



Figure 5. Transplant rates by simulation and tier, adults only

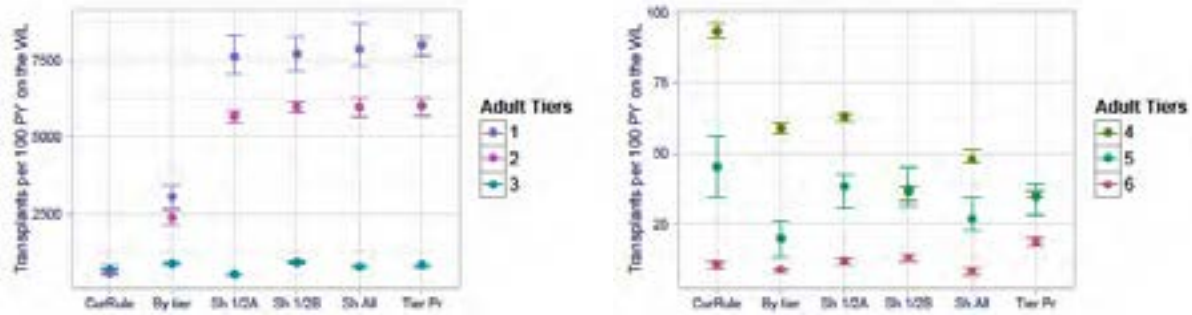


Figure 6. Waitlist mortality rates by simulation and tier, adults only

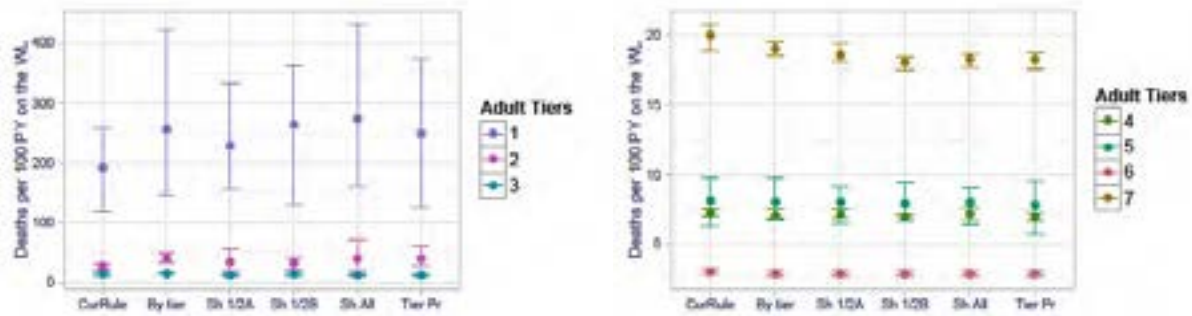


Figure 7. One-year posttransplant mortality rates by simulation and tier, adults only

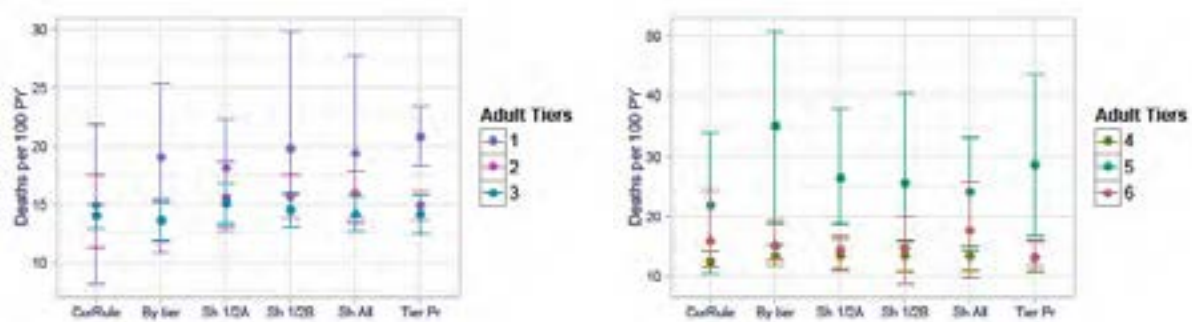




Figure 8. Two-year posttransplant mortality rates by simulation and tier, adults only

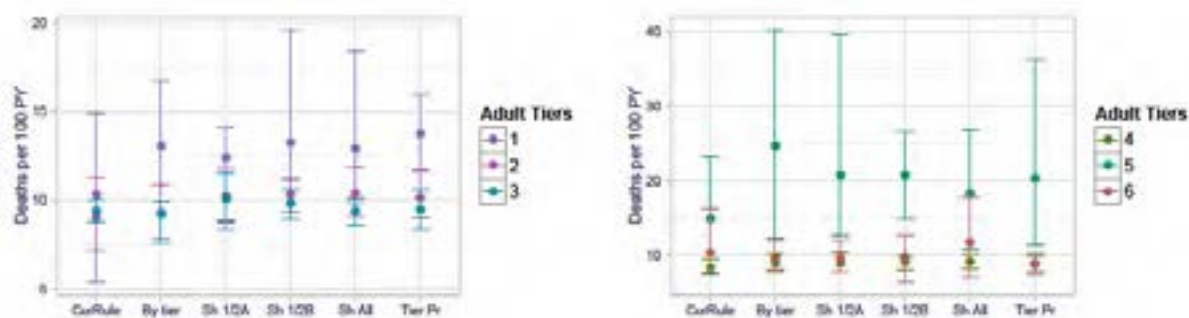


Figure 7 and Figure 8 show 1- and 2-year posttransplant mortality rates by tier and simulation. Posttransplant mortality rates were highest for tier 5 recipients (ACO transplants), but these rates were based on relatively few deaths, less than 10 deaths at 1 year and 10-15 deaths at 2 years. Posttransplant mortality rates were next highest for tier 1 recipients, and rates were similar across simulations. Broader sharing resulted in more deaths among tier 1 candidates compared with current rules (Table B-2), but also in a larger pool of tier 1 recipients who underwent transplant and so were at risk for posttransplant death.

Figure 9 shows transplant rates for adult candidates by simulation and urgency status. The simulation Sh 1/2B resulted in the highest transplant rates for candidates who are status 1A in the current system. Sh 1/2B prioritized offers out to zone B for tier 1 and 2 candidates, and gave broader sharing to tier 3 candidates than the Sh 1/2A simulation. Including tier 3 candidates in broader sharing had a relatively large impact on status 1A rates because the majority of status 1A candidates were in tier 3. Simulations Sh 1/2B, ShAll, and TierPr resulted in lower transplant rates among status 1B candidates and higher rates among status 2 candidates. Detailed rates and counts are given in Table B-3.

Figure 10 shows waitlist mortality rates by simulation and urgency status. All rules with broader sharing resulted in lower waitlist mortality rates for status 1A candidates than current rules. These sharing rules generally also resulted in lower waitlist mortality rates for status 1B and inactive candidates, though the differences were less extreme.



Figure 9. Transplant rates by simulation and urgency status, adults only



Figure 10. Waitlist mortality rates by simulation and urgency status, adults only

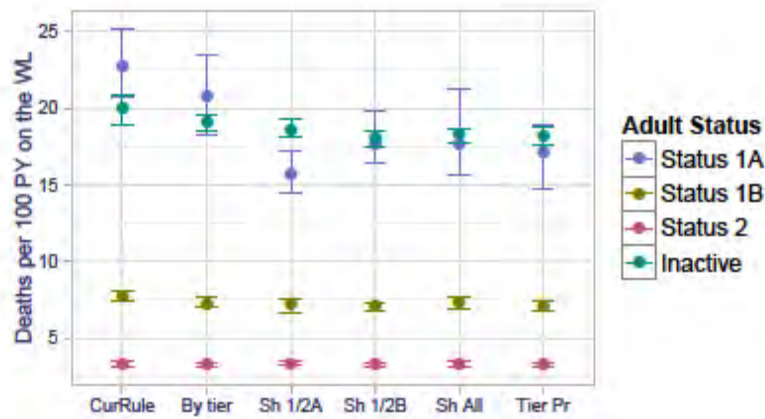


Figure 11. One-year posttransplant mortality rates by simulation and urgency status, adults only

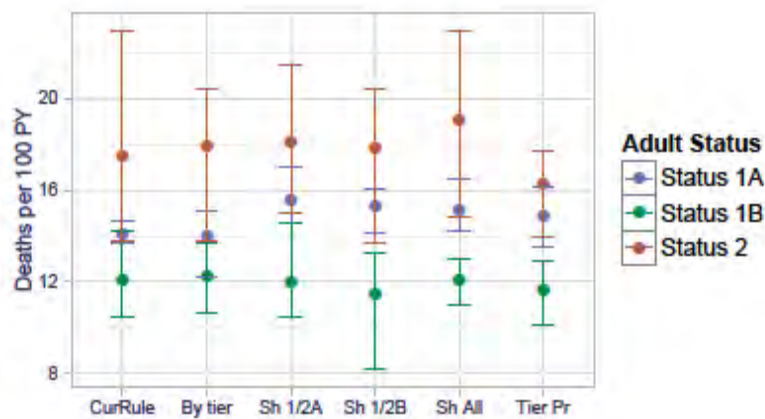
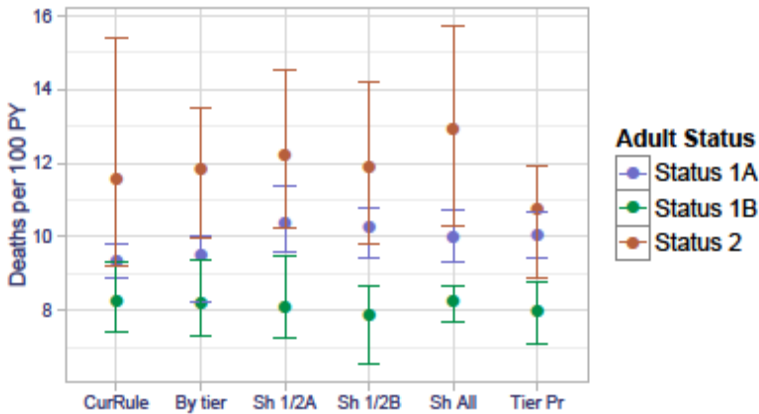




Figure 12. Two-year posttransplant mortality rates by simulation and urgency status, adults only



One- and two-year posttransplant mortality for status 1A recipients averaged slightly higher under all sharing rules (Figure 11 and Figure 12), but the ranges of these simulations overlapped for this group. For status 1B and status 2 recipients, posttransplant mortality was similar across simulations.

Outcomes by zone and distance, all recipients

We describe transplant and posttransplant outcomes by zone and distance below. We do not report waitlist outcomes in this section because measurement of zone and distance is based on completion of a donor-recipient pair, which occurs when an offer is accepted and the candidate is no longer on the waiting list.

Figure 13 shows transplant counts by simulation and zone. Zones D and E counts are not shown because they are so small that they do not appear when graphed. Simulations indicated that allocating by tier without broader geographic sharing increased the number of zone A transplants, decreased the number of local transplants, and had little impact on zone B-E transplant counts. Broader sharing rules further decreased the number of local transplants, especially the ShAll simulation, which had no local donation service area (DSA) preference; the nearest unit of distance was zone A in ShAll. The number of zone A transplants increased to represent the majority of overall transplants for three of the sharing simulations, Sh 1/2B, ShAll, and TierPr. The Sh 1/2A simulation resulted in higher local transplant counts than the other sharing rules. Sh 1/2A rules were similar to allocation by tier, except that they prioritize offers to tier 1 and 2 candidates out to zone B before making local tier 3 offers. Since tiers 1 and 2 are small groups, the Sh 1/2A simulation had little impact on the distribution to local candidates. Tier 3 is the largest patient group, so increased sharing to tier 3 candidates (simulations Sh 1/2B, ShAll, TierPr) reduced local transplants the most. Broader sharing rules slightly increased the number of transplants to zone C, but those remained no more than 3% of all transplants.



Figure 13. Transplant counts by simulation and zone

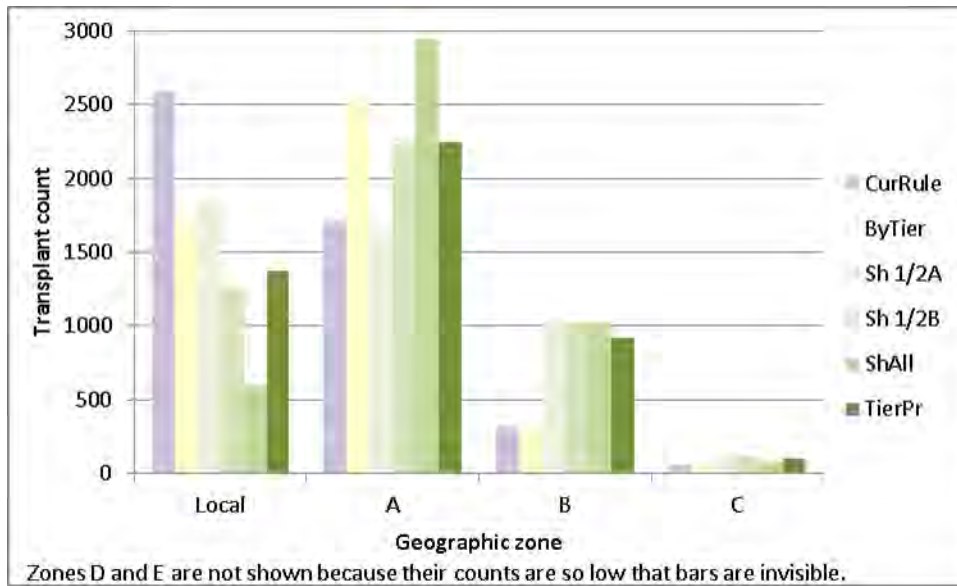
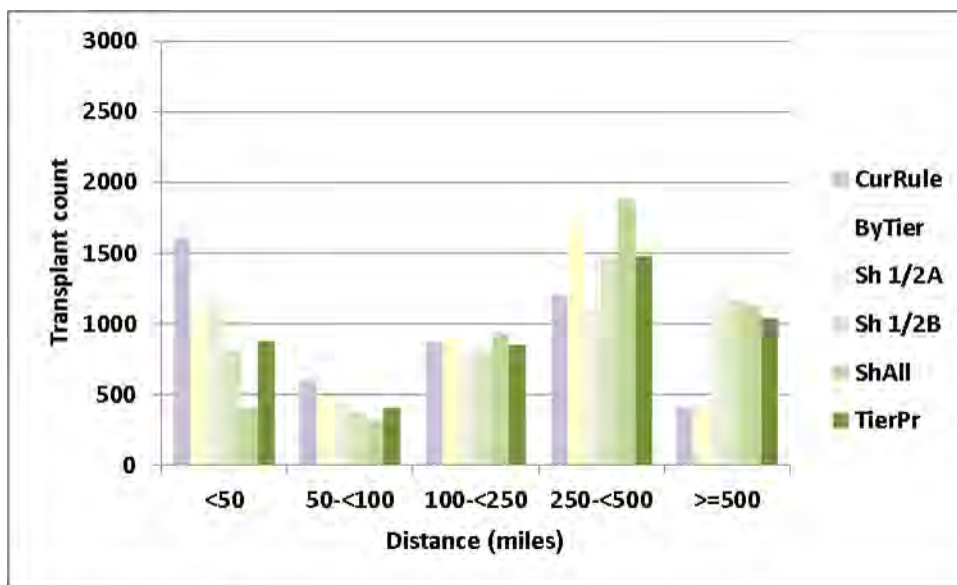


Figure 14 shows transplant counts by distance, ignoring DSA boundaries. Under current rules, 1609 transplants (34%) came from donors within 50 miles; this decreased to 406 transplants (9%) in the ShAll simulation, which includes no local DSA preferences. The broader geographic sharing rules tended toward longer distances between donors and recipients, but transplant pairings over very long distances (> 500 miles) represented 25% or less of total transplants, even in broader sharing scenarios, and 2-3% of these pairings occurred over distances of 1000 miles or more.

Figure 14. Transplant counts by simulation and distance



Within a geographic zone, 1- and 2-year posttransplant mortality rates were similar (Figure 15 and Figure 16). Among zone B recipients, the average rates among the shared simulations trended slightly higher, but the large



overlap suggests no difference. Zone C rates are based on relatively few deaths, 7-27 at 1 year and 6-35 at 2 years. Zone D and E rates are not shown because the number of transplants and deaths was too small to compute reliable estimates.

Figure 15. One-year posttransplant mortality rates by simulation and zone

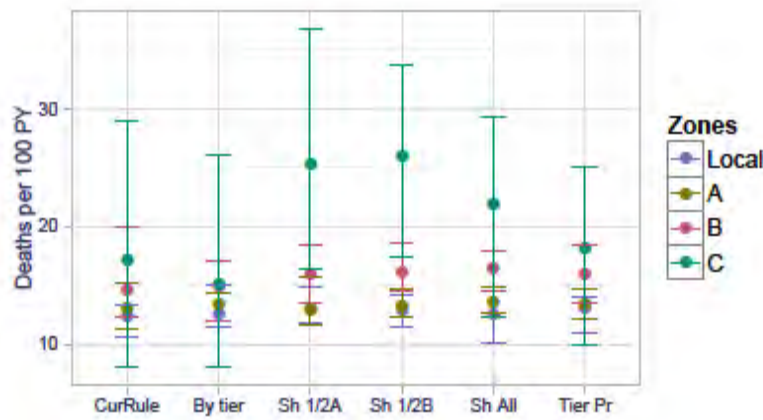
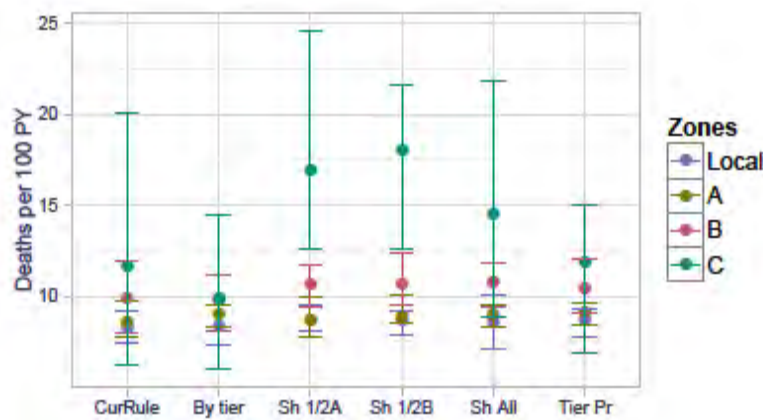


Figure 16. Two-year posttransplant mortality rates by simulation and zone



Outcomes by status, pediatric candidates and recipients

Figure 17 shows transplant rates by status group for pediatric candidates. All broader sharing rules resulted in higher transplant rates for status 1A pediatric candidates than current rules or tiers without broader sharing. When developing broader sharing scenarios to test, the Heart Subcommittee made an intentional effort to place pediatric candidates with or before tier 1 adult candidates to ensure that broader sharing did not disadvantage children. Broader sharing resulted in slightly lower transplant rates among status 1B pediatric candidates under Sh 1/2B and TierPr rules, though they nearly overlapped. Rates among status 2 candidates were similar across all simulations.

Figure 18 shows that waitlist mortality rates for pediatric candidates did not vary by simulation. Waitlist mortality was highest for status 1A candidates, but within status 1A waitlist mortality was similar across simulations. There was a suggestion of slightly lower waitlist mortality rates among inactive candidates, though the simulation ranges overlapped.



Figure 19 and Figure 20 show 1- and 2-year posttransplant mortality rates, respectively. Among status 1A pediatric recipients, posttransplant mortality rates were similar across simulations. Status 1B and status 2 rates were variable, but with large differences between the minimum and maximum simulated values. These rates were based on very few occurrences, less than 10 deaths, so should be interpreted with caution.

See detailed counts and rates for all pediatric waitlist and posttransplant outcomes in Table B-6.

Figure 17. Transplant rates by simulation and urgency status, children only

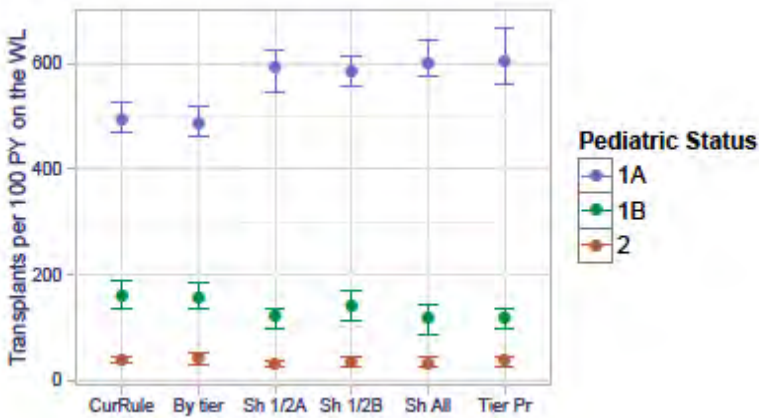


Figure 18. Waitlist mortality rates by simulation and urgency status, children only

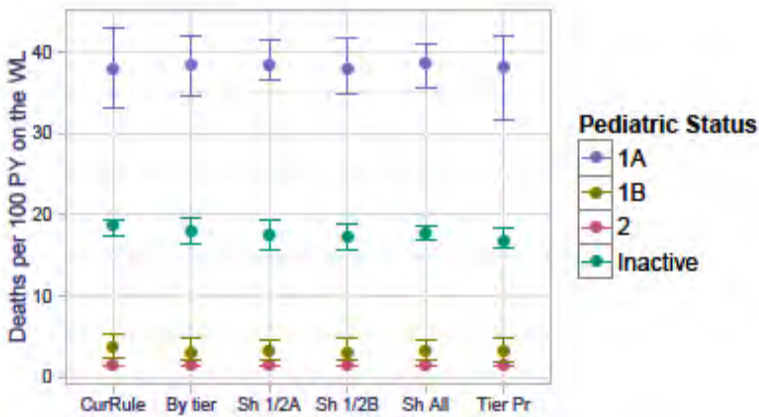




Figure 19. One-year posttransplant mortality rates by simulation and urgency status, children only

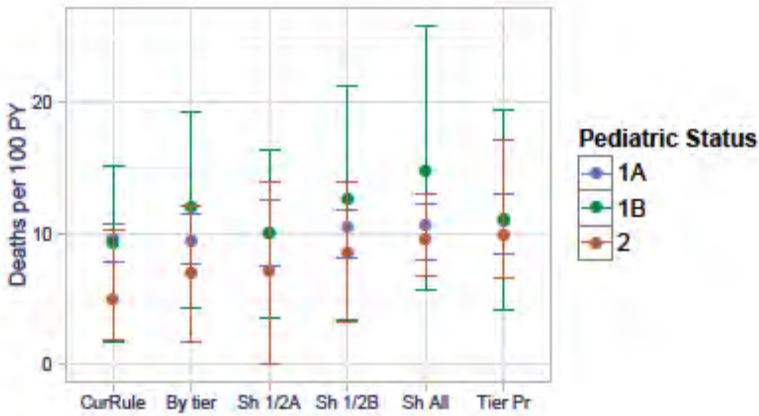
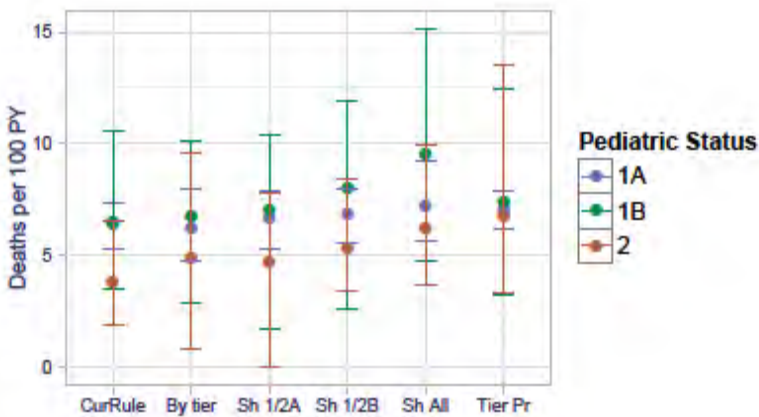


Figure 20. Two-year posttransplant mortality rates by simulation and urgency status, children only





Outcomes by age group, all candidates and recipients

Figure 21 through Figure 24 show waitlist and posttransplant outcomes among adults, by age group. Within all adult age groups, the ranges of transplant rates among the sharing simulations were similar to each other (Figure 21). Candidates aged 35-64 years made up 75% of the adult TSAM cohort (Table 4). Waitlist mortality rates for these candidates were clearly lower for simulations Sh 1/2B, Sh All, and Tier Pr, compared with current rules (Figure 22). Trends were similar for the oldest and youngest age groups, but ranges of the simulations overlapped. Posttransplant mortality rates within each adult age group were similar for all sharing rules, with ranges overlapping each other and overlapping ranges of current rules and allocation by tiers simulations (Figure 23 and Figure 24).

See detailed counts and rates for all adult waitlist and posttransplant outcomes by age group in Table B-7.

Figure 21. Transplant rates by simulation and adult age group

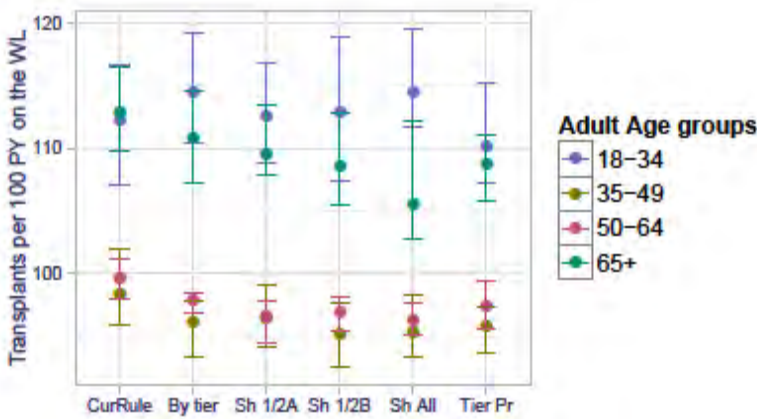


Figure 22. Waitlist mortality rates by simulation and adult age group

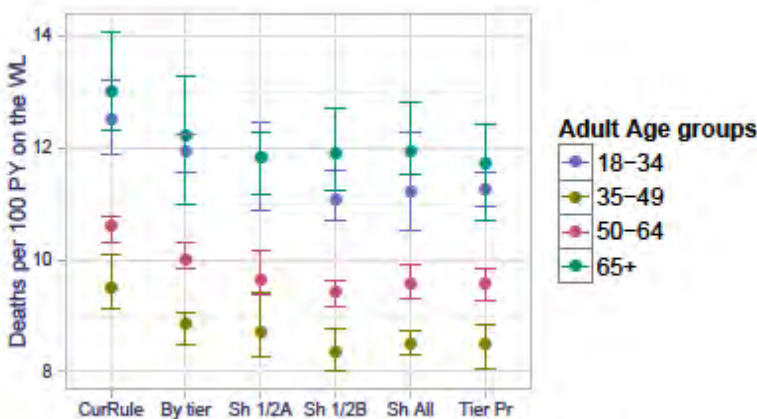




Figure 23. One-year posttransplant mortality rates by simulation and adult age group

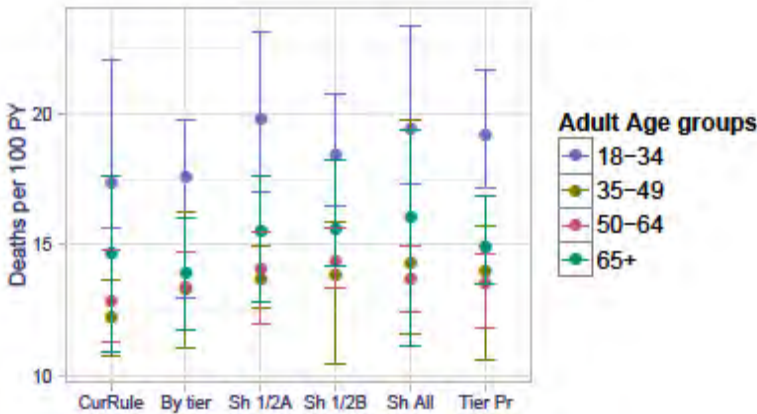


Figure 24. Two-year posttransplant mortality rates by simulation and adult age group

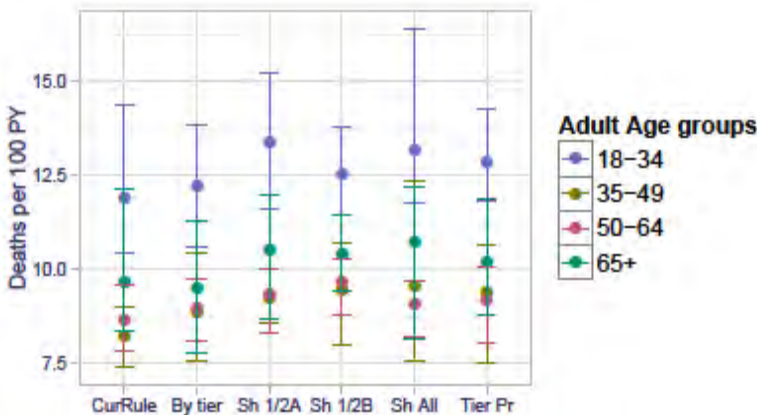


Figure 25 through Figure 28 show waitlist and posttransplant outcomes among children by age group.

Broader geographic sharing simulations indicated increased transplant rates among candidates aged 12-17 years compared with current rules and allocation by tiers, and possibly increased rates among candidates aged 6-11 years, but decreased rates compared with current rules among candidates aged 0-5 years (Figure 25). Transplant rates in all pediatric age groups remained considerably higher than in all adult age groups, however. Waitlist mortality rates among candidates aged 0-11 years were similar across all simulations, within age group. Among candidates aged 12-17 years, sharing simulations resulted in lower waitlist mortality rates compared with current rules (Figure 26). Posttransplant death counts were low among all pediatric age groups, resulting in wide ranges of posttransplant death rates in all age groups. Within pediatric age group, posttransplant death rates were very similar among recipients aged 0-11 years, and trended higher with broader sharing among recipients aged 12-17 years, though all ranges overlapped (Figure 27 and Figure 28).

See detailed counts and rates for all pediatric waitlist and posttransplant outcomes by age group in Table B-8.



Figure 25. Transplant rates by simulation and pediatric age group

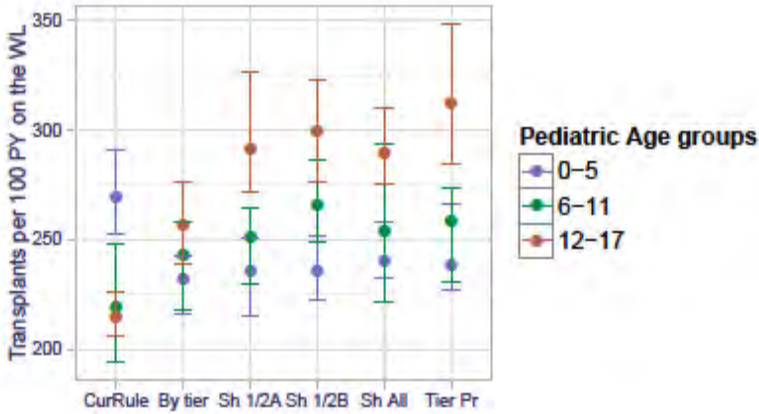


Figure 26. Waitlist mortality rates by simulation and pediatric age group

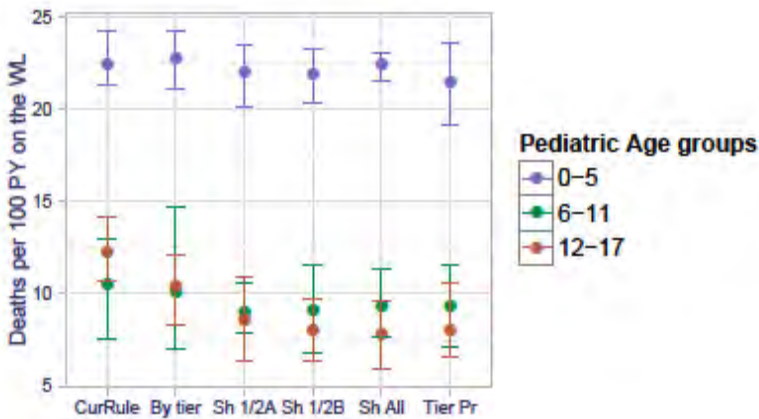


Figure 27. One-year posttransplant mortality rates by simulation and pediatric age group

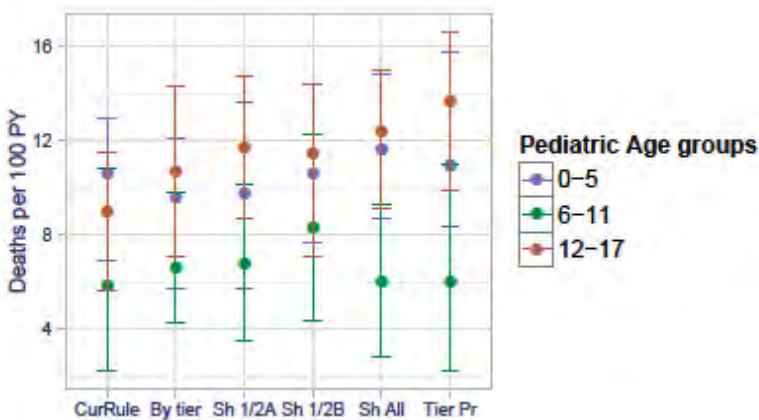
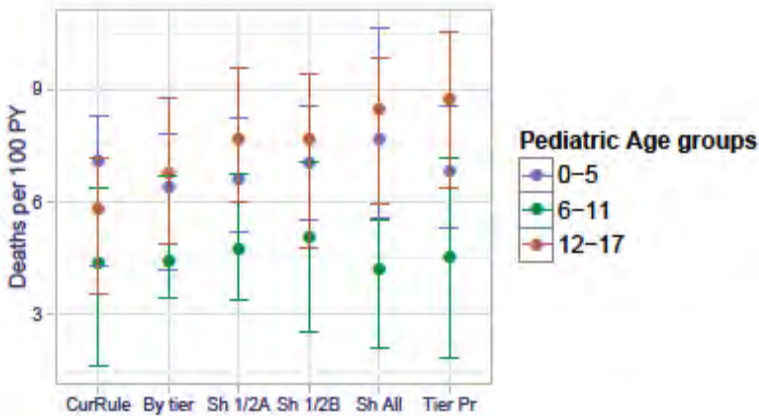




Figure 28. Two-year posttransplant mortality rates by simulation and pediatric age group



Outcomes by race, all candidates and recipients

Transplant rates for white candidates were nearly identical across all simulations (Figure 29). Among black and Hispanic candidates, transplant rates trended lower with broader sharing, but ranges of all simulations overlapped each other. Transplant rates among Asians and those of other/unknown races were similar across simulations. Waitlist mortality rates were lower for white candidates under all sharing rules than under current rules or under allocation by tiers (Figure 30). Among black and Hispanic candidates, waitlist mortality rates were lower under all sharing rules than under current rules. Among Asian and other race groups, waitlist mortality rates averaged lower in sharing simulations, but ranges were wide due to small group sizes and overlapped current rules. Posttransplant mortality rates (Figure 31 and Figure 32) within race groups overlapped ranges across all simulations.

See detailed counts and rates for all waitlist and posttransplant outcomes by race group in Table B-9.

Figure 29. Transplant rates by simulation and race group

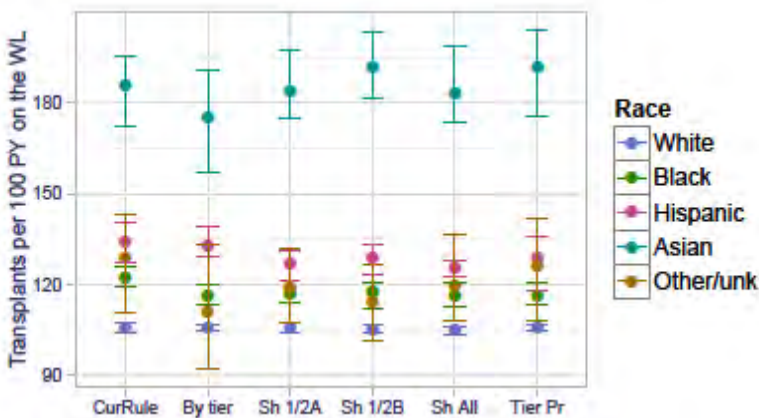




Figure 30. Waitlist mortality rates by simulation and race group

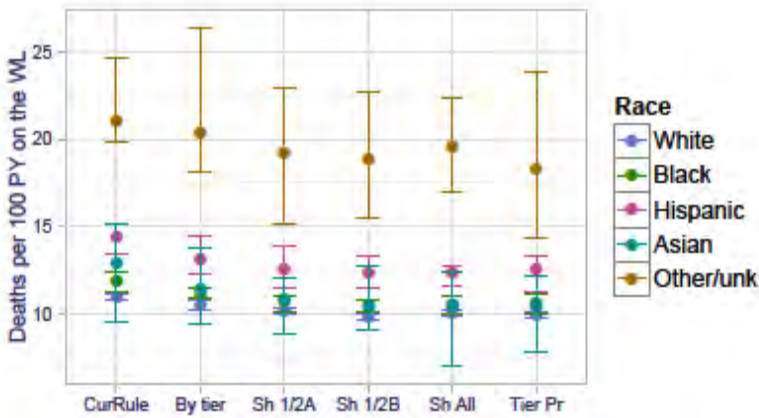


Figure 31. One-year posttransplant mortality rates by simulation and race group

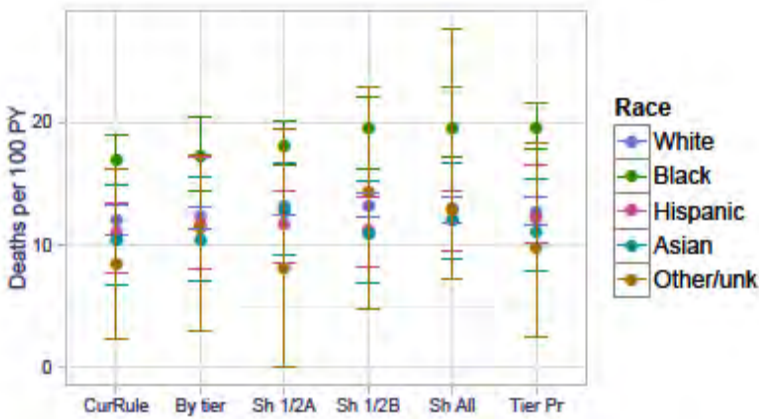
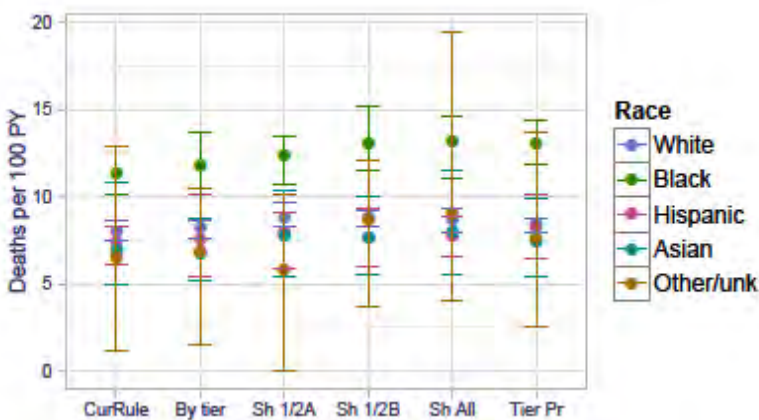


Figure 32. Two-year posttransplant mortality rates by simulation and race group





Outcomes by diagnosis group, all candidates and recipients

Broader sharing simulations resulted in lower transplant rates among candidates with coronary artery disease (CAD), compared with current rules (Figure 33). Broader sharing also resulted in lower transplant rates among candidates with cardiomyopathy, though some sharing schemes overlapped current rules. Large increases in transplant rates occurred for candidates with other and unknown diagnoses with tiers and with broader sharing. Waitlist mortality was lower in simulations with broader sharing compared with current rules (Figure 34) among CAD and cardiomyopathy candidates. The pattern was similar for candidates with congenital and other diagnoses, but those groups were small and the ranges of the simulations overlapped. Posttransplant mortality rates were similar across simulations (Figure 35) within disease groups. Among recipients with other and unknown diagnoses, posttransplant mortality rates showed an upward trend but wide ranges.

See detailed counts and rates for all waitlist and posttransplant outcomes by diagnosis group in Table B-10.

Figure 33. Transplant rates by simulation and cause of heart failure

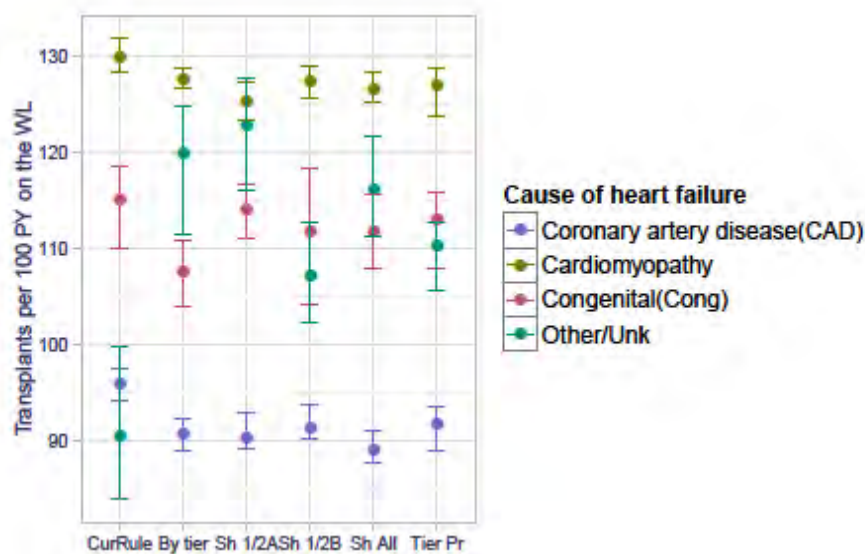




Figure 34. Waitlist mortality rates by simulation and cause of heart failure

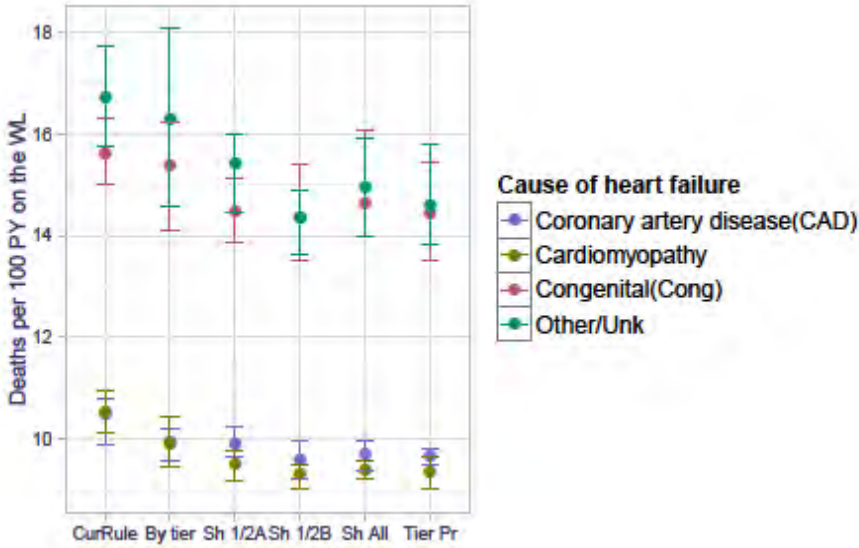


Figure 35. One-year posttransplant mortality rates by simulation and cause of heart failure

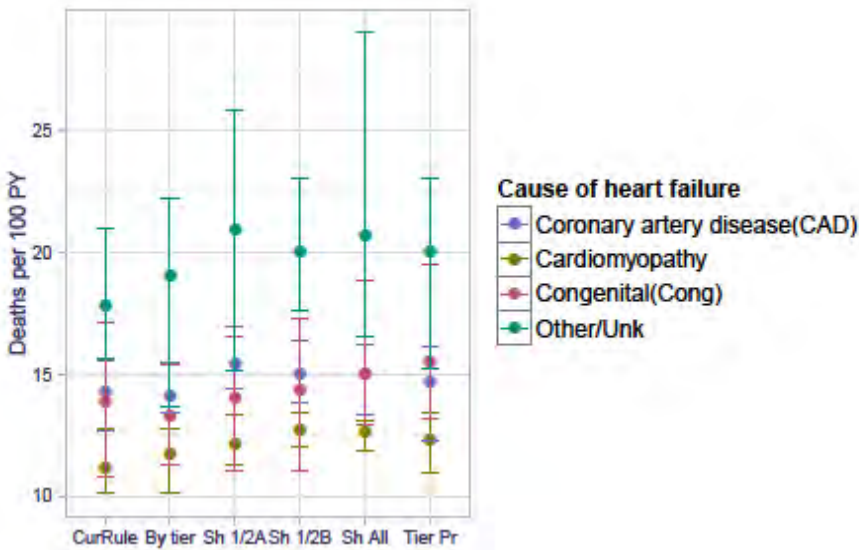
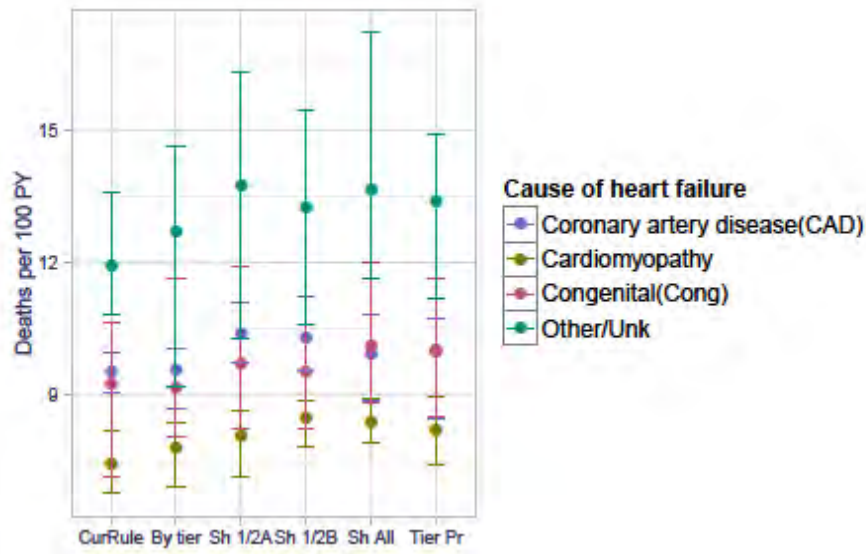




Figure 36. Two-year posttransplant mortality rates by simulation and cause of heart failure





Outcomes by blood type, all candidates and recipients

Figure 37 shows that transplant rates varied by blood type, but rates within blood groups were similar across simulations. Broader sharing resulted in lower waitlist mortality rates in blood groups A, B, and O than under current rules (Figure 38). Within blood groups, posttransplant mortality rates were similar among broader sharing simulations compared with current rules (Figure 39 and Figure 40).

See detailed counts and rates for all waitlist and posttransplant outcomes by blood type in Table B-11.

Figure 37. Transplant rates by simulation and blood type

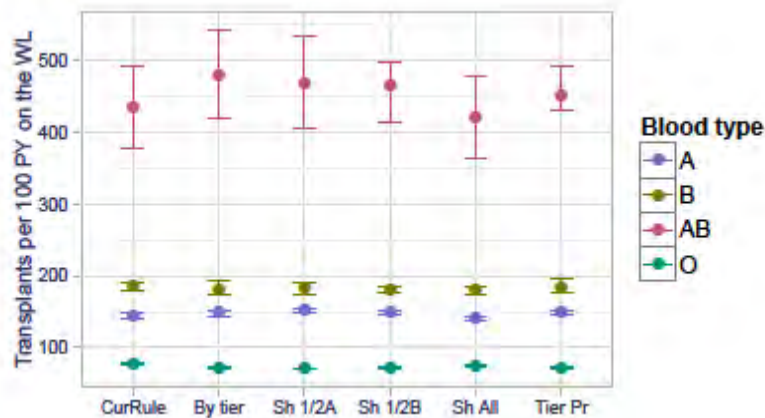


Figure 38. Waitlist mortality rates by simulation and blood type

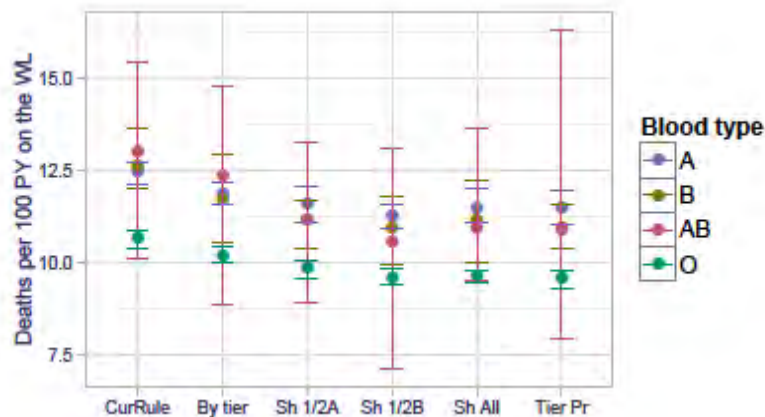




Figure 39. One-year posttransplant mortality rates by simulation and blood type

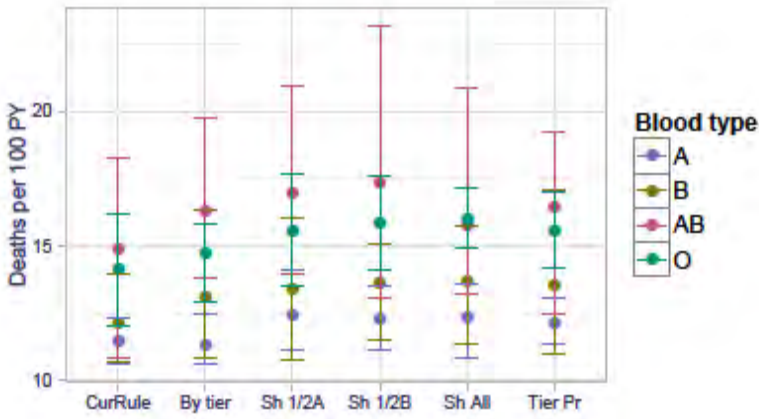
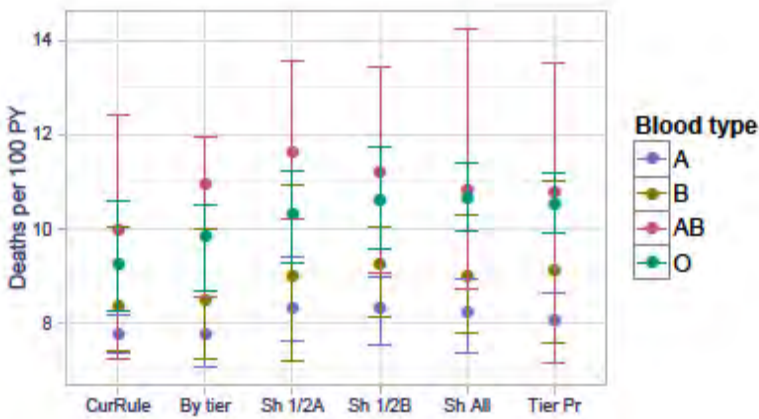


Figure 40. Two-year posttransplant mortality rates by simulation and blood type





Outcomes by sex, all candidates and recipients

Figure 41 shows that transplant rates varied by sex, but rates were similar across simulations for men and women. Broader sharing resulted in lower waitlist mortality rates for men and women than under current rules (Figure 42). Posttransplant mortality rates were similar among broader sharing simulations compared with current rules (Figure 43 and Figure 44).

See detailed counts and rates for all waitlist and posttransplant outcomes by sex in Table B-12.

Figure 41. Transplant rates by simulation and sex

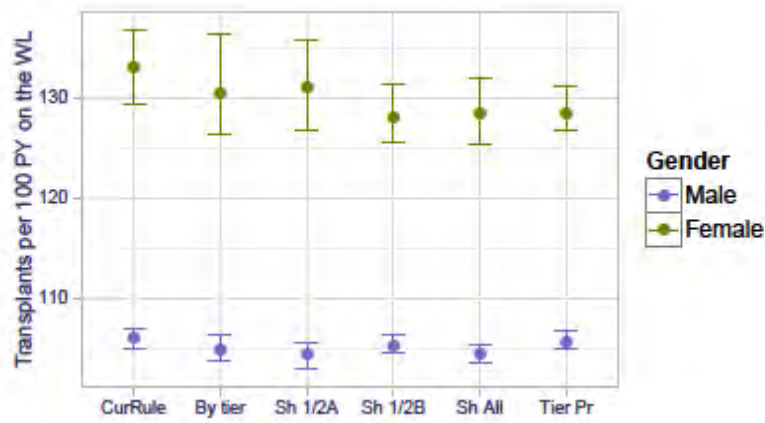


Figure 42. Waitlist mortality rates by simulation and sex

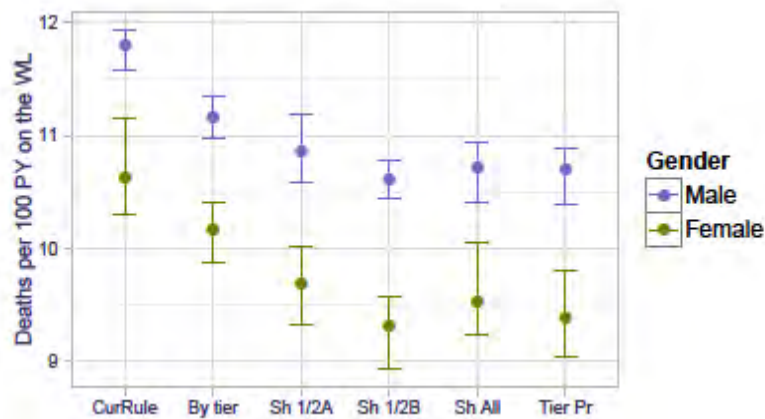




Figure 43. One-year posttransplant mortality rates by simulation and sex

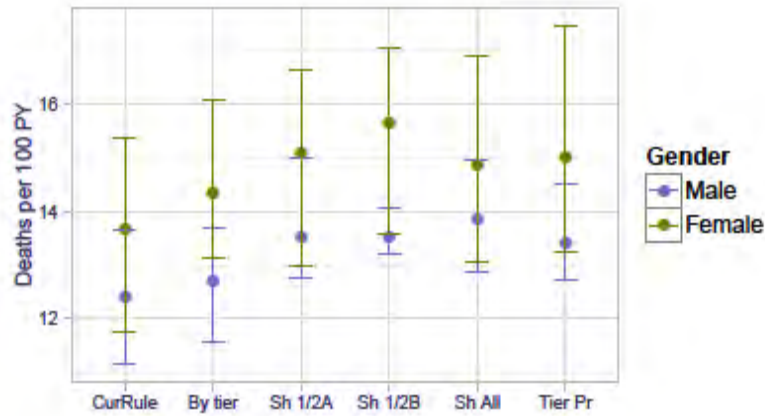
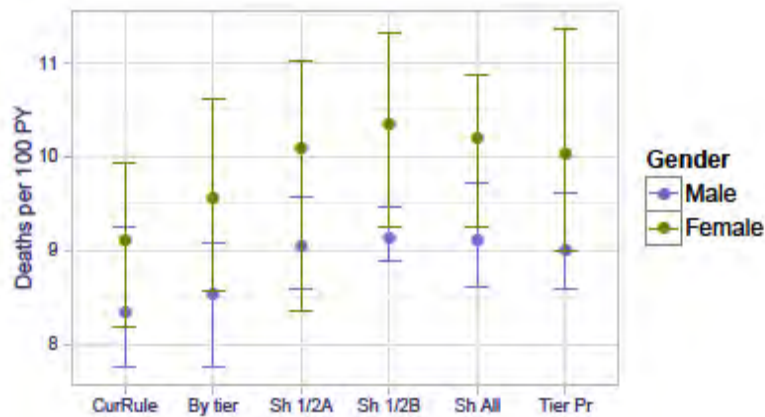


Figure 44. Two-year posttransplant mortality rates by simulation and sex



Outcomes by selected tier-defining criteria, tiers 1-4

Tier 1

Tier 1 was a small group overall. Table 6 shows transplant counts, waitlist death counts, waitlist removals, and 2-year posttransplant death counts by sub-criteria that define tier 1. A candidate can fulfill more than one sub-criterion at a time. Due to low counts, rates are not given.



Table 6. Tier 1 event counts by sub-criteria

Metric	Criterion	Obs	Current rules			By tier			Sh 1/2A			Sh 1/2B		
			Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max
TX count	ECMO	11	5	3	10	19	16	23	31	28	35	31	25	35
	MechVent	14	13	7	17	46	41	52	73	69	81	73	69	77
	ND VAD	25	12	8	15	34	27	39	42	39	45	40	37	43
	MCS	20	20	16	25	28	24	33	39	32	44	35	33	38
WL death Counts	ECMO	8	8	5	9	7	4	9	4	2	5	4	2	6
	MechVent	6	4	2	5	3	2	5	2	0	3	2	0	4
	ND VAD	2	2	1	3	0	0	1	0	0	0	0	0	0
	MCS	1	2	1	3	1	0	4	1	0	2	1	0	2
WL removals	ECMO	2	7	5	9	5	3	7	4	3	5	4	2	6
	MechVent	3	2	1	2	1	0	2	1	0	2	1	0	2
	ND VAD	1	0	0	0	0	0	0	0	0	0	0	0	0
	MCS	0	1	0	2	0	0	1	0	0	0	0	0	0
2Y PT deaths	ECMO	3	1	0	2	5	2	9	7	3	9	7	5	13
	MechVent	5	3	0	6	10	5	13	15	8	21	17	13	21
	ND VAD	2	2	1	5	8	4	12	11	7	15	9	6	15
	MCS	3	3	1	6	5	2	6	6	3	9	7	3	9

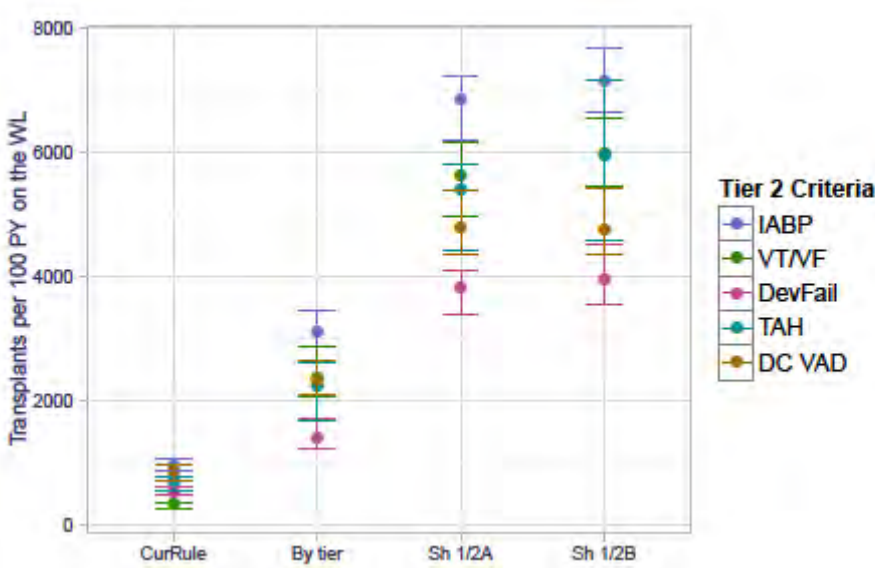
Obs = Observed data; MechVent = mechanical ventilation; ND VAD = Non-dischargeable VAD; MCS = Mechanical circulatory support.

Tier 2

Tier 2 was large enough that sufficient numbers of events occurred for most tier-defining criteria to allow computation of stable transplant and waitlist mortality estimates (Figure 45, Figure 46, and Figure 47). However, the acute circulatory support (ACS) group was too small and is excluded from the figures. For posttransplant mortality rates, only the intra-aortic balloon pump (IABP), ventricular tachycardia/fibrillation (VT/VF), and device failure groups were large enough to allow rate estimates. Counts of these outcomes are given for all groups in Table 7, Table 8, and Table 9.



Figure 45. Transplant rates among tier 2 candidates by sub-criteria



IABP = intra-aortic balloon pump; VT/VF = ventricular tachycardia/fibrillation; DevFail = device failure; TAH = total artificial heart; DC VAD = dischargeable LVAD.

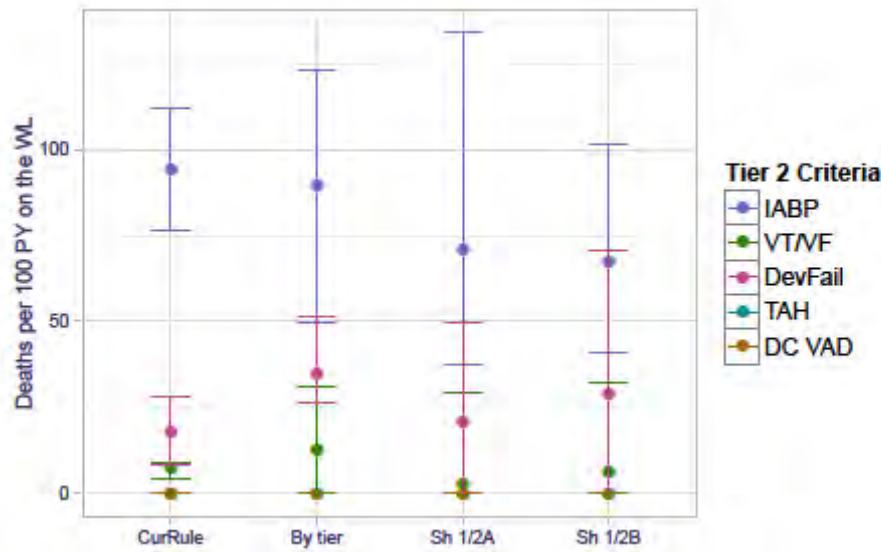
Table 7. Tier 2 transplant counts by sub-criteria

Metric	Criterion	Obs	Current rules			By tier			Sh 1/2A			Sh 1/2B		
			Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max
TX count	IABP	161	112	107	117	240	212	252	358	347	370	348	331	366
	VT/VF	81	72	58	80	152	143	160	191	178	200	188	182	196
	DevFail	62	62	55	69	94	81	101	143	136	150	122	110	140
	TAH	45	50	41	56	64	57	72	71	63	78	67	60	73
	DC VAD	41	42	37	46	71	65	78	84	77	89	83	79	89
	ACS	7	2	0	6	6	2	8	11	8	13	13	10	16

ACS = acute circulatory support



Figure 46. Tier 2 waitlist mortality rates by sub-criteria



IABP = intra-aortic balloon pump; VT/VF = ventricular tachycardia/fibrillation; DevFail = device failure; TAH = total artificial heart; DC VAD = dischargeable LVAD.

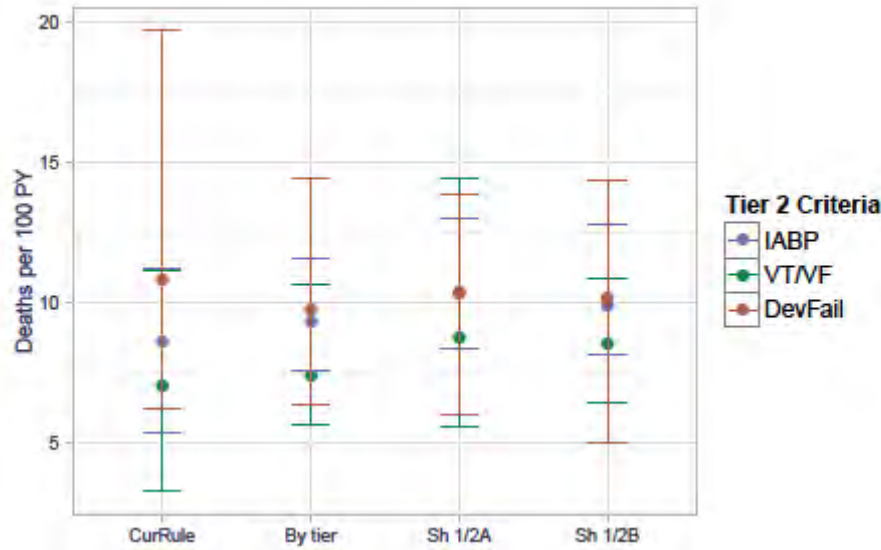
Table 8. Tier 2 waitlist death and removal counts by sub-criteria

Metric	Criterion	Obs	Current rules			By tier			Sh 1/2A			Sh 1/2B		
			Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max
WL death counts	IABP	14	11	9	13	7	4	9	4	2	7	3	2	5
	VT/VF	3	2	1	2	1	0	2	0	0	1	0	0	1
	DevFail	3	2	1	3	2	2	3	1	0	2	1	0	2
	TAH	0	0	0	0	0	0	0	0	0	0	0	0	0
	DC VAD	0	0	0	0	0	0	0	0	0	0	0	0	0
ACS	1	1	1	1	1	0	1	1	0	1	0	0	1	
WL removals	IABP	4	2	0	3	1	0	3	0	0	1	1	0	2
	VT/VF	3	1	0	1	0	0	0	0	0	0	0	0	0
	DevFail	2	0	0	1	0	0	0	0	0	0	0	0	0
	TAH	0	0	0	0	0	0	0	0	0	0	0	0	0
	DC VAD	0	0	0	0	0	0	0	0	0	0	0	0	0
ACS	0	0	0	0	0	0	0	0	0	0	0	0	0	

ACS = acute circulatory support.



Figure 47. Tier 2 two-year posttransplant mortality rates by sub-criteria



IABP = intra-aortic balloon pump; VT/VF = ventricular tachycardia/fibrillation; DevFail = device failure.

Table 9. Tier 2 two-year posttransplant death counts by sub-criteria

Metric	Criterion	Obs	Current rules			By tier			Sh 1/2A			Sh 1/2B		
			Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max
2Y PT deaths	IABP	20	17	11	21	40	29	50	64	53	78	60	52	77
	VT/VF	10	9	5	13	20	15	28	30	19	48	28	22	34
	DevFail	8	11	7	17	16	11	24	26	16	34	22	13	27
	TAH	10	10	5	15	14	10	19	15	7	18	19	15	23
	DC VAD	4	7	4	9	12	6	17	17	13	20	17	12	21
ACS	1	1	0	2	1	0	2	2	0	3	3	1	7	

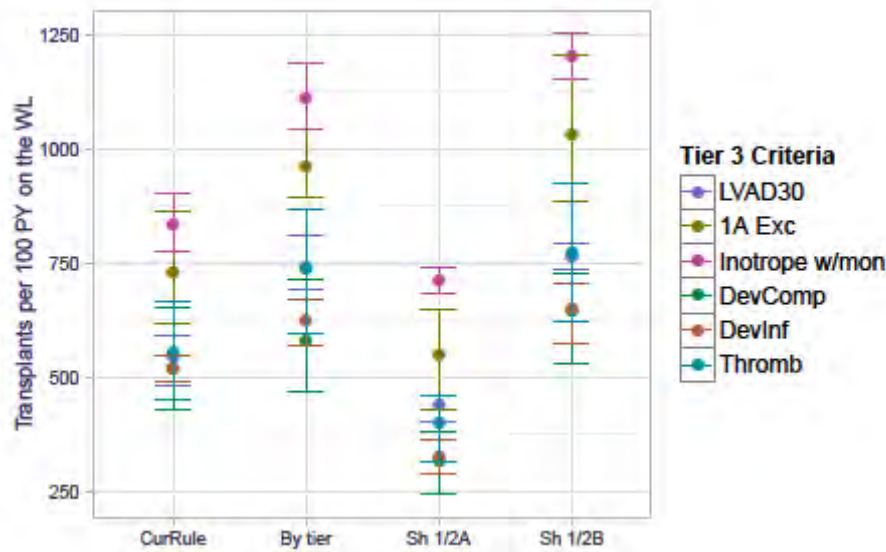
TAH = total artificial heart; DC VAD = dischargeable LVAD; ACS = acute circulatory support.



Tier 3

Tier 3 included the majority of candidates currently classified as status 1A, and sufficient numbers of events occurred for all tier-defining criteria to allow computation of stable transplant and waitlist mortality estimates (Figure 48, Figure 49, and Figure 50). Counts of these outcomes are given for all groups in Table 10, Table 11, and Table 12.

Figure 48. Tier 3 transplant rates by sub-criteria



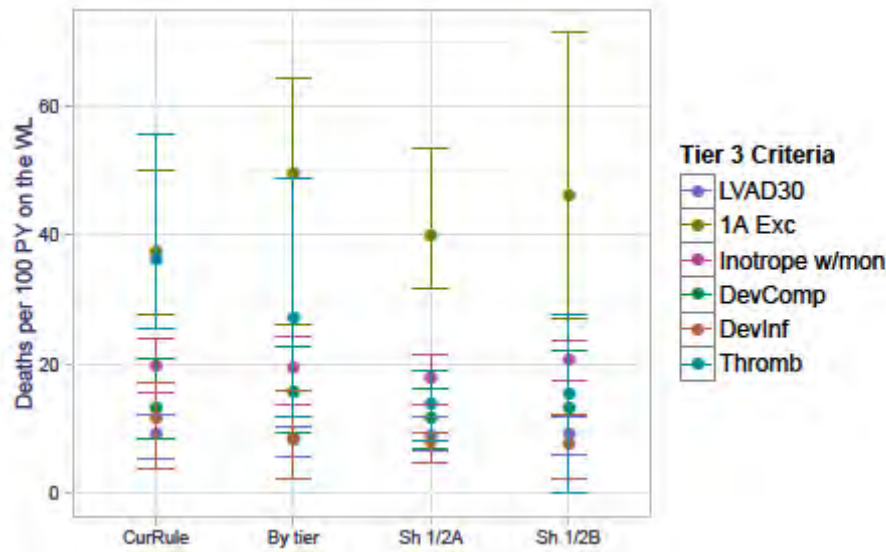
LVAD30 = LVAD for 30 days; 1A Exc = Status 1A exception; Inotrope/mon = inotropes with hemodynamic monitoring; DevComp = Other device complication; DevInf = Device infection; Thromb = Thromboembolism.

Table 10. Tier 3 transplant counts by sub-criteria

Metric	Criterion	Obs	Current rules			By tier			Sh 1/2A			Sh 1/2B		
			Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max
TX count	LVAD30	479	401	363	432	510	487	552	334	309	347	517	502	527
	1A Exc	132	105	86	114	107	98	113	80	68	91	112	104	121
	Inotrope w/mon	673	562	544	578	660	635	689	505	495	521	682	659	719
	DevComp	70	55	46	60	59	50	71	43	34	54	58	53	63
	DevInf	237	262	254	288	273	250	285	212	199	231	261	247	278
	Thromb	79	55	52	62	58	52	66	46	33	53	54	48	64



Figure 49. Tier 3 waitlist mortality rates by sub-criteria



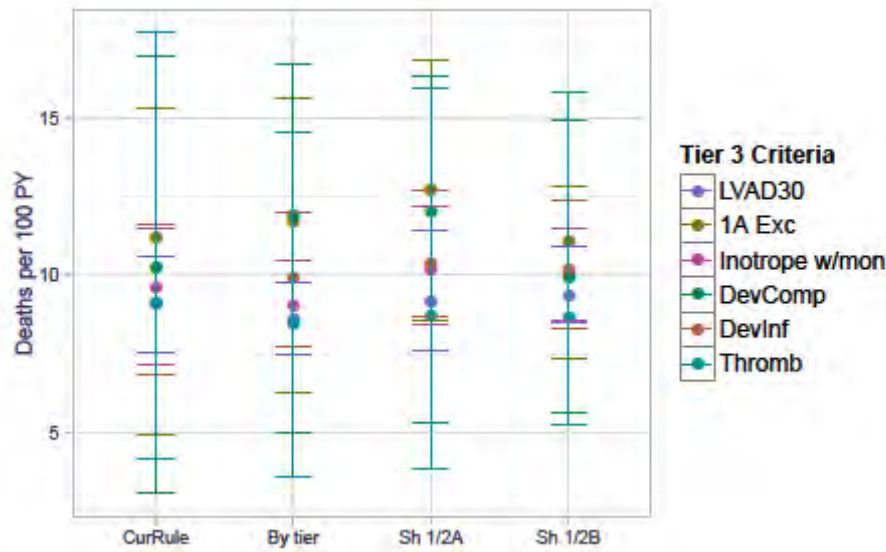
LVAD30 = LVAD for 30 days; 1A Exc = Status 1A exception; Inotrope/mon = inotropes with hemodynamic monitoring; DevComp = Other device complication; DevInf = Device infection; Thromb = Thromboembolism.

Table 11. Tier 3 waitlist death and removal counts by sub-criteria

Metric	Criterion	Obs	Current rules			By tier			Sh 1/2A			Sh 1/2B		
			Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max
WL death Counts	LVAD30	8	7	4	9	6	4	7	7	5	9	6	4	8
	1A Exc	7	5	4	7	6	3	7	6	5	8	5	3	7
	Inotrope w/mon	13	13	11	16	12	8	14	13	10	15	12	10	13
	DevComp	2	1	1	2	2	1	2	2	1	2	1	0	2
	DevInf	3	6	2	9	4	1	7	5	3	6	3	1	5
WL removals	Thromb	2	4	3	5	2	1	4	2	1	2	1	0	2
	LVAD30	0	1	1	1	1	1	1	1	1	1	1	1	1
	1A Exc	4	2	0	4	0	0	1	1	0	2	0	0	1
	Inotrope w/mon	11	7	4	9	6	4	7	6	5	8	5	2	7
	DevComp	0	0	0	0	0	0	0	0	0	0	0	0	0
DevInf	5	1	0	2	1	0	2	2	0	3	1	0	2	
Thromb	0	0	0	0	0	0	0	0	0	0	0	0	0	



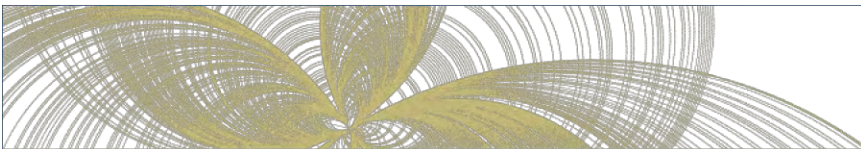
Figure 50. Tier 3 two-year posttransplant mortality rates by sub-criteria



LVAD30 = LVAD for 30 days; 1A Exc = Status 1A exception; Inotrope/mon = inotropes with hemodynamic monitoring; DevComp = Other device complication; DevInf = Device infection; Thromb = Thromboembolism.

Table 12. Tier 3 two-year posttransplant death counts by sub-criteria

Metric	Criterion	Obs	Current rules			By tier			Sh 1/2A			Sh 1/2B		
			Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max
2Y PT deaths	LVAD30	52	64	53	71	78	68	84	54	46	65	85	76	98
	1A Exc	23	20	10	25	21	12	28	17	12	22	21	14	26
	Inotrope w/mon	60	95	72	114	106	91	123	90	74	107	120	105	142
	DevComp	10	10	3	16	12	6	15	9	4	11	10	6	13
	DevInf	44	42	33	51	47	37	54	38	33	47	47	37	57
	Thromb	10	9	4	15	9	4	15	7	3	13	8	5	16



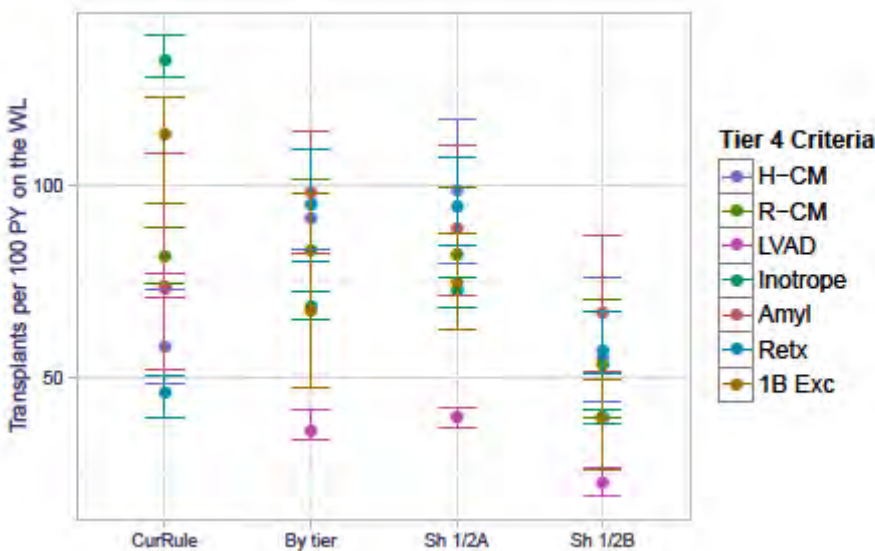
Tier 4

Twelve different sub-criteria defined tier 4, but almost all tier 4 candidates had LVADs after 30 days or were on inotropes without hemodynamic monitoring. Six sub-criteria groups were sufficiently large to show transplant and waitlist mortality rates (Figure 51 and Figure 52), while sufficient numbers of events to show posttransplant mortality occurred in only the two largest categories (Figure 53). Counts of these outcomes are given for all sub-criteria in Table 13, Table 14, and Table 15.

The difference between observed and simulated transplant counts and rates for tier 4 LVAD and inotrope candidates is likely a combination of unmodeled patient management strategies, TSAM acceptance model performance, and exposure time. TSAM does not distinguish among tier 4 candidates except by characteristics defined in allocation rules (blood group, zone, time spent at the given tier). Observed transplant rates for candidates on inotropes without hemodynamic monitoring were about 3 times higher than observed rates for candidates with stable LVADs. These conditions both qualify candidates as status 1B under current rules. All other things being equal, we might expect more similar observed transplant rates. Indeed, simulations of current rules resulted in transplant rates for inotrope candidates that were only twice as high as rates for LVAD candidates. In the current rules simulation, transplants occurred in appended data (i.e., **records added to a candidate’s clinical history covering time after the observed transplant date**) for 41% of tier 4 LVAD candidates and 31% of tier 4 inotrope candidates. In tier 4, collectively, candidates in the simulation spent more time on LVADs than on unmonitored inotropes, possibly resulting in greater exposure to simulated offers and thus more transplants in LVAD candidates than in observed data and relatively fewer transplants in inotrope candidates.

Increases in the number of “automatic downgrade” candidates who underwent transplant in simulated compared with observed data are an artifact of the simulation (Table 13). These transplants took place primarily in appended data. In the simulation, these candidates waited longer for transplant than in real life, and their appended data included insufficient information to identify the criterion that defined tier 4 assignment.

Figure 51. Tier 4 transplant rates by selected sub-criteria



H-CM = Hypertrophic cardiomyopathy; R-CM = Restrictive cardiomyopathy; LVAD = LVAD after 30 days; Inotrope w/o hemodynamic monitoring; Amyl = Amyloidosis; Retx = Re-transplant; 1B Exc = Status 1B exception.

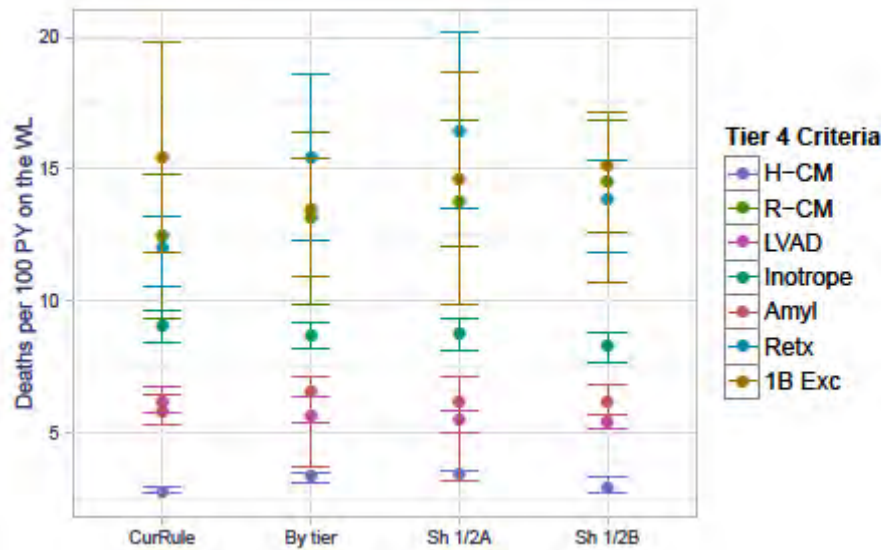


Table 13. Tier 4 transplant counts by sub-criteria

Metric	Criteria	Obs	Current rules			By tier			Sh 1/2A			Sh 1/2B		
			Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max
TX count	CHD unrep	7	8	5	11	9	6	13	8	4	12	6	3	8
	2V CHD	2	11	9	16	9	7	12	11	9	15	6	3	9
	1V CHD	6	7	4	10	6	2	9	9	5	15	3	2	4
	Angina	15	10	4	13	11	8	14	13	11	17	7	4	11
	H-CM	40	42	35	53	55	49	58	59	50	69	37	32	46
	R-CM	36	33	32	37	33	26	40	33	26	37	23	18	28
	LVAD >30d	447	623	609	642	322	300	366	370	344	398	204	175	235
	Inotrop w/o mon	939	785	764	820	462	446	487	488	459	505	291	279	305
	Amyloid	23	25	19	35	28	24	31	27	22	32	21	17	26
	Re-tx	75	79	69	87	125	109	137	126	115	135	89	81	102
	1B Exc	72	55	49	60	35	26	48	38	32	42	23	16	28
	Auto downgrade	4	110	96	123	79	75	91	85	73	94	57	50	64

CHD unrep = Congenital unrepaired CHD; 2V CHD = Congenital repaired CHD, 2 ventricles; 1V CHD = Congenital repaired CHD, 1 ventricle; Angina = IHD/intractable angina.

Figure 52. Tier 4 waitlist mortality rates by selected sub-criteria



H-CM = Hypertrophic cardiomyopathy; R-CM = Restrictive cardiomyopathy; LVAD = LVAD after 30 days; Inotrope w/o hemodynamic monitoring; Amyl = Amyloidosis; Retx = Re-transplant; 1B Exc = Status 1B exception.

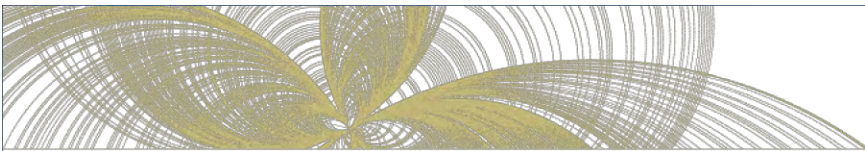


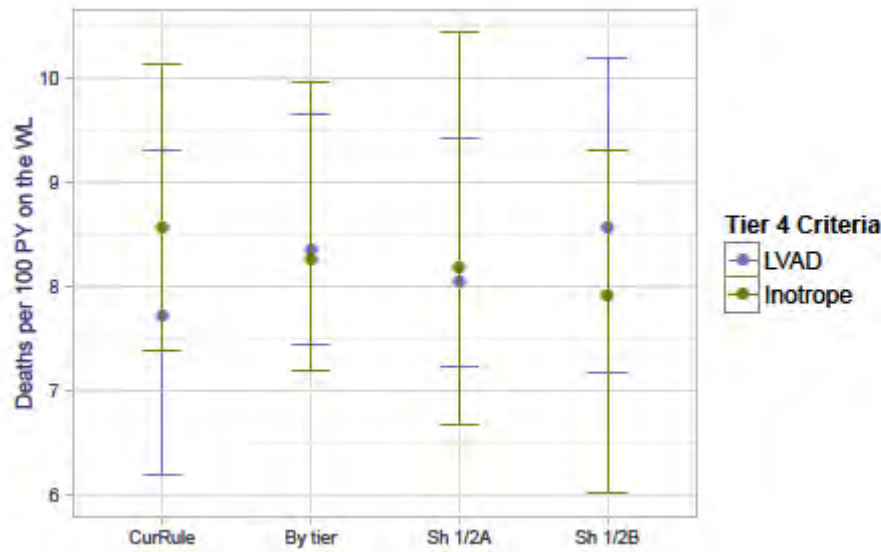
Table 14. Tier 4 waitlist death and removal counts by sub-criteria

Metric	Criteria	Obs	Current rules			By tier			Sh 1/2A			Sh 1/2B		
			Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max
WL death counts	CHD unrep	0	0	0	0	0	0	0	0	0	0	0	0	0
	2V CHD	1	1	1	1	1	1	1	1	0	1	1	1	1
	1V CHD	1	1	1	1	1	0	1	1	0	1	1	1	1
	Angina	3	4	2	6	4	2	5	4	3	6	4	2	5
	H-CM	2	2	2	2	2	2	2	2	2	2	2	2	2
	R-CM	2	5	4	6	5	4	6	6	5	7	6	5	7
	LVAD >30d	50	53	48	57	51	48	55	51	47	54	49	46	53
	Inotrop w/o mon	56	54	50	57	59	56	63	59	54	62	61	56	64
	Amyloid	2	2	2	2	2	1	2	2	1	2	2	2	2
	Re-tx	20	21	18	23	20	17	23	22	18	25	22	19	24
	1B Exc	4	8	6	9	7	6	8	8	5	9	9	6	10
Auto downgrade	1	0	0	1	0	0	1	0	0	0	0	0	1	
WL removals	CHD unrep	1	1	0	2	2	0	3	2	1	3	3	2	4
	2V CHD	2	1	1	1	1	1	1	1	0	1	1	0	1
	1V CHD	0	0	0	0	0	0	0	0	0	0	0	0	0
	Angina	0	0	0	0	0	0	0	0	0	0	0	0	0
	H-CM	11	11	9	12	10	7	11	9	7	13	10	8	11
	R-CM	5	4	3	5	3	2	4	3	2	5	3	3	4
	LVAD >30d	65	45	42	48	48	41	53	48	43	52	50	43	55
	Inotrop w/o mon	50	32	29	35	39	35	42	39	36	42	42	38	43
	Amyloid	2	4	3	6	7	6	9	7	6	9	7	5	8
	Re-tx	20	19	16	21	11	7	16	12	8	15	14	10	17
	1B Exc	4	3	2	4	3	2	4	3	1	4	4	3	6
Auto downgrade	2	3	2	4	3	2	4	3	2	4	4	3	4	

CHD unrep = Congenital unrepaired CHD; 2V CHD = Congenital repaired CHD, 2 ventricles; 1V CHD = Congenital repaired CHD, 1 ventricle; Angina = IHD/intractable angina.



Figure 53. Tier 4 two-year posttransplant mortality rates by selected sub-criteria



LVAD = LVAD after 30 days; Inotrope w/o hemodynamic monitoring.

Table 15. Tier 4 two-year posttransplant death counts by sub-criteria

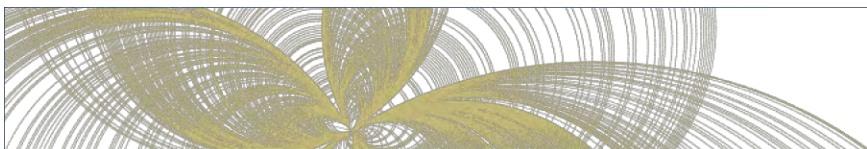
Metric	Criteria	Obs	Current rules			By tier			Sh 1/2A			Sh 1/2B		
			Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max
PT deaths	CHD unrep	3	2	0	4	2	0	4	3	2	5	2	0	4
	2V CHD	0	3	1	6	1	0	4	2	1	4	1	0	3
	1V CHD	2	1	0	4	1	0	3	1	0	4	0	0	2
	Angina	1	2	1	4	2	0	4	2	0	4	1	0	3
	H-CM	5	6	3	8	7	4	10	8	5	11	5	3	7
	R-CM	6	5	2	8	6	3	10	6	3	9	5	2	11
	LVAD >30d	56	87	71	104	48	43	56	53	49	62	31	23	38
	Inotrop w/o mon	107	120	104	138	68	60	84	71	60	91	41	32	48
	Amyloid	2	4	1	7	5	3	8	5	3	7	3	0	5
	Re-tx	8	18	14	23	31	21	41	33	25	43	23	13	28
	1B Exc	11	11	6	17	5	1	8	7	4	10	4	2	7
	Auto downgrade	0	15	8	20	12	8	15	11	7	13	8	5	11

CHD unrep = Congenital unrepaired CHD; 2V CHD = Congenital repaired CHD, 2 ventricles; 1V CHD = Congenital repaired CHD, 1 ventricle; Angina = IHD/intractable angina; H-CM = Hypertrophic cardiomyopathy; R-CM = Restrictive cardiomyopathy; Amyl = Amyloidosis; Retx = Re-transplant; 1B Exc = Status 1B exception.

Discussion

The proposed 7-tiered allocation system was developed to stratify medical urgency based on waitlist mortality risk, and broader sharing rules were developed to increase access to transplant for the most critically ill candidates. We simulated allocation by tiers and four sets of sharing rules to determine how they affected the system in general and the most severely ill candidates in particular.

Allocation by tiers and all broader sharing rules prioritized tier 1 and 2 candidates compared with current rules, and resulted in large increases in transplant rates for these candidates. Broader sharing further increased transplant rates 2- to 3-fold compared with allocation by tiers for tier 1 and 2 candidates, though most sharing



rules behaved similarly to each other in these two groups. All broader sharing rules prioritized tier 1 and 2 candidates out to zone B before any tier 3 offers were made. Since tiers 1 and 2 represent small groups of candidates, there was little competition among them for transplants, and all broader sharing simulations resulted in high transplant rates for these groups regardless of the details of their geographic ordering.

For tier 3 candidates, the Sh 1/2A rules gave lower transplant rates than allocation by tiers without sharing. Comparing the rules under allocation by tiers (Table A-3) and Sh 1/2A (Table A-1), allocation by tiers offered broader access to transplant for tier 3 candidates. Allocation by tiers made offers to zone A tier 3 candidates before making any tier 4 offers, while Sh 1/2A prioritized local tier 4 candidates before zone A tier 3 candidates. Since tiers 3 and 4 include many more candidates than tiers 1 and 2, this seemingly slight difference in order had a large impact on tier 3 transplant rates, dropping them below the tier 3 rate under current rules.

Waitlist mortality remained highest for tier 1 candidates in all simulations, but the number of waitlist deaths declined from 16 under current rules to 10 under allocation by tiers, and further declined to 6-7 under the four sharing simulations. This suggests that prioritization of critically ill candidates reduced the number of waitlist deaths, and those who died on the waiting list spent little time waiting at the more urgent tiers. Although ranges overlapped, point estimates for waitlist mortality among inactive candidates suggest that sharing increased access to transplant for these candidates. Inactive candidates are not eligible for transplant, so the most likely mechanism for this reduction is urgent candidates receiving and accepting organ offers before becoming inactive, reducing the inactive candidate pool at risk for death.

Limitations of the thoracic simulated allocation model (TSAM) used for this analysis should be considered when interpreting results.

- TSAM assumes that organ acceptance behavior does not change in response to simulated policy changes; moreover, organ acceptance behavior is based on historical acceptance behavior that may or may not change under proposed sharing
- TSAM does not anticipate changes in listing behavior that allocation rule changes could precipitate.
- TSAM cannot account for center-specific practices.
- TSAM assumes that all organ offers follow the stated allocation rules, and does not allow for exceptions or expedited placements.
- TSAM models are limited by the available data during the cohort period.
- All prediction models include uncertainty.
 - TSAM relies on 13 separate models.
 - TSAM provides less certain results for small groups that may have minimal influence on the models.

Taking these limitations into account, the simulations described here suggest promising results for differentiating among the most critical status 1A candidates, increasing transplant rates for candidates in the highest medical urgency groups (tiers 1 and 2), and reducing overall waitlist mortality with broader geographic sharing organ allocation scenarios.

Appendix A. Allocation rules for heart offers

Table A-1. Broader sharing rules, heart offers from adult donors

Broader sharing Tier 1/2A	
Candidate tier/status	Location
Tier 1 adult + Status 1A ped	DSA + Zone A
Tier 1 adult + Status 1A ped	Zone B
Tier 2 adult	DSA + Zone A
Tier 2 adult	Zone B
Tier 3 adult + Status 1B ped	DSA
Tier 4 adult	DSA
Tier 3 adult + Status 1B ped	Zone A
Tier 5 adult	DSA
Tier 3 adult + Status 1B ped	Zone B
Tier 6 adult + Status 2 ped	DSA
Tier 1 adult + Status 1A ped	Zone C
Tier 2 adult	Zone C
Tier 3 adult + Status 1B ped	Zone C
Tier 4 adult	Zone A
Tier 5 adult	Zone A
Tier 6 adult + Status 2 ped	Zone A
Tier 1 adult + Status 1A ped	Zone D
Tier 2 adult	Zone D
Tier 3 adult + Status 1B ped	Zone D
Tier 4 adult	Zone B
Tier 5 adult	Zone B
Tier 6 adult + Status 2 ped	Zone B
Tier 1 adult + Status 1A ped	Zone E
Tier 2 adult	Zone E
Tier 3 adult + Status 1B ped	Zone E
Tier 4 adult	Zone C
Tier 5 adult	Zone C
Tier 6 adult + Status 2 ped	Zone C
Tier 4 adult	Zone D
Tier 5 adult	Zone D
Tier 6 adult + Status 2 ped	Zone D
Tier 4 adult	Zone E
Tier 5 adult	Zone E
Tier 6 adult + Status 2 ped	Zone E

Broader sharing Tier 1/Tier 2B, modified	
Candidate tier/status	Location
Tier 1 adult + Status 1A ped	DSA + Zone A
Tier 1 adult + Status 1A ped	Zone B
Tier 2 adult	DSA + Zone A
Tier 2 adult	Zone B
Tier 2 adult	Zone B
Tier 3 adult + Status 1B ped	DSA
Tier 3 adult + Status 1B ped	Zone A
Tier 4 adult	DSA
Tier 5 adult	DSA
Tier 3 adult + Status 1B ped	Zone B
Tier 6 adult + Status 2 ped	DSA
Tier 1 adult + Status 1A ped	Zone C
Tier 2 adult	Zone C
Tier 3 adult + Status 1B ped	Zone C
Tier 4 adult	Zone A
Tier 5 adult	Zone A
Tier 6 adult + Status 2 ped	Zone A
Tier 1 adult + Status 1A ped	Zone D
Tier 2 adult	Zone D
Tier 3 adult + Status 1B ped	Zone D
Tier 4 adult	Zone B
Tier 5 adult	Zone B
Tier 6 adult + Status 2 ped	Zone B
Tier 1 adult + Status 1A ped	Zone E
Tier 2 adult	Zone E
Tier 3 adult + Status 1B ped	Zone E
Tier 4 adult	Zone C
Tier 5 adult	Zone C
Tier 6 adult + Status 2 ped	Zone C
Tier 4 adult	Zone D
Tier 5 adult	Zone D
Tier 6 adult + Status 2 ped	Zone D
Tier 4 adult	Zone E
Tier 5 adult	Zone E
Tier 6 adult + Status 2 ped	Zone E

Broader sharing all tiers	
Candidate tier/status	Location
Tier 1 adult + Status 1A ped	DSA + Zone A + Zone B
Tier 2 adult	DSA + Zone A + Zone B
Tier 3 adult + Status 1B ped	DSA + Zone A
Tier 4 adult	DSA + Zone A
Tier 3 adult + Status 1B ped	Zone B
Tier 5 adult	DSA + Zone A
Tier 6 adult + Status 2 ped	DSA + Zone A
Tier 1 adult + Status 1A ped	Zone C
Tier 2 adult	Zone C
Tier 3 adult + Status 1B ped	Zone C
Tier 4 adult	Zone B
Tier 5 adult	Zone B
Tier 6 adult + Status 2 ped	Zone B
Tier 1 adult + Status 1A ped	Zone D
Tier 2 adult	Zone D
Tier 3 adult + Status 1B ped	Zone D
Tier 4 adult	Zone C
Tier 5 adult	Zone C
Tier 6 adult + Status 2 ped	Zone C
Tier 1 adult + Status 1A ped	Zone E
Tier 2 adult	Zone E
Tier 3 adult + Status 1B ped	Zone E
Tier 4 adult	Zone D
Tier 5 adult	Zone D
Tier 6 adult + Status 2 ped	Zone D
Tier 4 adult	Zone E
Tier 5 adult	Zone E
Tier 6 adult + Status 2 ped	Zone E

Tier priority	
Candidate tier/status	Location
Tier 1 adult + Status 1A ped	DSA
Tier 1 adult + Status 1A ped	Zone A
Tier 1 adult + Status 1A ped	Zone B
Tier 2 adult	DSA
Tier 2 adult	Zone A
Tier 2 adult	Zone B
Tier 3 adult + Status 1B ped	DSA
Tier 3 adult + Status 1B ped	Zone A
Tier 4 adult	DSA
Tier 5 adult	DSA
Tier 6 adult + Status 2 ped	DSA
Tier 1 adult + Status 1A ped	Zone C
Tier 2 adult	Zone C
Tier 3 adult + Status 1B ped	Zone B
Tier 4 adult	Zone A
Tier 5 adult	Zone A
Tier 6 adult + Status 2 ped	Zone A
Tier 1 adult + Status 1A ped	Zone D
Tier 2 adult	Zone D
Tier 3 adult + Status 1B ped	Zone C
Tier 4 adult	Zone B
Tier 5 adult	Zone B
Tier 6 adult + Status 2 ped	Zone B
Tier 1 adult + Status 1A ped	Zone E
Tier 2 adult	Zone E
Tier 3 adult + Status 1B ped	Zone D
Tier 4 adult	Zone C
Tier 5 adult	Zone C
Tier 6 adult + Status 2 ped	Zone C
Tier 3 adult + Status 1B ped	Zone E
Tier 4 adult	Zone D
Tier 5 adult	Zone D
Tier 6 adult + Status 2 ped	Zone D
Tier 4 adult	Zone E
Tier 5 adult	Zone E
Tier 6 adult + Status 2 ped	Zone E

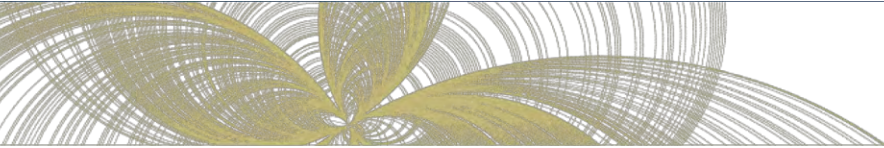
Table A-2. Broader sharing rules, heart offers from pediatric donors

Broader sharing Tier 1/2	
Candidate tier/status	Location
Status 1A ped	DSA + Zone A
Tier 1 adult	DSA + Zone A
Status 1A ped	Zone B
Tier 1 adult	Zone B
Tier 2 adult	DSA + Zone A
Tier 2 adult	Zone B
Status 1B ped	DSA
Tier 3 adult	DSA
Tier 4 adult	DSA
Status 1B ped	Zone A
Tier 3 adult	Zone A
Tier 5 adult	DSA
Status 1B ped	Zone B
Tier 3 adult	Zone B
Status 2 ped	DSA
Tier 6 adult	DSA
Status 1A ped	Zone C
Tier 1 adult	Zone C
Tier 2 adult	Zone C
Status 1B ped	Zone C
Tier 3 adult	Zone C
Tier 4 adult	Zone A
Tier 5 adult	Zone A
Status 2 ped	Zone A
Tier 6 adult	Zone A
Status 1A ped	Zone D
Tier 1 adult	Zone D
Tier 2 adult	Zone D
Status 1B ped	Zone D
Tier 3 adult	Zone D
Tier 4 adult	Zone B
Tier 5 adult	Zone B
Status 2 ped	Zone B
Tier 6 adult	Zone B
Status 1A ped	Zone E
Tier 1 adult	Zone E
Tier 2 adult	Zone E
Status 1B ped	Zone E

Broader sharing Tier 1/Tier 2, modified	
Candidate tier/status	Location
Status 1A ped	DSA + Zone A
Tier 1 adult	DSA + Zone A
Status 1A ped	Zone B
Tier 1 adult	Zone B
Tier 2 adult	DSA + Zone A
Tier 2 adult	Zone B
Status 1B ped	DSA
Tier 3 adult	DSA
Status 1B ped	Zone A
Tier 3 adult	Zone A
Tier 4 adult	DSA
Tier 5 adult	DSA
Status 1B ped	Zone B
Tier 3 adult	Zone B
Status 2 ped	DSA
Tier 6 adult	DSA
Status 1A ped	Zone C
Tier 1 adult	Zone C
Tier 2 adult	Zone C
Status 1B ped	Zone C
Tier 3 adult	Zone C
Tier 4 adult	Zone A
Tier 5 adult	Zone A
Status 2 ped	Zone A
Tier 6 adult	Zone A
Status 1A ped	Zone D
Tier 1 adult	Zone D
Tier 2 adult	Zone D
Status 1B ped	Zone D
Tier 3 adult	Zone D
Tier 4 adult	Zone B
Tier 5 adult	Zone B
Status 2 ped	Zone B
Tier 6 adult	Zone B
Status 1A ped	Zone E
Tier 1 adult	Zone E
Tier 2 adult	Zone E
Status 1B ped	Zone E

Broader sharing all tiers	
Candidate tier/status	Location
Status 1A ped	DSA + Zone A + Zone B
Tier 1 adult	DSA + Zone A + Zone B
Tier 2 adult	DSA + Zone A + Zone B
Status 1B ped	DSA + Zone A
Tier 3 adult	DSA + Zone A
Tier 4 adult	DSA + Zone A
Status 1B ped	Zone B
Tier 3 adult	Zone B
Tier 5 adult	DSA + Zone A
Status 2 ped	DSA + Zone A
Tier 6 adult	DSA + Zone A
Status 1A ped	Zone C
Tier 1 adult	Zone C
Tier 2 adult	Zone C
Status 1B ped	Zone C
Tier 3 adult	Zone C
Tier 4 adult	Zone B
Tier 5 adult	Zone B
Status 2 ped	Zone B
Tier 6 adult	Zone B
Status 1A ped	Zone D
Tier 1 adult	Zone D
Tier 2 adult	Zone D
Status 1B ped	Zone D
Tier 3 adult	Zone D
Tier 4 adult	Zone C
Tier 5 adult	Zone C
Status 2 ped	Zone C
Tier 6 adult	Zone C
Status 1A ped	Zone E
Tier 1 adult	Zone E
Tier 2 adult	Zone E
Status 1B ped	Zone E
Tier 3 adult	Zone E
Tier 4 adult	Zone D
Tier 5 adult	Zone D
Status 2 ped	Zone D
Tier 6 adult	Zone D

Tier priority	
Candidate tier/status	Location
Status 1A ped	DSA
Tier 1 adult	DSA
Status 1A ped	Zone A
Tier 1 adult	Zone A
Status 1A ped	Zone B
Tier 1 adult	Zone B
Tier 2 adult	DSA
Tier 2 adult	Zone A
Tier 2 adult	Zone B
Status 1B ped	DSA
Tier 3 adult	DSA
Status 1B ped	Zone A
Tier 3 adult	Zone A
Tier 4 adult	DSA
Tier 5 adult	DSA
Status 2 ped	DSA
Tier 6 adult	DSA
Status 1A ped	Zone C
Tier 1 adult	Zone C
Tier 2 adult	Zone C
Status 1B ped	Zone B
Tier 3 adult	Zone B
Tier 4 adult	Zone A
Tier 5 adult	Zone A
Status 2 ped	Zone A
Tier 6 adult	Zone A
Status 1A ped	Zone D
Tier 1 adult	Zone D
Tier 2 adult	Zone D
Status 1B ped	Zone C
Tier 3 adult	Zone C
Tier 4 adult	Zone B
Tier 5 adult	Zone B
Status 2 ped	Zone B
Tier 6 adult	Zone B
Status 1A ped	Zone E
Tier 1 adult	Zone E
Tier 2 adult	Zone E



Broader sharing Tier 1/2	
Candidate tier/status	Location
Tier 3 adult	Zone E
Tier 4 adult	Zone C
Tier 5 adult	Zone C
Status 2 ped	Zone C
Tier 6 adult	Zone C
Tier 4 adult	Zone D
Tier 5 adult	Zone D
Status 2 ped	Zone D
Tier 6 adult	Zone D
Tier 4 adult	Zone E
Tier 5 adult	Zone E
Status 2 ped	Zone E
Tier 6 adult	Zone E

Broader sharing Tier 1/Tier 2, modified	
Candidate tier/status	Location
Tier 3 adult	Zone E
Tier 4 adult	Zone C
Tier 5 adult	Zone C
Status 2 ped	Zone C
Tier 6 adult	Zone C
Tier 4 adult	Zone D
Tier 5 adult	Zone D
Status 2 ped	Zone D
Tier 6 adult	Zone D
Tier 4 adult	Zone E
Tier 5 adult	Zone E
Status 2 ped	Zone E
Tier 6 adult	Zone E

Broader sharing all tiers	
Candidate tier/status	Location
Tier 4 adult	Zone E
Tier 5 adult	Zone E
Status 2 ped	Zone E
Tier 6 adult	Zone E

Tier priority	
Candidate tier/status	Location
Status 1B ped	Zone D
Tier 3 adult	Zone D
Tier 4 adult	Zone C
Tier 5 adult	Zone C
Status 2 ped	Zone C
Tier 6 adult	Zone C
Status 1B ped	Zone E
Tier 3 adult	Zone E
Tier 4 adult	Zone D
Tier 5 adult	Zone D
Status 2 ped	Zone D
Tier 6 adult	Zone D
Tier 4 adult	Zone E
Tier 5 adult	Zone E
Status 2 ped	Zone E
Tier 6 adult	Zone E

Note: Each classification is further stratified by ABO-primary, then ABO-secondary blood type match.



Table A-3. Current rules and allocation by tier, heart offers from adult donors

Current rules	
Candidate status	Location
Status 1A	DSA
Status 1B	DSA
Status 1A	Zone A
Status 1B	Zone A
Status 2	DSA
Status 1A	Zone B
Status 1B	Zone B
Status 2	Zone A
Status 2	Zone B
Status 1A	Zone C
Status 1B	Zone C
Status 2	Zone C

Allocation by tier	
Candidate tier	Location
Tier 1 adult + Status 1A ped	DSA
Tier 2 adult	DSA
Tier 3 adult + Status 1B ped	DSA
Tier 1 adult + Status 1A ped	Zone A
Tier 2 adult	Zone A
Tier 3 adult + Status 1B ped	Zone A
Tier 4 adult	DSA
Tier 4 adult	Zone A
Tier 5 adult + Status 2 ped	DSA
Tier 6 adult	DSA
Tier 1 adult + Status 1A ped	Zone B
Tier 2 adult	Zone B
Tier 3 adult + Status 1B ped	Zone B
Tier 4 adult	Zone B
Tier 5 adult + Status 2 ped	Zone A
Tier 6 adult	Zone A
Tier 5 adult + Status 2 ped	Zone B
Tier 6 adult	Zone B
Tier 1 adult + Status 1A ped	Zone C
Tier 2 adult	Zone C
Tier 3 adult + Status 1B ped	Zone C
Tier 4 adult	Zone C
Tier 5 adult + Status 2 ped	Zone C
Tier 6 adult	Zone C

Zones D and E follow the Zone C pattern.

Note: Each classification is further stratified by ABO-primary, then ABO-secondary blood type match.



Table A-4. Current rules and allocation by tier, heart offers from pediatric donors

Current Rules	
Candidate status	Location
Status 1A ped	DSA + Zone A
Status 1A adults	DSA
Status 1B ped	DSA + Zone A
Status 1B adults	DSA
Status 1A adults	Zone A
Status 1B adults	Zone A
Status 2 ped	DSA
Status 2 adult	DSA
Status 1A ped	Zone B
Status 1A adults	Zone B
Status 1B ped	Zone B
Status 1B adults	Zone B
Status 2 ped	Zone A
Status 2 adult	Zone A
Status 2 ped	Zone B
Status 2 adult	Zone B
Status 1A ped	Zone C
Status 1A adults	Zone C
Status 1B ped	Zone C
Status 1B adults	Zone C
Status 2 ped	Zone C
Status 2 adult	Zone C

Allocation by Tier	
Candidate tier	Location
Status 1A ped	DSA + Zone A
Tier 1 adult	DSA
Tier 2 adult	DSA
Status 1B ped	DSA + Zone A
Tier 3 adult	DSA
Tier 4 adult	DSA
Tier 1 adult	Zone A
Tier 2 adult	Zone A
Tier 3 adult	Zone A
Tier 4 adult	Zone A
Status 2 ped	DSA
Tier 5 adult	DSA
Tier 6 adult	DSA
Status 1A ped	Zone B
Tier 1 adult	Zone B
Tier 2 adult	Zone B
Status 1B ped	Zone B
Tier 3 adult	Zone B
Tier 4 adult	Zone B
Status 2 ped	Zone A
Tier 5 adult	Zone A
Tier 6 adult	Zone A
Status 2 ped	Zone B
Tier 5 adult	Zone B
Tier 6 adult	Zone B
Status 1A ped	Zone C
Tier 1 adult	Zone C
Tier 2 adult	Zone C
Status 1B ped	Zone C
Tier 3 adult	Zone C
Tier 4 adult	Zone C
Status 2 ped	Zone C
Tier 5 adult	Zone C
Tier 6 adult	Zone C

Zones D and E follow the Zone C pattern.

Note: Each classification is further stratified by ABO-primary, then ABO-secondary blood type match.



Appendix B. Waitlist and posttransplant outcomes details, by simulation

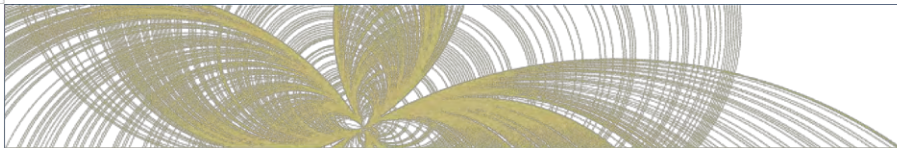
Table B-1. Overall waitlist and posttransplant outcomes by simulation.

Metric	Obs.	Current Rule			By Tier			Sh 1/2A			Sh 1/2B			ShAll			Tier Priority		
		Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max
Candidates	9913	9913	9913	9913	9913	9913	9913	9913	9913	9913	9913	9913	9913	9913	9913	9913	9913	9913	9913
TX count	4629	4684	4677	4692	4648	4640	4660	4661	4652	4672	4656	4643	4666	4650	4640	4664	4657	4652	4666
TX rates	109.5	112.7	112.0	113.5	111.2	110.7	111.6	111.0	109.9	112.2	111.0	109.9	111.6	110.4	109.7	110.9	111.3	110.7	111.8
WL death counts	743	710	700	724	676	667	684	657	647	666	638	633	643	649	643	654	641	630	653
WL morality rate	11.8	11.5	11.3	11.7	10.9	10.8	11.0	10.5	10.4	10.7	10.3	10.2	10.4	10.4	10.3	10.5	10.3	10.1	10.5
WL Removals	1302	1026	1016	1042	1015	987	1030	1012	988	1032	1010	998	1023	1014	999	1030	1006	992	1029
Active WL deaths	307	308	299	318	293	285	302	283	278	287	276	267	284	281	272	296	277	269	283
Active WL mort. rate	7.3	7.4	7.2	7.7	7.0	6.8	7.2	6.7	6.6	6.9	6.6	6.4	6.8	6.7	6.5	7.1	6.6	6.4	6.7
1Y PT deaths	443	550	515	596	561	519	591	593	571	632	598	570	617	598	582	637	588	559	641
1Y PT death rate	10.3	12.8	11.9	13.9	13.2	12.1	14.0	14.0	13.4	15.0	14.1	13.5	14.6	14.1	13.7	15.2	13.9	13.1	15.3
2Y PT deaths	554	714	677	762	729	669	763	768	732	802	776	746	810	771	748	809	764	732	794
2Y PT death rate	6.6	8.6	8.1	9.2	8.8	8.0	9.3	9.3	8.8	9.8	9.5	9.1	9.9	9.4	9.1	10.0	9.3	8.9	9.8



Table B-2. Waitlist and posttransplant outcomes by simulation and tier

Metric	Tier	Observed	Current Rule			By Tier			Sh 1/2A			Sh 1/2B			ShAll			Tier Priority		
			Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max
Candidates	1	111	112	112	112	112	112	112	112	112	112	112	112	112	112	112	112	112	112	112
	2	379	377	377	377	377	377	377	377	377	377	377	377	377	377	377	377	377	377	377
	3	931	931	931	931	931	931	931	931	931	931	931	931	931	931	931	931	931	931	931
	4	3350	3350	3350	3350	3350	3350	3350	3350	3350	3350	3350	3350	3350	3350	3350	3350	3350	3350	3350
	5	158	159	159	159	159	159	159	159	159	159	159	159	159	159	159	159	159	159	159
	6	2471	2471	2471	2471	2471	2471	2471	2471	2471	2471	2471	2471	2471	2471	2471	2471	2471	2471	2471
	7	1150	1150	1150	1150	1150	1150	1150	1150	1150	1150	1150	1150	1150	1150	1150	1150	1150	1150	1150
TX count	1	70	51	40	61	130	120	138	191	179	199	185	175	195	188	179	197	190	182	196
	2	397	345	322	360	640	621	662	885	862	896	847	825	864	870	850	890	861	841	884
	3	1666	1668	1610	1721	1875	1857	1903	1409	1394	1428	1893	1871	1909	1742	1712	1776	1808	1773	1832
	4	1504	1649	1606	1699	1088	1056	1117	1174	1145	1201	707	663	737	911	893	966	694	675	718
	5	30	50	40	57	22	15	28	40	34	44	39	33	46	30	25	38	37	31	41
	6	228	171	147	191	144	125	154	194	178	211	212	192	233	139	114	156	291	268	316
	7	742.2	615.0	510.7	821.5	3044.3	2673.1	3405.9	7627.4	7062.0	8318.0	7705.3	7169.6	8257.4	7854.9	7312.9	8721.7	7998.9	7627.4	8285.8
TX rates	2	586.7	588.7	550.4	626.2	2363.1	2094.2	2595.6	5647.4	5435.9	5849.3	5954.5	5782.6	6107.5	5938.7	5639.0	6274.3	5995.8	5689.5	6286.0
	3	606.5	663.7	626.3	679.9	852.9	828.3	879.5	501.6	486.4	514.2	901.8	866.6	931.7	780.3	733.9	815.3	809.7	764.5	835.9
	4	82.2	93.2	90.9	96.4	59.0	57.1	61.0	62.9	61.2	64.1	36.4	33.6	38.3	47.8	46.5	51.6	35.3	34.3	36.6
	5	29.7	45.3	34.2	56.3	19.7	13.1	25.9	38.2	30.9	42.2	37.5	31.1	45.1	27.0	22.6	34.2	34.9	28.1	39.1
	6	14.1	10.4	8.9	11.7	8.7	7.5	9.4	11.9	10.9	13.1	13.0	11.8	14.4	8.4	6.8	9.5	18.4	16.9	20.3
	7	17	16	11	19	11	7	18	6	4	9	6	3	9	7	4	11	6	3	9
	8	21	16	12	18	11	9	13	5	3	9	5	3	6	6	3	10	6	4	9
WL death counts	3	35	37	31	42	31	27	34	35	30	39	29	25	32	30	27	33	29	26	32
	4	123	129	123	133	131	127	139	134	129	140	134	128	140	136	127	146	137	131	142
	5	6	9	7	11	9	8	11	8	7	10	8	7	10	9	7	10	8	6	10
	6	48	50	47	53	48	46	51	48	45	50	47	45	49	47	45	50	46	43	49
	7	376	349	329	363	332	322	338	325	318	336	313	303	319	318	310	322	317	306	327
	8	180.2	191.4	117.0	256.2	255.1	145.8	421.7	228.3	155.4	331.4	263.8	130.0	361.2	272.1	160.5	432.0	247.3	125.8	373.1
	9	31.0	26.9	21.2	31.0	39.4	33.1	48.7	33.6	18.4	54.8	32.9	21.0	42.0	39.6	19.7	70.6	38.8	27.5	61.4
WL morality rates	3	12.7	14.9	12.3	16.9	14.0	12.6	15.6	12.3	10.7	13.9	13.6	11.7	15.3	13.4	12.4	14.8	12.9	11.6	14.5
	4	6.7	7.3	7.0	7.5	7.1	6.9	7.5	7.2	6.9	7.5	6.9	6.7	7.1	7.1	6.7	7.7	7.0	6.7	7.2
	5	5.9	8.1	6.3	9.8	8.0	6.8	9.8	8.0	6.5	9.1	7.9	6.7	9.4	8.0	6.4	9.1	7.8	5.8	9.6
	6	3.0	3.0	2.9	3.2	2.9	2.8	3.0	2.9	2.8	3.1	2.9	2.7	3.0	2.9	2.7	3.0	2.9	2.7	3.1
	7	21.3	20.0	18.9	20.8	19.0	18.5	19.5	18.6	18.1	19.3	18.0	17.5	18.5	18.2	17.7	18.6	18.2	17.5	18.8
	8	6	10	8	13	6	3	10	5	4	7	5	4	7	5	2	8	5	1	7
	9	9	3	1	4	1	0	3	0	0	1	1	0	2	1	0	2	1	0	3
WL removals	3	20	12	9	17	9	6	12	10	8	12	8	5	10	9	5	11	9	6	12
	4	148	113	106	119	117	102	129	117	108	123	127	118	133	119	114	125	125	121	131
	5	12	12	11	14	12	9	15	12	8	15	12	11	14	13	11	15	13	9	15



Metric	Tier	Observed	Current Rule			By Tier			Sh 1/2A			Sh 1/2B			ShAll			Tier Priority		
			Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max
	6	135	120	116	124	117	113	121	115	111	120	113	110	117	119	116	122	108	103	118
	7	778	577	566	590	573	566	584	576	569	590	572	563	579	577	569	586	574	564	582
Active WL s	1	17	16	11	19	11	7	18	6	4	9	6	3	9	7	4	11	6	3	9
Death counts	2	21	16	12	18	11	9	13	5	3	9	5	3	6	6	3	10	6	4	9
	3	35	37	31	42	31	27	34	35	30	39	29	25	32	30	27	33	29	26	32
	4	123	129	123	133	131	127	139	134	129	140	134	128	140	136	127	146	137	131	142
	5	6	9	7	11	9	8	11	8	7	10	8	7	10	9	7	10	8	6	10
	6	48	50	47	53	48	46	51	48	45	50	47	45	49	47	45	50	46	43	49
Active WL	1	180.2	191.5	117.0	256.3	255.7	146.2	422.5	229.7	157.1	332.7	265.7	131.1	366.1	273.8	161.8	434.8	248.9	126.8	375.3
Mortality rates	2	31.0	26.9	21.2	31.0	39.4	33.1	48.8	33.7	18.5	55.0	33.0	21.0	42.3	39.7	19.8	71.0	38.9	27.7	61.7
	3	12.7	14.9	12.3	16.9	14.0	12.6	15.6	12.3	10.7	13.9	13.6	11.7	15.3	13.4	12.4	14.8	12.9	11.6	14.5
	4	6.7	7.3	7.0	7.5	7.1	6.9	7.5	7.2	6.9	7.5	6.9	6.7	7.1	7.1	6.7	7.7	7.0	6.7	7.2
	5	5.9	8.1	6.3	9.8	8.0	6.8	9.8	8.0	6.5	9.1	7.9	6.7	9.4	8.0	6.4	9.1	7.8	5.8	9.6
	6	3.0	3.0	2.9	3.2	2.9	2.8	3.0	2.9	2.8	3.1	2.9	2.7	3.0	2.9	2.7	3.0	2.9	2.7	3.1
1Y PT deaths	1	13	7	4	11	22	13	28	31	22	38	32	26	45	32	24	42	35	32	38
	2	43	44	35	54	79	65	90	123	106	147	119	109	135	125	104	139	117	106	129
	3	163	214	196	231	233	207	261	192	171	212	248	228	275	224	201	245	232	202	259
	4	136	187	166	213	134	122	155	143	125	174	87	70	101	112	92	125	84	70	99
	5	8	9	5	14	6	4	11	9	7	11	8	5	12	6	4	9	9	6	12
	6	16	24	18	36	20	16	26	25	20	29	28	16	39	22	12	29	35	30	41
1Y PT death rates	1	22.4	14.9	8.1	21.9	19.1	11.8	25.3	18.1	12.6	22.3	19.8	15.8	29.9	19.5	13.8	27.8	20.8	18.4	23.4
	2	11.8	14.0	11.2	17.6	13.6	10.9	15.2	15.5	13.0	18.7	15.6	13.8	17.6	16.0	13.5	17.9	14.9	13.6	16.2
	3	10.5	14.0	12.9	14.9	13.6	11.9	15.4	15.0	13.3	16.7	14.5	13.1	16.0	14.1	12.6	15.7	14.1	12.4	15.8
	4	9.7	12.3	10.6	14.3	13.5	11.8	15.3	13.3	11.4	16.4	13.4	10.8	15.9	13.5	11.1	15.2	13.2	10.8	16.1
	5	32.6	21.9	10.6	33.9	35.1	18.7	50.9	26.3	18.9	38.0	25.5	15.7	40.7	24.1	14.2	33.3	28.6	16.8	43.6
	6	7.5	15.8	11.5	24.3	15.2	12.9	19.2	14.5	11.0	16.8	14.7	8.8	20.1	17.6	9.8	25.6	13.2	11.9	15.8
2Y PT deaths	1	13	9	5	13	29	21	35	40	28	47	41	35	55	41	31	52	43	39	50
	2	53	55	43	69	105	91	122	157	139	177	152	140	165	157	138	174	153	136	178
	3	199	276	260	300	304	258	326	247	219	281	325	301	351	288	265	308	302	272	338
	4	177	247	228	285	174	158	201	186	166	217	114	102	122	148	134	163	111	100	121
	5	10	12	7	17	8	4	14	13	9	19	13	9	17	9	6	12	11	7	16
	6	21	30	23	46	25	18	32	33	28	39	36	23	47	28	17	38	45	36	52
2Y PT death rates	1	11.3	10.3	5.4	14.9	13.1	9.9	16.7	12.4	8.3	14.1	13.2	11.1	19.6	12.9	9.8	18.4	13.7	11.6	16.0
	2	7.5	9.0	7.2	11.3	9.3	7.8	10.8	10.2	8.8	11.8	10.3	9.3	11.3	10.4	9.1	11.9	10.2	9.0	11.7
	3	6.6	9.4	8.8	10.0	9.2	7.6	10.0	10.0	8.8	11.6	9.8	8.9	10.6	9.4	8.6	10.1	9.5	8.4	10.6
	4	6.4	8.4	7.6	9.5	9.0	7.9	10.3	8.9	7.9	10.6	9.1	8.2	10.0	9.2	8.4	10.3	9.1	7.9	10.2
	5	21.8	14.9	7.7	23.3	24.8	12.0	40.3	20.6	12.7	39.6	20.7	14.9	26.7	18.4	10.8	26.8	20.4	11.5	36.2
	6	5.0	10.3	7.5	16.4	9.8	8.2	12.4	9.8	8.0	12.2	9.7	6.5	12.7	11.7	7.1	17.9	8.7	7.4	10.0



Table B-3. Waitlist and posttransplant outcomes by simulation and urgency status, adults only

Metric	Status	Observed	Current Rule			By Tier			Sh 1/2A			Sh 1/2B			ShAll			Tier Priority		
			Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max
Candidates	1A	1397	1397	1397	1397	1397	1397	1397	1397	1397	1397	1397	1397	1397	1397	1397	1397	1397	1397	1397
	1B	2936	2936	2936	2936	2936	2936	2936	2936	2936	2936	2936	2936	2936	2936	2936	2936	2936	2936	2936
	2	3067	3067	3067	3067	3067	3067	3067	3067	3067	3067	3067	3067	3067	3067	3067	3067	3067	3067	3067
TX count	Inactive	1150	1150	1150	1150	1150	1150	1150	1150	1150	1150	1150	1150	1150	1150	1150	1150	1150	1150	1150
	1A	2106	2150	2099	2200	2605	2576	2627	2438	2399	2455	2865	2846	2891	2746	2714	2771	2801	2779	2830
	1B	1487	1563	1523	1611	948	924	973	1041	1005	1068	646	603	681	804	777	842	633	613	656
TX rates	2	302	220	190	244	346	333	367	413	395	430	371	344	388	330	307	356	447	415	475
	1A	628.7	675.4	643.8	690.0	941.1	904.3	964.0	736.5	711.7	746.5	1129.2	1093.5	1170.2	1029.5	982.8	1077.6	1047.2	1004.6	1087.0
	1B	93.5	103.0	100.5	106.6	57.4	55.9	59.6	62.3	59.7	63.8	37.6	34.5	40.2	47.2	45.0	49.9	36.4	35.0	37.7
WL death counts	2	15.3	11.0	9.4	12.3	17.9	17.0	19.0	21.8	20.7	22.7	19.3	17.7	20.3	17.0	15.7	18.6	23.8	21.9	25.6
	1A	71	72	66	79	58	51	65	52	48	57	45	43	49	47	41	55	46	39	51
	1B	114	117	111	123	120	114	127	120	111	125	122	115	126	124	117	131	124	119	129
WL morality rates	2	65	67	64	70	64	61	66	63	61	67	63	61	66	63	61	67	61	58	65
	Inactive	376	349	329	363	332	322	338	325	318	336	313	303	319	318	310	322	317	306	327
	1A	21.2	22.7	20.8	25.2	20.8	18.2	23.5	15.7	14.4	17.2	17.7	16.4	19.9	17.7	15.6	21.3	17.1	14.7	18.8
WL removals	1B	7.2	7.7	7.4	8.0	7.2	7.0	7.7	7.2	6.6	7.5	7.1	6.7	7.3	7.3	6.9	7.7	7.1	6.8	7.4
	2	3.3	3.3	3.2	3.5	3.3	3.2	3.4	3.3	3.2	3.6	3.3	3.2	3.4	3.3	3.1	3.5	3.3	3.1	3.4
	Inactive	21.3	20.0	18.9	20.8	19.0	18.5	19.5	18.6	18.1	19.3	18.0	17.5	18.5	18.2	17.7	18.6	18.2	17.5	18.8
Active WL death counts	1A	33	28	22	37	26	19	31	25	22	31	22	18	27	24	19	27	23	19	27
	1B	120	82	75	87	92	81	99	93	87	100	100	93	104	97	93	104	99	95	104
	2	177	161	157	165	145	140	150	142	136	149	144	140	148	146	140	151	139	133	148
Active WL mortality rates	Inactive	778	577	566	590	573	566	584	576	569	590	572	563	579	577	569	586	574	564	582
	1A	71	72	66	79	58	51	65	52	48	57	45	43	49	47	41	55	46	39	51
	1B	114	117	111	123	120	114	127	120	111	125	122	115	126	124	117	131	124	119	129
1Y PT deaths	2	65	67	64	70	64	61	66	63	61	67	63	61	66	63	61	67	61	58	65
	1A	21.2	22.7	20.8	25.2	20.8	18.3	23.5	15.7	14.4	17.2	17.7	16.4	19.9	17.7	15.6	21.3	17.1	14.7	18.9
	1B	7.2	7.7	7.4	8.0	7.2	7.0	7.7	7.2	6.6	7.5	7.1	6.7	7.3	7.3	6.9	7.7	7.1	6.8	7.4
1Y PT death rates	2	3.3	3.3	3.2	3.5	3.3	3.2	3.4	3.3	3.2	3.6	3.3	3.2	3.4	3.3	3.1	3.5	3.3	3.1	3.4
	1A	216	276	265	291	333	295	357	342	321	372	396	369	419	376	353	408	377	344	406
	1B	135	175	155	201	107	95	120	115	99	139	69	50	83	89	81	97	68	58	75
2Y PT deaths	2	28	34	24	45	55	43	63	66	56	76	59	48	69	55	44	67	65	55	73
	1A	11.0	14.1	13.7	14.6	14.0	12.3	15.1	15.5	14.5	17.0	15.3	14.1	16.1	15.1	14.2	16.5	14.8	13.6	16.1
	1B	9.7	12.1	10.4	14.2	12.2	10.6	13.7	12.0	10.5	14.6	11.5	8.2	13.3	12.0	11.0	13.0	11.7	10.1	12.9
2Y PT death rates	2	10.0	17.5	13.8	23.0	17.9	13.8	20.4	18.1	15.0	21.5	17.8	13.7	20.5	19.1	14.8	22.9	16.3	14.0	17.7
	1A	261	355	340	377	435	384	455	440	410	479	513	475	540	479	447	512	491	463	521
	1B	177	231	215	267	139	127	156	151	136	175	92	78	105	119	112	125	91	79	101
2Y PT death rates	2	35	43	34	56	70	60	81	85	72	98	75	66	87	72	58	87	83	68	94
	1A	6.8	9.4	8.9	9.8	9.5	8.2	10.0	10.4	9.6	11.4	10.3	9.4	10.8	10.0	9.3	10.7	10.0	9.4	10.7
	1B	6.5	8.2	7.4	9.3	8.2	7.3	9.3	8.1	7.3	9.5	7.9	6.5	8.7	8.3	7.7	8.7	8.0	7.1	8.8
2	6.3	11.5	9.2	15.4	11.9	10.0	13.5	12.2	10.2	14.5	11.9	9.8	14.2	12.9	10.3	15.7	10.7	8.9	11.9	



Table B-4. Transplant counts and posttransplant outcomes by simulation and zone

Metric	Zone	Observed	Current Rules			By Tier			Sh 1/2A			Sh 1/2B			ShAll			Tier Priority		
			Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max
TX count	Local	2442	2591	2563	2647	1749	1709	1816	1852	1790	1892	1262	1213	1282	598	571	629	1376	1352	1405
	A	1829	1703	1660	1746	2542	2462	2584	1624	1583	1694	2229	2207	2268	2937	2897	2972	2248	2216	2273
	B	320	321	301	347	293	271	314	1047	1011	1089	1028	1006	1053	1028	992	1056	918	892	961
	C	35	58	45	70	54	45	65	124	104	139	122	106	134	77	66	89	100	96	105
	D	3	11	9	20	9	6	13	13	9	19	14	11	16	9	4	13	14	10	20
	E	3	1	1	1	1	1	2	2	1	3	2	1	3	1	1	2	2	1	4
1Y PT deaths	Local	236	294	252	315	201	185	237	221	200	253	150	135	165	69	57	84	164	140	173
	A	174	203	183	231	311	281	328	192	170	224	269	252	299	363	342	392	275	249	303
	B	30	42	35	57	39	30	45	150	129	166	149	133	169	151	136	163	131	113	156
	C	3	9	4	14	7	4	13	27	19	35	27	18	36	14	10	18	16	9	21
	D	0	3	1	5	2	0	4	4	1	8	4	0	5	1	0	3	2	1	4
	E	0	0	0	0	0	0	1	0	0	1	1	0	2	0	0	1	1	0	2
1Y PT death rates	Local	10.4	12.3	10.5	13.3	12.5	11.4	15.0	13.0	11.8	14.8	12.9	11.4	14.1	12.5	10.1	14.8	13.0	11.0	14.0
	A	10.2	13.0	11.3	15.2	13.3	12.0	14.3	12.8	11.6	15.6	13.2	12.3	14.6	13.5	12.7	14.8	13.4	12.1	14.8
	B	10.1	14.6	12.4	20.0	14.9	12.0	17.0	16.0	13.6	18.4	16.1	14.6	18.6	16.5	14.6	17.9	15.9	13.5	18.3
	C	9.0	17.1	8.0	29.0	15.1	8.0	26.0	25.3	16.3	36.8	25.9	17.3	33.8	21.8	12.3	29.2	18.2	10.0	25.1
	D	0.0	35.5	9.9	67.9	34.7	0.0	105.9	40.3	6.7	81.7	35.4	0.0	59.4	10.5	0.0	27.2	18.9	7.1	30.8
	E	0.0	0.0	0.0	0.0	10447.4	0.0	36525.0	53.1	0.0	424.7	7338.2	0.0	36525.0	2637.5	0.0	18262.5	519.0	0.0	3043.8
2Y PT deaths	Local	292	383	343	421	260	231	293	287	269	313	195	174	208	92	78	104	212	191	222
	A	221	260	243	285	407	376	429	250	221	274	353	338	397	467	435	486	361	333	385
	B	36	55	43	66	50	39	54	193	172	213	188	174	215	192	170	206	166	148	193
	C	5	11	6	17	9	5	14	34	26	43	35	25	43	18	13	22	20	12	24
	D	0	4	1	6	3	0	5	4	2	9	5	1	7	1	0	3	3	1	6
	E	0	1	0	1	0	0	1	1	0	1	1	0	2	1	0	1	1	0	2
2Y PT death rates	Local	6.6	8.3	7.4	9.2	8.3	7.3	9.5	8.7	8.1	9.5	8.7	7.8	9.2	8.6	7.1	10.1	8.7	7.7	9.3
	A	6.6	8.6	7.7	9.7	9.0	8.2	9.5	8.6	7.7	9.9	8.9	8.5	10.0	9.0	8.3	9.5	9.1	8.4	9.7
	B	6.2	9.9	7.9	11.9	9.8	8.0	11.1	10.7	9.4	11.7	10.6	9.5	12.4	10.8	9.4	11.8	10.4	9.1	12.0
	C	7.7	11.7	6.2	20.1	9.8	6.0	14.5	17.0	12.6	24.6	18.0	12.5	21.6	14.5	8.8	21.9	11.9	6.8	15.1
	D	0.0	23.6	5.5	37.4	23.2	0.0	59.0	25.8	6.7	53.3	23.7	3.2	37.3	9.2	0.0	32.1	14.2	5.5	23.2
	E	0.0	27.6	0.0	55.3	10442.1	0.0	36525.0	65.7	0.0	424.7	7330.2	0.0	36525.0	2647.3	0.0	18262.5	508.5	0.0	3043.8



Table B-5. Transplant counts and posttransplant outcomes by simulation and distance

Metric	Distance (miles)	Observed	Current Rules			By Tier			Sh 1/2A			Sh 1/2B			ShAll			Tier Priority		
			Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max
Candidates	<50	521	384	354	403	289	274	309	361	309	406	254	208	273	107	85	121	292	272	309
	50-<100	180	136	126	147	116	96	145	122	108	136	104	84	128	74	57	89	127	108	138
	100-<250	282	209	194	236	257	226	281	224	208	238	223	202	243	222	208	244	222	203	240
	250-<500	474	280	256	304	458	435	472	326	293	353	386	369	424	462	427	495	381	353	409
	>=500	214	151	134	174	142	123	162	380	361	406	383	355	416	407	386	423	365	334	399
TX count	<50	1557	1609	1574	1642	1122	1094	1151	1164	1120	1190	813	792	840	406	368	431	880	851	905
	50-<100	580	603	571	624	473	434	516	448	423	475	375	327	415	310	283	333	404	369	428
	100-<250	885	870	842	903	964	934	995	756	715	798	824	802	868	927	898	962	849	812	885
	250-<500	1235	1202	1162	1264	1723	1689	1761	1099	1055	1144	1468	1424	1527	1882	1795	1903	1480	1449	1506
	>=500	372	401	381	428	366	342	392	1195	1151	1219	1176	1139	1200	1125	1100	1151	1044	1021	1088
1Y PT deaths	<50	145	183	150	204	132	120	160	141	126	159	97	80	109	47	36	62	106	95	114
	50-<100	60	69	59	80	55	42	73	53	40	68	46	33	54	39	31	51	50	42	56
	100-<250	94	100	93	113	113	101	125	89	61	121	100	85	117	109	98	120	101	82	128
	250-<500	110	143	127	165	212	184	227	129	101	143	175	159	191	235	218	259	181	165	199
	>=500	34	55	44	66	50	42	63	182	155	204	180	164	205	168	150	181	151	128	175
1Y PT death rates	<50	10.0	12.4	10.2	13.8	12.8	11.4	15.9	13.2	12.2	14.9	13.1	10.6	14.2	12.6	9.4	17.5	13.2	11.8	14.1
	50-<100	11.2	12.5	10.7	14.7	12.7	9.4	17.0	13.0	9.9	17.3	13.3	10.9	16.2	13.8	10.9	18.9	13.5	11.0	15.9
	100-<250	11.5	12.5	11.3	14.3	12.7	11.2	14.3	12.9	8.8	17.8	13.4	11.1	16.2	12.8	11.5	13.7	12.9	10.7	16.2
	250-<500	9.5	13.0	11.3	15.2	13.4	11.5	14.6	12.8	10.1	14.4	13.0	11.8	14.0	13.7	12.5	15.4	13.4	12.3	14.7
	>=500	9.8	15.2	12.4	18.9	15.1	12.8	18.8	17.0	14.3	19.4	17.2	16.1	19.9	16.8	14.7	18.4	16.1	13.7	18.3
2Y PT deaths	<50	178	239	212	274	169	147	198	181	166	196	126	102	141	62	51	75	138	123	151
	50-<100	73	88	75	104	70	57	87	71	57	91	58	45	67	52	43	60	65	56	76
	100-<250	123	129	121	138	149	134	160	116	86	149	131	113	153	143	120	152	132	108	157
	250-<500	138	185	170	202	276	244	302	168	134	185	231	213	251	301	284	323	237	221	257
	>=500	42	73	61	82	64	56	71	233	217	259	230	211	255	214	186	232	191	170	221
2Y PT death rates	<50	6.3	8.3	7.4	9.6	8.5	7.2	10.2	8.7	8.3	9.4	8.7	6.9	9.7	8.6	7.0	11.0	8.9	7.8	9.8
	50-<100	7.0	8.2	7.1	9.9	8.4	6.6	10.5	8.9	7.2	11.2	8.7	7.6	10.3	9.4	8.0	11.0	9.1	7.5	10.5
	100-<250	7.7	8.3	7.5	8.8	8.7	7.6	9.7	8.7	6.3	11.4	9.0	7.7	11.0	8.6	7.4	9.0	8.8	7.3	10.4
	250-<500	6.1	8.7	7.7	9.6	9.0	8.0	10.1	8.6	6.9	9.2	8.9	8.1	9.5	9.1	8.4	10.0	9.1	8.3	9.8
	>=500	6.2	10.4	9.0	12.5	10.0	8.8	11.2	11.4	10.4	12.8	11.4	10.4	12.9	11.0	9.4	12.1	10.6	9.4	12.2

Note that distances over 500 miles are generally considered zone B or greater.



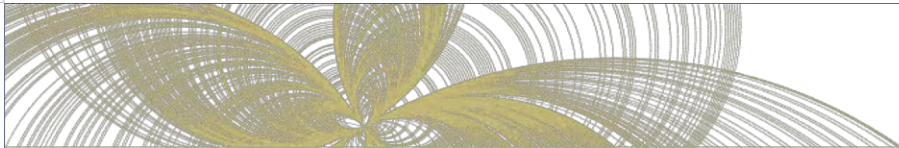
Table B-6. Waitlist and posttransplant outcomes by simulation and urgency status, children only

Metric	Status	Observed	Current Rules			By Tier			Sh 1/2A			Sh 1/2B			ShAll			Tier Priority		
			Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max
Candidates	1A	798	798	798	798	798	798	798	798	798	798	798	798	798	798	798	798	798	798	798
	1B	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126
	2	263	263	263	263	263	263	263	263	263	263	263	263	263	263	263	263	263	263	263
TX count	Inactive	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176
	1A	631	631	619	644	627	618	644	672	664	682	669	657	680	673	662	691	674	654	688
	1B	55	65	59	74	65	60	71	54	45	59	59	49	67	53	41	62	52	48	57
TX rates	2	48	54	45	61	56	44	68	43	35	51	47	36	63	44	37	61	52	38	62
	1A	450.3	493.0	470.1	526.1	486.1	462.6	519.6	590.8	546.9	625.9	582.7	555.9	612.2	599.2	574.6	642.1	602.9	559.8	667.9
	1B	120.2	159.2	135.0	186.9	156.4	133.9	183.8	120.0	97.9	137.2	140.4	113.9	169.8	117.6	87.1	144.9	116.0	99.3	134.1
WL death counts	2	33.2	37.8	31.3	44.0	40.4	30.9	50.3	29.9	24.7	36.7	33.0	24.3	46.1	31.1	26.3	44.9	37.3	26.8	45.8
	1A	53	49	44	53	50	44	55	44	42	46	43	40	46	44	39	47	43	37	48
	1B	2	2	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2
WL morality rates	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	Inactive	60	53	50	55	51	46	55	49	45	54	49	44	52	50	48	52	48	44	52
	1A	37.8	37.9	33.1	43.0	38.3	34.6	42.0	38.4	36.5	41.3	37.8	34.9	41.7	38.7	35.6	41.0	38.1	31.5	41.9
WL removals	1B	4.4	3.6	2.3	5.2	2.9	2.2	5.0	3.2	2.1	4.7	2.9	2.2	4.9	3.1	2.1	4.7	3.2	2.0	4.8
	2	1.4	1.4	1.4	1.4	1.4	1.4	1.5	1.4	1.3	1.5	1.4	1.4	1.5	1.4	1.3	1.5	1.4	1.3	1.5
	Inactive	21.0	18.7	17.4	19.3	18.0	16.4	19.6	17.4	15.7	19.3	17.2	15.7	18.8	17.6	16.9	18.7	16.8	15.8	18.3
Active WL death counts	1A	45	48	45	52	48	44	51	45	39	48	44	42	48	43	37	50	44	39	48
	1B	2	3	2	3	3	2	3	3	2	3	3	2	3	3	2	3	3	2	3
	2	10	6	3	8	7	6	10	7	6	8	7	5	8	7	5	8	7	5	8
Active WL mortality rates	Inactive	137	122	116	128	121	115	125	121	115	127	119	114	124	118	112	122	119	114	124
	1A	53	49	44	53	50	44	55	44	42	46	43	40	46	44	39	47	43	37	48
	1B	2	2	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2
1Y PT deaths	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	1A	37.8	37.9	33.2	43.0	38.3	34.6	42.0	38.4	36.5	41.3	37.8	34.9	41.7	38.7	35.6	41.0	38.1	31.5	41.9
	1B	4.4	3.6	2.3	5.2	2.9	2.2	5.0	3.2	2.1	4.7	2.9	2.2	4.9	3.1	2.1	4.7	3.2	2.0	4.8
1Y PT death rates	2	1.4	1.4	1.4	1.4	1.4	1.4	1.5	1.4	1.3	1.5	1.4	1.4	1.5	1.4	1.3	1.5	1.4	1.3	1.5
	1A	57	57	47	63	55	45	67	63	48	78	65	51	72	67	51	76	68	54	77
	1B	5	6	1	9	7	3	11	5	2	8	7	2	11	7	3	12	5	2	8
2Y PT deaths	2	2	3	1	5	4	1	7	3	0	5	4	2	6	4	3	5	5	3	8
	1A	9.7	9.6	7.8	10.8	9.4	7.6	11.5	10.0	7.6	12.5	10.4	8.1	11.8	10.7	8.0	12.3	11.0	8.4	13.0
	1B	9.8	9.2	1.7	15.2	12.0	4.3	19.2	10.0	3.5	16.3	12.7	3.4	21.3	14.8	5.7	25.9	11.1	4.2	19.4
2Y PT death rates	2	4.3	5.0	1.9	10.3	7.0	1.7	12.1	7.1	0.0	13.9	8.5	3.2	14.0	9.6	6.8	13.0	9.9	6.6	17.2
	1A	70	74	61	84	71	55	90	82	66	96	83	69	95	88	69	110	85	78	92
	1B	8	8	4	13	8	4	11	7	2	10	8	3	12	8	5	13	7	3	10
2Y PT death rates	2	3	4	2	7	5	1	8	4	0	6	5	3	7	5	3	8	6	3	12
	1A	6.0	6.4	5.3	7.4	6.2	4.7	8.0	6.7	5.3	7.9	6.9	5.6	8.0	7.2	5.6	9.2	7.0	6.2	7.9
	1B	8.1	6.5	3.5	10.6	6.7	2.9	10.1	7.1	1.8	10.4	8.0	2.6	11.9	9.5	4.8	15.2	7.4	3.2	12.5
2	3.2	3.8	1.9	6.5	4.9	0.9	9.6	4.7	0.0	7.8	5.3	3.5	8.4	6.2	3.7	10.0	6.8	3.3	13.5	



Table B-7. Waitlist and posttransplant outcomes by simulation and age group, adults only

Metric	Age group	Observed	Current Rules			By Tier			Sh 1/2A			Sh 1/2B			ShAll			Tier Priority		
			Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max
Candidates	18-34	1051	1051	1051	1051	1051	1051	1051	1051	1051	1051	1051	1051	1051	1051	1051	1051	1051	1051	1051
	35-49	2032	2032	2032	2032	2032	2032	2032	2032	2032	2032	2032	2032	2032	2032	2032	2032	2032	2032	2032
	50-64	4345	4345	4345	4345	4345	4345	4345	4345	4345	4345	4345	4345	4345	4345	4345	4345	4345	4345	4345
	65+	1122	1122	1122	1122	1122	1122	1122	1122	1122	1122	1122	1122	1122	1122	1122	1122	1122	1122	1122
	TX count	18-34	441	462	452	471	467	453	482	463	455	470	468	456	487	469	456	479	461	451	474
TX rates	35-49	877	897	888	916	882	873	891	885	874	897	877	867	891	883	873	894	881	871	898
	50-64	2027	2038	2016	2052	2023	2006	2031	2017	1995	2033	2014	1997	2037	2011	1994	2041	2016	1996	2043
	65+	550	536	524	547	527	509	539	528	519	537	523	515	533	516	506	529	522	509	534
	18-34	105.0	112.1	107.1	116.6	114.5	110.4	119.3	112.6	108.9	116.9	112.9	107.4	118.9	114.5	111.6	119.6	110.2	107.2	115.2
	35-49	93.3	98.4	95.9	101.9	96.1	93.4	97.8	96.5	94.1	99.1	95.1	92.5	97.7	95.4	93.3	98.3	95.9	93.7	97.4
WL death counts	50-64	97.6	99.7	98.0	101.1	97.9	96.8	98.5	96.6	94.5	97.9	96.9	95.4	98.1	96.3	95.0	97.6	97.4	95.6	99.4
	65+	119.8	112.8	109.8	116.5	110.8	107.2	114.5	109.5	107.8	113.5	108.5	105.5	112.9	105.5	102.7	112.2	108.8	105.8	111.0
	18-34	94	89	85	95	84	82	86	84	79	88	79	76	83	79	75	85	81	78	83
	35-49	135	137	132	143	128	122	133	126	120	135	121	117	126	124	121	128	123	117	127
	50-64	310	299	292	303	284	280	293	276	269	289	268	262	274	273	267	283	271	261	279
WL morality rates	65+	87	80	76	86	76	68	82	74	70	77	74	70	78	76	73	81	73	66	77
	18-34	13.0	12.5	11.9	13.2	11.9	11.5	12.2	11.8	10.9	12.4	11.1	10.7	11.6	11.2	10.5	12.3	11.3	10.9	11.6
	35-49	9.2	9.5	9.1	10.1	8.9	8.5	9.1	8.7	8.3	9.4	8.4	8.0	8.8	8.5	8.3	8.7	8.5	8.0	8.8
	50-64	10.8	10.6	10.3	10.8	10.0	9.9	10.3	9.7	9.4	10.2	9.4	9.2	9.6	9.6	9.3	9.9	9.6	9.3	9.8
	65+	14.5	13.0	12.3	14.1	12.2	11.0	13.3	11.8	11.2	12.3	11.9	11.2	12.7	11.9	11.5	12.8	11.7	10.7	12.4
WL removals	18-34	151	136	129	139	130	120	135	132	125	139	129	122	136	133	128	140	130	122	138
	35-49	263	201	194	208	198	190	205	197	189	204	198	192	201	196	189	207	198	193	203
	50-64	517	381	368	397	378	366	388	377	365	396	382	371	393	382	374	390	380	366	402
	65+	177	130	125	137	130	124	136	131	123	134	128	124	134	133	129	137	127	123	131
	Active WL counts	18-34	35	36	31	39	35	31	36	35	33	38	33	30	36	35	33	41	34	33	36
Active WL mortality rates	35-49	50	60	55	62	55	51	57	51	46	55	51	49	57	52	48	55	50	47	53
	50-64	124	121	114	128	116	108	121	116	107	124	112	106	117	112	106	119	113	108	118
	65+	41	39	35	45	36	29	40	33	30	36	33	30	38	35	31	40	34	29	36
	18-34	8.3	8.7	7.6	9.5	8.5	7.7	8.8	8.6	8.0	9.2	8.0	7.2	8.8	8.6	7.9	9.9	8.2	7.7	8.6
	35-49	5.3	6.5	6.1	6.9	6.0	5.6	6.2	5.6	5.0	6.0	5.5	5.2	6.1	5.6	5.2	5.9	5.5	5.1	5.8
1Y PT deaths	50-64	6.0	5.9	5.5	6.3	5.6	5.2	5.9	5.6	5.1	6.0	5.4	5.1	5.6	5.4	5.1	5.7	5.4	5.2	5.7
	65+	8.9	8.2	7.4	9.5	7.5	6.1	8.3	6.8	6.2	7.4	6.9	6.2	8.1	7.2	6.3	8.1	7.0	6.1	7.5
	18-34	24	72	64	90	73	55	82	80	71	92	76	67	87	80	73	97	78	70	85
	35-49	72	101	89	111	107	90	129	111	102	120	110	84	125	114	94	152	112	87	127
	50-64	217	241	214	276	248	221	269	258	223	283	263	245	287	252	230	274	250	219	268
1Y PT death rates	65+	66	71	55	84	67	56	76	74	61	82	74	68	84	75	53	90	70	64	79
	18-34	5.6	17.4	15.7	22.0	17.6	13.0	19.8	19.8	17.0	23.1	18.4	16.5	20.8	19.4	17.3	23.4	19.2	17.2	21.7
	35-49	8.7	12.3	10.7	13.7	13.3	11.1	16.3	13.7	12.6	15.0	13.8	10.4	15.9	14.3	11.6	19.8	14.0	10.6	15.7
	50-64	11.6	12.8	11.3	14.8	13.4	11.8	14.7	14.1	12.0	15.5	14.3	13.3	15.6	13.7	12.4	14.9	13.6	11.8	14.6
	65+	13.2	14.7	10.9	17.6	13.9	11.8	16.0	15.5	12.8	17.6	15.6	14.2	18.2	16.1	11.1	19.4	14.9	13.5	16.9
2Y PT deaths	18-34	39	94	84	112	97	86	108	104	92	118	99	84	112	104	94	128	100	92	107

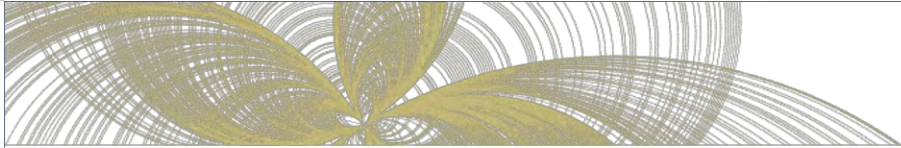


Metric	Age group	Observed	Current Rules			By Tier			Sh 1/2A			Sh 1/2B			ShAll			Tier Priority		
			Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max
	35-49	91	132	119	141	138	119	160	144	134	155	146	125	163	148	119	183	146	119	163
	50-64	262	313	287	344	321	292	343	331	300	353	341	312	365	322	295	344	327	290	355
	65+	81	91	82	111	88	72	103	96	82	108	95	87	105	96	75	109	93	81	107
2Y PT death rates	18-34	4.7	11.9	10.4	14.4	12.2	10.6	13.9	13.4	11.6	15.2	12.5	10.7	13.8	13.2	11.8	16.4	12.9	11.8	14.3
	35-49	5.6	8.2	7.4	9.0	8.8	7.5	10.4	9.2	8.6	10.0	9.4	8.0	10.7	9.6	7.5	12.4	9.4	7.5	10.6
	50-64	7.2	8.6	7.8	9.6	8.9	8.1	9.7	9.3	8.3	10.0	9.6	8.8	10.3	9.0	8.2	9.7	9.2	8.1	10.1
	65+	8.3	9.7	8.4	12.1	9.5	7.8	11.3	10.5	8.7	12.0	10.4	9.4	11.4	10.7	8.2	12.2	10.2	8.8	11.9



Table B-8. Waitlist and posttransplant outcomes by simulation and age group, with detailed child age groups

Metric	Age group	Observed	Current Rules			By Tier			Sh 1/2A			Sh 1/2B			ShAll			Tier Priority		
			Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max
Candidates	0-5	770	770	770	770	770	770	770	770	770	770	770	770	770	770	770	770	770	770	770
	6-11	219	219	219	219	219	219	219	219	219	219	219	219	219	219	219	219	219	219	219
	12-17	374	374	374	374	374	374	374	374	374	374	374	374	374	374	374	374	374	374	374
	18+	8550	8550	8550	8550	8550	8550	8550	8550	8550	8550	8550	8550	8550	8550	8550	8550	8550	8550	8550
TX count	0-5	383	395	387	399	369	353	380	372	361	381	372	361	384	373	366	383	373	362	381
	6-11	132	134	127	141	138	131	145	142	136	147	144	141	151	141	137	147	142	137	145
	12-17	219	221	215	226	242	236	250	255	251	260	258	252	264	256	251	261	262	257	270
	18+	3895	3934	3922	3944	3899	3891	3908	3892	3878	3906	3882	3868	3894	3880	3869	3888	3880	3867	3889
TX rates	0-5	250.4	269.1	252.2	290.9	231.6	216.2	242.5	235.2	215.5	250.6	235.1	222.2	251.4	240.0	232.6	258.2	238.1	227.3	266.0
	6-11	194.0	219.4	193.8	248.0	242.8	217.7	257.7	251.2	230.1	264.8	265.7	248.8	286.0	253.7	221.5	293.3	258.3	230.2	273.4
	12-17	200.3	214.2	205.9	225.6	256.4	238.5	276.5	291.4	271.5	326.3	299.0	276.0	322.9	289.4	274.9	309.9	312.0	284.5	348.7
	18+	100.0	102.3	101.5	103.2	100.8	100.2	101.3	99.9	98.8	100.9	99.6	98.9	100.4	99.1	98.6	100.1	99.8	99.3	100.2
WL death counts	0-5	84	74	71	77	78	74	83	75	69	79	75	69	79	76	73	79	73	66	81
	6-11	10	10	7	13	9	6	13	8	7	9	8	6	10	8	7	9	8	6	10
	12-17	23	22	19	25	17	14	19	13	10	17	12	10	15	12	9	15	12	10	16
	18+	626	605	593	622	572	566	580	560	552	574	542	536	549	552	544	560	548	538	563
WL morality rates	0-5	25.1	22.5	21.3	24.3	22.7	21.2	24.3	22.0	20.1	23.6	22.0	20.3	23.3	22.5	21.5	23.1	21.5	19.1	23.6
	6-11	10.2	10.5	7.6	13.0	10.0	7.0	14.7	9.0	7.8	10.6	9.1	6.8	11.6	9.3	7.6	11.4	9.3	7.1	11.6
	12-17	12.6	12.3	10.7	14.1	10.4	8.3	12.1	8.6	6.4	10.9	8.0	6.4	9.8	7.9	5.9	9.6	8.1	6.5	10.6
	18+	11.1	10.8	10.6	11.1	10.2	10.1	10.3	9.9	9.8	10.2	9.6	9.5	9.8	9.8	9.7	9.9	9.7	9.5	10.0
WL removals	0-5	139	127	120	132	133	128	139	132	127	139	132	125	136	129	118	135	131	123	135
	6-11	26	25	18	28	24	21	25	23	20	25	22	20	23	21	18	25	22	19	25
	12-17	29	27	24	30	22	19	24	20	18	22	20	18	21	20	17	22	19	18	21
	18+	1108	847	833	866	836	811	850	836	818	856	837	825	849	843	830	857	834	823	851
Active WL death counts	0-5	40	36	32	39	39	36	44	37	34	39	37	34	40	37	34	40	36	31	42
	6-11	6	5	4	8	5	3	8	4	3	5	4	3	5	4	3	5	4	2	5
	12-17	11	11	9	14	9	7	11	7	4	9	6	5	7	6	4	8	6	3	9
	18+	250	256	246	264	241	234	248	236	230	242	229	220	237	235	223	249	231	226	236
Active WL mortality rates	0-5	26.2	24.3	21.0	28.5	24.6	21.9	27.5	23.2	21.9	25.6	23.3	21.5	25.5	23.8	21.9	25.2	23.2	19.4	25.8
	6-11	8.8	8.3	6.3	12.3	8.1	5.1	14.2	6.7	5.3	8.9	7.4	5.6	9.5	7.2	5.1	10.0	7.3	3.8	9.1
	12-17	10.1	10.8	8.8	13.4	9.6	7.1	12.4	7.4	4.4	10.5	6.6	5.7	7.8	6.7	4.4	9.1	6.6	3.6	10.8
	18+	6.4	6.7	6.4	6.9	6.2	6.0	6.4	6.0	5.9	6.2	5.9	5.7	6.1	6.0	5.7	6.4	5.9	5.8	6.1
1Y PT deaths	0-5	40	39	26	46	33	20	42	34	21	46	37	27	42	40	31	51	38	30	51
	6-11	7	7	3	13	9	6	12	9	5	13	11	6	16	8	4	12	8	3	14
	12-17	17	19	12	24	24	17	31	28	21	34	27	17	33	29	22	34	33	24	40
	18+	379	485	455	522	495	458	523	523	503	569	523	486	549	521	505	564	510	477	552
1Y PT death rates	0-5	11.3	10.6	6.9	13.0	9.6	5.7	12.1	9.7	5.8	13.6	10.6	7.7	12.3	11.7	8.7	14.8	10.9	8.3	15.8
	6-11	5.5	5.8	2.2	10.9	6.6	4.3	9.8	6.8	3.5	10.2	8.3	4.3	12.3	6.0	2.8	9.3	6.0	2.2	11.0
	12-17	8.2	9.0	5.6	11.5	10.7	7.1	14.3	11.7	8.7	14.8	11.4	7.1	14.4	12.4	9.1	15.0	13.7	9.9	16.7
	18+	10.5	13.5	12.6	14.6	13.9	12.8	14.8	14.8	14.2	16.3	14.9	13.7	15.6	14.8	14.3	16.2	14.5	13.5	15.8
2Y PT deaths	0-5	53	51	32	57	43	29	52	45	37	55	47	38	57	51	39	70	46	37	54

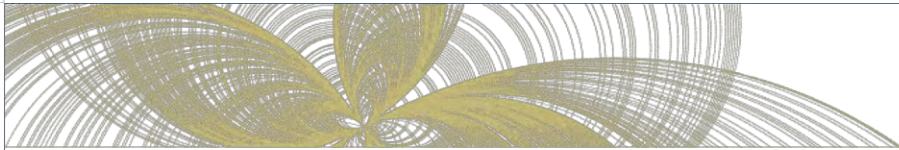


Metric	Age group	Observed	Current Rules			By Tier			Sh 1/2A			Sh 1/2B			ShAll			Tier Priority		
			Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max
	6-11	11	11	4	15	11	9	16	13	9	17	14	7	18	11	6	15	12	5	18
	12-17	17	24	15	29	30	23	37	35	28	43	35	23	42	39	28	44	41	30	47
	18+	473	629	601	667	644	590	665	676	644	718	680	636	706	670	648	711	665	634	688
2Y PT death rates	0-5	7.7	7.1	4.3	8.3	6.4	4.2	7.8	6.6	5.2	8.3	7.0	5.5	8.6	7.7	5.6	10.7	6.8	5.3	8.5
	6-11	4.4	4.4	1.6	6.4	4.4	3.4	6.7	4.8	3.4	6.8	5.1	2.5	7.1	4.2	2.1	5.5	4.5	1.8	7.2
	12-17	4.2	5.8	3.6	7.2	6.8	4.9	8.8	7.7	6.0	9.6	7.7	4.8	9.4	8.5	6.0	9.9	8.8	6.4	10.5
	18+	6.7	9.0	8.6	9.6	9.4	8.5	9.7	9.9	9.4	10.7	10.0	9.3	10.4	9.9	9.5	10.6	9.8	9.3	10.2



Table B-9. Waitlist and posttransplant outcomes by simulation and race group

Metric	Race group	Observed	Current Rules			By Tier			Sh 1/2A			Sh 1/2B			ShAll			Tier Priority		
			Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max
Candidates	White	6701	6701	6701	6701	6701	6701	6701	6701	6701	6701	6701	6701	6701	6701	6701	6701	6701	6701	6701
	Black	2009	2009	2009	2009	2009	2009	2009	2009	2009	2009	2009	2009	2009	2009	2009	2009	2009	2009	2009
	Hispanic	866	866	866	866	866	866	866	866	866	866	866	866	866	866	866	866	866	866	866
	Asian	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250
	Other/unk	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87
TX count	White	3094	3087	3069	3115	3080	3058	3100	3096	3078	3116	3083	3062	3103	3088	3059	3096	3094	3079	3109
	Black	917	978	965	992	956	942	979	958	946	974	961	941	981	957	933	976	952	940	977
	Hispanic	419	426	418	435	426	409	435	417	404	429	418	409	430	413	405	420	418	406	432
	Asian	155	151	140	157	147	137	152	151	146	158	154	148	159	151	148	157	153	147	159
	Other/unk	44	42	38	44	39	34	44	40	37	43	40	37	43	41	39	44	41	38	44
TX rates	White	105.9	105.6	104.1	107.3	105.6	104.4	107.0	105.5	103.8	107.1	105.0	103.8	106.5	104.8	103.7	106.2	105.7	104.5	106.7
	Black	105.3	122.0	119.1	125.9	116.3	113.0	119.9	116.8	114.0	121.1	117.3	112.3	120.7	116.5	112.6	120.9	115.9	113.2	120.5
	Hispanic	130.5	134.3	127.3	140.2	132.9	129.1	139.3	126.8	121.1	131.0	128.7	123.3	133.2	125.4	122.8	128.2	128.9	118.3	135.9
	Asian	195.6	185.6	171.9	195.4	175.3	157.2	190.7	183.5	174.8	197.2	192.0	181.7	203.1	183.0	173.2	198.7	191.6	175.7	204.2
	Other/unk	131.0	128.7	110.6	143.4	110.8	92.0	133.2	118.6	107.5	132.0	114.3	101.7	126.5	119.7	107.8	136.6	126.2	108.2	141.9
WL death counts	White	504	475	468	486	455	445	468	444	438	450	429	420	435	440	430	447	432	426	439
	Black	148	140	133	144	133	131	137	128	121	132	126	122	131	126	122	130	126	118	134
	Hispanic	70	70	65	73	64	61	70	63	58	68	61	58	66	61	58	63	62	55	66
	Asian	12	15	11	17	13	11	16	12	10	14	12	10	14	12	8	14	12	9	14
	Other/unk	9	11	10	13	11	9	14	10	8	11	10	8	12	10	9	12	9	7	11
WL morality rates	White	11.6	10.9	10.8	11.1	10.5	10.2	10.8	10.2	10.0	10.3	9.8	9.7	9.9	10.1	9.8	10.2	9.9	9.7	10.1
	Black	11.7	11.9	11.3	12.3	11.1	10.9	11.4	10.7	10.1	11.0	10.5	10.1	10.8	10.5	10.0	11.0	10.5	9.9	11.1
	Hispanic	14.2	14.4	13.4	15.2	13.1	12.3	14.4	12.5	11.5	13.8	12.4	11.5	13.3	12.3	11.5	12.8	12.6	11.3	13.3
	Asian	11.0	12.9	9.5	15.1	11.4	9.4	13.8	10.8	8.9	12.1	10.4	9.1	12.7	10.5	7.0	12.3	10.3	7.9	12.2
	Other/unk	17.6	21.0	19.9	24.7	20.3	18.1	26.4	19.2	15.1	22.9	18.8	15.4	22.7	19.5	17.0	22.3	18.3	14.4	23.8
WL removals	White	867	682	668	696	671	656	683	667	656	685	667	651	679	667	660	677	663	646	682
	Black	272	204	198	214	204	197	214	203	189	209	204	195	212	206	200	214	205	198	211
	Hispanic	126	106	104	109	106	96	112	107	103	113	106	102	110	106	99	113	103	96	113
	Asian	26	26	22	31	27	24	30	26	24	27	26	24	27	26	24	29	26	23	30
	Other/unk	11	8	7	9	8	6	10	9	7	10	8	7	9	8	6	10	9	7	10
Active WL death counts	White	216	210	199	218	202	192	210	197	193	204	190	182	197	196	184	206	192	184	199
	Black	53	54	48	58	50	47	55	49	44	52	48	45	49	48	45	51	49	42	52
	Hispanic	28	32	30	35	30	27	32	27	26	30	28	26	29	27	25	29	27	22	30
	Asian	5	6	4	9	6	3	8	6	4	7	6	5	7	5	3	8	5	3	7
	Other/unk	5	6	5	7	6	5	7	5	4	6	5	4	6	5	4	6	4	3	6
Active WL mortality rates	White	7.4	7.2	6.8	7.5	6.9	6.6	7.2	6.7	6.5	6.9	6.5	6.2	6.7	6.7	6.2	7.0	6.5	6.3	6.8
	Black	6.1	6.7	6.1	7.2	6.1	5.7	6.6	5.9	5.4	6.2	5.8	5.6	6.1	5.8	5.6	6.2	6.0	5.2	6.3
	Hispanic	8.7	10.1	9.4	11.0	9.3	8.6	9.9	8.3	7.7	9.2	8.5	7.8	9.0	8.3	7.6	8.8	8.4	6.9	9.6
	Asian	6.3	7.8	4.7	11.1	6.9	3.7	9.6	6.7	4.8	8.4	7.0	6.0	8.9	6.2	3.6	9.8	6.2	3.7	9.0
	Other/unk	14.9	18.4	15.4	21.2	15.7	13.1	20.3	14.0	11.3	19.2	13.7	11.2	16.6	14.5	11.5	16.9	13.5	9.0	19.8
1Y PT deaths	White	284	341	314	374	349	322	370	374	355	408	370	349	401	367	335	394	360	333	392

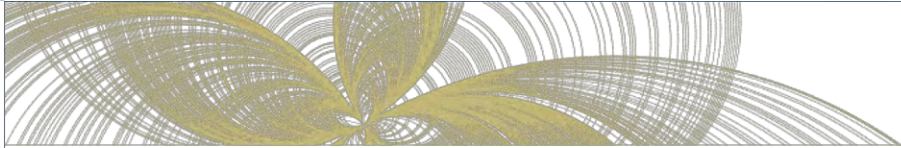


Metric	Race group	Observed	Current Rules			By Tier			Sh 1/2A			Sh 1/2B			ShAll			Tier Priority		
			Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max
1Y PT death rates	Black	102	148	131	162	147	124	167	154	146	166	165	140	185	165	148	187	163	149	182
	Hispanic	42	44	31	53	46	33	65	45	34	53	44	32	53	46	37	53	47	40	62
	Asian	11	15	9	21	14	10	21	18	13	22	16	10	21	17	13	22	16	12	21
	Other/unk	4	3	1	6	4	1	6	3	0	7	5	2	8	5	3	9	4	1	7
	White	9.8	12.0	10.8	13.3	12.3	11.4	13.0	13.2	12.4	14.5	13.1	12.3	14.3	12.9	11.8	14.0	12.7	11.7	13.9
2Y PT deaths	Black	12.0	16.9	14.9	19.0	17.3	14.4	20.4	18.0	16.6	20.1	19.5	16.2	22.1	19.6	17.1	22.8	19.5	17.8	21.6
	Hispanic	10.9	11.0	7.7	13.4	11.7	8.0	17.2	11.8	8.6	14.4	11.3	8.2	13.9	12.0	9.5	14.3	12.2	10.2	16.6
	Asian	7.5	10.3	6.7	14.9	10.3	7.0	15.5	12.6	9.1	16.7	10.9	6.9	15.2	11.9	8.9	16.7	11.0	7.9	15.4
	Other/unk	9.8	8.5	2.3	16.1	11.4	3.0	17.4	8.1	0.0	19.5	14.3	4.8	22.9	12.9	7.2	27.7	9.7	2.5	18.3
	White	353	443	424	469	456	421	476	483	460	525	480	457	503	475	439	506	468	441	482
2Y PT death rates	Black	127	189	174	209	193	169	215	200	181	213	211	190	241	210	182	228	208	192	225
	Hispanic	52	57	48	64	57	44	74	59	45	67	58	46	69	58	50	65	62	49	73
	Asian	18	19	13	29	18	14	23	21	15	29	21	15	26	22	16	31	21	15	27
	Other/unk	4	5	1	9	5	1	7	4	0	7	6	3	9	6	3	12	6	2	10
	White	6.2	8.0	7.5	8.6	8.3	7.6	8.7	8.8	8.3	9.6	8.8	8.3	9.2	8.6	8.0	9.3	8.5	8.0	8.8
	Black	7.7	11.3	10.2	12.9	11.8	10.1	13.7	12.3	10.7	13.5	13.1	11.5	15.2	13.1	11.0	14.6	13.0	11.9	14.4
	Hispanic	6.9	7.5	6.1	8.3	7.5	5.4	10.2	7.9	5.8	9.1	7.7	6.0	9.4	7.8	6.5	8.9	8.3	6.4	10.1
	Asian	6.3	6.9	4.9	10.8	6.7	5.2	8.7	7.8	5.5	10.4	7.6	5.5	10.0	8.0	5.6	11.5	7.5	5.4	9.9
	Other/unk	5.0	6.6	1.2	12.8	6.8	1.5	10.5	5.9	0.0	10.2	8.6	3.7	12.0	9.0	4.0	19.5	7.6	2.6	13.7



Table B-10. Waitlist and posttransplant outcomes by simulation and cause of heart failure

Metric	Primary cause of heart failure	Obs	Current Rules			By Tier			Sh 1/2A			Sh 1/2B			ShAll			Tier Priority		
			Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max
Candidates	Coronary artery disease (CAD)	3248	3248	3248	3248	3248	3248	3248	3248	3248	3248	3248	3248	3248	3248	3248	3248	3248	3248	3248
	Cardiomyopathy (CM)	4934	4934	4934	4934	4934	4934	4934	4934	4934	4934	4934	4934	4934	4934	4934	4934	4934	4934	4934
	Congenital (Cong)	992	992	992	992	992	992	992	992	992	992	992	992	992	992	992	992	992	992	992
	Other/unknown	739	739	739	739	739	739	739	739	739	739	739	739	739	739	739	739	739	739	739
TX count	Coronary artery disease (CAD)	1472	1481	1465	1506	1433	1418	1456	1437	1422	1457	1441	1429	1460	1421	1406	1432	1440	1407	1460
	Cardiomyopathy (CM)	2425	2462	2438	2480	2438	2425	2451	2425	2392	2449	2444	2433	2469	2448	2429	2464	2436	2411	2453
	Congenital (Cong)	415	433	418	438	416	400	428	429	418	438	424	402	437	423	414	433	428	419	435
	Other/unknown	317	308	293	325	361	344	368	369	359	381	347	340	357	358	345	365	354	347	362
TX rates	Coronary artery disease (CAD)	94.6	95.9	94.2	97.5	90.7	89.1	92.4	90.4	89.2	93.0	91.5	90.4	93.8	89.2	87.8	91.1	91.9	88.9	93.6
	Cardiomyopathy (CM)	124.8	130.0	128.5	131.9	127.6	126.7	128.9	125.5	123.4	127.4	127.5	125.7	129.1	126.7	125.3	128.4	127.1	123.9	128.8
	Congenital (Cong)	106.8	115.1	110.0	118.6	107.6	104.0	111.0	114.2	111.0	116.8	111.8	104.2	118.4	111.8	108.0	115.8	113.0	107.9	116.0
	Other/unknown	93.8	90.5	84.0	99.8	120.0	111.5	124.8	122.9	116.1	127.8	107.2	102.3	112.8	116.1	111.3	121.8	110.3	105.6	112.8
WL death counts	Coronary artery disease (CAD)	238	231	219	238	223	215	228	223	217	230	214	206	221	218	213	224	214	212	218
	Cardiomyopathy (CM)	318	307	297	318	290	279	304	281	274	288	273	265	278	277	273	282	275	267	283
	Congenital (Cong)	100	91	87	95	92	84	97	85	81	88	85	81	92	86	81	94	85	80	90
	Other/unknown	87	81	74	85	72	65	80	68	64	71	67	64	69	67	64	71	67	65	72
WL morality rates	Coronary artery disease (CAD)	10.7	10.5	9.9	10.8	9.9	9.6	10.2	9.9	9.7	10.3	9.6	9.2	10.0	9.7	9.4	10.0	9.7	9.5	9.8
	Cardiomyopathy (CM)	10.7	10.5	10.1	10.9	9.9	9.5	10.4	9.5	9.2	9.8	9.3	9.0	9.5	9.4	9.2	9.6	9.4	9.0	9.7
	Congenital (Cong)	16.7	15.6	15.0	16.3	15.4	14.1	16.2	14.5	13.9	15.1	14.4	13.5	15.4	14.6	14.0	16.1	14.4	13.5	15.4
	Other/unknown	18.2	16.7	15.8	17.7	16.3	14.6	18.1	15.4	14.5	16.0	14.3	13.6	14.9	14.9	14.0	15.9	14.6	13.8	15.8
WL removals	Coronary artery disease (CAD)	443	339	331	348	339	332	343	336	329	352	336	325	343	339	335	345	335	325	344
	Cardiomyopathy (CM)	593	461	448	474	459	447	472	458	437	471	455	447	465	457	445	468	452	444	462
	Congenital (Cong)	173	147	139	153	148	142	156	149	143	154	148	144	152	146	136	152	147	137	152
	Other/unknown	93	79	75	86	70	63	75	69	64	74	72	65	74	71	64	75	72	68	79
Active WL death counts	Coronary artery disease (CAD)	98	101	94	107	97	92	102	98	94	102	93	89	96	97	90	105	95	91	98
	Cardiomyopathy (CM)	108	110	104	119	103	97	107	100	95	105	97	90	100	99	93	105	97	92	103
	Congenital (Cong)	51	51	48	55	53	49	56	48	45	52	48	44	53	48	46	54	48	42	54
	Other/unknown	50	46	42	49	41	37	46	37	35	40	38	35	39	38	36	41	38	34	42
Active WL mortality rates	Coronary artery disease (CAD)	6.3	6.5	6.1	7.0	6.1	5.8	6.4	6.1	5.9	6.4	5.9	5.7	6.1	6.1	5.6	6.6	6.0	5.8	6.2
	Cardiomyopathy (CM)	5.6	5.8	5.5	6.3	5.4	5.1	5.6	5.2	4.9	5.4	5.1	4.7	5.2	5.1	4.8	5.5	5.1	4.8	5.4
	Congenital (Cong)	13.1	13.6	12.8	14.6	13.7	12.7	14.4	12.7	12.0	13.7	12.6	11.5	13.7	12.7	12.0	14.4	12.7	11.2	14.1
	Other/unknown	14.8	13.5	12.5	14.3	13.5	12.0	14.9	12.4	11.6	13.2	11.7	10.8	12.0	12.4	11.3	13.2	11.7	10.8	13.3
1Y PT deaths	Coronary artery disease (CAD)	161	193	172	206	184	177	201	201	189	217	196	180	215	193	175	209	192	164	209
	Cardiomyopathy (CM)	189	255	232	289	265	232	286	271	255	299	286	269	300	284	266	292	275	250	300
	Congenital (Cong)	61	54	44	66	51	44	58	55	44	63	55	43	65	57	50	71	59	52	74
	Other/unknown	32	49	41	58	61	43	69	67	51	78	61	53	69	64	54	86	62	49	69
1Y PT death rates	Coronary artery disease (CAD)	11.9	14.3	12.7	15.6	14.1	13.4	15.5	15.4	14.4	17.0	15.0	13.8	16.4	15.0	13.4	16.2	14.7	12.3	16.1
	Cardiomyopathy (CM)	8.2	11.1	10.1	12.8	11.8	10.1	12.7	12.1	11.3	13.4	12.7	12.0	13.4	12.6	11.9	13.1	12.3	11.0	13.5
	Congenital (Cong)	16.7	13.9	10.8	17.1	13.3	11.3	15.4	14.0	11.0	16.5	14.4	11.1	17.3	15.0	12.9	18.8	15.5	13.1	19.5
	Other/unknown	10.9	17.8	15.6	21.0	19.0	13.7	22.2	21.0	15.1	25.8	20.0	17.6	23.1	20.7	16.6	29.0	20.0	15.3	23.0
2Y PT deaths	Coronary artery disease (CAD)	198	249	238	258	242	223	251	259	246	274	259	241	283	248	225	269	252	219	267
	Cardiomyopathy (CM)	247	333	302	365	342	310	363	351	318	376	370	343	385	367	347	387	358	329	387
	Congenital (Cong)	71	71	57	79	67	61	81	73	64	89	71	61	79	75	66	87	74	64	85
	Other/unknown	38	62	58	69	77	56	87	84	67	99	77	62	87	81	72	96	79	69	89

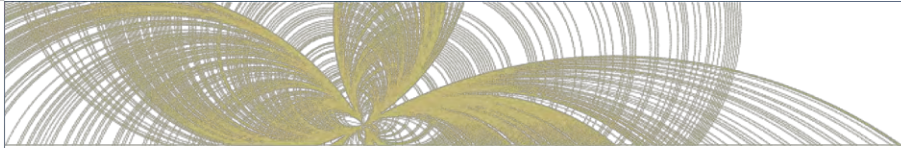


Metric	Primary cause of heart failure	Obs	Current Rules			By Tier			Sh 1/2A			Sh 1/2B			ShAll			Tier Priority		
			Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max
2Y PT death rates	Coronary artery disease (CAD)	7.5	9.5	9.1	10.0	9.6	8.7	10.1	10.4	9.7	11.1	10.3	9.6	11.2	10.0	8.9	10.8	10.0	8.5	10.8
	Cardiomyopathy (CM)	5.5	7.5	6.8	8.2	7.8	6.9	8.4	8.1	7.2	8.7	8.5	7.9	8.9	8.4	8.0	8.9	8.2	7.4	9.0
	Congenital (Cong)	10.0	9.3	7.2	10.6	9.2	8.1	11.6	9.7	8.3	11.9	9.5	8.2	10.6	10.1	8.8	12.0	10.0	8.5	11.6
	Other/unknown	6.6	11.9	10.8	13.6	12.7	9.2	14.7	13.7	10.3	16.3	13.3	10.6	15.4	13.7	11.6	17.2	13.4	11.2	14.9



Table B-11. Waitlist and posttransplant outcomes by simulation and blood type

Metric	Blood type	Observed	Current Rules			By Tier			Sh 1/2A			Sh 1/2B			ShAll			Tier Priority		
			Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max
Candidates	A	3605	3605	3605	3605	3605	3605	3605	3605	3605	3605	3605	3605	3605	3605	3605	3605	3605	3605	3605
	B	1170	1170	1170	1170	1170	1170	1170	1170	1170	1170	1170	1170	1170	1170	1170	1170	1170	1170	1170
	AB	364	364	364	364	364	364	364	364	364	364	364	364	364	364	364	364	364	364	364
	O	4774	4774	4774	4774	4774	4774	4774	4774	4774	4774	4774	4774	4774	4774	4774	4774	4774	4774	4774
TX count	A	1870	1881	1872	1893	1912	1887	1925	1937	1926	1949	1918	1902	1939	1866	1843	1888	1921	1893	1936
	B	651	684	663	692	680	670	693	689	679	703	683	668	698	685	675	694	684	665	705
	AB	261	270	262	279	280	274	287	280	272	287	283	279	290	272	267	280	281	271	297
	O	1847	1849	1837	1865	1776	1749	1800	1755	1741	1770	1772	1760	1789	1827	1805	1853	1771	1740	1797
TX rates	A	141.6	143.5	140.8	147.4	148.4	144.2	152.8	152.1	148.3	153.6	149.5	146.1	152.9	140.8	136.9	144.5	150.2	146.6	152.6
	B	166.9	186.0	179.2	190.8	180.8	172.9	193.7	183.3	174.9	189.3	180.0	176.2	185.6	180.5	174.8	184.9	182.5	175.3	195.8
	AB	407.2	433.6	377.2	493.1	479.3	418.5	543.7	467.7	404.9	534.9	464.7	414.2	497.7	420.6	364.1	479.3	451.0	431.1	492.1
	O	75.3	76.6	75.5	78.0	72.3	70.7	74.2	70.5	69.7	71.6	71.7	71.0	72.7	74.8	73.1	76.5	71.8	70.0	73.1
WL death counts	A	256	250	242	255	235	230	241	227	218	236	221	215	230	232	225	241	226	215	236
	B	77	75	71	82	71	64	78	67	62	72	66	60	71	67	59	74	66	62	70
	AB	18	13	10	15	12	9	14	11	9	12	10	7	13	11	10	14	11	8	16
	O	392	372	362	379	359	353	371	352	344	360	340	331	349	338	331	344	339	328	347
WL morality rates	A	12.7	12.5	12.1	12.7	11.9	11.6	12.2	11.6	11.1	12.1	11.3	10.9	11.6	11.5	11.1	12.0	11.5	11.0	12.0
	B	12.3	12.6	12.0	13.6	11.7	10.6	13.0	11.1	10.4	11.7	11.0	9.9	11.8	11.2	10.0	12.2	11.0	10.4	11.6
	AB	16.6	13.0	10.1	15.5	12.4	8.9	14.8	11.2	8.9	13.3	10.6	7.1	13.1	10.9	9.5	13.6	10.9	8.0	16.3
	O	11.1	10.7	10.4	10.9	10.2	10.0	10.4	9.8	9.6	10.1	9.6	9.4	9.8	9.6	9.5	9.8	9.6	9.3	9.8
WL removals	A	410	328	319	341	317	306	328	315	299	329	316	309	327	323	315	331	312	300	327
	B	136	100	91	106	99	94	107	100	91	105	99	95	103	102	96	107	98	93	107
	AB	28	16	12	18	13	10	15	13	8	16	13	11	16	15	9	21	13	11	16
	O	728	583	572	591	587	573	597	584	572	602	582	578	592	574	558	588	583	567	592
Active WL death counts	A	102	107	102	114	104	95	110	97	93	101	97	92	103	103	96	106	99	92	104
	B	23	25	22	28	25	21	29	23	21	27	23	18	28	24	16	28	23	21	25
	AB	8	6	3	7	5	3	7	5	4	6	4	3	5	5	4	7	5	3	7
	O	174	170	161	181	160	153	170	158	154	163	152	144	160	150	143	159	150	146	156
Active WL mortality rates	A	7.7	8.2	7.9	8.7	8.0	7.4	8.4	7.6	7.3	7.9	7.5	7.2	8.0	7.8	7.2	8.1	7.7	7.2	8.1
	B	5.9	6.8	6.2	7.7	6.7	5.5	8.1	6.1	5.4	7.2	6.2	4.6	7.2	6.2	4.3	7.3	6.1	5.4	7.0
	AB	12.5	8.8	5.3	11.6	8.3	5.0	12.1	8.1	6.5	9.4	6.9	4.9	8.6	7.8	6.1	10.6	7.9	5.0	11.4
	O	7.1	7.0	6.6	7.5	6.5	6.3	6.9	6.3	6.2	6.6	6.1	5.9	6.5	6.1	5.9	6.5	6.1	5.9	6.3
1Y PT deaths	A	207	200	186	213	201	188	221	221	200	251	217	197	238	212	187	229	214	201	225
	B	56	76	68	88	82	68	101	84	69	98	85	74	94	85	73	96	85	70	105
	AB	11	37	27	44	41	35	49	43	36	51	44	34	56	39	32	49	41	34	48
	O	169	237	205	271	237	214	252	246	219	277	253	228	278	263	245	278	249	227	272
1Y PT death rates	A	12.1	11.5	10.6	12.3	11.3	10.6	12.5	12.4	11.1	14.1	12.3	11.1	13.5	12.3	10.9	13.5	12.1	11.3	13.0
	B	9.1	12.1	10.7	14.0	13.1	10.9	16.3	13.4	10.8	16.1	13.6	11.5	15.1	13.7	11.3	15.7	13.5	11.0	17.1
	AB	4.3	14.8	10.8	18.2	16.3	13.8	19.8	17.0	13.9	20.9	17.3	13.1	23.2	15.8	13.2	20.9	16.4	12.5	19.3
	O	9.8	14.1	12.0	16.2	14.7	12.9	15.8	15.5	13.5	17.7	15.8	14.1	17.6	16.0	14.9	17.1	15.5	14.2	17.0
2Y PT deaths	A	245	263	251	276	267	246	293	288	266	323	285	258	308	274	248	297	277	262	295



Metric	Blood type	Observed	Current Rules			By Tier			Sh 1/2A			Sh 1/2B			ShAll			Tier Priority		
			Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max
	B	74	102	92	122	102	89	120	109	90	128	112	102	120	109	95	124	110	94	130
	AB	20	47	35	57	53	42	57	56	50	65	54	45	62	51	41	64	52	38	64
	O	215	302	274	340	306	274	322	315	291	337	325	298	356	337	316	359	324	306	341
2Y PT death rates	A	7.3	7.8	7.4	8.2	7.8	7.1	8.6	8.3	7.6	9.4	8.3	7.5	9.0	8.2	7.4	8.9	8.1	7.6	8.6
	B	6.2	8.4	7.4	10.1	8.5	7.2	10.0	9.0	7.2	10.9	9.3	8.1	10.0	9.0	7.8	10.3	9.1	7.6	11.0
	AB	4.0	10.0	7.2	12.4	11.0	8.6	11.9	11.6	10.2	13.5	11.2	9.1	13.4	10.8	8.7	14.3	10.8	7.1	13.5
	O	6.4	9.3	8.3	10.6	9.8	8.7	10.5	10.3	9.3	11.2	10.6	9.6	11.7	10.6	10.0	11.4	10.5	9.9	11.2



Table B-12. Waitlist and posttransplant outcomes by simulation and sex

Metric	Sex	Observed	Current Rules			By Tier			Sh 1/2A			Sh 1/2B			ShAll			Tier Priority		
			Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max
Candidates	Male	7082	7082	7082	7082	7082	7082	7082	7082	7082	7082	7082	7082	7082	7082	7082	7082	7082	7082	7082
	Female	2831	2831	2831	2831	2831	2831	2831	2831	2831	2831	2831	2831	2831	2831	2831	2831	2831	2831	2831
TX count	Male	3308	3311	3288	3337	3287	3263	3315	3294	3285	3315	3302	3285	3325	3295	3275	3314	3303	3281	3321
	Female	1321	1373	1355	1397	1360	1326	1391	1367	1342	1384	1354	1327	1375	1355	1342	1369	1355	1345	1372
TX rates	Male	105.1	106.0	105.0	106.9	104.9	103.6	106.4	104.4	102.9	105.6	105.2	104.5	106.3	104.3	103.6	105.4	105.5	104.9	106.7
	Female	122.4	132.9	129.3	136.8	130.3	126.2	136.3	131.0	126.7	135.7	128.1	125.5	131.3	128.5	125.3	131.9	128.4	126.7	131.2
WL death counts	Male	556	535	525	542	507	496	515	496	485	508	482	475	490	489	476	500	484	472	494
	Female	187	175	169	185	169	164	173	161	155	166	156	150	160	159	154	169	157	151	164
WL morality rates	Male	12.2	11.8	11.6	11.9	11.2	11.0	11.4	10.9	10.6	11.2	10.6	10.4	10.8	10.7	10.4	10.9	10.7	10.4	10.9
	Female	10.9	10.6	10.3	11.1	10.2	9.9	10.4	9.7	9.3	10.0	9.3	8.9	9.6	9.5	9.2	10.1	9.4	9.0	9.8
WL removals	Male	888	695	681	706	686	664	697	686	671	699	682	666	690	681	667	695	677	664	687
	Female	414	331	322	339	330	323	338	325	306	339	329	318	340	332	325	340	329	316	344
Active WL dth counts	Male	224	227	222	234	213	206	224	206	199	213	202	191	210	206	197	221	204	196	210
	Female	83	82	77	88	80	76	86	77	71	81	74	67	79	76	70	79	73	69	78
Active WL mort rates	Male	7.1	7.3	7.1	7.5	6.8	6.6	7.1	6.5	6.3	6.7	6.4	6.1	6.7	6.5	6.2	7.0	6.5	6.2	6.7
	Female	7.7	7.9	7.4	8.5	7.7	7.2	8.2	7.3	6.8	7.8	7.0	6.3	7.5	7.2	6.6	7.5	6.9	6.5	7.4
1Y PT deaths	Male	311	379	344	415	384	352	409	407	384	448	408	400	426	416	390	449	405	386	434
	Female	132	171	148	192	177	161	196	187	165	203	191	168	207	182	162	203	184	164	211
1Y PT death rates	Male	10.1	12.4	11.1	13.7	12.7	11.6	13.7	13.5	12.8	15.0	13.5	13.2	14.1	13.8	12.9	15.0	13.4	12.7	14.5
	Female	10.8	13.7	11.7	15.4	14.3	13.1	16.1	15.1	13.0	16.6	15.7	13.6	17.1	14.9	13.1	16.9	15.0	13.2	17.5
2Y PT deaths	Male	390	494	464	542	500	460	526	528	502	552	533	520	551	530	506	564	527	500	557
	Female	164	221	200	239	229	209	249	240	206	260	243	222	264	241	224	256	237	214	264
2Y PT death rates	Male	6.5	8.3	7.8	9.2	8.5	7.8	9.1	9.1	8.6	9.6	9.1	8.9	9.5	9.1	8.6	9.7	9.0	8.6	9.6
	Female	6.9	9.1	8.2	9.9	9.6	8.6	10.6	10.1	8.4	11.0	10.4	9.2	11.3	10.2	9.3	10.9	10.0	9.0	11.4



Table B-13. Waitlist and posttransplant outcomes by simulation and tier-defining criteria, tier 2

Metric	Criteria	Obs	Current rules			By Tier			Sh 1/2A			Sh 12B		
			Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max
TX count	IABP	161	112	107	117	240	212	252	358	347	370	348	331	366
	VT/VF	81	72	58	80	152	143	160	191	178	200	188	182	196
	DevFail	62	62	55	69	94	81	101	143	136	150	122	110	140
	TAH	45	50	41	56	64	57	72	71	63	78	67	60	73
	DC VAD	41	42	37	46	71	65	78	84	77	89	83	79	89
	ACS	7	2	0	6	6	2	8	11	8	13	13	10	16
TX rates	IABP	1150.3	957.0	856.7	1071.0	3095.8	2624.0	3463.0	6860.1	6194.6	7222.1	7153.6	6661.0	7665.2
	VT/VF	353.5	320.0	250.9	358.1	2380.5	2070.7	2870.6	5627.9	4974.7	6157.3	5983.2	5468.3	6563.6
	DevFail	419.1	526.6	472.8	628.5	1412.6	1218.0	1701.6	3814.9	3390.7	4092.1	3960.3	3541.6	4525.2
	TAH	462.9	677.1	542.0	784.3	2228.5	1689.9	2623.6	5400.1	4415.1	5797.6	5947.7	4592.5	7168.5
	DC VAD	699.1	844.3	724.9	980.3	2331.3	2091.5	2642.8	4774.7	4370.1	5382.0	4768.4	4345.6	5413.5
	ACS	.	.	.	.	.	.	.	.	.	.	.	.	.
WL death counts	IABP	14	11	9	13	7	4	9	4	2	7	3	2	5
	VT/VF	3	2	1	2	1	0	2	0	0	1	0	0	1
	DevFail	3	2	1	3	2	2	3	1	0	2	1	0	2
	TAH	0	0	0	0	0	0	0	0	0	0	0	0	0
	DC VAD	0	0	0	0	0	0	0	0	0	0	0	0	0
	ACS	1	1	1	1	1	0	1	1	0	1	0	0	1
WL removals	IABP	4	2	0	3	1	0	3	0	0	1	1	0	2
	VT/VF	3	1	0	1	0	0	0	0	0	0	0	0	0
	DevFail	2	0	0	1	0	0	0	0	0	0	0	0	0
	TAH	0	0	0	0	0	0	0	0	0	0	0	0	0
	DC VAD	0	0	0	0	0	0	0	0	0	0	0	0	0
	ACS	0	0	0	0	0	0	0	0	0	0	0	0	0
2Y PT deaths	IABP	20	17	11	21	40	29	50	64	53	78	60	52	77
	VT/VF	10	9	5	13	20	15	28	30	19	48	28	22	34
	DevFail	8	11	7	17	16	11	24	26	16	34	22	13	27
	TAH	10	10	5	15	14	10	19	15	7	18	19	15	23
	DC VAD	4	7	4	9	12	6	17	17	13	20	17	12	21
	ACS	1	1	0	2	1	0	2	2	0	3	3	1	7
2Y PT death rates	IABP	6.9	8.6	5.4	11.2	9.3	7.6	11.6	10.4	8.4	13.0	9.9	8.2	12.8
	VT/VF	6.8	7.0	3.3	11.1	7.4	5.6	10.6	8.8	5.6	14.5	8.5	6.5	10.9
	DevFail	7.2	10.8	6.2	19.7	9.7	6.4	14.4	10.3	6.0	13.8	10.2	5.0	14.3
	TAH	.	.	.	.	.	.	.	.	.	.	.	.	.
	DC VAD	.	.	.	.	.	.	.	.	.	.	.	.	.
	ACS	.	.	.	.	.	.	.	.	.	.	.	.	.

Obs = Observed data; MechVent = mechanical ventilation; ND VAD = Non-dischargeable VAD; MCS = Mechanical circulatory support.



Table B-14. Waitlist and posttransplant outcomes by simulation and tier-defining criteria, tier 3

Metric	Criteria	Obs	Current rules			By tier			Sh 1/2A			Sh 1/2B		
			Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max
TX count	LVAD30	479	401	363	432	510	487	552	334	309	347	517	502	527
	1A Exc	132	105	86	114	107	98	113	80	68	91	112	104	121
	Inotrope w/mon	673	562	544	578	660	635	689	505	495	521	682	659	719
	DevComp	70	55	46	60	59	50	71	43	34	54	58	53	63
	DevInf	237	262	254	288	273	250	285	212	199	231	261	247	278
	Thromb	79	55	52	62	58	52	66	46	33	53	54	48	64
TX rates	LVAD30	588.4	544.5	480.9	591.3	740.7	693.1	809.9	437.5	400.6	461.3	766.0	735.0	791.9
	1A Exc	756.5	728.9	615.7	864.7	960.1	894.2	1043.0	548.1	431.0	646.6	1031.7	886.0	1203.2
	Inotrope w/mon	889.9	834.8	775.9	902.0	1108.3	1044.7	1187.8	712.1	682.3	738.9	1201.6	1152.6	1251.8
	DevComp	478.6	520.4	428.1	653.6	580.4	470.7	714.4	316.1	243.7	379.7	644.3	531.5	725.4
	DevInf	320.3	519.3	488.9	546.9	624.6	569.0	668.1	326.8	289.5	364.3	650.7	571.8	706.8
	Thromb	605.7	554.3	452.1	667.5	737.3	595.0	866.4	399.5	314.8	458.4	770.9	621.2	923.2
WL death Counts	LVAD30	8	7	4	9	6	4	7	7	5	9	6	4	8
	1A Exc	7	5	4	7	6	3	7	6	5	8	5	3	7
	Inotrope w/mon	13	13	11	16	12	8	14	13	10	15	12	10	13
	DevComp	2	1	1	2	2	1	2	2	1	2	1	0	2
	DevInf	3	6	2	9	4	1	7	5	3	6	3	1	5
	Thromb	2	4	3	5	2	1	4	2	1	2	1	0	2
WL morality rates	LVAD30	9.8	9.2	5.5	12.2	8.4	5.8	10.3	8.9	6.6	11.9	9.2	6.1	11.8
	1A Exc	40.1	37.4	27.6	50.1	49.6	26.1	64.5	39.9	31.7	53.5	46.3	27.2	71.4
	Inotrope w/mon	17.2	19.6	15.6	24.0	19.3	13.8	24.4	18.0	13.8	21.6	20.8	17.4	23.8
	DevComp	13.7	13.1	8.6	21.0	15.6	9.4	22.7	11.7	7.0	16.2	13.1	0.0	22.0
	DevInf	4.1	11.7	3.9	17.0	8.6	2.3	15.8	7.9	4.8	9.5	7.5	2.3	12.1
	Thromb	15.3	36.2	25.6	55.6	27.4	12.0	48.7	13.8	8.2	19.1	15.4	0.0	27.7
WL removals	LVAD30	0	1	1	1	1	1	1	1	1	1	1	1	1
	1A Exc	4	2	0	4	0	0	1	1	0	2	0	0	1
	Inotrope w/mon	11	7	4	9	6	4	7	6	5	8	5	2	7
	DevComp	0	0	0	0	0	0	0	0	0	0	0	0	0
	DevInf	5	1	0	2	1	0	2	2	0	3	1	0	2
	Thromb	0	0	0	0	0	0	0	0	0	0	0	0	0
2YPT deaths	LVAD30	52	64	53	71	78	68	84	54	46	65	85	76	98
	1A Exc	23	20	10	25	21	12	28	17	12	22	21	14	26
	Inotrope w/mon	60	95	72	114	106	91	123	90	74	107	120	105	142
	DevComp	10	10	3	16	12	6	15	9	4	11	10	6	13
	DevInf	44	42	33	51	47	37	54	38	33	47	47	37	57
	Thromb	10	9	4	15	9	4	15	7	3	13	8	5	16
2YPT death rates	LVAD30	5.9	9.1	7.5	10.6	8.6	7.4	9.8	9.2	7.6	11.4	9.4	8.5	10.9
	1A Exc	10.0	11.2	4.9	15.3	11.7	6.3	15.6	12.7	8.5	16.8	11.1	7.4	12.8
	Inotrope w/mon	4.8	9.6	7.2	11.5	9.0	7.7	10.5	10.2	8.4	12.2	10.0	8.5	11.5
	DevComp	8.0	10.3	3.1	17.0	11.9	5.0	16.7	12.0	5.3	16.3	9.9	5.6	14.9
	DevInf	10.8	9.1	6.9	11.6	9.9	7.7	12.0	10.3	8.7	12.7	10.2	8.3	12.4
	Thromb	7.0	9.1	4.1	17.7	8.4	3.6	14.5	8.7	3.9	16.0	8.6	5.2	15.8

Obs = Observed data; LVAD30 = LVAD for 30 days; 1A Exc = Status 1A exception; Inotrope/mon = inotropes with hemodynamic monitoring; DevComp = Other device complication; DevInf = Device infection; Thromb = Thromboembolism



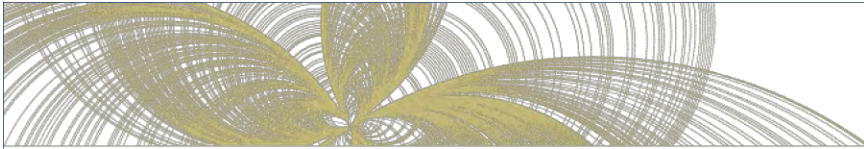
Table B-15. Waitlist and posttransplant outcomes by simulation and tier-defining criteria, tier 4

Metric	Criteria	Obs	Current rules			By tier			Sh 1/2A			Sh 1/2B			
		Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max		
TX count	CHD unrep	7	8	5	11	9	6	13	8	4	12	6	3	8	
	2V CHD	2	11	9	16	9	7	12	11	9	15	6	3	9	
	1V CHD	6	7	4	10	6	2	9	9	5	15	3	2	4	
	Angina	15	10	4	13	11	8	14	13	11	17	7	4	11	
	H-CM	40	42	35	53	55	49	58	59	50	69	37	32	46	
	R-CM	36	33	32	37	33	26	40	33	26	37	23	18	28	
	LVAD >30d	447	623	609	642	322	300	366	370	344	398	204	175	235	
	Inotrop w/o mon	939	785	764	820	462	446	487	488	459	505	291	279	305	
	Amyloid	23	25	19	35	28	24	31	27	22	32	21	17	26	
	Re-tx	75	79	69	87	125	109	137	126	115	135	89	81	102	
	1B Exc	72	55	49	60	35	26	48	38	32	42	23	16	28	
	Auto downgrade	4	110	96	123	79	75	91	85	73	94	57	50	64	
	TX rates	CHD unrep
		2V CHD
		1V CHD
Angina		.	.	.	.	.	.	.	.	.	.	.	.	.
H-CM		51.4	58.2	48.1	73.1	91.1	83.4	97.8	98.8	79.8	117.4	54.7	43.7	76.2	
R-CM		95.5	81.4	74.3	89.1	82.7	65.1	101.6	82.1	62.6	99.7	53.4	39.4	70.4	
LVAD >30d		47.7	73.0	70.9	77.2	35.7	33.4	41.3	39.8	36.9	41.9	22.5	18.9	26.3	
Inotrop w/o mon		152.1	132.6	128.3	139.0	68.1	65.2	72.3	72.4	67.9	75.9	39.7	37.7	41.7	
Amyloid		75.3	73.7	52.1	108.6	97.9	82.3	114.3	88.6	71.3	110.6	66.6	51.7	86.9	
Re-tx		42.8	45.9	39.7	50.2	95.1	80.1	109.4	94.7	84.2	107.3	56.9	51.2	67.3	
1B Exc		138.5	113.3	95.3	123.2	67.2	47.0	97.9	74.6	62.6	87.3	39.3	25.7	49.6	
Auto downgrade		92.0	280.3	240.7	315.5	159.3	145.0	180.6	168.3	152.5	206.8	110.1	97.0	122.7	
WL death Counts		CHD unrep	0	0	0	0	0	0	0	0	0	0	0	0	0
		2V CHD	1	1	1	1	1	1	1	1	0	1	1	1	1
		1V CHD	1	1	1	1	1	0	1	1	0	1	1	1	1
	Angina	3	4	2	6	4	2	5	4	3	6	4	2	5	
	H-CM	2	2	2	2	2	2	2	2	2	2	2	2	2	
	R-CM	2	5	4	6	5	4	6	6	5	7	6	5	7	
	LVAD >30d	50	53	48	57	51	48	55	51	47	54	49	46	53	
	Inotrop w/o mon	56	54	50	57	59	56	63	59	54	62	61	56	64	
	Amyloid	2	2	2	2	2	1	2	2	1	2	2	2	2	
	Re-tx	20	21	18	23	20	17	23	22	18	25	22	19	24	
	1B Exc	4	8	6	9	7	6	8	8	5	9	9	6	10	
	Auto downgrade	1	0	0	1	0	0	1	0	0	0	0	0	1	
	WL morality rates	CHD unrep
		2V CHD
		1V CHD
Angina		.	.	.	.	.	.	.	.	.	.	.	.	.
H-CM		2.6	2.8	2.7	2.9	3.3	3.1	3.5	3.4	3.2	3.6	2.9	2.7	3.3	
R-CM		5.3	12.4	9.3	14.8	13.1	9.9	16.4	13.8	12.0	16.8	14.5	12.6	16.9	
LVAD >30d		5.3	6.2	5.7	6.7	5.6	5.3	6.3	5.4	5.0	5.8	5.4	5.1	5.7	
Inotrop w/o mon		9.1	9.1	8.4	9.7	8.7	8.1	9.2	8.8	8.1	9.3	8.3	7.7	8.8	
Amyloid		6.6	5.8	5.3	6.5	6.5	3.7	7.1	6.2	3.2	7.1	6.2	5.6	6.8	
Re-tx		11.4	12.0	10.5	13.2	15.4	12.3	18.6	16.5	13.5	20.2	13.9	11.8	15.3	
1B Exc		7.7	15.4	11.9	19.9	13.5	10.9	15.4	14.6	9.8	18.7	15.1	10.7	17.2	
Auto downgrade		23.0	0.7	0.0	2.7	0.8	0.0	2.3	0.0	0.0	0.0	0.2	0.0	2.0	



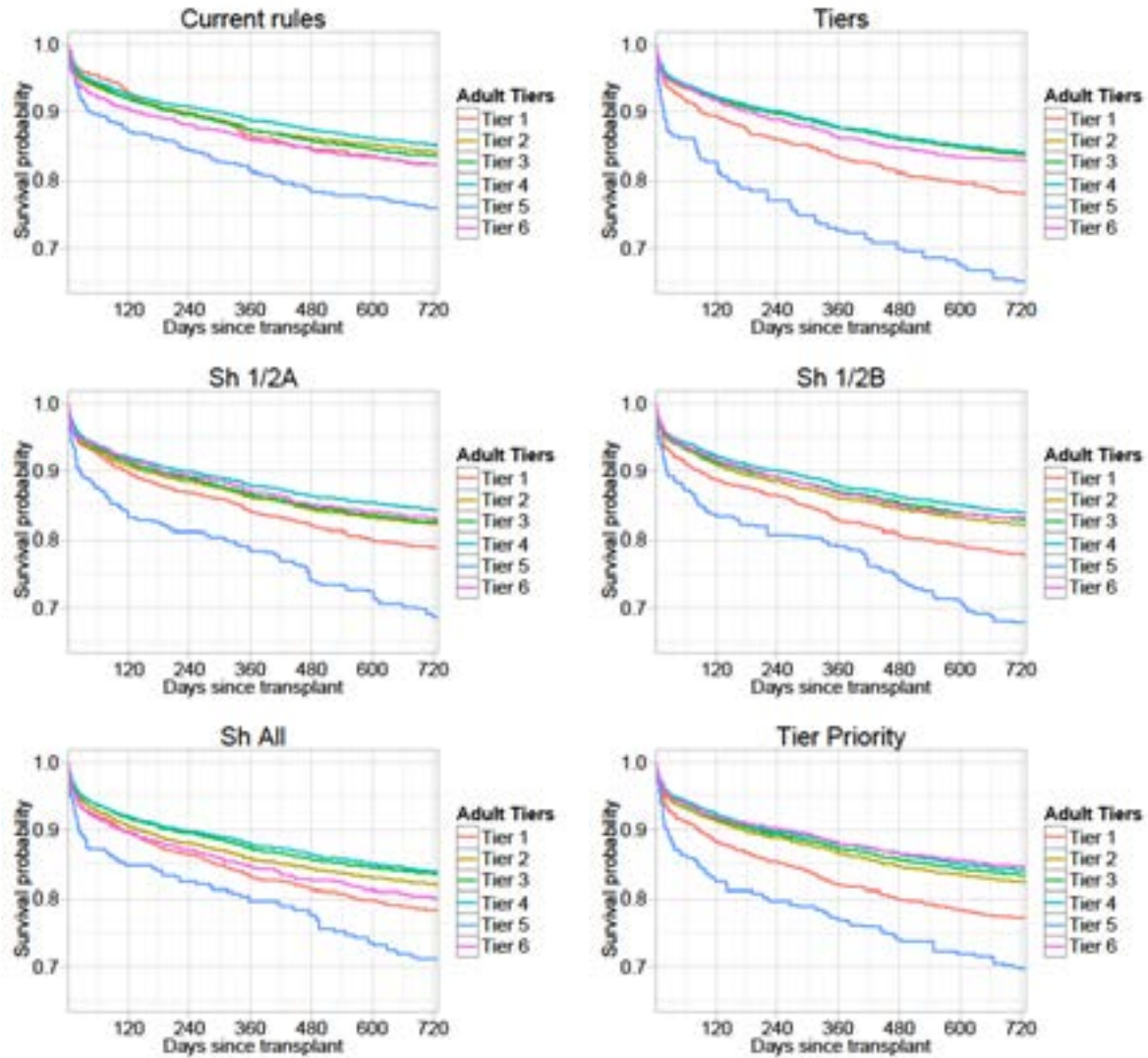
Metric	Criteria	Obs	Current rules			By tier			Sh 1/2A			Sh 1/2B			
			Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	
WL removals	CHD unrep	1	1	0	2	2	0	3	2	1	3	3	2	4	
	2V CHD	2	1	1	1	1	1	1	1	0	1	1	0	1	
	1V CHD	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Angina	0	0	0	0	0	0	0	0	0	0	0	0	0	
	H-CM	11	11	9	12	10	7	11	9	7	13	10	8	11	
	R-CM	5	4	3	5	3	2	4	3	2	5	3	3	4	
	LVAD >30d	65	45	42	48	48	41	53	48	43	52	50	43	55	
	Inotrop w/o mon	50	32	29	35	39	35	42	39	36	42	42	38	43	
	Amyloid	2	4	3	6	7	6	9	7	6	9	7	5	8	
	Re-tx	20	19	16	21	11	7	16	12	8	15	14	10	17	
	1B Exc	4	3	2	4	3	2	4	3	1	4	4	3	6	
	Auto downgrade	2	3	2	4	3	2	4	3	2	4	4	3	4	
	2Y PT deaths	CHD unrep	3	2	0	4	2	0	4	3	2	5	2	0	4
		2V CHD	0	3	1	6	1	0	4	2	1	4	1	0	3
1V CHD		2	1	0	4	1	0	3	1	0	4	0	0	2	
Angina		1	2	1	4	2	0	4	2	0	4	1	0	3	
H-CM		5	6	3	8	7	4	10	8	5	11	5	3	7	
R-CM		6	5	2	8	6	3	10	6	3	9	5	2	11	
LVAD >30d		56	87	71	104	48	43	56	53	49	62	31	23	38	
Inotrop w/o mon		107	120	104	138	68	60	84	71	60	91	41	32	48	
Amyloid		2	4	1	7	5	3	8	5	3	7	3	0	5	
Re-tx		8	18	14	23	31	21	41	33	25	43	23	13	28	
1B Exc		11	11	6	17	5	1	8	7	4	10	4	2	7	
Auto downgrade		0	15	8	20	12	8	15	11	7	13	8	5	11	
2Y PT death rates		CHD unrep	37	19	0	43	14	0	25	26	17	42	21	0	49
		2V CHD	0	14	5	37	8	0	25	12	4	31	8	0	26
	1V CHD	25	12	0	60	14	0	49	11	0	32	6	0	37	
	Angina	4	15	5	42	10	0	21	10	0	25	10	0	30	
	H-CM	6.8	7.2	4.4	10.3	7.5	3.6	10.4	7.6	4.9	10.4	7.7	4.3	11.3	
	R-CM	9.5	8.3	3.2	12.6	10.4	4.7	21.3	11.5	5.7	15.3	12.5	4.3	31.0	
	LVAD >30d	6.9	7.7	6.2	9.3	8.4	7.4	9.6	8.1	7.2	9.4	8.6	7.2	10.2	
	Inotrop w/o mon	6.2	8.6	7.4	10.1	8.3	7.2	10.0	8.2	6.7	10.4	7.9	6.0	9.3	
	Amyloid	4.5	9.1	1.4	14.7	9.6	5.8	15.2	10.8	5.4	17.5	7.1	0.0	12.4	
	Re-tx	5.7	14.2	10.2	19.3	15.4	10.9	21.8	16.0	11.7	20.9	16.3	9.1	21.3	
	1B Exc	8.7	11.8	6.6	20.1	8.1	1.5	13.8	10.3	6.2	14.9	10.0	4.4	19.8	
	Auto downgrade	0.0	7.3	4.4	10.0	8.4	5.5	11.3	7.1	5.1	8.7	7.8	4.8	11.8	

Obs = Observed data; CHD unrep = Congenital unrepaired CHD; 2V CHD = Congenital repaired CHD, 2 ventricles; 1V CHD = Congenital repaired CHD, 1 ventricle; Angina = IHD/intractable angina; H-CM = Hypertrophic cardiomyopathy; R-CM = Restrictive cardiomyopathy; LVAD = LVAD after 30 days; Inotrope w/o hemodynamic monitoring; Amyl = Amyloidosis; Retx = Re-transplant; 1B Exc = Status 1B exception.



Appendix C. Kaplan-Meier survival curves, by simulation

Figure C-1. Posttransplant survival curves by simulation and tier, adult recipients



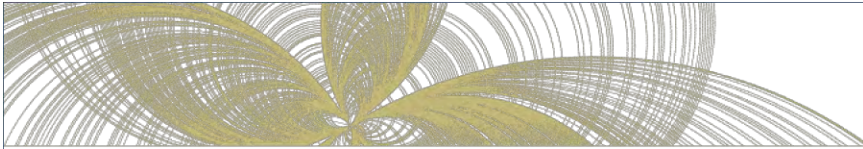
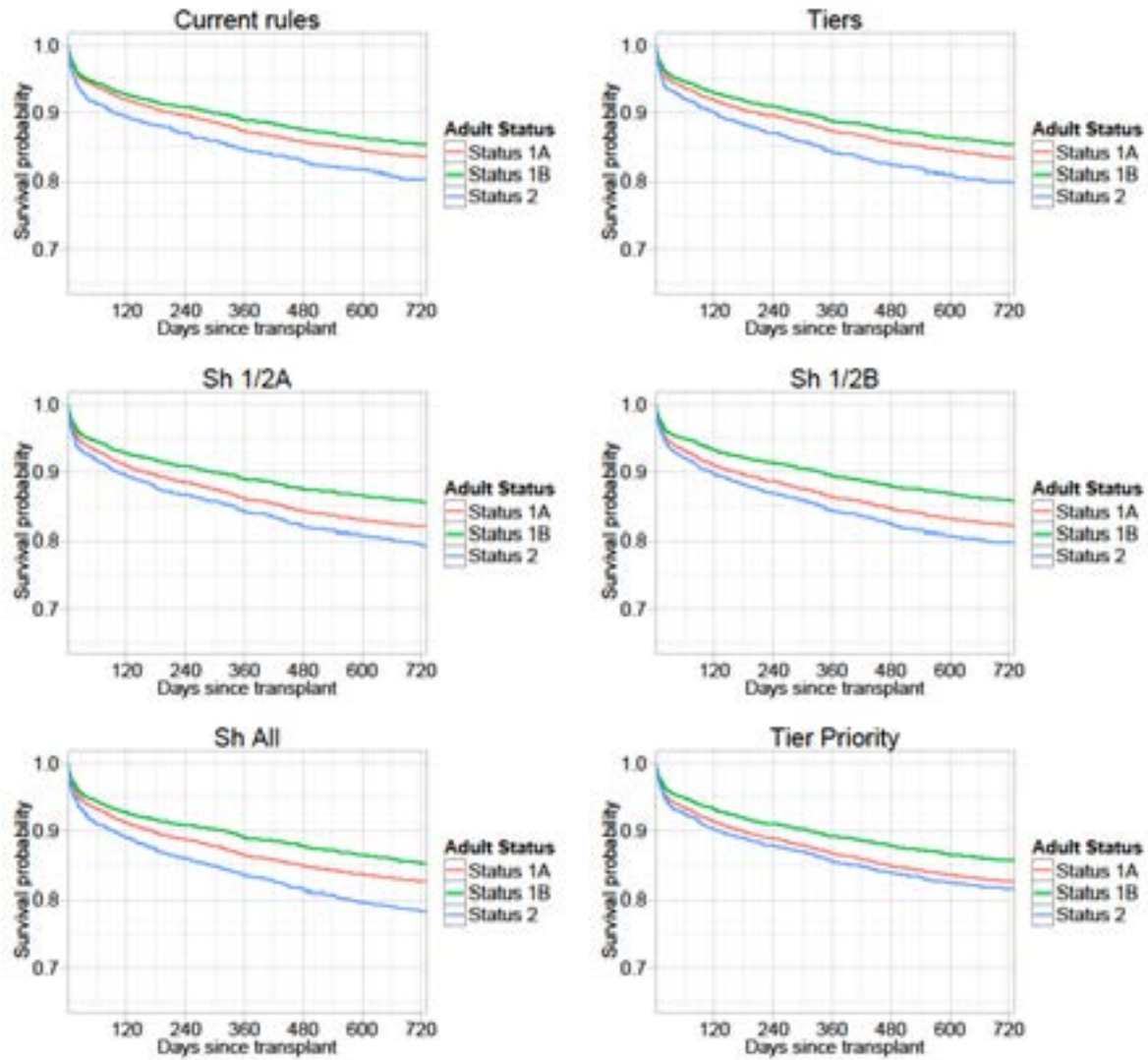


Figure C-2. Posttransplant survival curves by simulation and status, adult recipients



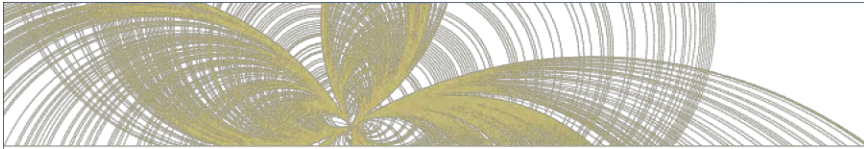
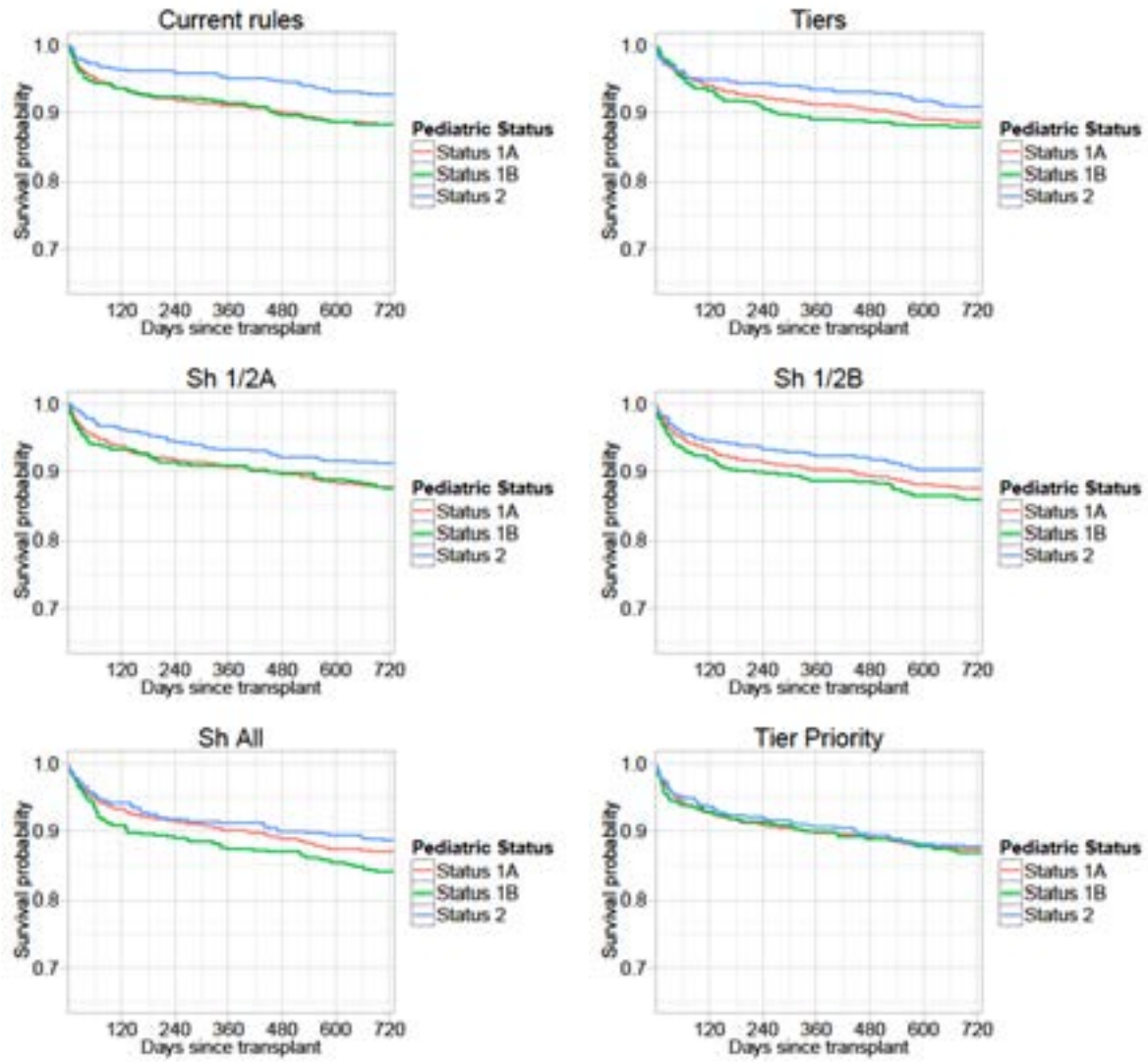


Figure C-3. Posttransplant survival curves by simulation and status, pediatric recipients



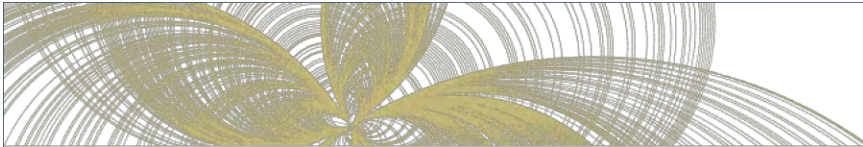
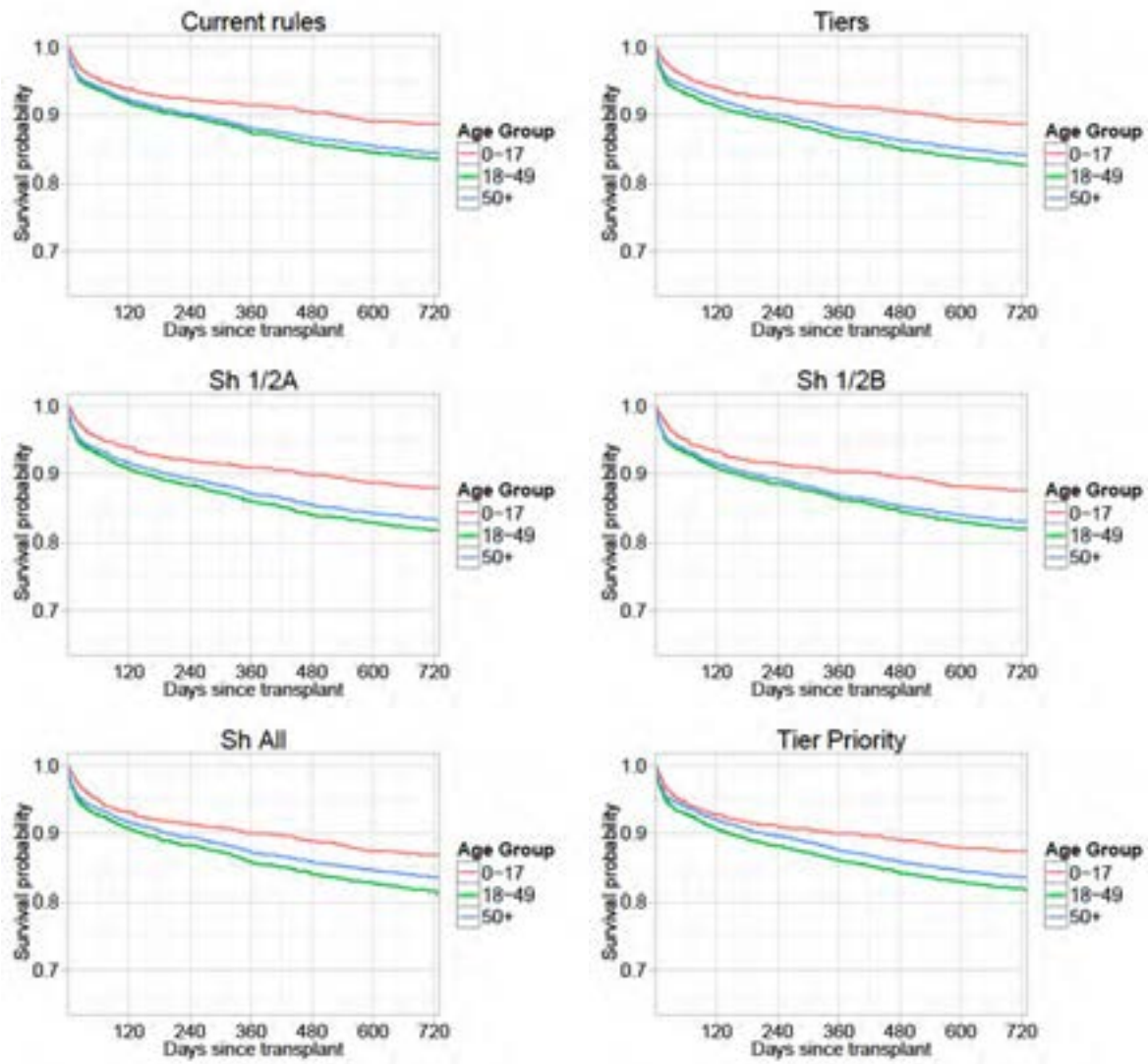


Figure C-4. Posttransplant survival curves by simulation and age group, all recipients



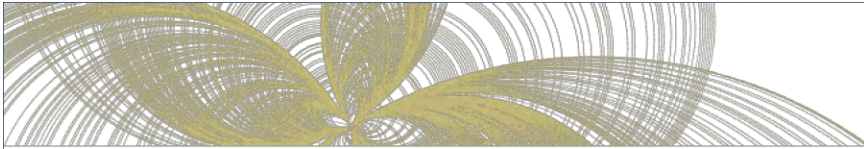
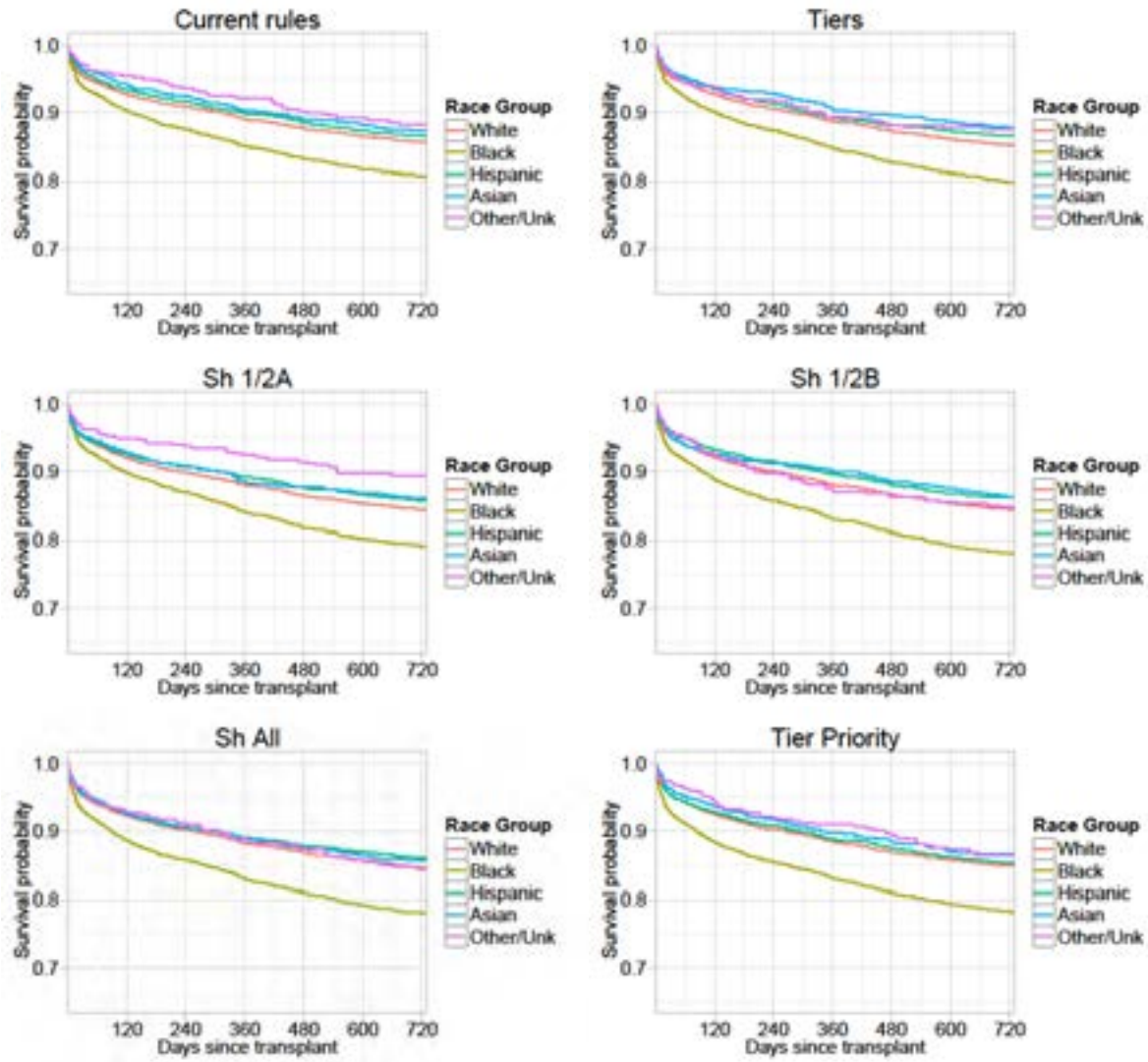


Figure C-5. Posttransplant survival curves by simulation and race group, all recipients



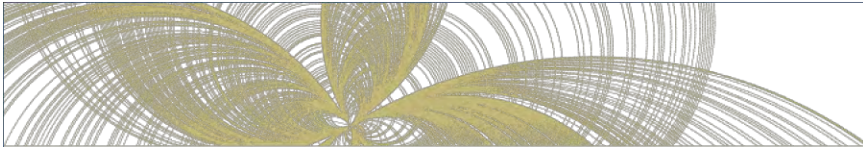
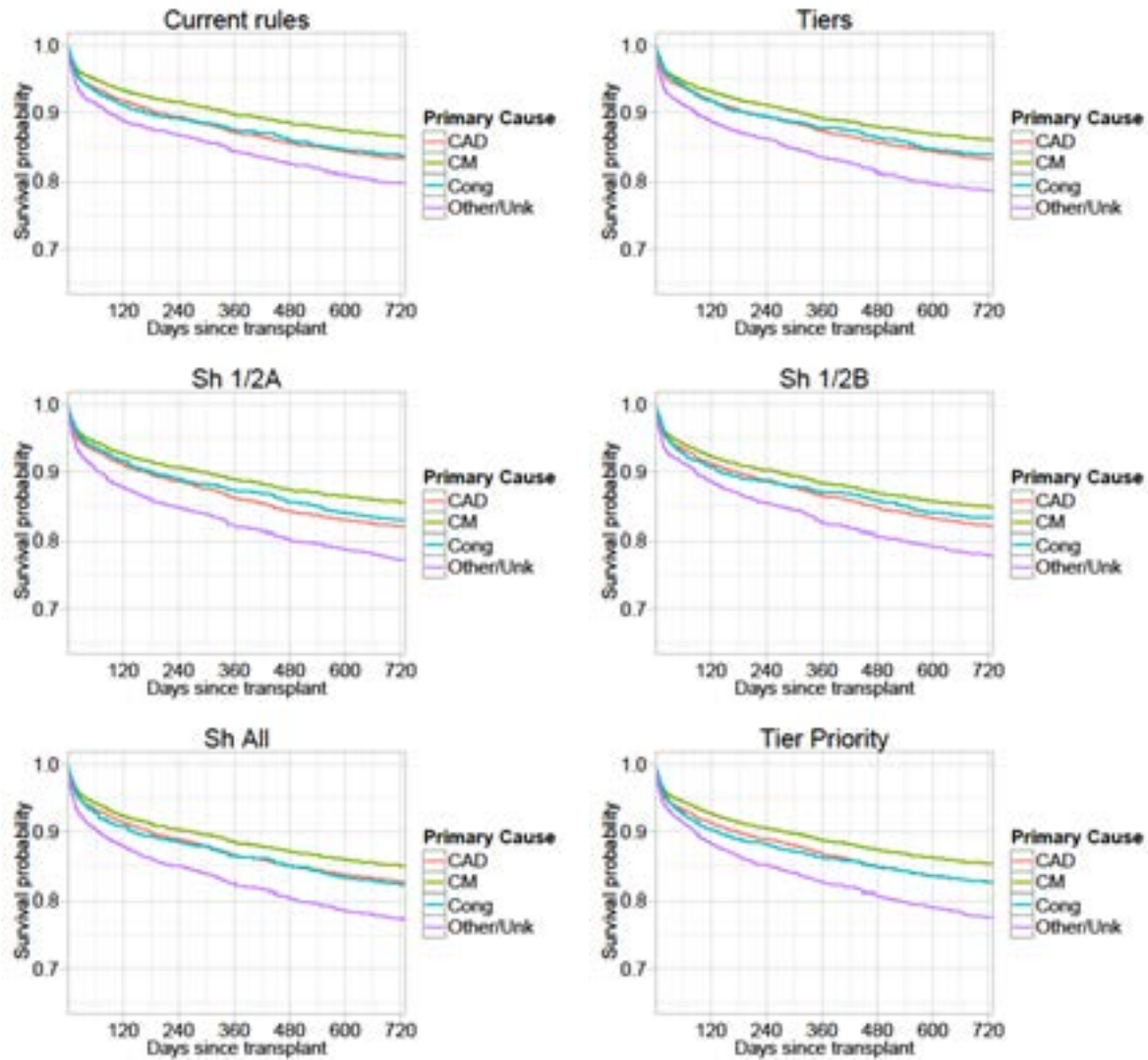


Figure C-6. Posttransplant survival curves by simulation and primary cause of heart failure, all recipients



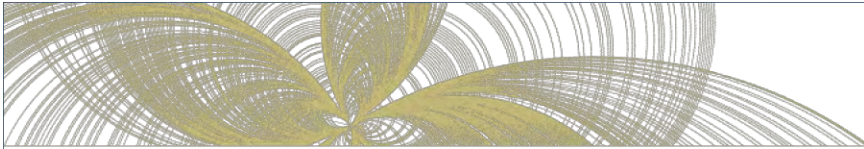
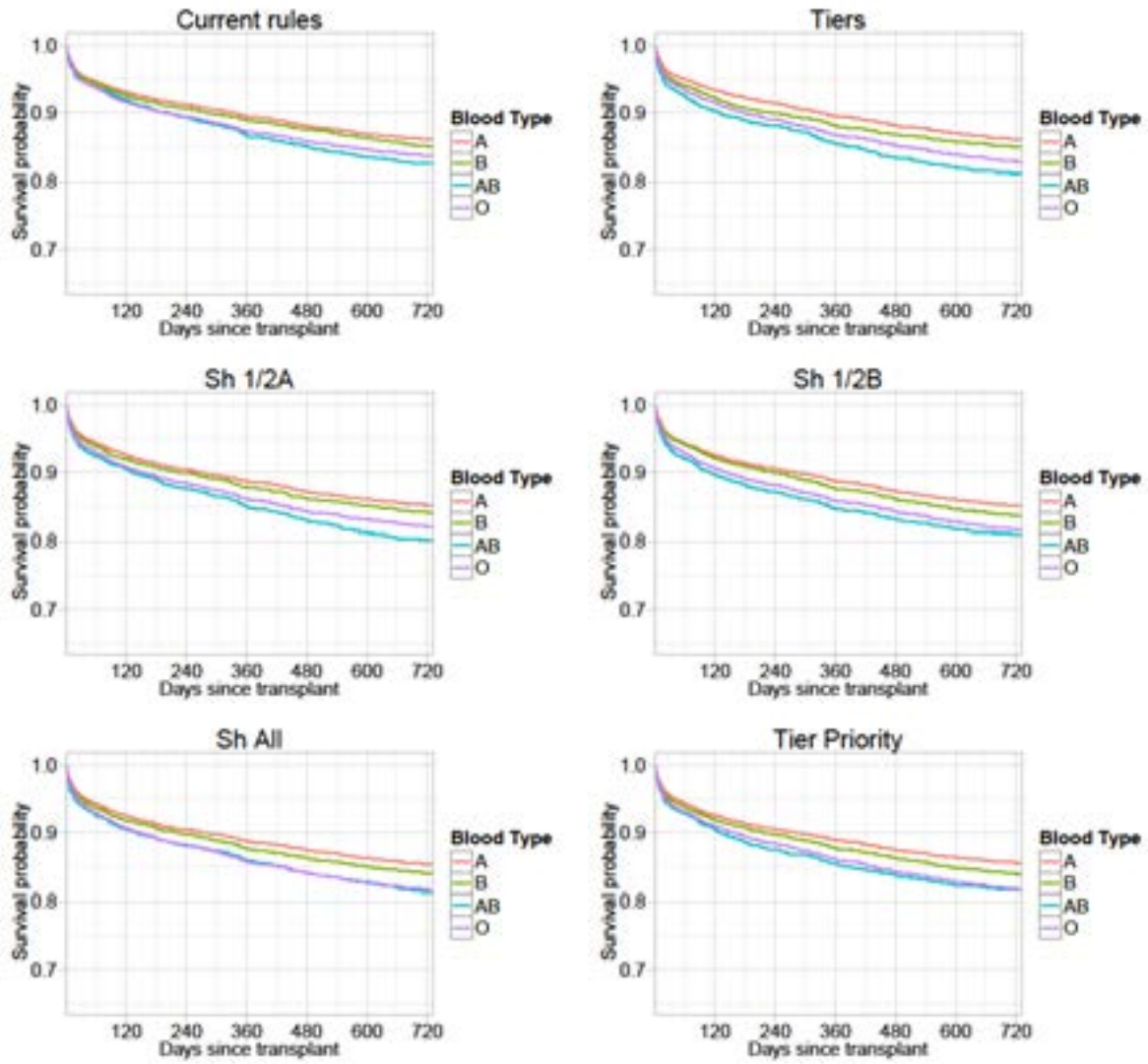


Figure C-7. Posttransplant survival curves by simulation and blood type, all recipients



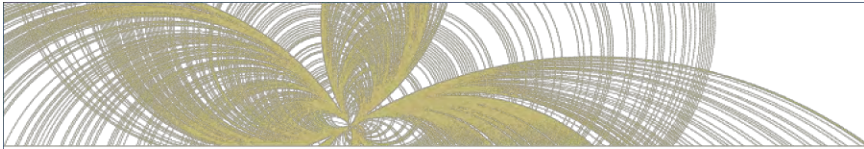
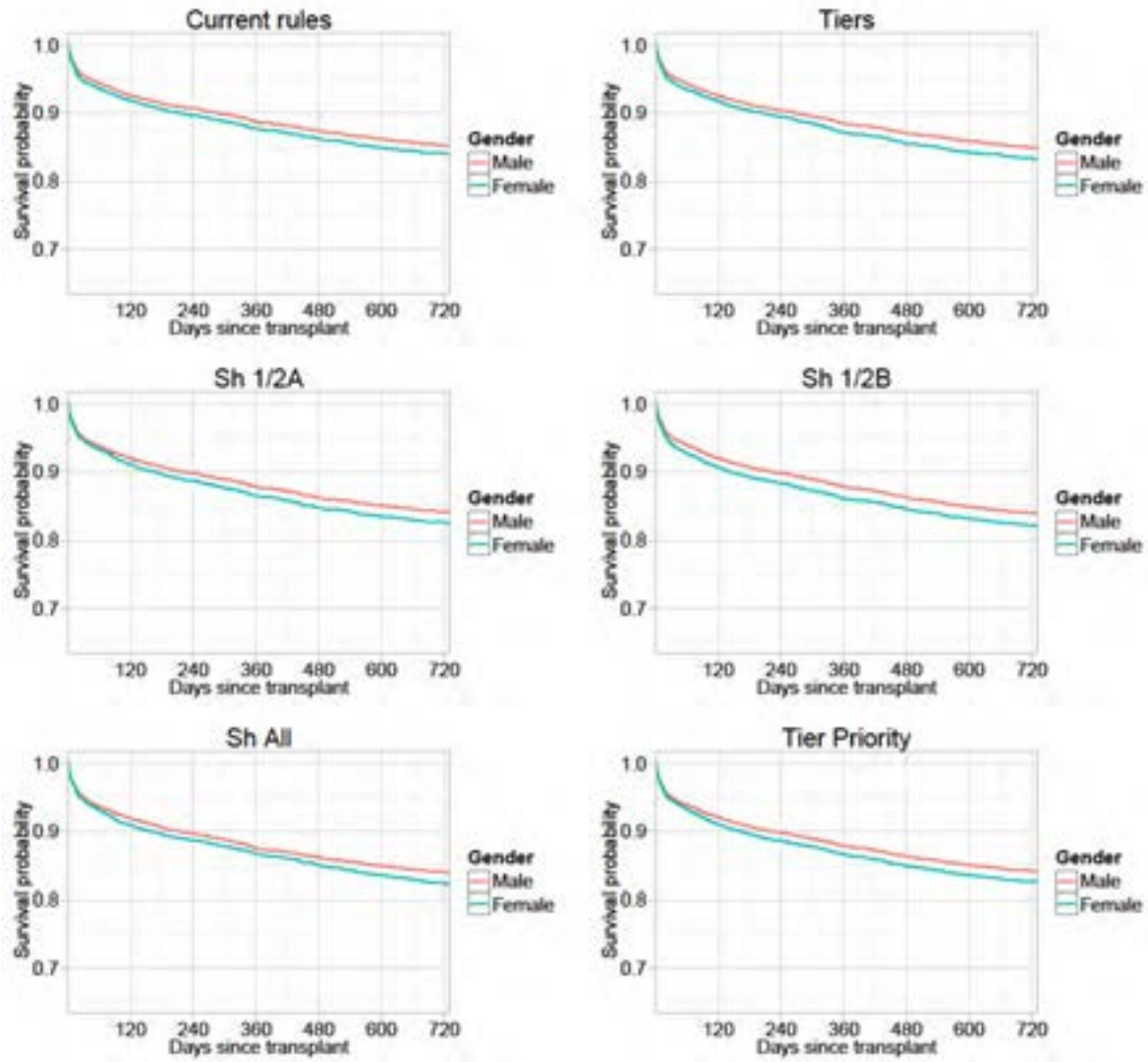


Figure C-8. Posttransplant survival curves by simulation and sex, all recipients



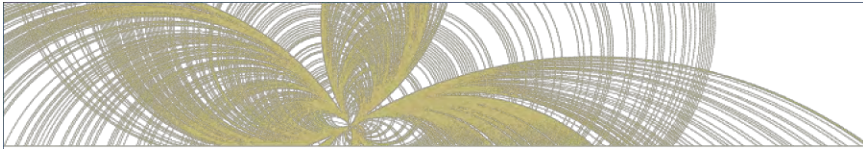
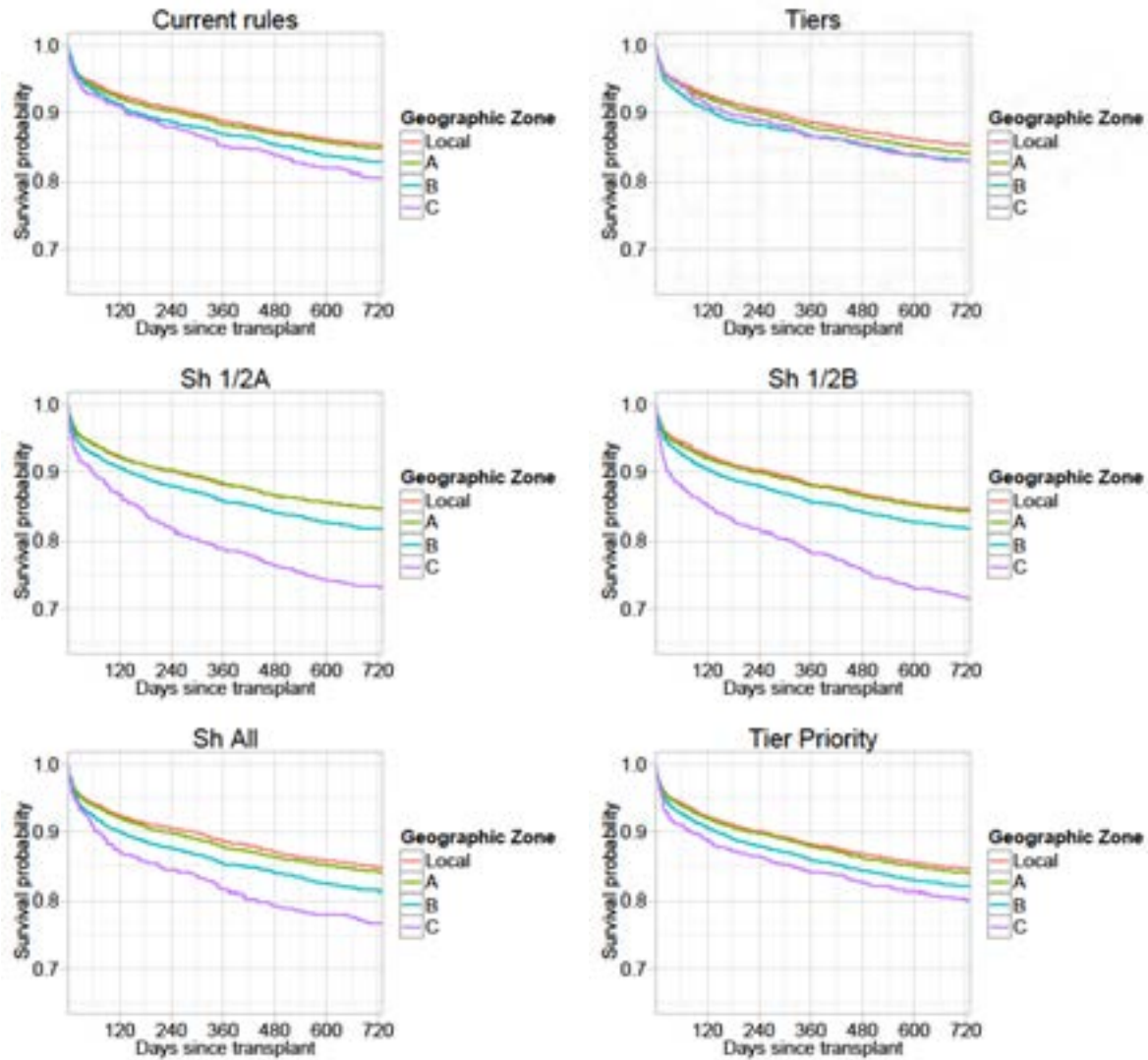


Figure C-9. Posttransplant survival curves by simulation and geographic zone, all recipients



Zone C survival rates should be interpreted with caution. These outcomes appear considerably worse with broader sharing compared with current rules and allocation tier, but are based on relatively few transplants and even fewer deaths. Two-year posttransplant death counts averaged 34 in simulation Share 1/2A, 35 in simulation Share 1/2B, 18 in simulation Share All, and 20 in simulation Tier Priority.

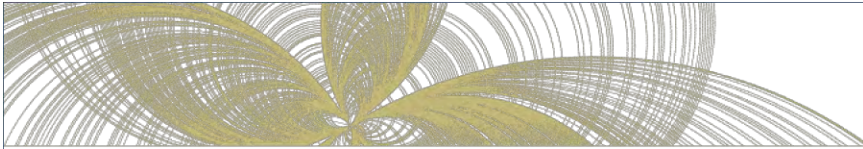


Figure C-10. Posttransplant survival curves by simulation and distance (miles), all recipients

