1.06, $P > 0.37$
Requester rushed through giving you new information	1.65 (0.08)	1.57 (0.09)	F (1, 1602) = 0.28, $P > 0.84$
Requester used aids, diagrams, UNOS statistics or recipient stories to enhance your understanding	2.13 (0.10)	2.05 (0.11)	F (1, 1602) = 0.47, $P > 0.70$
Requester checked your understanding of the information he/she provided	3.9 (0.07)	4.1 (0.08)	F (1, 1602) = 1.40, $P > 0.24$
Relational communication scale items			
Was sincere	6.28 (0.06)[a]	6.52 (0.07)[a]	F (1, 1602) = 4.18, $P < 0.006$
Attempted to persuade me	2.94 (0.14)[a]	2.77 (0.15)[a]	F (1, 1602) = 2.92, $P < 0.03$
Wanted me to trust him/her	5.77 (0.12)	5.89 (0.13)	F (1, 1602) = 0.44, $P > 0.73$
Was willing to listen to me	6.1 (0.07)[a]	6.58 (0.07)[a]	F (1, 1602) = 5.63, $P < 0.0008$
Wanted to cooperate with me	6.13 (0.08)[a]	6.46 (0.08)[a]	F (1, 1602) = 2.91, $P < 0.03$
Considered as equals	5.82 (0.09)[a]	6.36 (0.09)[a]	F (1, 1602) = 5.24, $P < 0.001$
Felt very relaxed talking with me	6.21 (0.07)[a]	6.46 (0.08)[a]	F (1, 1602) = 1.86, $P < 0.06$
Tried to gain my approval	4.05 (0.18)	4.25 (0.20)	F (1, 1602) = 0.65, $P > 0.59$
Was calm and poised with me	6.48 (0.06)	6.63 (0.06)	F (1, 1602) = 2.13, $P < 0.09$
Was honest in her communication	6.37 (0.07)[a]	6.52 (0.06)[a]	F (1, 1602) = 4.27, $P < 0.005$
Was interested in talking with me	6.26 (0.07)	6.48 (0.07)	F (1, 1602) = 1.12, $P > 0.34$
Was comfortable interacting with me	6.51 (0.06)	6.47 (0.07)	F (1, 1602) = 0.84, $P > 0.47$
Relational communication summary score	5.80 (0.07)	6.12 (0.06)	F (1, 1602) = 2.57, $P < 0.05$

[a] Means are significantly different preintervention/postintervention.

StdEr, standard error.

and exhibited more displays of empathy and support compared with FDM pretraining ratings. Additionally, requesters behaved with increased professionalism, courtesy, and a more positive attitude after either version of the training. Improvements were also found in requesters' relational communication skills (ie, more relaxed, sincere, honest, and willing to listen and cooperate), with FDMs also less likely to feel inferior, unwelcome, or that the discussion was intended to persuade. Requesters themselves reported significant improvements in comfort answering family members' questions about donation after brain death. We also note that although opportunity exists in the United States for raising the authorization rates of recent immigrant communities and traditionally low authorization-rate ethnicities, this study was not designed to specifically evaluate this and no difference in authorization rates was observed for FDMs raised outside the United States as compared to the overall sample. Studies focusing on these differences, as well as geographic differences within the United States, are needed.

The experiences of FDMs are important for several reasons. First, organ donation is a public good and relies on positive public perceptions for success. That FDMs feel they are being approached as valued members of the dialogue and the feelings and concerns they express are valid, enhances the residual impressions retained regarding the experience. Positive experiences by families asked to donate contribute to a reservoir of social trust and support. However, requesters were only exposed to the training once, and it is

likely that a degree of decay in skill occurred over time. Future research should use longitudinal and/or dose-escalation designs to assess the sustained impact of the intervention and the specific amount and timing required. Additionally, future investigations should incorporate and compare the effects of different training elements on skill retention.[31,32]

Although this study is the most rigorous test of a communication training program for OPO requesters to date, it is not without limitations. As a field experiment, we had no control over how requesters chose to use the web-based training program; completion of the online CEaD training was validated through website analytics. There was also no direct observation of requester performance; ratings obtained from both families and requesters did not conflict. In addition, the partnering OPOs may not be representative of other OPOs nationally, given the high rates of authorization observed—families refusing donation represented only 16% of the final sample. A post hoc analysis of administrative data provided by the participating OPOs for organ requests not included in these analyses revealed authorization rates ranging from 66% to 92%, with an average of 77%. This same analysis revealed within-OPO differences in authorization rates ranging from less than 1% to over 25% (ie, requests included in these analyses compared to those that were excluded). Thus, the sample was somewhat skewed toward donating families and any donor/nondonor differences should be considered conservative estimates. Another potential limitation was that this study was not designed to evaluate variation in how successful OPOs are in ascertaining potential eligibility, and therefore could not find cases with donor potential that were missed. We note that it is widely recognized that the "eligible" definition has severe limitations in considering only pronounced patients. The OPOs routinely approach families before pronouncement and may receive a family decline resulting in the patient being removed from the ventilator and not declared brain dead. This practice can lead to an artificially inflated authorization rate. We dealt with this problem by each OPO acting as its own control as a means of mitigating potential variation in enacted eligibility/approach scenarios. Thus, the main takeaway message of this study is not the consent rate per se but that we were able to raise the rates amongst novice staff while raising the quality of the communication for all OPO staff. Finally, although requesters were not blinded to having been trained, FDMs were blinded, and both types of subjects (request staff and FDMs) reported significant improvement in requester communication skills.

The findings of this research suggest that evidence-based communication skills training should be required of all personnel making requests for organ donation. Although some larger and more successful OPOs have inhouse programs, hire trainers, or send their staff out for training, most OPOs only offer their staff limited and intermittent training, some of which is of questionable quality and frequently expensive.[32] Requesters' lack of any formalized training to perform their job functions likely contributes to the high rates of staff burnout and turnover.[33] Indeed, this study encountered a job dropout rate of almost 30%; another 30% of requesters were working at their positions for less than 1 year. This is notable given that OPO directors report that satisfactory performance among new employees does not typically materialize until the second year on the job.[34] In the only study conducted to date examining requester turnover, 75% (n = 326) expressed a need for additional training and educational programs, with a focus on communication (61%).[35] The CEaD offers an evidence-based, cost-effective means of ensuring even the most distantly located requesters can receive training to prepare them to effectively engage families in discussions about the option of organ donation.

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APPENDIX

Descriptions of Scenarios

Online Scenarios

Scenario 1: patient is a white man with a severe head trauma from a motor vehicle accident. He is recently widowed and has 2 young children. Family members present in the hospital are his mother and father. The father is angry at the death of his son. He is protective of the mother and does not want to upset her any more. His major concern about donation is fear of mutilation. The mother is quiet and overwhelmed. Brain death testing is underway. Before the staff from the organ procurement organization arrived, the physician spoke with the family and explained brain death. The physician is cold and impatient with the staff from the organ procurement organization. He regards them as vultures, their presence punctuating his failure as a physician.

Scenario 2: patient is a 16-year-old African American girl with a gunshot wound in her abdomen, caught in the crossfire during a convenience store robbery. Family members present at the hospital include mother, grandmother, and 23-year-old brother. The mother and grandmother are in shock. The brother is very angry and frustrated and is mistrustful of the health care system. The grandmother cannot understand the concept of brain death, but mother and brother are also having a hard time with this. An opportunity to speak with their minister may be helpful. The family feels frustrated that no one in the hospital will answer their questions or give them any information about how the patient is doing.

Scenario 3: patient is a 5-year-old girl with severe trauma from an automobile accident and a potential donation after cardiac death case. Parents are divorced, with unresolved differences and mutual hostility; father was driving the vehicle when it was struck. Mother has custody; she is Catholic and believes that the church doesn't allow donation, so is against the idea. Father thinks that donation is a good thing. When he says this, mother accuses him of trying to assuage his guilt at "killing their child." The child is on supports when the requester arrives and the pediatric health care providers have already spent time discussing taking the child off of supports.

Scenario 4: this is a replication of Scenario 1 (ie, same details), with the exception that the patient was a registered organ donor.

In-person Scenarios

Scenario 1: patient is a 70-year-old man with a severe stroke. Daughter and son-in-law express concerns about funeral arrangements, the "grossness" of organ donation, and the patient's advanced age. Son-in-law is very upset over the loss and becomes agitated, having outbursts during the request.

Scenario 2: Patient is a 17-year-old African American man accidentally shot in head by friend playing with gun. Mother and grandmother are present; grandmother has issues with potential disfigurement of the body as a result of donating. Grandmother repeatedly questions why grandchild was taken to trauma hospital instead of neighborhood hospital. Mother is crying and concerned about why her child is still hooked to machines after brain death determination.

Scenario 3: patient is a 4-year-old boy who dies of drowning while in dad's care. Dad has questions, but is more inclined to say yes. Mother is extremely combative and nasty with the father. During the encounter, mom stands up and tries to be as physically distant from dad as room will allow. Dad does not do much to defend himself or get too riled up by her. Mom's primary concerns are religious, and she doesn't understand the need for a child's organs.

Scenario 4: patient is an adult female, confirmed brain death and registered donor. Adult siblings say sister "was like a mother," had no children and never discussed being a donor with anyone. In fact, she was quite averse to doctors and medicine in general, so the siblings are shocked to hear that she had registered as a donor. Female is the power of attorney and is opposed to the idea of donation.