OPTN/SRTR 2011 Annual Data Report:

deceased organ donation

ABSTRACT In 2011, the number of eligible deaths (death of a patient aged 70 years or younger who is legally declared brain dead and does not exhibit any excluding factors) was 9023, a slight decrease from 2010; 72.9 eligible donors per 100 eligible deaths were converted to organ donors. The unadjusted donation rate varied by donation service area (DSA), as did the number of transplant programs. The observed/expected organ yield ratio for all organs varied by DSA from 0.89 to 1.13. The total number of organs recovered divided by the number of donors was 3.54, slightly lower than in 2010; this value varied by DSA from 2.91 to 4.19. The number of organs transplanted per donor was 3.07, varying by DSA from 2.28 to 3.37. The discard rate for all organs combined was 0.13 per recovered organ, a value that varied substantially by DSA and by organ type. Reasons for not procuring or for discarding organs varied by organ type. Numbers of intestines, hearts, and lungs procured for transplant but not used are smaller than numbers of kidneys, pancreata, and livers because intestines, hearts, and lungs are recovered only after a transplant center has accepted the organ for transplant.

KEY WORDS Donation rate, eligible death, organ procurement organization, organ yield.

When I heard there would be five families impacted by Kim's organ donation, that was phenomenal. It was a moment of healing and beginning.

Kimberly, donor aunt

For organ donation, there are new metrics to calculate organ yield for all deceased donors, along with existing metrics such as donation rate, transplant rate, and rate of organs discarded. This chapter describes these metrics and compares them across the 58 donation service areas (DSAs).

Eligible Deaths

For reporting purposes, an eligible death is defined as the death of a patient aged 70 years or younger who is legally declared brain dead according to hospital policy and does not exhibit any of the list of exclusions listed in OPTN policy (Figure 1.1). The number of eligible deaths, as reported by organ procurement organizations (OPOs) to the Organ Procurement and Transplantation Network (OPTN), was 9,023 in 2011, a slight decrease from 9,035 in 2010. The estimated number of potential eligible deaths varies across the country, according to a recent study by Sheehy et al. using data from the National Center for Health Statistics (1). In 2007, these deaths represented 4.8% of all in-hospital deaths. The reasons for this variation in potential eligible deaths are not fully understood; regional variation in neurologic deaths could explain part of this variation (1).

Donation/Conversion Rate

The donation rate is calculated as the number of eligible donors per 100 eligible deaths. In 2011, 72.9 eligible donors per 100 eligible deaths were converted to organ donors (Figure 1.1). This overall 2011 rate was higher than the 2009 rate (69.4 per 100 eligible deaths) and the 2010 rate (71.7 per 100 eligible deaths). The donation rate for kidneys was higher than for livers; both of these rates were higher than the rates for thoracic organs and pancreata. Heart donation rates were higher than lung donation rates (lung donation refers to 1 or 2 lungs recovered). The unadjusted donation rate varied by DSA (Figure 1.2). The number of transplant programs in each DSA also varied substantially (Table 1.3).

Organ Yield

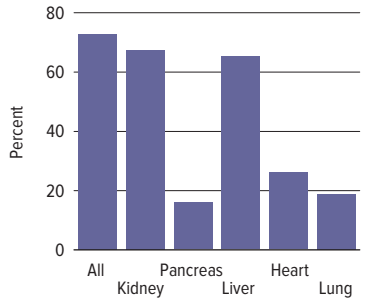
In June 2011, the OPTN Board of Directors approved use of the observed-versus-expected organs transplanted, or yield, metric. This adjusted analysis suggests opportunities to share best practices from DSAs with higher-than-expected organ-specific yields, to improve the overall yield across the country. The aggregate and organ-specific yield metrics based on 2-year cohorts for each OPO are publicly available on the Scientific Registry of Transplant Recipients website (2) and are reviewed biannually by the OPTN Membership and Professional Standards Committee. This metric compares the number of organs actually transplanted (observed) with the number of organs that would be expected to be transplanted, based on the national experience with similar donors (expected). The metric is expressed as the ratio of observed/expected organs transplanted. A ratio of less than 1 indicates that fewer organs were transplanted than would be expected, based on the national models for that particular organ. A ratio of greater than 1 indicates that more organs were transplanted than would be expected. Yields for all organs together (aggregate) are shown in Figure 1.4. In 2011, the observed/expected yield ratio for total organs varied across the DSAs from 0.89 to 1.13 (Figure 1.4). The observed/expected yield ratio for kidneys varied from 0.81 to 1.19 (Figure 1.5); for pancreata, from 0.10 to 2.26 (Figure 1.6); and for livers, from

0.83 to 1.19 (Figure 1.7). The range of observed/expected yield ratio for intestines was widest compared with all other organs, from 0 to 5.36 (Figure 1.8). The observed/expected yield ratio for hearts ranged from 0 to 1.28 (Figure 1.9), and for lungs, from 0.51 to 1.82 (Figure 1.10).

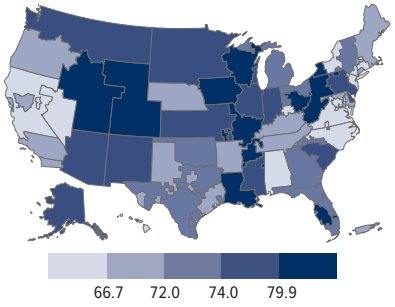
Organs Recovered per Donor

The total number of organs recovered divided by the number of donors was 3.54 in 2011, slightly lower than the 3.58 organs recovered per donor in 2010. Since 2000, this value has ranged from 3.48 to 3.62 (Figure 2.1). In 2011 the number varied substantially by DSA, ranging from 2.91 to 4.19 (Figures 2.2, 2.3). The number of kidneys recovered per donor ranged from 1.62 to 2.00; pancreata, from 0.07 to 0.31; and livers, from 0.64 to 0.95. The number of intestines recovered per donor ranged from 0.0 to 0.11; hearts, from 0.0 to 0.42; and lungs, from 0.13 to 0.76 (Figure 2.2). Of note, organs recovered per donor represents an unadjusted analysis. The value is not adjusted for mix of donor types recovered in the OPO, that is, standard criteria donors (SCD), expanded criteria donors (ECD), and donation after circulatory death (DCD) donors.

As expected, the number of organs recovered per donor from SCDs was higher than those from ECDs and DCD donors (Figure 2.4). In 2011, more kid-



DOD 1.1 Overall & organ-specific donation rates per eligible deaths, 2011



DOD 1.2 Overall donation rates (per 100 eligible deaths), by DSA, 2011

Donation rate is the number of deceased donors meeting eligibility criteria per 100 eligible deaths. Organ-specific rates represent the number of donors of each organ type meeting eligibility criteria per 100 eligible deaths. An eligible death is any hospital-reported death or imminent death that is evaluated and meets organ donor eligibility requirements: age 70 or younger, death by neurological criteria (based on the American Academy of Neurology Practice parameter for determining brain death), and without any of the following indications: tuberculosis, human immunodeficiency virus infection with specified conditions, Creutzfeldt-Jacob Disease, herpetic septicemia, rabies, reactive hepatitis B surface antigen, any retrovirus infection, active malignant neoplasms (except primary CNS tumors and skin cancers), Hodgkin's disease, multiple myeloma, leukemia, miscellaneous carcinomas, aplastic anemia, agranulocytosis, fungal and viral encephalitis, gangrene of bowel, extreme immaturity, or positive serological or viral culture findings for HIV.

neys were recovered per donor from DCD donors than from SCDs and ECDs: 1.98, 1.86, and 1.61, respectively (Figure 2.5). In contrast, for all other organs, more were recovered per donor from SCDs than from DCD donors. This pattern also occurred in 2010. Similarly, more organs were recovered per donor from SCDs than from ECDs, except for livers. Similar numbers of livers were recovered per donor from SCDs and from ECDs (Figure 2.6).

Organs Transplanted per Donor

The number of organs transplanted per donor was 3.07 in 2011, slightly lower than the 3.10 in 2010 (Figure 3.1). Since 2000, this value has ranged from 3.00 to 3.24. While the overall number of organs transplanted per donor in 2011 was similar to that in 2010 (Figure 3.1), the number varied substantially by DSA, ranging from 2.28 to 3.73 (Figures 3.2, 3.3). Of note, organs transplanted per donor represents an unadjusted analysis. The value is not adjusted for mix of SCD, ECD, and DCD donor types. As expected, the number of organs transplanted per donor from SCDs was higher than the numbers for ECDs and DCD donors (Figure 3.4). In 2011, more kidneys were transplanted per donor from DCD donors than from SCDs and ECDs: 1.73, 1.67, and 0.88, respectively (Figure 3.5). In contrast, for all other organs, the number of organs transplanted per donor from SCDs was higher than the numbers for ECDs and DCD donors (Figure 3.6).

Discard Rate

The number of organs discarded is calculated by subtracting the number of organs transplanted from the number of organs recovered for the purpose of transplantation. The discard rate is then calculated by dividing the number of organs discarded by the number of organs recovered for the purpose of transplantation. The discard rate for all organs combined was 0.13 per recovered organ, unchanged from 2010 (Figure 4.1). Organ-specific discard rates were similar to those in 2010. Discard rates varied substantially by DSA (Figure 4.2) and by organ type; discard rates were highest for pancreata and kidneys and lowest for hearts (Figure 4.2).

In 2011, use of kidneys, pancreata, livers, and lungs from ECDs varied by DSA. To quantify ECD use, the number of ECD organs transplanted is divided by the number of all organs (SCD+ECD+DCD) transplanted. This calculation was done for each organ type (kidney, pancreas, liver, and lung). The largest variation occurred for livers; ECDs represented 0% to 44% of all organs transplanted by DSAs (Figure 5.1). Waiting times for deceased donor transplants in 2011 varied across the country (Figure 7.1). Waiting times were longest for kidney transplants. Longer waiting times may be an impetus for the use of ECD organs. Of note, the waiting times are only for candidates who received a transplant. The waiting times do not account for candidates who did not receive a transplant.

Organ disposition data were reviewed to improve understanding of the reasons for organ discard or for not procuring an organ. In 2011, at least one organ was procured for the purpose of transplant from 8,128 donors (Figure 8.1). Of the 16,256 kidneys from these donors, 5,800 left, 5,741 right, and 298 *en bloc* kidneys were transplanted. This represents 75% of all kidneys, after counting each *en bloc* kidney as two kidneys transplanted. Reasons donor kidneys were not used are listed in Figure 8.1. The most common reason for not procuring a kidney was poor organ function. There were 1,233 left kidneys,

1,294 right kidneys, and 60 *en bloc* kidneys that were recovered but not transplanted. The most common reason for not transplanting a procured left or right kidney was "biopsy findings." The most common reason for not transplanting procured *en bloc* kidneys was "no recipient located, list exhausted," followed closely by "biopsy findings." From the 8,128 donors, only 1,093 pancreas allografts (13.4%) were transplanted; another 419 were recovered for the purpose of transplant and not used for transplant (Figure 8.2). From the 8,128 donors, only 6,031 liver allografts (74.2%) were transplanted; another 655 allografts were recovered but not transplanted (Figure 8.3). The most common reason for not transplanting recovered livers was "biopsy findings." The most common reason for not procuring a liver was "ruled out after evaluation in the operating room." For the remaining organs (intestine, heart, and lung), the numbers procured for transplant and not used were smaller, since the surgical procurement team in these cases is usually the same as the transplant team. Thus these organs would be recovered only after a transplant center has accepted the organ for transplantation (Figures 8.4, 8.5, 8.6).

References

1. Sheehy E, O'Connor KJ, Luskin RS, Howard RJ, Cornell D, Finn J, Mone T, Selck FW, Delmonico FL. Investigating geographic variation in mortality in the context of organ donation. Am J Transplant 2012; 12: 1599-1602.

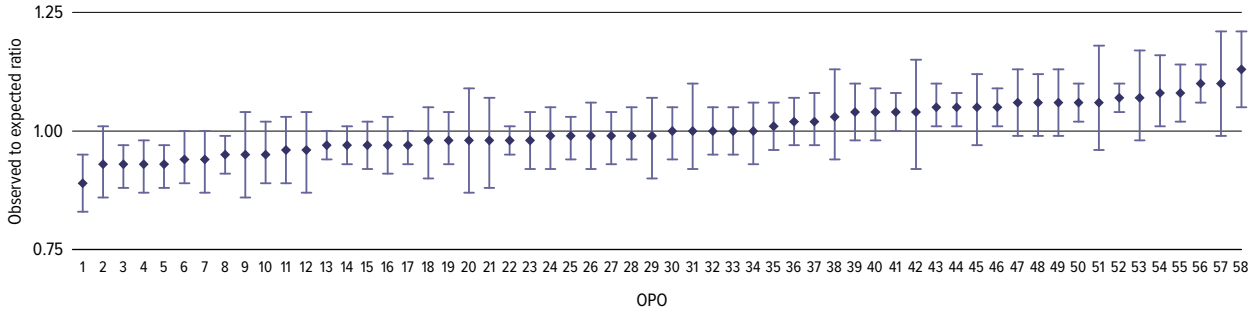
2. Scientific Registry of Transplant Recipients. OPO-specific reports. 2012. Available at http://www.srtr.org/opo/Default.aspx. Accessed July 10, 2012.

organ-specific donation rates

	Number of transplant programs in the country that transplanted at least one organ from the OPO						Number of transplant programs within the OPO service area					
DSA/OPO	KI	PA	LI	IN	HR	LU	KI	PA	LI	IN	HR	LU
ALOB	20	3	14	1	15	7	1	1	1		1	1
AROR	27	1	13	2	13	11	3		1		2	
AZOB	41	5	15	1	18	5	4	3	3	1	4	2
CADN	43	11	17	2	18	11	4	3	4	2	3	3
CAGS	21	5	13	1	7	7	2	1			1	
CAOP	55	13	18	6	20	12	11	6	5	1	5	3
CASD	22	5	8		9	4	4	3	3		2	1
CORS	26	3	12		18	9	4	2	3		2	1
CTOP	12	5	7	1	6	5	2		1		1	
DCTC	15	5	11	2	9	7	5	3	1	1	2	1
FLFH	20	6	9	1	13	8	2	1	1			
FLMP	23	6	11	3	14	9	1	1	2	1	2	1
FLUF	37	7	13	1	17	10	2	2	2		2	2
FLWC	30	6	18	4	13	8	2	1	1		2	1
GALL	37	9	23	4	27	13	4	3	3		3	1
HIOP	22	3	5			2	1	1	1			
IAOP	18	3	7	2	7	3	4	1	1		1	1
ILIP	43	8	13	3	22	14	8	6	6		6	2
INOP	32	1	7	2	21	6	3	1	1	1	3	1
KYDA	34	5	16	3	12	3	3	2	2		3	2
LAOP	37	11	12	2	18	14	4	3	3		2	1
MAOB	44	8	9	2	11	7	12	8	6	1	5	3
MDPC	18	2	8		13	9	2	2	2		2	2
MIOP	42	11	10	4	28	18	7	3	3	1	4	2
MNOP	48	4	13	2	13	9	9	4	3	1	3	2
MOMA	26	7	18	2	9	8	4	2	4		3	2
MSOP	28	7	20	1	15	8	1				1	
MWOB	37	11	17	3	22	22	6	2	3		1	
NCCM	16	4	12	1	7	10	1	1	1		1	
NCNC	34	6	16	1	18	7	4	3	2	1	3	2
NEOR	9	3	7		5	7	1	1	1	1	1	
NJTO	26	8	16		8	6	4	4	1		2	1
NMOP	13	3	11		10	4	2					
NVLV	25	4	17		12	4	1					
NYAP	13	4	7		8	3	2	2				
NYFL	12	1	8		7	4	2	1	1		1	
NYRT	43	6	10		13	4	10	4	6	2	4	1
NYWN	15	4	8		8	3	2	1				
OHLB	31	5	7	2	14	6	2	2	2	1	2	2
OHLC	12	6	6	1	7	9	2					
OHLP	13	2	10	2	19	8	2	1	1		2	1
OHOV	18	5	7	2	9	6	3	1	2	1	1	
OKOP	25	2	12	1	14	6	6	2	2		1	1
ORUO	20	4	10	1	12	3	3	1	2		2	
PADV	69	14	26	2	26	11	16	9	10		7	2
PATF	22	3	16	2	16	6	5	3	4	2	3	2
PRLL	20	3	14	2	4	6	1	1			1	
SCOP	33	6	19	4	24	16	1	1	1		1	1
TNDS	39	9	16	1	27	14	7	2	1		2	1
TNMS	24	6	7	2	19	10	2	1	2		1	1
TXGC	48	8	15	2	16	9	7	4	6		3	3
TXSA	29	4	8	3	9	3	5	2	3		2	1
TXSB	45	12	17	1	18	8	11	4	5		6	3
UTOP	23	7	11	1	11	9	3	2	3		3	1
VATB	25	6	21	2	19	11	4	2	2		4	1
WALC	33	6	11	1	8	2	5	3	3	1	3	1
WIDN	14	4	12		8	4	3	2	3		3	1
WIUW	19	3	12	3	12	5	1	1	1		1	1

DOD 1.3 Transplant program summary, 2011

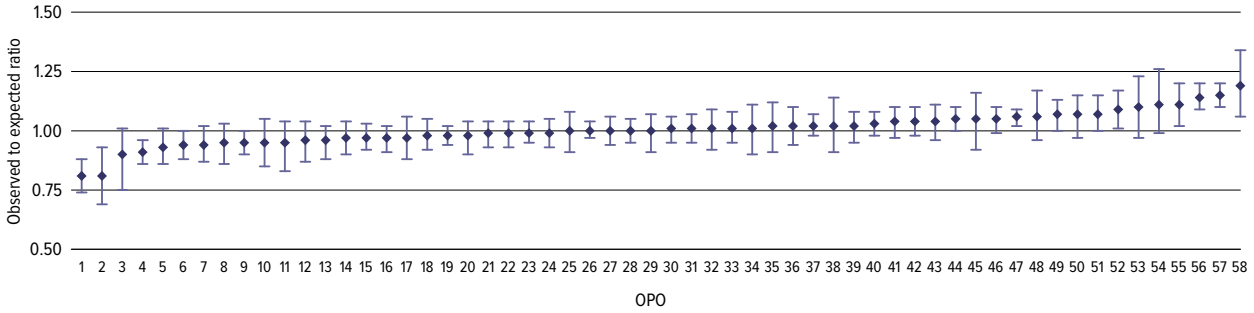
Organ specific transplant programs are defined based on one or more transplants of that organ type within 2011.



DOD 1.4 Donor yield: observed to expected ratio (O/E), 2011: all organs

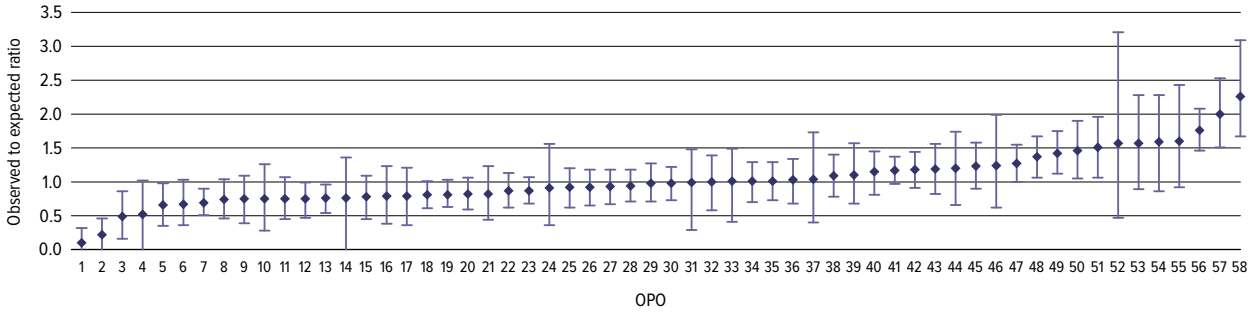
Donor yield provides a measure of organs transplanted per donor. Expected yield is estimated from statistical models. These models take into account various characteristics that are not under the control of the OPOs. For variables used, see figures for the individual organs (Figures 1.5–10).

organ-specific donation rates



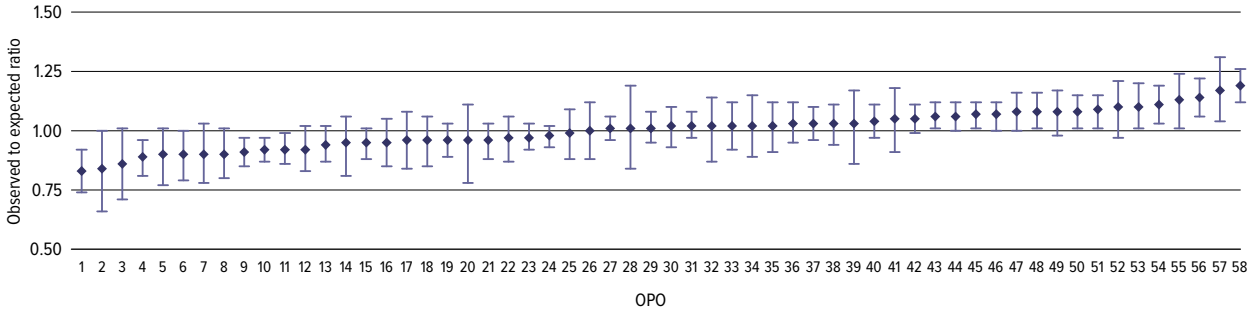
DOD 1.5 Donor yield: observed to expected ratio (O/E), 2011: kidney

Donor yield provides a measure of organs transplanted per donor. Expected yield is estimated from statistical models. These models take into account various characteristics that are not under the control of the OPOs. Variables used in the model: age, gender, blood type, cause of death, circumstances of death, mechanism of death, clinical infection present, cigarette use, cocaine use, heavy alcohol consumption, CDC high risk donor, history of diabetes, insulin dependence, history of hypertension, history of cancer, DCD, cardiac arrest after brain death, hepatitis B surface antigen, hepatitis B core antibody, hepatitis C antibody, serum creatinine, organ recovered outside the contiguous 48 states?



DOD 1.6 Donor yield: observed to expected ratio (O/E), 2011: pancreas

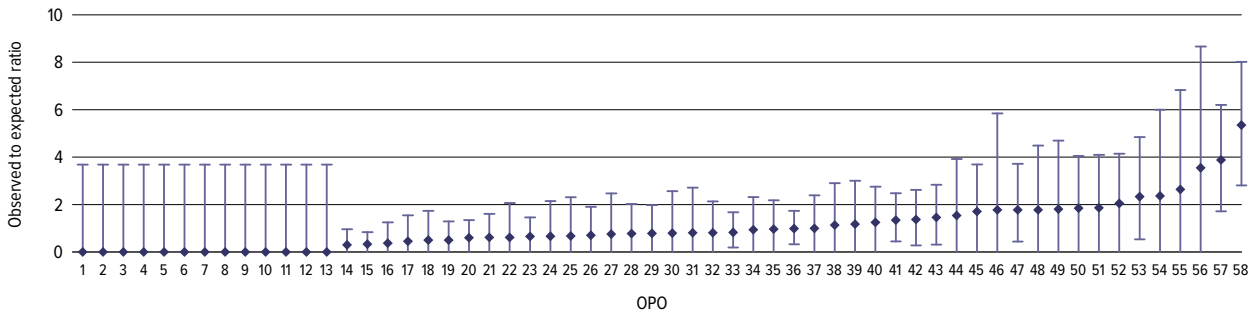
Donor yield provides a measure of organs transplanted per donor. Expected yield is estimated from statistical models. These models take into account various characteristics that are not under the control of the OPOs. Variables used in the model: age, BMI, race/ethnicity, blood type, cause of death, circumstances of death, mechanism of death, cocaine use, heavy alcohol consumption, CDC high risk donor, history of diabetes, insulin dependence, history of hypertension, history of cancer, DCD, lung pO_2 terminal value, hepatitis B surface antigen, hepatitis B core antibody, hepatitis C antibody, serum creatinine, organ recovered outside the contiguous 48 states?



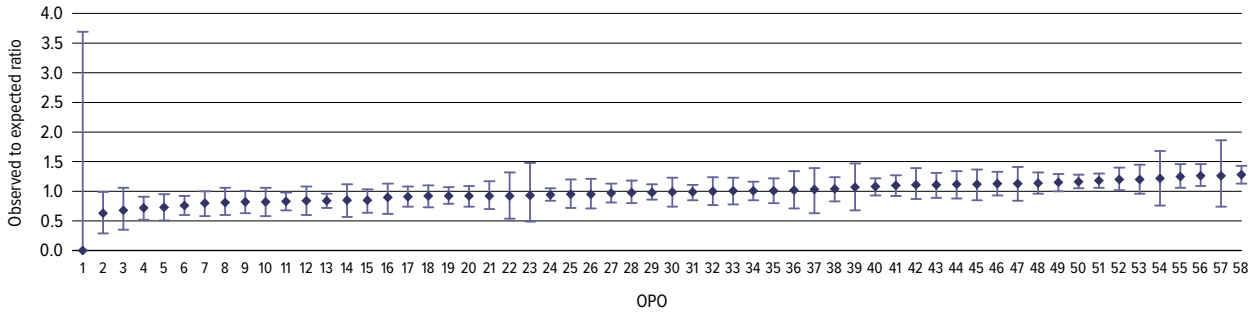
DOD 1.7 Donor yield: observed to expected ratio (O/E), 2011: liver

Donor yield provides a measure of organs transplanted per donor. Expected yield is estimated from statistical models. These models take into account various characteristics that are not under the control of the OPOs. Variables used in the model: age, BMI, race/ethnicity, blood type, cause of death, circumstances of death, clinical infection present, cigarette use, cocaine use, other drug use, heavy alcohol consumption, CDC high risk donor, history of diabetes, insulin dependence, DCD, DCD controlled, cardiac arrest after brain death, lung pO_2 terminal value, hepatitis B surface antigen, hepatitis B core antibody, hepatitis C antibody, organ recovered outside the contiguous 48 states?

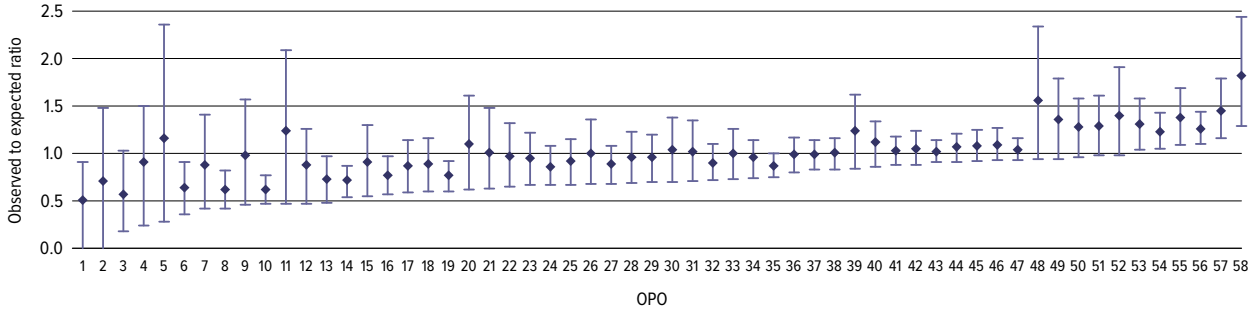
organ-specific donation rates



DOD 1.8 Donor yield: observed to expected ratio (O/E), 2011: intestine
Donor yield provides a measure of organs transplanted per donor. Expected yield is estimated from statistical models. These models take into account various characteristics that are not under the control of the OPOs. Variables used in the model: history of diabetes, insulin dependence, DCD, hepatitis B surface antigen.

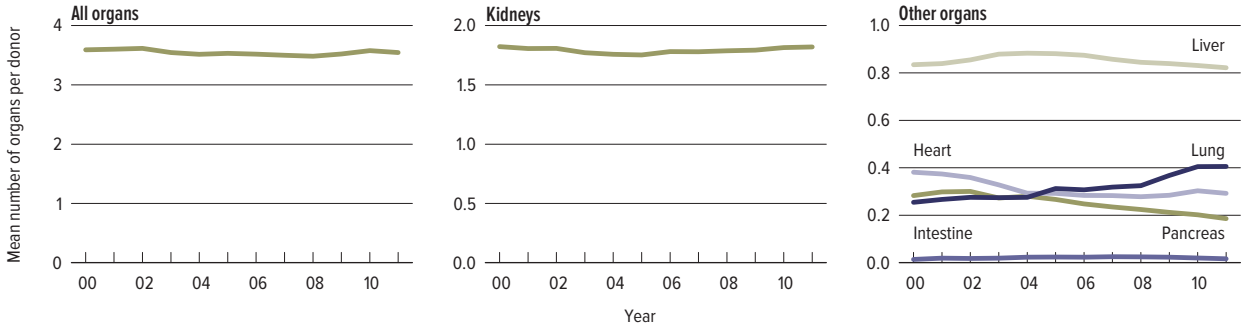


DOD 1.9 Donor yield: observed to expected ratio (O/E), 2011: heart
Donor yield provides a measure of organs transplanted per donor. Expected yield is estimated from statistical models. These models take into account various characteristics that are not under the control of the OPOs. Variables used in the model: age, BMI, gender, race/ethnicity, blood type, cause of death, mechanism of death, clinical infection present, cigarette use, cocaine use, other drug use, CDC high risk donor, history of diabetes, history of hypertension, DCD, cardiac arrest after brain death, lung pO_2 terminal value, hepatitis B surface antigen, hepatitis B core antibody, hepatitis C antibody, serum creatinine, organ recovered outside the contiguous 48 states?

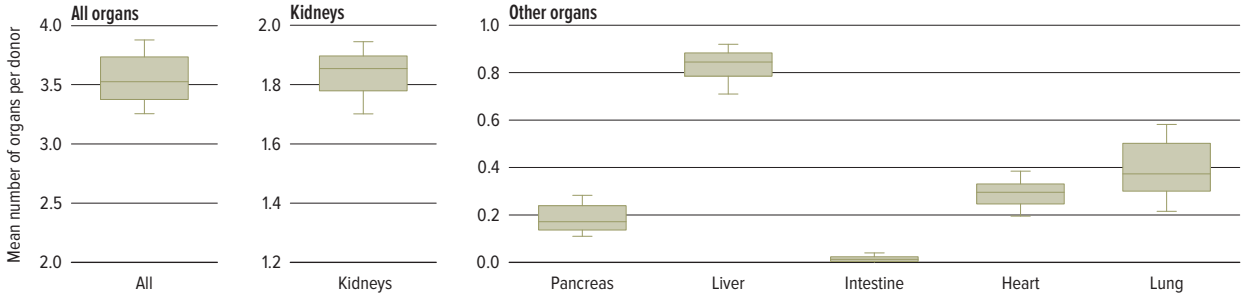


DOD 1.10 Donor yield: observed to expected ratio (O/E), 2011: lung
Donor yield provides a measure of organs transplanted per donor. Expected yield is estimated from statistical models. These models take into account various characteristics that are not under the control of the OPOs. Variables used in the model: age, BMI, gender, race/ethnicity, blood type, cause of death, circumstances of death, mechanism of death, clinical infection present, cigarette use, cocaine use, other drug use, CDC high risk donor, insulin dependence, history of cancer, DCD, cardiac arrest after brain death, lung pO_2 terminal value, hepatitis B surface antigen, hepatitis B core antibody, hepatitis C antibody, serum creatinine, organ recovered outside the contiguous 48 states?

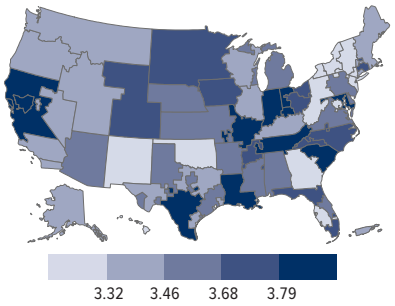
organs recovered per donor



DOD 2.1 Organs recovered per donor (ORPD)
Organs recovered per donor is the average number of organs recovered per donor, calculated as the sum of recovered organs and by organ type, i.e., in the case of kidneys recovered, up to two kidneys can be recovered from an individual donor, while only one heart can be recovered from each donor.

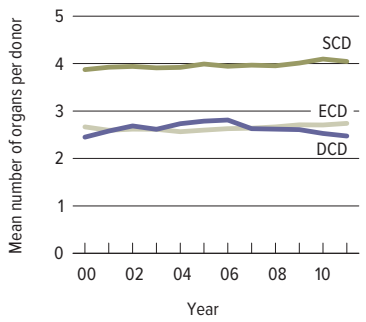


DOD 2.2 Organs recovered per donor (ORPD), by DSA, 2011
Organs recovered per donor is the average number of organs recovered per donor, calculated as the sum of recovered organs and by organ type, i.e., in the case of kidneys recovered, up to two kidneys can be recovered from an individual donor, while only one heart can be recovered from each donor. Means of DSA-level means are shown.



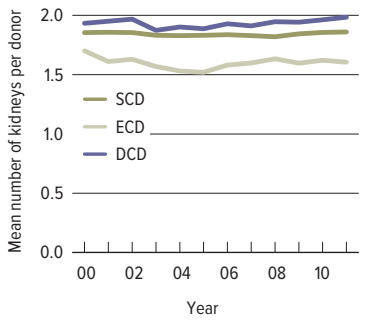
DOD 2.3 Organs recovered per donor (ORPD), by DSA, 2011
Organs recovered per donor is the average number of organs recovered per donor, calculated as the sum of recovered organs, i.e., in the case of kidneys recovered, up to two kidneys can be recovered from an individual donor, while only one heart can be recovered from each donor.

organs recovered per donor



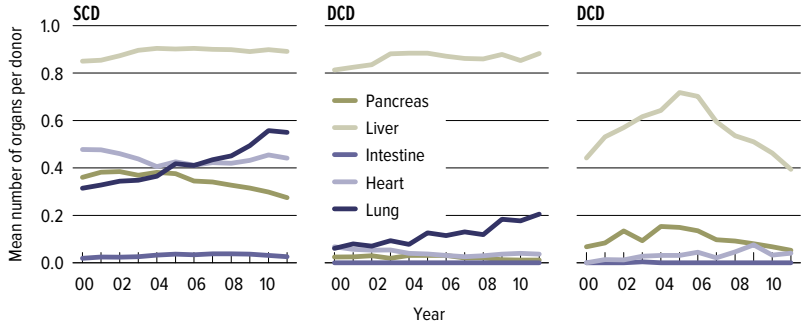
DOD 2.4 Organs recovered per donor (ORPD), by SCD, DCD, & ECD status

Organs recovered per donor is the average number of organs recovered per donor, calculated as the sum of recovered organs, i.e., in the case of kidneys recovered, up to two kidneys can be recovered from an individual donor, while only one heart can be recovered from each donor.



DOD 2.5 Kidneys recovered per donor (ORPD), by SCD, DCD, & ECD status

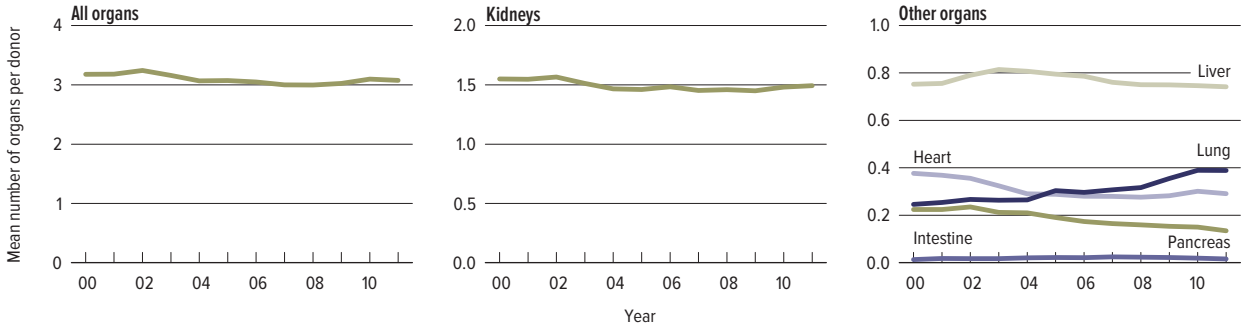
Kidneys recovered per donor is calculated as the sum of recovered kidneys; up to two kidneys can be recovered from an individual donor.



DOD 2.6 Other organs recovered per donor (ORPD), by SCD, DCD, & ECD status

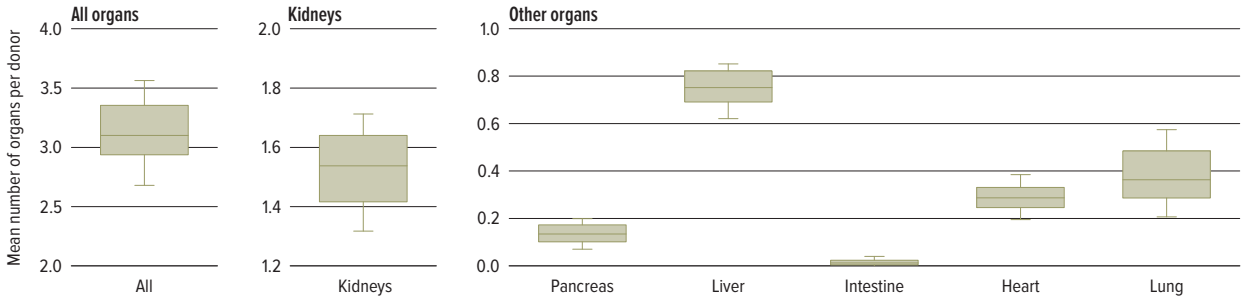
Organs recovered per donor is the average number of organs recovered per donor, calculated as the sum of recovered organs and by organ type, i.e., in the case of kidneys recovered, up to two kidneys can be recovered from an individual donor, while only one heart can be recovered from each donor.

organs transplanted per donor



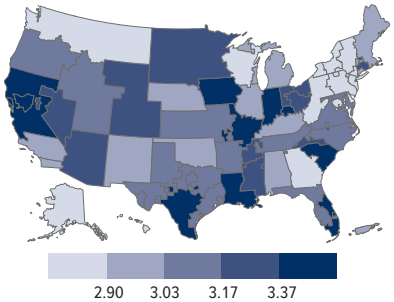
DOD 3.1 Organs transplanted per donor (OTPD)

Organs transplanted per donor is the average number of organs transplanted per donor. Organs divided into segments (liver, lung, pancreas, intestine) may account for more than one transplant, so the number transplanted may exceed the number recovered. Based on a count of recovered organs that are transplanted, which differs from the number of transplant operations.



DOD 3.2 Organs transplanted per donor (OTPD), by DSA, 2011

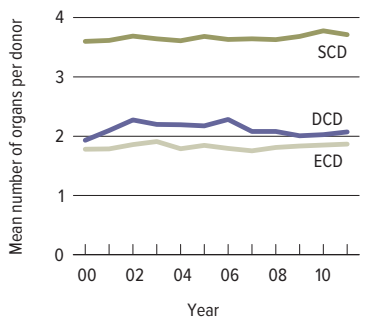
Organs transplanted per donor is the average number of organs transplanted per donor. Organs divided into segments (liver, lung, pancreas, intestine) may account for more than one transplant, so the number transplanted may exceed the number recovered. Based on a count of recovered organs that are transplanted, which differs from the number of transplant operations. Means of DSA-level means are shown.



DOD 3.3 Organs transplanted per donor (OTPD), by DSA, 2011

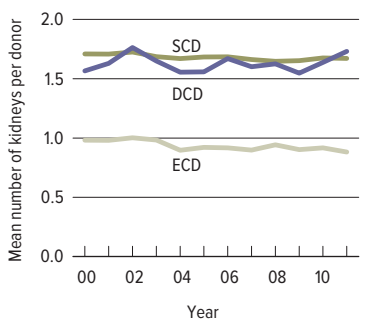
Organs transplanted per donor is the average number of organs transplanted per donor. Organs divided into segments (liver, lung, pancreas, intestine) may account for more than one transplant, so the number transplanted may exceed the number recovered. Based on a count of recovered organs that are transplanted, which differs from the number of transplant operations.

organs transplanted per donor



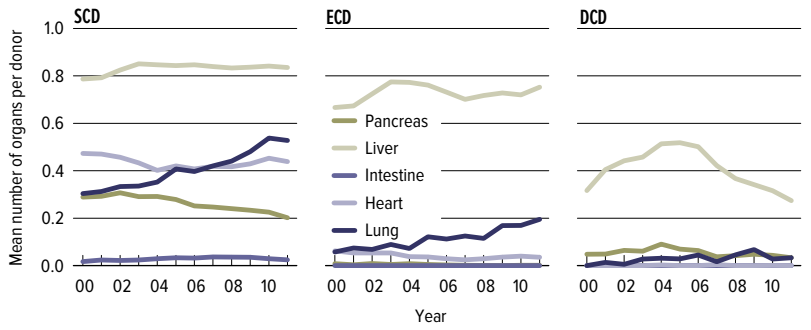
DOD 3.4 Organs transplanted per donor (OTPD), by SCD, DCD, & ECD status

Organs transplanted per donor is the average number of organs transplanted per donor. Organs divided into segments (liver, lung, pancreas, intestine) may account for more than one transplant, so the number transplanted may exceed the number recovered. Based on a count of recovered organs that are transplanted, which differs from the number of transplant operations.



DOD 3.5 Kidneys transplanted per donor (OTPD), by SCD, DCD, & ECD status

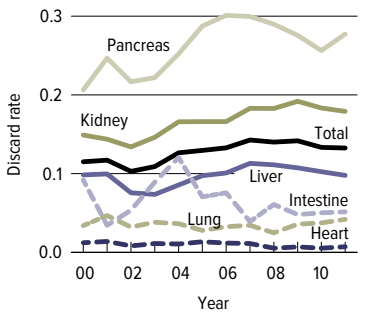
Kidneys transplanted per donor is the average number of kidneys transplanted per donor. Based on a count of recovered kidneys that are transplanted, which differs from the number of transplant operations.



DOD 3.6 Other organs transplanted per donor (ORPD), by SCD, DCD, & ECD status

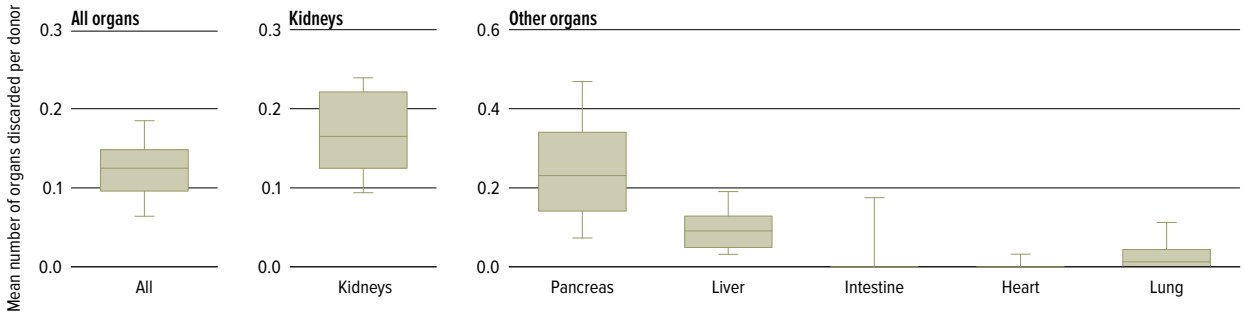
Organs transplanted per donor is the average number of organs transplanted per donor. Organs divided into segments (liver, lung, pancreas, intestine) may account for more than one transplant, so the number transplanted may exceed the number recovered. Based on a count of recovered organs that are transplanted, which differs from the number of transplant operations.

organ discards | expanded criteria donors



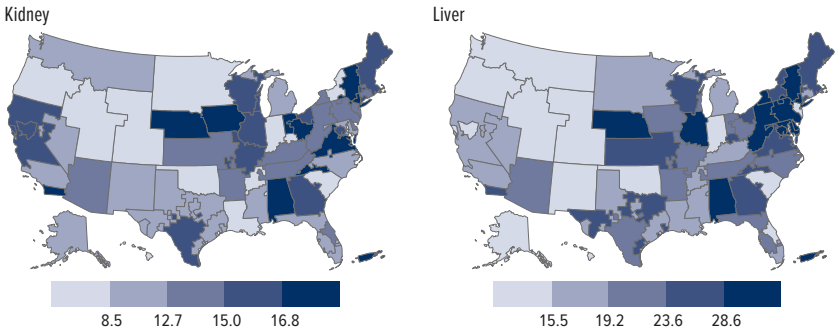
DOD 4.1 Organ discard rates for organs recovered for transplantation

Organ discard rate is calculated as the difference between the number of organs recovered and the number of organs transplanted, divided by the number of organs recovered.



DOD 4.2 Variation in organ discard rates, by DSA, 2011

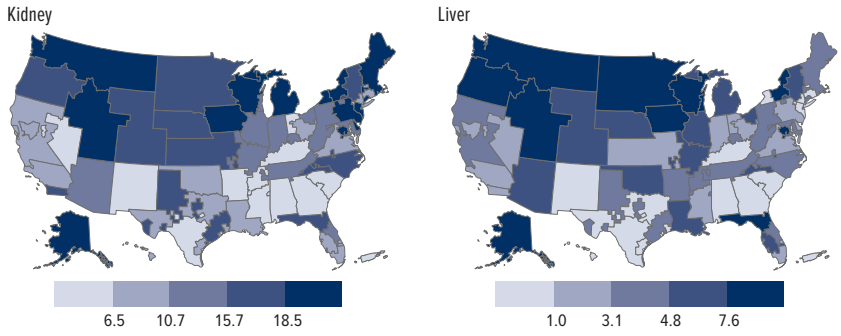
Organ discard rate is calculated as the difference between the number of organs recovered and the number of organs transplanted, divided by the number of organs recovered.



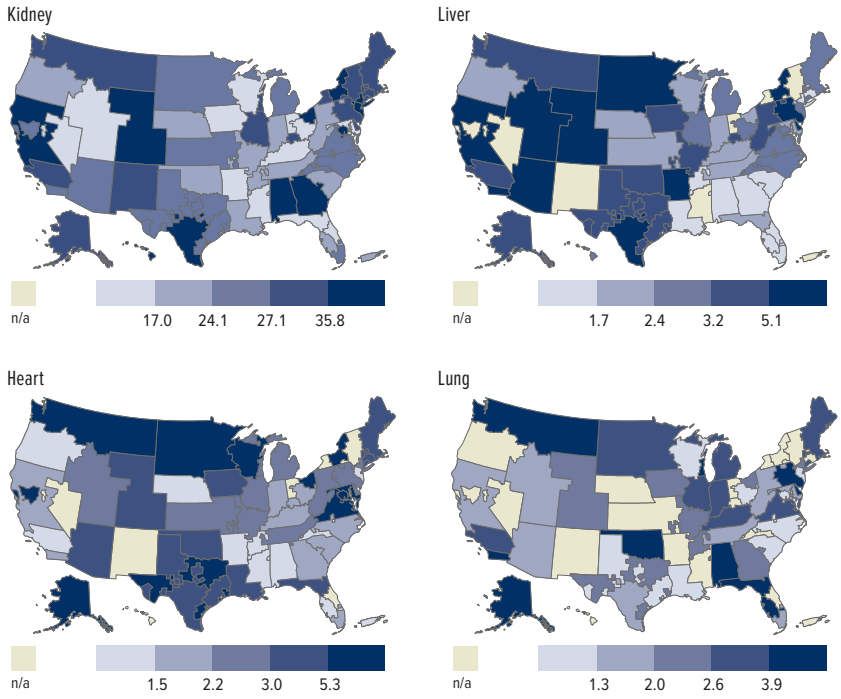
DOD 5.1 Variation in the use of ECD donors for patients transplanted in 2011, by DSA

Per DSA, the percent of transplants from ECD donors.

donations after cardiac death | waiting time



DOD 6.1 Variation in the use of DCD donors for patients transplanted in 2011, by DSA
Per DSA, the percent of transplants from DCD donors.



DOD 7.1 Variation in waiting time (months) for patients receiving a deceased donor transplant in 2011, by DSA
Median time to transplant for those on the waiting list and with a transplant in 2010. Time to transplant is calculated as the time (in months) after a candidate is placed on the transplant wait list.

DOD 8.1 organ use: kidney

Kidney

2011: 8128 donors (16256 kidneys)

Reported by left/right: 7667 donors (94%)

Left

- Consent not requested 46 (0.6%)
  - Donor age (12)
  - Acute/chronic renal failure (20)
  - Donor quality (7)
  - Other (7)
- Consent not obtained 29 (0.4%)
  - Emotional (18)
  - Family conflict (3)
  - Other (8)
- Recovered, not for tx 27 (0.4%)
  - Recovered for research (27)
- Tx'ed 5800 (75.7%)
  - Locally (4716)
  - Shared (1084)
- Recovered for tx but not tx'd 1233 (16.1%)
  - Discarded locally (812)
    - Too old on pump (8)
    - Too old on ice (13)
    - Vascular damage (24)
    - Ureteral damage (2)
    - Donor medical history (6)
    - Donor social history (3)
    - Positive HIV (1)
    - Positive hepatitis (11)
    - Warm ischemia time too long (9)
    - Organ trauma (15)
    - Organ not as described (2)
    - Biopsy findings (482)
    - Recipient determined to be unsuitable for transplant in OR (5)
    - Poor organ function (109)
    - Infection (2)
    - Diseased organ (41)
    - Anatomical abnormalities (92)
    - No recipient located, list exhausted (200)
    - Other (208)
  - Shared & discarded (252)
  - Submitted for research (169)
- Organ not recovered 532 (6.9%)
  - Poor organ function (257)
  - Positive hepatitis (7)
  - Diseased organ (28)
  - Anatomical abnormalities (14)
  - No recipient located (16)
  - Donor medical history (67)
  - Donor social history (5)
  - Surgical damage in OR (1)
  - Organ refused by all regional programs (16)
  - Organ refused by all national programs (36)
  - Ruled out after evaluation in OR (35)
  - Hemodynamically unstable donor (1)
  - Trauma to organ (3)
  - Medical examiner restricted (2)
  - Other (44)

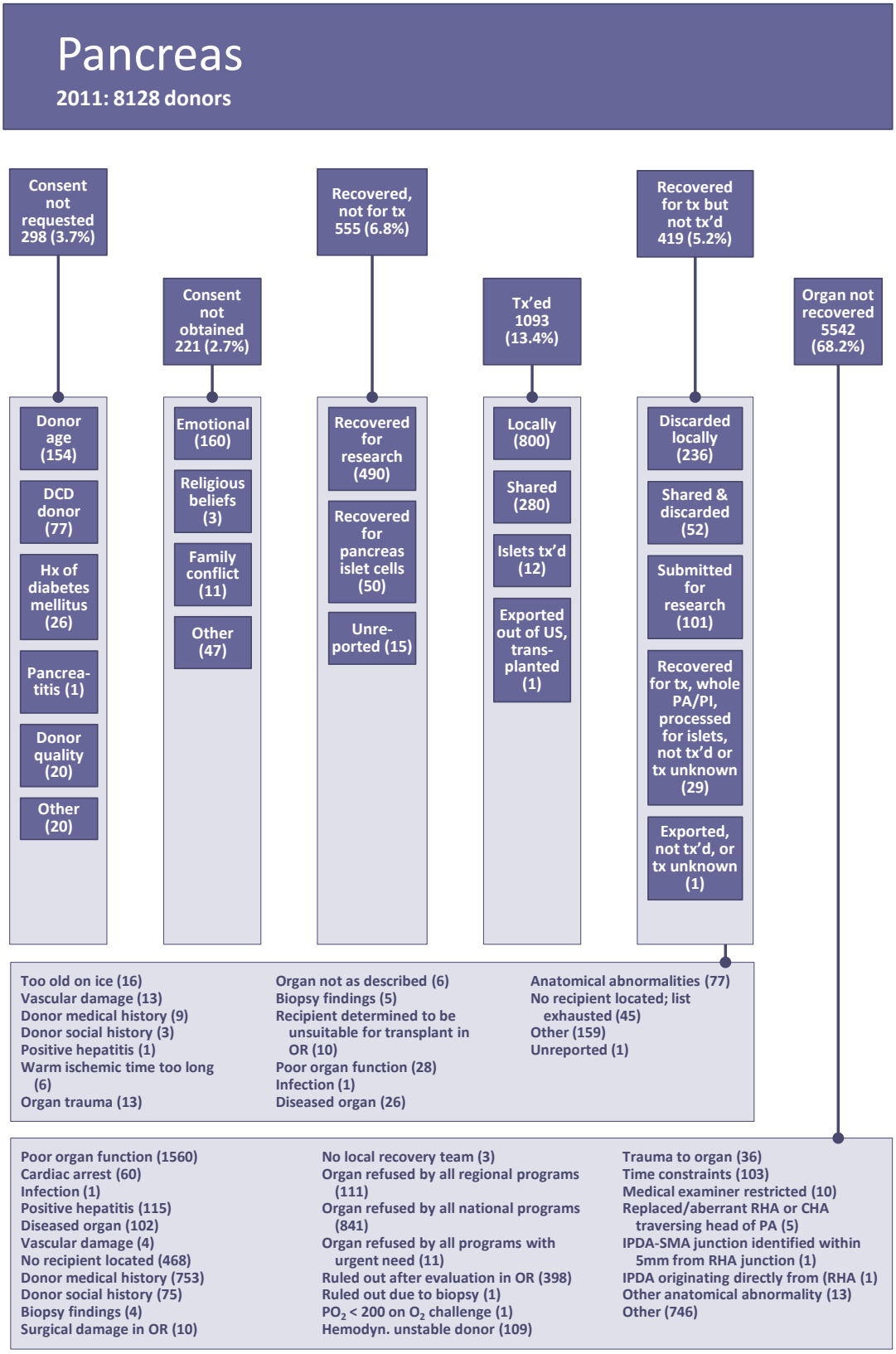
Right

- Consent not requested 46 (0.6%)
  - Donor age (12)
  - Acute/chronic renal failure (20)
  - Donor quality (7)
  - Other (7)
- Consent not obtained 29 (0.4%)
  - Emotional (18)
  - Family conflict (3)
  - Other (8)
- Recovered, not for tx 34 (0.4%)
  - Recovered for research (34)
- Tx'ed 5741 (74.9%)
  - Locally (4472)
  - Shared (1269)
- Recovered for tx but not tx'd 1294 (16.9%)
  - Discarded locally (860)
    - Too old on pump (10)
    - Too old on ice (14)
    - Vascular damage (20)
    - Ureteral damage (1)
    - Donor medical history (11)
    - Donor social history (3)
    - Positive HIV (1)
    - Positive hepatitis (19)
    - Warm ischemia time too long (13)
    - Organ trauma (17)
    - Organ not as described (3)
    - Biopsy findings (470)
    - Recipient determined to be unsuitable for transplant in OR (5)
    - Poor organ function (122)
    - Infection (2)
    - Diseased organ (48)
    - Anatomical abnormalities (87)
    - No recipient located, list exhausted (215)
    - Other (233)
  - Shared & discarded (252)
  - Submitted for research (171)
- Organ not recovered 523 (6.8%)
  - Poor organ function (252)
  - Positive hepatitis (7)
  - Diseased organ (28)
  - Anatomical abnormalities (8)
  - No recipient located (16)
  - Donor medical history (68)
  - Donor social history (7)
  - Surgical damage in OR (1)
  - Organ refused by all regional programs (16)
  - Organ refused by all national programs (36)
  - Ruled out after evaluation in OR (31)
  - Hemodynamically unstable donor (1)
  - Trauma to organ (7)
  - Medical examiner restricted (3)
  - Other (42)

Reported en bloc: 461 donors (6%)

- Consent not requested 10 (2.2%)
  - Donor age (4)
  - Acute/chronic renal failure (5)
  - Donor quality (1)
  - Other (0)
- Consent not obtained 5 (1.1%)
  - Emotional (3)
  - Family conflict (0%)
  - Other (2)
- Recovered, not for tx 18 (3.9%)
  - Recovered for research (18)
- Tx'ed 298 (64.8%)
  - Locally (180)
  - Shared (118)
- Recovered for tx but not tx'd 60 (13%)
  - Discarded locally (36)
    - Too old on ice (1)
    - Ureteral damage (1)
    - Organ not as described (2)
    - Biopsy findings (14)
    - Recipient determined to be unsuitable for transplant in OR (1)
    - Poor organ function (8)
    - Infection (1)
    - Diseased organ (1)
    - Anatomical abnormalities (4)
    - No recipient located, list exhausted (15)
    - Other (12)
  - Shared & discarded (14)
  - Submitted for research (10)
- Organ not recovered 69 (15%)
  - Poor organ function (33)
  - Diseased organ (2)
  - Anatomical abnormalities (1)
  - No recipient located (3)
  - Donor medical history (10)
  - Organ refused by all national programs (9)
  - Ruled out after evaluation in OR (3)
  - Trauma to organ (1)
  - Time constraints (1)
  - Medical examiner restricted (0%)
  - Other (6)

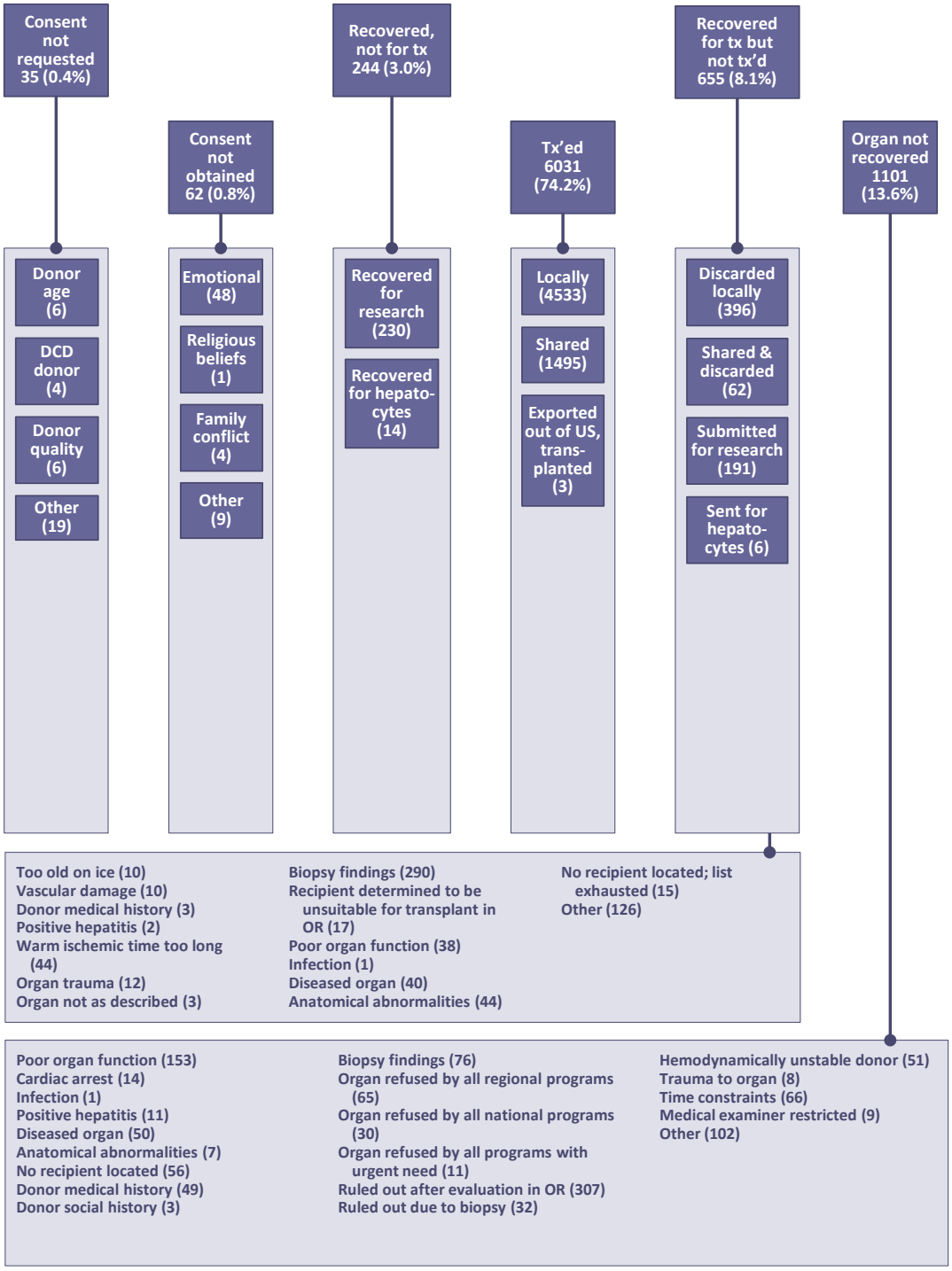
DOD 8.2 organ use: pancreas



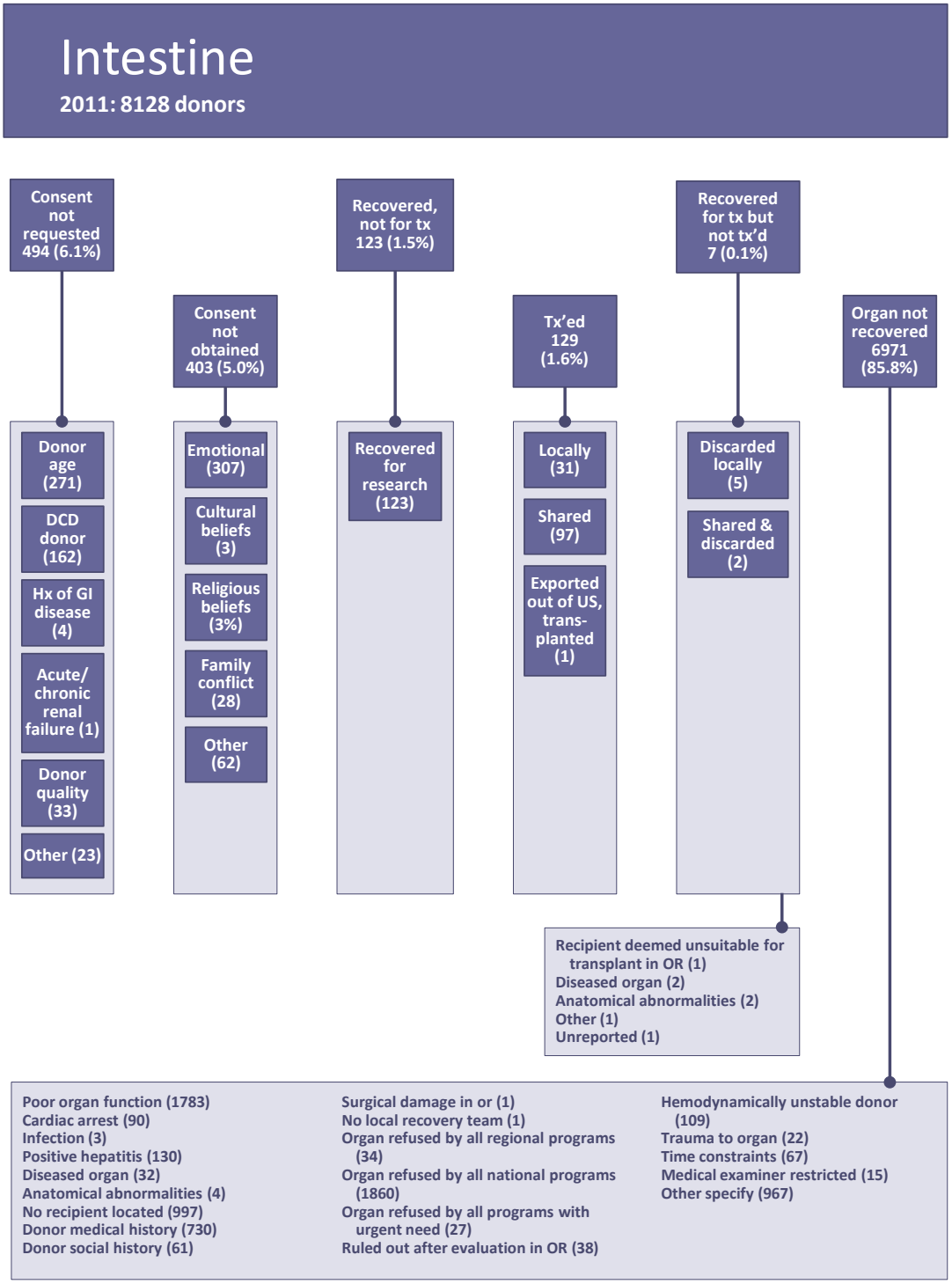
DOD 8.3 organ use: liver

Liver

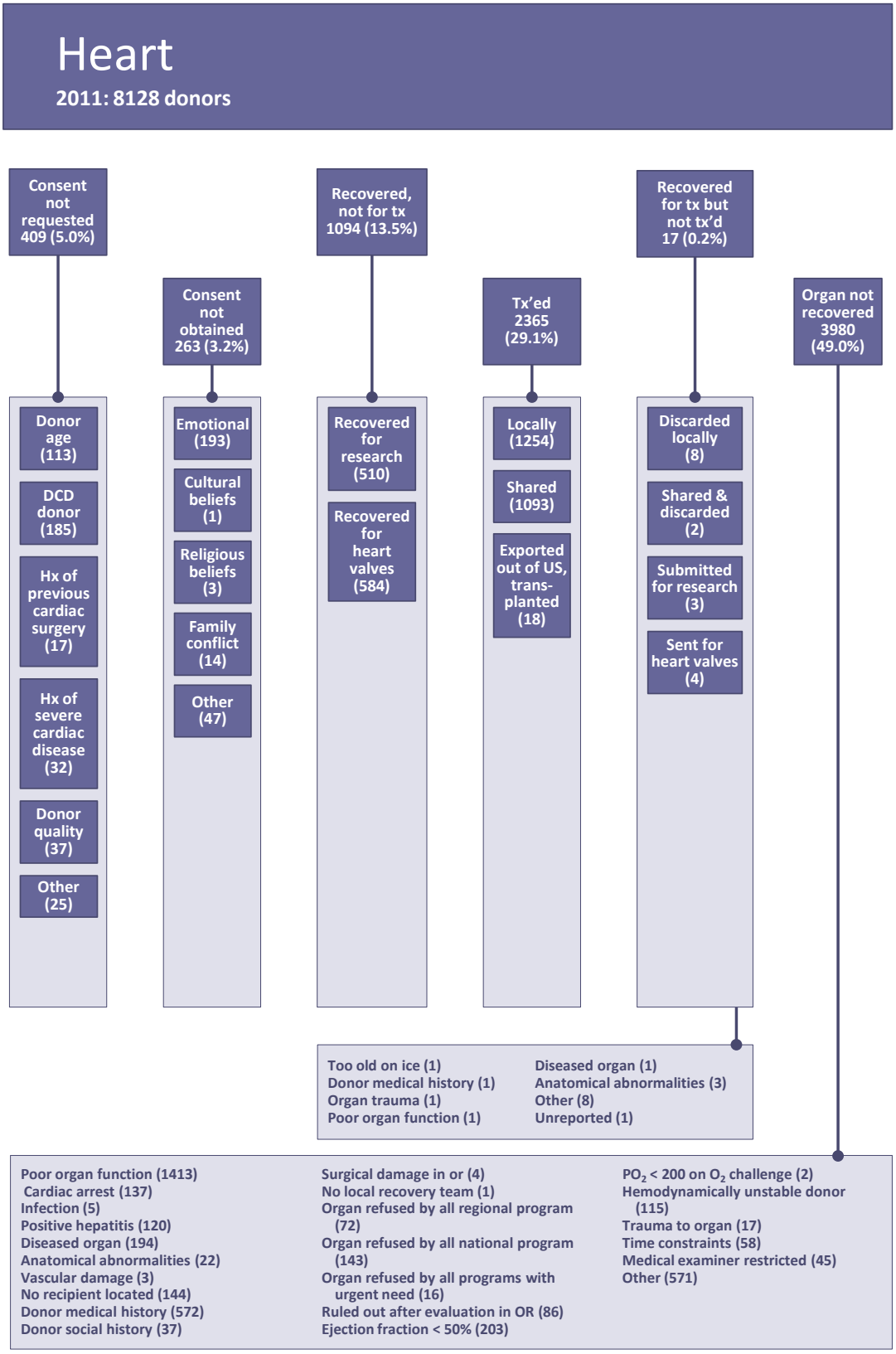
2011: 8128 donors



DOD 8.4 organ use: intestine



DOD 8.5 organ use: heart



DOD 8.6 organ use: lung