Stability of Organ Donor Designations on Driver's Licenses

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ABSTRACT

Background.   Little is known about the stability of decisions that people make to be organ donors. We sought to determine the rate of stability of organ donor designations on driver's licenses.

Methods.   With the use of a cross-sectional study design, we reviewed the health records of 2500 randomly selected primary-care patients at a large urban safety-net medical system to obtain their demographic and medical characteristics. We also examined the two most recent unique driver's licenses, state identification cards, or learner's permits that were scanned into electronic health records as part of the patient registration process. We obtained organ donor designations from these documents for each patient.

Results.   Of all patients, 1174 (47%) had two driver's licenses, identification cards, or permits in their electronic medical records. The two documents were issued an average of 3.5 years apart. Overall, 114 (10%) patients had differing organ donor designations on their two documents. Among the 502 patients who were designated as organ donors on the first document, 32 (6%) were not designated as organ donors on the second document. Among the 672 patients who were not designated as organ donors on the first document, 82 (12%) were designated as organ donors on the second document. There was little relationship between stability of organ donor designations and patient demographic and medical characteristics.

Conclusions.   About 1 of every 10 patients changed their organ donor designation, but stability was not associated with any demographic or medical factors. Further work is needed to understand why individuals change their organ donor designation.

MANY aspects of organ donation have been extensively studied [1–4]. However, little is known about the stability of decisions that people make to be organ donors, for example, how often individuals change their organ donor designations. Furthermore, past studies on willingness to donate have relied on asking respondents if they were willing to donate or were designated as organ donors on driver's licenses [1–3,5–8]. By not directly checking respondents' licenses to verify donation designation, these studies may be susceptible to social desirability bias or the tendency of individuals to answer questions in a manner that will be viewed favorably by others. Social desirability bias may confound research results by creating false relationships or obscuring relationships among variables [9–11]. We

sought to overcome this limitation by examining driver's licenses or similar documents, which record actual donation designations. We were able to examine these because they are scanned into patients' electronic health records at each

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clinical encounter at a large urban safety-net medical system. Knowing more accurately the stability of donor preferences may help inform future efforts to increase organ donation.

METHODS

This study was conducted at an urban safety-net medical system in northeast Ohio that includes a large tertiary care hospital and more than a dozen community centers located in both poor and wealthy communities. We randomly selected 2500 active patients from the electronic health record. Active patients were defined as those who saw their primary care physician at least twice in the preceding 2 years. Only patients over the age of 18 years were eligible for this study.

From electronic health records, we obtained patient demographic characteristics including age, sex, race, ethnicity, language, marital status, employment status, health insurance, and zip code. We also determined the presence of specific common comorbid conditions based on relevant ICD-9 codes, including hypertension, chronic obstructive pulmonary disease, diabetes, cancer, cerebrovascular accident, chronic kidney disease, congestive heart failure, connective tissue disease, peripheral vascular disease, myocardial infarction, peptic ulcer disease, AIDS, and liver disease. Because we did not have data on individual income, we used census data to obtain the median household income of each patient's zip code.

From January 2016 to March 2016, 2 researchers independently examined the 2 most recent unique driver's licenses, state identification cards, or learner's permits to determine each patient's organ donor designation at 2 different times. A third researcher resolved any discrepancies between the 2 researchers. This study was approved by the Institutional Review Board of MetroHealth Medical Center, Cleveland, Ohio (approval No. 685, protocol No. 13-00548).

We used descriptive statistics (percentages, means, and standard deviations) to describe the characteristics of the patients. We used the χ^2 test to determine the univariate relationship between change in organ donor designation and several predictor variables, including demographic characteristics and medical characteristics. We used logistic regression to determine the multivariate relationship between change in organ donor designation and all predictor variables. All statistical analyses were performed using JMP Pro 11.0 (SAS Institute, Cary, NC, United States).

RESULTS

Of the 2500 randomly selected patients, 937 (37%) had only 1 license, card, or permit; 377 (15%) had no documentation; and 12 (0.6%) had only illegible documentation. The remaining 1174 (47%) patients had 2 licenses, cards, or permits documenting organ donor designation in their medical records. The 2 documents were issued an average of 3.5 years (standard deviation, 1.3 years) apart. Compared with the 1174 patients with 2 documents, the 1326 patients without 2 documents were more likely to be male (50% vs 37%), less likely to be black (29% vs 39%) or Hispanic (2% vs 6%), more likely to speak a language other than English or Spanish (8% vs 4%), more likely to be uninsured (13% vs 4%), more likely to have more medical conditions (0.5 vs 0.9), and more likely to have a higher income ($42,700 vs

$39,000). The 2 groups were similar in marital status and employment status.

The demographic and medical characteristics of patients with a donation designation are listed in Table 1. A majority of patients were female, spoke English, were not married, were unemployed, and had private insurance.

Among the entire sample of 1174 patients, 114 (10%) had differing organ donor designations on their 2 documents. Among the 502 patients who were designated as organ donors on the first document, 32 (6%) were not designated as organ donors on the second document. Among the 672 patients who were not designated as organ donors on the first document, 82 (12%) were designated as organ donors on the second document. There was little relationship between stability of organ donor designations and patient demographic and medical characteristics. For example, 11% of patients 18 to 34 years of age changed their organ donor designation, 10% of patients 35 to 54 years of age changed their organ donor designation, and 7% of patients ≥55 years of age changed their organ donor designation (P = .12; Table 2). No patient characteristics were associated with stability of organ donor designation on multivariate analyses (results not shown).

DISCUSSION

We found that about 1 in 10 of the patients at a large urban safety-net medical system changed their donor designation

Table 1. Demographic and Medical Characteristics of Patients (n = 1174)

Age, years	46.0 (16.0)
Sex	
Female	743 (63%)
Male	431 (37%)
Race	
White	511 (44%)
Black	461 (39%)
Other	202 (17%)
Ethnicity	
Hispanic	70 (6%)
Non-Hispanic	1104 (94%)
Language	
English	1077 (92%)
Spanish	54 (5%)
Other	43 (4%)
Marital status	
Married	315 (27%)
Not married	859 (73%)
Employment status	
Employed	455 (39%)
Unemployed	719 (61%)
Insurance	
Private	604 (51%)
Government	520 (44%)
None	50 (4%)
Annual household income, $1000	40.0 (17.8)
Total medical conditions	0.9 (1.2)

Numbers indicate mean (standard deviation) for continuous variables and n (percentage) for categorical variables.