

**MICHIGAN DEPARTMENT OF COMMUNITY HEALTH
HEART/LUNG & LIVER TRANSPLANTATION SERVICES
STANDARD ADVISORY COMMITTEE (HLLSAC) MEETING**

Tuesday, May 19, 2009

Capitol View Building
201 Townsend Street
MDCH Conference Center
Lansing, Michigan 48913

APPROVED MINUTES

I. Call to Order

Chairperson Ball called the meeting to order at 9:09 a.m.

A. Members Present:

James F. Ball, Chairperson, Michigan Manufacturers
Wayne Cass, Vice-Chairperson, Coalition of Labor Organizations Michigan State
Heidi Gustine, Munson Medical Center (Arrived at 9:11 a.m.)
Robert L. Hooker, MD, West Michigan Cardiothoracic Surgeons, PLC
Jerry Johnson, MD, Blue Cross Blue Shield of Michigan
Alan Koffron, MD, Beaumont Hospitals
Richard E. Pietroski, Gift of Life Michigan
Jeannette Prochazka, Borgess Health
Jeffrey Punch, MD, University of Michigan Health System
John D. Serini, DO, Metro Health Hospital

B. Members Absent:

Frederick R. Armenti, MD, West Michigan Cardiothoracic Surgeons, PLC
Marwan S. Abdoulijoud, MD, Henry Ford Hospital

C. Michigan Department of Community Health Staff Present:

Jessica Austin
Michael Berrios
Sallie Flanders
Kasi Kelley
Irma Lopez
Andrea Moore
Tania Rodriguez
Brenda Rogers

II. Declaration of Conflicts of Interests

No conflicts were noted for the record.

III. Review of Agenda

Motion by Vice-Chairperson Cass, seconded by Dr. Serini, to modify the order of items V and VI of the agenda and accept the agenda as modified.
Motion Carried.

IV. Review of Minutes of April 23, 2009

Correction on item VII by Dr. Johnson. The item pertaining to his commitment should state "Dr. Johnson agreed to provide whatever BCBSM data he could regarding transplants performed in out of state centers for any of their subscribers."

Motion by Vice-Chairperson Cass, seconded by Dr. Serini, to accept the minutes as corrected.
Motion Carried.

V. Organ Procurement – Presentation – Richard Pietroski

Mr. Pietroski provided a presentation on organ procurement (Attachment A).
Discussion followed.

Mr. Pietroski provided a presentation on Exported organs 2008 by Organ (Attachment B) and GOL MI Deceased Organ Donor Outcomes 1984-2008 (Attachment C).
Discussion followed.

VI. Transplantation Basics – Presentation – Jeffrey Punch, MD

Dr. Punch gave a presentation on Transplant Basics (Attachment D).
Questions and discussion followed.

VII. Next Steps

The June 25, 2009 meeting will continue fact gathering activities.

VIII. Future Meeting Dates

June 25, 2009
July 16, 2009
August 13, 2009
September 15, 2009
October 15, 2009

IX. Public Comment

There were no public comments.

X. Adjournment

Motion by Vice-Chairperson Cass, seconded by Mr. Pietroski, to adjourn the meeting at 11:09 a.m. Motion Carried.

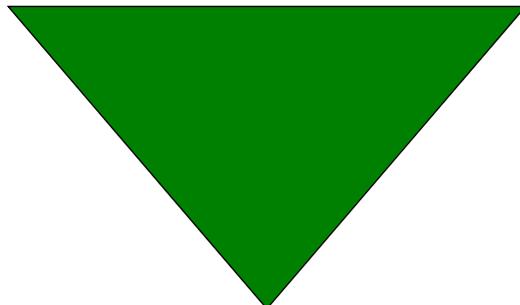


WHERE ORGANS COME FROM WHERE ORGANS GO

Richard E. Pietroski
Executive Director
Gift of Life Michigan

“Cascade” of Deaths

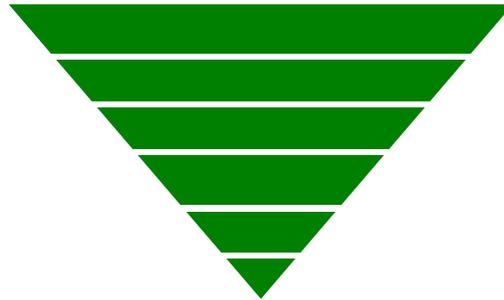
ALL DEATHS



ORGAN DONORS

“Cascade” of Deaths

ALL DEATHS



ORGAN DONORS

Reportable Deaths

Medicare Conditions of Participation; August 1998
All hospital deaths to be reported to an OPO

In 2007:

- 86,642 total deaths in Michigan
- 36,573 hospital deaths in Michigan (~42%)

Gift of Life received 37,737 facility deaths triaged in 2008, representing reported deaths from hospitals, hospice, nursing homes and medical examiners.

Definitions*

Imminent Deaths

Potential brain dead donors prior to declaration of brain death, diminished organ function, and consent intervention.

The *timely* reporting of patients who require mechanical ventilation, and, have a GCS \leq 5, or are being evaluated for brain death, or when life sustaining therapies are to be withdrawn at the request of the patient's family.

Eligible Deaths

Patients aged 70 years or younger, declared brain dead, and, not contraindicated for organ donation under specific medical diagnoses

* Source: Centers for Medicare and Medicaid Conditions of Participation

Imminent Deaths

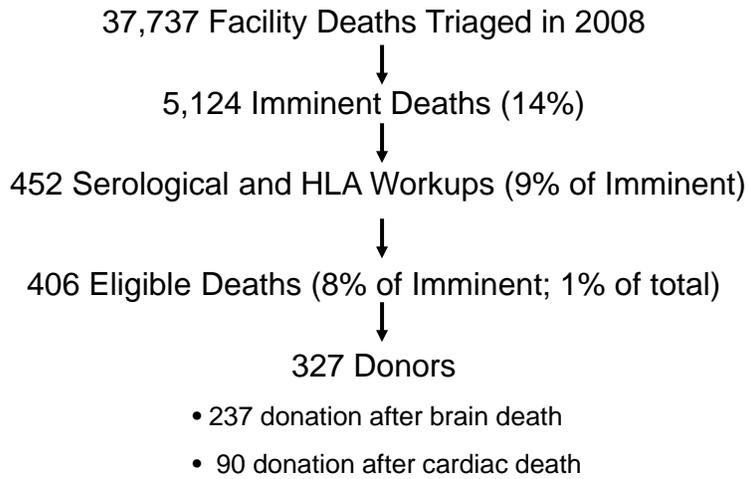
All Deaths (86,642; 100%) ¹
 |
 Hospital Deaths (37,737; 43%) ²
 |
 Imminent Deaths (5,124; 14%) ³
 (aka Potential Donors)

Sources:

¹ MDCH – CY2007

^{2,3} Gift of Life Michigan – CY2008

Gift of Life Michigan Experience



Eligible Deaths

OVERVIEW OF DONOR ACTIVITY -
ELIGIBLE DEATHS TO ORGAN DONORS (2004-2008)

	2004	2005	2006	2007	2008
Eligible Deaths	538	419	434	391	406
Eligible Deaths Not Reported	62	25	11	5	1
Organ Donors (all)	276	269	292	301	327
Organ Donors (DCD only)	14	17	32	53	90

Organs Recovered

GIFT OF LIFE MICHIGAN 2008 Deceased Organ Outcomes				
Organ Type	Organs Recovered	Exported	Imported	Locally Transplanted
Liver	239	43	30	201
Heart	85	52	20	52
Lung	136	73	11	101

See Organ Donor Outcomes chart for data encompassing 1984-2008

Export Reasons

- **Recipient Urgency**
 - Medical priority status
- **Donor Specific Demographics**
 - Age
 - ABO
 - DCD
 - Height/weight
 - Reactive serologies
- **Recipient-Donor Incompatibility**
 - Incompatible crossmatch
 - HLA mismatch
- **Other Donor Issues**
 - Organ function
 - Directed donation
 - High risk behavior

Liver

Total Livers Exported = 43

Medical Priority Status 1		6
Donor Demographics		27
- DCD	11	
- Age/height/weight	10	
- ABO=AB	3	
- Reactive serology	3	
Other Donor Issues		10
- Elevated liver tests	6	
- Liver damage	2	
- Lobe segment	2	

Heart

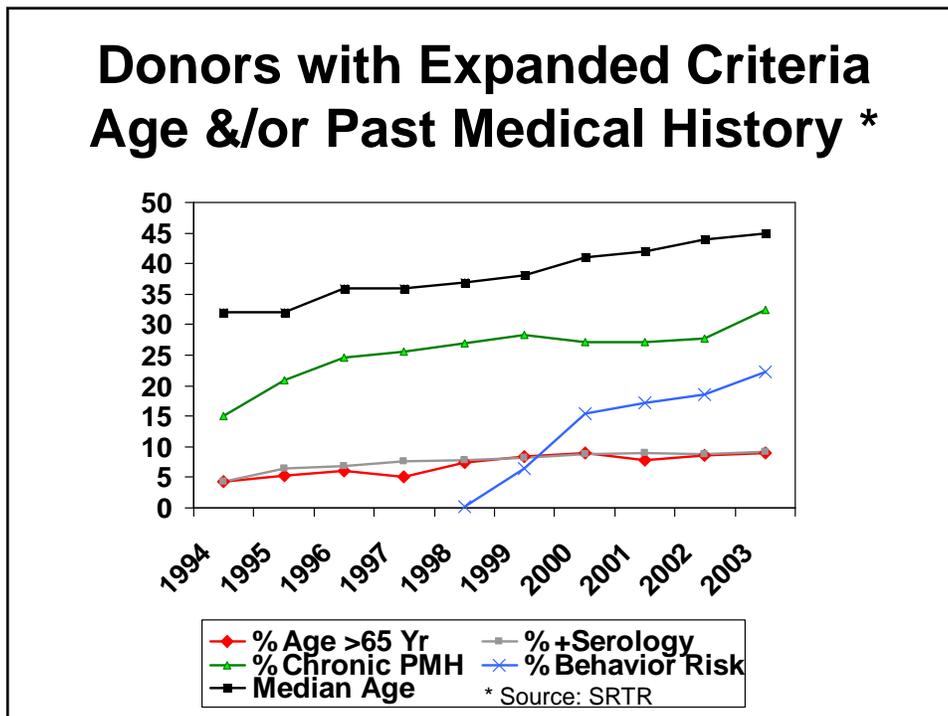
Total Hearts Exported = 52

Medical Priority Status 1		23
Donor Demographics		24
- Incompatible crossmatch/ HLA mismatch	12	
- Age/height/weight	9	
- ABO=AB	3	
Other Donor Issues		5
- Low ejection fraction	4	
- Directed donation	1	

Lung

Total Lungs Exported = 73

Medical Priority Status 1	2
Donor Demographics	30
- Age/height/weight	18
- DCD	8
- ABO=AB	4
Recipient-Donor Incompatibility	1
Other Donor Issues	40
- ↓ function/low PO ₂	35
- Center Logistics	4
- Lung Contusion	1





Richard E. Pietroski
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Attachment B

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EXPORTED ORGANS 2008 BY ORGAN

DATE	UNOS	LI	LU	HR	REASON	AGE	ABO	ECD/ DCD
2008	VDG004	1			cand transplanted,organ issue	53	O	
2008	VAD314	1			left lobe,no instate stat 1A recip	10	O	
2008	VAK328	1			no instate 1A recipients	31	O	
2008	VBH464	1			898-other refusal reason, lobe	35	O	
2008	VBH464	1			898-other refusal reason, lobe	35	O	
2008	VDL435	1			no instate recipients	18mos	A	
2008	VEZ457	1			no instate recipients	4	O	DCD
2008	VFA360	1			no instate recip,trans w/pan&int	11	B	
2008	VFF244	1			pos serology, trans with kidney	55	O	
2008	VFM162	1			no instate recip,trans w/panc	19	AB	
2008	VFP169	1			no instate recipients,Stat 1A	6	A	
2008	VFL058	1			age/qual, 9mo old recip-left lobe	4	A	
2008	VGA048	1			OHCC first recip on matchrun	32	AB	
2008	VHN108	1			no instate recipients	11mos	O	
2008	VJ2089	1			Region 10 share, Status 1B	18	O	
2008	VKP148	1			no instate recipients	56	AB	
2008	VLA366	1			No instate recipients	6	O	
2008	VCR333	1			age,qual,soc history,organ issue	51	O	
2008	VKY297	1			AST 809, ALT 566	47	B	
2008	VBX128	1			age, quality	83	A	ECD
2008	VCA171	1			DCD, age	57	B	DCD
2008	VFJ495	1			age,strong Hx ETOH,mult org needs	57	O	DCD
2008	VLV257	1			grade five liver laceration	21	A	
2008	VA4264	1			age, DCD	48	O	DCD
2008	VBH222	1			qual, organ spec donor issue	79	B	ECD
2008	VBU211	1			quality	35	O	
2008	VCA177	1			quality	21	A	DCD
2008	VCF195	1			lacerated liver (not found)	17	A	
2008	VDN158	1			quality, DCD	48	O	DCD
2008	VDU282	1			pos serol tests,other issue	57	O	ECD
2008	VDV123	1			age, quality	70	AB	ECD
2008	VDX086	1			age, quality	37	A	DCD
2008	VEB333	1			age, quality	56	O	ECD
2008	VEB352	1			age, quality,org spec don issue	76	A	ECD
2008	VEM103	1			MP 22	44	O	
2008	VGX235	1			age, quality, MP 11	45	A	DCD
2008	VHJ427	1			age, qual-unstable, MP 22	25	A	
2008	VHT381	1			age, quality, MP 22	62	O	ECD
2008	VH3356	1			age, quality	4	A	DCD
2008	VIO265	1			age, quality, MP 15	50	O	DCD
2008	VIV099	1			age, quality, MP 18	45	A	DCD

EXPORTED ORGANS 2008 BY ORGAN

DATE	UNOS	LI	LU	HR	REASON	AGE	ABO	ECD/ DCD
2008	VLC297	1			recipient ill, Hep B. Hep C, jail	53	O	ECD
2008	VLD174	1			age	64	AB	ECD
LIVER =		43						
2008	VEC245	1			no instate recipients	33	B	
2008	VEC245	1			no instate recipients	33	B	
2008	VEJ437	1			no local recipient	45	B	
2008	VFM162	1			no instate recipients	19	AB	
2008	VFM162	1			no instate recipients	19	AB	
2008	VGT410	1			heavy workload,size,weight	12	A	
2008	VGT410	1			heavy workload,size,weight	12	A	
2008	VGY219	1			size, weight, bilateral lungs	10	A	
2008	VGY219	1			size, weight, bilateral lungs	10	A	
2008	VG4365	1			med urgency of another candidate	48	A	
2008	VG4365	1			med urgency of another candidate	48	A	
2008	VHT381	1			no instate recipients	62	O	ECD
2008	VHT381	1			no instate recipients	62	O	ECD
2008	VJM218	1			size, BMI 16	20	B	
2008	VJM218	1			size, BMI 16	20	B	
2008	VJK394	1			size, BMI 34	2	B	
2008	VJK394	1			size, BMI 34	2	B	
2008	VKA148	1			size, pos XM, med soc Hx	41	O	
2008	VKS436	1			no instate recipients	63	B	ECD
2008	VKS436	1			no instate recipients	63	B	ECD
2008	VLM275	1			no instate recipients	51	B	
2008	VLM275	1			no instate recipients	51	B	
2008	VCF459	1			no instate recipients	26	AB	
2008	VCF459	1			no instate recipients	26	AB	
2008	VJ2218	1			no instate recipients	69	O	ECD
2008	VJ2218	1			no instate recipients	69	O	ECD
2008	VAG006	1			age,qual,organ-spec donor issue	47	O	
2008	VAG006	1			age,qual,organ-spec donor issue	47	O	
2008	VAM316	1			size,age, quality, social history	59	A	
2008	VAM316	1			size,age, quality, social history	59	A	
2008	VAL024	1			low PO2, size	41	O	
2008	VAL024	1			low PO2, size	41	O	
2008	VAR475	1			age, quality, size, weight	37	A	
2008	VAR475	1			age, quality, size, weight	37	A	
2008	VBA284	1			quality	35	B	
2008	VBA284	1			quality	35	B	
2008	VBA444	1			quality	42	O	
2008	VBA444	1			quality	42	O	
2008	VBP030	1			age, quality	50	A	DCD
2008	VBP030	1			age, quality	50	A	DCD
2008	VBS309	1			size,weight,organ-spec issue	14	A	
2008	VBS309	1			size,weight,organ-spec issue	14	A	
2008	VBU259	1			multi-organ need,size, weight	30	O	
2008	VB1332	1			qual,size/weight,social history	27	O	

EXPORTED ORGANS 2008 BY ORGAN

DATE	UNOS	LI	LU	HR	REASON	AGE	ABO	ECD/ DCD
2008	VB1332		1		qual,size/weight,social history	27	O	
2008	VCI304		1		PO2 367, contusion other lung	31	A	
2008	VCO480		1		age,qual,size, weight,organ-spec	44	O	
2008	VCO480		1		age,qual,size, weight,organ-spec	44	O	
2008	VDK400		1		age,qual,size, weight	49	O	
2008	VEQ049		1		heavy workload,,size,weight	21	A	
2008	VEQ049		1		heavy workload,,size,weight	21	A	
2008	VE5279		1		heavy workload, O2 =490	53	A	ECD
2008	VE5279		1		heavy workload, O2 =490	53	A	ECD
2008	VFT462		1		age,weight,size,qual-bilateral lungs	40	A	
2008	VFT462		1		age,weight,size,qual-bilateral lungs	40	A	
2008	VF2261		1		size	27	B	
2008	VF2261		1		size	27	B	
2008	VF2401		1		CXR=WNL,O2=523	42	O	DCD
2008	VF2401		1		CXR=WNL,O2=523	42	O	DCD
2008	VG270		1		org spec issue, bilateral lungs	49	O	
2008	VG270		1		org spec issue, bilateral lungs	49	O	
2008	VGX111		1		size,weight,organ-spec issue	40	A	
2008	VGX421		1		age, quality, bilateral lungs	19	O	
2008	VGX421		1		age, quality, bilateral lungs	19	O	
2008	VG3345		1		quality, bilateral lungs	28	O	
2008	VG3345		1		quality, bilateral lungs	28	O	
2008	VHB122		1		age,qual,organ-spec donor issue	56	O	ECD
2008	VH1167		1		DCD	38	B	DCD
2008	VH1167		1		DCD	38	B	DCD
2008	VJP332		1		size, quality, donor issue	21	A	
2008	VJP332		1		size, quality, donor issue	21	A	
2008	VLA067		1		O2 556, CXR=wnl, DCD	44	A	DCD
2008	VLA067		1		O2 556, CXR=wnl, DCD	44	A	DCD

LUNG = 73

2008	VAD314		1		size,weight,donor issue,Stat 1A	10	O	
2008	VAR475		1		pos crossmatch, Stat 1B recip	37	A	
2008	VA3242		1		pos crossmatch,weight,size	27	O	
2008	VBA420		1		unaccept antigens-only 1 recip	33	A	
2008	VBH464		1		pos crossmatch,no serum	35	O	
2008	VBI331		1		pos crossmatch,size,weight	44	O	
2008	VBQ128		1		pos crossmatch,size,weight	53	B	
2008	VBQ494		1		# HLA mismatches,donor issue	44	O	
2008	VBS309		1		organ spec donor issue,Stat 1A	14	A	
2008	VBR425		1		unaccept antigens,size,weight	36	A	
2008	VB1332		1		Zone A Stat 1A ABO Prim Cand	27	O	
2008	VCF459		1		pos crossmatch, Stat 1A	26	AB	
2008	VCF195		1		pos crossmatch, Stat 1B	17	A	
2008	VCX423		1		size,crossmatch issues	33	B	
2008	VDG147		1		size,weight,Stat 1A	32	O	
2008	VDK071		1		pos crossmatch,unaccept antigens	24	O	

EXPORTED ORGANS 2008 BY ORGAN

DATE	UNOS	LI	LU	HR	REASON	AGE	ABO	ECD/ DCD
2008	VDK400			1	unaccept antigens,size,weight	49	O	
2008	VD1460			1	pos crossmatch,size,weight	12	A	
2008	VEC245			1	pos crossmatch,unaccept antigens	33	B	
2008	VEQ049			1	pos crossmatch,# HLA mismat	21	A	
2008	VFA360			1	unaccept antigens,size,weight	11	B	
2008	VFF295			1	pos crossmatch,HLA,Stat 1A	18	A	
2008	VFI105			1	unaccept antigens,Stat 1A	36	A	
2008	VJF459			1	pos crossmatch,Stat 1A	54	A	
2008	VFM277			1	unaccept antigens,Stat 1B	19	B	
2008	VFM162			1	pos crossmatch,unaccept antigens	19	AB	
2008	VFP169			1	no instate recipients,Stat 1B	6	A	
2008	VFT462			1	pos crossmatch,size,weight,1B	40	A	
2008	VG410			1	size, weight, Stat 2A	12	A	
2008	VG3418			1	pos crossmatch, Stat 1B	61	A	ECD
2008	VG219			1	pos crossmatch, Stat 1B	10	A	
2008	VG5325			1	pos crossmatch, Stat 1B	16	B	
2008	VG3345			1	pos crossmatch,unaccept antigens	28	O	
2008	VHB230			1	no instate recipients, Stat 1A	3	O	
2008	VHF074			1	no instate recipients, Stat 1A	3days	A	
2008	VHN108			1	age,qual,size,weight,+ XM,St1A	11mos	O	
2008	VH5112			1	unaccept antigens,size,weight	47	A	
2008	VI4304			1	pos XM,size,weight,soc history	21	A	
2008	VJM218			1	Status 1A, size	20	B	
2008	VKA148			1	size, weight, pos XM	41	O	
2008	VKH187			1	size, pos XM	58	A	
2008	VKW144			1	Status 1 B	42	A	
2008	VK3037			1	Directed Donation	23	O	
2008	VLA366			1	Status 1A	6	O	
2008	VLV257			1	Status 1A	21	A	
2008	VL1427			1	unaccept antigens	22	AB	
2008	VF1077			1	COD unknown, EF = 40-50	29	O	
2008	VJY270			1	quality, EF 40% to 55%	31	O	
2008	VKB139			1	EF 55%, trace mitral & tri regurg	46	O	
2008	VKP300			1	EF 45% - 65%	56	A	ECD
2008	VLM275			1	age	51	B	
2008	VLY439			1	jail time, smoking hx, size	25	O	
HEART =				52				

TOTAL	168	43	73	52
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Attachment B

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EXPORTED ORGANS 2007 BY ORGAN

DATE	UNOS	LI	LU	HR	REASON	AGE	ABO	ECD/ DCD
2007	UKX391	1			no instate recipients	21	AB	
2007	UL5415	1			no local AB recip	61	AB	ECD
2007	UKA052	1			no instate recip printed	86	A	ECD
2007	UAC056	1			no recip hi MELD	41	A	
2007	UAP203	1			no recip on match	4	AB	
2007	UAU197	1			no recip on match	21	AB	
2007	UBD150	1			size, split liver	7	AB	
2007	UBD453	1			no recip on match	1 mo	A	
2007	UBI088	1			Region 10 sharing	17	O	
2007	UDD298	1			size, en bloc	2 mos	O	
2007	UDM462	1			Region 10 sharing	5	O	
2007	UEA150	1			no recip on match, age 8	8	A	
2007	UFM093	1			MP30, placed as cluster	2	A	
2007	UGB064	1			placed as cluster with PA & IN	15	O	
2007	UGJ025	1			placed as cluster with PA & IN	8mos	A	
2007	UGO097	1			UNOS peds liver/int protocol	17mos	A	
2007	UGO261	1			UNOS peds liver/int protocol	4	A	
2007	UGX177	1			status 1A	12	A	
2007	UG2110	1			Intestine block	15mos	A	
2007	UIB008	1			no instate status 1A recip	20	O	
2007	UIO357	1			no instate recip printed	3mos	O	
2007	UIT175	1			status 1A	53	O	
2007	UJB349	1			left lobe, no instate recipients	6	O	
2007	UJ2108	1			no local recip w/ MP > 15	66	AB	ECD
2007	UKT308	1			auto rule out instate due to ag	81	B	ECD
2007	UKZ408	1			no instate recip printed	13	AB	
2007	UL1111	1			placed with pancreas	8	O	
2007	UAY026	1			LDH=1504,AIP=150	48	AB	
2007	UCF360	1			age 81	81	B	ECD
2007	UCP204	1			age 80	80	O	ECD
2007	UIZ457	1			age,DCD	52	A	DCD
2007	UJI256	1			age, quality	61	A	ECD
2007	UJX012	1			age,pos serology,HTN,diabet	78	O	ECD
2007	UKO143	1			positive serologies	46	O	DCD
2007	UGY137	1			70% fat	59	O	DCD
2007	UH2466	1			elev labs,size,quality	44	O	
2007	UKC390	1			bedside biopsy 40-50% steat	51	O	ECD
2007	ULB072	1			quality,organ-spec donor issu	22	O	
2007	TL5013	1			age, HTN, DM, surg	70	A	ECD
2007	UAI362	1			Glioblastoma	54	A	
2007	UAY029	1			AST=1625, ALT=665	42	A	
2007	UAX465	1			40% macro, & micro	49	B	
2007	UBS256	1			Bx - 60% fat	62	O	ECD
2007	UBQ491	1			AST-770,ALT-446	54	A	
2007	UCK210	1			CPK 19,290, ALT 482, AST 2	43	O	

Attachment B

2007	UCI209	1	837 organ specific issue	47	O	
2007	UDA441	1	AST-268, ALT-164, LDH-559	54	A	ECD
2007	UDD113	1	DCD, 60 min down time	38	B	DCD
2007	UDR176	1	Hep B, syphilis	80	B	ECD
2007	UDE398	1	Hep C, HTLV	48	O	
2007	UED414	1	DCD, High Risk - jail	43	AB	DCD
2007	UFK263	1	830 age/quality,834 + sero test	42	O	
2007	UF1208	1	biopsy results, MP 22	64	O	ECD
2007	UIA173	1	size, weight	60	AB	ECD
2007	UIL275	1	donor quality, ETOH history	51	A	
2007	UJ4194	1	DCD	53	A	
2007	UKC079	1	age, DCD	51	O	DCD
LIVER =		57				
2007	TL3232	1	size, infiltrates	24	O	
2007	TL3232	1	size, infiltrates	24	O	
2007	UAJ093	1	no recips on match	38	AB	
2007	UAX465	1	no recips on match	49	B	
2007	UAX465	1	no recips on match	49	B	
2007	UAX024	1	multi org needs	54	A	
2007	UAU197	1	no recips on match	21	AB	
2007	UAU197	1	no recips on match	21	AB	
2007	UC3317	1	813 unacceptable antigens	37	A	
2007	UC4163	1	no instate recipients	47	B	
2007	UC4163	1	no instate recipients	47	B	
2007	UDY037	1	no recips on match	53	AB	ECD
2007	UDY037	1	no recips on match	53	AB	ECD
2007	UEB335	1	no recip on match	63	O	ECD
2007	UEB335	1	no recip on match	63	O	ECD
2007	UE1046	1	size	34	B	
2007	UE1046	1	size	34	B	
2007	UEY466	1	size	44	B	
2007	UF1208	1	no instate recipients	64	O	ECD
2007	UF1208	1	no instate recipients	64	O	ECD
2007	UJB349	1	no instate recipients	6	O	
2007	UJB349	1	no instate recipients	6	O	
2007	ULX355	1	age, quality,size, weight	11	A	
2007	ULX355	1	age, quality,size, weight	11	A	
2007	ULY484	1	size, weight, bilateral lungs	64	A	ECD
2007	ULY484	1	size, weight, bilateral lungs	64	A	ECD
2007	UAI461	1	OD, CPR down time	24	AB	
2007	UAI461	1	OD, CPR down time	24	AB	
2007	UAR137	1	IVDA	34	AB	
2007	UAR137	1	IVDA	34	AB	
2007	UAU310	1	IVDA	36	O	
2007	UAU310	1	IVDA	36	O	
2007	UBE197	1	CAD, long intubation	34	O	
2007	UBE197	1	CAD, long intubation	34	O	
2007	UBQ491	1	COPD, size	54	A	
2007	UC3317	1	833 high risk social Hx	37	A	
2007	UDO226	1	adhesions found in OR	51	A	ECD
2007	UEC161	1	chest trauma, chest tubes	21	O	
2007	UEC161	1	chest trauma, chest tubes	21	O	
2007	UEF243	1	low O2 = 391	53	O	

Attachment B

2007	UEF243	1	low O2 = 391	53	O	
2007	UFJ377	1	donor quality	49	O	
2007	UFJ377	1	donor quality	49	O	
2007	UFQ397	1	quality,organ-specific donor is	18	A	
2007	UFR011	1	donor quality	18	A	
2007	UFR011	1	donor quality	18	A	
2007	UGF031	1	smoker,contusions,atelectasis	25	A	
2007	UGF031	1	smoker,contusions,atelectasis	25	A	
2007	UGS430	1	no serum,age/qual, size/weigl	46	O	
2007	UGS430	1	no serum,age/qual, size/weigl	46	O	
2007	UG5225	1	contusions	14	A	
2007	UG5225	1	contusions	14	A	
2007	UHF280	1	age	66	O	ECD
2007	UHF280	1	age	66	O	ECD
2007	UHK348	1	opacity on chest film	19	B	
2007	UHK348	1	opacity on chest film	19	B	
2007	UJD282	1	age/qual,organ spec donor iss	12	A	
2007	UJD282	1	age/qual,organ spec donor iss	12	A	
2007	UJG352	1	asthma	46	A	
2007	UJG352	1	asthma	46	A	
2007	UJG214	1	IVDA	20	O	
2007	UJG214	1	IVDA	20	O	
2007	UJK030	1	biohazard exposure	44	A	
2007	UJK030	1	biohazard exposure	44	A	
2007	UJO029	1	organ specific donor issue	34	A	
2007	UKC096	1	age,quality,high-risk soc histo	32	O	
2007	UKC096	1	age,quality,high-risk soc histo	32	O	
2007	UKG498	1	donor weight and size	48	AB	
2007	UKG498	1	donor weight and size	48	AB	
2007	UKS113	1	donor quality	25	O	
2007	UKS113	1	donor quality	25	O	
2007	UKX122	1	age, bilateral lungs	65	O	ECD
2007	UKX122	1	age, bilateral lungs	65	O	ECD
2007	UK3453	1	age,qual,size, weight,donor is	38	A	
2007	UK3453	1	age,qual,size, weight,donor is	38	A	
2007	ULM382	1	age, quality	78	O	ECD
2007	ULM382	1	age, quality	78	O	ECD
2007	ULR126	1	age, quality	62	O	ECD
2007	ULR126	1	age, quality	62	O	ECD
2007	ULR480	1	pos serological tests,bilat lung	56	O	ECD
2007	ULR480	1	pos serological tests,bilat lung	56	O	ECD

LUNG = 81

2007	UAA144	1	size	12	A	
2007	UAT132	1	size	21	O	
2007	UAQ476	1	size, jail, downtime	23	A	
2007	UAU197	1	no recips on match	21	AB	
2007	UBD453	1	no recips on match	1 mo	A	
2007	UBV254	1	age, size;	10 mos	O	
2007	UBW092	1	no recips on match	66	O	ECD
2007	UCV239	1	size, pos crossmatches	18	O	
2007	UC1160	1	instate recips pos crossmatch	25	A	
2007	UC4163	1	unacceptable HLA antigens	47	B	
2007	UED238	1	no recips on match	11	B	

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2007	UFB116	1	status 1B,code 810 and 813	34	B	
2007	UFF135	1	830 age	3mos	A	
2007	UFM093	1	size, status 1A	2	A	
2007	UFR010	1	rec already trans,size/organ si	29	O	
2007	UFR011	1	donor quality, donor size	18	A	
2007	UFW461	1	donor quality,unaccept.antigen	36	O	
2007	UGO097	1	list exhasted, age & quality	17mos	A	
2007	UGO261	1	no instate recipients	4	A	
2007	UG2110	1	Zone A Status 1A	15mos	A	
2007	UG5225	1	Status 1A	14	A	
2007	UHL398	1	size, ECHO	59	A	ECD
2007	UHO462	1	size, ECHO	4	O	
2007	UHQ433	1	pos crossmatch,code 830/31/	44	O	
2007	UH1356	1	no instate recipients	38	A	
2007	UJ4137	1	pos crossmatch,age, quality	49	O	
2007	UKJ486	1	Stat 1A, pos Xmatch, 831/837	42	O	
2007	UKX391	1	no instate recipients	21	AB	
2007	UL1111	1	age, quality, status 1A	8	O	
2007	UGF031	1	quality,organ specific donor is	25	A	
2007	ULJ466	1	already trans,organ dam/defec	25	A	
2007	UAU310	1	IVDA	36	O	
2007	UBS256	1	age, pressors	62	O	ECD
2007	UBW420	1	IVDA	34	O	
2007	UCB169	1	CPK>6,400, LDH-4,280,	40	O	
2007	UC3317	1	833 high risk social Hx	37	A	
2007	UC4051	1	donor social Hx, cocaine	45	A	
2007	UEB335	1	age 63	63	O	ECD
2007	UEF243	1	age 53	53	O	
2007	UEU043	1	bypass, age, smoking history	57	A	ECD
2007	UE1046	1	Poor ECHO	34	B	
2007	UFG047	1	Poor ECHO	54	O	
2007	UFI147	1	elevated CPV , size, weight	21	O	
2007	UFT454	1	830 donor age/quality	63	O	
2007	UFY146	1	ejection factor of 50%	16	A	
2007	UGI304	1	age/quality, status 1A recip	18	B	
2007	UGL157	1	downtime,cocaine history, EF	43	A	
2007	UIZ149	1	size/weight,organ spec don is	29	B	
2007	UKQ349	1	donor size and weight	34	A	
2007	ULS234	1	organ specific donor issue	50	A	

HEART = 50

TOTAL 188 57 81 50

Attachment B

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EXPORTED ORGANS 2006 BY ORGAN

DATE	CASE	LIV	LUN	HRT	REASON	AGE	ABO	ECD/ DCD
2006	5688255	1			Status 1 Region 10	47	O	
2006	5096760	1			no instate recip	3	O	
2006	5251519	1			split to 16 month old	24	O	
2006	5315068	1			size, no pt on match	3	B	
2006	5317593	1			size, no pt on match	1 mo	A	
2006	5345678	1			no instate recip	19 mos	A	
2006	5339298	1			age, en bloc	18 mos	O	
2006	5395745	1			Reg 10 Sta 1B, split	32	O	
2006	5413405	1			Region 10 Status 1A	50	A	
2006	5424758	1			size, no pt on match	4	B	
2006	5492582	1			size, no recip match	34	AB	
2006	5535137	1			size, recip better	12	O	
2006	5616127	1			size	6	B	
2006	5662877	1			size, SPLIT LIVER	6	O	
2006	5662877	1			size, SPLIT LIVER	6	O	
2006	5777708	1			size, DM, low O2, EF	51	O	ECD
2006	5153655	1			recipient issues	76	O	ECD
2006	5189038	1			Hep C	56	B	
2006	5282933	1			fibrosis, necrosis	56	A	ECD
2006	5330376	1			HTN, IDDM	53	B	ECD
2006	5454701	1			50% fat, adhesions	61	A	ECD
2006	5699554	1			astrocytoma	36	O	DCD
2006	5492303	1			fatty, yellow, rounded	57	O	ECD
2006	5503902	1			30% fat, no flush, WIT	54	O	DCD
2006	5176923	1			Hx of CA	37	A	DCD
2006	5432064	1			BMI 52, 60% macro	33	O	
2006	5436127	1			age, DCD, distance	51	O	DCD
2006	5154255	1			age, no bedside Bx	76	A	ECD
2006	5202401	1			pass for age	76	A	ECD
2006	5225235	1			size, prison Hx	27	AB	
2006	5235179	1			too busy; single recip	15	O	
2006	5245580	1			size, surg Hx, dialys	62	A	ECD
2006	5255136	1			aplastic anemia	59	O	
2006	5296176	1			Tylenol OD	56	A	
2006	5351782	1			IVDA	37	O	
2006	5326545	1			elevated LFT, DCD	50	A	DCD
2006	5357693	1			age	75	O	ECD
2006	5350872	1			prior heart Tx	39	O	
2006	5348199	1			pressors	60	A	ECD
2006	5332869	1			HTN, IDDM, Hep B	67	O	ECD
2006	5451282	1			previous TX, 3 days	39	A	
2006	5449481	1			Hep B, CAD, HTN,	33	O	
2006	5472124	1			age 79	79	O	ECD
2006	5482916	1			AST 851, ALT 207	41	O	

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2006	5507317	1	liver lacerations	23	O	
2006	5523854	1	age, ETOH,	71	A	ECD
2006	5536968	1	IVDA, pos for Hep C	25	AB	
2006	5555718	1	DCD, labs > 400	38	O	DCD
2006	5614407	1	DCD, low BP	15	O	DCD
2006	5746716	1	Hep C	59	O	ECD
LIVER = 50						
2006	5699427	1	no pt on match run	17	O	
2006	5195339	1	no recips on Match	36	O	
2006	5195339	1	no recips on Match	36	O	
2006	5237471	1	size; Hr-Lu block	51	A	
2006	5237471	1	size; Hr-Lu block	51	A	
2006	5259962	1	size	34	A	
2006	5259962	1	size	34	A	
2006	5299881	1	size	53	A	ECD
2006	5299881	1	size	53	A	ECD
2006	5316758	1	no pt on match run	44	O	
2006	5316758	1	no pt on match run	44	O	
2006	5398893	1	AB, no pt on match	24	AB	
2006	5404842	1	size, 6'3"	18	O	
2006	5404842	1	size, 6'3"	18	O	
2006	5458208	1	size, sputum cult	52	A	ECD
2006	5458208	1	size, sputum cult	52	A	ECD
2006	5650356	1	no recips on Match	23	O	
2006	5667479	1	size, pneumothorax	49	A	
2006	5667479	1	size, pneumothorax	49	A	
2006	5636108	1	size, low O2	51	O	
2006	5636108	1	size, low O2	51	O	
2006	5672414	1	size, smoking Hx	53	A	ECD
2006	5672414	1	size, smoking Hx	53	A	ECD
2006	5662877	1	1A, Ht-Lu en bloc	6	O	
2006	5662877	1	1A, Ht-Lu en bloc	6	O	
2006	5665621	1	1B, Ht - Lu en bloc	20	B	
2006	5665621	1	1B, Ht - Lu en bloc	20	B	
2006	5682778	1	size, Ht-Lu en bloc	23	A	
2006	5682778	1	size, Ht-Lu en bloc	23	A	
2006	5678822	1	no recips on Match	22	B	
2006	5694781	1	size, 71",81 kg	49	O	
2006	5688214	1	no recips on match	34	O	
2006	5688214	1	no recips on match	34	O	
2006	5699427	1	no pt on match run	17	O	
2006	5698520	1	size, low O2	55	A	ECD
2006	5698520	1	size, low O2	55	A	ECD
2006	5765128	1	no recips on match	67	A	ECD
2006	5765128	1	no recips on match	67	A	ECD
2006	5583635	1	no recips on match	40	A	
2006	5583635	1	no recips on match	40	A	
2006	5089425	1	size age, high risk	58	O	ECD
2006	5089425	1	size age, high risk	58	O	ECD
2006	5121879	1	pass for Hep B	45	O	
2006	5121879	1	pass for Hep B	45	O	
2006	5128906	1	low O2, 346	43	B	

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2006	5128906	1	low O2, 346	43	B	
2006	5130666	1	size, smoking Hx	53	O	
2006	5251456	1	size, Gram stain	25	O	
2006	5269464	1	Hx smoking, cocaine	49	O	
2006	5345391	1	size, low O2	41	B	
2006	5345391	1	size, low O2	41	B	
2006	5413405	1	smoking hx	50	A	
2006	5413405	1	smoking hx	50	A	
2006	5492392	1	pus in lungs	42	A	
2006	5492392	1	pus in lungs	42	A	
2006	5493866	1	size, O2 = 393	43	O	
2006	5493866	1	size, O2 = 393	43	O	
2006	5566072	1	cocaine use	24	A	
2006	5566072	1	cocaine use	24	A	
2006	5567542	1	brown secretions	59	O	ECD
2006	5567542	1	brown secretions	59	O	ECD
2006	5618260	1	gram stain	38	O	
2006	5618260	1	gram stain	38	O	
2006	5650293	1	prev renal transplant	47	A	
2006	5656139	1	edema, downtime	53	O	
2006	5656139	1	edema, downtime	53	O	
2006	5667447	1	downtime, DCD	47	O	DCD
2006	5667447	1	downtime, DCD	47	O	DCD
2006	5642351	1	STD	21	O	
2006	5642351	1	STD	21	O	
2006	5719817	1	45 pack year hx	48	A	
2006	5719817	1	45 pack year hx	48	A	

LUNG = 72

2006	5101649	1	size, cross match	18	A	
2006	5237471	1	size; Hr-Lu block	51	A	
2006	5308598	1	size, HLA	53	A	
2006	5317593	1	no pts on match run	1 mo	A	
2006	5407573	1	size, cath, Status 1A	52	O	
2006	5458208	1	size, no recip match	52	A	ECD
2006	5453378	1	size	30	A	
2006	5488391	1	Pos XM & HLA	44	A	
2006	5479677	1	size and swan	41	A	
2006	5492582	1	XM, no recip match	34	AB	
2006	5492392	1	XM, size, no recip	42	A	
2006	5507317	1	size, pos XM	23	O	
2006	5535137	1	no recip on match	12	O	
2006	5532228	1	size and XM	19	O	
2006	5562747	1	size	18	A	
2006	5585210	1	no recip, size, ABO	1	B	
2006	5608787	1	size, no recip match	44	O	
2006	5665621	1	1B, Ht - Lu en bloc	20	B	
2006	5668855	1	no recip on match	34	B	
2006	5662877	1	1A, Ht-Lu en bloc	6	O	
2006	5680387	1	XM, recip ill, high risk	39	O	
2006	5682778	1	size, Ht-Lu en bloc	23	A	
2006	5698520	1	unacc Ag, Status 1A	55	A	ECD
2006	5713924	1	no recip on match	8 mos	A	

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2006	5719817	1	size	48	A	
2006	5699427	1	no recips on match	17	O	
2006	5756038	1	no recips on match	45	B	
2006	5736860	1	pos XM, med Hx	28	O	
2006	5765479	1	size	31	O	
2006	5783754	1	size	22	A	
2006	5089425	1	size age, high risk	58	O	ECD
2006	5245575	1	poor ECHO	33	O	
2006	5310403	1	Hx smoking	50	A	
2006	5514400	1	hypoxia, hypokinesia	34	O	
2006	5566072	1	cocaine use	24	A	
2006	5618260	1	size, "quality"	38	O	
2006	5738184	1	ECHO	26	O	

HEART **37**

TOTAL **159** **50** **72** **37**



MICHIGAN ORGAN & TISSUE DONATION PROGRAM

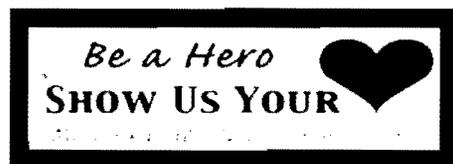
GIVE SO OTHERS CAN LIVE

Last year, 922 organs were transplanted. So far this year, the generosity of Michigan donors has led to 297 transplants and saved numerous lives.

**Michigan Patients Currently Waiting For a Transplant
May 1, 2009**

Kidney	2429
Liver	308
Lung	43
Kidney/Pancreas	45
Heart	85
Pancreas	23
Kidney/Liver	19
Kidney/Heart	1
TOTAL	2953

Every day hundreds of people in our state are in need of other tissues such as heart valves, veins, tendons, bone, and corneas in order to survive or maintain their quality of life.



**Sign up on the Michigan Organ Donor Registry today
online at giftoflifemichigan.org or call 800.482.4881**



Gift of Life Michigan Deceased Organ Donor Outcomes 1984 thru 2008

MICHIGAN ORGAN & TISSUE DONATION PROGRAM

GIVE SO OTHERS CAN LIVE

	HEART				LUNG				LIVER				INTESTINES				PANCREAS				KIDNEY			
	ORGANS RECOVERED	EXP.	IMP.	LOCALLY TXP'D	ORGANS RECOVERED	EXP.	IMP.	LOCALLY TXP'D	ORGANS RECOVERED	EXP.	IMP.	LOCALLY TXP'D	ORGANS RECOVERED	EXP.	IMP.	LOCALLY TXP'D	ORGANS RECOVERED	EXP.	IMP.	LOCALLY TXP'D	ORGANS RECOVERED	EXP.	IMP.	LOCALLY TXP'D
1984 ¹	15	11	0	4	N/A	N/A	N/A	N/A	12	12	0	0	N/A	N/A	N/A	N/A	11	0	0	6	242	12	29	235
1985	36	16	2	22	N/A	N/A	N/A	N/A	21	18	1	4	N/A	N/A	N/A	N/A	16	0	0	12	290	17	13	264
1986	44	13	4	35	N/A	N/A	N/A	N/A	32	27	1	6	N/A	N/A	N/A	N/A	23	0	0	22	310	7	8	290
1987	60	9	11	62	N/A	N/A	N/A	N/A	43	23	13	31	N/A	N/A	N/A	N/A	11	0	0	11	284	14	8	256
1988	56	12	7	51	0	0	0	0	60	38	32	54	N/A	N/A	N/A	N/A	7	1	0	6	254	22	28	237
1989	56	17	10	48	0	0	0	0	75	27	52	97	N/A	N/A	N/A	N/A	7	2	0	4	270	34	26	232
1990	56	9	10	55	7	3	0	3	93	38	40	91	N/A	N/A	N/A	N/A	6	3	0	3	270	49	43	245
1991	49	13	6	40	23	5	1	19	109	33	20	91	N/A	N/A	N/A	N/A	6	6	0	0	341	73	51	280
1992	48	13	3	37	24	7	0	17	101	26	24	86	N/A	N/A	N/A	N/A	18	3	0	12	318	50	36	278
1993	70	19	5	47	17	6	3	10	120	39	10	78	N/A	N/A	N/A	N/A	51	14	1	31	306	44	40	273
1994	71	26	4	42	22	1	2	17	140	39	12	96	N/A	N/A	N/A	N/A	70	13	3	40	355	68	49	298
1995	71	23	2	47	46	16	0	29	123	13	11	106	N/A	N/A	N/A	N/A	44	4	2	35	324	78	70	282
1996	62	16	1	46	45	10	5	35	115	14	5	94	N/A	N/A	N/A	N/A	49	5	2	33	304	88	59	243
1997	64	18	4	50	40	11	6	34	115	27	2	80	N/A	N/A	N/A	N/A	29	3	2	23	300	67	52	251
1998	73	18	10	85	41	7	12	51	154	36	14	151	3	3	N/A	0	27	5	3	75	371	90	65	440
1999	67	20	10	69	45	6	10	47	149	37	8	132	4	4	N/A	0	45	18	1	64	350	76	48	388
2000	77	15	9	83	64	7	6	57	159	46	10	139	2	2	N/A	0	41	23	0	43	358	101	59	409
2001	76	13	6	75	58	6	10	59	165	32	13	162	3	3	N/A	0	37	14	1	27	404	103	55	447
2002	72	32	10	61	63	14	4	35	180	34	6	157	8	8	N/A	0	34	8	2	30	411	90	64	488
2003	64	22	12	68	41	8	1	29	175	32	19	181	5	5	N/A	0	33	9	1	30	371	75	55	456
2004	72	32	11	64	76	16	1	34	252	37	16	248	8	8	N/A	0	61	18	3	71	449	69	47	569
2005	83	42	13	52	105	32	7	74	235	44	28	189	8	8	N/A	0	65	16	3	29	463	91	63	327
2006	83	37	14	55	125	72	16	88	247	50	26	186	5	5	N/A	0	80	21	2	54	521	132	68	383
2007	86	50	14	48	131	81	14	92	234	57	20	175	13	13	N/A	0	54	25	3	41	526	175	82	378
2008	85	52	20	52	136	73	11	101	239	43	30	201	4	4	N/A	0	53	28	1	25	585	171	92	401

¹ 1984, National Organ Transplant Act (NOTA) passed to create the Organ Procurement Transplant Network (OPTN) and the Scientific Registry of Transplant Recipients (SRTR)

² First pancreas listed in Michigan 4/10/84

³ First heart listed in Michigan 6/14/85

⁴ First liver listed in Michigan 6/14/85

⁵ First lung listed in Michigan 7/30/85

Transplantation Basics

Heart/Lung Liver Transplantation Services Standards Advisory Committee

Lansing Michigan
May 19, 2009

Jeffrey D. Punch MD
Jeremiah and Claire Turcotte Professor
of Transplantation Surgery
Chief, Division of Transplantation
University of Michigan
jpunch@umich.edu

- Brief History
- Demographics and Allocation
 - Heart
 - Lung
 - Liver

History of Organ Transplantation

- 1954 First successful kidney transplant (twins)
- 1967 First successful liver transplant
- 1968 First successful heart transplant
- 1983 First successful lung transplant

Eras of Organ Transplantation

- 1950's- 60's
- 1970's
- 1983
- 1990 – present
- 2009
- Experimental Surgery
- Slow progress
- Cyclosporine introduced; growth begins
- Standard of Care; Organ shortage appears
- 8078 Organ Donors in most recent year (322 in Michigan)

Modern Transplantation

- NOTA 1984
 - OPTN Organ Procurement and Transplantation Network
 - UNOS granted OPTN contract in 1985
 - SRTR Scientific Registry of Transplant Recipients
 - Arbor Research (A²) granted SRTR in 2000
- March 16, 2000 HHS implemented “Final Rule”
 - Mandated sickest first allocation
- Enforced through Medicare “Conditions of Participation” by DHHS



UNITED NETWORK FOR ORGAN SHARING



it's all about life

People like you and me need organ transplants in order to live. Their second chance at life is made possible because people like us decided to be organ and tissue donors.

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The time is now >>

data

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Waiting list candidates	101,058 as of today 8:38am
Transplants January - December 2008	27,958 as of 03/06/2009
Donors January - December 2008	14,204 as of 03/06/2009

[About Data Counts](#) ▶

calendar

March 08 - 14, 2009

- U.S. Daylight Savings Time Starts
- OPTN/UNOS Region 1 Meeting
- Purim
- NATCO CCTC & OPTC Review Courses

17TH ANNUAL
UNOS TRANSPLANT
MANAGEMENT FORUM

APRIL 22-24, 2009
SEATTLE, WA

news

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- March 03, 2009** [OPTN/UNOS Board Addresses International Definitions of Transplant Tourism](#)
Houston -- The OPTN/UNOS Board of Directors, at its meeting today, adopted a series of definitions differentiating between concepts such as organ trafficking, transplant tourism and travel for...
- March 02, 2009** [OPTN/UNOS Officers and Board Members Elected](#)
Richmond, Va. -- Members of the national Organ Procurement and Transplantation Network (OPTN) have elected 18 members to its Board of Directors, including a new president, vice president/president...
- March 02, 2009** [Selected Articles from UNOS Update Now Online](#)
Selected feature articles from the January/February 2009 issue of the UNOS Update are now available in PDF format in the Resources section of the UNOS Web site.
- February 06, 2009** [Policy Proposals Issued for Public Comment](#)
Eight policy proposals are now being offered for public comment. These proposals were developed by a number of OPTN/UNOS committees.
- January 26, 2009** [National Kidney Allocation Concepts Discussed in Public Forum](#)
St. Louis, MO -- The OPTN/UNOS Kidney Transplantation Committee hosted a public forum today to discuss concepts for kidney allocation. More than 200 people participated, both in person and over an...
- January 13, 2009** [Register Now for the 2009 UNOS Transplant Management Forum](#)
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quick links

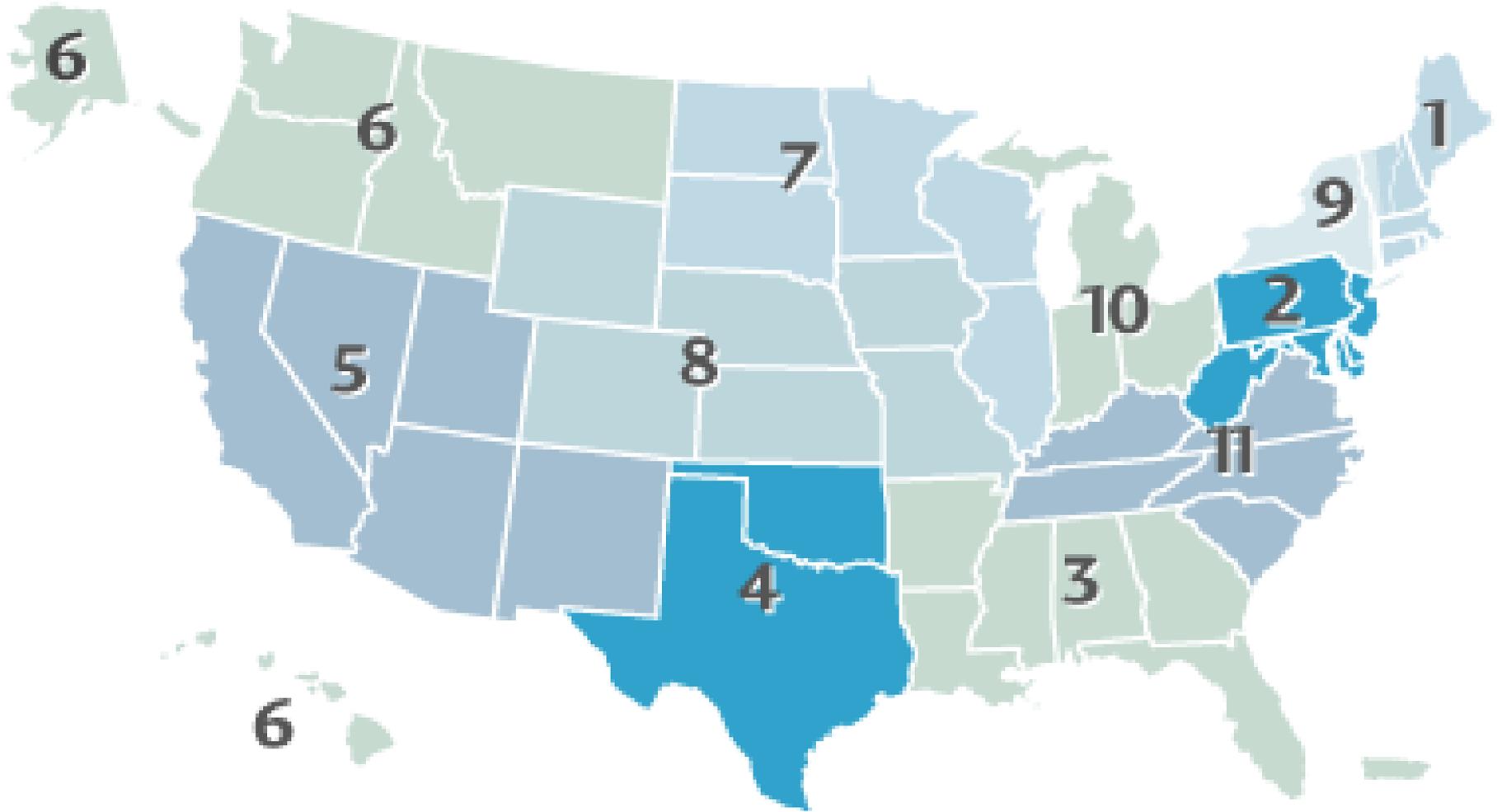
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Patient Survival Rates

Learn More >>

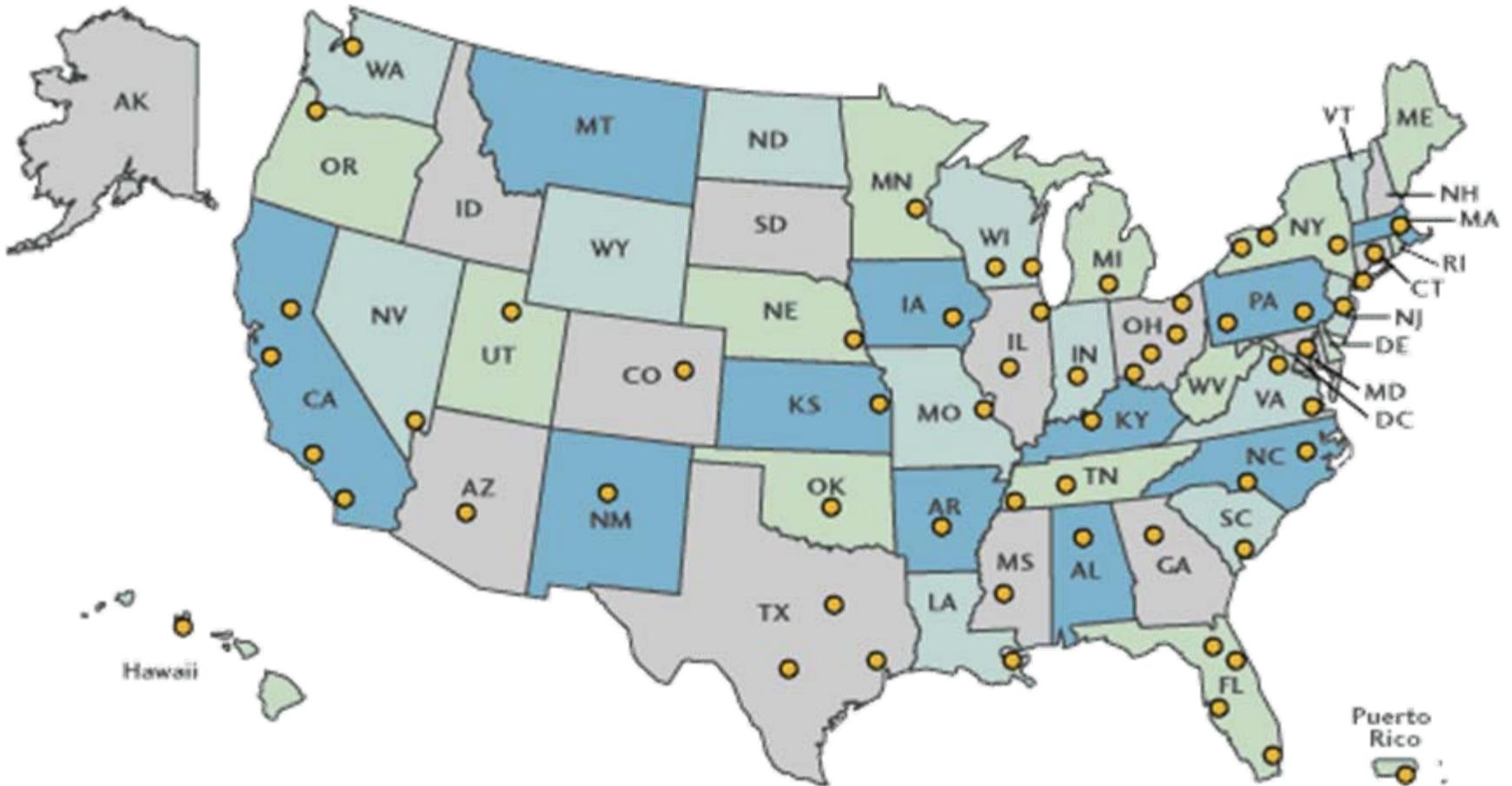
Looking for info on kidney allocation policy

Regions



Attachment D

Organ Procurement Organizations (OPO's)



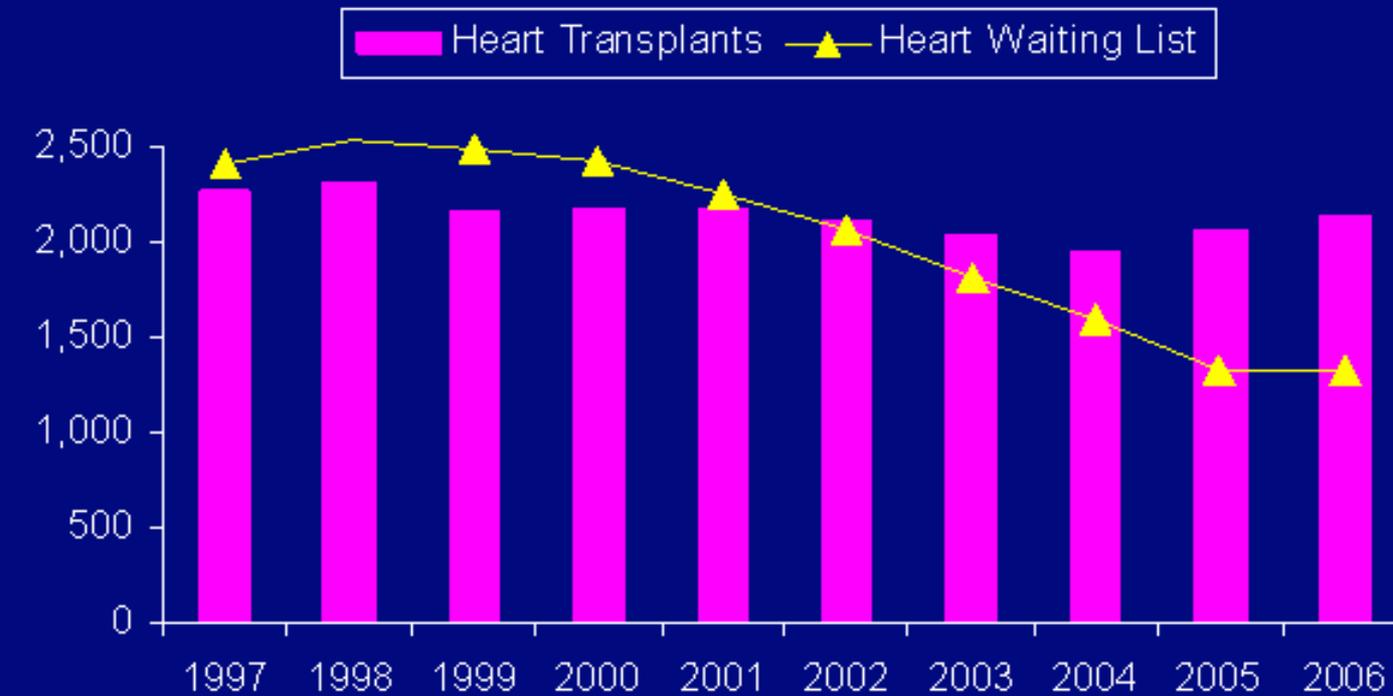
Heart Transplantation

- 2136 Transplants last year in the U.S.
 - 55 in Michigan
- Indications:
 - Cardiomyopathy (51%)
 - Coronary Artery Disease (37%)
 - Congenital (9%)
 - Other (3%)

Heart Transplantation

- “Shelf life” of a heart: ~3-4 hours
- Matching:
 - Blood type
 - Size
 - Histocompatibility important for ~50%
- 27% Of U.S. organ donors are able to donate a heart (25% in Michigan)

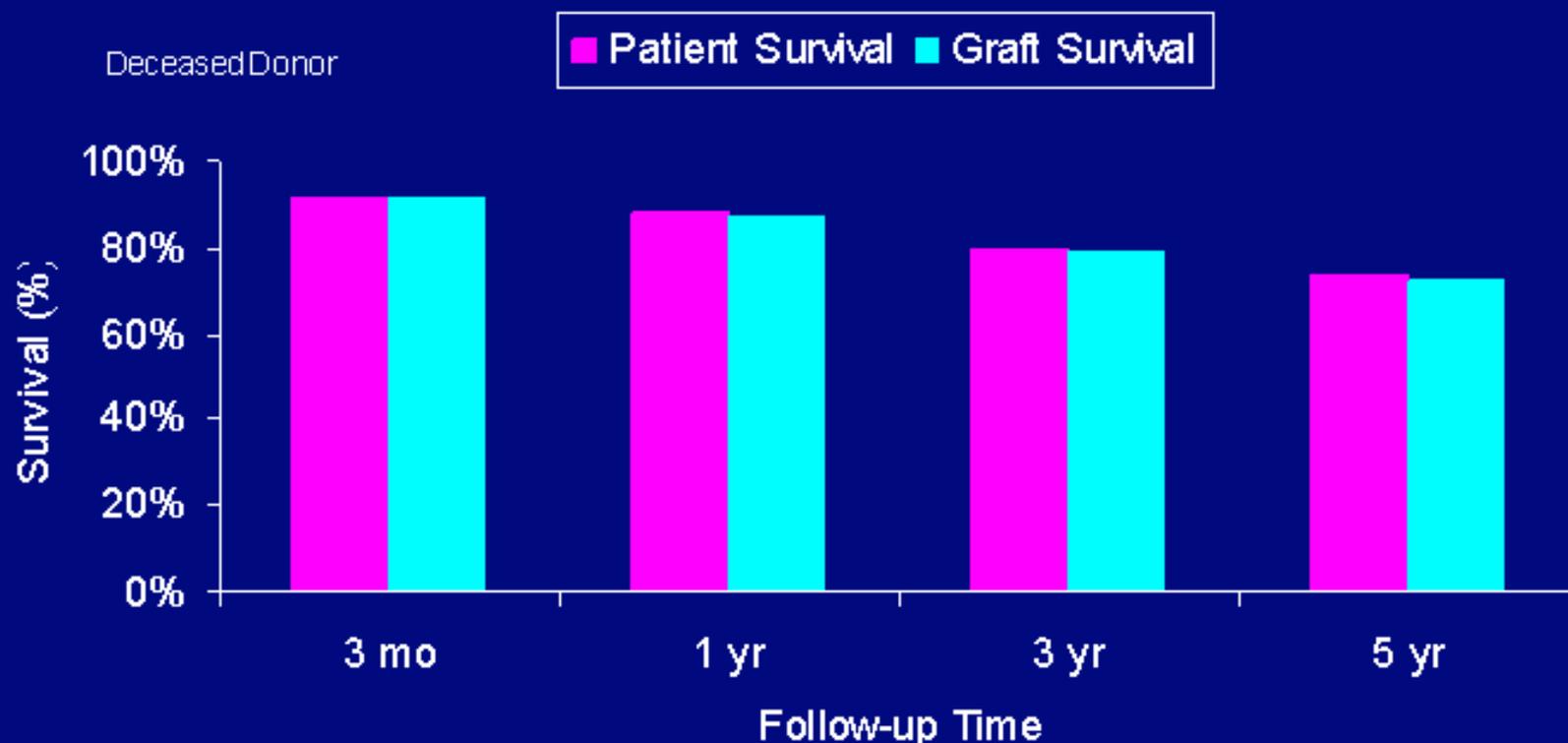
Figure I-19. Number of Transplants and Size of Active Waiting List.



The number of heart transplants increased in 2005 and 2006 after several years of gradual reduction. The number of patients awaiting a heart decreased steeply since 2000, likely reflecting improvements in medical therapy.

Data from: 2007 OPTN/SRTR Annual Report, Tables 1.7, 11.1a.

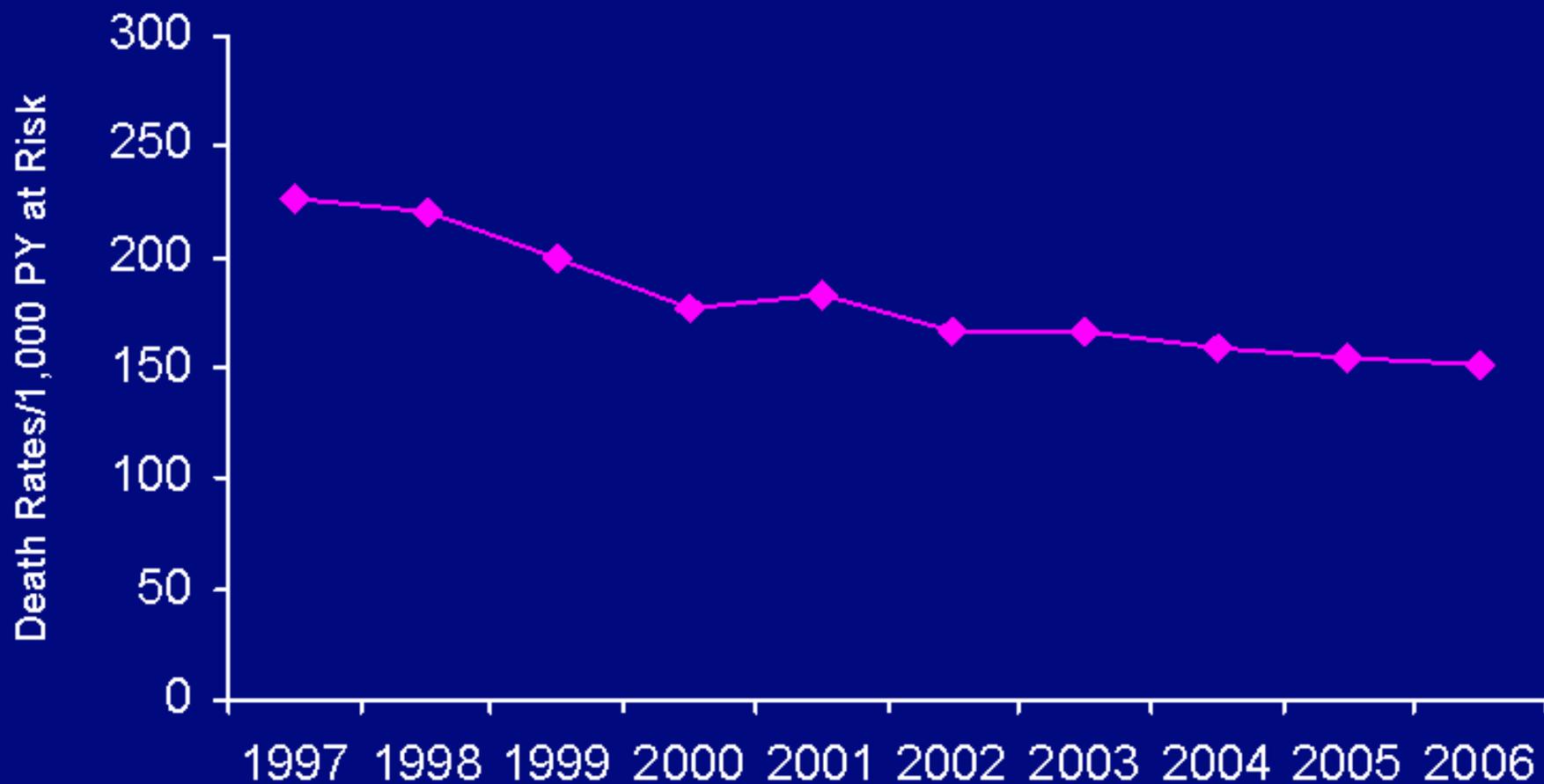
Figure I-21. Unadjusted Patient and Graft Survival.



Patient survival improved in recent years for heart recipients. At one and five years following heart transplantation, 88% and 74% of patients, respectively, were alive. Graft survival was very similar because very few patients may receive a second heart transplant after graft failure.

Data from: 2007 OPTN/SRTR Annual Report, Tables 11.10, 11.14.

Figure VI-2. Annual Death Rate of Patients Awaiting Heart Transplantation, per 1,000 Patient-Years at Risk, 1997-2006



Data From: 2007 OPTN/SRTR Annual Report, Table 11.3.



Allocation Algorithm: Heart

- UNOS Policy 3.7
- Allocates hearts based on status and distance between the donor hospital and the Transplant Center
- Local (State of Michigan)
- Concentric circles from the donor hospital
 - Zone A <500 nm
 - Zone B 500-1000 nm
 - Zone C 1000-1500 nm
 - Zone D 1500-2500 nm
 - Zone E >2500 nm

Allocation Algorithm: Heart

- Status 1A
 - Mechanical Assist (30 days only)
 - Left ventricular assist device
 - Total Artificial Heart
 - Intra-aortic balloon pump
 - ECMO
 - Mechanical ventilation
 - High dose intravenous infusion of medications to maintain blood pressure in ICU (14 days)

Allocation Algorithm: Heart

- Status 1B
 - Mechanical assist (no time limit)
 - Intravenous infusion of medications to maintain blood pressure (home or hospital)
- Status 2
 - Candidates that don't meet criteria for 1A or 1B
 - Uncommon (~10% of transplants)

Allocation Algorithm: Heart

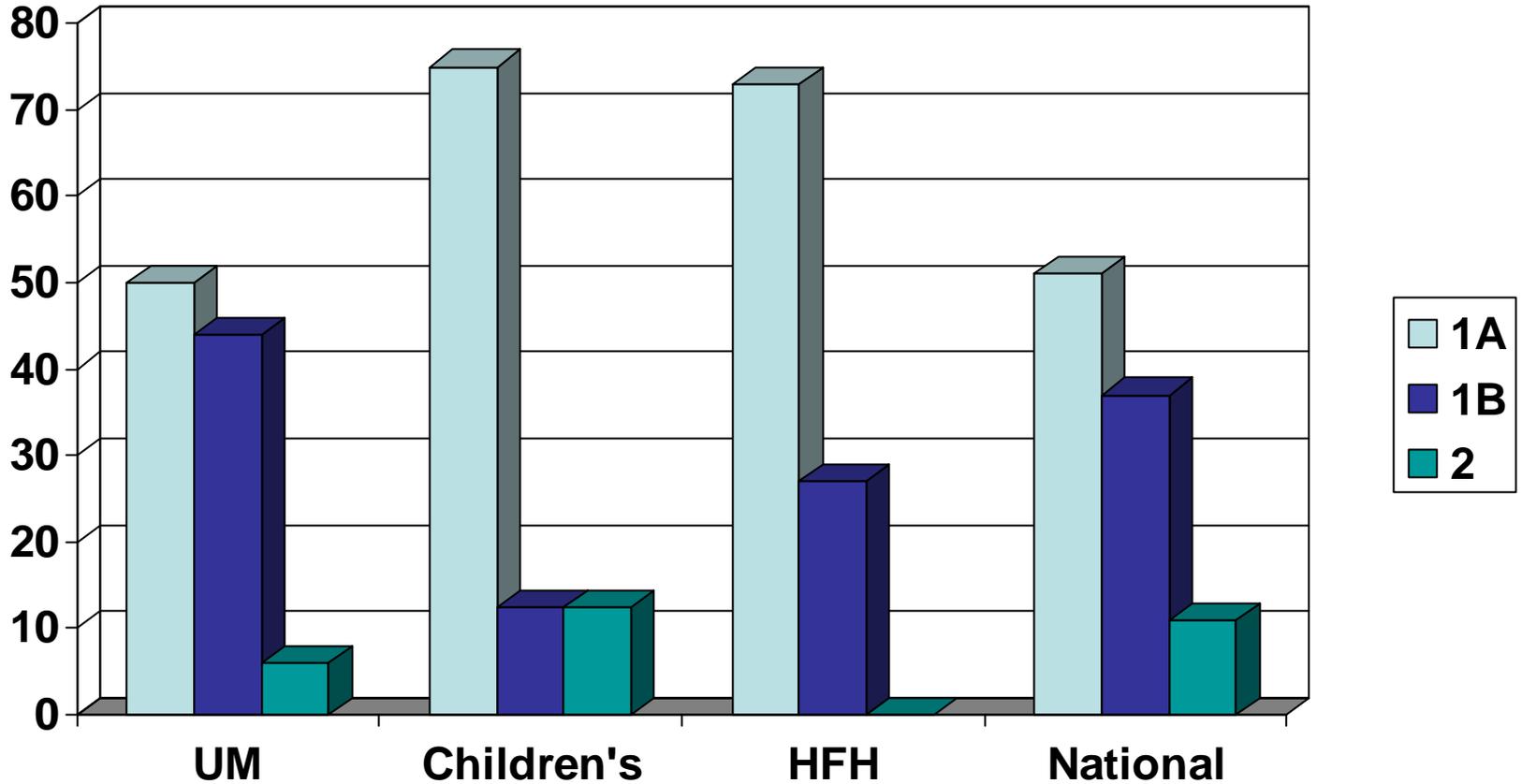
1. Local 1A
2. Local 1B
3. Zone A 1A
4. Zone A 1B
5. Local 2
6. Zone B 1A
7. Zone B 1B
8. Zone A 2
9. Zone B 2
10. Zone C 1A
11. Zone C 1B
12. Zone C 2
13. Zone D 1A
14. Zone D 1B
15. Zone D 2
16. Zone E 1A
17. Zone E 1B
18. Zone E 2

Allocation Algorithm: Heart

MAJORITY

1. Local 1A
2. Local 1B
3. Zone A 1A
4. Zone A 1B
5. Local 2
6. Zone B 1A
7. Zone B 1B
8. Zone A 2
9. Zone B 2
10. Zone C 1A
11. Zone C 1B
12. Zone C 2
13. Zone D 1A
14. Zone D 1B
15. Zone D 2
16. Zone E 1A
17. Zone E 1B
18. Zone E 2

Who gets transplanted?



ustransplant

Scientific Registry of Transplant Recipients



[Information for Patients & Families](#)



[Information for Transplant Community & Policy Makers](#)



[Information for Researchers](#)

Supporting the transplant community with analyses to improve patient outcomes.

The Scientific Registry of Transplant Recipients is a national database of statistics related to solid organ transplantation - kidney, liver, pancreas, intestine, heart, and lung. The registry covers the full range of transplant activity, from organ donation and waiting list candidates to transplant recipients and survival statistics. Its purpose: to support the development of sound policy, to encourage research on issues of importance to the transplant community, and to facilitate responsible analysis of transplant programs and OPOs. [Learn more...](#)

Recent News

Thoracic Cohort Change for July 2009

On July 14, 2009, the SRTR will release the next version of the Program-Specific Reports. One important change to note at this time is that the one year survival cohort of transplants for thoracic organs will have sufficient follow-up data for all the transplants occurring up until June 30, 2008. We will, therefore, move this cohort ahead to have the cohorts of all organ programs synchronized. Please see <http://www.ustransplant.org/csr/current/timeline.aspx> for a complete list of important dates for the upcoming Program-Specific Reports.

New Center and OPO Specific Reports Published January 13, 2009

On January 13, 2009, the SRTR released the newest version of the Program-Specific Reports. Released every six months, these reports provide different measures of performance and characteristics about each transplant program and OPO in the United States, including waitlist outcomes, post-transplant survival, and organ recovery and transplantation rates.

[View Current Program-Specific Reports for all transplant centers and OPOs](#)

2007 Annual Report

- [Current Annual Report](#)
- [Survival Rates](#)
- [Chapters](#)
- [Data Tables](#)

Transplant Program and OPO Specific Data

- [Transplant Program and OPO Specific Reports](#) describe the activity and outcomes at each transplant center in the US.
- [Background and Methodology](#)
- [Risk-Adjustment Models](#)
- [Upcoming Program and OPO Reports](#) (July 2009)
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[Fast Facts](#) give an overview of recent waiting list and transplant activity

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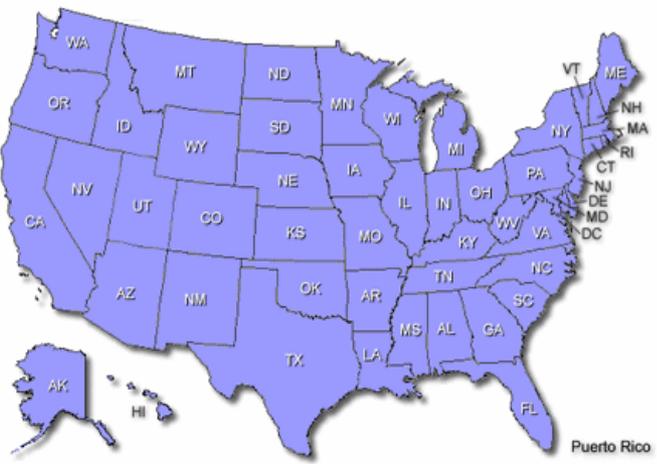
About the SRTR | National Transplant Statistics | Program and OPO Data | Research Resources

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Transplant Program and OPO-Specific Reports January 2009

SRTR Program-specific reports include statistics about organ donation and recovery, waitlist activity such as transplant rate, and post-transplant outcomes such as graft and patient survival. These reports are published every six months with revised data about each Organ Procurement Organization and Transplant Program operating in the United States.

Option 1: See the full report for a given Transplant Program or OPO. Begin by choosing a state of interest:



- * [Aggregate National Reports](#)
- * [Alphabetical List of States](#)

Option 2: PDFs are available listing some specific outcomes, each for all programs in the country. It is recommended that users first familiarize themselves with the statistics and methodologies in individual reports (above) before selecting from the drop-downs below:

All Transplant Centers:	Kidney	Table 01: Waitlist Activity	Get Report
All OPOs:	Table 1 (Deceased donors and Organs recovered at this OPO)		Get Report



Choose an audience

Transplant Program and OPO Specific Data

- [Transplant Program and OPO Specific Reports](#) describe the activity and outcomes at each transplant center in the US.
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2007 Annual Report

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Attachment D

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Program and OPO Specific Reports January 2009

Select a Transplant Center or OPO/DSA serving MichiganMichigan:
Return to the [Map](#)

- [Kidney Centers](#)
- [Pancreas Centers](#)
- [Kidney-Pancreas Centers](#)
- [Heart Centers](#)
 - [Children's Hospital of Michigan, Detroit, MI, MICTX1HR](#)
 - [Henry Ford Hospital, Detroit, MI, MIHFTX1HR](#)
 - [University of Michigan Medical Center, Ann Arbor, MI, MIUMTX1HR](#)
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Transplant Program and OPO Specific Data

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Attachment 1
Table 1. Patient Survival by Age and by Time since First Transplant of This Organ Type
For Patients Receiving their First Transplant of this type between 01/01/2005 and 06/30/2007 for the 3 Year Cohort
and 06/30/2005 for the 3 Year Cohort

Center: University of Michigan Medical Center (MIUM)

Organ: HR: Heart (Single-Organ Transplants Only; Re-transplants excluded)

	Patient Survival by Time		
	1 Month	This Center 1 Year	3 Years
Adult (Age 18+)			
Transplants (n=number) ¹	71	71	56
Percent (%) of Patients Surviving at End of Period			
Observed at this Center ²	100.00	92.96	92.86
Expected, based on national experience ³	95.36	87.94	78.85
Deaths During Follow-up Period			
Observed at this center	0	5	4
Expected, based on national experience ⁴	3.41	9.17	13.07
Ratio: Observed to Expected (O/E) (95% Confidence Interval) ⁵	0.00 (0.00-1.08)	0.54 (0.18-1.27)	0.31 (0.08-0.78)
P-value (2-sided), observed v. expected ⁶	0.066	0.211	<0.01
How does this center's survival compare to what is expected for similar patients?	Not Significantly Different (a)	Not Significantly Different (a)	Statistically Higher (b)
Percent retransplanted	0.0	0.0	0.0
Follow-up days reported by center (%) ⁷	100.0	94.0	98.2
Maximum Days of Follow-up (n)	30	365	1,095

Access to Heart Transplant in Michigan?

- Time to transplant
- Transplant Rate
- Waiting List Mortality Rate

Median Time To Heart Transplant (Months)

	Percentile		
	10 th	25 th	50 th
Michigan	0.6	2.1	4.8
National	0.3	1.1	4.8

What is the “Transplant Rate”?

- Transplant Rate=
$$\frac{\text{Transplants}}{\text{Patient years on list}}$$
- Expected Transplant Rate is adjusted for:
 - Urgency status
 - Age
 - Blood type
 - Waiting time
 - Previous transplant

Transplant Rate

	Transplant Rate	Expected Transplant Rate
Michigan	0.80	0.87
National	0.83	-

Wait list death rates in Michigan Heart

	Transplants	Wait list	Deaths	Death Rate (per year on list)
Michigan	55	65	10	14%
National	2136	2607	483	18%

Source of Hearts for Michigan

(Most recent 2 years)

	From Michigan	From Another State	Total
Michigan	63 (69%)	28 (31%)	91

	In State	Another State	Total
National (1yr)	1025 (48%)	1111 (52%)	2136

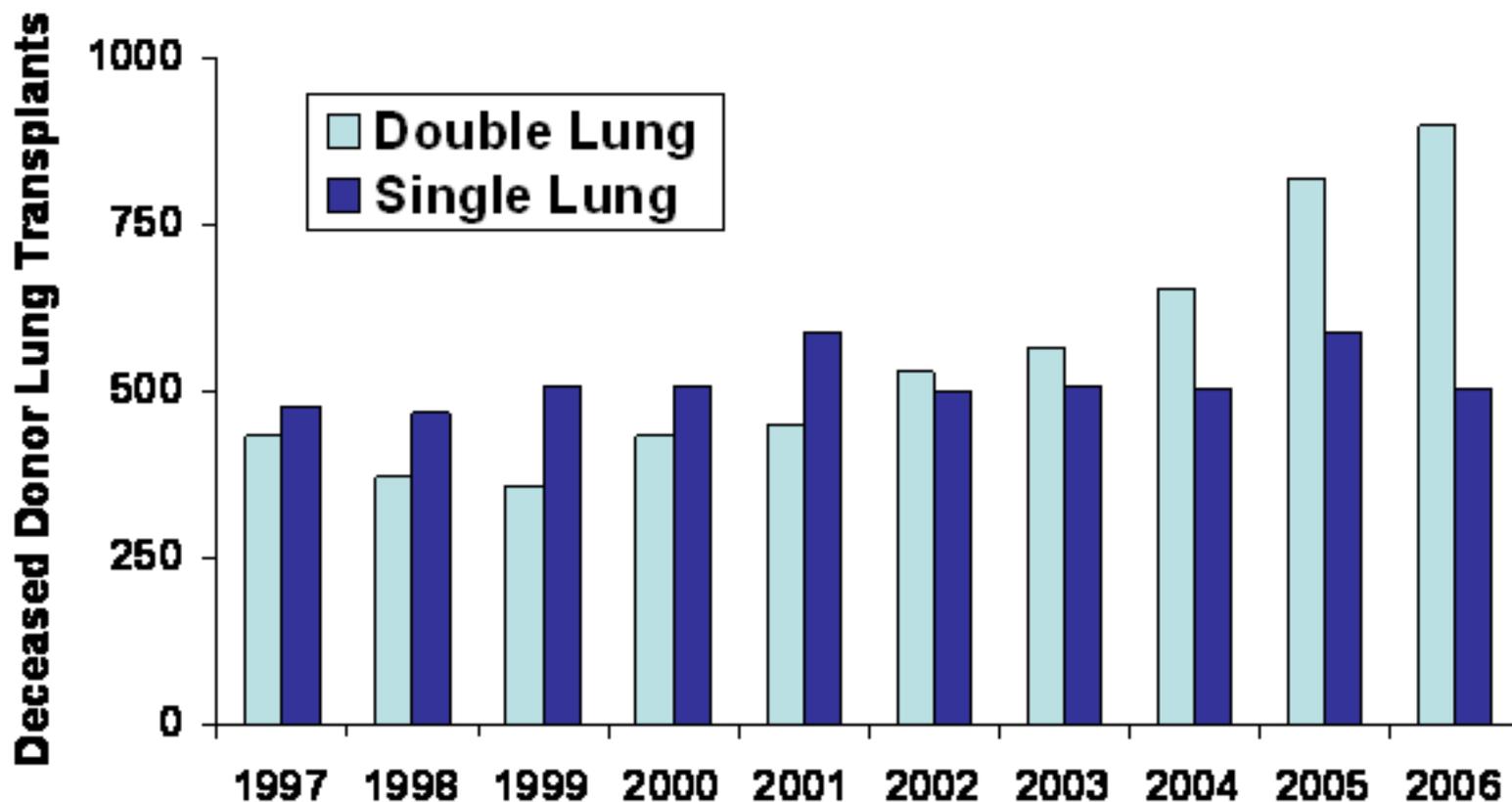
Summary- Heart

- Uncommon procedure (~1/week in MI)
- Activity flat
- Complicated national allocation policy based on medical urgency
- Similar transplant rate and wait list death rate in Michigan compared to the rest of the country
- A higher percentage of hearts from Michigan donors are used in Michigan relative to the national norm

Lung Transplantation

- 1956 patients on the waiting list
 - 43 in Michigan
- 1478 lung transplants in 2008
 - 43 in Michigan
- Indications
 - Emphesema/COPD (31%)
 - Idiopathic Pulmonary Fibrosis (29%)
 - Cystic Fibrosis (16%)
 - Other (24%)

Figure VI-22. Deceased Donor Lung Transplants by Procedure Type, 1997-2006



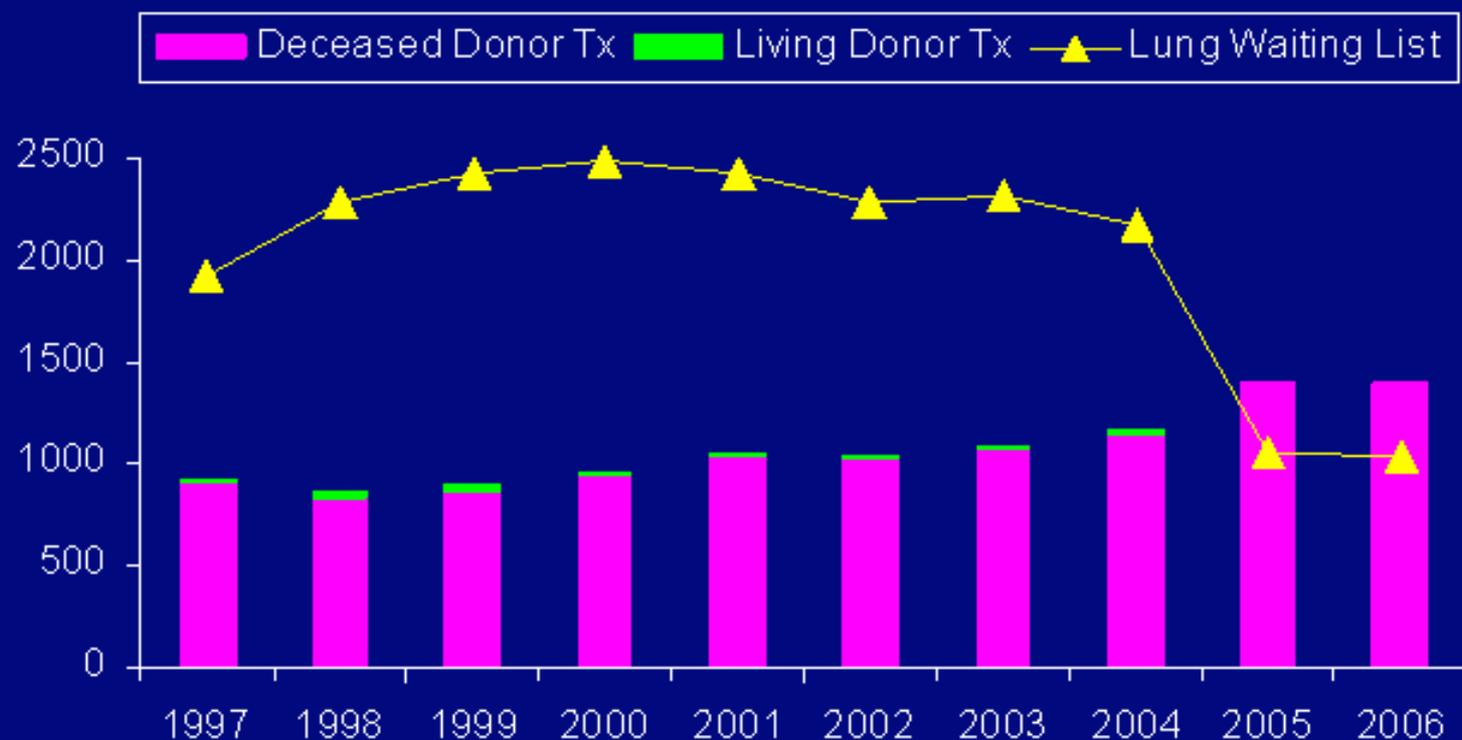
Source: 2007 OPTN/SRTR Annual Report, Table 12.4a.

Lung Transplantation

- Shelf life of Lungs ~4-6 Hours
- Matching for
 - Blood type
 - Size
 - Histo-compatibility important for ~10%
- 31% Of U.S. organ donors are able to donate a lung (40% in Michigan)

Figure I-22. Number of Transplants and Size of Active Waiting List.

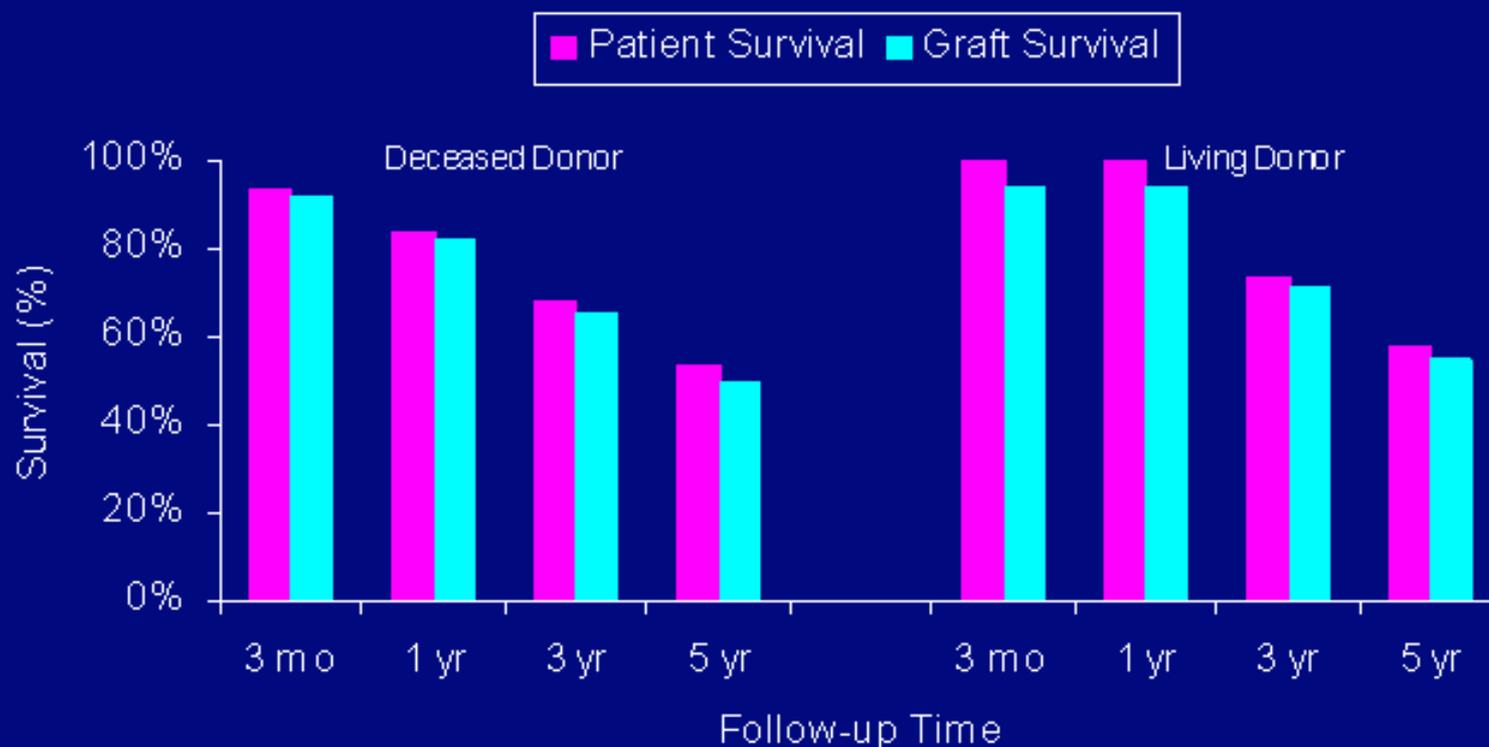
Attachment D



The number of lung transplants increased steeply in the last two years. The number of patients awaiting a transplant dropped steeply in 2005 after a stable pattern during the prior seven years. This sharp reduction is largely attributable to changes in allocation policy, which now considers urgency and benefit rather than time spent waiting.

Data from: 2007 OPTN/SRTR Annual Report, Tables 1.7, 12.1a

Figure I-24. Unadjusted Patient and Graft Survival.



Patient survival has been improving in recent years for both deceased and living donor lung transplant recipients. At one year following deceased donor and living donor lung transplantation, 84% and 100% of patients, respectively, were alive. With the recent good results at one year, it is hoped that longer term patient survival will improve. Graft survival was very similar because very few patients may live after graft failure through a second lung transplant.

Data from: 2007 OPTN/SRTR Annual Report, Tables 12.10a, 12.10b, 12.14a, 12.14b.

Allocation Algorithm: Lung

- UNOS Policy 3.7.6
- Candidates are assigned a priority based on Lung Allocation Score (LAS)
- Highest LAS goes first
 - Local, then Zone A, B, C, D, E

Lung Allocation Score (LAS)

- Calculated based on:
 - Predicted survival with transplant (days)
 - Predicted survival on waitlist (days)
 - Transplant benefit (days)

Lung Allocation Score (LAS)

- 11 Factors that predict waitlist death:
 - Forced vital capacity; Pulmonary artery pressure; pO_2 ; pCO_2
 - Age, Body mass index
 - Functional status, Diabetes, Diagnosis
 - Six minute walk distance, mechanical ventilation
- 7 Factors that predict survival after lung transplant:
 - Forced vital capacity; Pulmonary artery wedge pressure
 - Mechanical ventilation
 - Age
 - Functional status
 - Diagnosis
 - Kidney function (creatinine)

Lung Allocation Score (LAS)

Part of Equation	X	Y
a. Post-txp survival (days)	286.3	262.9
b. Waitlist survival (days)	101.1	69.2
c. Transplant Benefit (a-b)	185.2	193.7
d. Raw allocation score (c-b)	84.1	124.5
e. Lung allocation score (Normalized to scale of 0 to 100)	74.3	78.0

Median Time To Lung Transplant (Months)

	Percentile		
	10 th	25 th	50 th
Michigan	1.1	3.7	12.2
National	0.7	2.6	12.4

Transplant Rate Lung

	Transplant Rate (per year)	Expected Transplant Rate (per year)
Michigan	0.68	0.92
National	0.66	-

Wait list death rates in Michigan (Lung)

	Transplants	Wait list	Deaths	Death Rate (per year on list)
Michigan	35	39	11	17%
National	1,476	2,692	344	14%

Source of Lungs for Michigan (Most recent year)

	From Michigan	From Another State	Total
Michigan	28 (80%)	7 (20%)	35

	In State	Another State	Total
National (1yr)	739(50%)	737 (50%)	1476

Summary- Lung

- Uncommon procedure (<1/week in MI)
- Activity flat
- Extremely complicated national allocation policy based on medical urgency
- Similar transplant rate and wait list death rate in Michigan compared to the rest of the country
- A higher percentage of lungs from Michigan are used in Michigan relative to the national norm

Liver Transplantation

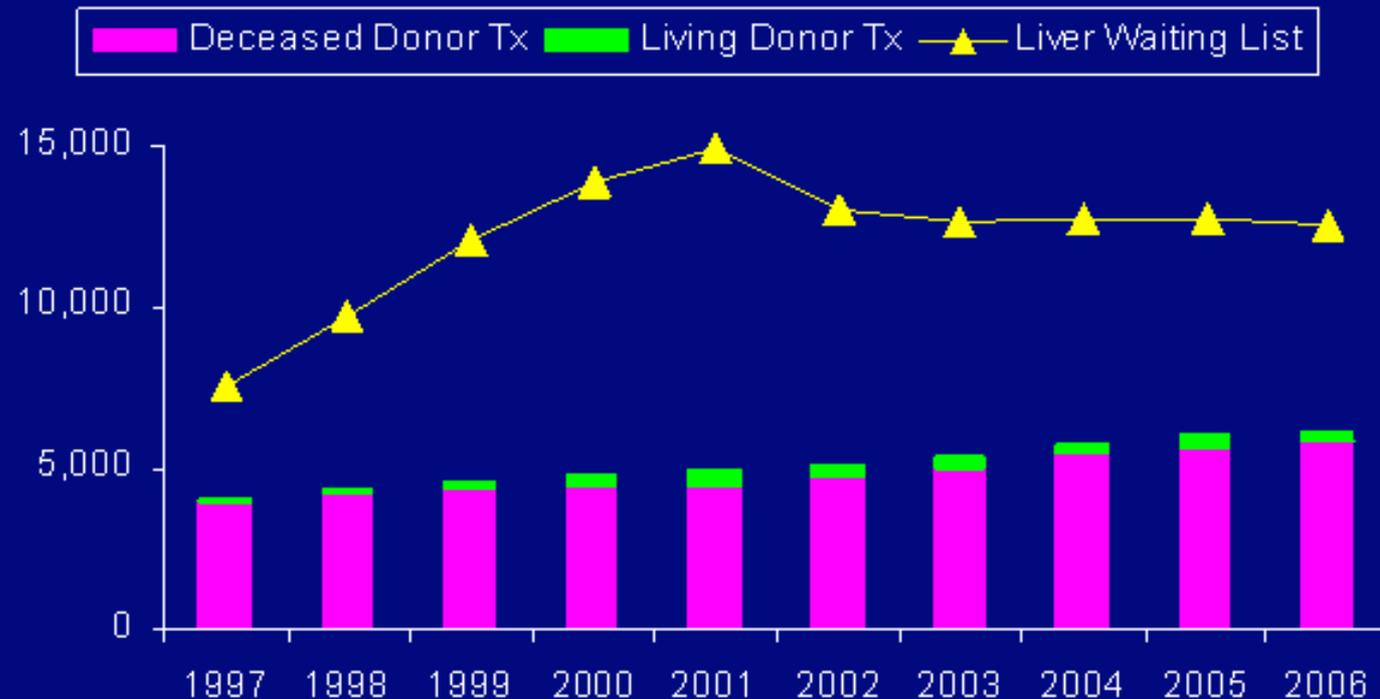
- 16,597 patients on the waiting list*
 - 302 in Michigan
- 6,417 liver transplants in 2008
 - 203 in Michigan
 - 268 from living donors (10 in Michigan)
- Cirrhosis is the 11th leading cause of death in the U.S. (27,000 deaths per year)
- 76% Of U.S. organ donors are able to donate a liver (63% in Michigan)

Liver Transplantation

- Shelf Life of a Liver: ~12 hours
- Livers are matched by:
 - Size
 - Blood type
- Indications
 - Hepatitis C (~40%)
 - Alcohol induced cirrhosis (~20%)
 - Non-alcoholic fatty liver disease (~20%)
 - Autoimmune, Other (~20%)

Figure I-13. Number of Transplants and Size of Active Waiting List.

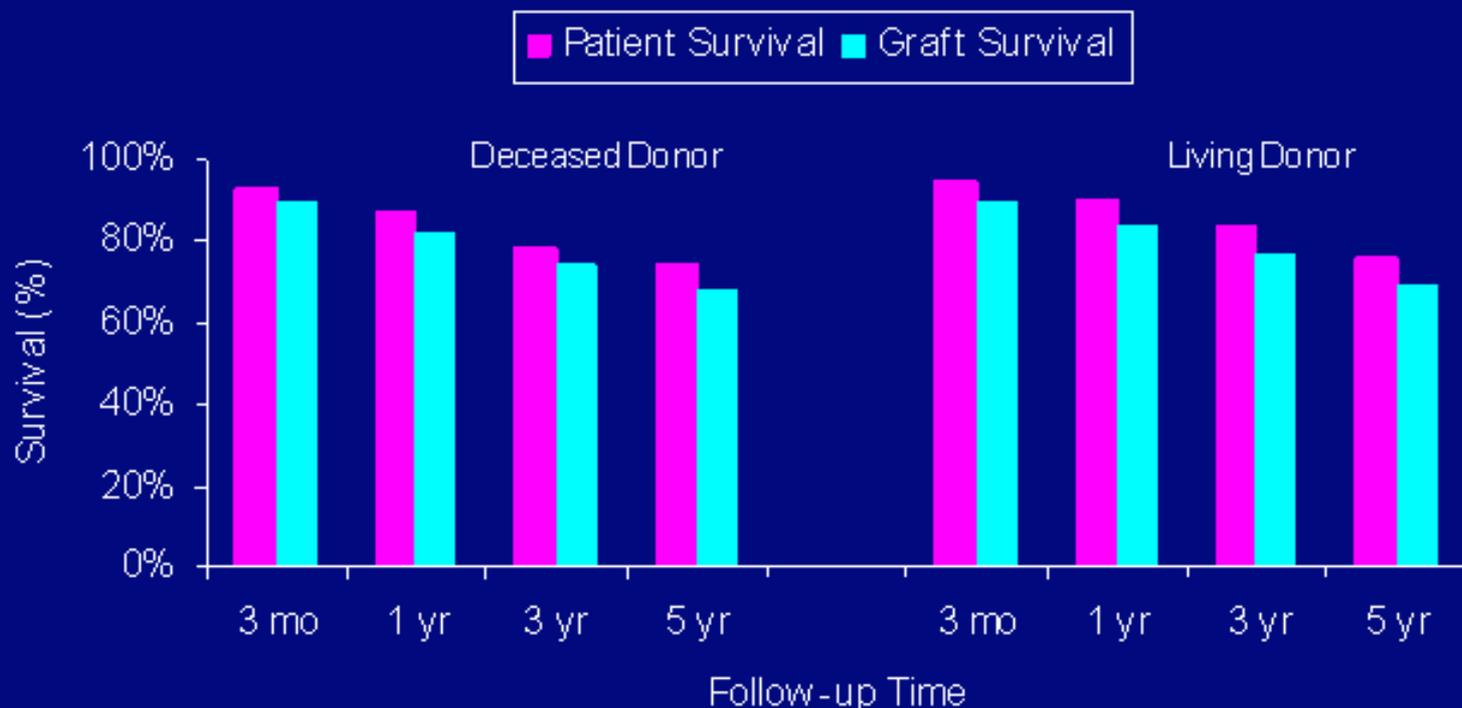
Attachment D



The large increase in the number of patients awaiting a liver transplant has stabilized since 2002, when the MELD/PELD system began. The number receiving a deceased donor liver transplant has gradually increased, more steeply in 2004-2006. The gap between the numbers of candidates and recipients has been slowly shrinking since 2002.

Data from: 2007 OPTN/SRTR Annual Report, Tables 1.7, 9.1a, 9.1b.

Figure I-15. Unadjusted Patient and Graft Survival.



Patient survival in recent years has been improving for both deceased donors and living donors, with 74% and 76% of patients, respectively, alive five years following transplantation. Graft survival was lower because patient survival included time after graft failure for patients receiving repeat liver transplantation.

Data from: 2007 OPTN/SRTR Annual Report, Tables 9.10a, 9.10b, 9.14a, and 9.14b.

Allocation Algorithm: Liver

- UNOS Policy 3.6
- Allocation based on severity of illness: “Sickest First”
- Two schemes: Status 1 and MELD

Status 1

- Sickest possible candidates
 - Acute liver failure
 - Primary non-function after liver transplant
 - 7 days to live without transplant
- Allocated by Region (MI + IN + OH)

MELD

- If there are no status 1 patients in the region in that size and blood type, the liver goes to the patient with the highest MELD in the State (“Donation Service Area”)

MELD: an estimate of mortality risk in liver failure

- **Model of End-stage Liver Disease**
- Based on 3 lab tests: Creatinine, Bilirubin, Prothrombin Time (PT)
- Completely objective
- Waiting time only used to break ties

MELD

$$\begin{aligned} & (0.957 \times \text{Log}_e[\text{Creatinine}]) + \\ & (0.378 \times \text{Log}_e[\text{Bilirubin}]) + \\ & (1.12 \times \text{Log}_e[\text{INR}]) + \\ & \quad \underline{0.643} \end{aligned}$$

Result rounded to tenth decimal place, then multiplied by 10

MELD: example

Creatinine = 1.9

Bilirubin = 4.2

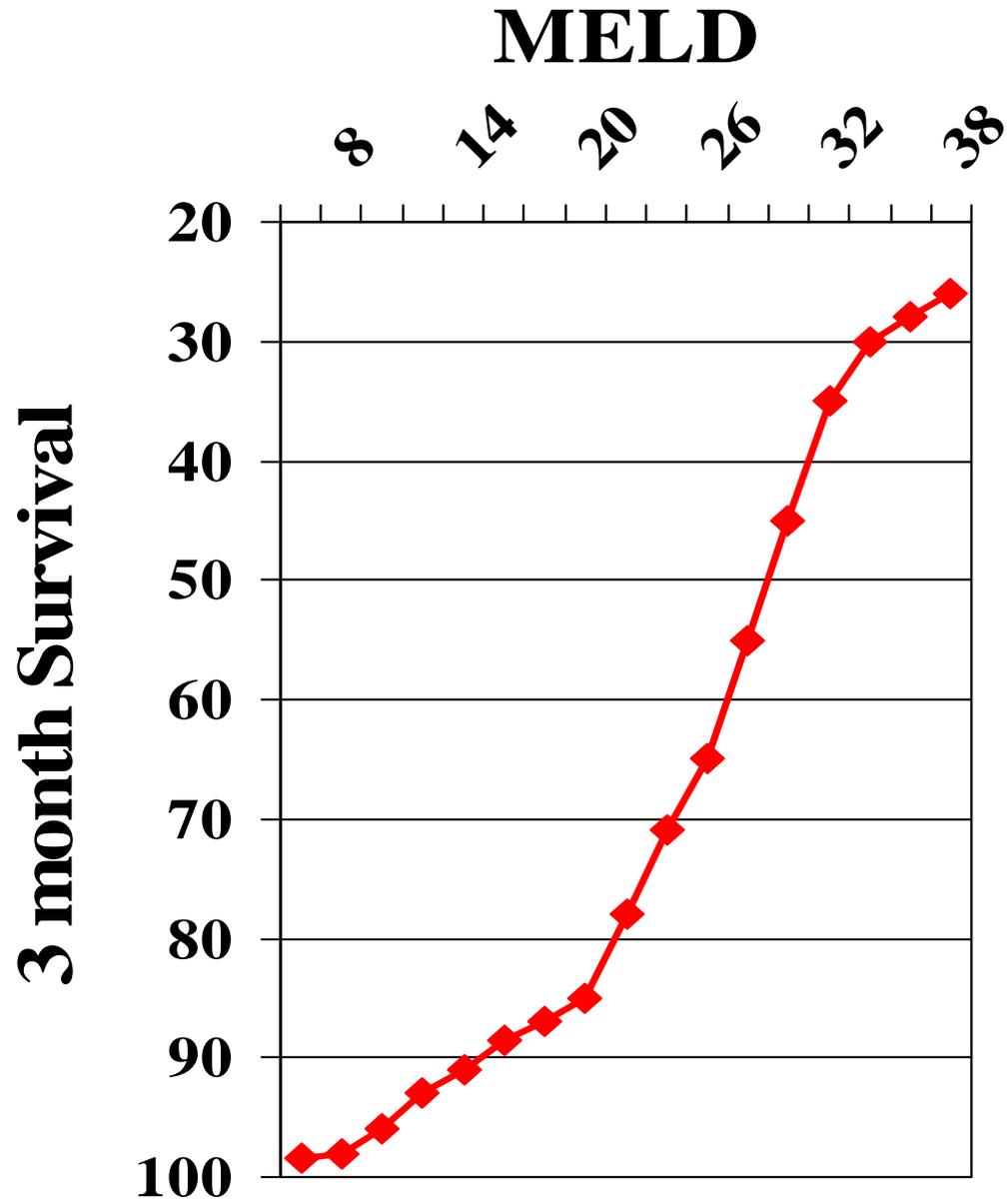
INR = 1.2

MELD: example

$$\begin{array}{r} (0.957 \times \text{Log}_e 1.9) + \\ (0.378 \times \text{Log}_e 4.2) + \\ (1.12 \times \text{Log}_e 1.2) + \\ \hline 0.643 \\ 2.039 \end{array}$$

Rounded = 2.0

x10 gives MELD=20



MELD exceptions

- MELD doesn't predict mortality for all patients
- Regional Review Board can grant MELD score requested by center
- Children classified by different scale: PELD, based on additional factors

MELD- how does it work?

MELD Example

Name	Match MELD	Lab MELD	Waiting time (days)
Washington	29	14	18
Jefferson	24	24	467
Adams	20	20	356
Lincoln	18	18	245
Harrison	18	18	218
Truman	18	18	56
Nixon	16	16	788

Washington gets transplanted; Adams gets sicker

Name	Match MELD	Lab MELD	Waiting time (days)
Washington	29	18	18
Jefferson	24	24	467
Adams	27	27	356
Lincoln	18	18	245
Harrison	18	18	218
Truman	18	18	56
Nixon	16	16	788

MELD Example: the next day

Name	Match MELD	Lab MELD	Waiting time (days)
Adams	27	27	1
Jefferson	24	24	468
Lincoln	18	18	246
Harrison	18	18	219
Truman	18	18	57
Nixon	16	16	789
Taft	14	14	2417

Median Time To Liver Transplant (Months)

	Percentile		
	10 th	25 th	50 th
Michigan	0.2	1.0	6.8
National	0.3	1.4	12.3

Transplant Rate Liver

	Transplant Rate (per year)	Expected Transplant Rate (per year)
Michigan	0.57	0.34
National	0.39	-

* Statistically higher than expected

Wait list death rates in Michigan (Liver)

	Txp	Wait list	Deaths	Death Rate (per year)	Expected Death Rate
Michigan	195	302	68	18%*	18%
National	6,417	16,597	2386	14%	

* Not Statistically different

Source of Liver for Michigan (Most recent year)

	From Michigan	From Another State	Total
Michigan	162 (83%)	33 (17%)	195

	In State	Another State	Total
National	4181 (68%)	1968 (32%)	6,149

Summary- Liver

- More common procedure (~4/week in MI)
- Activity: very slow growth
- Complicated national allocation policy based on medical urgency
- Higher transplant rate; similar wait list death rate in Michigan compared to the rest of the country
- A higher percentage of livers from Michigan donors are used in Michigan relative to the national norm

Questions?