

At-a-Glance

- **Proposed Model for Assessing the Effectiveness of Individual OPOs in Key Measures of Organ Recovery and Utilization**
- **Affected Bylaw:** OPTN and UNOS Bylaws, Appendix B, Section I: Organ Procurement Organizations
- **Membership and Professional Standards Committee (MPSC), Organ Procurement Organization (OPO) Committee**

The Organ Procurement Organization (OPO) Committee and the Membership and Professional Standards Committee (MPSC) propose the use of a statistical model to analyze OPO performance. This model utilizes a comparison of observed (actual) to expected organs transplanted per donor (yield) based upon donor specific characteristics in each Donation Service Area. The model will be used in aggregate (for all organs) in addition to organ specific performance measures, and predicts how many organs would have been recovered and transplanted if the OPO performed at the level of the national average for donors with similar characteristics. The MPSC will use the model to monitor OPO performance, similar to existing practices for monitoring transplant program performance. Through this approach, the MPSC will identify opportunities for improvement at OPOs whose observed organ yield falls below expected levels by more than a threshold. The bylaw proposal provides information regarding the model's intended use by the MPSC as well as the threshold that will result in MPSC inquiry.

- **Affected Groups**
OPO Directors of Organ Procurement, OPO Executive Directors, OPO Medical Directors, OPO Coordinators, OPO Data Coordinators, OPO Quality Assurance Staff
- **Number of Potential Candidates Affected**
The purpose for implementing a process for monitoring OPO performance is to improve overall organ yield. By identifying opportunities for OPO improvement and sharing these opportunities with the greater community, it is anticipated that the proposed model will increase in the number of organs procured and transplanted.
- **Compliance with OPTN Strategic Goals and Final Rule**
OPO performance monitoring directly addresses maximizing donor organs as well as systemic improvements for all OPTN members.
- **Specific Requests for Comment**
There are no specific requests for comment on this proposal. Please consider and comment on the entire proposal.

Proposed Model for Assessing the Effectiveness of Individual OPOs in Key Measures of Organ Recovery and Utilization

Affected Bylaw: OPTN and UNOS Bylaws, Appendix B, Section I: Organ Procurement Organizations

Membership and Professional Standards Committee (MPSC), Organ Procurement Organization (OPO) Committee

Summary and Goals of the Proposal:

The Organ Procurement Organization (OPO) Committee and the Membership and Professional Standards (MPSC) Committee propose a statistical model to analyze OPO performance. This model utilizes a comparison of observed (actual) to expected organs transplanted per donor (yield) based upon donor specific characteristics in each Donation Service Area (DSA). The model will be used in aggregate (for all organs) in addition to organ specific performance measures, and predicts how many organs would have been recovered and transplanted if the OPO performed at the level of the national average for donors with similar characteristics. The MPSC will use the model to monitor OPO performance, similar to existing practices for monitoring transplant program performance. Through this approach, the MPSC will identify opportunities for improvement at OPOs whose observed performance falls below expected performance by more than a threshold. The bylaw proposal provides information regarding the model's intended use by the MPSC as well as the threshold that will result in MPSC inquiry.

Background and Significance of the Proposal:

The OPTN (through the MPSC) monitors member performance and identifies opportunities for improvement. Historically these efforts have focused on transplant program performance, primarily through routine reviews of one-year post-transplant graft and patient survival and activity levels. Currently, for OPO assessment the MPSC primarily considers results of site surveys (audits), allocation, and member reports of potential policy violations. In 2008, the Board of Directors charged the MPSC and OPO Committee with identifying performance metrics the MPSC could use to monitor OPO performance. A joint work group that includes the OPO committee and MPSC, in conjunction with the SRTR contractor, was established to work on this project.

- **Collaboration:** The joint work group comprises OPO executive directors, medical directors, directors of procurement/clinical services, quality directors and staff, and an anesthesiologist. Once the work group endorsed the SRTR's statistical model of organs transplanted per donor, many educational opportunities explaining the analysis and its benefits were provided to the OPO community. In January 2010, the statistical model was presented during the AOPO Executive Director Winter meeting in La Jolla, CA. Additionally, in May 2010, OPO Executive Directors were encouraged to send staff to an educational forum in Chicago, IL. Finally, during the June 2010 AOPO Annual Meeting, additional presentations were provided for interested parties. Feedback was gained through all of these venues and considered by the work group.
- **Strengths and weaknesses:** Because OPO performance metrics do not exist in the bylaws, this proposal will provide notice of the MPSC's intent to monitor OPO performance and the thresholds used to identify those OPOs that do not meet the expected yield. One of its strengths is that no additional data collection is needed. With this proposed flagging algorithm, both the OPO

committee and MPSC believe they have identified statistically and clinically relevant thresholds that will serve as an appropriate trigger for further inquiry.

- **Description of intended and unintended consequences:** This proposal should result in broader quality improvement initiatives based on statistical analyses of data that historically have not been risk-adjusted to account for donor characteristics from the populations of each specific OPO service area. This renewed focus may result in increased organ recovery and utilization practices. The risk-adjusted metrics that have been developed will define OPO performance on the observed yield of organs transplanted per donor as compared to the expected yield. This model predicts how many organs would have been recovered and transplanted if the OPO performed at the level of the national average for donors with similar characteristics. An unintended consequence of adopting this proposal is the potential for parties outside of the OPTN to begin using the metrics for other than the intended purpose of quality and performance improvement. The MPSC and OPTN can provide suggestions to these outside parties, but ultimately the use of these metrics for purposes other than quality improvement is outside of the purview of the OPTN.

Supporting Evidence and Modeling:

Statistical Modeling

The modeling efforts in support of this proposal by the Arbor Research Collaborative for Health (SRTR contractor from 2000-2010) evolved over a period of several months. After extensive deliberations with the joint work group, the overall organs transplanted per donor (OTPD) was chosen as a key outcome measure for assessing OPO performance. From each donor, up to 8 organs can be transplanted (2 kidney, 2 lungs, 1 liver, 1 heart, 1 pancreas, 1 intestine).

The initial overall model for OTPD was based on all donors from 6/1/2000 – 5/30/2007 from whom at least one organ was recovered and transplanted. Potential donor factors in the model were derived almost exclusively from the OPTN Deceased Donor Registration Form (DDR). Potential factors included donor age, ethnicity, blood type, cause of death, body mass index, history of hypertension, and others. Factors that were considered to be “practice-based” such as machine perfusion of kidneys, chest x-rays, coronary angiograms, and biopsy results were explicitly excluded from the model, as well as factors that were not statistically significant ($p < 0.05$). Individual organ-specific models for OTPD (yield) were also developed that use many of the same factors. Over time, a number of interim models were developed in response to work group requests for refinements to the analysis.

The most recent updated overall model for yield was based on over 32,000 donors procured from 1/1/2006 – 12/31/2009, again incorporating many of the same factors used in the initial model. The c-statistic (a measure of the accuracy of model predictions¹) from this model was 0.825. The individual organ-specific models were also updated using the same cohort. The c-statistics for these models ranged from 0.78 for liver to 0.90 for lung. For the donor factors used in each model and their impact on yield, see Appendix A.

¹C-statistics typically range from about 0.5 to 1.0. Values closer to 1.0 are better, while values above 0.7 are considered to be clinically useful.

Application of the Models

Philosophically, the proposed approach for assessing OPO performance is identical to the current approach used to assess transplant program performance. For transplant programs, the actual (observed) number of organs that fail is compared to the expected number of failures. The expected number of failures is derived from the statistical outcome model for that organ. The difference between the observed and expected number of failures is then assessed for statistical significance.

Similarly, for assessing OPO performance, the observed number of organs transplanted is compared to the expected number of organs transplanted, where the expected number is derived from either the overall OTPD model or the applicable organ-specific model. The expected number of organs transplanted can be interpreted as the number expected if the OPO performed at the level of the national average for donors with similar characteristics. Any difference between the observed and the expected is an estimate of the performance of the OPO, or in statistical terms, the “OPO effect.” Differences greater than zero indicate performance above expected, while differences less than zero indicate performance below expected. P-values attached to the differences provide a measure of statistical significance.

Flagging Methodology

Factors considered by the work group in identifying a flagging threshold included the length of the assessment period, the level of statistical significance, and a clinical significance threshold. In considering the length of assessment, the work group reviewed results of both a one-year and a two-year cohort. A one-year cohort allows for analysis of the most current performance but is limited in scope. A two-year cohort includes older data, but the longer assessment period may better reflect the OPO’s true potential.

The choice of a two-sided p-value allows the MPSC to identify OPOs that perform both above and below expected levels. A two-sided p-value of less than 0.05 provides strong evidence that the difference in the observed and expected yield is due to more than random chance. In addition, using this criterion, the false positive rate among OPOs with performance below expected is only 2.5%.

Clinical significance factors considered by the work group included the absolute ratio of observed to expected yield, or O/E; the difference in organs transplanted per 100 donors, or O per 100 – E per 100; and the absolute difference in organs transplanted, or O-E. In developing a flagging algorithm, the work group reviewed several potential combinations of statistical and clinical significance and the resulting number of OPOs that are triggered for review in each scenario. Using a two-year assessment period, a hierarchy of importance in the factors was chosen as listed below:

1. Statistical Significance
2. Observed/Expected Ratio (O/E)
3. Observed – Expected per 100 donors (O per 100 – E per 100)
4. Observed – Expected (O-E)

Table 1 shows the number of OPOs flagged for performance below expected (based on the overall yield model applied to a recent 2-year cohort) using several combinations of the above factors and a one-sided p-value. Table 2 shows the same information using a two-sided p-value. Note that choosing a one-sided vs. a two-sided p-value had very little impact on the number of OPOs flagged. Using an O/E

ratio of 0.95 flagged more than twice the number of programs as did an O/E of 0.90. Adding criteria 3 and 4 had only a moderate impact on the results. The work group felt that criterion 3 (O per 100 – E per 100) was more relevant than criterion 4 (O – E) since yield varies substantially across OPOs.²

After significant discussion, the work group, the OPO Committee, and the MPSC reached consensus on a flagging algorithm to identify OPOs with observed organ yield rates that fall below their expected rates (both in the aggregate and by organ type). **Each of the following three criteria must be met for an OPO to be identified for MPSC review:**

- A difference of at least 11 fewer observed organs per 100 donors than expected yield (Observed per 100 donors-Expected per 100 donors < -10) ,
- A ratio of observed to expected yield less than 0.90 (O/E<0.90), and
- A two-sided p-value less than 0.05.

The two year cohort will be advanced every six months, similar to the processes and cohorts utilized by the Program Specific Reports for the assessment of transplant outcomes performance.

² For example, a deficit of 5 organs may be less troublesome at an OPO that procures 100 donors than it is at an OPO that procures 10 donors.

Table 1. Potential thresholds for triggering MPSC review using a one-sided p-value.

Aggregate Yield Model - One Sided p-value < 0.05							
O/E <	# of OPOs	AND O - E per 100 <	# of OPOs	AND O - E <	# of OPOs		
0.95	12	-5	12	-10	9		
				-25	9		
				-50	5		
		-10	12	-10	12	-10	9
						-25	9
						-50	5
		-15	12	-15	12	-10	9
						-25	9
						-50	5
		-20	9	-20	9	-10	9
						-25	9
						-50	8
0.9	4	-5	4	-10	4		
				-25	4		
				-50	3		
		-10	4	-10	4	-10	4
						-25	4
						-50	3
		-15	4	-15	4	-10	4
						-25	4
						-50	3
		-20	4	-20	4	-10	4
						-25	4
						-50	3

Table 2. Potential thresholds for triggering MPSC review using a two-sided p-value.

Aggregate Yield Model - Two Sided p-value < 0.05							
O/E <	# of OPOs	AND O - E per 100 <	# of OPOs	AND O - E <	# of OPOs		
0.95	11	-5	11	-10	11		
				-25	11		
				-50	7		
		-10	11	11	11	-10	11
						-25	11
						-50	7
		-15	11	11	11	-10	11
						-25	11
						-50	7
		-20	9	9	9	-10	9
						-25	9
						-50	7
0.9	4	-5	4	-10	4		
				-25	4		
				-50	3		
		-10	4	4	4	-10	4
						-25	4
						-50	3
		-15	4	4	4	-10	4
						-25	4
						-50	3
		-20	4	4	4	-10	4
						-25	4
						-50	3

Expected Impact on Living Donors or Living Donation

Not applicable.

Expected Impact on Specific Patient Populations

There is no known impact to specific patient populations, though it is anticipated that improvement opportunities may result in increased organ yield in the transplant community.

Expected Impact on Program Goals, Strategic Plan, and Adherence to OPTN Final Rule:

Adopting a method for monitoring OPO performance and identifying potential opportunities for improvement will ultimately enhance OPO performance and increase the number of donor organs available for transplant and enhance the efficiency of the transplant system.

Plan for Evaluating the Proposal:

Upon implementation, the MPSC will monitor the effectiveness of the flagging methodology annually. The committee will consider adding additional variables to the analysis as practice changes and/or additional data is collected. The committee will also review the information submitted by OPOs identified for review. This additional review will identify common issues as well as opportunities to improve the tools the MPSC uses to evaluate OPO performance.

Additional Data Collection:

This proposal does not require additional data collection.

Expected Implementation Plan:

This proposal does not require OPOs to do anything differently. This proposal will not require programming in UNetSM.

Communication and Education Plan:

Many educational opportunities have already occurred regarding the methodology for monitoring OPO performance (see summary of educational activities below). Additional opportunities for education will be considered, for example, sessions at conferences and meetings that OPO personnel attend.

Communication Activities			
Type of Communication	Audience(s)	Delivery Method(s)	Timeframe
Policy Notice	OPO executive directors	eNewsletter	Within 30 days of approval by the Board

Education/Training Activities			
Education/Training Description	Audience(s)	Delivery Method(s)	Timeframe and Frequency
Review of model, including covariates and intended use	OPO executive directors, medical directors, directors of procurement	PowerPoint presentation, with question and answer session	January 2010 APOO Executive/Medical Directors Meeting in La Jolla, CA
	OPO Staff of all levels (attendees were determined by each individual OPO executive director)		May 2010 Educational Forum held in Chicago, IL
	AOPO attendees		June 2010 AOPO Annual Meeting

Monitoring and Evaluation:

OPOs will be flagged or identified for MPSC inquiry and review based upon the identified flagging algorithm in the aggregate as well as individual organ-specific models. Flagging an OPO for review does not mean there is an issue at the OPO; rather it is an opportunity to start a dialogue to identify potential improvement methods. The responsibility for monitoring OPO performance will fall to the Performance Analysis and Improvement Subcommittee (PAIS) of the MPSC.

The PAIS will follow similar processes used to review transplant program performance. Once an OPO is flagged, a survey will be sent to the OPO that will be used to gather additional information. This information may include questions relating to personnel, Clinical/Medical Advisory Board composition and involvement, the DSA, geographic factors, allocation and practice patterns, meetings between the OPO and hospitals in its DSA, and any other factors the OPO may believe to be relevant to the review. The PAIS may ask OPOs to submit copies of protocols and processes or other additional information as requested by the Subcommittee. In cases where the Subcommittee would like to discuss a particular issue directly with the OPO, the OPO may be requested to participate in an informal discussion. Informal discussions provide the opportunity for real time interaction between the OPO and the PAIS before the committee considers potential adverse actions. These discussions are informal and take place through teleconference in most cases.

In some cases, the PAIS may recommend that the OPO undergo a peer visit at the OPO's expense. Peer visits serve as a quality and performance improvement tool. A team of OPO professionals, approved by the OPTN President or Vice President, will visit with the OPO and conduct interviews, policy and procedure reviews, and donor chart reviews. At the conclusion of the peer visit, the team will provide preliminary feedback to the OPO and compile a report for the MPSC and the OPO to identify opportunities for improvement and specific recommendations where applicable. It is expected that the OPO will adopt a plan for improvement to address the findings contained within the peer visit report.

All OPOs identified for review based upon lower than expected performance may be required to promptly adopt and implement a plan for quality improvement. If the OPO fails to comply with requests for information regarding its progress in implementing its plan for improvement, or if it fails to adopt a plan for improvement, the committee may consider recommending an adverse action against the OPO.

Bylaw Proposal:

**APPENDIX B TO BYLAWS
OPTN**

Criteria for OPO, Transplant Hospital, and Histocompatibility Laboratory Membership

I. Organ Procurement Organizations.

A. General. [No change to content, only to numbering convention.]

B. Key Personnel. [No change to content, only to numbering convention.]

C. Plan for Public Education on Organ Donation. [No change to content, only to numbering convention.]

D. Communication of Information for Organ Distribution. [No change to content, only to numbering convention.]

E. Donation After Cardiac Death: [No change to content, only to numbering convention.]

F. Performance: The Membership and Professional Standards Committee (MPSC) will evaluate all OPOs to determine if the difference in observed and expected organ yield can be accounted for by some unique aspect of the Donation Service Area and/or OPO in question. The evaluation may include a peer visit to the OPO at the OPO's expense.

Those OPOs whose observed organ yield rates fall below the expected rates by more than a specified threshold will be reviewed. The absolute values of relevant parameters in the formula may be different for different organs, and may be reviewed and modified by the MPSC after distribution to the transplant community and subsequent Board approval.

The initial criteria used to identify OPOs with lower than expected organ yield, for all organs as well as for each organ type, will include all of the following:

- A difference of at least 11 fewer observed organs per 100 donors than expected yield (Observed per 100 donors-Expected per 100 donors < -10)
- A ratio of observed to expected yield less than 0.90,
- A two-sided p-value is less than 0.05.

All three criteria must be met for an OPO to be identified for MPSC review.

If an OPO's organ yield rate cannot be explained by donor mix or some other unique clinical aspect of the OPO or Donation Service Area in question, the Member, in cooperation with the

MPSC, will adopt and promptly implement a plan for performance improvement. The Member's failure to do so will constitute a violation of OPTN requirements.

APPENDIX B TO BYLAWS

UNITED NETWORK FOR ORGAN SHARING

Criteria for OPO, Transplant Hospital, and Histocompatibility Laboratory Membership

I. Organ Procurement Organizations.

A. General. [No change to content, only to numbering convention.]

B. Key Personnel. [No change to content, only to numbering convention.]

C. Plan for Public Education on Organ Donation. [No change to content, only to numbering convention.]

D. Communication of Information for Organ Distribution. [No change to content, only to numbering convention.]

E. Donation After Cardiac Death: [No change to content, only to numbering convention.]

F. Inactive Status. An organ procurement organization that is voluntarily inactive, declared inactive or withdrawn will no longer be allowed to list patients on the UNOS recipient list or to maintain a local recipient list in any form, and will not be allowed to provide organs to UNOS member transplant centers.

G. Performance: The Membership and Professional Standards Committee (MPSC) will evaluate all OPOs to determine if the difference in observed and expected organ yield can be accounted for by some unique aspect of the Donation Service Area and/or OPO in question. The evaluation may include a peer visit to the OPO at the OPO's expense.

Those OPOs whose observed organ yield rates fall below the expected rates by more than a specified threshold will be reviewed. The absolute values of relevant parameters in the formula may be different for different organs, and may be reviewed and modified by the MPSC after distribution to the transplant community and subsequent Board approval.

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- A ratio of observed to expected yield less than 0.90,
- A two-sided p-value is less than 0.05.

All three criteria must be met for an OPO to be identified for MPSC review.

If an OPO's organ yield rate cannot be explained by donor mix or some other unique clinical aspect of the OPO or Donation Service Area in question, the Member, in cooperation with the MPSC, will adopt and promptly implement a plan for performance improvement. The Member's failure to do so will constitute a violation of UNOS requirements.

Appendix A

Table 1. Overall Ordinal Logistic Regression Model for OTPD. Based on donors for whom at least one organ was procured for the purpose of transplantation from January 1, 2006 - December 31, 2009. Model c-statistic = 0.827.

Parameter		DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	8	1	-8.6102	0.2014	1827.5231	<.0001
Intercept	7	1	-5.5884	0.1665	1127.1112	<.0001
Intercept	6	1	-4.4115	0.1643	720.5316	<.0001
Intercept	5	1	-3.3290	0.1631	416.4186	<.0001
Intercept	4	1	-2.0984	0.1623	167.2073	<.0001
Intercept	3	1	-0.1580	0.1621	0.9494	0.3299
Intercept	2	1	1.1047	0.1626	46.1576	<.0001
Intercept	1	1	3.1738	0.1646	371.8649	<.0001
OPO1		1	-0.00712	0.1072	0.0044	0.9470
OPO2		1	0.3150	0.0814	14.9740	0.0001
OPO3		1	0.2608	0.0581	20.1838	<.0001
OPO4		1	-0.1255	0.1149	1.1933	0.2747
OPO5		1	-0.1574	0.0483	10.6107	0.0011
OPO6		1	-0.0451	0.0914	0.2433	0.6218
OPO7		1	-0.1777	0.0862	4.2521	0.0392
OPO8		1	0.1648	0.1440	1.3111	0.2522
OPO9		1	0.2507	0.0878	8.1507	0.0043
OPO10		1	0.1211	0.0914	1.7567	0.1850
OPO11		1	0.1460	0.0793	3.3948	0.0654
OPO12		1	-0.0849	0.0820	1.0707	0.3008
OPO13		1	-0.1991	0.0693	8.2575	0.0041
OPO14		1	-0.1827	0.0585	9.7569	0.0018
OPO15		1	-0.6787	0.1702	15.8934	<.0001
OPO16		1	0.3088	0.1248	6.1239	0.0133
OPO17		1	0.7088	0.0573	153.0782	<.0001
OPO18		1	0.1445	0.0774	3.4845	0.0619
OPO19		1	-0.1745	0.0889	3.8566	0.0496
OPO20		1	-0.1646	0.0762	4.6743	0.0306
OPO21		1	0.2874	0.0633	20.5854	<.0001
OPO22		1	0.5555	0.0822	45.6751	<.0001
OPO23		1	0.2668	0.0541	24.3610	<.0001

Table 1. Overall Ordinal Logistic Regression Model for OTPD. Based on donors for whom at least one organ was procured for the purpose of transplantation from January 1, 2006 - December 31, 2009. Model c-statistic = 0.827.

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
OPO24	1	0.4444	0.0727	37.3419	<.0001
OPO25	1	-0.0593	0.0743	0.6368	0.4249
OPO26	1	-0.3276	0.1066	9.4476	0.0021
OPO27	1	0.00786	0.0639	0.0151	0.9022
OPO28	1	0.0587	0.0997	0.3469	0.5559
OPO29	1	0.1063	0.0681	2.4383	0.1184
OPO30	1	0.3013	0.1341	5.0446	0.0247
OPO31	1	0.1320	0.0733	3.2459	0.0716
OPO32	1	-0.3486	0.1404	6.1661	0.0130
OPO33	1	-0.2419	0.1242	3.7947	0.0514
OPO34	1	0.0853	0.1333	0.4095	0.5222
OPO35	1	0.1688	0.1349	1.5659	0.2108
OPO36	1	-0.0500	0.0560	0.7991	0.3714
OPO37	1	0.0662	0.1307	0.2569	0.6123
OPO38	1	0.2249	0.0869	6.7061	0.0096
OPO39	1	0.0501	0.1232	0.1653	0.6843
OPO40	1	0.2374	0.0910	6.8085	0.0091
OPO41	1	-0.5000	0.1355	13.6216	0.0002
OPO42	1	-0.5219	0.0984	28.1357	<.0001
OPO43	1	0.0763	0.0960	0.6319	0.4267
OPO44	1	0.00318	0.0491	0.0042	0.9483
OPO45	1	-0.1951	0.0662	8.6754	0.0032
OPO46	1	-0.2561	0.3165	0.6548	0.4184
OPO47	1	-0.1738	0.0715	5.9109	0.0150
OPO48	1	-0.1549	0.0638	5.8966	0.0152
OPO49	1	-0.1681	0.1156	2.1173	0.1456
OPO50	1	-0.3240	0.0546	35.2336	<.0001
OPO51	1	-0.2797	0.0878	10.1576	0.0014
OPO52	1	-0.0719	0.0628	1.3090	0.2526
OPO53	1	-0.0847	0.1028	0.6798	0.4097
OPO54	1	-0.1232	0.0797	2.3869	0.1224
OPO55	1	0.0513	0.0775	0.4376	0.5083

Table 1. Overall Ordinal Logistic Regression Model for OTPD. Based on donors for whom at least one organ was procured for the purpose of transplantation from January 1, 2006 - December 31, 2009. Model c-statistic = 0.827.

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
OPO56	1	0.2882	0.1014	8.0808	0.0045
OPO57	1	0.6680	0.0796	70.4000	<.0001
Organs recovered outside US	1	-0.5030	0.3262	2.3775	0.1231
Donor age	1	0.0374	0.00294	162.1055	<.0001
Age_spline25	1	-0.0911	0.00461	390.0933	<.0001
Age_spline43	1	-0.0102	0.00513	3.9834	0.0460
Age_spline55	1	-0.0554	0.00531	108.6664	<.0001
Male	1	0.1428	0.0223	40.9450	<.0001
Black (vs White)	1	0.0480	0.0316	2.3149	0.1281
Hispanic (vs White)	1	-0.0909	0.0347	6.8718	0.0088
Other race (vs White)	1	-0.0858	0.0618	1.9252	0.1653
Blood type A (vs O)	1	-0.1773	0.0222	63.9577	<.0001
Blood type AB (vs O)	1	-0.9934	0.0793	156.8312	<.0001
Blood type B (vs O)	1	-0.2701	0.0332	66.2427	<.0001
COD anoxia (vs Stroke)	1	-0.2242	0.0634	12.5230	0.0004
COD head trauma (vs Stroke)	1	0.0654	0.0604	1.1742	0.2785
COD other (vs Stroke)	1	-0.2218	0.0724	9.3895	0.0022
Circ. of death MVA (vs Natural causes)	1	0.1318	0.0505	6.8224	0.0090
Circ. of death Suicide (vs Natural causes)	1	0.1272	0.0652	3.8084	0.0510
Circ. of death Homicide (vs Natural causes)	1	0.1607	0.0678	5.6142	0.0178
Circ. of death Other (vs Natural causes)	1	0.0388	0.0321	1.4594	0.2270
Mech. of death Blunt injury	1	0.0387	0.0573	0.4555	0.4997
Mech. of death GSW (vs Stroke)	1	0.4376	0.0777	31.7438	<.0001
Mech. of death Cardio (vs Stroke)	1	-0.0534	0.0641	0.6938	0.4049
Mech. of death Asphyx (vs Stroke)	1	0.1294	0.0908	2.0311	0.1541
Mech. of death Drug (vs Stroke)	1	-0.0273	0.0836	0.1066	0.7441

Table 1. Overall Ordinal Logistic Regression Model for OTPD. Based on donors for whom at least one organ was procured for the purpose of transplantation from January 1, 2006 - December 31, 2009. Model c-statistic = 0.827.

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Mech. of death Other (vs Stroke)	1	-0.1512	0.0625	5.8534	0.0155
BMI	1	0.0865	0.00862	100.6804	<.0001
BMI_spline22	1	-0.1135	0.0178	40.6687	<.0001
BMI_spline25	1	-0.0258	0.0191	1.8150	0.1779
BMI_spline30	1	0.0152	0.0119	1.6278	0.2020
BMI missing	1	0.5173	0.1957	6.9892	0.0082
Clinical infection source: Blood (vs No infection)	1	-0.0596	0.0422	1.9964	0.1577
Clinical infection source: Lung (vs No infection)	1	0.1622	0.0255	40.4616	<.0001
Clinical infection source: Urine (vs No infection)	1	-0.0597	0.0397	2.2597	0.1328
Clinical infection source: Other (vs No infection)	1	0.0424	0.0437	0.9401	0.3323
Cigarette use	1	-0.2336	0.0254	84.4726	<.0001
Cocaine use within the last 6 months	1	-0.1234	0.0449	7.5444	0.0060
Heavy alcohol use	1	-0.2672	0.0300	79.3769	<.0001
Meets CDC high risk guidelines	1	-0.4072	0.0408	99.7383	<.0001
History of diabetes	1	-0.5164	0.0436	140.1179	<.0001
Insulin dependence	1	-0.2619	0.0643	16.5902	<.0001
History of hypertension	1	-0.4572	0.0275	276.1260	<.0001
History of cancer	1	-0.4841	0.0681	50.5956	<.0001
DCD	1	-1.9600	0.0383	2623.7252	<.0001
Cardiac arrest after brain death	1	-0.2256	0.0433	27.0971	<.0001
PO2 on FiO2	1	0.00413	0.000079	2733.1721	<.0001
PO2 on FiO2 missing	1	0.4906	0.0585	70.2198	<.0001
Hepatitis B Surface Antigen +	1	-0.9825	0.2990	10.8009	0.0010
Hepatitis B Core Antibody Positive	1	-0.4942	0.0468	111.7161	<.0001
Hepatitis C Antibody Positive	1	-2.6205	0.0577	2066.0598	<.0001
Creatinine	1	-0.4399	0.00873	2541.8058	<.0001
Creatinine missing	1	-1.2840	0.2724	22.2094	<.0001

Table 1. Overall Ordinal Logistic Regression Model for OTPD. Based on donors for whom at least one organ was procured for the purpose of transplantation from January 1, 2006 - December 31, 2009. Model c-statistic = 0.827.

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Year 2006	1	0.000167	0.0287	0.0000	0.9954
Year 2008	1	0.0237	0.0288	0.6785	0.4101
Year 2009	1	0.0918	0.0290	9.9976	0.0016

Table 2. Lung Binary Logistic Regression Model for OTPD. Based on donors for whom at least one organ was procured for the purpose of transplantation from January 1, 2006 - December 31, 2009. Model c-statistic = 0.897.

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	-4.8281	0.3024	254.8573	<.0001
OPO1	1	-0.1217	0.2032	0.3585	0.5493
OPO2	1	0.3155	0.1481	4.5343	0.0332
OPO3	1	0.2434	0.1019	5.7038	0.0169
OPO4	1	-0.2679	0.2481	1.1666	0.2801
OPO5	1	0.3675	0.0887	17.1859	<.0001
OPO6	1	0.0683	0.1712	0.1591	0.6899
OPO7	1	-0.0755	0.1586	0.2267	0.6340
OPO8	1	-0.0546	0.2881	0.0359	0.8498
OPO9	1	0.4357	0.1659	6.8980	0.0086
OPO10	1	0.00766	0.1666	0.0021	0.9633
OPO11	1	-0.4242	0.1491	8.0976	0.0044
OPO12	1	-0.00588	0.1593	0.0014	0.9706
OPO13	1	-0.2451	0.1291	3.6024	0.0577
OPO14	1	-0.4310	0.1050	16.8391	<.0001
OPO15	1	-4.2873	1.1332	14.3141	0.0002
OPO16	1	0.3449	0.2195	2.4681	0.1162
OPO17	1	1.3852	0.0983	198.7324	<.0001
OPO18	1	0.4128	0.1380	8.9527	0.0028
OPO19	1	-0.1519	0.1751	0.7520	0.3858
OPO20	1	-0.4566	0.1593	8.2133	0.0042
OPO21	1	0.1229	0.1213	1.0264	0.3110
OPO22	1	0.9812	0.1523	41.5181	<.0001
OPO23	1	0.7931	0.0976	66.0626	<.0001
OPO24	1	0.4470	0.1329	11.3196	0.0008
OPO25	1	0.2507	0.1277	3.8530	0.0497
OPO26	1	-0.0399	0.2150	0.0345	0.8527
OPO27	1	0.3091	0.1188	6.7716	0.0093
OPO28	1	-0.0569	0.1691	0.1132	0.7365
OPO29	1	0.3699	0.1233	9.0044	0.0027
OPO30	1	0.1803	0.2535	0.5057	0.4770

Table 2. Lung Binary Logistic Regression Model for OTPD. Based on donors for whom at least one organ was procured for the purpose of transplantation from January 1, 2006 - December 31, 2009. Model c-statistic = 0.897.

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
OPO31	1	0.0206	0.1455	0.0200	0.8875
OPO32	1	-0.1393	0.2692	0.2677	0.6049
OPO33	1	0.4193	0.2303	3.3134	0.0687
OPO34	1	0.4003	0.2770	2.0893	0.1483
OPO35	1	0.1073	0.2915	0.1355	0.7128
OPO36	1	-0.2783	0.1241	5.0264	0.0250
OPO37	1	-0.1480	0.2993	0.2444	0.6210
OPO38	1	0.6098	0.1460	17.4448	<.0001
OPO39	1	-0.2096	0.2275	0.8482	0.3571
OPO40	1	0.4881	0.1646	8.7963	0.0030
OPO41	1	-0.1813	0.2409	0.5663	0.4517
OPO42	1	-0.6479	0.2120	9.3379	0.0022
OPO43	1	0.5110	0.1645	9.6520	0.0019
OPO44	1	-0.0553	0.0978	0.3196	0.5718
OPO45	1	0.5976	0.1315	20.6646	<.0001
OPO46	1	-0.3970	0.5357	0.5492	0.4587
OPO47	1	-0.1661	0.1248	1.7713	0.1832
OPO48	1	-0.3097	0.1187	6.8030	0.0091
OPO49	1	-0.2791	0.2449	1.2991	0.2544
OPO50	1	0.2646	0.0986	7.1986	0.0073
OPO51	1	-0.3131	0.1518	4.2535	0.0392
OPO52	1	-0.0550	0.1197	0.2114	0.6457
OPO53	1	-0.0905	0.2152	0.1767	0.6742
OPO54	1	-0.3933	0.1483	7.0312	0.0080
OPO55	1	0.3036	0.1384	4.8150	0.0282
OPO56	1	0.1976	0.2065	0.9154	0.3387
OPO57	1	0.3100	0.1714	3.2727	0.0704
Organs recovered outside US	1	-0.7549	0.5572	1.8354	0.1755
Donor age	1	0.0617	0.00557	122.8252	<.0001
Age_spline25	1	-0.0994	0.00837	140.9014	<.0001
Age_spline43	1	0.0130	0.00989	1.7247	0.1891
Age_spline55	1	-0.1363	0.0149	83.4920	<.0001

Table 2. Lung Binary Logistic Regression Model for OTPD. Based on donors for whom at least one organ was procured for the purpose of transplantation from January 1, 2006 - December 31, 2009. Model c-statistic = 0.897.

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Male	1	-0.2241	0.0417	28.8315	<.0001
Black (vs White)	1	0.0125	0.0562	0.0498	0.8235
Hispanic (vs White)	1	-0.0204	0.0612	0.1117	0.7382
Other race (vs White)	1	0.0380	0.1095	0.1204	0.7286
Blood type A (vs O)	1	-0.1598	0.0411	15.1164	0.0001
Blood type AB (vs O)	1	-0.8707	0.1666	27.2974	<.0001
Blood type B (vs O)	1	-0.3977	0.0629	39.9763	<.0001
COD anoxia (vs Stroke)	1	-0.5790	0.1274	20.6466	<.0001
COD head trauma (vs Stroke)	1	-0.2542	0.1163	4.7777	0.0288
COD other (vs Stroke)	1	0.00331	0.1341	0.0006	0.9803
Circ. of death MVA (vs Natural causes)	1	-0.2519	0.0953	6.9826	0.0082
Circ. of death Suicide (vs Natural causes)	1	0.1704	0.1158	2.1644	0.1412
Circ. of death Homicide (vs Natural causes)	1	0.0915	0.1183	0.5976	0.4395
Circ. of death Other (vs Natural causes)	1	-0.0709	0.0633	1.2555	0.2625
Mech. of death Blunt injury	1	0.0310	0.1070	0.0842	0.7717
Mech. of death GSW (vs Stroke)	1	0.4704	0.1359	11.9835	0.0005
Mech. of death Cardio (vs Stroke)	1	-0.2195	0.1332	2.7133	0.0995
Mech. of death Asphyx (vs Stroke)	1	-0.0706	0.1780	0.1574	0.6915
Mech. of death Drug (vs Stroke)	1	0.0728	0.1581	0.2119	0.6453
Mech. of death Other (vs Stroke)	1	-0.3545	0.1208	8.6097	0.0033
BMI	1	0.0582	0.0157	13.7865	0.0002
BMI_spline22	1	-0.0978	0.0316	9.5569	0.0020
BMI_spline25	1	-0.0436	0.0348	1.5715	0.2100
BMI_spline30	1	0.0321	0.0244	1.7357	0.1877
BMI missing	1	-0.1241	0.4436	0.0783	0.7797

Table 2. Lung Binary Logistic Regression Model for OTPD. Based on donors for whom at least one organ was procured for the purpose of transplantation from January 1, 2006 - December 31, 2009. Model c-statistic = 0.897.

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Clinical infection source: Blood (vs No infection)	1	-0.1742	0.0839	4.3038	0.0380
Clinical infection source: Lung (vs No infection)	1	0.1611	0.0462	12.1752	0.0005
Clinical infection source: Urine (vs No infection)	1	-0.0952	0.0784	1.4749	0.2246
Clinical infection source: Other (vs No infection)	1	0.00834	0.0844	0.0098	0.9212
Cigarette use	1	-0.7098	0.1146	38.3738	<.0001
Cigarette use within last 6 months	1	-0.3322	0.1222	7.3946	0.0065
Cocaine use	1	-0.1512	0.0639	5.5912	0.0181
Other drug use	1	-0.2304	0.0488	22.3082	<.0001
Meets CDC high risk guidelines	1	-0.5476	0.0767	50.9403	<.0001
Insulin dependence	1	-0.0681	0.1149	0.3517	0.5531
History of cancer	1	-0.2325	0.1517	2.3494	0.1253
DCD	1	-2.3110	0.1346	294.8229	<.0001
Cardiac arrest after brain death	1	-0.2394	0.0841	8.0988	0.0044
PO2 on FiO2	1	0.00869	0.000140	3879.4997	<.0001
PO2 on FiO2 missing	1	1.5110	0.1408	115.1558	<.0001
Hepatitis B Core Antibody Positive	1	-0.8812	0.1102	63.9102	<.0001
Creatinine	1	-0.1005	0.0155	42.2094	<.0001
Creatinine missing	1	-0.3878	0.5103	0.5775	0.4473
Year 2006 (vs 2007)	1	-0.1609	0.0536	9.0112	0.0027
Year 2008 (vs 2007)	1	-0.00656	0.0536	0.0150	0.9027
Year 2009 (vs 2007)	1	0.2014	0.0536	14.1423	0.0002

Table 3. Kidney Ordinal Logistic Regression Model for OTPD. Based on donors for whom at least one organ was procured for the purpose of transplantation from January 1, 2006 - December 31, 2009. Model c-statistic = 0.856.

Parameter		DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	2	1	1.1023	0.0835	174.3468	<.0001
Intercept	1	1	1.7344	0.0841	425.5546	<.0001
OPO1		1	0.0316	0.1600	0.0391	0.8432
OPO2		1	0.2600	0.1311	3.9356	0.0473
OPO3		1	0.2700	0.0887	9.2615	0.0023
OPO4		1	0.2336	0.1698	1.8930	0.1689
OPO5		1	-0.1901	0.0682	7.7733	0.0053
OPO6		1	0.0227	0.1354	0.0282	0.8667
OPO7		1	-0.2074	0.1258	2.7192	0.0991
OPO8		1	0.1252	0.2215	0.3195	0.5719
OPO9		1	0.3638	0.1337	7.4052	0.0065
OPO10		1	0.2386	0.1355	3.0980	0.0784
OPO11		1	0.3745	0.1214	9.5235	0.0020
OPO12		1	-0.2867	0.1128	6.4557	0.0111
OPO13		1	-0.1698	0.0977	3.0170	0.0824
OPO14		1	-0.0772	0.0818	0.8902	0.3454
OPO15		1	0.0597	0.2483	0.0578	0.8100
OPO16		1	0.0567	0.1892	0.0899	0.7643
OPO17		1	0.3731	0.0846	19.4433	<.0001
OPO18		1	-0.4578	0.1057	18.7556	<.0001
OPO19		1	-0.3813	0.1216	9.8270	0.0017
OPO20		1	-0.1704	0.1091	2.4403	0.1183
OPO21		1	0.4888	0.0992	24.2934	<.0001
OPO22		1	0.2106	0.1194	3.1105	0.0778
OPO23		1	0.1267	0.0777	2.6597	0.1029
OPO24		1	0.1468	0.1087	1.8243	0.1768
OPO25		1	-0.3126	0.1049	8.8737	0.0029
OPO26		1	-0.0973	0.1533	0.4030	0.5256
OPO27		1	-0.1884	0.0930	4.1028	0.0428
OPO28		1	-0.0628	0.1475	0.1814	0.6702
OPO29		1	-0.1406	0.0952	2.1815	0.1397
OPO30		1	0.2123	0.2105	1.0167	0.3133

Table 3. Kidney Ordinal Logistic Regression Model for OTPD. Based on donors for whom at least one organ was procured for the purpose of transplantation from January 1, 2006 - December 31, 2009. Model c-statistic = 0.856.

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
OPO31	1	0.3117	0.1093	8.1318	0.0043
OPO32	1	-0.3048	0.2069	2.1702	0.1407
OPO33	1	-0.2380	0.1773	1.8025	0.1794
OPO34	1	0.0896	0.1861	0.2316	0.6303
OPO35	1	-0.0257	0.1875	0.0188	0.8910
OPO36	1	-0.00726	0.0786	0.0085	0.9264
OPO37	1	0.1031	0.1925	0.2869	0.5922
OPO38	1	-0.2388	0.1182	4.0827	0.0433
OPO39	1	0.7853	0.2332	11.3390	0.0008
OPO40	1	-0.1702	0.1300	1.7150	0.1903
OPO41	1	-0.6212	0.1826	11.5764	0.0007
OPO42	1	0.0174	0.1449	0.0143	0.9047
OPO43	1	0.1008	0.1549	0.4233	0.5153
OPO44	1	0.4536	0.0727	38.9643	<.0001
OPO45	1	-0.4381	0.0887	24.3904	<.0001
OPO46	1	0.0969	0.4952	0.0383	0.8449
OPO47	1	-0.4624	0.0972	22.6097	<.0001
OPO48	1	-0.4078	0.0874	21.7605	<.0001
OPO49	1	-0.1172	0.1602	0.5355	0.4643
OPO50	1	-0.1515	0.0773	3.8427	0.0500
OPO51	1	-0.2066	0.1274	2.6308	0.1048
OPO52	1	-0.1767	0.0895	3.8959	0.0484
OPO53	1	-0.0310	0.1574	0.0388	0.8438
OPO54	1	0.4147	0.1205	11.8444	0.0006
OPO55	1	0.1164	0.1196	0.9471	0.3305
OPO56	1	-0.1334	0.1445	0.8525	0.3559
OPO57	1	0.6855	0.1304	27.6355	<.0001
Organs recovered outside US	1	-0.5773	0.5121	1.2706	0.2596
Donor age	1	0.1132	0.00394	824.5893	<.0001
Age_spline25	1	-0.1672	0.00716	544.3762	<.0001
Age_spline43	1	0.0179	0.00767	5.4517	0.0195
Age_spline55	1	-0.0914	0.00717	162.5415	<.0001

Table 3. Kidney Ordinal Logistic Regression Model for OTPD. Based on donors for whom at least one organ was procured for the purpose of transplantation from January 1, 2006 - December 31, 2009. Model c-statistic = 0.856.

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Male	1	0.2507	0.0316	63.0006	<.0001
Blood type A (vs O)	1	-0.0732	0.0319	5.2480	0.0220
Blood type AB (vs O)	1	-0.3864	0.1074	12.9400	0.0003
Blood type B (vs O)	1	0.0427	0.0484	0.7769	0.3781
COD anoxia (vs Stroke)	1	-0.0235	0.0880	0.0716	0.7891
COD head trauma (vs Stroke)	1	-0.1504	0.0899	2.7999	0.0943
COD other (vs Stroke)	1	-0.4211	0.0977	18.5716	<.0001
Circ. of death MVA (vs Natural causes)	1	0.3621	0.0779	21.6154	<.0001
Circ. of death Suicide (vs Natural causes)	1	0.2488	0.1033	5.7998	0.0160
Circ. of death Homicide (vs Natural causes)	1	0.2466	0.1098	5.0420	0.0247
Circ. of death Other (vs Natural causes)	1	0.0936	0.0446	4.4006	0.0359
Mech. of death Blunt injury	1	0.2477	0.0888	7.7764	0.0053
Mech. of death GSW (vs Stroke)	1	0.3754	0.1262	8.8494	0.0029
Mech. of death Cardio (vs Stroke)	1	0.00783	0.0878	0.0079	0.9290
Mech. of death Asphyx (vs Stroke)	1	0.2693	0.1347	3.9993	0.0455
Mech. of death Drug (vs Stroke)	1	0.1107	0.1218	0.8262	0.3634
Mech. of death Other (vs Stroke)	1	-0.0685	0.0867	0.6234	0.4298
Clinical infection source: Blood (vs No infection)	1	-0.0570	0.0601	0.8994	0.3429
Clinical infection source: Lung (vs No infection)	1	0.1119	0.0374	8.9409	0.0028
Clinical infection source: Urine (vs No infection)	1	-0.0312	0.0551	0.3211	0.5709
Clinical infection source: Other (vs No infection)	1	0.1632	0.0626	6.7981	0.0091
Cigarette use	1	-0.1115	0.0344	10.4931	0.0012
Cocaine use	1	-0.0825	0.0498	2.7486	0.0973

Table 3. Kidney Ordinal Logistic Regression Model for OTPD. Based on donors for whom at least one organ was procured for the purpose of transplantation from January 1, 2006 - December 31, 2009. Model c-statistic = 0.856.

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Heavy alcohol use	1	0.1817	0.0429	17.9491	<.0001
Meets CDC high risk guidelines	1	-0.5121	0.0591	74.9887	<.0001
History of diabetes	1	-0.4918	0.0530	86.1032	<.0001
Insulin dependence	1	-0.6177	0.0824	56.1834	<.0001
History of hypertension	1	-0.6041	0.0356	288.5690	<.0001
History of cancer	1	-0.6958	0.0853	66.4838	<.0001
DCD	1	-0.7670	0.0504	231.1837	<.0001
Cardiac arrest after brain death	1	0.0464	0.0633	0.5381	0.4632
Hepatitis B Core Antibody Positive	1	-0.4005	0.0586	46.7359	<.0001
Hepatitis C Antibody Positive	1	-2.1729	0.0672	1045.9277	<.0001
Creatinine	1	-0.9657	0.0174	3085.2279	<.0001
Creatinine missing	1	-2.5579	0.3225	62.9000	<.0001
Year 2006 (vs 2007)	1	0.0908	0.0420	4.6805	0.0305
Year 2008 (vs 2007)	1	0.0389	0.0416	0.8734	0.3500
Year 2009 (vs 2007)	1	0.0183	0.0418	0.1917	0.6615

Table 4. Heart Binary Logistic Regression Model for OTPD. Based on donors for whom at least one organ was procured for the purpose of transplantation from January 1, 2006 - December 31, 2009. Model c-statistic = 0.841.

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	-1.9101	0.2160	78.1707	<.0001
OPO1	1	0.4334	0.1481	8.5636	0.0034
OPO2	1	0.1072	0.1132	0.8980	0.3433
OPO3	1	0.4191	0.0814	26.5296	<.0001
OPO4	1	-0.2169	0.1731	1.5709	0.2101
OPO5	1	0.1820	0.0678	7.2013	0.0073
OPO6	1	-0.0118	0.1333	0.0078	0.9296
OPO7	1	0.0701	0.1175	0.3565	0.5505
OPO8	1	0.5630	0.1972	8.1522	0.0043
OPO9	1	0.00487	0.1376	0.0013	0.9718
OPO10	1	-0.1565	0.1321	1.4039	0.2361
OPO11	1	0.2384	0.1137	4.3997	0.0359
OPO12	1	-0.3643	0.1246	8.5491	0.0035
OPO13	1	-0.3015	0.1076	7.8536	0.0051
OPO14	1	0.0364	0.0866	0.1764	0.6745
OPO15	1	-1.9859	0.4381	20.5477	<.0001
OPO16	1	0.6125	0.1703	12.9347	0.0003
OPO17	1	0.3936	0.0851	21.4077	<.0001
OPO18	1	0.2325	0.1071	4.7107	0.0300
OPO19	1	0.0530	0.1299	0.1666	0.6832
OPO20	1	-0.3306	0.1111	8.8554	0.0029
OPO21	1	0.2574	0.0912	7.9617	0.0048
OPO22	1	0.5157	0.1192	18.7187	<.0001
OPO23	1	0.3103	0.0793	15.3244	<.0001
OPO24	1	0.5851	0.1005	33.8936	<.0001
OPO25	1	-0.1908	0.1079	3.1229	0.0772
OPO26	1	-0.2890	0.1575	3.3676	0.0665
OPO27	1	0.1375	0.0903	2.3191	0.1278
OPO28	1	0.1546	0.1414	1.1947	0.2744
OPO29	1	0.3273	0.0956	11.7274	0.0006
OPO30	1	-0.2466	0.1954	1.5928	0.2069

Table 4. Heart Binary Logistic Regression Model for OTPD. Based on donors for whom at least one organ was procured for the purpose of transplantation from January 1, 2006 - December 31, 2009. Model c-statistic = 0.841.

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
OPO31	1	0.1267	0.1110	1.3023	0.2538
OPO32	1	-0.4364	0.2119	4.2438	0.0394
OPO33	1	-0.00087	0.1807	0.0000	0.9962
OPO34	1	-0.1102	0.2188	0.2537	0.6145
OPO35	1	-0.1938	0.2215	0.7655	0.3816
OPO36	1	0.3224	0.0869	13.7659	0.0002
OPO37	1	-0.0962	0.2090	0.2117	0.6455
OPO38	1	0.5006	0.1267	15.6016	<.0001
OPO39	1	-0.2385	0.1750	1.8577	0.1729
OPO40	1	0.3372	0.1320	6.5275	0.0106
OPO41	1	-0.3930	0.1964	4.0019	0.0454
OPO42	1	-0.2280	0.1446	2.4860	0.1149
OPO43	1	-0.1489	0.1339	1.2369	0.2661
OPO44	1	0.0129	0.0730	0.0311	0.8600
OPO45	1	0.0444	0.1058	0.1764	0.6745
OPO46	1	-0.1882	0.4535	0.1722	0.6782
OPO47	1	0.3866	0.1050	13.5539	0.0002
OPO48	1	0.3549	0.0887	16.0079	<.0001
OPO49	1	-0.3374	0.1772	3.6248	0.0569
OPO50	1	-0.0497	0.0781	0.4048	0.5246
OPO51	1	-0.2609	0.1224	4.5448	0.0330
OPO52	1	0.2764	0.0898	9.4737	0.0021
OPO53	1	-0.2714	0.1389	3.8167	0.0507
OPO54	1	-0.0863	0.1189	0.5269	0.4679
OPO55	1	-0.1180	0.1067	1.2225	0.2689
OPO56	1	0.3412	0.1464	5.4284	0.0198
OPO57	1	-0.5329	0.1340	15.8259	<.0001
Organs recovered outside US	1	-0.4320	0.4677	0.8532	0.3557
Donor age	1	-0.0291	0.00371	61.5648	<.0001
Age_spline25	1	0.00368	0.00579	0.4032	0.5254
Age_spline43	1	-0.0775	0.00820	89.2567	<.0001
Age_spline55	1	-0.1411	0.0218	41.9483	<.0001

Table 4. Heart Binary Logistic Regression Model for OTPD. Based on donors for whom at least one organ was procured for the purpose of transplantation from January 1, 2006 - December 31, 2009. Model c-statistic = 0.841.

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Male	1	0.4072	0.0332	150.5293	<.0001
Black (vs White)	1	0.0198	0.0455	0.1903	0.6627
Hispanic (vs White)	1	0.1062	0.0473	5.0271	0.0250
Other race (vs White)	1	-0.0726	0.0956	0.5771	0.4474
Blood type A (vs O)	1	-0.2851	0.0324	77.3015	<.0001
Blood type AB (vs O)	1	-1.3633	0.1382	97.2462	<.0001
Blood type B (vs O)	1	-0.3991	0.0490	66.3422	<.0001
COD anoxia (vs Stroke)	1	-0.0609	0.0961	0.4014	0.5264
COD head trauma (vs Stroke)	1	0.4365	0.0780	31.3081	<.0001
COD other (vs Stroke)	1	-0.0323	0.1045	0.0954	0.7575
Mech. of death Blunt injury	1	-0.0592	0.0759	0.6086	0.4353
Mech. of death GSW (vs Stroke)	1	0.1978	0.0831	5.6587	0.0174
Mech. of death Cardio (vs Stroke)	1	-0.6171	0.1030	35.9123	<.0001
Mech. of death Asphyx (vs Stroke)	1	-0.0927	0.1215	0.5818	0.4456
Mech. of death Drug (vs Stroke)	1	0.0777	0.1158	0.4498	0.5024
Mech. of death Other (vs Stroke)	1	-0.0708	0.0919	0.5948	0.4406
BMI	1	0.0758	0.0116	42.7324	<.0001
BMI_spline22	1	0.0196	0.0248	0.6254	0.4290
BMI_spline25	1	-0.0784	0.0281	7.7998	0.0052
BMI_spline30	1	-0.0259	0.0183	2.0021	0.1571
BMI missing	1	2.0035	0.2647	57.2835	<.0001
Clinical infection source: Blood (vs No infection)	1	-0.1639	0.0637	6.6260	0.0100
Clinical infection source: Lung (vs No infection)	1	0.2888	0.0367	62.0022	<.0001
Clinical infection source: Urine (vs No infection)	1	-0.0597	0.0624	0.9164	0.3384
Clinical infection source: Other (vs No infection)	1	0.0412	0.0657	0.3941	0.5301
Cigarette use	1	-0.2433	0.0412	34.7996	<.0001

Table 4. Heart Binary Logistic Regression Model for OTPD. Based on donors for whom at least one organ was procured for the purpose of transplantation from January 1, 2006 - December 31, 2009. Model c-statistic = 0.841.

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Cocaine use within the last 6 months	1	-0.2253	0.0625	13.0023	0.0003
Other drug use	1	-0.0625	0.0365	2.9402	0.0864
Meets CDC high risk guidelines	1	-0.5121	0.0591	74.9887	<.0001
History of diabetes	1	-0.7349	0.0802	83.9028	<.0001
History of hypertension	1	-0.5227	0.0465	126.2477	<.0001
Cardiac arrest after brain death	1	-0.1531	0.0631	5.8849	0.0153
PO2 on FiO2	1	0.00230	0.000105	480.7992	<.0001
PO2 on FiO2 missing	1	-0.2145	0.0965	4.9402	0.0262
Hepatitis B Core Antibody Positive	1	-0.7715	0.0904	72.8826	<.0001
Creatinine	1	-0.1041	0.0134	60.0897	<.0001
Creatinine missing	1	-0.5978	0.4220	2.0071	0.1566
Year 2006 (vs Year 2007)	1	-0.00474	0.0419	0.0128	0.9100
Year 2008 (vs Year 2007)	1	0.0335	0.0421	0.6303	0.4272
Year 2009 (vs Year 2007)	1	0.0541	0.0424	1.6285	0.2019

Table 5. Liver Binary Logistic Regression Model for OTPD. Based on donors for whom at least one organ was procured for the purpose of transplantation from January 1, 2006 - December 31, 2009. Model c-statistic = 0.784.

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	0.3473	0.2421	2.0575	0.1515
OPO1	1	0.2415	0.1803	1.7939	0.1805
OPO2	1	0.1094	0.1247	0.7701	0.3802
OPO3	1	0.0978	0.0886	1.2185	0.2696
OPO4	1	-0.4269	0.1543	7.6558	0.0057
OPO5	1	-0.4140	0.0665	38.7892	<.0001
OPO6	1	-0.2373	0.1266	3.5153	0.0608
OPO7	1	-0.0104	0.1302	0.0063	0.9366
OPO8	1	-0.0102	0.2147	0.0022	0.9622
OPO9	1	-0.2123	0.1190	3.1826	0.0744
OPO10	1	0.1065	0.1380	0.5954	0.4404
OPO11	1	0.1127	0.1223	0.8498	0.3566
OPO12	1	0.6478	0.1337	23.4728	<.0001
OPO13	1	0.1323	0.1091	1.4690	0.2255
OPO14	1	0.2233	0.0949	5.5299	0.0187
OPO15	1	-0.8216	0.2147	14.6456	0.0001
OPO16	1	0.2307	0.1941	1.4135	0.2345
OPO17	1	0.1220	0.0839	2.1162	0.1457
OPO18	1	-0.1381	0.1148	1.4466	0.2291
OPO19	1	0.3302	0.1447	5.2112	0.0224
OPO20	1	0.5311	0.1334	15.8468	<.0001
OPO21	1	-0.0740	0.0903	0.6716	0.4125
OPO22	1	0.2155	0.1216	3.1431	0.0762
OPO23	1	-0.3368	0.0741	20.6473	<.0001
OPO24	1	0.3805	0.1160	10.7530	0.0010
OPO25	1	0.3419	0.1187	8.2950	0.0040
OPO26	1	-0.6716	0.1420	22.3767	<.0001
OPO27	1	0.1682	0.0963	3.0482	0.0808
OPO28	1	0.1265	0.1588	0.6343	0.4258
OPO29	1	-0.3050	0.0959	10.1156	0.0015
OPO30	1	0.5894	0.2316	6.4794	0.0109

Table 5. Liver Binary Logistic Regression Model for OTPD. Based on donors for whom at least one organ was procured for the purpose of transplantation from January 1, 2006 - December 31, 2009. Model c-statistic = 0.784.

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
OPO31	1	-0.2080	0.1013	4.2191	0.0400
OPO32	1	0.0115	0.2037	0.0032	0.9550
OPO33	1	-0.3554	0.1715	4.2925	0.0383
OPO34	1	-0.1505	0.1802	0.6977	0.4035
OPO35	1	0.2871	0.1947	2.1738	0.1404
OPO36	1	-0.1128	0.0768	2.1575	0.1419
OPO37	1	0.0513	0.1863	0.0759	0.7829
OPO38	1	0.1661	0.1330	1.5591	0.2118
OPO39	1	-0.2834	0.1794	2.4948	0.1142
OPO40	1	-0.2349	0.1289	3.3226	0.0683
OPO41	1	-0.0997	0.2071	0.2317	0.6302
OPO42	1	-0.4098	0.1374	8.8946	0.0029
OPO43	1	-0.1004	0.1421	0.4991	0.4799
OPO44	1	-0.5470	0.0655	69.7505	<.0001
OPO45	1	-0.2978	0.0868	11.7655	0.0006
OPO46	1	0.0515	0.1337	0.1483	0.7002
OPO47	1	0.2970	0.1164	6.5136	0.0107
OPO48	1	0.1337	0.1000	1.7887	0.1811
OPO49	1	0.1903	0.1811	1.1048	0.2932
OPO50	1	-0.4944	0.0743	44.2712	<.0001
OPO51	1	0.9353	0.1761	28.1964	<.0001
OPO52	1	0.2910	0.0982	8.7776	0.0030
OPO53	1	0.1870	0.1557	1.4423	0.2298
OPO54	1	-0.2309	0.1136	4.1313	0.0421
OPO55	1	-0.3553	0.1108	10.2762	0.0013
OPO56	1	0.3336	0.1516	4.8412	0.0278
OPO57	1	0.2939	0.1148	6.5505	0.0105
Donor age	1	0.0237	0.00457	26.9135	<.0001
Age_spline25	1	-0.0665	0.00727	83.5329	<.0001
Age_spline43	1	0.0218	0.00739	8.6632	0.0032
Age_spline55	1	0.000283	0.00694	0.0017	0.9674
Black	1	0.3284	0.0480	46.7897	<.0001

Table 5. Liver Binary Logistic Regression Model for OTPD. Based on donors for whom at least one organ was procured for the purpose of transplantation from January 1, 2006 - December 31, 2009. Model c-statistic = 0.784.

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Hispanic	1	-0.3140	0.0504	38.8229	<.0001
Other race	1	-0.0447	0.0882	0.2573	0.6120
Blood type A (vs O)	1	-0.0420	0.0326	1.6609	0.1975
Blood type AB (vs O)	1	-0.6183	0.1068	33.5025	<.0001
Blood type B (vs O)	1	-0.2155	0.0479	20.2650	<.0001
COD anoxia (vs Stroke)	1	-0.1427	0.0447	10.1783	0.0014
COD head trauma (vs Stroke)	1	-0.0448	0.0562	0.6345	0.4257
COD other (vs Stroke)	1	-0.3612	0.0840	18.4948	<.0001
Circ. of death MVA (vs Natural causes)	1	0.2512	0.0720	12.1694	0.0005
Circ. of death Suicide (vs Natural causes)	1	0.2528	0.0788	10.2876	0.0013
Circ. of death Homicide (vs Natural causes)	1	0.2616	0.0964	7.3575	0.0067
Circ. of death Other (vs Natural causes)	1	-0.0180	0.0440	0.1675	0.6824
BMI	1	0.0768	0.0131	34.2475	<.0001
BMI spline22	1	-0.1173	0.0276	18.0597	<.0001
BMI spline25	1	-0.0308	0.0289	1.1380	0.2861
BMI spline30	1	0.00290	0.0166	0.0305	0.8613
BMI missing	1	-0.2227	0.2810	0.6279	0.4281
Clinical infection source: Blood (vs No infection)	1	0.0527	0.0605	0.7583	0.3839
Clinical infection source: Lung (vs No infection)	1	0.0883	0.0378	5.4632	0.0194
Clinical infection source: Urine (vs No infection)	1	-0.0340	0.0555	0.3749	0.5404
Clinical infection source: Other (vs No infection)	1	-0.1771	0.0608	8.4751	0.0036
Cigarette use	1	0.0689	0.0355	3.7666	0.0523
Cocaine use within the last 6 months	1	0.1504	0.0689	4.7719	0.0289
Drug use	1	0.1194	0.0403	8.7947	0.0030
Heavy alcohol use	1	-0.8208	0.0401	418.6052	<.0001
Meets CDC high risk guidelines	1	0.1354	0.0624	4.7083	0.0300

Table 5. Liver Binary Logistic Regression Model for OTPD. Based on donors for whom at least one organ was procured for the purpose of transplantation from January 1, 2006 - December 31, 2009. Model c-statistic = 0.784.

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
History of diabetes	1	-0.3714	0.0534	48.4570	<.0001
Insulin dependence	1	0.2373	0.0800	8.7913	0.0030
DCD	1	-3.1573	0.2365	178.1880	<.0001
DCD (controlled)	1	0.9631	0.2383	16.3263	<.0001
Cardiac arrest after brain death	1	-0.1518	0.0623	5.9347	0.0148
PO2 on FiO2	1	0.00109	0.000122	80.6481	<.0001
PO2 on FiO2 missing	1	0.0399	0.0792	0.2541	0.6142
Hepatitis B Core Antibody Positive	1	-0.2223	0.0608	13.3681	0.0003
Hepatitis C Antibody Positive	1	-1.4726	0.0675	475.7061	<.0001
Year 2006 (vs 2007)	1	0.1161	0.0426	7.4292	0.0064
Year 2008 (vs 2007)	1	-0.00857	0.0418	0.0421	0.8375
Year 2009 (vs 2007)	1	0.0132	0.0422	0.0987	0.7535

Table 6. Pancreas Binary Logistic Regression Model for OTPD. Based on donors for whom at least one organ was procured for the purpose of transplantation from January 1, 2006 - December 31, 2009. Model c-statistic = 0.904.

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	-3.4022	0.2600	171.2506	<.0001
OPO1	1	-1.0283	0.2122	23.4749	<.0001
OPO2	1	0.6996	0.1316	28.2628	<.0001
OPO3	1	0.1014	0.1014	0.9993	0.3175
OPO4	1	-0.1790	0.2206	0.6587	0.4170
OPO5	1	-0.2529	0.0862	8.6017	0.0034
OPO6	1	-0.1218	0.1725	0.4989	0.4800
OPO7	1	-0.0905	0.1447	0.3907	0.5319
OPO8	1	-0.3583	0.2678	1.7904	0.1809
OPO9	1	0.7888	0.1578	24.9743	<.0001
OPO10	1	0.1754	0.1599	1.2027	0.2728
OPO11	1	0.5439	0.1344	16.3747	<.0001
OPO12	1	-0.3309	0.1601	4.2736	0.0387
OPO13	1	-0.2435	0.1294	3.5389	0.0599
OPO14	1	-0.2932	0.1098	7.1281	0.0076
OPO15	1	0.4920	0.3094	2.5283	0.1118
OPO16	1	0.0577	0.2162	0.0712	0.7896
OPO17	1	1.1282	0.1005	126.1024	<.0001
OPO18	1	1.1080	0.1257	77.7376	<.0001
OPO19	1	-0.3869	0.1613	5.7525	0.0165
OPO20	1	0.1217	0.1296	0.8813	0.3479
OPO21	1	0.1273	0.1181	1.1606	0.2813
OPO22	1	0.6161	0.1537	16.0739	<.0001
OPO23	1	0.1659	0.1044	2.5287	0.1118
OPO24	1	0.5994	0.1252	22.9196	<.0001
OPO25	1	-0.7642	0.1489	26.3356	<.0001
OPO26	1	-0.1296	0.1834	0.4994	0.4797
OPO27	1	-0.0200	0.1157	0.0300	0.8625
OPO28	1	0.2289	0.1690	1.8338	0.1757
OPO29	1	0.1989	0.1209	2.7049	0.1000
OPO30	1	0.7348	0.2214	11.0195	0.0009

Table 6. Pancreas Binary Logistic Regression Model for OTPD. Based on donors for whom at least one organ was procured for the purpose of transplantation from January 1, 2006 - December 31, 2009. Model c-statistic = 0.904.

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
OPO31	1	0.00919	0.1351	0.0046	0.9458
OPO32	1	-0.9266	0.2928	10.0181	0.0016
OPO33	1	-1.3823	0.2907	22.6090	<.0001
OPO34	1	0.5943	0.2579	5.3113	0.0212
OPO35	1	-0.00976	0.2913	0.0011	0.9733
OPO36	1	0.0619	0.1158	0.2858	0.5929
OPO37	1	-0.4575	0.2910	2.4711	0.1160
OPO38	1	0.5726	0.1568	13.3251	0.0003
OPO39	1	0.4427	0.2031	4.7521	0.0293
OPO40	1	1.6352	0.1565	109.2339	<.0001
OPO41	1	0.4422	0.2187	4.0885	0.0432
OPO42	1	-1.2246	0.2130	33.0644	<.0001
OPO43	1	-0.0620	0.1693	0.1340	0.7144
OPO44	1	-0.3349	0.1014	10.9141	0.0010
OPO45	1	-0.4502	0.1547	8.4716	0.0036
OPO46	1	-1.3858	0.5919	5.4810	0.0192
OPO47	1	-0.3184	0.1396	5.1989	0.0226
OPO48	1	-0.0816	0.1100	0.5500	0.4583
OPO49	1	-0.4954	0.2203	5.0564	0.0245
OPO50	1	-0.6926	0.1062	42.5110	<.0001
OPO51	1	-0.9722	0.1797	29.2558	<.0001
OPO52	1	-0.2999	0.1123	7.1276	0.0076
OPO53	1	-0.1688	0.1763	0.9167	0.3383
OPO54	1	-0.6197	0.1618	14.6695	0.0001
OPO55	1	0.0661	0.1305	0.2564	0.6126
OPO56	1	0.6632	0.1840	12.9900	0.0003
OPO57	1	2.2288	0.1432	242.2014	<.0001
Organs recovered outside US	1	0.1610	0.5979	0.0725	0.7878
Donor age	1	0.0492	0.00435	128.3577	<.0001
Age_spline25	1	-0.1348	0.00715	355.3983	<.0001
Age_spline43	1	-0.1276	0.0153	69.7370	<.0001

Table 6. Pancreas Binary Logistic Regression Model for OTPD. Based on donors for whom at least one organ was procured for the purpose of transplantation from January 1, 2006 - December 31, 2009. Model c-statistic = 0.904.

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Age_spline55	1	-0.3915	0.1482	6.9798	0.0082
Black (vs White)	1	0.0817	0.0583	1.9678	0.1607
Hispanic (vs White)	1	-0.3485	0.0603	33.3882	<.0001
Other race (vs White)	1	-0.1115	0.1185	0.8855	0.3467
Blood type A (vs O)	1	-0.2178	0.0412	27.9033	<.0001
Blood type AB (vs O)	1	-1.1688	0.1721	46.1392	<.0001
Blood type B (vs O)	1	-0.3983	0.0629	40.0820	<.0001
COD anoxia (vs Stroke)	1	-0.3174	0.1309	5.8830	0.0153
COD head trauma (vs Stroke)	1	0.0966	0.1099	0.7721	0.3796
COD other (vs Stroke)	1	-0.3615	0.1445	6.2608	0.0123
Circ. of death MVA (vs Natural causes)	1	0.0290	0.0934	0.0964	0.7562
Circ. of death Suicide (vs Natural causes)	1	0.2134	0.1130	3.5697	0.0588
Circ. of death Homicide (vs Natural causes)	1	0.2330	0.1137	4.1996	0.0404
Circ. of death Other (vs Natural causes)	1	0.0819	0.0708	1.3377	0.2474
Mech. of death Blunt injury	1	-0.1120	0.0937	1.4271	0.2322
Mech. of death GSW (vs Stroke)	1	0.1593	0.1215	1.7179	0.1900
Mech. of death Cardio (vs Stroke)	1	-0.3461	0.1399	6.1160	0.0134
Mech. of death Asphyx (vs Stroke)	1	-0.0484	0.1633	0.0880	0.7667
Mech. of death Drug (vs Stroke)	1	-0.3730	0.1583	5.5527	0.0185
Mech. of death Other (vs Stroke)	1	-0.2516	0.1214	4.2973	0.0382
BMI	1	0.1446	0.0135	114.4288	<.0001
BMI_spline22	1	-0.2646	0.0293	81.6544	<.0001
BMI_spline25	1	-0.0224	0.0362	0.3825	0.5363
BMI_spline30	1	-0.0586	0.0325	3.2441	0.0717

Table 6. Pancreas Binary Logistic Regression Model for OTPD. Based on donors for whom at least one organ was procured for the purpose of transplantation from January 1, 2006 - December 31, 2009. Model c-statistic = 0.904.

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
BMI missing	1	2.4099	0.3178	57.5116	<.0001
Cocaine use	1	-0.2370	0.0624	14.4059	0.0001
Heavy alcohol use	1	-0.5362	0.0654	67.2554	<.0001
Meets CDC high risk guidelines	1	-0.7854	0.0735	114.2323	<.0001
History of hypertension	1	-0.5783	0.0755	58.7207	<.0001
History of cancer	1	-0.5814	0.2016	8.3143	0.0039
DCD	1	-2.1367	0.1020	438.7877	<.0001
PO2 on FiO2	1	0.00151	0.000128	139.4888	<.0001
PO2 on FiO2 missing	1	0.1670	0.1256	1.7674	0.1837
Hepatitis B Core Antibody Positive	1	-1.2738	0.1635	60.6985	<.0001
Creatinine	1	-0.4729	0.0283	279.0535	<.0001
Creatinine missing	1	-1.2108	0.5747	4.4386	0.0351
Year 2006 (vs Year 2007)	1	0.0435	0.0526	0.6825	0.4087
Year 2008 (vs Year 2007)	1	0.0453	0.0536	0.7157	0.3976
Year 2009 (vs Year 2007)	1	0.0228	0.0542	0.1763	0.6745