

OPTN/UNOS Kidney Transplantation Committee

Summary

I. Action Items for Board Consideration

- None

II. Other Significant Items:

- The Kidney Transplantation Committee continues its work to develop a new, national kidney allocation system. During its August 14-15, 2007 meeting, the Committee met to discuss the need and requirements for a new allocation system. During its deliberations, the Committee revisited the requirements stated in the National Organ Transplant Act, the OPTN Final Rule, and the General Principles for Allocating Human Organs and Tissues. The Committee also reviewed the most recent simulation modeling results, discussed how to address geographic inequities in access to kidney transplantation, and revamped its communications efforts to further engage the transplant community and general public in the policy development process. (Item 1, Page 3)

This page is intentionally left blank.



**Report of the
OPTN/UNOS Kidney Transplantation Committee
to the Board of Directors
September 17-18, 2007
Los Angeles, California**

**Peter G. Stock, MD, PhD, Chair
Kenneth Andreoni, MD, Vice Chair**

The Kidney Transplantation Committee met in Chicago on August 14-15, 2007, to continue developing a new kidney allocation system. To date, no system has been proposed, but the Committee continues to analyze allocation concepts that could be incorporated into a new allocation system. Below is a brief summary of the Committee's discussion and deliberations on this topic.

1. DEVELOPMENT OF A NEW NATIONAL KIDNEY ALLOCATION SYSTEM

The Need for a New Allocation System

Tim Pruett, MD, OPTN/UNOS President, presented the role of the OPTN and UNOS in organ allocation to the Committee. In his presentation, he emphasized that the Committee must develop a kidney allocation system that balances utility (e.g., maximizing the use of available kidneys) with justice (e.g., by ensuring that candidates have a reasonable chance of being transplanted). He shared with the Committee the trends of available organs and the number of candidates on the waiting list to show that demand for organs is outpacing the supply.

Dr. Pruett explained that the allocation system is affected by larger societal factors, such as access to health insurance and geographic differences (e.g., urban versus rural). Allocation policies, therefore, must effectively, efficiently, and fairly allocate organs despite these societal factors. Additionally, allocation policies must take into consideration the special needs of certain patient populations such as children and sensitized candidates. The National Organ Transplant Act (NOTA) specifically directs the OPTN to address the unique healthcare needs of children. The OPTN is also required to study ways of improving access to transplantation for people with special needs, racial and ethnic minority groups, children, and populations with limited access to transportation.¹ Additionally, the OPTN Final Rule also requires that allocation policies must:

- Be based on sound medical judgment,
- Seek to achieve the best use of donated organs, and

¹ The National Organ Transplant Act of 1984 specifically states that the OPTN shall *carry out studies and demonstration projects for the purpose of improving procedures for organ donation procurement and allocation, including but not limited to projects to examine and attempt to increase transplantation ... and among populations with limited access to transportation.*

- Be designed to avoid wasting organs, to avoid futile transplants, to promote patient access to transplantation, and to promote efficient management of organ placement.

Dr. Pruett also addressed efficiency and how inefficient allocation systems lead to organ wastage. Some of these inefficiencies (e.g., process errors and logistic errors) can be corrected. Other inefficiencies (e.g., discarding a recovered organ due to inherent disease issues) cannot be corrected through allocation systems. The Committee considered these principles, concepts and issues throughout its deliberations.

Review of Systems Modeled to Date

Peter Stock, MD, PhD, Chair of the Committee, asked the Committee to review each of the systems that had been modeled to date and to discuss the strengths and weaknesses of each. Since each system may have had several iterations of modeling, the systems for discussion were defined as follows:

- The current kidney allocation system,
- An allocation system based entirely on LYFT (life years from transplant is the estimated years of life gained from a kidney transplant over years lived on dialysis),
- A continuous system using modified LYFT scores, that also incorporates time on dialysis and the continuous donor profile index (DPI) kidney graft scale,
- A discontinuous system using modified LYFT scores and dividing donor kidneys by DPI categories,
- A system that matches candidates to donors based on post-transplant survival and DPI, and
- A system that matches candidates and donors based only on age.

The Committee again reviewed the three competing principles in organ allocation: justice, utility, and autonomy. No matter what allocation system is ultimately designed, these three principles must be balanced as described in the 1991 White Paper, General Principles for Allocating Human Organs and Tissues. Additionally, the allocation system must meet the requirements of the Final Rule which states that allocation policies must:

- “be based on sound medical judgment”,
- “seek to achieve the best use of donated organs”,
- “be designed to avoid wasting organs, to avoid futile transplants, to promote patient access to transplantation, and to promote the efficient management of organ placement”, and
- Set “priority rankings... through objective and measurable medical criteria”.

One member asked how to address the HRSA Program Goal to increase life years after kidney transplant within a new allocation system and whether this is a necessary consideration.² Gregory Fant, PhD, from HRSA responded that Program Goals were initially established by the Office of Management and Budget (OMB) as a way of to assess the performance of the OPTN. The performance levels on each metric could then be assessed and used as a way of determining federal funding levels. Dr. Fant also explained that the Program Goals were set based on the assumptions of the current organ allocation system so if the allocation system changes, then it may be appropriate to modify the goals. HRSA is aware that changes to the kidney allocation system may require the program goal for increasing life years within the first five years of transplant to be revisited.

The Committee used the requirements and frameworks of the Final Rule, NOTA, and the General Principles for Allocating Human Organs and Tissues, to discuss each of the systems described below, and to assign advantages and disadvantages to each.

The Current Kidney Allocation System

Under the current national system, kidneys are divided into two categories based on donor factors (i.e., standard criteria donor (SCD) and expanded criteria donor (ECD) kidneys). The system is driven primarily by waiting time with additional points or priority for sensitized candidates, pediatric candidates, prior living donors, and degree of HLA matching (class II DR only). Waiting time begins at time of listing and there is no additional credit for time on dialysis. The zero-antigen mismatch policy provides an absolute priority for perfectly matched candidates at the local, regional, and national levels and requires that kidneys shared for these candidates are paid back to the offering organ procurement organization (OPO).

Strengths and Weaknesses of the Current Kidney Allocation System

The Committee discussed the relative strengths and weaknesses of the current kidney allocation system. Among the advantages, the predictability of the system (i.e., ability to predict when a given candidate may be transplanted) was identified for those unsensitized candidates that do not receive a perfectly matched kidney graft. Due to recent pediatric modifications, the system has also resulted in pediatric candidates receiving faster access to transplantation which has reduced the dialysis-related adverse effects in this population.

However, the Committee also recognized several limitations of the current system. Members discussed how the current system does not provide transplant professionals or patients with any information for determining if transplantation is the right therapeutic option. For example, information about the relative survival on dialysis versus post-transplant for candidates is not readily available. Additionally, many members pointed out that the system is not equitable since it uses waiting time (i.e., the time since the candidate was added to the waiting list) instead of

² By 2013, increase the average number of life-years gained in the first 5 years after transplantation for deceased kidney/kidney-pancreas transplants by 0.003 life-years until the goal of 0.436 life-years gained per transplant is achieved in 2013.

time on dialysis. Referral rates to transplant centers are variable across the country and among ethnic groups. Therefore, some candidates are referred later than others, resulting in disparate access to transplant.

Committee members also discussed how more than half of the OPOs in the country are not using the national allocation system. Instead, these OPOs have alternative allocation systems or variances to deal with a limitation of the national system. These variances make it difficult to identify how changes to the national system actually affect outcome measures such as graft or patient survival. Additionally, these variances are difficult and costly to maintain.

As an additional weakness, the Committee discussed how waiting time has become the primary allocation factor by default. With the elimination of priority for matching at the HLA A and B loci, waiting time emerged as the primary allocation factor. This was not intentionally designed and has resulted in a system that is perceived as equitable but one that does not allow medically urgent candidates (e.g., those who have limited survival on dialysis) equal access to transplant. Patient and graft survival are also adversely affected by the disproportionate emphasis on waiting time. Graft survival is especially hampered by the lack of consideration for estimated graft survival versus patient survival within the current allocation system. This results commonly in the allocation of very young donor kidneys with over 20 years of potential function into recipients having less than five years of estimated lifetime survival with a functioning kidney graft.

Finally, many on the Committee expressed that the current zero-antigen mismatch and payback policies are not equitable. Caucasian candidates are much more likely to receive zero-antigen mismatch offers than minorities. The payback policy, which was intended to mitigate the ethnic disparity caused by the zero-antigen mismatch policy, has been found to be inefficient, results in decreased graft survival for the payback kidney, and has not resulted in much of an increase in minority access to transplant.

An Allocation System Based Entirely on LYFT

In this system, candidate LYFT scores would be calculated as the difference between the candidate's estimated survival following transplant versus the candidate's estimated survival on dialysis. The dialysis survival time would be adjusted by a factor of 0.8 to reflect the lower quality of life that dialysis patients report.³ The data elements used to calculate LYFT scores were selected because they are important to the calculation, are objective, are less likely to be gameable, and the data element is available and of good quality. Table 1 shows the data elements included and excluded from the LYFT calculation. In this system, the dichotomous ECD/SCD

³ The quality of life adjustment factor of 0.8 was selected from published studies including:

Laupacis A, Keown P, Pus N et al. A study of the quality of life and cost-utility of renal transplantation. *Kidney Int* 1996; 50: 235–242.

Hornberger JC, Best JH, Garrison LP Jr. Cost-effectiveness of repeat medical procedures: Kidney transplantation as an example. *Med Decis Making* 1997; 17: 363–372.

designation is still in place. The SCD kidneys would be allocated based only on LYFT and the ECD kidneys would be allocated based on waiting time alone.

Table 1: Variables included and excluded from the LYFT calculation.

Data Elements Included in the Model		Data Elements Excluded from the Model	
Time exposed to ESRD	Shared/local	Ethnicity/Race	
Candidate Age	Donor Factors	Angina	DSA (Surrogate for Geography)
Body Mass Index (BMI)	Peak PRA	Peripheral Vascular Disease	Dialysis Modality
Albumin		Gender	Previous Malignancy
Diagnosis		NYHA Function Class	
Hypertension		Calendar Year of Listing	
Polycystic Kidney Disease		Drug Treated Hypertension	
Diabetes		Primary Insurance Status	
Other			
Previous Transplant			
HLA			

Strengths and Weaknesses of an Allocation System Based Entirely on LYFT

Among the strengths of this system, the Committee acknowledged that it would maximize the life years gained from transplant. By allocating ECD kidneys by waiting time alone, this system would also preserve access to transplant for candidates with lower LYFT scores. Many Committee members remarked that using LYFT as a basis for allocation would provide the foundation for a more flexible allocation system. Since LYFT is a metric that ranks candidates according to objective medical criteria, it could be used in the future to determine if geographic boundaries need to be expanded. Additionally, as new data becomes available, LYFT could be modified to include additional predictive elements such as surrogate metrics for cardiovascular disease or peripheral vascular disease.

Among the weakness of this system, predictability and data quality were most often mentioned. Since this system continues to use HLA matching in the LYFT calculation, the predictability of when a candidate may receive a transplant is not certain. Additionally, as new candidates enter the list, their LYFT scores may supersede existing candidates, making time to transplant for patients with lower LYFT scores difficult to calculate. Additionally, this system maintains the current division between SCD and ECD kidneys which has not proven to be an accurate way of assessing donor quality. In fact, the graft survival for some SCD kidneys is actually less than for some ECD kidneys.

The Committee discussed the data elements used to calculate LYFT and raised concerns that not all of the necessary elements that one would expect to be important in predicting survival with and without a transplant have been included. Since actual data are used to model each of these systems, if data elements are not currently collected in the OPTN database or they are of poor quality, then they are not included in the model. Despite these limitations, Alan Leichtman, MD, of the Scientific Registry of Transplant Recipients (SRTR) responded that the current data elements used to calculate LYFT are robust and explain the majority of patient survival.

A Continuous System Using Modified LYFT Scores

This system incorporates an additional factor for candidate time on dialysis (also referred to as years of ESRD) and a continuous measure of donor quality (DPI). Under this system, LYFT is calculated as described above (see section entitled *An Allocation System Based Entirely on LYFT*). Kidneys with the best donor profiles would be allocated entirely by candidate LYFT scores. As the quality of the kidney decreases (i.e., increasing risk of graft lost), an increasing number of points would be given for time on dialysis. Kidneys with the poorest donor profile index would be allocated principally by candidate time on dialysis. Figure 1 depicts the relationship between LYFT scores, time on dialysis, and DPI within this system.

Strengths and Weaknesses of a Continuous System Using Modified LYFT Scores

By removing the artificial boundary between SCD and ECD kidneys, members of the Committee remarked that utilization of kidneys from lower DPI donors may increase. Since use of the currently identified ECD kidneys is not uniform across the country, many on the Committee observed that utilization of these organs is not as high as it could be. For example, in donor service areas (DSAs) with shorter waiting times, ECD kidneys are less likely to be procured and transplanted than in DSAs with longer waiting times. The Committee also appreciated the gain in post-transplant survival (PTS) that was achieved by this system.

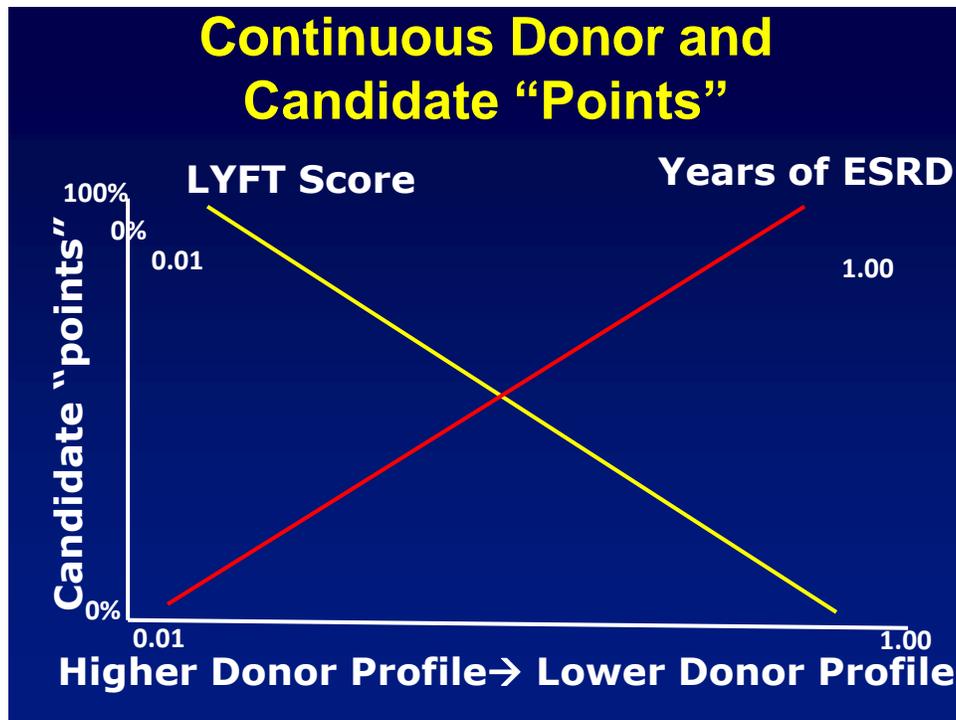


Figure 1: Graphic of continuous system incorporating LYFT and DPI. In this system, the amount of weight given to a candidate's time on dialysis is determined based on the quality of the donor organ.

Some on the Committee were concerned about the predictability of this system. The SRTR conducted an analysis of predictability which showed that this system is actually more predictable than some of the others reviewed (please see section entitled *Predictability*). Since this system uses a continuous scale to match candidates and donors, the availability of organs will affect

which candidates receive offers and when. Additionally, this system is more complex than some of the others that the Committee has examined and may be more difficult to explain in great detail to candidates and professionals; however the overall concepts are readily understandable.

A Discontinuous System Using Modified LYFT Scores

In this system, quintiles are developed by reviewing the LYFT scores of recipients during the previous year and dividing them into five categories, each with an equal number of individuals. Candidates are then categorized into quintiles based on their LYFT scores. Similarly, donor organs are categorized into quintiles based on their DPI. Within the candidate quintiles, candidates are rank-ordered according to their time on dialysis. The candidates' LYFT scores do not change over time. Figure 2 depicts how candidates and donors are separated into categories and matched.

Strengths and Weaknesses of a Discontinuous System Using Modified LYFT Scores

This system is easier to understand than the continuous system. However, this system was found to be less predictable than some of the other systems reviewed (please see the section entitled *Predictability*). Furthermore, many on the Committee expressed concern that the advantages do not outweigh the disadvantage of a decrease in life years gained over the current system. Since this system underperformed the current system on this important metric, the Committee determined that it could not pursue this system. This system will underperform most other systems since the average donor age in this country is younger than the average recipient age; therefore, many kidney grafts would likely fail due to recipient death and not graft loss.

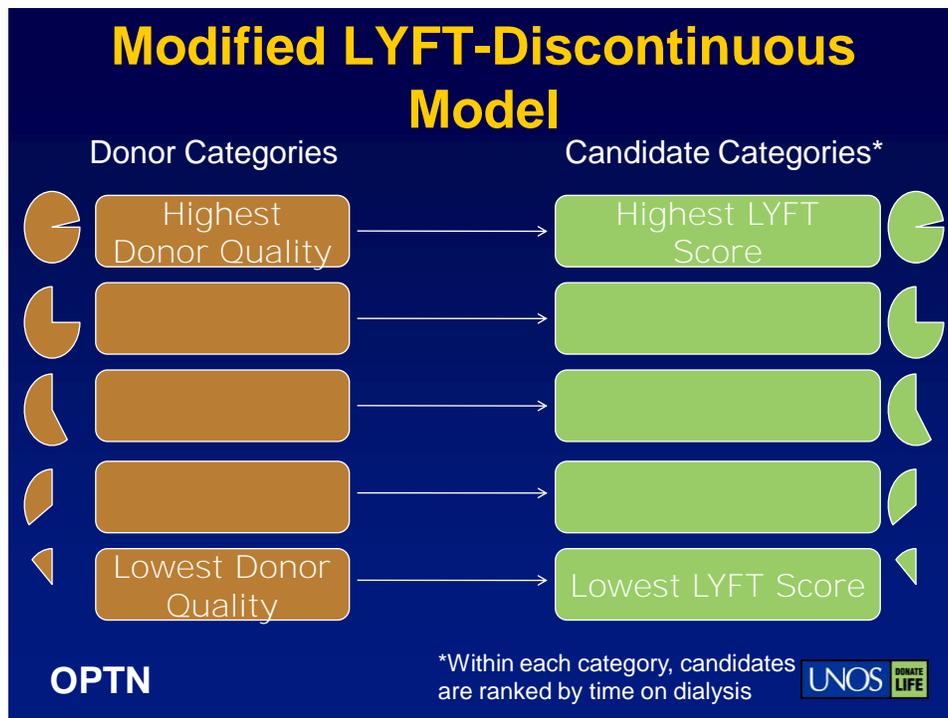


Figure 2: Graphic of a system using five categories called quintiles to match donors and candidates. In this system, candidates are rank ordered within their quintile according to the amount of time that they have spent on dialysis.

A System that Matches Candidates to Donors Based on Post-Transplant Survival and DPI

This system is similar to the *Discontinuous System Using Modified LYFT Scores* (see above). Instead of categorizing candidates based on LYFT scores, though, this system uses an estimate of post-transplant survival. Within each quintile, candidates are ranked according to their time on dialysis. Essentially, recipients with the longest predicted post-transplant survival would be matched with the kidneys predicted to have the longest expected graft survival (Figure 3).

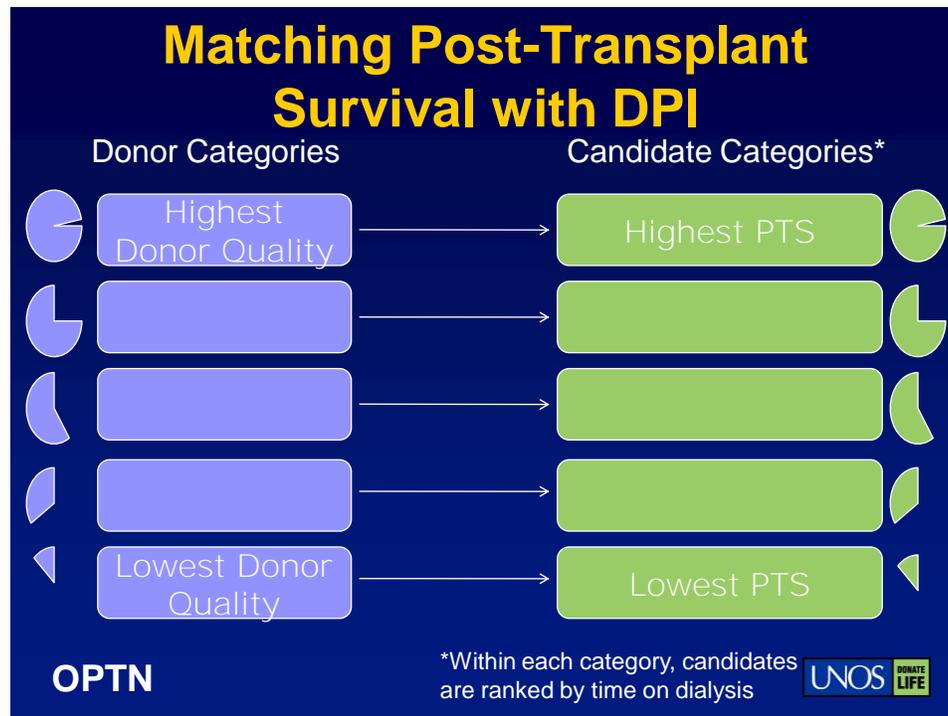


Figure 3: Graphic of a system using five categories (quintiles) to match donors and candidates according to donor quality (DPI) and post transplant survival (PTS).

Strengths and Weaknesses of a System that Matches Candidates to Donors Based on Post-Transplant Survival and DPI

The Committee agreed that this system would be easier for providers and candidates to understand than the current system and some of the other proposed systems. However, this system does not take into account medical urgency. Candidates who may have excellent post-transplant survival but very limited survival on dialysis would not receive any additional consideration. As an example, Type I diabetics, who tend to have excellent post-transplant survival, have much lower rates of survival on dialysis. Without the metric to compare expected survival on dialysis, these candidates are less likely to survive to receive a transplant. Additionally, this system does not result in added years of post-transplant survival over the current system as it will also give relatively younger donor kidneys to an older candidate group, like the previous system. Due to these limitations, the Committee decided not to pursue this system.

A System that Matches Candidates and Donors Based Only on Age

Finally, the Committee reviewed a system that matches donors and candidates based only on age. When a donor becomes available, candidates are ranked according to the proximity of their birth date compared to the donor's birth date.

Strengths and Weaknesses of a System that Matches Candidates and Donors Based Only on Age

The Committee remarked that the simplicity of this system would make it very easy for candidates and professionals to understand. This system also resulted in a significant gain in life years following transplant. However, many Committee members remarked that simply age matching did not take into account any comorbidities that may affect donor quality or candidate survival. Furthermore, since the donor population is younger than the candidate population, older candidates would be disadvantaged based solely on their age. This system would not allow for consideration of medically urgent candidates, and it would not be very flexible for future changes. Therefore, the Committee decided not to pursue this system.

Review of Most Current Simulation Modeling Results

Keith McCullough, MS, of the SRTR presented the results from the most current simulation model runs, a summary is provided in Table 2 with complete results provided in **Exhibit A**. These runs were grouped into three categories: 1) the current national allocation system; 2) LYFT, modified by dialysis years (DY); and 3) matching groups of donors to groups of candidates based on characteristics (LYFT, DPI, age, etc.). Mr. McCullough reviewed the following simulation modeling decisions that were previously made by the Committee:

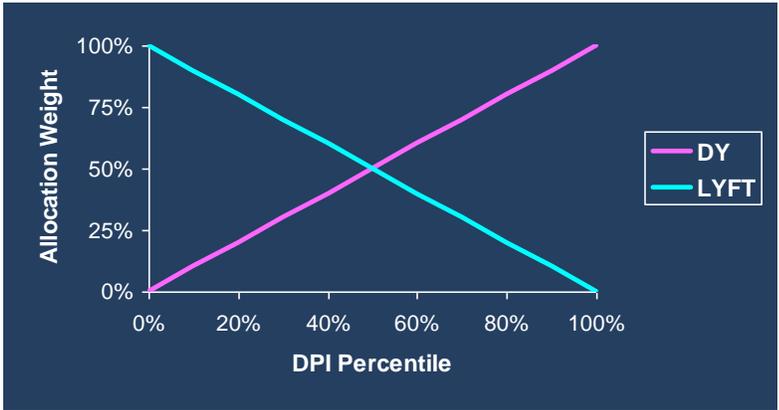
- Separate pediatric/adult allocation categories,
- Use LYFT instead of waiting time (i.e. removing points for PRA & HLA) for adults,
- Remove paybacks,
- Remove zero-antigen mismatch sharing for adult candidates,
- Remove zero-antigen mismatch priority for adult candidates,
- Incorporate the A₂/A₂B kidneys into B candidates system, and
- Including sharing of zero-antigen mismatches for highly sensitized adult candidates.

Table 2: Survival benefits due to transplant displayed by simulation run numbers. The run under “A” corresponds to the Current national allocation system. The runs under “B” correspond to the systems incorporating LYFT, modified by dialysis years (DY) (Runs 16a, 18c, 18d, 18e, and 24). The runs under “C” correspond to those systems that match groups of donors to groups of candidates based on characteristics (LYFT, DPI, age, etc.) (Runs 21a through 21e), or continuous age matching (Run 22a).

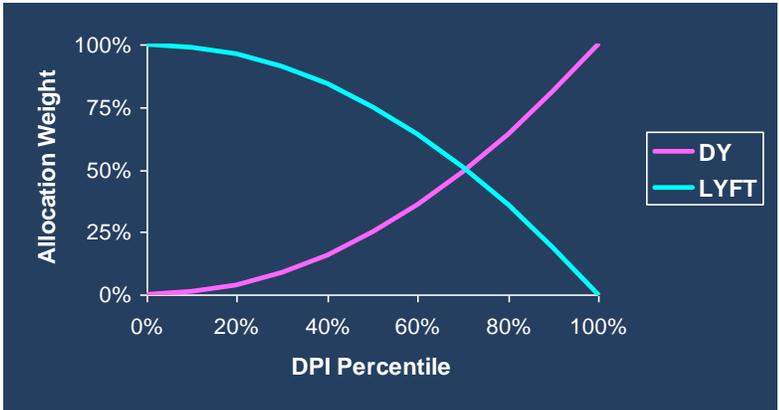
	A	B				C				B	
Years	Run 1: Current national allocatn. system	Run 16a: LYFT no HLA A,B, Dgn PKD /DM/Oth	Run 18c: LYFT v. DY by Cont DPI	Run 18d: LYFT v. DY by Cont DPI^2	Run 18e: LYFT v. DY by Cont DPI^3	Run 21a: Quint: LYFT v. DPI	Run 21b: Quint: PT v. DPI	Run 21c: Quint: PT v. DPI + PRA80	Run 21e: Dec: PT v. DPI + PRA80	Run 22a: Cont age match	Run 24: LYFT + 0.5 DY (SCD)
Number of candidates (on waitlist at start or joining during run)	80,549	80,549	80,549	80,549	80,549	80,549	80,549	80,549	80,549	80,549	80,549
Number of transplant recipients	9225	9616	9430	9469	9531	9514	9552	9404	9375	9654	9541
Total lifespan after transplant	108044	143062	128549	135956	138955	108537	109850	109150	110331	127613	136296
Total graft years of life	73318	86423	79508	82458	83994	75750	76220	74846	75447	81639	82597
Total extra years	48424	59770	55503	57718	58548	48622	49176	48869	49621	56294	58141
Change in lifespan after transplant	(Ref.)	35,018	20,505	27,912	30,911	493	1,806	1,106	2,287	19,569	28,252
Change in graft years of life	(Ref.)	13,105	6,191	9,140	10,676	2,433	2,903	1,528	2,130	8,322	9,279
Change in extra years	(Ref.)	11,346	7,079	9,294	10,125	198	752	445	1,197	7,871	9,718
Lifespan benefit per transplant	5.25	6.22	5.89	6.10	6.14	5.11	5.15	5.20	5.29	5.83	6.09

SD Between Runs	Run 1: Current national allocatn. system	Run 16a: LYFT no HLA A,B, Dgn PKD /DM/Oth	Run 18c: Cont DPI	Run 18d: Cont DPI^2	Run 18e: Cont DPI^3	Run 21a: Quint: LYFT v. DPI	Run 21b: Quint: PT v. DPI	Run 21c: Quint: PT v. DPI + PRA80	Run 21e: Dec: PT v. DPI + PRA80	Run 22a: Cont age match	Run 24: LYFT + 0.5 DY (SCD)
Total lifespan after transplant	1002	221	684	660	235	390	22	783	237	828	341
Total graft years of life	557	75	302	411	76	299	245	422	181	577	135
Total transplant benefit	390	11	215	295	95	143	25	365	93	424	84

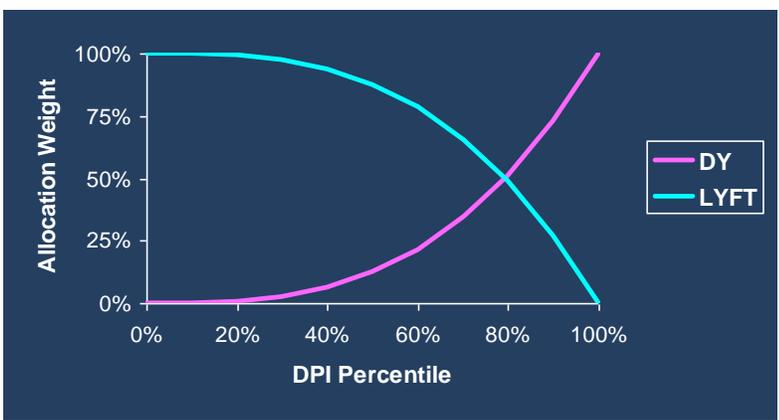
Since runs 18c, 18d, and 18e only differ from one another by the way that DPI is incorporated, Mr. McCullough showed the Committee how each system would give varying weights to DPI (Figure 4).



In **Run 18c**, equal weight is given to a candidate's time on dialysis and LYFT score. For example, a kidney in the 50th DPI percentile would be allocated to a candidate based on 50% of the candidate's LYFT score and 50% of the candidate's time on dialysis. Candidates will be ranked according to this combined score.



In **Run 18d**, the candidate's LYFT score is given more weight so that kidneys of diminishing quality are allocated more by a candidate's LYFT score than by the candidate's time on dialysis. For example, a kidney in the 50th DPI percentile would be allocated to a candidate based on 75% of the candidate's LYFT score and 25% of the candidate's time on dialysis.



In **Run 18e**, the candidate's LYFT score is given even more weight than in Runs 18d and 18c. For example, a kidney in the 50th DPI percentile would be allocated to a candidate based on 80% of the candidate's LYFT score and 20% of the candidate's time on dialysis.

Figure 4: Depiction of differences between simulation runs 18c, 18d, and 18e.

For Run 21a, Mr. McCullough explained how the quintiles were defined to match candidates and donors based on LYFT and DPI respectively. Essentially, current recipients were identified and ranked according to their LYFT scores. These recipients were divided equally into quintiles with 20% of recipients in each category. The quintile thresholds were then applied to the current candidates on the waitlist (excluding KP candidates and inactive candidates) who were ranked by dialysis years within each quintile. Donor kidneys were divided into quintiles based on DPI with 20% of the kidneys in each quintile. The donor categories and the candidate categories were then matched (Figure 5). This approach resulted in a projected distribution of recipients that mirrors the current distribution of recipients.

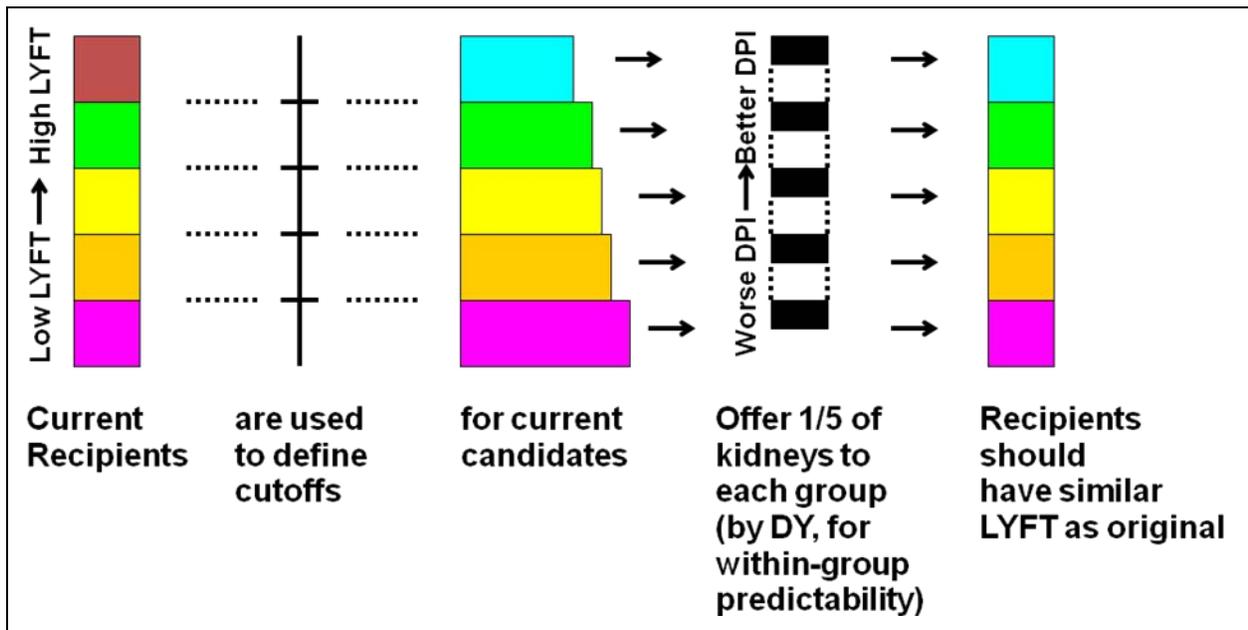


Figure 5: Method for defining donor and candidate quintiles for simulation run 21a

The Committee then reviewed the following metrics for each simulation run: average post transplant lifespan, average graft lifetime, average extra years of life, and total extra years of life (Table 3). From these metrics, the Committee determined that the systems incorporating a continuous measure of DPI and LYFT had the highest average post-transplant lifetime and total extra years of life compared to the current system (Category B in Table 3). The Committee also determined that the systems that match groups of donors and recipients based on characteristics did not experience gains in the average post-transplant lifetime or total extra life years (Category C in Table 3).

Table 3: Extra Years of Life Due to Transplant by Simulation Run Number. The run classified as “A” corresponds to the Current national allocation system. The runs classified as “B” correspond to the systems incorporating continuous LYFT, modified by dialysis years (DY). The runs classified as “C” correspond to those systems that match groups of donors to groups of candidates based on characteristics (LYFT, DPI, age, etc.).

Years	Average Post-Transplant Lifetime	Average Graft Lifetime	Average Extra Years of Life	Total extra years	
Run 1: Current natnl allocat. system	11.71	7.95	5.25	(Ref.)	A
Run 16a: LYFT for SCD, DY for ECD	14.88	8.99	6.22	11346	B
Run 18c: LYFT v. DY by DPI	13.63	8.43	5.89	7079	
Run 18d: LYFT v. DY by DPI²	14.36	8.71	6.10	9294	
Run 18e: LYFT v. DY by DPI³	14.58	8.81	6.14	10125	
Run 24: LYFT + 0.5 DY (SCD)	14.29	8.66	6.09	9718	C
Run 21a: Quint: LYFT v. DPI	11.41	7.96	5.11	198	
Run 21b: Quint: PT v. DPI	11.50	7.98	5.15	752	
Run 21c: Quint: PT v. DPI + PRA80	11.61	7.96	5.20	445	
Run 21e: Dec: PT v. DPI + PRA80	11.77	8.05	5.29	1197	
Run 22a: Cont age match	13.22	8.46	5.83	7871	

The Committee reviewed a series of distributions of kidney and simultaneous pancreas-kidney (SPK) recipients by ethnicity, blood type, diagnosis category, sensitization level, and age (Figure 6-Figure 10). The Committee focused its discussion on Runs 18c, 18d, and 18e. From these results, the Committee determined that Run 18c resulted in more transplants for minority candidates as opposed to Runs 18d and 18e (Figure 6). Furthermore, 18c results in slightly more transplants for candidates ages 50-64, the largest and fastest growing group of candidates (Figure 10). This simulation calculation is also easier to understand than 18d and 18e, both of which utilize increasingly higher exponential values for the LYFT component. Due to these considerations, the Committee unanimously determined that Run 18c should serve as the new baseline for analysis.

The Committee will now focus on adding additional elements to those included in Run 18c to develop a new allocation system. For example, the Committee plans to examine the best way to incorporate priority for sensitized candidates to improve their access to transplantation. The Committee also plans to examine methods for improving access for minority candidates (e.g., through possible elimination of DR matching if warranted). The Committee formed a subcommittee to begin examining these possible modifications. The subcommittee consists of Trent Tipple, Dorry Segev, Charles Van Buren, Mark Stegall, John Friedewald, Susie Leffell, Stephen Rayhill, Win Williams, Francis Wright, Peter Stock, and Ken Andreoni.

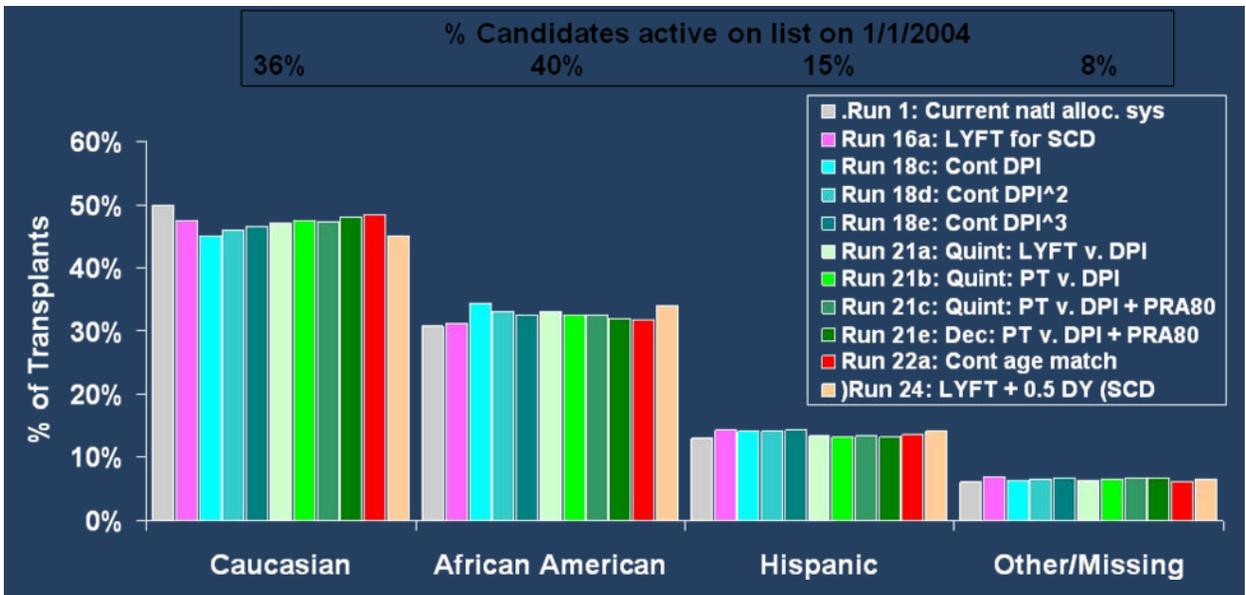


Figure 6: Distribution of Recipients by Race

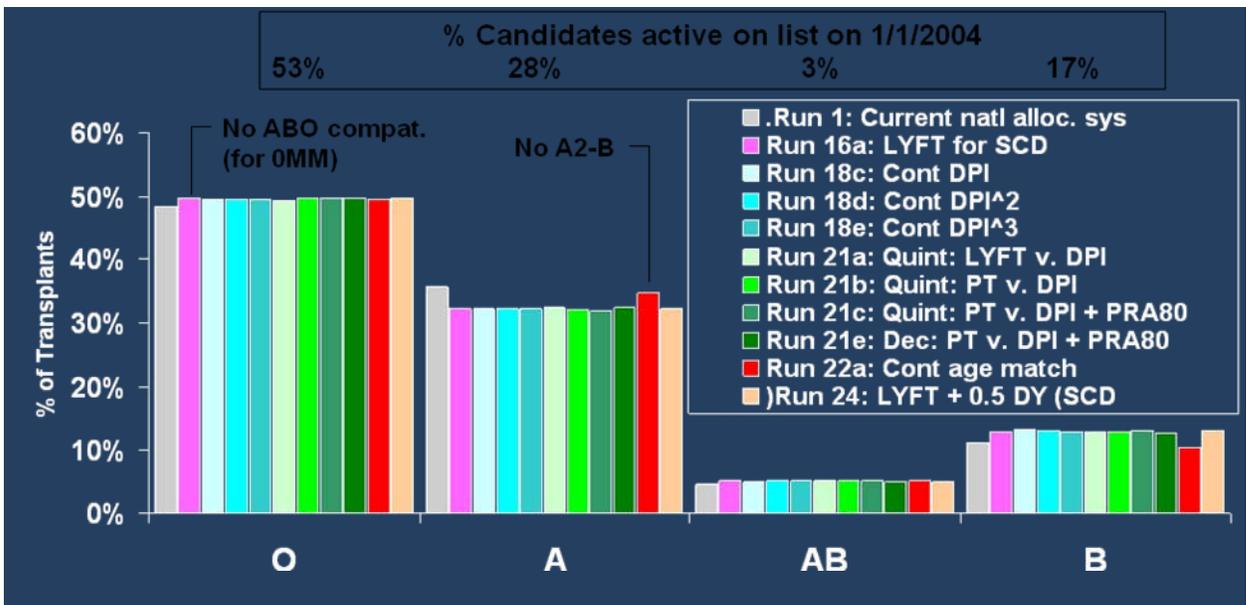


Figure 7: Distribution of Recipients by Blood Type

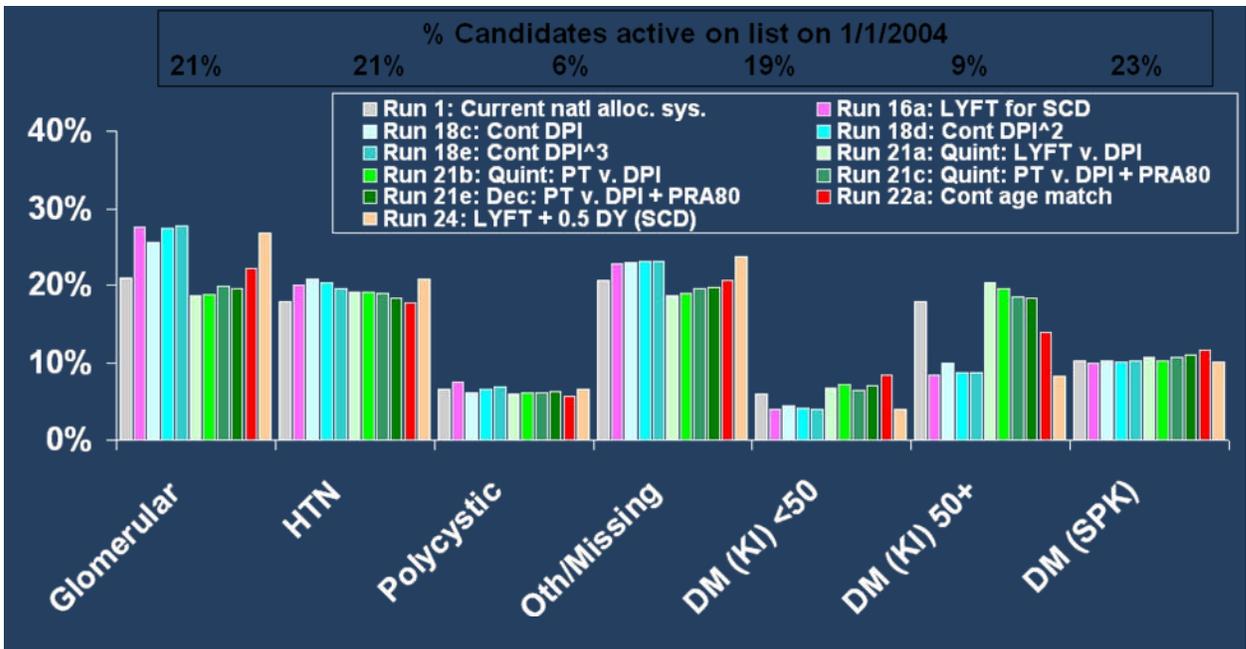


Figure 8: Distribution of Recipients by Diagnosis Category

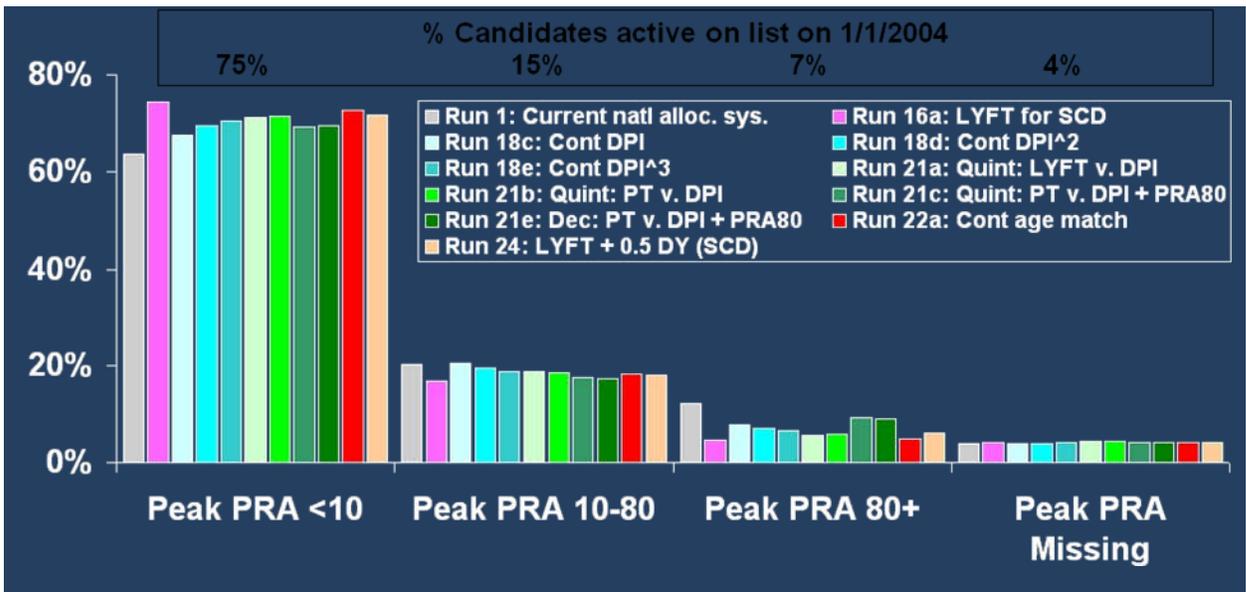


Figure 9: Distribution of Recipients by Sensitization Level (PRA)



Figure 10: Distribution of Recipients by Age

Predictability

Many on the Committee expressed that the ability to determine when a candidate may receive an organ offer is crucial for wait list management purposes. For example, knowing which candidates may receive an organ offer allows a transplant center to order necessary tests such as cardiac evaluations closer to the time of transplant. Having current information on candidates who receive offers is important not only from the clinical perspective but also from the financial perspective. Since candidates' health states may change over time, it is not a good use of resources to order repeat tests as candidates evaluations become outdated. Being able to predict when candidates may begin receiving organ offers would allow centers to make more efficient use of evaluation resources.

Predictability is also necessary from the candidate perspective. Several members of the Committee talked about how important it is to advise candidates on their estimated waiting time for an organ. One patient representative on the Committee remarked that while this information is not currently very accurate, it is necessary information for candidates to make informed choices about their health. While some on the Committee expressed concern that predictability may have an unfortunate effect on those candidates who are unlikely to live long enough to receive an organ offer, others commented that the "false hope" that is created when centers list candidates who are not appropriate for transplant was also unfair.

The SRTR shared analyses of the level of predictability from each of the modeled systems. From these analyses, the Committee learned that the simulation runs for the continuous LYFT systems (corresponding to simulation runs 16a, 18c, 18d, and 18e) offered the highest level of predictability by matching SCD kidneys, or kidneys with good DPI, to candidates with high

LYFT scores. The systems that incorporate LYFT and time on dialysis (corresponding to simulation runs 18c, 18d, and 18e) were modestly predictable for SCD organs. Allocation based on dialysis years alone is unpredictable and ECD recipients are not predictable by either dialysis years or LYFT score, likely due to the current variety of acceptance patterns by both transplant professionals and candidates.

Geography

The Committee agreed that geographic differences are a barrier to reducing disparities in transplant rates. With the current kidney allocation system there is not a metric to assess whether candidates with similar medical characteristics are being transplanted across DSAs. Waiting time is not an adequate metric for assessing transplantation rates, as it is a function of how many candidates the DSA is adding to the list. So, OPOs with larger waiting lists ultimately have longer waiting times.

The Committee members agreed that incorporating an objective medical score such as LYFT into an allocation system would be a solid first step to addressing geographic differences. This type of measure would provide data on differences in access to transplant for medically similar patients in differing geographic locations. For example, if candidates in one DSA have an average LYFT of seven while candidates in a neighboring DSA have an average LYFT of four, then possibilities of increasing geographic units could be systematically explored in the future.

Communication

The Committee is acutely aware of the needs for information by members of the transplant community and general public about its work to develop a new kidney allocation system. In response, the Committee continues to examine and implement various approaches for connecting with transplant professionals and candidates prior to the public comment process. A leading professional transplant journal has agreed to accept progress pieces focused on UNOS policies, including the new kidney allocation scheme development. For those dialysis patients who are not listed for transplant, the Committee plans to examine ways of reaching these individuals through dialysis centers. Additionally, the Committee is actively working to involve other Committees such as the Minority Affairs and Patient Affairs Committees. The Committee has also begun to examine approaches for connecting with the general public since organs are a scarce national resource. The Committee's ultimate goal is to reach affected parties prior to the public comment process and in a way that is accessible and understandable for both members of the lay public and professionals. UNOS Staff is working with the Committee to develop a communications plan to achieve this goal.

KIDNEY COMMITTEE	MONTH	AUGUST
	DAY	14
		Chicago, IL
NAME	POSITION	
Peter Stock MD, PhD	Chair	x
Kenneth Andreoni MD	Vice Chair	x
Dicken Ko MD	Regional Rep.	x
David Klassen MD	Regional Rep.	x
Denise Alveranga MD	Regional Rep.	x
Charles Van Buren MD	Regional Rep.	x
H. Albin Gritsch MD	Regional Rep.	x
Stephen Rayhill MD	Regional Rep.	x
John Friedewald MD	Regional Rep.	x
Christie Thomas MD	Regional Rep.	x
Stuart Greenstein MD	Regional Rep.	x
Todd Pesavento MD	Regional Rep.	x
Oscar Grandas MD	Regional Rep.	x
Eileen Brewer MD	At Large	x
Dale Distant MD	At Large	
Mark Fox MD, PhD	At Large	x
Daniel Hayes MD	At Large	
Randall Heyn-Lamb RN, BSN, CPTC	At Large	x
Marjorie Hunter, JD	At Large	x
Mary Leffell PhD	At Large	x
Ruth McDonald MD	At Large	
Silas Norman MD	At Large	x
Kevin O'Connor MS, PA	At Large	x
Janis Orłowski MD	At Large	
Tammie Peterson RN, BSN	At Large	
Marla Rodgers MBA	At Large	
Mark Schnitzler PhD	At Large	
Dorry Segev M.D.	At Large	x
Michael Shapiro MD	At Large	
Trent Tipple M.D.	At Large	x
Winfred Williams MD	At Large	x
Francis Wright Jr, MD	At Large	x
James Wynn MD	At Large	x
Marla Jill McMaster M A	BOD - Liaison	x
Deborah Surlas RN, AEE	BOD - Liaison	x
Gregory Fant PhD	Ex Officio	x
Mark Stegall MD	Ex Officio	x
Elizabeth Ortiz-Rios MD, MPH	Ex Officio	x
Chris McLaughlin	Ex Officio	x
Jack Kalbfleisch Ph.D.	SRTR Liaison	x
Keith McCullough	SRTR Liaison	x
Robert Wolfe Ph.D.	SRTR Liaison	
Ciara Gould MSPH	Committee Liaison	x
Maureen McBride Ph.D.	Support Staff	x
Dielita McKnight	Support Staff	x
Mary D. Ellison, PhD	Support Staff	x
Karl J. McCleary, PhD	Support Staff	x
Anne Paschke	Support Staff	x
Elizabeth Sleeman, MHA	Support Staff	x
Wida Cherikh	Support Staff	x

Updated Analysis for Data Requests from the OPTN Kidney Transplantation Committee Meeting of May 20-21, 2007

**Prepared by Robert Wolfe, PhD; Alan Leichtman, MD;
 Keith McCullough, MS; and Ann Rodgers, BS, of the Scientific Registry of Transplant Recipients (Arbor Research/University of Michigan)**

Data Request Routing Information and Analysis Timeline:

OPTN Kidney Committee meeting date: May 20-21, 2007
 OPTN Kidney Committee request made: July 24, 2007
 Next Committee Date: August 14-15, 2007

Table of Contents

KPSAM RESULTS: REQUEST #1	2
STUDY POPULATION	6
ANALYTICAL APPROACH	6
<i>KPSAM Run Descriptions</i>	6
Survival Benefits Due to Transplant by KPSAM Run	17
Analytical Changes in Lifespan Estimation	18
Transplants – Demographic Distribution	18
Transplant Percentages Total Kidney Alone	19
Transplant Percentages ECD Kidney	21
Transplant Percentages SCD Kidney	23
Transplant Percentages Simultaneous Kidney-Pancreas	25
Transplant Counts Total Kidney Alone	27
Transplant Counts ECD Kidney	29
Transplant Counts SCD Kidney	31
Transplant Counts Simultaneous Kidney/Pancreas	33
Average Years of Benefit Total Kidney Alone	35
Average Years of Benefit ECD Kidney	37
Average Years of Benefit SCD Kidney	39
Average Years of Benefit Simultaneous Kidney/Pancreas	41
Total Life Years All Kidney and Kidney/Pancreas Candidates and Recipients	43
Distribution of Waitlist Demographics At Start and End of Each Run	45
Correlation Plots	47
Six-month change (bolus effect)	48
Run 1: Current Rules	48
Run 16a: LYFT (No HLA A+B, dgn. PKD + DM only) for SCD, Dialysis Years for ECD	50
Run 18c: LYFT + Dialysis Years, Weighted by DPI	52
Run 18d: LYFT + Dialysis Years, Weighted by DPI ²	54
Run 18e: LYFT + Dialysis Years, Weighted by DPI ³	56
Run 21a: Quintiles of LYFT Matched to Quintiles of DPI (sort by dialysis years)	58
Run 21b: Quintiles of Post-Transplant Lifespan Matched to Quintiles of DPI (sort by dialysis years)	60
Run 21c: Quintiles of Post-Transplant Lifespan Matched to Quintiles of DPI (sort by dialysis years), PRA 80+ can receive organs from next highest or all lower quintiles	62
Run 21e: Deciles of Post-Transplant Lifespan Matched to Deciles of DPI (sort by dialysis years), PRA 80+ can receive organs from next highest or all lower quintiles	64
Run 22a: Continuous Age Matching, Kidney Follows Pancreas	66
Run 24: LYFT + 0.5 Dialysis Years for SCD, Dialysis Years for ECD, KI follows PA	68
Graphic Depiction of Change in Percentage of KI-Alone Transplants Going to Recipients < 50 Throughout Runs	69
Transplants by Region for Each Run	71
Distribution of LYFT By Candidate Age and Diabetes Status	72
Distribution of Discounted (3%/year) LYFT By Candidate Age and Diabetes Status	72
<i>Variables Used or Investigated for Use in LYFT Calculation</i>	74
Effects in LYFT Models	74

Prepared by the Scientific Registry of Transplant Recipients

Variables Used in LYFT Calculation.....	75
Additional Variables Considered for LYFT Calculation.....	77
Approximate contribution of covariates to LYFT.....	77
All Else Equals Tables	77
Years.....	77
Deltas.....	77
Graphics of selected variables' effects.....	77
Overall Model Goodness of Fit Test Results	77
CONCLUSION/CAVEATS	77

KPSAM Results: Request #1Background

The OPTN Kidney Transplantation Committee is continuing to investigate several alternative approaches to the allocation of kidneys, including several based on allocating each organ to the candidate who will receive the largest extra Life Years From Transplant (LYFT), with that organ, defined as the difference between their projected median lifespan post-transplant (PT) with that organ minus their projected median WL lifespan without a transplant. Time periods on dialysis are given a weight of 0.8 compared with time periods spent with a functioning allograft. Pursuant to the OPTN Kidney Committee's request, the SRTR has prepared the Kidney-Pancreas Simulated Allocation System (KPSAM) to simulate various strategies for allocation, including LYFT.

Data Requested

Pursuant to the discussion at the Kidney Committee meeting, the SRTR was asked to provide as many of the following additional simulations using KPSAM as possible. The runs were clarified during a 6/5/2007 conference call with Dr. Stegall and Dr. Stock, and Dr. Stock further clarified runs 21 a-e during his visit to Arbor Research on 7/12/2007.

KPSAM Modeling Requests

Changes that apply to all KPSAM runs:

- Priority for Kidney-Pancreas (KP) allocation will be changed such that the “kidney follows the pancreas.” This implies that candidates awaiting KP transplant are no longer given a LYFT score. Instead, allocation for the pancreas is driven by the pancreas allocation system (essentially by wait time), and if the pancreas candidate also needs a kidney, the kidney will be allocated to that patient. This type of system allows for the pancreas and kidney-pancreas to be allocated (or discarded) prior to the kidney. Prior analyses ranked kidney-pancreas candidates by LYFT and ranked them with Kidney only candidates.

This means that allocation of the organs of a donor with a kidney and a pancreas will be as follows:

KP/PA candidates: Sensitized, Local by wait time

KP/PA candidates: OMM Local, Regional, National by wait time

KP/PA candidates: All others, Local, Regional, National by wait time

KI candidates: Pediatric¹ (current rules for OMM, ABO, sensitized, geography) by wait time modified by rules concerning age, and HLA

KI candidates: Adult (rules as defined within specific runs below).

KP = kidney-pancreas, PA = pancreas, and KI = kidney.

This applies to all donors with a pancreas in all KPSAM runs in this data request.

- Diabetes and Polycystic Kidney Disease (PKD) will remain in the LYFT models. If it is determined later that the PKD effect is small, this could be removed from the model with small impact on the simulations.

¹ Note: OPTN policy 3.5.11.5.1 indicates that pediatric candidates rank below “renal/non-renal organ allocation.” This is assumed to apply equally to “kidney follows pancreas” as it does to situations where the kidney follows another non-renal organ.

Prepared by the Scientific Registry of Transplant Recipients

- If the simulations include a LYFT score for recipients of both SCD and ECD kidneys, the LYFT models will be modified to include an ECD indicator covariate for the post-transplant survival models. Double-kidney and en bloc will be similarly tested as factors.
- ESRD years are defined as the time from first dialysis after the most recent transplant if the candidate had a previous transplant.

Requested Simulation Runs²

(NOTE: This table is a comprehensive list of all simulations performed to date. Rows that are new requests are shaded in grey and indicate “YES” in the ‘New’ column.)

Abbreviations:

DY = Dialysis Years

DPI = Donor Profile Index (higher values = riskier organ) rescaled to 0-1 according to percentile among organs transplanted during the year nationally.

PL = Patient lifespan with transplant (calculated assuming average SCD donor)

GL = Graft lifespan with transplant (calculated assuming average SCD donor)

System	Run #	Description	New?	Base Run
Current	1	Current national allocation system as baseline		
	2	No interleave - separate allocation for adult & pediatric candidates		1
SCD-LYFT	3	LYFT in place of kidney points for adult candidates of SCD organs; KP Priority		2
	4	No paybacks; KP Priority		3
	5	No OMM sharing; KP Priority		4
	6 ³	Eliminate OMM priority locally for adult candidates of SCD organs; KP Priority		5
	7 ⁴	No KP Priority - KP and KI candidates compete by LYFT for adult candidates		6
	8	A ₂ -> B; KP Priority		7
	9	OMM sharing for PRA 80%+ adult candidates; KP Priority		8
	11	National allocation, no geographic boundaries; KP Priority		9
	15	LYFT (No HLA A, B); KP Priority.		9
	16	LYFT (No HLA A, B; with PKD, DM); KP Priority.		9

² Numbering is based on all runs completed for the kidney committee, rather than re-starting the numbering with this sequence. This will help prevent confusion when referencing runs across data requests.

³ Run 6 was not explicitly requested; however, the SRTR believes this change to the allocation system is desired by the Kidney Committee prior to the requested runs.

⁴ Run 7 was not explicitly requested; however, the SRTR believes this change to the allocation system is desired by the Kidney Committee prior to the requested runs.

Prepared by the Scientific Registry of Transplant Recipients

System	Run #	Description	New?	Base Run
	16a	LYFT (No HLA A, B; with PKD, DM); KI follows PA.	Yes	9
	17	LYFT (No HLA A, B; with DM only); KP Priority.		16
SCD- LYFT modified by ESRD years	10	LYFT + X*(DY) (X=1,2) (Note: This run superceded by run 12a-12d)		9
	12 ⁵ a	LYFT + 0.1*(DY)		9
	12b	LYFT + 0.2*(DY)		9
	12c	LYFT + 0.5*(DY)		9
	12d	LYFT + 1*(DY)		9
	24	LYFT + 0.5*(DY) (LYFT with no HLA A,B; with PKD, DM; KI follows PA)	YES	16a
SCD-LYFT modified by waitlist time	13a	LYFT - x*Waitlist lifetime. X=0.2		9
SCD-LYFT modified by PRA	14a	LYFT + 0.01*PRA		9
All Donors-LYFT modified by ESRD time and continuous DPI	18a	LYFT * (1-DPI) + DY * DPI. KP Priority.		17
	18b	LYFT * (1-DPI ²) + DY * DPI ² . KP Priority.		17
	18c	LYFT * (1-DPI) + DY * DPI + PRA*4. KI follows PA.	YES	16a
	18d	LYFT * (1-DPI ²) + DY * DPI ² + PRA*4. KI follows PA.	YES	16a
	18e	LYFT * (1-DPI ³) + DY * DPI ³ + PRA*4. KI follows PA.	YES	16a

Committee Decision Point—18c, 18d, or 18e

All donors - LYFT modified by continuous DPI and Lifetime Matching	19	LYFT * (1-DPI ^X) + DY * DPI ^X + PRA*4 + Lifetime matching (PL - GL) Note: X (power of DPI) needs to be selected by committee after reviewing results of 18c, 18d, 18e	YES	Choose one: 18c or 18d or 18e
All donors - Discrete Categories	21	LYFT quintiles, DPI quintiles, rank by DY within matching quintiles, allocate to nearest quintile, KP Priority.		17

⁵ Note runs 12a-12d use a “fixed” LYFT score based on the information known at the time of listing. All other runs allow LYFT to vary with time.

Prepared by the Scientific Registry of Transplant Recipients

System	Run #	Description	New?	Base Run
	21a	LYFT quintiles, DPI quintiles, rank by DY within matching quintiles, allocate to nearest quintile, KI follows PA (redo 21)	YES	16
	21b	Post-transplant lifetime (PL) quintiles, DPI quintiles, rank by DY within matching quintiles, allocate to nearest quintile, KI follows PA	YES	16
	21c	21b + Allow patients with >80% PRA to receive kidneys from 1 quintile above and all quintiles of DPI below ⁶	YES	21b
	21d	21c + Absolute trump for OABDR HLA mismatch in quintile #1, 1 point for 1 DR mismatch, 2 points for 2 DR mismatches ⁷	YES	21c
	21e	Instead of quintiles of DPI and post-transplant lifetime, use deciles	YES	21c
All donors - Age Matching	22	Continuous age matching, KP priority		17
	22a	Continuous age matching, KI follows PA	YES	16a
All donors - Waiting Time	23	Current points system, with A ₂ -> B, no paybacks, OMM share only for PRA 80%+		1

Details regarding the discrete categories simulations:

- Define quintiles of candidates (active and inactive) by DSA in terms of expected posttransplant lifespan with an average SCD kidney.
- To determine candidate quintile thresholds for runs 21a-c, do not use discarded organs, KP donors, or KP recipients. Since organs for KP candidates will be allocated outside of the quintile system, these candidates and donors should not be included in determining the quintile thresholds
- Define quintiles of donors using previous years' kidneys in terms of the DPI.
- To determine donor quintile thresholds for 21a-c, use the national DPI distribution. (Future runs may utilize an individualized set of DPI quintile thresholds for each DSA/ABO combination)
- When a donor becomes available, allocate first to candidates in same quintile, then 1 lower quintile, then 1 higher quintile, then 2 lower, then 2 higher etc. Offer locally first, then regionally only if entire local list (all quintiles) is exhausted (or limit on number of offers is reached and organ is discarded).⁸
- Kidney follows pancreas rules apply here as well.

⁶ Per discussion with Peter Stock on July 12, 2007. For 21c, a kidney in DPI quintile 3 would be allocated according to the following sequence:

Local (or PRA 80+ OMM) quintile 3 candidates and local PRA 80+ candidates in quintile 1 - 4
 Local (or PRA 80+ OMM) quintile 4 candidates
 Local (or PRA 80+ OMM) quintile 2 candidates
 Local (or PRA 80+ OMM) quintile 5 candidates
 Local (or PRA 80+ OMM) quintile 1 candidates (includes local PRA 80+ candidates in quintile 5)
 regional (same quintile order)
 national (same quintile order)

⁷ Per discussion with Peter Stock on July 12, 2007—exclude Run 21d

⁸ Per discussion with Peter Stock on July 12, 2007. This approach of offering the organ first to the lower quintile is expected to expedite placement.

Prepared by the Scientific Registry of Transplant Recipients

- Allocate by years of dialysis within each quintile. Note that fractional dialysis years will be calculated by giving each patient a continuous number (rounded to the nearest day) corresponding to the total time spent waiting (e.g., 3+37/365 for a candidate who had 3 years and 37 days of dialysis time).

Changes to Outputs

- Evaluate the magnitude of the bolus effect in the 1st 6 months vs. last 6 months of the KPSAM run.
- Delete transplant percentage tables by blood type for SCD and transplant counts tables.
- Include tabulations of percentage of transplants by Region for each simulation run.
- Create box-plots of percentiles of DY and LYFT. This will inform us about how the components of scores are competing with each other in the allocation system.
- In order to assess predictability, plot patients' LYFT v. dialysis time, and how deep into the perimeter candidates get organs under each system. Ideally, patients who get offers but no transplants would have different colored dots; however analyses of offer data take considerable time. Contrast these results with the plot under the current allocation system. These plots need to be OPO/ABO specific, so choose a large OPO/ABO group or two as examples. This could also be a tool used to advise centers on when to start working up patients under each rule, as they approach the boundaries of the plot where patients start getting transplants.
- Time-to-transplant analyses will be performed when the allocation system (or systems) is closer to finalized and longer KPSAM runs are performed.

Non-KPSAM:

- 1) Calculate the crude correlation of living donor rate by waiting time across DSA, and present the scatterplot.
- 2) Provide distribution of patients in each quintile of LYFT and DPI by DSA for each (select?) DSAs.

Study Population

2003 kidney candidates and donors are used in KPSAM; models for calculating LYFT are based on candidates and recipients from 1987 – 2004.

Analytical Approach**KPSAM Run Descriptions**

The rules used in each run are cumulative, incorporating rule changes made in prior runs, up to run 9. Runs after run 9 are based on changes to the rules set in run 9. Descriptions of details of modeling that were necessary to implement the committee's proposed allocation rules are included for each run. Several of these runs have been completed more than once with varying rules for kidney-pancreas (KP) v. kidney-alone (KI), an issue that for

Prepared by the Scientific Registry of Transplant Recipients

non-zero mismatch organs is currently decided within each OPO. The specific rule used will be noted explicitly in the run description for the runs completed for this data request (e.g. 16a, 18c-e, etc.).

- Run 1: Current national allocation system
- Run 2: “No interleave” – separate allocation categories for adult and pediatric candidates
- Run 3: LYFT in place of kidney points for adult candidates of SCD organs
- Run 4: No paybacks – the payback system is eliminated
- Run 5: No OMM sharing – the priority for shared OMM organs is eliminated
- Run 6⁹: Eliminate OMM priority locally for adult candidates of SCD organs.
- Run 7¹⁰: No KP priority – KP and KI candidates compete by LYFT. Do this for adult candidates for SCD organs.
- Run 8: A2-B
- Run 9: OMM Sharing for PRA 80+ adult candidates for SCD organs
- Runs 10: LYFT + X * ESRD years (X = 1, 2) (*Note: this run is superceded by run 12*)
- Run 11: National allocation, no geographic boundaries.
- Run 12: Allocate by LYFT + X * ESRD time (with X small) (start by modifying LYFT to be unchanging from listing, then add 0.1, 0.2, 0.5, 1).
- Run 13: Allocate by LYFT - X * waitlist lifetime, with X = 0.2.
- Run 14: Allocate by LYFT + X * PRA, with X = 0.01.
- Run 15 No HLA A+B (based on run 9)
- Run 16 Dgn PKD + DM (based on run 15)
- Run 17 Dgn DM only (based on run 16)
- Run 18 Continuous DPI (based on run 17)
- Run 19 PRA*4 pts (based on run 18)
- Run 20 Discounting (based on run 18) (*Note: Not completed*)
- Run 21 Quintiles (based on run 17)
- Run 22 Continuous age matching (based on run 17)
- Run 23 Wait-time + changes (based on run 1) (*Note: Not completed*)
- Run 24 LYFT + 0.5*ESRD time, kidney follows pancreas (based on run 12, but with LYFT as in run 16)

A more complete description of these runs is as follows.

Runs 1-9 have already been completed, with the exception of run 7 (no KP priority). The following description is included because all runs up to run 9 (again, excluding run 7) are cumulative.

Run 1: Replicates the current national allocation system on the 2003 cohort of candidates and available organs. This allows a validation of KPSAM's ability to replicate both the current allocation rules and the outcomes resulting from these rules. This run assumes that all kidney and pancreas allocation follow a national set of rules without local variances or errors.

- a. Extra-renal multi-organ transplants are allocated apart from the kidney allocation system and neither the donors nor the recipients are included in the simulation.

⁹ Run 6 has not been explicitly requested; however, the SRTR believes this change to the allocation system is desired by the Kidney Committee prior to the requested runs.

¹⁰ Run 7 has not been explicitly requested; however, the SRTR believes this change to the allocation system is desired by the Kidney Committee prior to the requested runs.

Prepared by the Scientific Registry of Transplant Recipients

Run 2: Changes the rules used in run 1 by separating any categories of candidates in which one group is ranked according to wait time or points while the other will be ranked according to LYFT. Mostly, this involves separating pediatric and adult candidates. This run explores one solution to some of the problems introduced by keeping pediatric allocation the same while changing the basis for adult allocation, and by keeping PA allocation the same while changing the basis for KP allocation. It also provides a reference for comparison with subsequent, more extensive rule changes.

- a. Pediatric kidney-alone and KP candidates are placed ahead of adult candidates for SCD organs from donors < 35 in all geography*sensitization*mismatch categories
- b. Pediatric candidates will not be offered organs from donors > 35
- c. Highest-ranking, sensitized category for kidney allocation on the local list is eliminated (since “highest-ranking” is defined as “having more points than the pediatric candidate with the most points”)
- d. The very few pediatric KP candidates are included in the simulations as kidney-alone candidates. This issue has little effect on KPSAM but will need to be decided by the committee.
- e. KP candidates are ranked ahead of pancreas-alone candidates in local allocation
- f. The current priority for pancreas-alone candidates over KP candidates among regional >0MM and national >0MM has been kept

Run 3: Keep the separated system used in run 2, but substitute LYFT for points (for SCD organs for adult kidney-alone candidates) and for waiting time (for adult KP candidates) in order to determine the impact of this change on patient populations. As stated in the July 2006 meeting, this change leaves the priority given to KP candidates in place.

Run 4: Elimination of paybacks.

- a. In the current rules, for 0-MM sharing, the highly- and medium-sensitized candidates who are ABO identical go first, then low-sensitized go unless they are from OPOs that have exceeded their payback debt threshold. Then come the highly- and medium-sensitized candidates who are ABO compatible. The low-sensitized candidates who are from OPOs that have exceeded their payback debt thresholds, whether they are compatible or identical, come last for 0-MM allocation. So, when paybacks are eliminated, KPSAM could either put all of the ABO identical low-sensitized candidates ahead of local ABO compatibles, or it could lump all low-sensitized candidates at the very end of all 0-MM allocation. We have chosen to rank candidates as follows, as it preserves O kidneys for O candidates and B kidneys for B candidates.
 - o 0-MM, ABO Identical
 - High
 - Medium
 - Low
 - o 0-MM, ABO Compatible
 - High
 - Medium
 - Low

Run 5: Elimination of sharing for zero mismatch SCD kidneys and KP (adults only)
Local 0MM priority is kept, even for adult candidates.

Prepared by the Scientific Registry of Transplant Recipients

Run 6: Eliminate OMM priority locally (adult candidates of SCD organs – includes KI and KP).

- a. Use >0MM ABO Chart. There were separate ABO charts for OMM and >0MM according to the current rules. When the local OMM priority was eliminated from the allocation rules, there was no more reason to keep the separate ABO charts. We used the >0MM chart for all KI and KP.
- b. Pediatric candidates who were OMM (local, regional, national) then local non-0MM pediatric candidates trumped all adults for donors < 35. This included OMM and non0MM adults locally.
- c. All pediatric rules were kept the same (as in the no interleave run). Local pediatric OMM were still allocated ahead of local pediatric non-0MM.
- d. There were relatively few ECD donors with both KI and PA available. For these donors, the OMM local priority was kept (for KP, KI, and PA candidates). The current rules do not have separate OMM sharing for KP candidates, so there was OMM sharing for PA candidates for ECD donors, but not KP or KI candidates, among candidates willing to accept ECD organs.

Run 7: No KP priority – Adult KP and KI candidates compete using LYFT for SCD organs

Note that this run had been excluded from previous output, but has been included in the current sequence due in part to an improved acceptance model.

Currently, national rules allow local discretion with regards to the majority of decisions about KP v. KI priority; each OPO is allowed to make their own decision. For these runs, OPOs were divided based on past performance into those who used more or fewer pancreata in simultaneous kidney-pancreas transplants. Those who used > 60% of their pancreata in 2003-2006 in kidney-pancreas transplants were considered “kidney-pancreas first”, while the remaining OPOs were considered “pancreas first”. This threshold results in total proportions of pancreas and kidney-pancreas transplants similar to those that actually occurred in 2003.

- a. PA follows KI. KP and KI were ranked together for an SCD KP donor, while PA candidates were listed in a category behind both KP and KI.
- b. Note that this reverses the current rules for >0MM national and regional KP and PA. Under the altered system being simulated in run 7, KP regionally has priority over PA and KP nationally has priority over PA. Put another way, the priority for KI and KP over PA occurs locally, then regionally, then nationally; i.e., for one of the SCD KP donors, local KI and KP candidates will be first, then local pancreas (sensitized, then OMM, then other as in the current system for PA), then regional KI and KP, then regional pancreas, etc.
- c. We left the priority for OMM local pediatrics over >0MM local pediatrics, and for ECD local OMM.
- d. For the relatively few ECD donors with both a KI and a PA available, the priority was kept for KP and PA candidates willing to accept ECD organs.

Run 8: Incorporation of the A2/A2B into B allocation algorithm.

- a. Per committee discussion, we assumed 20% of White, Hispanic and Black Donors with A or AB blood type are actually A₂ or A₂B, and 0% of Asians and other races (including mixed race and missing race) with A or AB were assigned A₂ or A₂B. This was done randomly. Note that this means that 0% of Asians and other races (including mixed race and missing race) will be assigned A₂ or A₂B.¹¹

¹¹ While the resulting proportion of candidates will be close to the assigned probability, it may vary by a small proportion just as the sample of candidates on the list for a given year may have some small variations in the proportions of A blood types and anti-A titer

Prepared by the Scientific Registry of Transplant Recipients

- b. Per committee discussion, we assumed that 70% of blood group B and AB candidates had low anti-A titer. This was done randomly, using the assigned probabilities to determine for each candidate their specific anti-A titer category. It was also assumed that outcomes of B candidates receiving A organs were identical to those of all other ABO-identical transplants, and that AB (low anti-A2 titer) receiving B organs also had identical outcomes to other ABO-identical transplants.
- c. We allowed both A and B candidates to receive offers from these donors
- d. This rule applied to both ECD and SCD donors
- e. This rule applied to adult and pediatric recipients
- f. This rule did not apply to kidney-pancreas candidates
- g. Kidney-pancreas candidates were treated as kidney-alone candidates if they were willing to accept kidney-alone, if the donor had no pancreas.
- h. The resulting blood type/compatibility chart was as follows:

KI		Candidate					
		O	A1 / A2	B (antiA2)	B (low A2 titer)	A1B / A2B (antiA2)	A1B / A2B (low A2 titer)
Donor	O	1	X	X	X	X	X
	A1	X	1	X	X	1	1
	A2	X	1	X	1	1	1
	B	X	X	1	1	X	X
	A1B	X	X	X	X	1	1
	A2B	X	X	X	1	1	1

Numbers indicate order of offering for each donor blood type (since there is no more identical/compatible priority after the elimination of OMM priority, this is 1 in all cases where the transplant is allowed). For example, O donor organs were offered only to O recipients, but A2B organs were offered to B (low A2 titer) and AB candidates, and neither group was set above the other. An “X” indicates that these organs were not allowed to be offered to these recipients. The above table applied to OMM and to non-0MM organs, pediatric and adult candidates.

For KP candidates of KP organs, the above chart did not apply. Instead, among both OMM and non-0MM organs (see note b under run 6), the following chart was used:

KP		Candidate					
		O	A1 / A2	B (antiA2)	B (low A2 titer)	A1B / A2B (antiA2)	A1B / A2B (low A2 titer)
Donor	O	1	X	X	X	X	X
	A1	X	1	X	X	1	1
	A2	X	1	X	X	1	1
	B	X	X	1	1	X	X
	A1B	X	X	X	X	1	1
	A2B	X	X	X	X	1	1

categories. The percentages used are close to those reported in Nelson et al., American Journal of Transplantation 2002; 2: 94-99. Table 1 shows that 23% (10%/44%) of White, 30% (8%/19%) of Black, and 0% of Asian A patients are actually A2. On page 96, Nelson et al. state that “The incidence of blood group B patients who have a consistent (at least 1 year) history of low anti-A titers is 77% in white patients (54/70) and 69% in black patients (23/35).”

Prepared by the Scientific Registry of Transplant Recipients

SPK B candidates were not offered an A2 or A2B organ no matter what the donor had (KP or KI alone).

Run 9: OMM Sharing for PRA 80+ adult candidates for SCD organs (based on run 8)

- a. This was done for adult, not pediatric candidates, per committee discussion.
- b. OMM pediatric nonlocal PRA 80+ candidates was ranked with local pediatric OMM candidates ahead of OMM adult nonlocal PRA 80+ candidates, per Mark Stegall e-mail.
- c. Relative ranking of OMM pediatric local (any PRA) and nonlocal (PRA 80+) candidates was decided by waiting time, per Mark Stegall e-mail.
- d. This was done for KP candidates if donor has KP available, per committee discussion.
- e. OMM adult nonlocal PRA 80+ candidates was ranked with local OMM adult (any PRA) candidates, with ranking determined by LYFT, per Mark Stegall e-mail.
- f. This run includes the A2-B rule changes, per Mark Stegall e-mail. This run can be also completed without the A2-B rule changes, if the committee desires.
- g. For SCD KI and KP donors, allocation went according to:
 - 1) Current Pediatric rules (categories, ranked by wait time) if donor < 35.
 - 2) Adult local candidates (any PRA, 0 and non-0 MM) + adult OMM shared 80+ PRA candidates (ranked by LYFT).
- h. This sharing is not done for PA-only candidates.
- i. This run has been completed with KP priority over KI in all DSAs (9k) and with mixed rules by DSA for KP v. PA priority (9, incorporating changes made in run 7). This run has not been re-done with KI following PA, but run 16a replicates the rules in run 9 with KI following PA but with a modified LYFT calculation.

Runs 10 (multiple): Inclusion of ESRD years (years since first ever ESRD treatment as noted by CMS; e.g. dialysis, prior transplant) as a modifier in the form:

LYFT + X * ESRD years

Note that this run was superceded by run 12 based on OPTN Kidney committee review of initial results from the run with X = 1 that eliminated half of the additional transplant benefit due to the LYFT modifications and runs 4-9 (excluding run 7). The remainder of these runs (X = 2, 10, etc.) will not be completed and instead the runs specified in run 12 will be done.

- a. Used a single set of national rules for these runs, rather than attempting to take into account the within-OPO and blood-type variation in waiting time's effects on the average ESRD years and subsequently the effect of X * ESRD years relative to LYFT, per Mark Stegall e-mail.
- b. Did not remove ESRD years prior to these runs; per discussion mentioned in Mark Stegall e-mail.
- c. Foreign national candidates may not have ESRD data in CMS; thus their ESRD years may be artificially zero. While the actual allocation system will need to account for this, these small numbers of patients are unlikely to affect the results and thus KPSAM will be run despite this problem.
- d. Runs are planned to be made with X = 1, 2, and further changes as the committee desires. These runs have not been completed yet. See boxplots illustrating the distribution of these scores titled "Distribution of LYFT + 1*ESRD Years by Age and Diabetes Status" and "Distribution of LYFT + 2*ESRD Years by Age and Diabetes Status" later in this document.

Run 11: National allocation, no geographic boundaries. (based on run 9)

Prepared by the Scientific Registry of Transplant Recipients

- a. The purpose of this run is not to allocate a proposed national allocation system. It is to determine if some of the results in terms of demographic distribution of kidney recipients in the earlier runs can be attributed to geographic differences. Post-transplant survival has not been re-estimated to take into account the massive change in the practice of shipping kidneys across long distances and thus the graft survival estimates and patient survival estimates cannot be presumed to be at all realistic. On the other hand, in the acceptance models candidates are still less likely to accept kidneys coming from outside their DSA; this seems a reasonable assumption under these circumstances.
- b. Pediatric candidates retain priority; however, this is now national, not just local. In order to mirror the current local priorities, the national allocation system now gives 0 ABDR HLA MM pediatric candidates the highest priority, then sensitized pediatric candidates, then the rest of pediatric candidates.
- c. Run 9 gave sensitized candidates with 0 ABDR HLA MM national access; since all candidates now have national access, sensitized adult candidates receive no advantage in this run.
- d. ECD is now national as well. Since candidates for ECD organs retained the 0MM priority (removed from the candidates for SCD organs in runs 5 and 6), nationally 0MM candidates for ECD organs are ranked first among adults and the blood-type rules apply (e.g. O organs go to identical, then B, then compatible, etc.).
- e. SPK was ranked in run 9 with sensitized first, (since 0MM priority was removed in runs 5 and 6). With national allocation, this would put all sensitized candidates at the top of the list, greatly increasing the chances of an organ being discarded. Thus the order for national allocation of organs among donors with a kidney and a pancreas is: 0 ABDR HLA MM for pancreas candidates (since this priority was not removed for pancreas candidates in runs 5 and 6), then SPK candidates, then the remaining pancreas candidates.
- f. Pancreas candidates were ranked in run 9 with sensitized first, then 0MM, then other candidates. For the reasons outlined in part e. above, pancreases that are not with kidneys will be allocated to 0MM candidates, and then the remaining candidates.

Run 12 a-d (multiple runs) (based on run 9)

- a. The LYFT calculation has been modified so that age at offer and years with ESRD at offer are replaced by the age and years with ESRD at listing. These numbers do not progress as the candidates wait on the list. This is in keeping with the committee's stated desire to have candidates progress on the list; if age or years with ESRD were allowed to increase, candidates would tend to have lower LYFT scores as they waited on the list.
- b. Preemptive candidate status is still a factor, and this factor can be updated to "non-preemptive" while the candidate is on the list. This will tend to make preemptive candidates whose ESRD actually progresses to dialysis rank much higher as this happens.
- c. In the allocation method, LYFT will be replaced by $LYFT + X * ESRD \text{ years}$, with $X = 0.1, 0.2, 0.5,$ and 1.0 for runs a-d respectively.
- d. This run will not include changes made to the allocation system in runs 10-11.

Run 13a (possible multiple runs) (based on run 9)

- a. In the allocation method, LYFT will be replaced by $LYFT - X * \text{Waitlist lifespan in years}$, in order to increase priority for candidates with short expected lifespans. $X = 0.2$ is the only run completed.
- b. This run will not include changes made to the allocation system in runs 10-12.

Run 14a (possible multiple runs) (based on run 9)

Prepared by the Scientific Registry of Transplant Recipients

- a. In the allocation method, LYFT will be replaced by $LYFT + X * PRA$ in percentage points, in order to increase priority for candidates with short expected lifespans. $X = 0.01$ is the only run completed in this sequence, but see run 18 where $X = 0.04$.
- b. This run will not include changes made to the allocation system in runs 10-13.

At this point we revised and updated the acceptance model used in all KPSAM runs to use only data after the rule change regarding B and DR points was made in 2003 so as to reflect current practices. Selected runs from among 1-14 have been re-done in response to this data request as a consequence of the altered acceptance model.

Run 15 No HLA A+B (based on run 9)

- a. Remove HLA A & B mismatch from LYFT calculation.
- b. KP did not have priority over KI nationwide (per run 7).

Run 16 Dgn PKD + DM (based on run 15)

- a. Remove all diagnoses except polycystic (PKD) and diabetes (DM) from LYFT calculation.
- b. KP did not have priority over KI nationwide (per run 7).

Run 16a Dgn PKD + DM with KI follows PA

- a. This run uses the kidney-follows-pancreas rule. Since KP are not allocated using kidney rules, KP candidates and donors are excluded from all quintiles calculations. Since pediatric candidates are allocated kidneys using a separate system, they are not used to calculate quintiles. KP and PA candidates are ranked together according to dialysis years.

Run 17 Dgn DM only (based on run 16)

- a. Remove all diagnoses except DM from LYFT calculation.
- b. KP did not have priority over KI nationwide (per run 7).

Run 18 (a-b) Continuous DPI (based on run 17)

- a. Examine distributions of Donor Profile Index (DPI) for all ECD/SCD/SPK organs removed for transplant including those not transplanted, and rank donors by DPI, assigning them their percentile. Use the average of all recipient and donor/recipient interaction (e.g. HLA) terms for DRI.
- c. Allocate organs by a function of LYFT, ESRD years, and DPI, where organs with higher DPI will be allocated primarily due to ESRD years and kidneys with low DPI will be allocated primarily due to LYFT. This will ensure that kidneys with good expected outcomes (DPI %ile close to zero) will go to high LYFT candidates.
- d. Donors with missing data (approx 2% had missing creatinine, weight, or height data) were given the mean value for that variable. This is not intended to be realistic or a recommendation for allocation.
- e. Run 18a allocates kidneys by $LYFT * (1 - DPI \%ile) + ESRD\ years * (DPI \%ile)$
- f. Run 18b allocates kidneys using the DPI squared; i.e. by $LYFT * (1 - DPI \%ile^2) + ESRD\ years * (DPI \%ile^2)$
- g. KP did not have priority over KI (per run 7).

Run 18 (c-e) Continuous DPI (based on run 16a)

Prepared by the Scientific Registry of Transplant Recipients

- b. This set of runs uses the kidney-follows-pancreas rule. KP and PA candidates are ranked together according to wait time, not dialysis years. KP has absolute priority over KI candidates (including pediatric).
- c. Run 18c uses continuous DPI. Run 18d uses DPI². Run 18e uses DPI³.
- d. Add 4* PRA/100 to candidates' total allocation scores.
- e. LYFT score for patients can progress over time (unlike in runs 12, 24).
- f. Candidates who indicated that they did not want to be offered ECD organs were not offered ECD organs in these runs, even though for all other purposes among adult kidney candidates the ECD/SCD distinction was replaced by DPI.

Run 19 PRA*4 pts (based on one of run 18 c-e)

- a. Add factor for post-transplant lifespan minus graft lifespan in order to match the candidates with the longest lifespans with the best quality kidneys, after LYFT selects best candidates for organs. Experiment with different weightings of this factor.
- b. This run will be based on the committee's decision as to which of runs 18 c-e represents the best trade-off.
- c. This run has not yet been completed.

Run 20 Discounting (based on run 18)

- a. Get new LYFT approximation using discounting (3% per year, per WHO guidelines).
- b. This run has not yet been completed.

Run 21 Quintiles (based on run 17)

- a. Create categories of candidates using the quintiles of LYFT scores among recipients (distribution of candidates will not be equal, but that's expected). Use an average organ for these LYFT scores.
- b. Get quintiles of donors by DRI, and allocate each donor only to candidates in the same quintile as that donor; e.g. donors in the highest DRI quintile would be allocated to the lowest quintile of LYFT.
- c. This will result in candidate health/donor quality matching by category, but will not change number of transplants to each group of candidates except for acceptance-induced changes.

Run 21a-e Quintiles (based on run 16a)

- a. 21a matches quintiles of LYFT to quintiles of DPI. 21b matches quintiles of post-transplant lifespan to quintiles of DPI. 21c allows candidates with PRA 80+ to receive transplants from 1 category higher than their current category or all lower quintiles. 21e matches deciles of post-transplant lifespan to deciles of DPI (based on 21c).
- b. This set of quintiles runs uses the kidney-follows-pancreas rule. Since KP are not allocated using kidney rules, KP candidates and donors are excluded from all quintiles calculations. Since pediatric candidates are allocated kidneys using a separate system, they are not used to calculate quintiles. KP and PA candidates are ranked together according to wait time, not dialysis years. KP has absolute priority over KI candidates (including pediatric).
- c. Quintiles of kidney recipients (during the same year as the KPSAM run) are calculated using only the candidate data and excluding the donor and donor/recipient factors' contribution to the score, and the results are applied to all candidates. For 21a, these quintiles are of LYFT. For 21 b-e, these quintiles are of post-transplant survival.
- d. Per Peter Stock (7/12/2003), run 21d should not be performed without more discussion.

Prepared by the Scientific Registry of Transplant Recipients

- e. Get quintiles of donors by DPI (ignoring candidate factors), and allocate each donor only to candidates in the same quintile as that donor; e.g. donors in the highest DPI quintile would be allocated to the lowest quintile of LYFT.
- f. This will result in candidate health/donor quality matching by category, but will not change number of transplants to each group of candidates except for acceptance-induced changes.
- g. A candidate's quintile will not change over time; if a candidate is assigned a low quintile because they are preemptive at listing, they do not move to a higher quintile when they go on dialysis. Similarly, candidate age at listing is used and increasing candidate age will not move a candidate to a lower quintile.
- h. Sort order within each quintile is dialysis years (i.e. time since most recent initiation of dialysis). Note that this means that preemptive candidates will be last on the list until they start dialysis. These candidates will not then shift quintiles, but they can begin accumulating dialysis time.
- i. If an entire quintile is exhausted (e.g. blood type AB in a small OPO), then organs are offered to candidates in the next lowest (in terms of LYFT or post-transplant survival) category, then next highest, and so on, alternating between lower and higher quintiles until the offer limit is reached and the organ is discarded.
- j. KP donors were not included in the DPI quintile definitions because the KP is allocated according to a different system; however, since most of these donors have another kidney, perhaps this should be re-thought.
- k. Candidates who indicated that they did not want to be offered ECD organs were not offered ECD organs in these runs, even though for all other purposes among adult kidney candidates the ECD/SCD distinction was replaced by DPI quintiles or deciles.

Run 22 Continuous age matching (based on run 17)

- a. Age-matching without categories (i.e. allocate by continuous score = absolute value of (candidate age - donor age)).
- b. Donor organs < 35 still go to pediatric candidates first (by geography, i.e. local pediatric, local adult, regional pediatric, regional adult, etc.). Donor organs > 35 are ranked simply by geography (local, regional, national) for adults.
- c. All candidates are ranked by this score if the donor has the appropriate organs; including pancreas, kidney-pancreas, and kidney.
- d. The current version did not include A₂-B.
- e. Candidates who indicated that they did not want to be offered ECD organs were not offered ECD organs in these runs, even though for all other purposes among adult kidney candidates the ECD/SCD distinction was erased.

Run 22a Continuous age matching

- a. This run uses the kidney-follows-pancreas rule. KP and PA candidates are ranked together according to wait time, not dialysis years. KP has absolute priority over KI candidates (including pediatric).

Run 23 Wait-time + changes (based on run 1)

- a. Use rules for current system, with waiting time (not ESRD time) as the primary allocation factor, removing OMM sharing and priority, removing paybacks, mixing SPK and KI, allowing sharing (but not priority) for PRA 80%+ OMM, and adding A₂-B.
- b. This may show that without LYFT, these changes do not save any additional life years, since they do not necessarily re-distribute organs to candidates with better benefit. Base this change on the run using the current system, not on any of the above runs.

Prepared by the Scientific Registry of Transplant Recipients

- c. This run has not yet been completed.

Run 24 LYFT + 0.5 Dialysis Years for SCD (based on run 9)

- a. This set of runs uses the kidney-follows-pancreas rule. KP and PA candidates are ranked together according to wait time, not dialysis years. KP has absolute priority over KI candidates (including pediatric).
- b. The LYFT calculation has been modified so that age at offer and years with ESRD at offer are replaced by the age and years with ESRD at listing. These numbers do not progress as the candidates wait on the list. This is in keeping with the committee's stated desire to have candidates progress on the list; if age or years with ESRD were allowed to increase, candidates would tend to have lower LYFT scores as they waited on the list.
- c. Preemptive candidate status is still a factor, and this factor can be updated to "non-preemptive" while the candidate is on the list. This will tend to make preemptive candidates whose ESRD actually progresses to dialysis rank much higher as this happens.
- d. In the allocation method, LYFT will be replaced by $LYFT + 0.5 * ESRD$ years.
- e. Remove HLA A & B mismatch from LYFT calculation, and remove all diagnoses except polycystic (PKD) and diabetes (DM) from LYFT calculation (i.e. use 16a run LYFT calculation, except LYFT cannot progress).

Survival Benefits Due to Transplant by KPSAM Run

Years	Run 1: Current national allocatn. system	Run 16a: LYFT no HLA A,B, Dgn PKD /DM/Oth	Run 18c: LYFT v. DY by Cont DPI	Run 18d: LYFT v. DY by Cont DPI^2	Run 18e: LYFT v. DY by Cont DPI^3	Run 21a: Quint: LYFT v. DPI	Run 21b: Quint: PT v. DPI	Run 21c: Quint: PT v. DPI + PRA80	Run 21e: Dec: PT v. DPI + PRA80	Run 22a: Cont age match	Run 24: LYFT + 0.5 DY (SCD)
Number of candidates (on waitlist at start or joining during run)	80,549	80,549	80,549	80,549	80,549	80,549	80,549	80,549	80,549	80,549	80,549
Number of transplant recipients	9225	9616	9430	9469	9531	9514	9552	9404	9375	9654	9541
Total lifespan after transplant	108044	143062	128549	135956	138955	108537	109850	109150	110331	127613	136296
Total graft years of life	73318	86423	79508	82458	83994	75750	76220	74846	75447	81639	82597
Total extra years	48424	59770	55503	57718	58548	48622	49176	48869	49621	56294	58141
Change in lifespan after transplant	(Ref.)	35,018	20,505	27,912	30,911	493	1,806	1,106	2,287	19,569	28,252
Change in graft years of life	(Ref.)	13,105	6,191	9,140	10,676	2,433	2,903	1,528	2,130	8,322	9,279
Change in extra years	(Ref.)	11,346	7,079	9,294	10,125	198	752	445	1,197	7,871	9,718
Lifespan benefit per transplant	5.25	6.22	5.89	6.10	6.14	5.11	5.15	5.20	5.29	5.83	6.09

SD Between Runs	Run 1: Current national allocatn. system	Run 16a: LYFT no HLA A,B, Dgn PKD /DM/Oth	Run 18c: Cont DPI	Run 18d: Cont DPI^2	Run 18e: Cont DPI^3	Run 21a: Quint: LYFT v. DPI	Run 21b: Quint: PT v. DPI	Run 21c: Quint: PT v. DPI + PRA80	Run 21e: Dec: PT v. DPI + PRA80	Run 22a: Cont age match	Run 24: LYFT + 0.5 DY (SCD)
Total lifespan after transplant	1002	221	684	660	235	390	22	783	237	828	341
Total graft years of life	557	75	302	411	76	299	245	422	181	577	135
Total transplant benefit	390	11	215	295	95	143	25	365	93	424	84

Prepared by the Scientific Registry of Transplant Recipients

Each run was performed 3 times, and results are presented as the mean (first table above) and standard deviation (second table) between runs.

Only the first transplant involving a kidney during the year of the run was used in the years of life calculations. Waitlist survival during the run was calculated using events generated by KPSAM (e.g. death, transplant, etc.), and this survival time was ended at death, transplant, or the end of the run. Years of life after transplant (both patient survival and graft survival) was calculated under different allocation systems using linear regression models that give close approximations to the actual survival models used to calculate elements of LYFT. The linear regression model approximation was used to speed processing time. Relistings were not included as waitlist years of life, as this time would overlap the calculated post-transplant survival time.

Waitlist survival after the run was also calculated using a linear regression that approximated the survival calculations used for the waitlist survival element of LYFT. This projection assumes no further transplants or retransplants for this population occur after the end of the KPSAM run. This projection was calculated for every candidate who was still alive at the end of the run and had not yet received a transplant involving a kidney, whether they were on the waitlist or had been removed. The projection will be refined in future iterations to better model survival for removed and inactive candidates. This projection is not a substitute for long-term runs, but shows the projected effects of differences in transplant allocation during the first year of allocation.

Analytical Changes in Lifespan Estimation

The linear equations used to estimate lifespans in the table titled “Survival Benefits Due to Transplant by KPSAM Run” have been updated. ROVD is no longer a valid diagnosis group, and is not included in the estimation equation. Also, additional candidate and donor age factors have been added, along with an interaction term where appropriate. Post-transplant lifespan estimation (including graft survival) is now based on a linear regression of lifespan, not of log(lifespan); with the additional data collected and new variables specified, the linear form seems to fit the data better than the log form. The waitlist model is still based on the log form.

With the new estimation methods and with the changes in the acceptance models brought about by an updated method for dealing with OPO-specific rules for allocating KP donors to either kidney-pancreas or pancreas-alone + kidney-alone, the total lifespan and number of transplant results for the runs shown in this report are not directly comparable to those shown in prior reports. General results on the demographic trends associated with different allocation rules should still be roughly comparable.

Transplants – Demographic Distribution

Separate tables are presented for each type of transplant: ECD kidney-alone, SCD kidney-alone, and kidney-pancreas transplants. Results are averages of 3 iterations each of KPSAM. Percentages add to 100% for each factor separated by a blank line except HLA MM, where percentages add to 100% for each of HLA A, B, and DR.

Prepared by the Scientific Registry of Transplant Recipients

Transplant Percentages Total Kidney Alone

Total KI	Run 1: Current national allocatn. system	Run 16a: LYFT no HLA A,B, Dgn PKD /DM/Oth	Run 18c: Cont DPI	Run 18d: Cont DPI^2	Run 18e: Cont DPI^3	Run 21a: Quint: LYFT v. DPI	Run 21b: Quint: PT v. DPI	Run 21c: Quint: PT v. DPI + PRA80	Run 21e: Dec: PT v. DPI + PRA80	Run 22a: Cont age match	Run 24: LYFT + 0.5 DY (SCD)
2 A MM	47.5 (0.4)	50.3 (0.4)	51 (0.3)	50.2 (0.2)	50.3 (0.4)	50 (1)	50.7 (0.9)	50.9 (0.8)	50.3 (0.6)	50.2 (0.2)	50.7 (0.1)
1 A MM	36.1 (0.2)	41.8 (0.5)	40.9 (0.4)	42.1 (0.1)	41.7 (0.3)	42.5 (0.7)	42.1 (0.4)	41.3 (0.4)	41.9 (0.7)	42.7 (0.3)	41.6 (0.4)
0 A MM	16.3 (0.1)	7.9 (0.4)	8.1 (0.2)	7.8 (0.2)	8 (0.2)	7.5 (0.3)	7.2 (0.2)	7.8 (0.1)	7.8 (0.1)	7.1 (0.1)	7.7 (0.3)
2 B MM	64 (0.1)	69.5 (0.4)	69.4 (0.3)	69 (0.4)	68.9 (0.3)	69.6 (0.4)	69.3 (0.4)	69.2 (0.4)	69.2 (0.4)	69.4 (0.8)	69.3 (0.1)
1 B MM	23.3 (0.4)	27.1 (0.3)	27.1 (0.5)	27.5 (0.1)	27.5 (0.3)	27.3 (0.2)	27.3 (0.4)	27.2 (0.5)	27.4 (0.3)	28.1 (0.4)	27.1 (0.3)
0 B MM	12.7 (0.1)	3.4 (0.2)	3.5 (0.2)	3.5 (0.1)	3.6 (0.2)	3.1 (0.2)	3.3 (0.1)	3.6 (0.3)	3.5 (0.3)	2.6 (0)	3.6 (0.2)
2 DR MM	35.9 (0.5)	42.7 (0.4)	43 (0.7)	42.5 (0.3)	42.3 (0.3)	44.8 (0.6)	45.2 (0.6)	45.3 (0.5)	44.7 (0.4)	45 (0.7)	42.2 (0.6)
1 DR MM	42.4 (0.9)	45 (0.4)	45.4 (0.4)	45.4 (0.4)	45.5 (0.3)	44.6 (1)	44.4 (1.2)	43.8 (1)	44.4 (0.2)	44.9 (0.8)	45.6 (0.3)
0 DR MM	21.6 (0.3)	12.3 (0.1)	11.5 (0)	12 (0.5)	12.2 (0.3)	10.6 (0.3)	10.4 (0.3)	10.9 (0.2)	11 (0.1)	10.1 (0.2)	12.2 (0.4)
0 ABDR MM	11.2 (0)	1.2 (0.1)	1.4 (0.2)	1.3 (0)	1.3 (0)	0.9 (0)	0.9 (0.1)	1.3 (0.1)	1.3 (0.1)	0.3 (0)	1.2 (0.1)
Rec. African American	32.5 (0.1)	33 (0.1)	36.7 (0.1)	35.1 (0.4)	34.5 (0.5)	35.3 (0.3)	34.7 (0.6)	34.7 (0.8)	34 (0.3)	34 (0.4)	36.3 (0.7)
Rec. Hispanic	13.5 (0.3)	14.8 (0.4)	14.5 (0.1)	14.7 (0.3)	14.9 (0.2)	13.8 (0.1)	13.8 (0.2)	13.8 (0.4)	13.6 (0.1)	14 (0.5)	14.6 (0.2)
Rec. Caucasian	47.4 (0.3)	44.7 (0.7)	41.9 (0.8)	43.1 (0.1)	43.4 (0.5)	44 (0.5)	44.6 (0.6)	44.2 (0.4)	45 (0)	45.3 (1.1)	42.1 (0.4)
Rec. Other/Missing	6.5 (0.2)	7.5 (0.3)	6.8 (0)	7 (0.3)	7.2 (0.1)	6.9 (0.1)	7 (0.2)	7.2 (0.2)	7.3 (0.3)	6.6 (0.3)	7 (0.1)
Rec. ABO = A	35.9 (0.3)	32.2 (0.2)	32.3 (0.4)	32.2 (0.1)	32.2 (0.3)	32.4 (0.1)	32 (0.3)	31.9 (0.4)	32.5 (0.2)	34.9 (0.1)	32.3 (0.3)
Rec. ABO = AB	4.8 (0.3)	5.4 (0.1)	5.2 (0.2)	5.4 (0.2)	5.5 (0.1)	5.4 (0.1)	5.5 (0.3)	5.4 (0.1)	5.2 (0.2)	5.5 (0.1)	5.2 (0.2)
Rec. ABO = B	11.7 (0.1)	13.6 (0.1)	13.9 (0.2)	13.8 (0.2)	13.4 (0.1)	13.7 (0.4)	13.6 (0.1)	13.8 (0.1)	13.4 (0.3)	10.9 (0.2)	13.6 (0.3)
Rec. ABO = O	47.5 (0.4)	48.8 (0.3)	48.6 (0.2)	48.6 (0.5)	48.8 (0.2)	48.5 (0.4)	49 (0.4)	49 (0.5)	48.9 (0.1)	48.7 (0.1)	48.8 (0.1)
Rec. < 18	6.7 (0.1)	7.2 (0.1)	7.1 (0.1)	7.1 (0.2)	7.1 (0)	7 (0.1)	7.1 (0.2)	7.1 (0.2)	7.4 (0.1)	7.4 (0.2)	7.2 (0.2)
Rec. 18-34	12.9 (0.5)	33.7 (0.5)	27 (0.4)	31.9 (0.3)	33.3 (0.4)	10.5 (0.1)	11 (0.3)	11.8 (0.1)	11.7 (0.1)	21.2 (0.1)	31.4 (0.2)
Rec. 35-49	30.5 (0.3)	31 (0.3)	32.2 (0.6)	31.3 (0.2)	30.9 (0.4)	27.6 (0.4)	28 (0.6)	28.8 (0.3)	29.9 (0.4)	35.3 (0.2)	32.2 (0.4)
Rec. 50-64	37.8 (0.4)	21.9 (0.2)	26.5 (0.3)	23.4 (0.3)	22.5 (0.4)	41.2 (0.6)	40.6 (0.3)	39.8 (0.5)	39.2 (0.3)	30.8 (0.4)	22.9 (0.5)
Rec. 65+	12.2 (0.1)	6.2 (0.1)	7.2 (0.3)	6.3 (0.3)	6.3 (0.3)	13.6 (0.3)	13.3 (0.4)	12.5 (0.2)	11.9 (0.3)	5.3 (0.1)	6.3 (0.3)
Rec. Dgn.: Glomerular	23.3 (0.6)	30.5 (0.2)	28.4 (0.3)	30.4 (0.2)	30.8 (0.2)	20.8 (0.4)	21 (0.4)	22.2 (0.2)	21.9 (0.1)	25 (0.2)	29.7 (0.4)

Prepared by the Scientific Registry of Transplant Recipients

Total KI	Run 1: Current national allocatn. system	Run 16a: LYFT no HLA A,B, Dgn PKD /DM/Oth	Run 18c: Cont DPI	Run 18d: Cont DPI^2	Run 18e: Cont DPI^3	Run 21a: Quint: LYFT v. DPI	Run 21b: Quint: PT v. DPI	Run 21c: Quint: PT v. DPI + PRA80	Run 21e: Dec: PT v. DPI + PRA80	Run 22a: Cont age match	Run 24: LYFT + 0.5 DY (SCD)
Rec. Dgn.: HTN	20 (0.6)	22.2 (0.1)	23.1 (0.4)	22.5 (0)	21.8 (0.2)	21.3 (0.3)	21.4 (0.2)	21.3 (0.4)	20.6 (0)	20 (0.1)	23 (0.2)
Rec. Dgn.: Polycystic	7.4 (0.4)	8.3 (0.1)	6.8 (0.1)	7.4 (0.1)	7.7 (0.2)	6.7 (0.2)	6.8 (0.3)	6.8 (0.1)	7 (0.2)	6.4 (0.1)	7.3 (0.1)
Rec. Dgn.: Renovascular	0.2 (0.1)	0.2 (0)	0.2 (0)	0.2 (0)	0.2 (0)	0.3 (0)	0.3 (0)	0.3 (0)	0.2 (0)	0.2 (0)	0.2 (0)
Rec. Dgn.: Oth/Missing	22.7 (0.2)	24.9 (0.4)	25.3 (0.1)	25.4 (0.7)	25.4 (0.2)	20.6 (0.4)	20.8 (0.3)	21.6 (0.1)	21.8 (0.2)	23.2 (0.4)	26.1 (0.2)
Rec. Dgn.: DM (KI)											
Rec. Dgn.: DM (KI) <50	6.6 (0.4)	4.4 (0)	5 (0.2)	4.6 (0.3)	4.4 (0.3)	7.6 (0.1)	8 (0.2)	7.2 (0.3)	7.8 (0.2)	9.6 (0.2)	4.5 (0.1)
Rec. Dgn.: DM (KI) 50+	19.8 (0.3)	9.4 (0.1)	11.1 (0.2)	9.6 (0.1)	9.7 (0.2)	22.8 (0.8)	21.8 (0.6)	20.7 (0.6)	20.6 (0.2)	15.7 (0.3)	9.2 (0.2)
Rec. Dgn.: DM (PA)											
Rec. Dgn.: DM (KP)											
Rec. Peak PRA Missing	3.3 (0)	3.5 (0.1)	3.3 (0)	3.3 (0.1)	3.5 (0)	3.7 (0)	3.7 (0.1)	3.6 (0.1)	3.7 (0.1)	3.6 (0.1)	3.6 (0.2)
Rec. Peak PRA <10	62.4 (0.2)	74.1 (0.2)	66.8 (0.4)	68.8 (0.9)	69.9 (0.2)	70.8 (0.7)	71.2 (0.3)	68.7 (0.8)	68.8 (0.4)	72.4 (0.9)	71.1 (0.5)
Rec. Peak PRA 10-80	21.2 (0.4)	17.6 (0.4)	21.7 (0.5)	20.6 (0.5)	19.8 (0.2)	19.9 (0.1)	19.3 (0.1)	18.2 (0.6)	18.1 (0.3)	19.2 (0.5)	19 (0.3)
Rec. Peak PRA 80+	13.1 (0.3)	4.7 (0)	8.1 (0.3)	7.4 (0.2)	6.9 (0.4)	5.6 (0)	5.9 (0.6)	9.5 (0.3)	9.4 (0.5)	4.7 (0.2)	6.3 (0.2)
Shared - payback	4.7 (0.1)										
Shared - nonpayback	21.7 (0.3)	15.7 (0.4)	14.6 (0.4)	14.6 (0.4)	15 (0.1)	15.1 (0.5)	15.2 (0.4)	14.5 (0.2)	14 (0.5)	12.7 (0.3)	15.1 (0.1)
Total # of transplants	8279	8665	8465	8512	8559	8501	8568	8401	8350	8532	8578
Don/Rec. age correlation	10.2%	28.6%	36.8%	32.7%	31.2%	34.5%	34.5%	34.1%	34.3%	66.0%	29.4%

Prepared by the Scientific Registry of Transplant Recipients

Transplant Percentages ECD Kidney

ECD KI	Run 1: Current national allocatn. system	Run 16a: LYFT no HLA A,B, Dgn PKD /DM/Oth	Run 18c: Cont DPI	Run 18d: Cont DPI^2	Run 18e: Cont DPI^3	Run 21a: Quint: LYFT v. DPI	Run 21b: Quint: PT v. DPI	Run 21c: Quint: PT v. DPI + PRA80	Run 21e: Dec: PT v. DPI + PRA80	Run 22a: Cont age match	Run 24: LYFT + 0.5 DY (SCD)
2 A MM	49.3 (2.1)	51.5 (1.1)	50.3 (1.2)	51.2 (0.2)	51 (1.4)	50.9 (2.3)	50.1 (1.2)	51.4 (2.2)	52 (0.2)	49.6 (0.5)	51.6 (1.1)
1 A MM	38.4 (2.1)	41.5 (0.2)	42.3 (0.9)	42.1 (0.7)	42.3 (1.4)	42.1 (1.3)	43 (0.2)	41.5 (0.4)	41.5 (1.1)	43.1 (1.1)	41.6 (0.4)
0 A MM	12.3 (0.5)	7 (0.4)	7.4 (0.8)	6.7 (0.8)	6.8 (0.7)	7 (0.8)	6.9 (0.5)	7.1 (0.4)	6.5 (0.4)	7.3 (0.9)	6.8 (0.4)
2 B MM	66.1 (2.1)	68.8 (1.7)	68.2 (0.9)	68.9 (0.4)	68 (1.1)	68 (1.2)	67.8 (0.7)	68.9 (1.4)	68.6 (1.6)	68.7 (2.4)	68.5 (1.3)
1 B MM	25.1 (1.4)	27.9 (1.5)	28.6 (1.6)	28.1 (0.6)	28.6 (0.2)	29.4 (0.4)	28.8 (0.9)	27.6 (0.8)	28.4 (1.2)	28.6 (1.2)	28.5 (1.5)
0 B MM	8.8 (0.2)	3.3 (0.7)	3.2 (0.3)	3.1 (0.3)	3.4 (0.4)	2.6 (0.3)	3.3 (0.2)	3.6 (0.3)	3 (0.2)	2.8 (0.1)	3 (0.4)
2 DR MM	41.4 (2.3)	44.5 (0.3)	43.2 (0.2)	43.2 (0.9)	43 (1.4)	42.7 (0.7)	43.4 (1.5)	43.3 (1.1)	43 (1.8)	43.2 (1.1)	43.3 (1.6)
1 DR MM	43.1 (1.4)	44.3 (0.6)	46 (1)	45.4 (0.7)	46 (1.6)	46.3 (1.7)	45.6 (2.8)	44.6 (2.7)	45.6 (1.9)	45.8 (2.1)	45.3 (1.5)
0 DR MM	15.6 (0.7)	11.2 (1.1)	10.7 (0.4)	11.4 (0.5)	11 (0.3)	11 (1)	11 (1.2)	12.1 (0.2)	11.4 (0.6)	11 (0.9)	11.5 (0.8)
0 ABDR MM	6.9 (0.3)	0.7 (0.1)	0.7 (0.2)	0.6 (0.1)	0.6 (0.1)	0.5 (0.2)	0.6 (0.2)	0.8 (0.1)	0.8 (0.1)	0.5 (0.1)	0.8 (0.1)
Rec. African American	32.6 (1.2)	33.9 (0.9)	33.6 (0.5)	34.4 (1.9)	34.5 (1.8)	34.3 (2.6)	35 (1.4)	34 (0.9)	33.7 (0.4)	32 (0.9)	34.4 (1.8)
Rec. Hispanic	12 (1)	12.1 (1.1)	12 (0.6)	11.6 (0.3)	12.3 (0.5)	12 (0.2)	11.3 (0.1)	11.9 (0.6)	11.7 (0.9)	10.7 (0.8)	11.8 (0.2)
Rec. Caucasian	48.3 (0.6)	46.7 (1.5)	47.3 (1.7)	47.2 (0.6)	46 (1.9)	46.4 (1)	46.7 (1)	46.4 (1.3)	46.7 (0.9)	49.8 (1.4)	46.6 (1.7)
Rec. Other/Missing	7 (0.9)	7.3 (0.3)	7.1 (0.8)	6.8 (0.5)	7.2 (0.3)	7.3 (0.8)	7 (1.1)	7.7 (0.3)	8 (0.7)	7.5 (0.2)	7.2 (1.1)
Rec. ABO = A	36 (0.9)	32.2 (0.2)	32.6 (1.7)	32.7 (0.5)	32.8 (1.3)	33.3 (0)	32.7 (0.8)	32.3 (1.3)	33 (1.2)	35.7 (1.1)	32.8 (1.9)
Rec. ABO = AB	5.3 (0.3)	4.9 (0.3)	4.4 (0.5)	5 (0.6)	5 (0.3)	5.1 (0.4)	5 (0.3)	4.9 (0.6)	4.5 (0.3)	5.2 (0.3)	4.5 (1.1)
Rec. ABO = B	9.5 (0.4)	12.7 (0.4)	12.4 (0.3)	12.1 (0.5)	11.5 (0.7)	11.7 (0.7)	11.5 (0.8)	12.1 (0.3)	11.6 (0.5)	8.9 (0.5)	12 (0.4)
Rec. ABO = O	49.2 (0.7)	50.2 (0.8)	50.5 (0.3)	50.2 (1.5)	50.7 (0.6)	49.9 (0.6)	50.9 (0.7)	50.8 (1.5)	51 (0.7)	50.2 (0.7)	50.6 (1.1)
Rec. < 18	0.1 (0)							0.1 (0)	0.1 (0)	0.1 (0.1)	
Rec. 18-34	9 (0.4)	7.6 (1)	7.7 (0.6)	6.8 (0.3)	7.4 (0.2)	8.4 (0.9)	9.7 (0.7)	8.6 (0.5)	9.1 (0.3)	2.1 (0.2)	6.7 (0.7)
Rec. 35-49	26.4 (0.5)	26.4 (0.8)	25.7 (1.1)	26.6 (0.8)	24.4 (1.5)	25.7 (1)	26 (0.5)	25.5 (1.2)	25.4 (1)	13.9 (1.1)	25.8 (1.4)
Rec. 50-64	45.7 (1.5)	45.8 (0.6)	47 (2.5)	46.9 (0.2)	48.1 (0.6)	47 (1.5)	45.5 (1.2)	46.9 (1.1)	46.8 (1.3)	65.4 (0.9)	46.9 (1.7)
Rec. 65+	18.9 (1)	20.2 (1)	19.6 (1.3)	19.8 (1.5)	20 (1)	18.9 (0.2)	18.7 (0.8)	18.9 (1.1)	18.7 (1.9)	18.5 (0.2)	20.6 (0.3)
Rec. Dgn.: Glomerular	18.6 (0.2)	17.5 (0.9)	18.8 (0.4)	18.1 (0.9)	18.5 (1)	18.2 (0.8)	18.2 (1.1)	19.2 (1.5)	17.8 (1.1)	14 (0.8)	18 (0.5)
Rec. Dgn.: HTN	22.2 (0.7)	22.9 (1)	21.4 (0.3)	21.5 (0.7)	20.9 (0.8)	22.5 (1)	21.8 (1)	22.4 (1)	21.5 (0.9)	20 (1.5)	21.8 (1.5)
Rec. Dgn.: Polycystic	6.9 (0.5)	6.5 (0)	7.1 (0.4)	7.3 (0.2)	7.4 (0.7)	7.7 (0.2)	7.4 (0.7)	6.6 (0.4)	7.1 (0.5)	8 (0.4)	7.9 (1)
Rec. Dgn.: Renovascular	0.2 (0.2)	0.4 (0.1)	0.2 (0.1)	0.4 (0.1)	0.3 (0.1)	0.2 (0.1)	0.3 (0.1)	0.4 (0.1)	0.3 (0.1)	0.3 (0)	0.2 (0.1)

Prepared by the Scientific Registry of Transplant Recipients

ECD KI	Run 1: Current national allocatn. system	Run 16a: LYFT no HLA A,B, Dgn PKD /DM/Oth	Run 18c: Cont DPI	Run 18d: Cont DPI^2	Run 18e: Cont DPI^3	Run 21a: Quint: LYFT v. DPI	Run 21b: Quint: PT v. DPI	Run 21c: Quint: PT v. DPI + PRA80	Run 21e: Dec: PT v. DPI + PRA80	Run 22a: Cont age match	Run 24: LYFT + 0.5 DY (SCD)
Rec. Dgn.: Oth/Missing	17.2 (0.4)	17.3 (1.2)	17 (0.4)	17.1 (0.8)	17 (1.2)	17.1 (1.2)	18.5 (0.9)	18.2 (0.6)	18.9 (1)	14.9 (1.1)	16.8 (0.9)
Rec. Dgn.: DM (KI)											
Rec. Dgn.: DM (KI) <50	6.5 (0.3)	6.5 (1.2)	6.7 (0.6)	6.6 (0.1)	6.3 (0.2)	6.3 (0.7)	6.6 (0.6)	5.8 (0.3)	6.8 (0.7)	3.7 (0.3)	6.5 (0.6)
Rec. Dgn.: DM (KI) 50+	28.3 (0.5)	29 (1.5)	28.9 (1.4)	28.9 (0.3)	29.6 (1.3)	27.9 (1.1)	27.3 (0.4)	27.5 (0.5)	27.7 (0.8)	39 (1.2)	28.8 (1.5)
Rec. Dgn.: DM (PA)											
Rec. Dgn.: DM (KP)											
Rec. Peak PRA Missing	4.3 (0.2)	5.2 (0.5)	5.4 (0.3)	4.7 (0.5)	5.3 (0.3)	5.4 (0.3)	5.6 (0.3)	5.4 (0.7)	5.3 (0.2)	5 (0.7)	5.3 (0.5)
Rec. Peak PRA <10	67.4 (1.3)	67.5 (0.6)	66.6 (1.4)	67.6 (0.5)	67.5 (1)	67.3 (0.9)	66.7 (1.3)	67.9 (1.7)	67.3 (0.5)	72.9 (2.2)	68.4 (0.8)
Rec. Peak PRA 10-80	21.6 (1.4)	21.4 (0.9)	21.9 (0.6)	21.6 (0.6)	21 (1)	20.9 (0.6)	21.1 (0.9)	21 (1)	21.1 (0.7)	18.6 (1)	20.5 (0.3)
Rec. Peak PRA 80+	6.8 (1.1)	5.9 (0.3)	6 (0.7)	6.1 (1.1)	6.2 (0.4)	6.4 (0.4)	6.6 (0.7)	5.7 (0.1)	6.2 (0.7)	3.5 (0.3)	5.9 (0.5)
Shared - payback	5.1 (0.8)										
Shared - nonpayback	27.8 (0.8)	21.6 (0.3)	21.9 (0.5)	20.9 (0.7)	21.7 (1.7)	22 (1.5)	22.2 (0.4)	21.1 (0.4)	21.4 (0.7)	22.6 (1.2)	21 (1.5)
Total # of transplants	1573	1626	1615	1597	1634	1602	1613	1615	1612	1696	1622
Don/Rec. age correlation	0.1%	-1.2%	-0.3%	-1.6%	-0.1%	1.0%	0.3%	1.2%	-2.3%	31.1%	-1.2%

Prepared by the Scientific Registry of Transplant Recipients

Transplant Percentages SCD Kidney

SCD KI	Run 1: Current national allocatn. system	Run 16a: LYFT no HLA A,B, Dgn PKD /DM/Oth	Run 18c: Cont DPI	Run 18d: Cont DPI^2	Run 18e: Cont DPI^3	Run 21a: Quint: LYFT v. DPI	Run 21b: Quint: PT v. DPI	Run 21c: Quint: PT v. DPI + PRA80	Run 21e: Dec: PT v. DPI + PRA80	Run 22a: Cont age match	Run 24: LYFT + 0.5 DY (SCD)
2 A MM	47.1 (0.2)	50 (0.7)	51.1 (0.6)	49.9 (0.3)	50.2 (0.2)	49.8 (0.7)	50.8 (0.9)	50.8 (0.5)	49.9 (0.8)	50.3 (0.1)	50.5 (0.4)
1 A MM	35.6 (0.7)	41.9 (0.7)	40.6 (0.6)	42.1 (0.3)	41.6 (0.2)	42.6 (0.6)	41.9 (0.4)	41.3 (0.5)	42 (0.7)	42.6 (0.1)	41.6 (0.5)
0 A MM	17.3 (0.2)	8.1 (0.4)	8.3 (0.3)	8 (0.2)	8.3 (0.1)	7.7 (0.4)	7.3 (0.1)	7.9 (0.3)	8.1 (0.2)	7.1 (0.1)	7.9 (0.3)
2 B MM	63.5 (0.4)	69.6 (0.5)	69.6 (0.3)	69 (0.5)	69.1 (0.2)	70 (0.2)	69.7 (0.4)	69.3 (0.1)	69.3 (0.4)	69.6 (0.4)	69.5 (0.2)
1 B MM	22.8 (0.3)	26.9 (0.6)	26.8 (0.4)	27.4 (0.2)	27.2 (0.4)	26.8 (0.3)	27 (0.4)	27.1 (0.4)	27.1 (0.3)	27.9 (0.3)	26.8 (0.1)
0 B MM	13.7 (0.1)	3.5 (0.2)	3.6 (0.3)	3.6 (0.2)	3.7 (0.2)	3.2 (0.3)	3.3 (0)	3.6 (0.2)	3.6 (0.4)	2.5 (0)	3.7 (0.2)
2 DR MM	34.7 (0.2)	42.2 (0.4)	43 (0.9)	42.4 (0.3)	42.1 (0.1)	45.3 (0.6)	45.6 (0.6)	45.8 (0.5)	45.1 (0.9)	45.5 (0.6)	42 (0.4)
1 DR MM	42.3 (0.9)	45.2 (0.6)	45.3 (0.5)	45.4 (0.4)	45.4 (0.4)	44.2 (0.9)	44.1 (0.9)	43.6 (0.7)	44 (0.6)	44.7 (0.7)	45.7 (0.1)
0 DR MM	23 (0.6)	12.6 (0.1)	11.7 (0.1)	12.2 (0.6)	12.5 (0.3)	10.5 (0.3)	10.3 (0.1)	10.7 (0.2)	10.8 (0.2)	9.8 (0)	12.3 (0.4)
0 ABDR MM	12.2 (0.1)	1.3 (0.1)	1.5 (0.2)	1.5 (0.1)	1.5 (0)	1 (0)	1 (0.1)	1.4 (0.2)	1.4 (0.1)	0.2 (0)	1.3 (0.1)
Rec. African American	32.4 (0.2)	32.8 (0.2)	37.5 (0.2)	35.3 (0.2)	34.5 (0.6)	35.5 (0.2)	34.6 (0.4)	34.9 (0.8)	34.1 (0.4)	34.5 (0.5)	36.8 (0.5)
Rec. Hispanic	13.9 (0.4)	15.5 (0.3)	15.1 (0.3)	15.5 (0.4)	15.5 (0.2)	14.2 (0.1)	14.3 (0.2)	14.3 (0.4)	14.1 (0.2)	14.9 (0.5)	15.3 (0.2)
Rec. Caucasian	47.2 (0.4)	44.2 (0.6)	40.6 (0.7)	42.2 (0.2)	42.8 (0.8)	43.5 (0.6)	44.1 (0.5)	43.7 (0.4)	44.6 (0.2)	44.2 (1.1)	41 (0.3)
Rec. Other/Missing	6.4 (0.1)	7.5 (0.3)	6.8 (0.2)	7.1 (0.3)	7.2 (0.1)	6.8 (0.2)	7 (0.1)	7.1 (0.2)	7.2 (0.1)	6.4 (0.4)	7 (0.3)
Rec. ABO = A	35.9 (0.3)	32.2 (0.2)	32.2 (0.2)	32.1 (0.1)	32.1 (0.3)	32.2 (0.2)	31.9 (0.2)	31.8 (0.3)	32.4 (0.4)	34.7 (0.1)	32.2 (0.1)
Rec. ABO = AB	4.7 (0.3)	5.6 (0.2)	5.4 (0.2)	5.4 (0.2)	5.6 (0.1)	5.5 (0.1)	5.6 (0.3)	5.5 (0.1)	5.4 (0.3)	5.6 (0.1)	5.4 (0.2)
Rec. ABO = B	12.3 (0.1)	13.8 (0)	14.3 (0.2)	14.2 (0.1)	13.9 (0.1)	14.1 (0.3)	14.1 (0.2)	14.2 (0.1)	13.9 (0.4)	11.4 (0.2)	14 (0.3)
Rec. ABO = O	47.2 (0.6)	48.5 (0.3)	48.1 (0.3)	48.2 (0.2)	48.4 (0.2)	48.1 (0.4)	48.5 (0.4)	48.6 (0.2)	48.4 (0.1)	48.4 (0)	48.4 (0.1)
Rec. < 18	8.3 (0.1)	8.9 (0.1)	8.8 (0.2)	8.7 (0.3)	8.8 (0)	8.6 (0.1)	8.7 (0.2)	8.8 (0.2)	9.2 (0.1)	9.2 (0.2)	8.8 (0.3)
Rec. 18-34	13.8 (0.6)	39.7 (0.6)	31.6 (0.6)	37.7 (0.5)	39.4 (0.4)	11 (0.3)	11.3 (0.2)	12.5 (0.2)	12.3 (0.1)	25.9 (0.1)	37.2 (0.2)
Rec. 35-49	31.4 (0.3)	32.1 (0.4)	33.7 (0.7)	32.4 (0.5)	32.4 (0.1)	28.1 (0.6)	28.4 (0.8)	29.6 (0.3)	31 (0.7)	40.6 (0.1)	33.6 (0.3)
Rec. 50-64	35.9 (0.3)	16.3 (0.2)	21.6 (0.3)	18 (0.4)	16.4 (0.4)	39.9 (0.5)	39.4 (0.6)	38.1 (0.8)	37.4 (0.6)	22.2 (0.3)	17.3 (0.2)
Rec. 65+	10.6 (0.2)	3 (0.4)	4.3 (0.1)	3.2 (0.1)	3 (0.2)	12.3 (0.3)	12.1 (0.3)	11 (0.3)	10.2 (0.1)	2.1 (0.1)	3 (0.3)
Rec. Dgn.: Glomerular	24.4 (0.8)	33.5 (0.5)	30.7 (0.3)	33.2 (0.3)	33.7 (0.4)	21.4 (0.5)	21.6 (0.4)	22.9 (0.6)	22.9 (0.3)	27.7 (0.1)	32.4 (0.6)
Rec. Dgn.: HTN	19.4 (0.5)	22.1 (0.2)	23.5 (0.6)	22.8 (0.2)	22 (0.3)	21 (0.2)	21.3 (0.3)	21 (0.5)	20.4 (0.2)	20 (0.3)	23.3 (0.2)
Rec. Dgn.: Polycystic	7.5 (0.4)	8.7 (0.1)	6.8 (0.1)	7.4 (0.2)	7.7 (0.1)	6.5 (0.2)	6.7 (0.2)	6.8 (0.1)	7 (0.1)	6 (0.1)	7.2 (0.2)

Prepared by the Scientific Registry of Transplant Recipients

SCD KI	Run 1: Current national allocatn. system	Run 16a: LYFT no HLA A,B, Dgn PKD /DM/Oth	Run 18c: Cont DPI	Run 18d: Cont DPI^2	Run 18e: Cont DPI^3	Run 21a: Quint: LYFT v. DPI	Run 21b: Quint: PT v. DPI	Run 21c: Quint: PT v. DPI + PRA80	Run 21e: Dec: PT v. DPI + PRA80	Run 22a: Cont age match	Run 24: LYFT + 0.5 DY (SCD)
Rec. Dgn.: Renovascular	0.2 (0.1)	0.2 (0)	0.2 (0)	0.2 (0)	0.2 (0)	0.3 (0)	0.2 (0)	0.3 (0)	0.2 (0)	0.2 (0)	0.2 (0)
Rec. Dgn.: Oth/Missing	24 (0.2)	26.7 (0.2)	27.3 (0.2)	27.3 (1)	27.4 (0.2)	21.4 (0.3)	21.3 (0.2)	22.4 (0.1)	22.6 (0)	25.2 (0.3)	28.3 (0.4)
Rec. Dgn.: DM (KI)											
Rec. Dgn.: DM (KI) <50	6.6 (0.4)	4 (0.2)	4.6 (0.1)	4.1 (0.3)	4 (0.3)	7.8 (0.2)	8.3 (0.4)	7.5 (0.4)	8.1 (0.1)	11 (0.2)	4 (0.1)
Rec. Dgn.: DM (KI) 50+	17.9 (0.3)	4.8 (0.2)	6.9 (0.1)	5.1 (0)	5 (0.1)	21.6 (0.7)	20.6 (0.8)	19.1 (0.7)	18.9 (0.1)	9.9 (0.3)	4.6 (0.1)
Rec. Dgn.: DM (PA)											
Rec. Dgn.: DM (KP)											
Rec. Peak PRA Missing	3 (0)	3.1 (0.1)	2.9 (0)	2.9 (0.1)	3 (0.1)	3.3 (0.1)	3.3 (0.2)	3.1 (0.1)	3.3 (0.2)	3.3 (0.2)	3.2 (0.1)
Rec. Peak PRA <10	61.3 (0.5)	75.6 (0.1)	66.8 (0.2)	69 (0.9)	70.4 (0.3)	71.6 (0.8)	72.2 (0.3)	68.9 (0.7)	69.1 (0.4)	72.2 (0.9)	71.8 (0.7)
Rec. Peak PRA 10-80	21.1 (0.2)	16.8 (0.4)	21.7 (0.5)	20.3 (0.5)	19.5 (0.1)	19.6 (0.3)	18.9 (0.3)	17.6 (0.6)	17.4 (0.2)	19.4 (0.9)	18.7 (0.4)
Rec. Peak PRA 80+	14.6 (0.5)	4.5 (0.1)	8.6 (0.2)	7.7 (0.1)	7.1 (0.4)	5.5 (0.1)	5.7 (0.6)	10.4 (0.3)	10.2 (0.6)	5 (0.1)	6.4 (0.3)
Shared - payback	4.6 (0.1)										
Shared - nonpayback	20.3 (0.3)	14.4 (0.5)	12.9 (0.4)	13.2 (0.3)	13.4 (0.4)	13.5 (0.2)	13.6 (0.4)	12.9 (0.1)	12.2 (0.5)	10.2 (0.1)	13.7 (0.3)
Total # of transplants	6706	7039	6850	6915	6925	6899	6955	6786	6738	6836	6956
Don/Rec. age correlation	2.9%	2.8%	22.1%	10.8%	5.6%	41.7%	42.6%	39.0%	39.6%	54.2%	4.2%

Prepared by the Scientific Registry of Transplant Recipients

Transplant Percentages Simultaneous Kidney-Pancreas

SPK	Run 1: Current national allocatn. system	Run 16a: LYFT no HLA A,B, Dgn PKD /DM/Oth	Run 18c: Cont DPI	Run 18d: Cont DPI^2	Run 18e: Cont DPI^3	Run 21a: Quint: LYFT v. DPI	Run 21b: Quint: PT v. DPI	Run 21c: Quint: PT v. DPI + PRA80	Run 21e: Dec: PT v. DPI + PRA80	Run 22a: Cont age match	Run 24: LYFT + 0.5 DY (SCD)
2 A MM	49.1 (2.4)	50.1 (0.5)	50.6 (1)	52 (2.3)	51 (2.2)	51.2 (1.1)	48.8 (1.9)	49.5 (1.9)	50.1 (0.5)	51.3 (1.2)	50.8 (3.5)
1 A MM	38.3 (0.2)	41.8 (0.9)	41.1 (0.7)	40.6 (2)	41.9 (2.7)	41.5 (2.5)	43.3 (1.1)	42.5 (1.8)	41.6 (1.3)	40.3 (0.8)	42.1 (2.7)
0 A MM	12.5 (1.2)	8.1 (0.3)	8.3 (0.9)	7.4 (0.8)	7.1 (0.7)	7.3 (1.1)	7.9 (0.7)	8 (0.7)	8.4 (0.1)	8.4 (0.1)	7.1 (0.2)
2 B MM	68.4 (2.4)	72.9 (2.2)	73.8 (1)	72 (0.8)	71.6 (0.9)	71.9 (2.4)	72.6 (1)	70.9 (0.7)	70.4 (1.4)	72 (1.2)	72.2 (1.3)
1 B MM	24.8 (1.7)	24.5 (1.7)	23.6 (0.3)	25.3 (1.7)	25.4 (0.9)	26.1 (0.5)	24.6 (1.2)	26.4 (1.3)	26.8 (0.7)	25 (0.1)	25 (0.8)
0 B MM	6.8 (1)	2.5 (0.7)	2.6 (0.5)	2.7 (0.4)	2.9 (0.2)	2.1 (0.7)	2.8 (0.3)	2.8 (0.3)	2.8 (0.4)	3.1 (0.4)	2.9 (0.4)
2 DR MM	50.2 (1.4)	51.5 (0.8)	51.8 (0.4)	51.1 (1.4)	51.3 (1.5)	53.6 (0.8)	52.2 (0.1)	50.9 (1.2)	50.4 (0.4)	51.9 (1.2)	53 (0.9)
1 DR MM	39.5 (1.6)	42.1 (0.8)	41.9 (0.6)	42.5 (2.1)	42.7 (2)	40.6 (2.3)	41.7 (0.8)	42.3 (0.9)	43.8 (1.7)	41.4 (3)	41.1 (2.1)
0 DR MM	10.3 (0.7)	6.4 (0.2)	6.3 (0.3)	6.5 (0.9)	6 (0.7)	5.8 (0.4)	6.1 (0.9)	6.8 (0.6)	5.8 (0.5)	6.7 (0.7)	6 (0.3)
0 ABDR MM	5.5 (1.1)	1.3 (0.2)	1.1 (0.4)	1.1 (0.1)	1.2 (0.1)	0.8 (0.2)	1 (0.2)	1.2 (0.2)	1.2 (0.2)	1.5 (0.3)	1.3 (0.2)
Rec. African American	15.8 (0.4)	15.8 (1.4)	15 (0.7)	16 (0.4)	15 (1.6)	15.8 (0.6)	14.9 (0.4)	15.5 (1.2)	15.3 (1)	15.2 (0.4)	15.1 (0.8)
Rec. Hispanic	9.8 (0.8)	9.2 (0.9)	10.5 (0.4)	9.3 (0.5)	9.2 (0.5)	9.6 (0.7)	9.5 (0.7)	9.2 (0.5)	9.2 (0.8)	9.5 (0.4)	10 (0.8)
Rec. Caucasian	72.4 (3.1)	72.9 (1.2)	72.7 (0.5)	72.6 (0.9)	74.1 (1.4)	72.9 (3)	73.7 (0.1)	73.4 (1.1)	73.4 (0.6)	73.2 (1.4)	72.4 (0.9)
Rec. Other/Missing	2 (0.1)	2.1 (0.6)	1.8 (0.1)	2.1 (0.1)	1.6 (0.5)	1.7 (0.1)	1.9 (0.7)	1.9 (0.2)	2 (0.4)	2 (0.3)	2.4 (0.3)
Rec. ABO = A	33.7 (2.1)	33 (1.1)	32.2 (0.2)	31.6 (0.6)	33 (0.7)	32.5 (0.9)	32.8 (1.1)	32.9 (0.5)	32.6 (0.6)	33.7 (1.8)	32.1 (0.6)
Rec. ABO = AB	2.7 (0.5)	2.8 (0.5)	3.3 (0.2)	3 (0.5)	2.6 (0.6)	2.9 (0.5)	3.1 (0.3)	3.1 (0.1)	2.9 (0.2)	2.9 (0.3)	3.3 (0.2)
Rec. ABO = B	7.1 (1)	6.8 (0.5)	6.8 (0.9)	7.5 (0.1)	7.6 (0.8)	7.1 (1.5)	7.2 (1)	7.1 (0.1)	7.2 (0.7)	7.8 (0.2)	7.4 (0.8)
Rec. ABO = O	56.5 (1.3)	57.3 (0.6)	57.7 (0.6)	58 (1)	56.8 (0.8)	57.6 (0.8)	57 (1.1)	56.9 (1.6)	57.4 (0.6)	55.7 (0.6)	57.3 (1)
Rec. < 18	0.1 (0.1)	0.1 (0.1)	0.1 (0)	0.1 (0)		0.2 (0.1)	0.2 (0.1)	0.1 (0.1)	0.2 (0.1)	0.1 (0)	0.1 (0)
Rec. 18-34	24.1 (1)	25.3 (0.3)	24.9 (0.5)	24.9 (1.2)	24.7 (1.3)	23.7 (1.2)	23.7 (0.5)	25 (1)	25.1 (0.7)	25.4 (0.9)	25.2 (0.3)
Rec. 35-49	60.7 (1.8)	58.9 (1.5)	59.4 (0.2)	59.4 (1.1)	59.5 (1.3)	59.5 (4.1)	59.8 (0.3)	58.6 (0.6)	58.3 (1.6)	59.5 (1.5)	58.9 (1.7)
Rec. 50-64	14.8 (1.2)	15.4 (0.1)	15.5 (1)	15.5 (1.4)	15.5 (0.6)	16.6 (0.9)	16.3 (0.9)	16.3 (0.8)	16.4 (0.5)	14.9 (0.7)	15.6 (0.2)
Rec. 65+	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)	0.1 (0)	0.3 (0.1)	0.1 (0)	0.2 (0.1)	0.1 (0)	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)
Rec. Dgn.: Glomerular											
Rec. Dgn.: HTN											
Rec. Dgn.: Polycystic											

Prepared by the Scientific Registry of Transplant Recipients

SPK	Run 1: Current national allocatn. system	Run 16a: LYFT no HLA A,B, Dgn PKD /DM/Oth	Run 18c: Cont DPI	Run 18d: Cont DPI^2	Run 18e: Cont DPI^3	Run 21a: Quint: LYFT v. DPI	Run 21b: Quint: PT v. DPI	Run 21c: Quint: PT v. DPI + PRA80	Run 21e: Dec: PT v. DPI + PRA80	Run 22a: Cont age match	Run 24: LYFT + 0.5 DY (SCD)
Rec. Dgn.: Renovascular											
Rec. Dgn.: Oth/Missing											
Rec. Dgn.: DM (KI)											
Rec. Dgn.: DM (KI) <50											
Rec. Dgn.: DM (KI) 50+											
Rec. Dgn.: DM (PA)											
Rec. Dgn.: DM (KP)	100 (3.4)	100 (1.2)	100 (0.6)	100 (1.1)	100 (1.3)	100 (3)	100 (0.4)	100 (1.2)	100 (1.3)	100 (1.2)	100 (1.8)
Rec. Peak PRA Missing	9.1 (0.4)	9.4 (0.3)	9.7 (0.5)	9.5 (0.5)	10 (0.5)	9.1 (0.3)	9.5 (0.6)	9.1 (0.2)	8.8 (0.7)	8.3 (0.3)	9.3 (0.2)
Rec. Peak PRA <10	75.7 (1.9)	76.2 (1.2)	75.8 (0.9)	76.3 (1.3)	76.8 (1.2)	75.2 (2.2)	75.1 (0.5)	73.5 (1)	74.9 (1.1)	75.4 (1.6)	76.7 (1.9)
Rec. Peak PRA 10-80	10.5 (0.5)	10 (0.5)	9.3 (0.6)	9.5 (1.6)	8.6 (0.7)	10.2 (0.5)	10.5 (0.6)	10.5 (0.6)	10.4 (0.8)	11.3 (1.3)	9.7 (0.8)
Rec. Peak PRA 80+	4.8 (0.8)	4.3 (0.8)	5.2 (0.1)	4.7 (0.8)	4.5 (0.4)	5.5 (0.6)	4.8 (0.5)	6.9 (0.8)	5.9 (0.1)	4.9 (0.5)	4.4 (0.5)
Shared - payback	0.5 (0.1)										
Shared - nonpayback	15.7 (2.2)	14.8 (0.6)	14.4 (1.3)	12.8 (1.7)	14.7 (1.3)	13.1 (0.9)	11.7 (0.9)	12.7 (0.7)	13 (1.3)	13 (0.6)	14.3 (1.1)
Total # of transplants	946	951	965	957	972	1013	984	1003	1025	1122	963
Don/Rec. age correlation	0.5%	-0.9%	-3.4%	-2.5%	3.0%	1.1%	-0.6%	0.3%	4.0%	8.6%	-2.6%

Prepared by the Scientific Registry of Transplant Recipients

Transplant Counts Total Kidney Alone

	Run 1: Current national allocatn. system	Run 16a: LYFT no HLA A,B, Dgn PKD /DM/Oth	Run 18c: Cont DPI	Run 18d: Cont DPI^2	Run 18e: Cont DPI^3	Run 21a: Quint: LYFT v. DPI	Run 21b: Quint: PT v. DPI	Run 21c: Quint: PT v. DPI + PRA80	Run 21e: Dec: PT v. DPI + PRA80	Run 22a: Cont age match	Run 24: LYFT + 0.5 DY (SCD)
Total KI											
2 A MM	3934 (32)	4358 (31)	4313 (27)	4269 (20)	4306 (31)	4249 (86)	4344 (74)	4277 (64)	4200 (49)	4281 (15)	4349 (12)
1 A MM	2992 (20)	3623 (44)	3466 (33)	3583 (11)	3571 (24)	3611 (60)	3609 (33)	3470 (31)	3497 (54)	3643 (29)	3568 (36)
0 A MM	1352 (11)	684 (32)	685 (19)	661 (19)	682 (14)	641 (27)	616 (16)	654 (11)	653 (5)	608 (12)	660 (23)
2 B MM	5298 (9)	6018 (34)	5870 (22)	5873 (35)	5895 (23)	5918 (32)	5941 (35)	5817 (31)	5776 (36)	5919 (71)	5946 (12)
1 B MM	1925 (34)	2349 (25)	2295 (38)	2343 (8)	2352 (27)	2321 (17)	2343 (35)	2284 (40)	2284 (25)	2394 (37)	2325 (29)
0 B MM	1055 (8)	298 (13)	299 (21)	296 (8)	312 (17)	262 (18)	284 (6)	299 (21)	290 (23)	219 (4)	307 (16)
2 DR MM	2976 (45)	3696 (35)	3643 (57)	3619 (27)	3621 (21)	3810 (50)	3871 (49)	3805 (43)	3732 (36)	3840 (57)	3622 (52)
1 DR MM	3514 (75)	3899 (36)	3845 (38)	3868 (32)	3893 (23)	3788 (85)	3805 (101)	3676 (88)	3703 (20)	3834 (70)	3912 (30)
0 DR MM	1789 (27)	1070 (12)	977 (3)	1025 (46)	1045 (26)	904 (26)	892 (27)	919 (15)	915 (12)	858 (18)	1044 (38)
0 ABDR MM	927 (4)	101 (7)	117 (15)	115 (3)	112 (1)	75 (2)	80 (7)	111 (11)	108 (6)	21 (1)	106 (10)
Rec. African American	2689 (8)	2858 (9)	3109 (9)	2991 (33)	2955 (47)	2998 (26)	2972 (48)	2916 (66)	2842 (24)	2903 (37)	3115 (60)
Rec. Hispanic	1119 (22)	1286 (35)	1230 (13)	1254 (27)	1272 (15)	1172 (6)	1178 (15)	1163 (32)	1138 (10)	1198 (46)	1254 (13)
Rec. Caucasian	3928 (29)	3872 (64)	3545 (65)	3671 (8)	3717 (44)	3743 (39)	3818 (48)	3714 (33)	3758 (3)	3864 (97)	3608 (31)
Rec. Other/Missing	542 (17)	650 (24)	580 (3)	596 (25)	615 (11)	589 (6)	601 (19)	607 (19)	612 (21)	567 (30)	600 (9)
Rec. ABO = A	2974 (25)	2788 (19)	2734 (35)	2745 (10)	2759 (24)	2758 (12)	2742 (22)	2676 (35)	2712 (21)	2975 (12)	2771 (29)
Rec. ABO = AB	396 (27)	470 (7)	438 (19)	456 (14)	471 (5)	460 (11)	467 (22)	451 (10)	437 (13)	470 (9)	449 (14)
Rec. ABO = B	972 (6)	1178 (8)	1179 (15)	1174 (14)	1150 (7)	1163 (31)	1163 (12)	1157 (12)	1122 (23)	929 (14)	1171 (25)
Rec. ABO = O	3936 (29)	4230 (27)	4113 (15)	4137 (39)	4180 (14)	4121 (33)	4196 (31)	4116 (40)	4080 (5)	4158 (12)	4187 (9)
Rec. < 18	556 (9)	625 (7)	602 (12)	605 (18)	606 (2)	595 (6)	606 (15)	601 (16)	617 (5)	630 (16)	614 (19)
Rec. 18-34	1067 (42)	2918 (41)	2285 (32)	2715 (30)	2850 (33)	896 (5)	945 (27)	988 (5)	973 (10)	1805 (10)	2697 (15)
Rec. 35-49	2522 (25)	2689 (26)	2723 (53)	2663 (19)	2645 (31)	2349 (35)	2398 (55)	2420 (23)	2496 (36)	3011 (17)	2759 (35)
Rec. 50-64	3127 (31)	1893 (21)	2241 (27)	1992 (23)	1923 (32)	3507 (55)	3477 (23)	3340 (41)	3273 (27)	2630 (37)	1967 (42)
Rec. 65+	1007 (8)	539 (9)	613 (25)	538 (29)	535 (27)	1155 (22)	1143 (37)	1052 (14)	991 (27)	455 (6)	541 (24)
Rec. Dgn.: Glomerular	1927 (51)	2644 (21)	2404 (25)	2584 (13)	2633 (16)	1767 (38)	1796 (35)	1862 (16)	1830 (8)	2130 (17)	2544 (38)
Rec. Dgn.: HTN	1653 (46)	1927 (7)	1956 (36)	1917 (2)	1868 (20)	1813 (23)	1830 (17)	1787 (38)	1720 (4)	1704 (10)	1976 (18)
Rec. Dgn.: Polycystic	609 (33)	717 (8)	579 (9)	627 (11)	657 (17)	572 (19)	584 (28)	571 (12)	584 (14)	546 (7)	628 (12)

Prepared by the Scientific Registry of Transplant Recipients

	Run 1: Current national allocatn. system	Run 16a: LYFT no HLA A,B, Dgn PKD /DM/Oth	Run 18c: Cont DPI	Run 18d: Cont DPI^2	Run 18e: Cont DPI^3	Run 21a: Quint: LYFT v. DPI	Run 21b: Quint: PT v. DPI	Run 21c: Quint: PT v. DPI + PRA80	Run 21e: Dec: PT v. DPI + PRA80	Run 22a: Cont age match	Run 24: LYFT + 0.5 DY (SCD)
Total KI											
Rec. Dgn.: Renovascular	19 (7)	20 (2)	17 (2)	18 (2)	18 (4)	22 (1)	22 (1)	24 (2)	19 (3)	20 (2)	17 (4)
Rec. Dgn.: Oth/Missing	1881 (20)	2161 (34)	2144 (11)	2159 (61)	2177 (21)	1748 (36)	1782 (28)	1817 (10)	1824 (18)	1977 (38)	2242 (21)
Rec. Dgn.: DM (KI)											
Rec. Dgn.: DM (KI) <50	546 (29)	385 (4)	421 (15)	390 (24)	378 (22)	642 (11)	683 (16)	603 (28)	655 (18)	818 (17)	383 (6)
Rec. Dgn.: DM (KI) 50+	1643 (25)	811 (13)	942 (13)	817 (6)	828 (16)	1938 (65)	1870 (52)	1737 (47)	1718 (20)	1336 (23)	789 (21)
Rec. Dgn.: DM (PA)											
Rec. Dgn.: DM (KP)											
Rec. Peak PRA Missing	272 (4)	306 (4)	283 (2)	277 (8)	296 (1)	315 (2)	317 (10)	298 (8)	306 (11)	310 (13)	309 (13)
Rec. Peak PRA <10	5168 (19)	6422 (19)	5651 (35)	5855 (73)	5980 (16)	6018 (56)	6098 (29)	5773 (63)	5744 (34)	6176 (76)	6101 (43)
Rec. Peak PRA 10-80	1754 (29)	1527 (33)	1840 (41)	1750 (43)	1694 (19)	1689 (10)	1652 (12)	1531 (53)	1514 (22)	1642 (43)	1630 (22)
Rec. Peak PRA 80+	1085 (21)	410 (1)	690 (23)	630 (15)	589 (31)	480 (4)	502 (47)	798 (24)	787 (42)	404 (13)	538 (14)
Shared - payback	388 (11)										
Shared - nonpayback	1797 (29)	1364 (31)	1236 (36)	1243 (31)	1282 (5)	1280 (39)	1300 (36)	1217 (16)	1167 (44)	1081 (25)	1293 (9)
Total # of transplants	8279	8665	8464	8512	8559	8502	8568	8401	8350	8532	8578

Prepared by the Scientific Registry of Transplant Recipients

Transplant Counts ECD Kidney

ECD KI	Run 1: Current national allocatn. system	Run 16a: LYFT no HLA A,B, Dgn PKD /DM/Oth	Run 18c: Cont DPI	Run 18d: Cont DPI^2	Run 18e: Cont DPI^3	Run 21a: Quint: LYFT v. DPI	Run 21b: Quint: PT v. DPI	Run 21c: Quint: PT v. DPI + PRA80	Run 21e: Dec: PT v. DPI + PRA80	Run 22a: Cont age match	Run 24: LYFT + 0.5 DY (SCD)
2 A MM	776 (34)	838 (18)	812 (19)	818 (3)	833 (23)	815 (37)	808 (20)	829 (36)	838 (4)	841 (9)	836 (18)
1 A MM	604 (34)	675 (3)	684 (15)	672 (12)	691 (24)	675 (22)	694 (3)	670 (7)	669 (18)	731 (19)	675 (7)
0 A MM	193 (7)	113 (6)	119 (13)	107 (13)	110 (11)	113 (13)	111 (8)	115 (6)	105 (7)	124 (16)	111 (7)
2 B MM	1040 (34)	1119 (27)	1102 (15)	1100 (7)	1111 (18)	1090 (19)	1094 (12)	1112 (23)	1106 (26)	1164 (41)	1110 (22)
1 B MM	395 (23)	453 (24)	461 (26)	448 (9)	468 (4)	472 (7)	465 (15)	445 (14)	458 (20)	484 (20)	463 (24)
0 B MM	138 (4)	54 (12)	51 (5)	49 (5)	55 (6)	41 (4)	54 (4)	58 (6)	48 (3)	47 (1)	49 (7)
2 DR MM	651 (37)	723 (5)	698 (4)	690 (15)	702 (23)	684 (12)	700 (24)	699 (18)	693 (29)	733 (19)	702 (26)
1 DR MM	677 (22)	720 (10)	743 (16)	726 (11)	752 (26)	742 (28)	736 (46)	721 (44)	736 (30)	777 (36)	734 (25)
0 DR MM	245 (11)	183 (18)	173 (6)	182 (7)	180 (5)	177 (17)	177 (19)	195 (4)	184 (10)	186 (16)	186 (14)
0 ABDR MM	109 (4)	12 (2)	12 (3)	9 (2)	9 (1)	8 (3)	10 (3)	12 (2)	12 (1)	8 (2)	13 (2)
Rec. African American	513 (19)	552 (15)	542 (8)	550 (31)	563 (29)	550 (42)	564 (23)	549 (15)	543 (7)	542 (16)	558 (29)
Rec. Hispanic	189 (15)	196 (17)	194 (10)	185 (4)	200 (8)	192 (3)	183 (2)	192 (10)	188 (15)	181 (14)	191 (4)
Rec. Caucasian	760 (10)	759 (25)	764 (27)	754 (9)	752 (30)	744 (16)	753 (16)	749 (21)	753 (14)	845 (25)	756 (28)
Rec. Other/Missing	110 (14)	119 (5)	115 (13)	109 (8)	118 (5)	117 (13)	113 (18)	125 (5)	128 (11)	128 (4)	116 (18)
Rec. ABO = A	567 (15)	524 (4)	527 (28)	523 (9)	537 (22)	534 (0)	527 (13)	521 (21)	531 (19)	606 (18)	533 (32)
Rec. ABO = AB	83 (4)	79 (6)	72 (9)	80 (9)	82 (5)	82 (7)	80 (6)	79 (10)	73 (6)	89 (5)	74 (18)
Rec. ABO = B	149 (6)	206 (7)	200 (4)	193 (8)	188 (11)	187 (11)	186 (13)	195 (5)	187 (8)	151 (9)	195 (7)
Rec. ABO = O	774 (11)	816 (13)	816 (6)	802 (24)	828 (10)	799 (9)	820 (11)	820 (24)	821 (11)	851 (12)	821 (19)
Rec. < 18	2 (1)							1 (0)	1 (0)	2 (1)	
Rec. 18-34	141 (6)	124 (16)	124 (9)	108 (6)	122 (3)	134 (15)	157 (12)	139 (8)	147 (6)	35 (4)	109 (11)
Rec. 35-49	415 (8)	429 (12)	415 (18)	425 (13)	399 (25)	412 (16)	420 (8)	412 (19)	409 (17)	236 (19)	418 (22)
Rec. 50-64	719 (24)	744 (10)	759 (41)	748 (3)	786 (9)	753 (24)	734 (20)	757 (18)	755 (21)	1110 (16)	760 (28)
Rec. 65+	298 (15)	328 (16)	317 (21)	316 (25)	327 (16)	303 (3)	302 (13)	305 (18)	301 (31)	313 (4)	334 (4)
Rec. Dgn.: Glomerular	292 (3)	284 (14)	303 (6)	290 (14)	302 (16)	292 (12)	293 (17)	309 (25)	288 (18)	237 (14)	292 (8)
Rec. Dgn.: HTN	349 (12)	372 (17)	345 (6)	344 (12)	341 (13)	361 (16)	351 (16)	361 (16)	346 (14)	339 (25)	353 (25)
Rec. Dgn.: Polycystic	108 (9)	106 (1)	114 (6)	117 (3)	121 (11)	123 (4)	119 (12)	107 (6)	115 (8)	136 (7)	128 (16)

Prepared by the Scientific Registry of Transplant Recipients

ECD KI	Run 1: Current national allocatn. system	Run 16a: LYFT no HLA A,B, Dgn PKD /DM/Oth	Run 18c: Cont DPI	Run 18d: Cont DPI^2	Run 18e: Cont DPI^3	Run 21a: Quint: LYFT v. DPI	Run 21b: Quint: PT v. DPI	Run 21c: Quint: PT v. DPI + PRA80	Run 21e: Dec: PT v. DPI + PRA80	Run 22a: Cont age match	Run 24: LYFT + 0.5 DY (SCD)
Rec. Dgn.: Renovascular	4 (3)	6 (2)	3 (1)	6 (1)	5 (1)	4 (2)	5 (2)	6 (1)	5 (2)	6 (1)	4 (2)
Rec. Dgn.: Oth/Missing	271 (7)	281 (19)	274 (6)	273 (12)	278 (19)	274 (19)	298 (14)	294 (10)	304 (17)	253 (19)	273 (14)
Rec. Dgn.: DM (KI)											
Rec. Dgn.: DM (KI) <50	103 (4)	105 (20)	108 (10)	105 (2)	104 (3)	102 (12)	106 (9)	94 (6)	109 (11)	63 (5)	105 (10)
Rec. Dgn.: DM (KI) 50+	445 (7)	472 (24)	467 (22)	461 (5)	484 (21)	447 (18)	441 (6)	444 (9)	446 (13)	661 (20)	467 (24)
Rec. Dgn.: DM (PA)											
Rec. Dgn.: DM (KP)											
Rec. Peak PRA Missing	67 (4)	84 (8)	87 (5)	75 (7)	87 (5)	86 (5)	90 (5)	87 (12)	86 (3)	85 (12)	86 (8)
Rec. Peak PRA <10	1060 (21)	1098 (9)	1076 (22)	1080 (8)	1104 (17)	1079 (15)	1077 (20)	1096 (27)	1086 (8)	1237 (37)	1109 (12)
Rec. Peak PRA 10-80	339 (22)	348 (15)	354 (10)	345 (10)	343 (17)	334 (10)	340 (15)	339 (16)	341 (12)	315 (18)	332 (5)
Rec. Peak PRA 80+	107 (18)	96 (5)	98 (12)	97 (18)	101 (7)	103 (7)	106 (11)	93 (1)	100 (12)	60 (6)	95 (8)
Shared - payback	81 (13)										
Shared - nonpayback	438 (13)	351 (6)	354 (8)	333 (11)	354 (27)	352 (24)	357 (6)	340 (7)	344 (12)	383 (21)	340 (24)
Total # of transplants	1573	1626	1615	1597	1634	1602	1613	1615	1612	1696	1622

Prepared by the Scientific Registry of Transplant Recipients

Transplant Counts SCD Kidney

SCD KI	Run 1: Current national allocatn. system	Run 16a: LYFT no HLA A,B, Dgn PKD /DM/Oth	Run 18c: Cont DPI	Run 18d: Cont DPI^2	Run 18e: Cont DPI^3	Run 21a: Quint: LYFT v. DPI	Run 21b: Quint: PT v. DPI	Run 21c: Quint: PT v. DPI + PRA80	Run 21e: Dec: PT v. DPI + PRA80	Run 22a: Cont age match	Run 24: LYFT + 0.5 DY (SCD)
2 A MM	3159 (13)	3521 (48)	3501 (44)	3451 (18)	3473 (11)	3434 (52)	3535 (60)	3448 (35)	3362 (52)	3440 (10)	3513 (28)
1 A MM	2388 (46)	2948 (47)	2782 (44)	2910 (23)	2880 (15)	2937 (39)	2915 (30)	2799 (31)	2828 (48)	2912 (10)	2894 (32)
0 A MM	1159 (14)	570 (29)	566 (18)	554 (10)	572 (6)	529 (26)	505 (10)	538 (17)	548 (12)	484 (6)	549 (19)
2 B MM	4258 (25)	4899 (39)	4768 (19)	4773 (37)	4784 (12)	4829 (14)	4847 (29)	4705 (9)	4670 (28)	4755 (31)	4836 (17)
1 B MM	1530 (18)	1895 (45)	1834 (30)	1895 (11)	1884 (28)	1850 (18)	1878 (26)	1839 (26)	1826 (19)	1909 (18)	1862 (5)
0 B MM	917 (9)	245 (12)	248 (17)	247 (11)	257 (12)	221 (18)	230 (3)	242 (17)	241 (25)	172 (3)	258 (13)
2 DR MM	2325 (11)	2973 (31)	2945 (60)	2929 (20)	2918 (6)	3126 (38)	3171 (43)	3106 (33)	3039 (63)	3107 (39)	2920 (28)
1 DR MM	2837 (60)	3179 (42)	3102 (33)	3143 (28)	3141 (25)	3046 (65)	3069 (65)	2955 (51)	2968 (43)	3057 (46)	3178 (10)
0 DR MM	1544 (38)	887 (6)	803 (4)	843 (41)	866 (22)	727 (20)	715 (9)	724 (12)	731 (15)	672 (3)	857 (28)
0 ABDR MM	818 (5)	89 (5)	105 (13)	106 (4)	102 (2)	67 (2)	69 (5)	98 (13)	95 (5)	13 (1)	93 (9)
Rec. African American	2176 (15)	2306 (16)	2567 (11)	2441 (15)	2392 (40)	2448 (16)	2407 (26)	2367 (55)	2299 (28)	2361 (34)	2557 (35)
Rec. Hispanic	930 (27)	1090 (18)	1037 (21)	1069 (28)	1072 (16)	980 (4)	996 (16)	971 (24)	950 (16)	1017 (34)	1063 (15)
Rec. Caucasian	3168 (24)	3113 (40)	2781 (48)	2917 (16)	2965 (55)	2999 (40)	3064 (36)	2965 (29)	3004 (15)	3018 (74)	2852 (20)
Rec. Other/Missing	432 (8)	531 (20)	465 (14)	488 (18)	496 (8)	472 (15)	488 (10)	483 (14)	484 (10)	439 (26)	484 (20)
Rec. ABO = A	2407 (18)	2263 (15)	2207 (15)	2222 (8)	2222 (24)	2224 (12)	2215 (11)	2155 (20)	2180 (25)	2369 (6)	2239 (8)
Rec. ABO = AB	313 (23)	391 (12)	367 (12)	376 (12)	389 (5)	378 (5)	387 (23)	371 (6)	364 (19)	381 (6)	375 (14)
Rec. ABO = B	824 (7)	972 (2)	978 (17)	982 (6)	962 (5)	976 (21)	977 (16)	962 (9)	935 (28)	778 (16)	976 (19)
Rec. ABO = O	3162 (40)	3413 (20)	3298 (19)	3335 (15)	3352 (13)	3321 (24)	3376 (28)	3297 (17)	3259 (9)	3307 (2)	3366 (10)
Rec. < 18	555 (9)	625 (7)	602 (13)	604 (19)	606 (1)	595 (6)	606 (15)	600 (16)	617 (5)	629 (15)	614 (19)
Rec. 18-34	926 (38)	2795 (42)	2162 (38)	2607 (35)	2728 (31)	762 (20)	788 (15)	849 (12)	826 (6)	1770 (8)	2588 (11)
Rec. 35-49	2107 (19)	2260 (29)	2308 (50)	2238 (32)	2246 (8)	1937 (44)	1978 (58)	2008 (24)	2087 (48)	2775 (4)	2340 (22)
Rec. 50-64	2408 (20)	1149 (13)	1482 (22)	1244 (25)	1137 (25)	2754 (37)	2743 (40)	2583 (56)	2518 (39)	1520 (22)	1206 (15)
Rec. 65+	709 (16)	211 (25)	296 (6)	222 (7)	208 (13)	852 (19)	841 (24)	747 (23)	690 (8)	142 (8)	207 (22)
Rec. Dgn.: Glomerular	1635 (51)	2360 (35)	2101 (22)	2294 (19)	2332 (31)	1475 (32)	1503 (28)	1553 (37)	1542 (17)	1893 (7)	2252 (43)
Rec. Dgn.: HTN	1303 (36)	1555 (16)	1610 (39)	1573 (13)	1527 (24)	1452 (13)	1479 (21)	1425 (33)	1374 (15)	1365 (23)	1623 (12)
Rec. Dgn.: Polycystic	501 (25)	612 (8)	465 (7)	509 (14)	536 (6)	449 (17)	465 (16)	464 (9)	469 (6)	410 (4)	500 (15)

Prepared by the Scientific Registry of Transplant Recipients

SCD KI	Run 1: Current national allocatn. system	Run 16a: LYFT no HLA A,B, Dgn PKD /DM/Oth	Run 18c: Cont DPI	Run 18d: Cont DPI^2	Run 18e: Cont DPI^3	Run 21a: Quint: LYFT v. DPI	Run 21b: Quint: PT v. DPI	Run 21c: Quint: PT v. DPI + PRA80	Run 21e: Dec: PT v. DPI + PRA80	Run 22a: Cont age match	Run 24: LYFT + 0.5 DY (SCD)
Rec. Dgn.: Renovascular	16 (5)	14 (2)	14 (1)	12 (1)	13 (3)	18 (3)	17 (1)	18 (2)	14 (3)	14 (2)	13 (2)
Rec. Dgn.: Oth/Missing	1609 (17)	1880 (16)	1870 (12)	1886 (72)	1899 (17)	1474 (21)	1485 (15)	1523 (10)	1520 (2)	1724 (19)	1969 (30)
Rec. Dgn.: DM (KI)											
Rec. Dgn.: DM (KI) <50	443 (25)	280 (17)	314 (6)	285 (21)	274 (19)	540 (13)	577 (25)	509 (26)	546 (8)	755 (13)	278 (4)
Rec. Dgn.: DM (KI) 50+	1198 (18)	339 (14)	475 (9)	356 (2)	344 (6)	1491 (47)	1430 (57)	1294 (46)	1272 (9)	675 (20)	321 (10)
Rec. Dgn.: DM (PA)											
Rec. Dgn.: DM (KP)											
Rec. Peak PRA Missing	204 (3)	222 (8)	196 (3)	202 (4)	209 (4)	228 (4)	227 (11)	211 (6)	220 (14)	226 (15)	223 (8)
Rec. Peak PRA <10	4108 (35)	5324 (10)	4575 (13)	4775 (66)	4876 (24)	4939 (53)	5021 (23)	4677 (48)	4658 (28)	4939 (62)	4992 (45)
Rec. Peak PRA 10-80	1415 (14)	1179 (29)	1487 (36)	1405 (35)	1351 (5)	1355 (19)	1312 (20)	1192 (43)	1173 (14)	1327 (60)	1298 (27)
Rec. Peak PRA 80+	979 (33)	314 (4)	592 (11)	533 (5)	488 (25)	377 (5)	395 (39)	705 (23)	686 (37)	345 (8)	443 (19)
Shared - payback	307 (10)										
Shared - nonpayback	1360 (23)	1013 (37)	882 (30)	909 (21)	928 (29)	928 (16)	943 (30)	877 (9)	822 (33)	697 (5)	952 (24)
Total # of transplants	6706	7039	6850	6915	6925	6899	6955	6786	6738	6836	6956

Prepared by the Scientific Registry of Transplant Recipients

Transplant Counts Simultaneous Kidney/Pancreas

SPK	Run 1: Current national allocatn. system	Run 16a: LYFT no HLA A,B, Dgn PKD /DM/Oth	Run 18c: Cont DPI	Run 18d: Cont DPI^2	Run 18e: Cont DPI^3	Run 21a: Quint: LYFT v. DPI	Run 21b: Quint: PT v. DPI	Run 21c: Quint: PT v. DPI + PRA80	Run 21e: Dec: PT v. DPI + PRA80	Run 22a: Cont age match	Run 24: LYFT + 0.5 DY (SCD)
2 A MM	465 (23)	477 (5)	489 (10)	498 (22)	495 (21)	519 (11)	480 (19)	497 (19)	514 (6)	576 (14)	489 (34)
1 A MM	363 (2)	397 (9)	397 (7)	389 (19)	407 (26)	421 (25)	426 (11)	427 (18)	426 (13)	452 (9)	406 (26)
0 A MM	118 (11)	77 (3)	80 (9)	71 (8)	69 (7)	74 (11)	78 (7)	80 (7)	86 (2)	95 (1)	69 (2)
2 B MM	647 (23)	694 (21)	712 (9)	689 (8)	696 (9)	728 (24)	715 (10)	711 (7)	722 (14)	807 (14)	695 (13)
1 B MM	234 (16)	233 (16)	227 (3)	242 (16)	247 (9)	264 (6)	242 (11)	264 (14)	275 (8)	280 (2)	240 (8)
0 B MM	64 (9)	24 (7)	25 (5)	26 (4)	28 (2)	21 (7)	28 (3)	28 (3)	29 (4)	35 (4)	28 (4)
2 DR MM	475 (14)	490 (7)	500 (4)	489 (14)	498 (14)	543 (8)	514 (1)	511 (12)	517 (4)	583 (13)	510 (9)
1 DR MM	374 (15)	400 (7)	405 (6)	406 (20)	415 (19)	412 (24)	410 (8)	424 (9)	449 (17)	465 (34)	396 (20)
0 DR MM	97 (7)	61 (2)	61 (3)	62 (8)	58 (7)	59 (4)	60 (9)	68 (6)	60 (5)	75 (7)	57 (3)
0 ABDR MM	52 (11)	12 (2)	10 (4)	10 (1)	12 (1)	8 (2)	10 (2)	12 (2)	12 (2)	17 (3)	13 (2)
Rec. African American	149 (4)	150 (14)	145 (7)	153 (4)	146 (16)	160 (6)	147 (4)	156 (12)	157 (11)	171 (4)	146 (8)
Rec. Hispanic	92 (8)	88 (9)	101 (4)	89 (5)	90 (5)	98 (7)	93 (7)	92 (5)	95 (8)	107 (5)	97 (8)
Rec. Caucasian	685 (29)	693 (11)	701 (5)	695 (8)	720 (13)	738 (30)	726 (1)	736 (11)	753 (6)	822 (16)	698 (8)
Rec. Other/Missing	19 (1)	20 (6)	18 (1)	20 (1)	16 (5)	18 (1)	19 (7)	19 (2)	21 (4)	23 (3)	23 (3)
Rec. ABO = A	319 (19)	314 (11)	311 (2)	303 (6)	320 (7)	329 (9)	322 (11)	330 (6)	334 (6)	378 (20)	309 (6)
Rec. ABO = AB	26 (5)	27 (5)	32 (2)	28 (5)	26 (6)	29 (5)	30 (3)	31 (1)	29 (3)	32 (3)	31 (2)
Rec. ABO = B	67 (9)	65 (4)	66 (9)	71 (1)	74 (8)	72 (15)	71 (10)	71 (1)	73 (7)	88 (2)	71 (8)
Rec. ABO = O	534 (13)	545 (6)	557 (6)	555 (10)	552 (8)	583 (9)	561 (10)	571 (16)	589 (6)	625 (7)	552 (10)
Rec. < 18	1 (1)	1 (1)	1 (0)	1 (0)	#VALUE!	2 (1)	2 (1)	1 (1)	2 (1)	1 (0)	1 (0)
Rec. 18-34	228 (10)	241 (3)	240 (5)	239 (11)	240 (13)	240 (12)	233 (5)	250 (10)	257 (8)	285 (10)	243 (3)
Rec. 35-49	574 (17)	560 (14)	573 (2)	568 (11)	579 (12)	603 (41)	588 (3)	588 (6)	597 (16)	668 (17)	567 (16)
Rec. 50-64	140 (11)	146 (1)	150 (10)	149 (13)	151 (6)	168 (9)	160 (9)	163 (8)	168 (6)	167 (7)	151 (2)
Rec. 65+	2 (1)	2 (1)	2 (1)	1 (0)	3 (1)	1 (0)	2 (1)	1 (0)	2 (1)	2 (1)	1 (1)
Rec. Dgn.: Glomerular											
Rec. Dgn.: HTN											
Rec. Dgn.: Polycystic											

Prepared by the Scientific Registry of Transplant Recipients

SPK	Run 1: Current national allocatn. system	Run 16a: LYFT no HLA A,B, Dgn PKD /DM/Oth	Run 18c: Cont DPI	Run 18d: Cont DPI^2	Run 18e: Cont DPI^3	Run 21a: Quint: LYFT v. DPI	Run 21b: Quint: PT v. DPI	Run 21c: Quint: PT v. DPI + PRA80	Run 21e: Dec: PT v. DPI + PRA80	Run 22a: Cont age match	Run 24: LYFT + 0.5 DY (SCD)
Rec. Dgn.: Renovascular											
Rec. Dgn.: Oth/Missing											
Rec. Dgn.: DM (KI)											
Rec. Dgn.: DM (KI) <50											
Rec. Dgn.: DM (KI) 50+											
Rec. Dgn.: DM (PA)											
Rec. Dgn.: DM (KP)	946 (32)	951 (12)	965 (6)	957 (11)	972 (13)	1013 (30)	984 (3)	1003 (12)	1025 (13)	1122 (13)	963 (18)
Rec. Peak PRA Missing	86 (4)	90 (3)	93 (5)	91 (5)	98 (5)	93 (3)	94 (6)	91 (2)	91 (7)	94 (3)	90 (2)
Rec. Peak PRA <10	716 (18)	725 (11)	732 (9)	731 (13)	747 (12)	761 (22)	739 (5)	737 (10)	768 (11)	846 (18)	738 (19)
Rec. Peak PRA 10-80	99 (4)	95 (5)	90 (6)	91 (15)	84 (7)	104 (5)	104 (6)	105 (6)	107 (9)	127 (14)	93 (8)
Rec. Peak PRA 80+	45 (8)	41 (7)	50 (1)	45 (8)	43 (4)	56 (6)	48 (5)	69 (8)	60 (1)	55 (6)	42 (5)
Shared - payback	5 (1)										
Shared - nonpayback	149 (21)	141 (6)	139 (13)	123 (17)	143 (13)	133 (9)	115 (9)	128 (7)	133 (13)	145 (7)	138 (11)
Total # of transplants	946	951	965	957	972	1013	984	1003	1025	1122	963

Prepared by the Scientific Registry of Transplant Recipients

Average Years of Benefit Total Kidney Alone

Total KI	Run 1: Current national allocatn. system	Run 16a: LYFT no HLA A,B, Dgn PKD /DM/Oth	Run 18c: Cont DPI	Run 18d: Cont DPI^2	Run 18e: Cont DPI^3	Run 21a: Quint: LYFT v. DPI	Run 21b: Quint: PT v. DPI	Run 21c: Quint: PT v. DPI + PRA80	Run 21e: Dec: PT v. DPI + PRA80	Run 22a: Cont age match	Run 24: LYFT + 0.5 DY (SCD)
2 A MM	5.3 (0)	6.3 (0)	5.9 (0)	6.1 (0)	6.2 (0)	5 (0)	5.1 (0.1)	5.1 (0)	5.2 (0)	5.9 (0)	6.2 (0)
1 A MM	5.2 (0.1)	6.3 (0)	6 (0.1)	6.2 (0)	6.3 (0)	5.1 (0)	5.2 (0.1)	5.2 (0.1)	5.3 (0)	6 (0)	6.2 (0)
0 A MM	5.3 (0)	6.6 (0.1)	6.4 (0.1)	6.6 (0.1)	6.6 (0)	5.5 (0)	5.6 (0.1)	5.6 (0)	5.7 (0.1)	6 (0.1)	6.5 (0)
2 B MM	5.3 (0)	6.3 (0)	5.9 (0)	6.2 (0)	6.2 (0)	5.1 (0)	5.1 (0)	5.1 (0)	5.3 (0)	5.9 (0)	6.2 (0)
1 B MM	5.3 (0)	6.4 (0)	6 (0.1)	6.3 (0)	6.3 (0)	5.2 (0.1)	5.2 (0)	5.3 (0.1)	5.4 (0.1)	6 (0)	6.2 (0)
0 B MM	5.2 (0)	6.7 (0.1)	6.5 (0.2)	6.6 (0)	6.5 (0.2)	5.7 (0.2)	5.5 (0.2)	5.8 (0.3)	6 (0.1)	5.7 (0.1)	6.5 (0.1)
2 DR MM	5.2 (0)	6.2 (0)	5.8 (0)	6.1 (0)	6.1 (0)	5 (0)	5 (0)	5.1 (0)	5.2 (0.1)	5.9 (0)	6.1 (0)
1 DR MM	5.3 (0)	6.4 (0)	6 (0)	6.2 (0)	6.3 (0)	5.2 (0)	5.2 (0)	5.3 (0.1)	5.4 (0)	6 (0)	6.3 (0)
0 DR MM	5.3 (0)	6.6 (0.1)	6.3 (0)	6.5 (0.1)	6.5 (0.1)	5.5 (0.1)	5.5 (0)	5.5 (0)	5.7 (0.1)	6 (0.1)	6.4 (0.1)
0 ABDR MM	5.2 (0)	7.7 (0.2)	7.6 (0.3)	7.5 (0.2)	7.3 (0.2)	7.5 (0.4)	7.2 (0.4)	7 (0.4)	7.1 (0.3)	5.5 (0.1)	7.3 (0.4)
Rec. African American	5.2 (0)	6.3 (0)	5.9 (0)	6.1 (0)	6.2 (0)	5.1 (0)	5.1 (0)	5.2 (0)	5.3 (0)	5.9 (0)	6.2 (0)
Rec. Hispanic	5.8 (0.1)	7 (0)	6.6 (0.1)	6.9 (0.1)	6.9 (0.1)	5.6 (0.1)	5.7 (0.1)	5.7 (0.1)	5.9 (0)	6.6 (0.1)	6.8 (0)
Rec. Caucasian	5.2 (0)	6.1 (0)	5.8 (0)	6 (0)	6.1 (0)	5.1 (0)	5.1 (0)	5.1 (0)	5.2 (0)	5.7 (0)	6 (0)
Rec. Other/Missing	5.1 (0.1)	6.4 (0)	5.9 (0.1)	6.3 (0)	6.3 (0)	4.9 (0)	5.1 (0.1)	5 (0.1)	5.1 (0.1)	5.9 (0.1)	6.3 (0.1)
Rec. ABO = A	5.2 (0)	6.3 (0)	5.9 (0)	6.1 (0)	6.2 (0)	5.1 (0)	5.2 (0)	5.3 (0)	5.4 (0)	5.8 (0)	6.1 (0)
Rec. ABO = AB	5 (0.1)	6 (0)	5.6 (0)	5.9 (0)	5.9 (0.1)	5 (0)	4.9 (0)	5.1 (0)	5.1 (0.1)	5.5 (0)	5.8 (0.1)
Rec. ABO = B	5.1 (0)	6.1 (0)	5.7 (0)	5.9 (0.1)	6 (0.1)	4.8 (0.1)	4.9 (0.1)	5 (0.1)	5 (0)	5.8 (0)	6 (0.1)
Rec. ABO = O	5.3 (0)	6.5 (0)	6.1 (0)	6.4 (0)	6.4 (0)	5.2 (0)	5.2 (0)	5.3 (0)	5.4 (0)	6.1 (0)	6.4 (0)
Rec. < 18	12.3 (0)	12.3 (0)	12.3 (0)	12.3 (0)	12.3 (0)	12.3 (0)	12.3 (0)	12.3 (0)	12.3 (0)	12.3 (0.1)	12.3 (0.1)
Rec. 18-34	7.2 (0)	7.2 (0)	7.3 (0)	7.3 (0)	7.2 (0)	7.3 (0)	7.3 (0)	7.3 (0)	7.2 (0)	7.3 (0)	7.3 (0)
Rec. 35-49	5.9 (0)	6.4 (0)	6.1 (0)	6.2 (0)	6.3 (0)	5.9 (0)	5.9 (0)	5.9 (0)	6 (0)	6 (0)	6.2 (0)
Rec. 50-64	3.9 (0)	4.2 (0)	3.9 (0)	4 (0)	4 (0)	3.8 (0)	3.9 (0)	3.8 (0)	3.9 (0)	3.9 (0)	4 (0)
Rec. 65+	2.2 (0)	2.1 (0.1)	2 (0)	2 (0)	2.1 (0)	2.1 (0)	2.1 (0)	2.1 (0)	2.1 (0)	2.1 (0.1)	2.1 (0)
Rec. Dgn.: Glomerular	6.3 (0)	7 (0)	6.8 (0)	6.9 (0)	7 (0)	6.4 (0)	6.4 (0.1)	6.4 (0)	6.5 (0)	6.9 (0.1)	6.9 (0)
Rec. Dgn.: HTN	4.8 (0)	5.8 (0)	5.4 (0)	5.7 (0)	5.7 (0)	4.8 (0)	4.8 (0)	4.8 (0)	4.9 (0)	5.6 (0.1)	5.7 (0)
Rec. Dgn.: Polycystic	5 (0)	5.6 (0.1)	5.3 (0.1)	5.4 (0)	5.5 (0)	4.9 (0.1)	5 (0.1)	4.9 (0)	5 (0.1)	5.3 (0)	5.4 (0)

Prepared by the Scientific Registry of Transplant Recipients

	Run 1: Current national allocatn. system	Run 16a: LYFT no HLA A,B, Dgn PKD /DM/Oth	Run 18c: Cont DPI	Run 18d: Cont DPI^2	Run 18e: Cont DPI^3	Run 21a: Quint: LYFT v. DPI	Run 21b: Quint: PT v. DPI	Run 21c: Quint: PT v. DPI + PRA80	Run 21e: Dec: PT v. DPI + PRA80	Run 22a: Cont age match	Run 24: LYFT + 0.5 DY (SCD)
Total KI											
Rec. Dgn.: Renovascular	5.7 (0.7)	6.5 (0.4)	6.8 (0.5)	6 (0.3)	6.4 (0.6)	6 (0.4)	5.7 (0.3)	5.7 (0.5)	6.5 (0.3)	6.1 (0.3)	6.3 (0.1)
Rec. Dgn.: Oth/Missing	7 (0)	7.7 (0.1)	7.4 (0)	7.6 (0)	7.7 (0.1)	7 (0)	7 (0)	7 (0.1)	7.1 (0)	7.6 (0)	7.6 (0)
Rec. Dgn.: DM (KI)											
Rec. Dgn.: DM (KI) <50	4.9 (0)	5.4 (0.1)	5.1 (0)	5.3 (0.1)	5.3 (0)	5 (0)	5 (0)	5 (0.1)	5.1 (0)	5.3 (0)	5.2 (0.1)
Rec. Dgn.: DM (KI) 50+	2.7 (0)	2.7 (0.1)	2.5 (0)	2.6 (0.1)	2.6 (0.1)	2.7 (0)	2.6 (0)	2.6 (0)	2.7 (0)	2.9 (0.1)	2.6 (0)
Rec. Dgn.: DM (PA)											
Rec. Dgn.: DM (KP)											
Rec. Peak PRA Missing	5.6 (0)	6.6 (0.1)	6.2 (0.1)	6.5 (0.2)	6.5 (0)	5.3 (0.2)	5.3 (0.2)	5.2 (0.1)	5.4 (0.1)	6.2 (0.1)	6.6 (0.1)
Rec. Peak PRA <10	5.4 (0)	6.4 (0)	6.1 (0)	6.3 (0)	6.4 (0)	5.2 (0)	5.2 (0)	5.3 (0)	5.4 (0)	6 (0)	6.3 (0)
Rec. Peak PRA 10-80	5.1 (0)	6.1 (0.1)	5.7 (0)	5.9 (0)	6 (0.1)	4.9 (0.1)	5 (0.1)	5 (0.1)	5.1 (0)	5.7 (0.1)	6 (0)
Rec. Peak PRA 80+	5 (0)	6.2 (0.1)	5.6 (0.1)	5.9 (0)	6 (0.1)	5.2 (0.1)	5.1 (0)	5.3 (0.2)	5.5 (0.1)	5.8 (0.1)	5.8 (0.1)
Shared - payback	4.9 (0.1)										
Shared - nonpayback	5.1 (0)	6.2 (0.1)	5.6 (0)	6 (0.1)	5.9 (0.1)	4.8 (0.1)	4.8 (0.1)	5 (0.1)	5.1 (0.1)	5.3 (0.1)	6.1 (0)
Average benefit	5.3	6.3	6.0	6.2	6.3	5.1	5.2	5.2	5.3	5.9	6.2
Average wait time	2.5	1.5	2.0	1.8	1.7	1.9	1.9	2.0	1.9	1.7	1.9
Average age	48.2	40.4	42.6	41.0	40.6	49.3	49.1	48.6	48.3	43.5	41.0

Prepared by the Scientific Registry of Transplant Recipients

Average Years of Benefit ECD Kidney

ECD KI	Run 1: Current national allocatn. system	Run 16a: LYFT no HLA A,B, Dgn PKD /DM/Oth	Run 18c: Cont DPI	Run 18d: Cont DPI^2	Run 18e: Cont DPI^3	Run 21a: Quint: LYFT v. DPI	Run 21b: Quint: PT v. DPI	Run 21c: Quint: PT v. DPI + PRA80	Run 21e: Dec: PT v. DPI + PRA80	Run 22a: Cont age match	Run 24: LYFT + 0.5 DY (SCD)
2 A MM	3.8 (0.1)	3.7 (0.1)	3.7 (0.1)	3.8 (0.1)	3.7 (0)	3.8 (0)	3.9 (0.1)	3.8 (0.1)	3.9 (0.1)	3.4 (0)	3.7 (0)
1 A MM	3.9 (0)	3.8 (0.1)	3.8 (0)	3.8 (0)	3.7 (0.1)	3.9 (0)	3.9 (0)	3.9 (0)	3.9 (0.1)	3.5 (0.1)	3.8 (0.1)
0 A MM	4.1 (0.1)	3.9 (0.1)	3.9 (0)	3.9 (0.1)	3.8 (0.3)	3.8 (0.1)	3.8 (0.1)	4 (0.2)	4 (0.2)	3.4 (0.1)	3.9 (0.1)
2 B MM	3.8 (0.1)	3.7 (0.1)	3.7 (0.1)	3.7 (0.1)	3.7 (0)	3.8 (0)	3.9 (0)	3.9 (0.1)	3.8 (0)	3.4 (0.1)	3.7 (0.1)
1 B MM	4 (0)	3.9 (0)	3.9 (0)	3.8 (0)	3.8 (0.2)	3.9 (0.1)	3.9 (0)	3.9 (0.1)	4 (0.1)	3.5 (0.1)	3.8 (0.1)
0 B MM	4.1 (0.1)	3.7 (0.1)	3.8 (0.3)	3.7 (0.3)	3.5 (0.2)	3.5 (0.4)	3.8 (0.1)	4.1 (0.2)	3.7 (0.1)	3.5 (0.2)	3.6 (0.2)
2 DR MM	3.8 (0)	3.7 (0.1)	3.7 (0.1)	3.7 (0.1)	3.6 (0)	3.8 (0)	3.8 (0)	3.8 (0.1)	3.8 (0)	3.4 (0.1)	3.7 (0)
1 DR MM	3.9 (0.1)	3.8 (0)	3.8 (0.1)	3.8 (0.1)	3.8 (0.1)	3.9 (0)	3.9 (0.1)	3.9 (0.1)	3.9 (0.1)	3.5 (0)	3.7 (0.1)
0 DR MM	4.1 (0.1)	3.9 (0.1)	3.8 (0.1)	3.9 (0.2)	3.9 (0.1)	3.8 (0.1)	4 (0)	3.9 (0.1)	4 (0)	3.5 (0)	3.9 (0.2)
0 ABDR MM	4.1 (0)	4.2 (0.6)	4 (0.3)	4.2 (0.4)	3.7 (0.3)	4.1 (0.7)	4.2 (0.5)	4.2 (0.8)	4.5 (0.2)	3.9 (1)	3.8 (0.1)
Rec. African American	4 (0.1)	3.9 (0.1)	3.9 (0.1)	3.9 (0.1)	3.9 (0)	4 (0)	4 (0)	4.1 (0)	4 (0)	3.4 (0.1)	3.9 (0.1)
Rec. Hispanic	3.8 (0.2)	3.6 (0.1)	3.7 (0.2)	3.6 (0.2)	3.6 (0)	3.7 (0.1)	3.7 (0.1)	3.6 (0)	3.7 (0.1)	3.3 (0.1)	3.5 (0.2)
Rec. Caucasian	3.8 (0.1)	3.7 (0)	3.7 (0)	3.7 (0)	3.7 (0)	3.8 (0)	3.8 (0.1)	3.8 (0.1)	3.8 (0)	3.5 (0)	3.7 (0)
Rec. Other/Missing	3.6 (0.1)	3.6 (0.1)	3.6 (0.2)	3.6 (0.1)	3.5 (0.2)	3.7 (0.1)	3.7 (0.1)	3.7 (0.2)	3.6 (0.2)	3.4 (0)	3.7 (0.1)
Rec. ABO = A	4 (0)	3.8 (0.1)	3.9 (0)	3.8 (0.1)	3.7 (0.1)	3.8 (0.1)	4 (0.1)	3.9 (0.1)	3.9 (0)	3.5 (0.1)	3.8 (0)
Rec. ABO = AB	3.9 (0.2)	3.6 (0)	3.4 (0.4)	3.7 (0.1)	3.5 (0.1)	3.9 (0.1)	3.8 (0.2)	4 (0.2)	3.6 (0.2)	3.5 (0)	3.6 (0.2)
Rec. ABO = B	3.7 (0.1)	3.7 (0)	3.7 (0.3)	3.6 (0)	3.6 (0.2)	3.7 (0)	3.8 (0.2)	3.7 (0.3)	3.8 (0.1)	3.4 (0)	3.5 (0.3)
Rec. ABO = O	3.8 (0.1)	3.8 (0.1)	3.8 (0.1)	3.8 (0.1)	3.8 (0.1)	3.9 (0.1)	3.8 (0)	3.9 (0)	3.9 (0)	3.4 (0)	3.8 (0.1)
Rec. < 18	12.3 (1)							12.3 (0.8)	11.5 (0.3)	12.1 (0.5)	
Rec. 18-34	6.6 (0.1)	6.7 (0)	6.7 (0.1)	6.7 (0)	6.6 (0)	6.6 (0.1)	6.6 (0.1)	6.7 (0.1)	6.6 (0)	6.6 (0)	6.5 (0.1)
Rec. 35-49	5.4 (0)	5.3 (0.1)	5.3 (0.1)	5.3 (0)	5.3 (0)	5.3 (0)	5.3 (0)	5.4 (0)	5.3 (0.1)	5.2 (0.1)	5.3 (0.1)
Rec. 50-64	3.3 (0.1)	3.3 (0)	3.3 (0)	3.3 (0)	3.3 (0)	3.4 (0)	3.3 (0)	3.4 (0.1)	3.4 (0)	3.4 (0.1)	3.3 (0.1)
Rec. 65+	1.8 (0.1)	1.7 (0.1)	1.7 (0)	1.7 (0)	1.8 (0)	1.8 (0)	1.8 (0)	1.7 (0)	1.8 (0)	2 (0.1)	1.8 (0)
Rec. Dgn.: Glomerular	5 (0.1)	4.9 (0.1)	4.8 (0.1)	4.9 (0.1)	4.8 (0.1)	4.9 (0)	4.9 (0)	4.9 (0.1)	4.9 (0.1)	4.3 (0.1)	4.7 (0.1)
Rec. Dgn.: HTN	4.1 (0)	4 (0)	3.9 (0.1)	4 (0.2)	3.9 (0.1)	4 (0.1)	4 (0.1)	4.1 (0.1)	4.1 (0.1)	3.7 (0)	4 (0.1)
Rec. Dgn.: Polycystic	4.1 (0.1)	4 (0.1)	4.1 (0.1)	4.1 (0.1)	4 (0)	4 (0.1)	4.2 (0.1)	4 (0.3)	4 (0.2)	3.9 (0.1)	4 (0.1)

Prepared by the Scientific Registry of Transplant Recipients

ECD KI	Run 1: Current national allocatn. system	Run 16a: LYFT no HLA A,B, Dgn PKD /DM/Oth	Run 18c: Cont DPI	Run 18d: Cont DPI^2	Run 18e: Cont DPI^3	Run 21a: Quint: LYFT v. DPI	Run 21b: Quint: PT v. DPI	Run 21c: Quint: PT v. DPI + PRA80	Run 21e: Dec: PT v. DPI + PRA80	Run 22a: Cont age match	Run 24: LYFT + 0.5 DY (SCD)
Rec. Dgn.: Renovascular	3.6 (1)	4.3 (1.2)	6 (0.8)	3.9 (0.7)	4.2 (0.8)	5.7 (0.2)	3.4 (0.3)	4.4 (0.3)	4.7 (1.3)	4.5 (0.1)	3.5 (1.1)
Rec. Dgn.: Oth/Missing	4.8 (0)	4.7 (0.1)	4.7 (0.1)	4.6 (0.1)	4.6 (0.2)	4.8 (0.1)	4.8 (0.1)	4.9 (0.1)	4.8 (0.1)	4.3 (0.1)	4.6 (0)
Rec. Dgn.: DM (KI)											
Rec. Dgn.: DM (KI) <50	4.4 (0.1)	4.3 (0.1)	4.4 (0.1)	4.3 (0.1)	4.3 (0.1)	4.4 (0)	4.3 (0)	4.2 (0)	4.2 (0)	4.3 (0.1)	4.4 (0.1)
Rec. Dgn.: DM (KI) 50+	2.3 (0.1)	2.2 (0.1)	2.2 (0.1)	2.2 (0)	2.2 (0)	2.3 (0)	2.2 (0.1)	2.3 (0)	2.3 (0)	2.5 (0)	2.3 (0)
Rec. Dgn.: DM (PA)											
Rec. Dgn.: DM (KP)											
Rec. Peak PRA Missing	3.8 (0.3)	3.6 (0.1)	3.7 (0.1)	3.6 (0.2)	3.6 (0.2)	3.7 (0.3)	3.7 (0.1)	3.6 (0.2)	3.5 (0.1)	3.6 (0.1)	3.8 (0.2)
Rec. Peak PRA <10	3.9 (0.1)	3.7 (0.1)	3.7 (0.1)	3.7 (0.1)	3.7 (0)	3.9 (0)	3.8 (0)	3.9 (0.1)	3.9 (0)	3.5 (0)	3.7 (0.1)
Rec. Peak PRA 10-80	3.9 (0)	3.9 (0.2)	3.8 (0)	3.8 (0.1)	3.8 (0.1)	3.8 (0.1)	4 (0)	4 (0.1)	4 (0.1)	3.2 (0.1)	3.8 (0)
Rec. Peak PRA 80+	4.1 (0.1)	4 (0.3)	4.1 (0.1)	4 (0.1)	3.9 (0.1)	4 (0.1)	4.1 (0.1)	4.2 (0.1)	4 (0.1)	3.3 (0.4)	4 (0.1)
Shared - payback	3.9 (0.2)										
Shared - nonpayback	3.8 (0.1)	3.6 (0.1)	3.5 (0.1)	3.6 (0)	3.5 (0.1)	3.7 (0.2)	3.7 (0)	3.8 (0.1)	3.6 (0)	3.1 (0)	3.6 (0.2)
Average benefit	3.9	3.8	3.8	3.8	3.7	3.9	3.9	3.9	3.9	3.5	3.8
Average wait time	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	1.7	2.5
Average age	53.9	54.7	54.8	54.8	55.1	54.3	53.9	54.3	54.1	57.9	55.1

Prepared by the Scientific Registry of Transplant Recipients

Average Years of Benefit SCD Kidney

SCD KI	Run 1: Current national allocatn. system	Run 16a: LYFT no HLA A,B, Dgn PKD /DM/Oth	Run 18c: Cont DPI	Run 18d: Cont DPI^2	Run 18e: Cont DPI^3	Run 21a: Quint: LYFT v. DPI	Run 21b: Quint: PT v. DPI	Run 21c: Quint: PT v. DPI + PRA80	Run 21e: Dec: PT v. DPI + PRA80	Run 22a: Cont age match	Run 24: LYFT + 0.5 DY (SCD)
2 A MM	5.6 (0)	6.9 (0)	6.4 (0)	6.7 (0)	6.8 (0)	5.3 (0)	5.4 (0)	5.4 (0)	5.6 (0)	6.5 (0)	6.8 (0)
1 A MM	5.6 (0.1)	6.9 (0)	6.5 (0.1)	6.8 (0)	6.9 (0)	5.4 (0)	5.5 (0.1)	5.6 (0.1)	5.7 (0)	6.6 (0)	6.8 (0.1)
0 A MM	5.5 (0)	7.2 (0)	6.9 (0.1)	7.1 (0.2)	7.2 (0)	5.9 (0.1)	6 (0.1)	6 (0.1)	6.1 (0.1)	6.6 (0.1)	7 (0)
2 B MM	5.6 (0)	6.9 (0)	6.4 (0)	6.7 (0)	6.8 (0)	5.4 (0)	5.4 (0)	5.5 (0)	5.6 (0)	6.5 (0)	6.8 (0)
1 B MM	5.7 (0)	7 (0)	6.6 (0.1)	6.8 (0)	6.9 (0)	5.5 (0)	5.5 (0)	5.6 (0.1)	5.7 (0.1)	6.6 (0.1)	6.8 (0)
0 B MM	5.3 (0)	7.4 (0.2)	7.1 (0.2)	7.2 (0.1)	7.1 (0.2)	6.1 (0.2)	5.9 (0.2)	6.2 (0.4)	6.4 (0.2)	6.3 (0.1)	7.1 (0.1)
2 DR MM	5.5 (0)	6.8 (0)	6.4 (0)	6.7 (0)	6.7 (0)	5.3 (0.1)	5.3 (0)	5.4 (0)	5.5 (0)	6.4 (0)	6.7 (0)
1 DR MM	5.7 (0)	7 (0)	6.5 (0.1)	6.8 (0)	6.9 (0)	5.5 (0.1)	5.5 (0)	5.6 (0.1)	5.7 (0)	6.6 (0)	6.8 (0)
0 DR MM	5.4 (0)	7.2 (0.1)	6.9 (0.1)	7.1 (0.1)	7 (0.1)	5.9 (0.1)	5.9 (0)	6 (0)	6.1 (0.1)	6.7 (0.1)	7 (0.1)
0 ABDR MM	5.3 (0)	8.1 (0.2)	8 (0.3)	7.8 (0.1)	7.6 (0.3)	7.9 (0.4)	7.6 (0.4)	7.4 (0.6)	7.5 (0.3)	6.6 (0.8)	7.7 (0.4)
Rec. African American	5.5 (0)	6.9 (0)	6.3 (0.1)	6.6 (0)	6.8 (0)	5.3 (0)	5.3 (0)	5.4 (0)	5.6 (0)	6.5 (0)	6.7 (0)
Rec. Hispanic	6.2 (0.1)	7.6 (0.1)	7.1 (0.1)	7.4 (0.1)	7.5 (0.1)	6 (0.1)	6.1 (0.1)	6.1 (0.1)	6.3 (0)	7.2 (0.1)	7.4 (0.1)
Rec. Caucasian	5.5 (0)	6.7 (0)	6.4 (0.1)	6.6 (0)	6.7 (0)	5.4 (0)	5.4 (0)	5.4 (0.1)	5.6 (0)	6.4 (0)	6.6 (0)
Rec. Other/Missing	5.5 (0)	7.1 (0.1)	6.5 (0.1)	6.9 (0)	7 (0)	5.2 (0.1)	5.4 (0.1)	5.4 (0.1)	5.5 (0)	6.6 (0.1)	6.9 (0.1)
Rec. ABO = A	5.5 (0)	6.8 (0)	6.4 (0)	6.7 (0)	6.7 (0)	5.5 (0)	5.5 (0)	5.6 (0.1)	5.7 (0)	6.4 (0)	6.7 (0)
Rec. ABO = AB	5.4 (0.1)	6.4 (0)	6 (0)	6.3 (0)	6.4 (0.1)	5.3 (0.1)	5.1 (0.1)	5.3 (0)	5.5 (0.1)	5.9 (0.1)	6.2 (0.1)
Rec. ABO = B	5.4 (0.1)	6.6 (0)	6.1 (0)	6.4 (0.1)	6.5 (0.1)	5.1 (0.1)	5.2 (0.1)	5.2 (0.1)	5.3 (0)	6.3 (0)	6.5 (0)
Rec. ABO = O	5.7 (0)	7.2 (0)	6.7 (0)	7 (0)	7.1 (0)	5.5 (0)	5.6 (0)	5.6 (0)	5.8 (0)	6.8 (0)	7 (0)
Rec. < 18	12.3 (0)	12.3 (0)	12.3 (0)	12.3 (0)	12.3 (0)	12.3 (0)	12.3 (0)	12.3 (0)	12.3 (0)	12.3 (0.1)	12.3 (0.1)
Rec. 18-34	7.3 (0)	7.2 (0)	7.4 (0)	7.3 (0)	7.3 (0)	7.4 (0)	7.4 (0)	7.3 (0)	7.4 (0)	7.4 (0)	7.3 (0)
Rec. 35-49	6 (0)	6.6 (0)	6.2 (0)	6.4 (0)	6.5 (0)	6 (0)	6 (0)	6 (0)	6.1 (0)	6.1 (0)	6.3 (0)
Rec. 50-64	4 (0)	4.7 (0.1)	4.1 (0)	4.4 (0)	4.5 (0)	4 (0)	4 (0)	4 (0)	4.1 (0)	4.3 (0)	4.4 (0)
Rec. 65+	2.3 (0)	2.8 (0.1)	2.2 (0.1)	2.5 (0)	2.6 (0)	2.2 (0)	2.2 (0)	2.2 (0)	2.3 (0)	2.5 (0.1)	2.6 (0.1)
Rec. Dgn.: Glomerular	6.6 (0.1)	7.3 (0)	7.1 (0)	7.2 (0)	7.2 (0)	6.6 (0)	6.7 (0.1)	6.7 (0)	6.8 (0)	7.3 (0)	7.2 (0)
Rec. Dgn.: HTN	5 (0)	6.3 (0)	5.8 (0)	6 (0)	6.1 (0)	5 (0)	5 (0)	5 (0)	5.1 (0)	6 (0.1)	6 (0)
Rec. Dgn.: Polycystic	5.2 (0.1)	5.9 (0.1)	5.6 (0.1)	5.7 (0)	5.9 (0)	5.2 (0.1)	5.2 (0.1)	5.1 (0.1)	5.3 (0)	5.7 (0)	5.7 (0.1)

Prepared by the Scientific Registry of Transplant Recipients

	Run 1: Current national allocatn. system	Run 16a: LYFT no HLA A,B, Dgn PKD /DM/Oth	Run 18c: Cont DPI	Run 18d: Cont DPI^2	Run 18e: Cont DPI^3	Run 21a: Quint: LYFT v. DPI	Run 21b: Quint: PT v. DPI	Run 21c: Quint: PT v. DPI + PRA80	Run 21e: Dec: PT v. DPI + PRA80	Run 22a: Cont age match	Run 24: LYFT + 0.5 DY (SCD)
SCD KI											
Rec. Dgn.: Renovascular	6.1 (0.8)	7.6 (0.8)	6.9 (0.5)	7.2 (0.8)	7.3 (0.5)	6 (0.5)	6.4 (0.2)	6.1 (0.6)	7.1 (0.6)	6.7 (0.4)	7.1 (0.3)
Rec. Dgn.: Oth/Missing	7.3 (0)	8.2 (0)	7.9 (0)	8 (0.1)	8.1 (0.1)	7.5 (0)	7.5 (0)	7.4 (0.1)	7.6 (0)	8.1 (0)	8 (0)
Rec. Dgn.: DM (KI)											
Rec. Dgn.: DM (KI) <50	5 (0)	5.8 (0)	5.3 (0)	5.6 (0.1)	5.6 (0)	5.1 (0)	5.1 (0)	5.1 (0.1)	5.2 (0)	5.3 (0)	5.5 (0)
Rec. Dgn.: DM (KI) 50+	2.8 (0)	3.3 (0.1)	2.8 (0)	3 (0.1)	3.1 (0.1)	2.8 (0)	2.8 (0)	2.8 (0)	2.9 (0)	3.3 (0)	3.2 (0)
Rec. Dgn.: DM (PA)											
Rec. Dgn.: DM (KP)											
Rec. Peak PRA Missing	6.2 (0.1)	7.7 (0.2)	7.3 (0.2)	7.6 (0.2)	7.7 (0.1)	5.9 (0.2)	5.9 (0.2)	5.9 (0.2)	6.1 (0.1)	7.2 (0)	7.6 (0.1)
Rec. Peak PRA <10	5.8 (0)	7 (0)	6.7 (0)	6.9 (0)	7 (0)	5.4 (0)	5.5 (0)	5.6 (0.1)	5.7 (0)	6.6 (0)	6.9 (0)
Rec. Peak PRA 10-80	5.3 (0)	6.7 (0)	6.2 (0.1)	6.4 (0)	6.6 (0.1)	5.2 (0.1)	5.3 (0.1)	5.3 (0.1)	5.4 (0.1)	6.3 (0)	6.5 (0)
Rec. Peak PRA 80+	5.1 (0)	6.8 (0.2)	5.9 (0.1)	6.2 (0.1)	6.4 (0.1)	5.6 (0.1)	5.4 (0)	5.4 (0.2)	5.7 (0.1)	6.2 (0)	6.2 (0.1)
Shared - payback	5.1 (0.1)										
Shared - nonpayback	5.5 (0.1)	7.1 (0.1)	6.5 (0.1)	6.9 (0.1)	6.9 (0)	5.2 (0.1)	5.2 (0.1)	5.5 (0.1)	5.6 (0.1)	6.4 (0.1)	7 (0.1)
Average benefit	5.6	6.9	6.5	6.8	6.9	5.4	5.5	5.5	5.7	6.5	6.8
Average wait time	2.6	1.2	1.9	1.6	1.5	1.8	1.8	1.9	1.8	1.7	1.7
Average age	46.8	37.1	39.7	37.8	37.2	48.1	48.0	47.3	46.9	39.9	37.7

Prepared by the Scientific Registry of Transplant Recipients

Average Years of Benefit Simultaneous Kidney/Pancreas

SPK	Run 1: Current national allocatn. system	Run 16a: LYFT no HLA A,B, Dgn PKD /DM/Oth	Run 18c: Cont DPI	Run 18d: Cont DPI^2	Run 18e: Cont DPI^3	Run 21a: Quint: LYFT v. DPI	Run 21b: Quint: PT v. DPI	Run 21c: Quint: PT v. DPI + PRA80	Run 21e: Dec: PT v. DPI + PRA80	Run 22a: Cont age match	Run 24: LYFT + 0.5 DY (SCD)
2 A MM	5.6 (0.2)	5.4 (0.1)	5.4 (0.1)	5.5 (0.2)	5.3 (0.1)	5.3 (0)	5.3 (0.1)	5.3 (0.1)	5.3 (0.1)	5.5 (0.1)	5.5 (0)
1 A MM	5.4 (0)	5.6 (0)	5.5 (0.1)	5.4 (0.1)	5.5 (0.1)	5.3 (0.1)	5.4 (0.1)	5.4 (0.2)	5.5 (0.1)	5.5 (0.1)	5.3 (0.1)
0 A MM	5.5 (0.4)	5.6 (0.2)	5.5 (0.2)	5.4 (0.1)	5.7 (0.5)	5.2 (0.3)	5.5 (0.4)	5.3 (0.1)	5.5 (0.4)	5.3 (0.3)	5.7 (0.1)
2 B MM	5.4 (0)	5.5 (0.1)	5.4 (0.1)	5.5 (0.1)	5.4 (0.1)	5.3 (0.1)	5.3 (0.1)	5.3 (0.1)	5.4 (0)	5.4 (0)	5.4 (0)
1 B MM	5.8 (0.1)	5.4 (0.2)	5.5 (0.2)	5.5 (0.1)	5.4 (0.2)	5.2 (0.1)	5.4 (0.1)	5.4 (0.2)	5.4 (0.2)	5.5 (0.1)	5.6 (0.1)
0 B MM	5.7 (0.9)	5.8 (0.6)	5.1 (0.4)	5.7 (1.1)	5.7 (0.9)	5.8 (0.8)	5.8 (0.9)	5.4 (0.4)	4.9 (1.1)	5.9 (0.5)	6 (0.4)
2 DR MM	5.5 (0.1)	5.5 (0.1)	5.4 (0.1)	5.4 (0.3)	5.4 (0.1)	5.2 (0)	5.2 (0.2)	5.4 (0.1)	5.3 (0.2)	5.3 (0)	5.3 (0)
1 DR MM	5.6 (0)	5.4 (0.2)	5.4 (0.1)	5.6 (0.1)	5.4 (0.1)	5.4 (0)	5.5 (0.1)	5.2 (0.3)	5.5 (0.1)	5.6 (0.1)	5.6 (0.2)
0 DR MM	5.5 (0.4)	5.5 (0.2)	5.7 (0.3)	5.7 (0.3)	5.9 (0.1)	5.4 (0.2)	5.5 (0.7)	5.7 (0.2)	5.9 (0.4)	5.5 (0.6)	5.5 (0.8)
0 ABDR MM	5.8 (0.6)	6.8 (0.6)	6 (1.1)	6.4 (0.9)	6.1 (0.4)	5.7 (2)	5.4 (1.7)	5.5 (0.3)	5.3 (1.7)	5.7 (0.6)	6.4 (1)
Rec. African American	6.4 (0.3)	6.6 (0.1)	6.1 (0.2)	6.4 (0.2)	6.3 (0.2)	6.2 (0.2)	6.3 (0.3)	6.2 (0.3)	6.2 (0.1)	6.5 (0.1)	6.3 (0.3)
Rec. Hispanic	5.7 (0.2)	6 (0.1)	6 (0.3)	6 (0.3)	5.8 (0.2)	5.9 (0.4)	6 (0.2)	5.9 (0.1)	5.7 (0.2)	6.1 (0.2)	6 (0.2)
Rec. Caucasian	5.3 (0.1)	5.2 (0)	5.2 (0.1)	5.3 (0.1)	5.3 (0)	5.1 (0)	5.1 (0)	5.1 (0)	5.2 (0.1)	5.2 (0)	5.2 (0.1)
Rec. Other/Missing	4 (1.3)	3.5 (0.9)	3.6 (0.6)	3.4 (0.8)	3.3 (0.9)	3 (1.2)	3.5 (0.5)	3.2 (1.1)	3.6 (0.8)	4.3 (0.2)	3.4 (0.7)
Rec. ABO = A	5.6 (0)	5.5 (0.1)	5.4 (0.1)	5.6 (0.1)	5.5 (0.1)	5.3 (0)	5.5 (0)	5.5 (0.2)	5.5 (0.1)	5.6 (0.1)	5.6 (0.1)
Rec. ABO = AB	5.5 (0.2)	5.7 (0.5)	5.7 (0.5)	5.9 (0.3)	6.1 (0.1)	5.6 (0.8)	5.7 (1)	5.5 (0.3)	5.3 (0.2)	5.4 (0.5)	5.9 (0.2)
Rec. ABO = B	5 (0.2)	5.7 (0.4)	4.7 (0.1)	5.2 (0.2)	5.1 (0.2)	5 (0.3)	5 (0.4)	5.1 (0.1)	5.1 (0.4)	5.1 (0.2)	5.3 (0.2)
Rec. ABO = O	5.5 (0.1)	5.4 (0.1)	5.5 (0.1)	5.4 (0.2)	5.4 (0.1)	5.3 (0)	5.4 (0.2)	5.3 (0.1)	5.4 (0.1)	5.4 (0.1)	5.3 (0)
Rec. < 18	15.1 (0.9)	17.6 (1)	14.7 (0.1)	16.8 (2.4)		17.2 (1)	15.9 (0.9)	15.1 (1)	15.9 (1)	14.7 (0.1)	16.9 (2.3)
Rec. 18-34	9.3 (0)	9.3 (0)	9.2 (0.1)	9.3 (0)	9.2 (0.1)	9.2 (0)	9.2 (0)	9.2 (0)	9.2 (0.2)	9.2 (0)	9.2 (0.1)
Rec. 35-49	5.2 (0.1)	5.1 (0.1)	5.1 (0.1)	5.1 (0.1)	5.1 (0)	5 (0.1)	5.1 (0)	5 (0)	5.1 (0)	5.1 (0)	5.1 (0.1)
Rec. 50-64	0.7 (0.1)	0.7 (0.1)	0.6 (0.1)	0.7 (0.1)	0.7 (0.1)	0.5 (0.1)	0.7 (0)	0.6 (0.1)	0.6 (0.1)	0.8 (0.1)	0.6 (0.2)
Rec. 65+	-5.6 (0.7)	-6.1 (0.1)	-5 (1)	-5.4 (0.3)	-4.7 (0.4)	-4.6 (1.5)	-5.1 (0.5)	-5.6 (0.4)	-5 (1.3)	-5.2 (1.3)	-5.2 (0.8)
Rec. Dgn.: Glomerular											
Rec. Dgn.: HTN											
Rec. Dgn.: Polycystic											

Prepared by the Scientific Registry of Transplant Recipients

SPK	Run 1: Current national allocatn. system	Run 16a: LYFT no HLA A,B, Dgn PKD /DM/Oth	Run 18c: Cont DPI	Run 18d: Cont DPI^2	Run 18e: Cont DPI^3	Run 21a: Quint: LYFT v. DPI	Run 21b: Quint: PT v. DPI	Run 21c: Quint: PT v. DPI + PRA80	Run 21e: Dec: PT v. DPI + PRA80	Run 22a: Cont age match	Run 24: LYFT + 0.5 DY (SCD)
Rec. Dgn.: Renovascular											
Rec. Dgn.: Oth/Missing											
Rec. Dgn.: DM (KI)											
Rec. Dgn.: DM (KI) <50											
Rec. Dgn.: DM (KI) 50+											
Rec. Dgn.: DM (PA)											
Rec. Dgn.: DM (KP)	5.5 (0.1)	5.5 (0)	5.4 (0.1)	5.5 (0.1)	5.4 (0.1)	5.3 (0)	5.4 (0.1)	5.3 (0.1)	5.4 (0.1)	5.5 (0)	5.4 (0)
Rec. Peak PRA Missing	6.1 (0.1)	6.1 (0.2)	6 (0.3)	6.4 (0.3)	6.1 (0.1)	6.2 (0.3)	6.1 (0.3)	6.1 (0.1)	6.1 (0.1)	5.9 (0.2)	6.2 (0.2)
Rec. Peak PRA <10	5.6 (0.1)	5.6 (0.1)	5.6 (0)	5.6 (0.1)	5.5 (0)	5.4 (0)	5.5 (0)	5.5 (0.1)	5.6 (0.1)	5.6 (0)	5.6 (0)
Rec. Peak PRA 10-80	4.6 (0.1)	4.3 (0.2)	4.6 (0.2)	4.5 (0.6)	4.5 (0.2)	4.4 (0.2)	4.3 (0.2)	4.5 (0.1)	4.3 (0.2)	4.6 (0)	4.3 (0.2)
Rec. Peak PRA 80+	4.5 (0.5)	3.7 (0.4)	3.8 (0.2)	4 (0.6)	4.2 (0.9)	3.5 (0.4)	3.5 (0.6)	3.8 (0.6)	3.9 (0.2)	4.3 (0.3)	3.6 (0.8)
Shared - payback	6.8 (2.2)										
Shared - nonpayback	5.5 (0.2)	5.6 (0.2)	5.4 (0.1)	5.5 (0.1)	5.5 (0.1)	4.7 (0.4)	5 (0.2)	4.9 (0.2)	5 (0.2)	4.8 (0.1)	5.4 (0)
Average benefit	5.5	5.5	5.4	5.5	5.4	5.3	5.4	5.3	5.4	5.5	5.4
Average wait time	1.3	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Average age	41.8	41.8	41.8	41.8	41.9	42.1	42.0	41.9	41.8	41.6	41.9

Prepared by the Scientific Registry of Transplant Recipients

Total Life Years All Kidney and Kidney/Pancreas Candidates and Recipients

Total KI/SPK	Run 1: Current national allocatn. system	Run 16a: LYFT no HLA A,B, Dgn PKD /DM/Oth	Run 18c: Cont DPI	Run 18d: Cont DPI^2	Run 18e: Cont DPI^3	Run 21a: Quint: LYFT v. DPI	Run 21b: Quint: PT v. DPI	Run 21c: Quint: PT v. DPI + PRA80	Run 21e: Dec: PT v. DPI + PRA80	Run 22a: Cont age match	Run 24: LYFT + 0.5 DY (SCD)
African American	204197 (112)	208507 (126)	208512 (191)	208630 (156)	208691 (209)	205384 (227)	205147 (278)	205290 (363)	205089 (192)	207528 (152)	209516 (472)
Hispanic	92859 (189)	95368 (250)	94540 (143)	95035 (249)	95183 (98)	92998 (104)	93120 (49)	93067 (140)	93106 (135)	94456 (192)	95036 (159)
Caucasian	259281 (364)	262921 (413)	260022 (493)	261352 (141)	261994 (195)	258136 (85)	258635 (208)	258239 (235)	259010 (232)	261950 (682)	260953 (225)
Other/Missing Race/Ethnicity	46260 (31)	47687 (43)	46927 (86)	47276 (197)	47357 (66)	46355 (7)	46497 (105)	46530 (78)	46609 (90)	46891 (229)	47284 (36)
ABO = A	178612 (297)	180608 (109)	179372 (254)	179923 (161)	180229 (249)	177301 (59)	177422 (76)	177332 (292)	177648 (66)	180756 (148)	180182 (70)
ABO = AB	18607 (119)	19443 (58)	19097 (95)	19316 (132)	19417 (78)	18921 (88)	18901 (97)	18912 (63)	18855 (73)	19205 (9)	19273 (100)
ABO = B	94397 (34)	96651 (57)	96142 (104)	96479 (17)	96440 (187)	95106 (157)	95178 (23)	95139 (46)	95099 (73)	94976 (77)	96509 (153)
ABO = O	310983 (173)	317782 (159)	315390 (45)	316576 (382)	317138 (236)	311544 (150)	311898 (26)	311743 (107)	312211 (59)	315887 (96)	316825 (65)
< 18	27320 (119)	28232 (63)	27936 (241)	27956 (215)	27936 (75)	27829 (52)	28006 (146)	27842 (237)	28165 (89)	28315 (181)	28062 (237)
18-34	143605 (321)	157083 (381)	152744 (275)	155771 (335)	156606 (255)	142619 (37)	142926 (211)	143340 (55)	143274 (160)	149770 (68)	155652 (168)
35-49	213154 (119)	215389 (262)	214865 (433)	214784 (150)	215166 (123)	212354 (218)	212499 (345)	212695 (203)	213302 (154)	216907 (160)	215361 (278)
50-64	176967 (100)	173130 (107)	173765 (168)	173173 (65)	172898 (171)	178268 (137)	178254 (49)	177687 (192)	177591 (162)	175359 (159)	173091 (122)
65+	41553 (39)	40649 (65)	40690 (47)	40611 (35)	40619 (72)	41802 (122)	41714 (97)	41564 (39)	41482 (57)	40473 (59)	40622 (70)
Diagnosis: Glomerular	159776 (410)	166121 (157)	163850 (209)	165483 (79)	165964 (103)	158856 (246)	159084 (210)	159502 (68)	159415 (128)	162488 (81)	165157 (169)
Diagnosis: HTN	129955	133297	132580	132845	132729	130663	130714	130640	130463	131511	133157

Prepared by the Scientific Registry of Transplant Recipients

	Run 1: Current national allocatn. system	Run 16a: LYFT no HLA A,B, Dgn PKD /DM/Oth	Run 18c: Cont DPI	Run 18d: Cont DPI^2	Run 18e: Cont DPI^3	Run 21a: Quint: LYFT v. DPI	Run 21b: Quint: PT v. DPI	Run 21c: Quint: PT v. DPI + PRA80	Run 21e: Dec: PT v. DPI + PRA80	Run 22a: Cont age match	Run 24: LYFT + 0.5 DY (SCD)
Total KI/SPK	(292)	(19)	(229)	(74)	(168)	(128)	(59)	(163)	(41)	(135)	(195)
Diagnosis: Polycystic	43335 (169)	44383 (75)	43430 (44)	43696 (64)	43959 (135)	43157 (75)	43268 (172)	43146 (44)	43289 (49)	43243 (43)	43687 (61)
Diagnosis: Renovascular	1279 (25)	1297 (4)	1288 (13)	1278 (18)	1282 (32)	1302 (17)	1299 (6)	1313 (3)	1290 (18)	1288 (13)	1281 (31)
Diagnosis: Other/Missing	132359 (165)	136179 (120)	135366 (175)	135819 (441)	136056 (81)	131693 (256)	131969 (182)	132043 (177)	132377 (137)	134422 (316)	136377 (116)
Diagnosis: DM (KI recipient)											
Diagnosis: DM (KI recipient) < 50	35400 (210)	34727 (37)	34811 (47)	34684 (87)	34631 (111)	35958 (36)	36049 (118)	35699 (179)	35988 (123)	36978 (133)	34634 (6)
Diagnosis: DM (KI recipient) 50+	80913 (62)	78896 (90)	79061 (11)	78866 (59)	78929 (35)	81529 (247)	81349 (210)	81063 (197)	81078 (49)	80411 (136)	78866 (81)
Diagnosis: DM (PA recipient)											
Diagnosis: DM (KP recipient)	19582 (127)	19584 (96)	19616 (15)	19624 (101)	19676 (87)	19713 (143)	19667 (22)	19721 (103)	19914 (66)	20484 (72)	19629 (86)

Prepared by the Scientific Registry of Transplant Recipients

Distribution of Waitlist Demographics At Start and End of Each Run

Percentages of Waitlist	Start of Run ¹²	End of Run									
		Run 1: Current national allocatn. system	Run 16a: LYFT no HLA A,B, Dgn PKD /DM/Oth	Run 18c: Cont DPI	Run 18d: Cont DPI^2	Run 18e: Cont DPI^3	Run 21a: Quint: LYFT v. DPI	Run 21b: Quint: PT v. DPI	Run 21c: Quint: PT v. DPI + PRA80	Run 21e: Dec: PT v. DPI + PRA80	Run 22a: Cont age match
Rec. African American	35.5%	35.4%	35.3%	34.8%	35.0%	35.1%	35.1%	35.1%	35.1%	35.2%	35.2%
Rec. Hispanic	14.3%	15.3%	15.2%	15.2%	15.2%	15.2%	15.3%	15.3%	15.3%	15.3%	15.3%
Rec. Caucasian	42.1%	41.0%	41.4%	41.7%	41.6%	41.5%	41.4%	41.4%	41.4%	41.3%	41.2%
Rec. Other/Missing Race/Ethnicity	8.1%	8.3%	8.1%	8.2%	8.2%	8.2%	8.2%	8.2%	8.2%	8.2%	8.3%
Rec. ABO = A	27.6%	27.8%	28.3%	28.3%	28.4%	28.3%	28.3%	28.3%	28.4%	28.3%	27.9%
Rec. ABO = AB	2.7%	2.7%	2.6%	2.7%	2.6%	2.6%	2.6%	2.6%	2.6%	2.7%	2.6%
Rec. ABO = B	16.9%	17.1%	16.8%	16.8%	16.8%	16.8%	16.8%	16.8%	16.8%	16.9%	17.2%
Rec. ABO = O	52.8%	52.4%	52.2%	52.3%	52.2%	52.2%	52.3%	52.2%	52.2%	52.2%	52.3%
Rec. < 18	1.3%	1.1%	1.0%	1.1%	1.1%	1.0%	1.1%	1.1%	1.1%	1.0%	1.0%
Rec. 18-34	14.5%	15.2%	12.5%	13.4%	12.7%	12.6%	15.6%	15.5%	15.4%	15.4%	14.1%
Rec. 35-49	33.6%	33.7%	33.7%	33.5%	33.6%	33.7%	34.1%	34.0%	34.0%	33.8%	33.0%
Rec. 50-64	38.9%	38.7%	40.8%	40.2%	40.6%	40.7%	38.3%	38.3%	38.4%	38.5%	39.7%
Rec. 65+	11.8%	11.2%	12.0%	11.8%	11.9%	12.0%	11.0%	11.0%	11.2%	11.2%	12.1%
Rec. Dgn.: Glomerular	20.3%	20.6%	19.7%	20.0%	19.7%	19.7%	21.0%	21.0%	20.8%	20.8%	20.5%
Rec. Dgn.: HTN	20.0%	20.7%	20.4%	20.3%	20.4%	20.4%	20.6%	20.5%	20.6%	20.7%	20.8%
Rec. Dgn.: Polycystic	5.9%	6.0%	5.9%	6.1%	6.0%	6.0%	6.1%	6.1%	6.1%	6.1%	6.2%
Rec. Dgn.: Other/Missing	18.8%	17.8%	17.5%	17.5%	17.5%	17.5%	18.1%	18.1%	18.0%	18.0%	17.8%
Rec. Dgn.: DM (KI Rec.) < 50	8.1%	7.8%	8.1%	8.0%	8.1%	8.1%	7.7%	7.6%	7.8%	7.7%	7.5%
Rec. Dgn.: DM (KI Rec.) 50+	22.4%	22.8%	24.2%	24.0%	24.2%	24.2%	22.5%	22.6%	22.7%	22.8%	23.4%
Rec. Dgn.: DM (KP Rec.)	4.5%	4.1%	4.2%	4.1%	4.2%	4.1%	4.1%	4.1%	4.1%	4.0%	3.9%

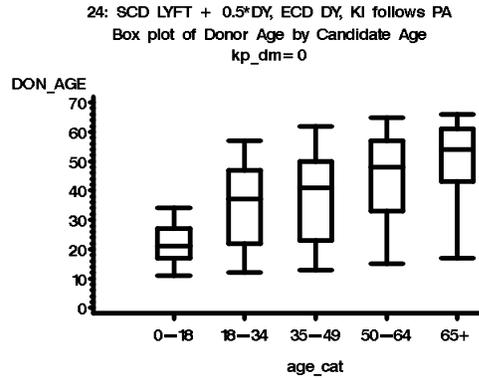
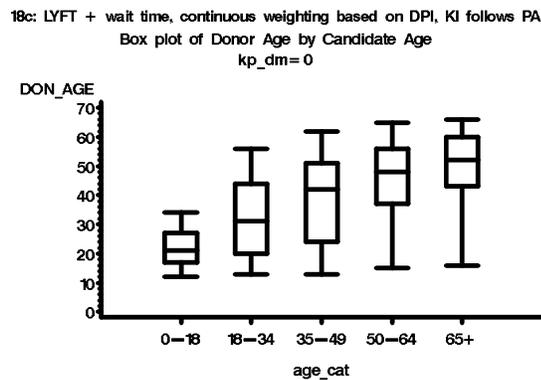
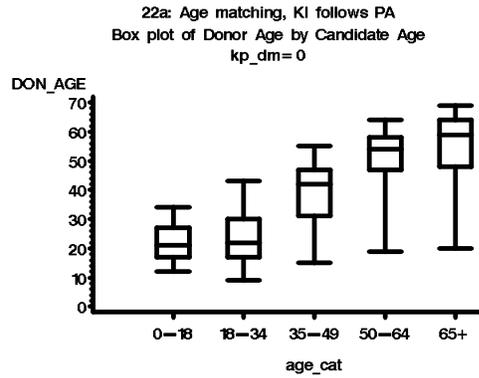
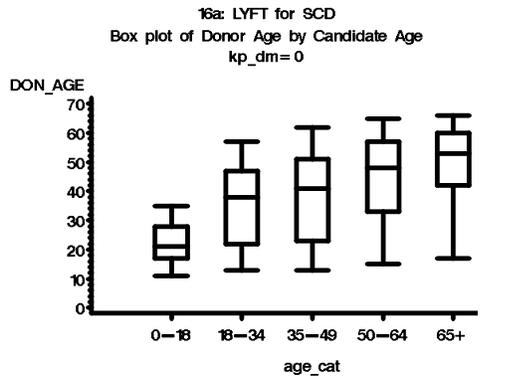
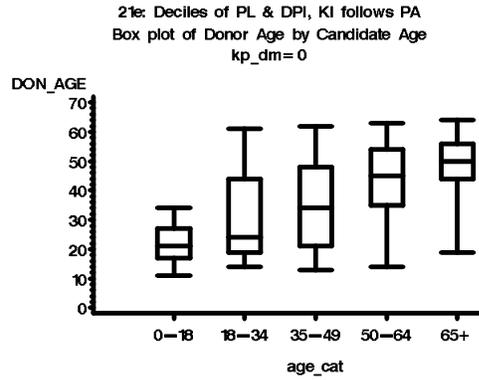
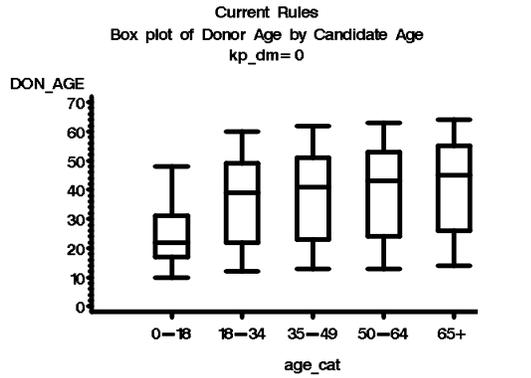
¹² Since all runs are based on the same data, the start of the run is the same for all runs.

Prepared by the Scientific Registry of Transplant Recipients

Percentages of Waitlist	End of Run										
	Start of Run ¹²	Run 1: Current national allocatn. system	Run 16a: LYFT no HLA A,B, Dgn PKD /DM/Oth	Run 18c: Cont DPI	Run 18d: Cont DPI^2	Run 18e: Cont DPI^3	Run 21a: Quint: LYFT v. DPI	Run 21b: Quint: PT v. DPI	Run 21c: Quint: PT v. DPI + PRA80	Run 21e: Dec: PT v. DPI + PRA80	Run 22a: Cont age match
Rec. Peak PRA Missing	4.5%	4.2%	4.2%	4.2%	4.2%	4.1%	4.1%	4.1%	4.1%	4.1%	4.1%
Rec. Peak PRA <10	62.0%	62.7%	61.2%	62.2%	61.9%	61.8%	61.7%	61.6%	61.9%	61.9%	61.4%
Rec. Peak PRA 10-80	19.8%	19.6%	20.0%	19.5%	19.7%	19.7%	19.7%	19.8%	20.0%	20.0%	19.8%
Rec. Peak PRA 80+	13.8%	13.5%	14.6%	14.2%	14.3%	14.3%	14.5%	14.5%	14.0%	14.0%	14.7%

Correlation Plots

Box plots show the relationship between donor age (don_age) and recipient age category (age_cat) for kidney-only transplants under different rules in KPSAM.



Prepared by the Scientific Registry of Transplant Recipients

Six-month change (bolus effect)

Numbers given are percentages of the recipients of the type of transplant shown (ECD, etc.), along with a between-iteration (3 iterations/run) standard deviation in order to show the variability due to random factors (e.g. acceptance).

The purpose of these tables is to show the difference in the immediate (1-6 month) effect v. the later (7-12 month) effect of a rule change in terms of the distribution of recipients. If this change is large at first and then much smaller later, the initial change may be a bolus effect that should not be assumed to persist long-term. Lack of a large change does not necessarily rule out a bolus effect. If the immediate and later effects are similar, this may be due to either a small or nonexistent bolus effect or it may result from a bolus operating on a much longer time scale.

Run 1: Current Rules

Run 1, Organ: Period:	ECD		SCD		KIA		SPK	
	1-6m	7-12m	1-6m	7-12m	1-6m	7-12m	1-6m	7-12m
2 A MM	49.1 (1.3)	49.5 (2.8)	47.1 (0.3)	47.1 (0.3)	47.5 (0.5)	47.6 (0.3)	48.7 (2.8)	49.5 (4.2)
1 A MM	38.9 (2)	38 (2.7)	35.9 (0.6)	35.4 (0.8)	36.4 (0.2)	35.9 (0.3)	37.8 (1.5)	38.8 (1.3)
0 A MM	12 (1.1)	12.6 (0.7)	17 (0.8)	17.5 (0.4)	16.1 (0.4)	16.6 (0.2)	13.4 (3.4)	11.7 (0.9)
2 B MM	65.7 (4)	66.5 (1.6)	63.2 (0.8)	63.8 (0.3)	63.6 (0.1)	64.3 (0.2)	67.6 (7.4)	69.1 (4.2)
1 B MM	25.4 (3)	24.8 (0.5)	23.4 (0.3)	22.2 (0.6)	23.8 (0.3)	22.8 (0.6)	24.2 (2.2)	25.3 (1.7)
0 B MM	8.9 (0.5)	8.7 (0.4)	13.4 (0.4)	13.9 (0.3)	12.6 (0.2)	12.9 (0.3)	8.1 (2.1)	5.6 (0.1)
2 DR MM	41.6 (1.9)	41.2 (4.7)	35.3 (0.7)	34.1 (0.7)	36.4 (0.8)	35.5 (1.5)	48.3 (4.7)	51.9 (3.5)
1 DR MM	42.7 (2.2)	43.4 (4.6)	41.8 (0.8)	42.8 (1)	42 (0.5)	42.9 (1.5)	40.5 (0.9)	38.6 (2.2)
0 DR MM	15.6 (1.9)	15.5 (1)	22.9 (1)	23.2 (0.1)	21.6 (0.7)	21.7 (0.2)	11.2 (2.3)	9.5 (0.8)
0 ABDR MM	7 (0.7)	6.9 (0.7)	12 (0.4)	12.4 (0.3)	11.1 (0.2)	11.3 (0.2)	6.3 (2.1)	4.7 (0.2)
Recipient African American	33.7 (0.9)	31.7 (1.6)	31.9 (0.3)	33 (0.8)	32.2 (0.4)	32.7 (0.3)	14.8 (1.5)	16.6 (1.1)
Recipient Hispanic	10.9 (1.5)	13 (0.6)	14 (0.6)	13.8 (0.2)	13.4 (0.3)	13.6 (0.2)	10.2 (1)	9.4 (2.1)
Recipient Caucasian	49.4 (1.7)	47.3 (0.6)	47.9 (0.8)	46.6 (1.3)	48.2 (0.4)	46.8 (1)	73.2 (7.8)	71.7 (4.1)
Recipient Other/Missing Race/Ethnicity	5.9 (1.1)	8 (0.7)	6.2 (0.1)	6.6 (0.3)	6.2 (0.1)	6.9 (0.4)	1.8 (0.6)	2.3 (0.4)
Recipient ABO = A	34.9 (1.4)	37 (0.8)	36.7 (0.4)	35.1 (0.8)	36.3 (0.4)	35.5 (0.6)	33 (4.3)	34.3 (0.4)
Recipient ABO = AB	4.7 (0.3)	5.8 (0.7)	4.8 (0.6)	4.6 (0.2)	4.8 (0.5)	4.8 (0.2)	2.6 (0.8)	2.8 (0.4)
Recipient ABO = B	9.3	9.6	12.1	12.4	11.6	11.9	7.8	6.4

Prepared by the Scientific Registry of Transplant Recipients

Run 1, Organ: Period:	ECD		SCD		KIA		SPK	
	1-6m	7-12m	1-6m	7-12m	1-6m	7-12m	1-6m	7-12m
	(1.1)	(0.7)	(0.2)	(0.2)	(0.2)	(0.3)	(2.2)	(1.3)
	51.1	47.6	46.4	47.9	47.3	47.8	56.6	56.4
Recipient ABO = O	(1.5)	(0.7)	(0.9)	(0.3)	(0.5)	(0.3)	(3.4)	(4.6)
	0.1		8.5	8	7	6.4		0.3
Recipient < 18	(0)		(0.4)	(0.3)	(0.3)	(0.2)		(0.1)
	9.1	8.8	13.9	13.8	13	12.8	23.2	24.9
Recipient 18-34	(1.2)	(1.2)	(0.8)	(0.3)	(0.5)	(0.5)	(2)	(2.7)
	25.7	26.9	31.3	31.6	30.3	30.7	60.7	60.7
Recipient 35-49	(0.9)	(0.2)	(0.6)	(1)	(0.5)	(0.8)	(4.7)	(3.8)
	46	45.4	35.8	36	37.7	37.9	15.7	14.1
Recipient 50-64	(1.9)	(2.7)	(0.6)	(0.4)	(0.4)	(0.4)	(2.5)	(1.7)
	19	18.9	10.5	10.6	12.1	12.3	0.3	
Recipient 65+	(1.2)	(1.4)	(0.2)	(0.3)	(0.1)	(0.1)	(0.1)	
Recipient Diagnosis: Glomerular	19.3	18	24.7	24.1	23.7	22.9		
	(1.1)	(1.3)	(0.9)	(1.1)	(0.5)	(0.9)		
	21.9	22.5	19.6	19.3	20	19.9		
Recipient Diagnosis: HTN	(1.2)	(2)	(1.2)	(0.1)	(0.8)	(0.3)		
Recipient Diagnosis: Polycystic	6.7	7	7.9	7	7.7	7		
	(0.4)	(1.2)	(0.8)	(0.3)	(0.5)	(0.4)		
Recipient Diagnosis: Renovascular	0.4	0.2	0.2	0.2	0.2	0.2		
	(0.4)	(0.1)	(0)	(0.1)	(0.1)	(0.1)		
Recipient Diagnosis: Other/Missing	16.6	17.8	24.3	23.7	22.9	22.5		
	(1.1)	(0.4)	(0.4)	(0.4)	(0.5)	(0.4)		
Recipient Diagnosis: DM (KI recipient)								
Recipient Diagnosis: DM (KI recipient) < 50	6.7	6.4	6.5	6.7	6.5	6.7		
	(0.6)	(0.1)	(0.2)	(0.6)	(0.3)	(0.5)		
Recipient Diagnosis: DM (KI recipient) 50+	28.6	28.1	16.8	18.9	19	20.7		
	(1.1)	(1.6)	(0.2)	(0.4)	(0.2)	(0.6)		
Recipient Diagnosis: DM (PA recipient)								
Recipient Diagnosis: DM (KP recipient)							99.9	100
							(7.2)	(5.8)
	3.8	4.7	3	3	3.2	3.4	9.3	8.9
Recipient Peak PRA Missing	(0.5)	(0.2)	(0.3)	(0.2)	(0.2)	(0.2)	(1.2)	(0.5)
	66.9	67.7	60.9	61.6	62	62.8	75.5	75.9
Recipient Peak PRA <10	(1.9)	(1.1)	(0.6)	(1.2)	(0.8)	(0.8)	(5.9)	(3.9)
	22.1	21.1	21	21.1	21.2	21.1	10	10.9
Recipient Peak PRA 10-80	(1.5)	(1.3)	(0.7)	(0.3)	(0.7)	(0.2)	(1.3)	(2)
	7.1	6.5	15	14.2	13.6	12.7	5.2	4.4
Recipient Peak PRA 80+	(1.7)	(1.2)	(0.1)	(0.9)	(0.3)	(0.8)	(1.3)	(0.5)
	6.7	3.8	5.2	4	5.5	3.9	0.6	0.4
Shared - payback	(1.6)	(0.5)	(0.1)	(0.2)	(0.2)	(0.2)	(0.2)	(0)
	27.4	28.2	20.5	20.1	21.7	21.7	16.4	15.1
Shared - nonpayback	(0.1)	(1.6)	(0.4)	(0.4)	(0.3)	(0.6)	(4.8)	(2)

Prepared by the Scientific Registry of Transplant Recipients

Run 16a: LYFT (No HLA A+B, dgn. PKD + DM only) for SCD, Dialysis Years for ECD

Run 16a, Organ: Period:	ECD		SCD		KIA		SPK	
	1-6m	7-12m	1-6m	7-12m	1-6m	7-12m	1-6m	7-12m
2 A MM	52.6 (2.5)	50.6 (0.8)	50.7 (0.4)	49.4 (1.1)	51 (0.4)	49.6 (0.9)	48.8 (4.6)	51.4 (3.7)
1 A MM	40.3 (2.4)	42.6 (1.9)	41.6 (0.4)	42.2 (0.9)	41.4 (0.1)	42.2 (1.1)	42.6 (2.6)	41 (1)
0 A MM	7.1 (0.2)	6.9 (0.8)	7.7 (0.3)	8.5 (0.8)	7.6 (0.3)	8.2 (0.8)	8.6 (1.5)	7.5 (0.9)
2 B MM	68.6 (4.3)	69 (2.5)	69.4 (0.8)	69.8 (0.7)	69.2 (1.3)	69.7 (0.6)	72.2 (5.8)	73.6 (2)
1 B MM	27.9 (2.8)	27.9 (1.9)	27.1 (0.9)	26.8 (0.8)	27.2 (1)	27 (0.7)	25.3 (0.8)	23.8 (2.9)
0 B MM	3.5 (0.9)	3.1 (0.6)	3.6 (0.3)	3.4 (0.3)	3.5 (0.3)	3.3 (0.1)	2.5 (1.1)	2.6 (0.5)
2 DR MM	45.1 (1.8)	43.9 (1.7)	42 (0.7)	42.5 (1.1)	42.5 (0.8)	42.8 (1.2)	50.7 (1.6)	52.3 (0.9)
1 DR MM	44.1 (1.5)	44.5 (2)	45.1 (0.6)	45.2 (0.6)	44.9 (0.4)	45.1 (0.6)	43.1 (4.4)	41.1 (2.7)
0 DR MM	10.7 (0.9)	11.7 (1.3)	12.9 (0.4)	12.3 (0.4)	12.6 (0.4)	12.1 (0.4)	6.2 (0.8)	6.6 (0.9)
0 ABDR MM	0.9 (0.2)	0.5 (0.3)	1.4 (0.2)	1.2 (0.1)	1.3 (0.2)	1 (0)	1.3 (0.8)	1.2 (0.5)
Recipient African American	35.2 (0.8)	32.8 (2.4)	32.7 (0.5)	32.8 (0.8)	33.2 (0.5)	32.8 (0.6)	16.2 (2.3)	15.3 (0.6)
Recipient Hispanic	12.3 (0.4)	11.8 (1.7)	15.4 (0.5)	15.6 (0.8)	14.8 (0.5)	14.9 (0.9)	9 (0.3)	9.4 (1.6)
Recipient Caucasian	45.4 (2)	47.8 (1.4)	44.1 (0.4)	44.3 (1)	44.4 (0.4)	45 (1.1)	72.8 (2.9)	73 (5)
Recipient Other/Missing Race/Ethnicity	7 (0.4)	7.6 (0.8)	7.8 (0.3)	7.3 (0.2)	7.6 (0.2)	7.4 (0.3)	2 (0.9)	2.2 (0.7)
Recipient ABO = A	31.5 (0.4)	32.9 (0.5)	32.8 (0.9)	31.5 (1.3)	32.6 (0.8)	31.8 (1.1)	32 (3.6)	34 (1.5)
Recipient ABO = AB	4.5 (1)	5.2 (1.2)	5.6 (0.2)	5.5 (0.2)	5.4 (0.3)	5.4 (0.1)	2.6 (0.4)	3.1 (1.1)
Recipient ABO = B	12.2 (1.5)	13.1 (1.9)	13.7 (0.4)	13.9 (0.4)	13.5 (0.5)	13.7 (0.5)	7.4 (0.9)	6.3 (0.7)
Recipient ABO = O	51.8 (1.6)	48.8 (0.2)	47.8 (0.5)	49.1 (0.6)	48.6 (0.2)	49.1 (0.5)	58 (2)	56.6 (2.4)
Recipient < 18			9.7 (0.4)	8.1 (0.2)	8 (0.3)	6.5 (0.1)		0.3 (0.1)
Recipient 18-34	8.4 (1.1)	6.9 (0.9)	40.8 (0.8)	38.6 (0.5)	35 (0.7)	32.4 (0.3)	26.1 (2.2)	24.6 (2.5)
Recipient 35-49	27.7 (2.2)	25.2 (0.7)	31.6 (0.9)	32.6 (0.1)	30.9 (0.7)	31.2 (0.1)	58 (5.6)	59.7 (3.1)

Prepared by the Scientific Registry of Transplant Recipients

Run 16a, Organ: Period:	ECD		SCD		KIA		SPK	
	1-6m	7-12m	1-6m	7-12m	1-6m	7-12m	1-6m	7-12m
Recipient 50-64	44.3 (0.7)	47.1 (0.5)	15.1 (0.5)	17.5 (0.9)	20.3 (0.4)	23.3 (0.7)	15.7 (0.2)	15.1 (0.1)
Recipient 65+	19.6 (1.3)	20.7 (0.8)	2.8 (0.5)	3.1 (0.2)	5.8 (0.2)	6.6 (0.1)	0.3 (0.2)	0.2 (0)
Recipient Diagnosis: Glomerular	16.8 (0.1)	18.1 (1.6)	34.2 (0.3)	32.9 (0.7)	31.1 (0.3)	30 (0.2)		
Recipient Diagnosis: HTN	24 (1.3)	22 (0.8)	21.5 (0.7)	22.7 (0.3)	21.9 (0.5)	22.5 (0.3)		
Recipient Diagnosis: Polycystic	6.9 (0.9)	6.2 (0.7)	8.6 (0.5)	8.8 (0.5)	8.3 (0.6)	8.3 (0.5)		
Recipient Diagnosis: Renovascular	0.4 (0.1)	0.4 (0.1)	0.2 (0)	0.2 (0)	0.3 (0)	0.2 (0)		
Recipient Diagnosis: Other/Missing	18.1 (2.4)	16.5 (0.6)	27.3 (0.7)	26.1 (1)	25.6 (0.5)	24.2 (0.8)		
Recipient Diagnosis: DM (KI recipient)								
Recipient Diagnosis: DM (KI recipient) < 50	6.3 (1.3)	6.6 (1.5)	3.9 (0.3)	4 (0.2)	4.4 (0.1)	4.5 (0.1)		
Recipient Diagnosis: DM (KI recipient) 50+	27.4 (2.5)	30.4 (0.6)	4.3 (0.4)	5.3 (0.1)	8.4 (0.3)	10.2 (0.1)		
Recipient Diagnosis: DM (PA recipient)								
Recipient Diagnosis: DM (KP recipient)							100 (6.1)	99.9 (3.4)
Recipient Peak PRA Missing	4.8 (1)	5.5 (0.5)	3.4 (0.2)	2.9 (0.4)	3.6 (0.2)	3.4 (0.2)	9.1 (0.7)	9.8 (0.9)
Recipient Peak PRA <10	66.3 (0.8)	68.5 (0.5)	75.5 (0.9)	75.7 (1)	73.9 (0.8)	74.3 (0.9)	77.6 (4.6)	74.9 (2.1)
Recipient Peak PRA 10-80	22.6 (1.4)	20.3 (0.9)	16.4 (0.7)	17.1 (0.6)	17.5 (0.5)	17.7 (0.6)	9.1 (1.6)	10.9 (0.6)
Recipient Peak PRA 80+	6.2 (0.8)	5.7 (0.4)	4.7 (0.2)	4.3 (0.2)	4.9 (0.3)	4.5 (0.2)	4.3 (0.9)	4.4 (0.7)
Shared - payback								
Shared - nonpayback	22.6 (1.4)	20.7 (1.4)	14.8 (1.2)	13.9 (0.3)	16.2 (1.1)	15.3 (0.5)	14.4 (1.8)	15.2 (1.8)

Prepared by the Scientific Registry of Transplant Recipients

Run 18c: LYFT + Dialysis Years, Weighted by DPI

Run 18c, Organ: Period:	ECD		SCD		KIA		SPK	
	1-6m	7-12m	1-6m	7-12m	1-6m	7-12m	1-6m	7-12m
2 A MM	49.7 (0.5)	50.8 (1.9)	51.7 (0.2)	50.6 (1.3)	51.3 (0.2)	50.6 (0.8)	49.9 (5.1)	51.4 (3.1)
1 A MM	42.8 (1.3)	41.9 (2.8)	40.3 (0.4)	41 (1)	40.7 (0.5)	41.2 (0.3)	42 (0.8)	40.2 (1.9)
0 A MM	7.4 (0.7)	7.3 (1.1)	8.1 (0)	8.5 (0.5)	8 (0.1)	8.2 (0.5)	8.2 (0.7)	8.3 (1.2)
2 B MM	66.3 (1)	69.9 (0.8)	69.6 (0.2)	69.6 (0.7)	69 (0.4)	69.7 (0.5)	73.6 (4.5)	74 (4.5)
1 B MM	29.8 (3.3)	27.5 (0.8)	27 (0.4)	26.5 (1.2)	27.5 (0.8)	26.7 (1.1)	23.7 (1.9)	23.4 (2.1)
0 B MM	3.9 (0.1)	2.6 (0.5)	3.4 (0.3)	3.8 (0.3)	3.5 (0.2)	3.6 (0.3)	2.8 (1.2)	2.5 (0.6)
2 DR MM	42.7 (1)	43.6 (0.5)	42.9 (0.7)	43.1 (1.2)	42.9 (0.5)	43.2 (1.1)	53.7 (3.6)	50 (3.9)
1 DR MM	46.8 (1.3)	45.3 (1.7)	45.4 (0.9)	45.2 (0.5)	45.6 (1)	45.2 (0.1)	41.2 (1.8)	42.6 (2.9)
0 DR MM	10.4 (0.6)	11 (0.3)	11.7 (0.2)	11.8 (0.2)	11.5 (0.1)	11.6 (0.1)	5.2 (0.7)	7.4 (0.7)
0 ABDR MM	0.9 (0.3)	0.6 (0.2)	1.6 (0.2)	1.5 (0.2)	1.5 (0.2)	1.3 (0.1)	1 (0.6)	1.1 (0.3)
Recipient African American	34.8 (0.6)	32.4 (1.3)	37.2 (0.7)	37.8 (0.9)	36.8 (0.5)	36.7 (0.6)	14.4 (1.4)	15.6 (0.7)
Recipient Hispanic	12.5 (1.8)	11.5 (0.8)	15 (0.6)	15.2 (0.2)	14.6 (0.5)	14.5 (0.3)	10.9 (0.8)	10.1 (1)
Recipient Caucasian	46.2 (0.9)	48.2 (2.7)	40.6 (1.2)	40.6 (0.3)	41.7 (1.1)	42.1 (0.5)	73.1 (5.5)	72.3 (4.5)
Recipient Other/Missing Race/Ethnicity	6.3 (0.6)	7.8 (1.1)	7.1 (0.4)	6.4 (0)	7 (0.2)	6.7 (0.2)	1.7 (0.4)	2 (0.3)
Recipient ABO = A	31.6 (2.5)	33.5 (1.1)	32.8 (0.5)	31.7 (0.7)	32.6 (0.8)	32.1 (0.5)	31.8 (1.8)	32.6 (1.5)
Recipient ABO = AB	4.5 (1.1)	4.4 (0.9)	5.4 (0.1)	5.3 (0.3)	5.2 (0.3)	5.1 (0.4)	3.4 (0.4)	3.2 (0.4)
Recipient ABO = B	12.1 (1.4)	12.6 (0.8)	14.4 (0.4)	14.2 (0.1)	14 (0.2)	13.9 (0.2)	6.9 (0.8)	6.8 (1.8)
Recipient ABO = O	51.7 (1.9)	49.5 (1.5)	47.5 (0.5)	48.8 (0.1)	48.2 (0.2)	48.9 (0.4)	58.1 (3.4)	57.4 (4.4)
Recipient < 18			9.7 (0.1)	7.9 (0.3)	7.9 (0.1)	6.3 (0.3)		0.2 (0)
Recipient 18-34	7.6 (1.3)	7.7 (0.1)	31.8 (0.3)	31.4 (0.8)	27.4 (0.1)	26.6 (0.6)	25.1 (3.2)	24.7 (2.1)
Recipient 35-49	26.9 (1)	24.7 (2)	33.2 (0.2)	34.1 (1.3)	32.1 (0.1)	32.3 (1.3)	59.1 (2.6)	59.6 (2.8)
Recipient 50-64	45.6	48.2	21.3	22	25.7	27.2	15.7	15.4

Prepared by the Scientific Registry of Transplant Recipients

Run 18c, Organ: Period:	ECD		SCD		KIA		SPK	
	1-6m	7-12m	1-6m	7-12m	1-6m	7-12m	1-6m	7-12m
	(3)	(2.7)	(0.6)	(0.3)	(0.8)	(0.4)	(0.8)	(1.8)
Recipient 65+	19.9	19.4	4	4.6	6.9	7.5	0.3	
	(1.6)	(1.4)	(0.4)	(0.2)	(0.5)	(0.2)	(0.1)	
Recipient Diagnosis: Glomerular	19.4	18.3	31.2	30.1	29.1	27.8		
	(1.4)	(1.1)	(0.7)	(1.2)	(0.4)	(0.8)		
	22.1	20.7	23.3	23.8	23	23.2		
Recipient Diagnosis: HTN	(1.3)	(1.2)	(0.5)	(1)	(0.5)	(1)		
Recipient Diagnosis: Polycystic	6.7	7.4	6.5	7.1	6.5	7.1		
	(0.5)	(0.4)	(0.5)	(0.4)	(0.5)	(0.3)		
Recipient Diagnosis: Renovascular	0.3	0.2	0.2	0.2	0.2	0.2		
	(0.1)	(0.1)	(0)	(0)	(0)	(0.1)		
Recipient Diagnosis: Other/Missing	16.3	17.6	27.7	26.9	25.6	25.1		
	(1.1)	(1.2)	(0.3)	(0.3)	(0.1)	(0.3)		
Recipient Diagnosis: DM (KI recipient)								
Recipient Diagnosis: DM (KI recipient) < 50	7	6.3	4.6	4.5	5.1	4.9		
	(0.4)	(0.9)	(0.2)	(0.3)	(0.1)	(0.3)		
Recipient Diagnosis: DM (KI recipient) 50+	28.1	29.6	6.5	7.4	10.4	11.8		
	(2)	(2.2)	(0.4)	(0.5)	(0.2)	(0.1)		
Recipient Diagnosis: DM (PA recipient)								
Recipient Diagnosis: DM (KP recipient)							100.1	99.9
							(5.5)	(6.1)
	5.3	5.5	2.8	2.9	3.3	3.4	9.1	10.2
Recipient Peak PRA Missing	(0.7)	(0.8)	(0)	(0.1)	(0.1)	(0.1)	(0.8)	(1.5)
	67.9	65.5	66.8	66.8	67	66.5	76.8	74.8
Recipient Peak PRA <10	(2.5)	(0.7)	(0.5)	(0.4)	(0.8)	(0.4)	(4.9)	(5.2)
	20.4	23.2	21.7	21.7	21.5	22	8.8	9.8
Recipient Peak PRA 10-80	(0.6)	(1.3)	(0.4)	(0.6)	(0.3)	(0.7)	(0.8)	(0.5)
	6.3	5.8	8.6	8.6	8.2	8.1	5.3	5.1
Recipient Peak PRA 80+	(1.7)	(0.3)	(0.4)	(0.3)	(0.5)	(0.3)	(0.2)	(0.2)
Shared - payback								
	22.2	21.7	13.2	12.5	14.9	14.4	13.6	15.3
Shared - nonpayback	(1.6)	(2)	(0.5)	(0.9)	(0.4)	(1.1)	(2)	(1.9)

Prepared by the Scientific Registry of Transplant Recipients

Run 18d: LYFT + Dialysis Years, Weighted by DPI²

Run 18d, Organ: Period:	ECD		SCD		KIA		SPK	
	1-6m	7-12m	1-6m	7-12m	1-6m	7-12m	1-6m	7-12m
2 A MM	52 (1.6)	50.6 (1.6)	49.9 (0.6)	49.9 (0.4)	50.3 (0.7)	50 (0.6)	51.5 (1.3)	52.5 (4)
1 A MM	41 (0.3)	43 (1.4)	42.4 (1)	41.8 (0.3)	42.2 (0.8)	42 (0.5)	40.4 (3.6)	40.8 (0.7)
0 A MM	7.1 (0.9)	6.3 (1.4)	7.7 (0.5)	8.4 (0.5)	7.5 (0.4)	8 (0.6)	8.2 (1.1)	6.7 (0.6)
2 B MM	68.3 (2.5)	69.4 (1.5)	69.7 (1.3)	68.4 (0.3)	69.4 (1.2)	68.6 (0.6)	71.7 (3.1)	72.3 (2.1)
1 B MM	28.4 (0.7)	27.8 (1.4)	26.7 (0.7)	28.1 (0.6)	27 (0.7)	28 (0.7)	25.7 (2.5)	24.9 (2.7)
0 B MM	3.4 (0.5)	2.8 (0.4)	3.6 (0.4)	3.5 (0.2)	3.6 (0.3)	3.4 (0.2)	2.6 (0.1)	2.7 (1)
2 DR MM	44.1 (1.4)	42.4 (1.4)	42.8 (0.4)	42 (0.4)	43 (0.1)	42 (0.6)	50.4 (2.7)	51.7 (2)
1 DR MM	44.2 (0.6)	46.5 (1)	45.1 (0.4)	45.8 (0.8)	44.9 (0.2)	45.9 (0.8)	43.3 (3.1)	41.6 (2.4)
0 DR MM	11.8 (1.1)	11.1 (0.6)	12.2 (0.2)	12.2 (0.9)	12.1 (0.3)	12 (0.8)	6.4 (1.1)	6.6 (0.7)
0 ABDR MM	0.7 (0.3)	0.4 (0.1)	1.5 (0)	1.5 (0.1)	1.4 (0.1)	1.3 (0.1)	1.2 (0.5)	1 (0.6)
Recipient African American	36 (2.8)	33.1 (1.1)	35 (0.6)	35.6 (0.2)	35.2 (0.7)	35.1 (0.2)	15 (0.7)	17 (0.2)
Recipient Hispanic	12.1 (0.6)	11.1 (0.2)	15.9 (0.3)	15 (0.6)	15.2 (0.3)	14.3 (0.5)	9.4 (1)	9.2 (1.4)
Recipient Caucasian	45.3 (1)	48.8 (1.1)	41.8 (0.7)	42.6 (0.5)	42.4 (0.5)	43.8 (0.3)	73.4 (2.3)	71.9 (3.6)
Recipient Other/Missing Race/Ethnicity	6.7 (0.7)	6.9 (0.9)	7.4 (0.2)	6.7 (0.4)	7.2 (0.3)	6.8 (0.5)	2.3 (0.2)	1.9 (0.2)
Recipient ABO = A	31.7 (1.2)	33.6 (0.6)	32.6 (0.3)	31.7 (0.4)	32.5 (0.4)	32 (0.3)	31.3 (1.3)	31.9 (0.1)
Recipient ABO = AB	4.2 (0.9)	5.7 (1)	5.6 (0.2)	5.3 (0.2)	5.4 (0.2)	5.3 (0.2)	2.3 (0.2)	3.6 (0.9)
Recipient ABO = B	12.6 (1.6)	11.6 (1.3)	14.1 (0.1)	14.3 (0.2)	13.8 (0.4)	13.7 (0.4)	8.3 (1.6)	6.6 (1.6)
Recipient ABO = O	51.5 (0.7)	49.1 (3.5)	47.6 (0.5)	48.8 (0.3)	48.3 (0.3)	48.9 (0.7)	58.1 (2.1)	57.9 (3.7)
Recipient < 18			9.2 (0.3)	8.3 (0.3)	7.5 (0.3)	6.7 (0.3)		0.2 (0)
Recipient 18-34	7.8 (0.4)	5.9 (0.3)	39 (1.1)	36.4 (0.2)	33.4 (0.8)	30.4 (0.1)	26.2 (2.5)	23.8 (0.8)
Recipient 35-49	26.9 (2.2)	26.3 (0.6)	31.5 (0.3)	33.2 (1.1)	30.7 (0.6)	31.8 (1)	57.9 (0.8)	60.8 (2.9)
Recipient 50-64	45	48.5	17.2	18.8	22.1	24.6	15.8	15.3

Prepared by the Scientific Registry of Transplant Recipients

Run 18d, Organ: Period:	ECD		SCD		KIA		SPK	
	1-6m	7-12m	1-6m	7-12m	1-6m	7-12m	1-6m	7-12m
	(0.8)	(0.4)	(0.9)	(0.1)	(0.6)	(0)	(2.1)	(1)
	20.3	19.3	3.1	3.3	6.2	6.4	0.2	
Recipient 65+	(1.4)	(1.8)	(0.3)	(0.3)	(0.4)	(0.3)	(0)	
Recipient Diagnosis: Glomerular	19.7	16.8	33.8	32.6	31.2	29.5		
	(1.1)	(1.2)	(0.8)	(0.3)	(0.8)	(0.5)		
	21.4	21.7	21.9	23.6	21.8	23.2		
Recipient Diagnosis: HTN	(0.3)	(1.4)	(1.1)	(0.7)	(0.9)	(0.8)		
Recipient Diagnosis: Polycystic	6.6	8	7.2	7.6	7.1	7.6		
	(0.4)	(0.3)	(0.4)	(0.3)	(0.3)	(0.3)		
Recipient Diagnosis: Renovascular	0.4	0.4	0.2	0.1	0.2	0.2		
	(0.2)	(0.1)	(0)	(0)	(0)	(0)		
Recipient Diagnosis: Other/Missing	17.5	16.8	27.9	26.7	26	24.7		
	(1.8)	(0.3)	(1.6)	(0.6)	(1)	(0.5)		
Recipient Diagnosis: DM (KI recipient)								
Recipient Diagnosis: DM (KI recipient) < 50	7.3	6	4.1	4.1	4.7	4.5		
	(0.6)	(0.8)	(0.2)	(0.5)	(0.1)	(0.6)		
Recipient Diagnosis: DM (KI recipient) 50+	27.3	30.3	4.9	5.3	8.9	10.2		
	(0.3)	(0.7)	(0.3)	(0.2)	(0.3)	(0.2)		
Recipient Diagnosis: DM (PA recipient)								
Recipient Diagnosis: DM (KP recipient)							100.1	100
							(2.3)	(4.2)
	4.8	4.6	3	2.8	3.3	3.2	9.1	9.9
Recipient Peak PRA Missing	(0.5)	(1.1)	(0.4)	(0.3)	(0.3)	(0.1)	(0.5)	(1.4)
	67.9	67.4	69.4	68.7	69.1	68.4	77.9	74.9
Recipient Peak PRA <10	(0.9)	(0.2)	(1.3)	(1.4)	(1.2)	(1.2)	(3.8)	(1.1)
	21.4	21.8	20.2	20.5	20.4	20.7	8.7	10.3
Recipient Peak PRA 10-80	(1.4)	(0.7)	(0.8)	(1.1)	(0.5)	(0.9)	(1.2)	(2.1)
	5.9	6.2	7.4	8	7.2	7.6	4.5	4.9
Recipient Peak PRA 80+	(1.1)	(1.2)	(0.4)	(0.4)	(0.3)	(0.5)	(0.9)	(1.1)
Shared - payback								
	20.9	20.8	13.4	12.9	14.8	14.4	13.3	12.4
Shared - nonpayback	(1.8)	(0.4)	(0.7)	(0.1)	(0.9)	(0.1)	(1.7)	(1.7)

Prepared by the Scientific Registry of Transplant Recipients

Run 18e: LYFT + Dialysis Years, Weighted by DPI³

Run 18e, Organ: Period:	ECD		SCD		KIA		SPK	
	1-6m	7-12m	1-6m	7-12m	1-6m	7-12m	1-6m	7-12m
2 A MM	50.8 (1.9)	51.1 (0.9)	50.2 (0.6)	50.1 (0.6)	50.3 (0.5)	50.3 (0.6)	50.6 (3.9)	51.5 (0.9)
1 A MM	42.5 (2.2)	42.1 (0.8)	41.8 (0.3)	41.4 (0.1)	41.9 (0.5)	41.5 (0.1)	42.3 (1.6)	41.5 (3.8)
0 A MM	6.6 (0.6)	6.8 (0.8)	8 (0.1)	8.5 (0.1)	7.7 (0.1)	8.2 (0.2)	7.2 (0.8)	7.1 (1.4)
2 B MM	67.1 (2.1)	68.7 (1.6)	69.4 (0.5)	68.7 (0.2)	69 (0.8)	68.7 (0.5)	71.2 (2)	72.1 (1.8)
1 B MM	29.2 (1.4)	28.1 (1)	27 (0.2)	27.4 (0.6)	27.4 (0.4)	27.6 (0.3)	25.6 (1)	25.4 (2.4)
0 B MM	3.6 (0.8)	3.2 (0.5)	3.6 (0.3)	3.8 (0.1)	3.6 (0.4)	3.7 (0.1)	3.3 (0.3)	2.6 (0.2)
2 DR MM	43.4 (3.1)	42.6 (1.9)	42.5 (0.1)	41.8 (0.2)	42.7 (0.6)	42 (0.5)	51.2 (1.7)	51.5 (1.9)
1 DR MM	45.9 (4.4)	46.1 (1.1)	45.1 (0.6)	45.6 (1.1)	45.3 (0.8)	45.7 (1.1)	43 (1.5)	42.5 (3.9)
0 DR MM	10.6 (1.2)	11.3 (0.8)	12.4 (0.9)	12.6 (1.3)	12.1 (0.5)	12.4 (1)	5.9 (0.9)	6.1 (1.1)
0 ABDR MM	0.6 (0.3)	0.6 (0.3)	1.5 (0)	1.4 (0.1)	1.3 (0)	1.3 (0)	1.2 (0.3)	1.2 (0.4)
Recipient African American	35.7 (3)	33.4 (1.1)	34.3 (1.1)	34.8 (0.2)	34.6 (0.8)	34.5 (0.4)	14.2 (1.8)	15.8 (1.9)
Recipient Hispanic	12.1 (1.1)	12.4 (1.7)	15.3 (0.7)	15.6 (0.9)	14.8 (0.4)	15 (0.5)	9.2 (1)	9.3 (0.1)
Recipient Caucasian	45.2 (2.4)	46.7 (1.7)	42.9 (0.7)	42.8 (1.2)	43.3 (0.6)	43.5 (0.8)	74.8 (5)	73.6 (2.8)
Recipient Other/Missing Race/Ethnicity	6.9 (0.4)	7.5 (0.8)	7.5 (0.3)	6.9 (0.5)	7.4 (0.3)	7 (0.4)	1.9 (1)	1.4 (0.1)
Recipient ABO = A	31.3 (1.8)	34.1 (0.9)	32.7 (0.1)	31.4 (0.7)	32.5 (0.4)	32 (0.5)	33.1 (1.2)	32.9 (2.5)
Recipient ABO = AB	4.8 (0.9)	5.2 (1)	5.5 (0.3)	5.7 (0.3)	5.4 (0.4)	5.6 (0.3)	2.4 (0.1)	2.9 (1.1)
Recipient ABO = B	11.5 (1.4)	11.5 (1.1)	13.9 (0.3)	13.9 (0.2)	13.5 (0)	13.4 (0.1)	8.1 (1)	7.1 (2)
Recipient ABO = O	52.3 (1.7)	49.2 (1)	47.8 (0.7)	49 (0.3)	48.6 (0.3)	49 (0.1)	56.5 (2.5)	57.2 (3.8)
Recipient < 18			9.3 (0.3)	8.2 (0.3)	7.6 (0.2)	6.6 (0.2)		
Recipient 18-34	7.9 (0.7)	7.1 (0.9)	40.9 (0.9)	37.9 (0.9)	35 (0.6)	31.7 (0.7)	25 (1.4)	24.4 (3.1)
Recipient 35-49	24.4 (2.1)	24.4 (2.3)	31.3 (0.5)	33.6 (0.7)	30 (0.2)	31.7 (0.9)	59.5 (2.2)	59.7 (1.1)
Recipient 50-64	47.4	48.6	15.7	17.2	21.4	23.5	15.2	15.8

Prepared by the Scientific Registry of Transplant Recipients

Run 18e, Organ: Period:	ECD		SCD		KIA		SPK	
	1-6m	7-12m	1-6m	7-12m	1-6m	7-12m	1-6m	7-12m
	(2.4)	(1.5)	(0.6)	(0.2)	(0.9)	(0.2)	(0.5)	(1.2)
Recipient 65+	20.2	19.9	2.9	3.1	6	6.5	0.5	
	(2.4)	(0.8)	(0.2)	(0.2)	(0.5)	(0.2)	(0.1)	
Recipient Diagnosis: Glomerular	18.4	18.5	33.9	33.4	31.1	30.4		
	(0.8)	(1.4)	(0.3)	(0.8)	(0.3)	(0.4)		
	21.1	20.7	21.5	22.5	21.5	22.2		
Recipient Diagnosis: HTN	(0.8)	(0.7)	(0.2)	(0.7)	(0.1)	(0.5)		
Recipient Diagnosis: Polycystic	7.5	7.3	7.6	7.9	7.6	7.8		
	(1.2)	(0.7)	(0.2)	(0.3)	(0.1)	(0.3)		
Recipient Diagnosis: Renovascular	0.4	0.3	0.2	0.2	0.2	0.2		
	(0.1)	(0.2)	(0.1)	(0)	(0.1)	(0)		
Recipient Diagnosis: Other/Missing	17.1	16.9	28.1	26.8	26.2	24.8		
	(1.6)	(1.5)	(0.4)	(0.8)	(0.5)	(0.9)		
Recipient Diagnosis: DM (KI recipient)								
Recipient Diagnosis: DM (KI recipient) < 50	6.8	6	3.8	4.1	4.4	4.5		
	(0.5)	(0.8)	(0.4)	(0.2)	(0.3)	(0.3)		
Recipient Diagnosis: DM (KI recipient) 50+	28.8	30.2	4.7	5.2	9.1	10.3		
	(1.8)	(1)	(0.2)	(0.2)	(0.3)	(0.2)		
Recipient Diagnosis: DM (PA recipient)								
Recipient Diagnosis: DM (KP recipient)							100.1	100.1
							(3.2)	(4)
	5.2	5.5	2.9	3.1	3.3	3.6	9.8	10.4
Recipient Peak PRA Missing	(0.7)	(0.3)	(0.5)	(0.4)	(0.3)	(0.3)	(1.1)	(0.4)
	66.8	68.1	71.1	69.8	70.3	69.4	76.7	77.1
Recipient Peak PRA <10	(2.2)	(1.5)	(0.2)	(0.5)	(0.5)	(0.3)	(1.9)	(3.5)
	21.5	20.5	19.2	19.8	19.6	20	9.1	8.2
Recipient Peak PRA 10-80	(2.4)	(1.2)	(0.3)	(0.1)	(0.6)	(0.3)	(0.7)	(0.7)
	6.5	5.9	6.8	7.3	6.7	7	4.5	4.4
Recipient Peak PRA 80+	(0.4)	(0.5)	(0.8)	(0.6)	(0.7)	(0.5)	(0.3)	(0.5)
Shared - payback								
	21.9	21.4	13.8	13	15.3	14.7	15.3	14.2
Shared - nonpayback	(0.7)	(3.2)	(0.3)	(0.8)	(0.4)	(0.5)	(1.7)	(1.5)

Prepared by the Scientific Registry of Transplant Recipients

Run 21a: Quintiles of LYFT Matched to Quintiles of DPI (sort by dialysis years)

Run 21a, Organ: Period:	ECD		SCD		KIA		SPK	
	1-6m	7-12m	1-6m	7-12m	1-6m	7-12m	1-6m	7-12m
2 A MM	50 (2.5)	51.7 (3.8)	50 (0.9)	49.6 (0.6)	50 (1)	50 (1.2)	51.3 (3)	51.2 (1.3)
1 A MM	42.9 (2.2)	41.4 (2)	42.3 (1)	42.8 (0.8)	42.4 (0.9)	42.6 (0.6)	40.7 (0.8)	42.4 (4.3)
0 A MM	7.2 (0.4)	6.9 (1.4)	7.7 (0.4)	7.6 (0.6)	7.6 (0.4)	7.5 (0.4)	8 (1.5)	6.5 (0.9)
2 B MM	67.9 (3)	68.2 (2.5)	69.3 (0.7)	70.6 (0.8)	69 (0.1)	70.2 (0.8)	72.6 (2.8)	71.2 (4.2)
1 B MM	29.7 (1.8)	29.2 (1.7)	27.5 (0.2)	26.1 (0.5)	27.9 (0.4)	26.7 (0.2)	25.4 (0.3)	26.7 (1.3)
0 B MM	2.5 (0.5)	2.6 (0.1)	3.2 (0.2)	3.2 (0.3)	3 (0.2)	3.1 (0.3)	2 (0.7)	2.1 (0.7)
2 DR MM	42.4 (2.2)	43 (1.9)	44.8 (0.5)	45.8 (0.8)	44.4 (0.4)	45.3 (0.8)	51.5 (1)	55.6 (1.2)
1 DR MM	46.2 (3)	46.4 (1.4)	44.5 (0.3)	43.8 (1.6)	44.9 (0.6)	44.3 (1.6)	42 (2.2)	39.3 (3.5)
0 DR MM	11.4 (1)	10.7 (1.1)	10.6 (0.1)	10.4 (0.5)	10.8 (0.2)	10.5 (0.5)	6.4 (1.6)	5.2 (0.9)
0 ABDR MM	0.6 (0.1)	0.4 (0.3)	0.9 (0.2)	1 (0.2)	0.9 (0.1)	0.9 (0.1)	0.7 (0.2)	0.9 (0.1)
Recipient African American	35.1 (4)	33.5 (2.4)	35.1 (0.8)	35.8 (1.2)	35.1 (1.2)	35.4 (0.5)	16.4 (1.5)	15.2 (1.4)
Recipient Hispanic	12.1 (1.2)	11.8 (1.4)	14 (0.2)	14.4 (0.3)	13.7 (0.2)	13.9 (0.3)	8.9 (0.1)	10.3 (1.3)
Recipient Caucasian	45.4 (1.2)	47.4 (3)	43.6 (1.1)	43.3 (1.2)	43.9 (0.6)	44.1 (0.6)	72.9 (3.6)	72.8 (2.4)
Recipient Other/Missing Race/Ethnicity	7.4 (1.2)	7.2 (0.9)	7.2 (0.1)	6.5 (0.4)	7.3 (0.3)	6.6 (0.4)	1.7 (0.2)	1.8 (0.4)
Recipient ABO = A	33 (1.1)	33.6 (1.1)	33 (0.8)	31.5 (0.7)	33 (0.4)	31.9 (0.4)	32.3 (1.3)	32.7 (1.5)
Recipient ABO = AB	5.6 (0.7)	4.6 (0.2)	5.7 (0.1)	5.3 (0.1)	5.7 (0.1)	5.1 (0.2)	2.3 (0.5)	3.4 (0.9)
Recipient ABO = B	12.5 (0.8)	10.9 (1.4)	14.1 (0.9)	14.1 (0.9)	13.8 (0.6)	13.5 (0.9)	7.4 (1.1)	6.9 (2.2)
Recipient ABO = O	48.9 (2.3)	50.8 (1.1)	47.1 (1.2)	49.1 (0.7)	47.5 (1.3)	49.4 (0.7)	58 (1.7)	57.1 (2.4)
Recipient < 18			9.3 (0.2)	8 (0)	7.5 (0.1)	6.5 (0)		0.3 (0.1)
Recipient 18-34	7.9 (1.1)	8.8 (1.1)	10.6 (0.4)	11.5 (0.1)	10.1 (0.2)	11 (0.1)	23.3 (1)	24 (1.4)
Recipient 35-49	26.3 (0.9)	25.2 (2.7)	27.5 (0.7)	28.6 (0.5)	27.3 (0.8)	27.9 (0.3)	60.2 (4.7)	58.8 (4.2)
Recipient 50-64	46.9	47.1	39.8	40	41.1	41.4	16.2	17

Prepared by the Scientific Registry of Transplant Recipients

Run 21a, Organ: Period:	ECD		SCD		KIA		SPK	
	1-6m	7-12m	1-6m	7-12m	1-6m	7-12m	1-6m	7-12m
	(1.7)	(1.7)	(1.1)	(0.8)	(0.7)	(0.9)	(0.8)	(1)
Recipient 65+	19	18.9	12.8	11.9	14	13.2	0.2	
	(1.6)	(1.7)	(0.3)	(0.4)	(0.5)	(0.6)	(0)	
Recipient Diagnosis: Glomerular	18.5	18	21.1	21.6	20.6	20.9		
	(2.2)	(1.3)	(0.8)	(0.9)	(0.2)	(0.9)		
	23.2	21.9	21	21.1	21.4	21.2		
Recipient Diagnosis: HTN	(2.4)	(1.5)	(0.5)	(0.2)	(0.3)	(0.2)		
Recipient Diagnosis: Polycystic	7.3	8.1	6.4	6.6	6.6	6.9		
	(0.7)	(0.4)	(0.1)	(0.6)	(0)	(0.4)		
Recipient Diagnosis: Renovascular	0.1	0.4	0.3	0.2	0.2	0.3		
	(0)	(0.3)	(0.1)	(0.1)	(0.1)	(0)		
Recipient Diagnosis: Other/Missing	17.1	17.1	22.3	20.5	21.3	19.8		
	(0.7)	(2.1)	(0.1)	(0.5)	(0.1)	(0.8)		
Recipient Diagnosis: DM (KI recipient)								
Recipient Diagnosis: DM (KI recipient) < 50	6.6	6.1	7.7	8	7.5	7.6		
	(0.4)	(1.1)	(0.1)	(0.4)	(0.1)	(0.2)		
Recipient Diagnosis: DM (KI recipient) 50+	27.4	28.4	21.2	22	22.3	23.2		
	(0.6)	(1.8)	(0.8)	(1.8)	(0.6)	(1.8)		
Recipient Diagnosis: DM (PA recipient)								
Recipient Diagnosis: DM (KP recipient)							100	100.1
							(3.1)	(4.4)
	5.9	4.9	3.5	3.2	3.9	3.5	9.9	8.4
Recipient Peak PRA Missing	(0.5)	(0.3)	(0.1)	(0.1)	(0.1)	(0.1)	(1)	(0.4)
	67.8	66.9	71.4	71.8	70.7	70.8	74	76.4
Recipient Peak PRA <10	(1)	(2.4)	(0.7)	(1.1)	(0.8)	(1.1)	(4.3)	(2.9)
	20	21.7	19.7	19.6	19.7	20	10.8	9.7
Recipient Peak PRA 10-80	(2.3)	(1)	(0.6)	(0.1)	(0.2)	(0.1)	(1.1)	(0.7)
	6.3	6.5	5.5	5.4	5.6	5.7	5.3	5.7
Recipient Peak PRA 80+	(1)	(0.3)	(0.4)	(0.3)	(0.2)	(0.2)	(0.4)	(1.6)
Shared - payback								
	22.9	21.1	13.5	13.4	15.3	14.8	12.6	13.7
Shared - nonpayback	(1.5)	(2.8)	(0.4)	(0.7)	(0.1)	(1)	(1.4)	(0.8)

Prepared by the Scientific Registry of Transplant Recipients

Run 21b: Quintiles of Post-Transplant Lifespan Matched to Quintiles of DPI (sort by dialysis years)

Run 21b, Organ: Period:	ECD		SCD		KIA		SPK	
	1-6m	7-12m	1-6m	7-12m	1-6m	7-12m	1-6m	7-12m
2 A MM	49.4 (3.4)	50.8 (0.8)	50.4 (0.3)	51.3 (1.6)	50.2 (0.5)	51.2 (1.2)	49.2 (3.7)	48.4 (2.1)
1 A MM	43.4 (2.9)	42.6 (3)	42.5 (0.1)	41.3 (0.8)	42.7 (0.5)	41.6 (1.2)	43 (1.3)	43.6 (1.1)
0 A MM	7.2 (0.8)	6.6 (0.8)	7.1 (0.1)	7.4 (0.3)	7.1 (0.2)	7.2 (0.2)	7.9 (0.6)	7.9 (0.8)
2 B MM	68.3 (3.1)	67.3 (3.5)	70.3 (0.4)	69.1 (0.5)	70 (0.9)	68.8 (0.8)	72 (1.7)	73.2 (0.4)
1 B MM	28.3 (1.4)	29.3 (1.1)	26.6 (0.6)	27.4 (0.6)	26.9 (0.3)	27.8 (0.7)	24.9 (1.3)	24.2 (1.8)
0 B MM	3.3 (0.8)	3.3 (0.6)	3.1 (0.2)	3.5 (0.3)	3.1 (0.1)	3.5 (0.2)	3.2 (0.8)	2.5 (0.9)
2 DR MM	43.8 (0.7)	43.1 (2.4)	45.2 (1.3)	46 (0)	44.9 (1.1)	45.4 (0.4)	51 (1)	53.4 (0.8)
1 DR MM	44.7 (6)	46.4 (2.3)	44.4 (0.9)	43.9 (1.1)	44.5 (1.7)	44.3 (0.9)	42 (3.2)	41.4 (2.2)
0 DR MM	11.5 (1.3)	10.5 (1.4)	10.4 (0.4)	10.2 (0.6)	10.6 (0.1)	10.2 (0.7)	7.1 (1.5)	5.1 (0.5)
0 ABDR MM	0.9 (0.4)	0.4 (0.2)	0.9 (0.2)	1.1 (0.3)	0.9 (0.1)	1 (0.3)	1 (0.2)	1 (0.2)
Recipient African American	36.5 (2)	33.6 (2.4)	34.4 (0.3)	34.9 (0.5)	34.7 (0.5)	34.6 (0.7)	14.1 (1.3)	15.7 (1.4)
Recipient Hispanic	11.6 (0.6)	11.1 (0.4)	14.2 (0.5)	14.4 (0.6)	13.7 (0.4)	13.8 (0.5)	9.4 (1.1)	9.5 (0.5)
Recipient Caucasian	45.4 (3.2)	47.9 (1.3)	44.5 (0.5)	43.7 (1.1)	44.6 (0.3)	44.5 (0.8)	74.8 (2.6)	72.7 (2.5)
Recipient Other/Missing Race/Ethnicity	6.6 (1.3)	7.4 (1.4)	6.9 (0.2)	7.1 (0.4)	6.9 (0.1)	7.1 (0.4)	1.8 (1)	2 (0.7)
Recipient ABO = A	31.6 (0.4)	33.7 (1.6)	32.7 (1.1)	31 (0.7)	32.5 (0.8)	31.5 (0.3)	33.1 (1.3)	32.4 (2.7)
Recipient ABO = AB	5.5 (0.7)	4.5 (0.1)	5.9 (0.5)	5.2 (0.2)	5.8 (0.3)	5.1 (0.2)	3.4 (0.8)	2.7 (0.4)
Recipient ABO = B	12.5 (3)	10.6 (1.3)	14 (0.8)	14.1 (0.8)	13.7 (0.3)	13.5 (0.6)	7 (0.4)	7.4 (2.4)
Recipient ABO = O	50.5 (1.2)	51.2 (1.2)	47.5 (1.5)	49.6 (0.8)	48 (1.4)	49.9 (0.7)	56.5 (1.7)	57.4 (0.7)
Recipient < 18			9.3 (0.3)	8.1 (0.1)	7.6 (0.3)	6.6 (0.1)	0.2 (0)	0.3 (0.1)
Recipient 18-34	9.5 (0.6)	10 (0.9)	11.4 (0.3)	11.2 (0.2)	11.1 (0.3)	11 (0.3)	22.6 (1.3)	24.7 (1.9)
Recipient 35-49	25.7 (0.8)	26.4 (1)	28.2 (1.8)	28.7 (0.3)	27.7 (1.5)	28.3 (0.4)	61.2 (3.5)	58.3 (2.9)
Recipient 50-64	46.6	44.4	39.3	39.6	40.7	40.5	16	16.6

Prepared by the Scientific Registry of Transplant Recipients

Run 21b, Organ: Period:	ECD		SCD		KIA		SPK	
	1-6m	7-12m	1-6m	7-12m	1-6m	7-12m	1-6m	7-12m
	(3.8)	(4.4)	(1.7)	(0.6)	(1.2)	(0.9)	(0.5)	(1.7)
Recipient 65+	18.2 (1)	19.2 (0.7)	11.8 (0.5)	12.3 (0.4)	13 (0.6)	13.7 (0.4)		
Recipient Diagnosis: Glomerular	18.7 (0.5)	17.7 (1.6)	22.1 (0.4)	21.1 (0.7)	21.5 (0.3)	20.5 (0.8)		
Recipient Diagnosis: HTN	22.2 (2.6)	21.4 (1.7)	21 (0.9)	21.5 (0.6)	21.2 (0.5)	21.5 (0.3)		
Recipient Diagnosis: Polycystic	6.9 (1.4)	7.8 (0.7)	6.4 (0.4)	6.9 (0.3)	6.5 (0.5)	7.1 (0.2)		
Recipient Diagnosis: Renovascular	0.3 (0.1)	0.5 (0.3)	0.3 (0)	0.2 (0)	0.3 (0)	0.3 (0.1)		
Recipient Diagnosis: Other/Missing	18.7 (1.3)	18.2 (1.1)	21.7 (0.8)	21.1 (0.9)	21.1 (0.8)	20.5 (0.9)		
Recipient Diagnosis: DM (KI recipient)								
Recipient Diagnosis: DM (KI recipient) < 50	6.2 (1)	6.9 (0.6)	8.2 (0.3)	8.4 (0.4)	7.9 (0.2)	8.1 (0.3)		
Recipient Diagnosis: DM (KI recipient) 50+	27 (1.8)	27.7 (2.3)	20.3 (1.9)	20.8 (0.3)	21.5 (1.8)	22.1 (0.5)		
Recipient Diagnosis: DM (PA recipient)								
Recipient Diagnosis: DM (KP recipient)							100.1 (2.2)	99.9 (2.5)
	6.8 (0.5)	4.4 (0.6)	3.4 (0.1)	3.1 (0.3)	4 (0.1)	3.4 (0.2)	8.8 (0.9)	10.2 (2)
Recipient Peak PRA Missing	67.1 (4)	66.5 (1.3)	72.4 (0.1)	72 (0.7)	71.4 (0.8)	71 (0.8)	76 (3.2)	74.2 (2.6)
Recipient Peak PRA <10	20.1 (0.3)	22 (1.9)	18.7 (0.6)	19 (0.9)	19 (0.5)	19.6 (0.3)	9.9 (0.9)	11.2 (1.6)
Recipient Peak PRA 10-80	6 (1.4)	7.1 (0.1)	5.5 (0.8)	5.8 (0.5)	5.6 (0.8)	6.1 (0.4)	5.3 (0.9)	4.4 (0.1)
Recipient Peak PRA 80+								
Shared - payback	23.2 (1.6)	21.1 (0.9)	13.8 (0.8)	13.3 (0.1)	15.5 (0.9)	14.8 (0.1)	12 (1.5)	11.4 (1.1)

Prepared by the Scientific Registry of Transplant Recipients

Run 21c: Quintiles of Post-Transplant Lifespan Matched to Quintiles of DPI (sort by dialysis years), PRA 80+ can receive organs from next highest or all lower quintiles

Run 21c, Organ: Period:	ECD		SCD		KIA		SPK	
	1-6m	7-12m	1-6m	7-12m	1-6m	7-12m	1-6m	7-12m
2 A MM	49.7 (3.7)	52.9 (2.1)	51.1 (0.9)	50.5 (0.2)	50.9 (1.4)	51 (0.3)	49.9 (1)	49.1 (3.6)
1 A MM	42.5 (2.2)	40.6 (2.4)	41.2 (0.8)	41.3 (0.2)	41.5 (0.4)	41.1 (0.6)	42.6 (2)	42.5 (1.7)
0 A MM	7.8 (1.4)	6.5 (0.9)	7.6 (0.4)	8.2 (0.6)	7.7 (0.2)	7.9 (0.4)	7.6 (0.6)	8.3 (1)
2 B MM	69.2 (3.3)	68.5 (0.5)	69.2 (0.5)	69.5 (0.8)	69.2 (0.3)	69.3 (0.6)	70 (1)	71.7 (2.2)
1 B MM	27.1 (1.7)	28 (0.5)	27.2 (1.1)	27 (0.8)	27.2 (1.1)	27.2 (0.8)	26.9 (1.9)	25.9 (2)
0 B MM	3.6 (0.8)	3.5 (0.4)	3.6 (0.3)	3.5 (0.3)	3.6 (0.3)	3.5 (0.2)	3.2 (0.2)	2.5 (0.5)
2 DR MM	44.2 (1.5)	42.4 (2.1)	45.1 (1.3)	46.4 (0.3)	44.9 (1.3)	45.7 (0.6)	49.2 (1.6)	52.6 (0.8)
1 DR MM	43.8 (4)	45.5 (1.7)	44.1 (1.2)	43.1 (0.3)	44 (1.7)	43.5 (0.5)	43 (1.9)	41.7 (3.4)
0 DR MM	12 (1.5)	12.1 (1.6)	10.9 (0.2)	10.5 (0.3)	11.1 (0.4)	10.8 (0.5)	7.9 (0.4)	5.7 (1.1)
0 ABDR MM	0.8 (0.5)	0.7 (0.3)	1.3 (0.4)	1.6 (0)	1.2 (0.2)	1.4 (0)	1.4 (0.3)	1 (0.1)
Recipient African American	35.4 (3)	32.6 (1.1)	34.3 (1.3)	35.4 (0.7)	34.5 (1.4)	34.9 (0.4)	15.6 (2.4)	15.5 (0.2)
Recipient Hispanic	11.2 (0.3)	12.6 (1)	14.8 (0.3)	13.9 (0.9)	14.1 (0.2)	13.6 (0.9)	8.8 (0.3)	9.5 (1.3)
Recipient Caucasian	46.3 (2.1)	46.5 (0.9)	43.6 (1.3)	43.8 (0.4)	44.1 (0.8)	44.3 (0.4)	74 (4.8)	72.8 (3.1)
Recipient Other/Missing Race/Ethnicity	7.1 (0.8)	8.3 (0.2)	7.3 (0.3)	6.9 (0.2)	7.3 (0.4)	7.2 (0.1)	1.7 (0.4)	2.2 (0.7)
Recipient ABO = A	31.9 (2.8)	32.6 (0.5)	32.6 (0.5)	31 (0.5)	32.4 (0.4)	31.3 (0.4)	32.6 (2.4)	33.3 (1.3)
Recipient ABO = AB	5.2 (0.4)	4.6 (0.8)	5.8 (0)	5.2 (0.2)	5.7 (0.1)	5.1 (0.2)	3 (0.5)	3.1 (0.6)
Recipient ABO = B	13.4 (0.8)	10.8 (1.3)	14.1 (0.8)	14.3 (0.8)	13.9 (0.6)	13.6 (0.6)	7.3 (0.9)	6.8 (0.8)
Recipient ABO = O	49.4 (1.6)	52 (1.4)	47.6 (1.4)	49.5 (0.9)	47.9 (1.5)	50 (0.5)	57.1 (3.4)	56.8 (1.7)
Recipient < 18		0.1 (0)	9.7 (0.4)	8.1 (0.6)	7.8 (0.3)	6.5 (0.4)		0.3 (0.1)
Recipient 18-34	8.7 (0.3)	8.6 (1)	12.3 (0.4)	12.7 (0.6)	11.6 (0.3)	11.9 (0.3)	23.9 (1.6)	26 (0.7)
Recipient 35-49	25.9 (2.7)	25.1 (0.3)	29.3 (0.3)	29.8 (0.6)	28.7 (0.7)	28.9 (0.5)	59.7 (2.1)	57.5 (3)

Prepared by the Scientific Registry of Transplant Recipients

Run 21c, Organ: Period:	ECD		SCD		KIA		SPK	
	1-6m	7-12m	1-6m	7-12m	1-6m	7-12m	1-6m	7-12m
Recipient 50-64	47.1 (1.6)	46.7 (0.7)	37.4 (0.1)	38.7 (1.5)	39.3 (0.2)	40.2 (1.1)	16.3 (1.7)	16.2 (0.4)
Recipient 65+	18.3 (2.8)	19.5 (0.5)	11.3 (0.8)	10.7 (0.7)	12.7 (0.9)	12.4 (0.7)	0.2 (0)	
Recipient Diagnosis: Glomerular	19.3 (3.1)	19 (1.8)	23.3 (0.4)	22.5 (0.7)	22.6 (0.4)	21.8 (0.4)		
Recipient Diagnosis: HTN	22.9 (1.6)	21.9 (1.9)	20 (0.8)	22 (0.8)	20.6 (0.8)	21.9 (0.8)		
Recipient Diagnosis: Polycystic	5.9 (0.4)	7.3 (0.5)	6.8 (0.1)	6.9 (0.4)	6.6 (0)	7 (0.3)		
Recipient Diagnosis: Renovascular	0.5 (0.1)	0.2 (0)	0.3 (0.1)	0.2 (0.1)	0.3 (0)	0.2 (0.1)		
Recipient Diagnosis: Other/Missing	19.1 (1)	17.4 (0.7)	23.5 (0.5)	21.5 (0.2)	22.6 (0.2)	20.7 (0.2)		
Recipient Diagnosis: DM (KI recipient)								
Recipient Diagnosis: DM (KI recipient) < 50	5.7 (0.3)	6 (0.9)	7.4 (0.6)	7.6 (0.5)	7 (0.4)	7.3 (0.3)		
Recipient Diagnosis: DM (KI recipient) 50+	26.6 (1.8)	28.3 (1.4)	18.8 (0.7)	19.3 (2)	20.3 (0.8)	21 (1.8)		
Recipient Diagnosis: DM (PA recipient)								
Recipient Diagnosis: DM (KP recipient)							100.1 (2.8)	100 (2.8)
Recipient Peak PRA Missing	5.3 (0.8)	5.5 (0.9)	3.1 (0.2)	3.1 (0)	3.5 (0)	3.6 (0.1)	10 (1.2)	8.3 (0.9)
Recipient Peak PRA <10	67.6 (3.8)	68.2 (0.4)	69.6 (0.1)	68.3 (1.5)	69.2 (0.7)	68.3 (1.2)	73.5 (2.6)	73.6 (1.4)
Recipient Peak PRA 10-80	21.2 (1.5)	20.7 (1.3)	17.3 (0.3)	17.8 (1.1)	18 (0.4)	18.4 (0.9)	10.2 (1.3)	10.8 (0.6)
Recipient Peak PRA 80+	5.9 (0.8)	5.6 (0.7)	10 (0.5)	10.7 (0.2)	9.2 (0.5)	9.7 (0.1)	6.5 (0.6)	7.3 (1.2)
Shared - payback								
Shared - nonpayback	22.1 (0.5)	20.1 (0.5)	13.1 (0.4)	12.8 (0.1)	14.8 (0.3)	14.2 (0.1)	12.9 (0.5)	12.6 (1.3)

Prepared by the Scientific Registry of Transplant Recipients

Run 21e: Deciles of Post-Transplant Lifespan Matched to Deciles of DPI (sort by dialysis years),
PRA 80+ can receive organs from next highest or all lower quintiles

Run 21e, Organ: Period:	ECD		SCD		KIA		SPK	
	1-6m	7-12m	1-6m	7-12m	1-6m	7-12m	1-6m	7-12m
2 A MM	52.3 (0.7)	51.7 (0.7)	50.1 (1.2)	49.7 (0.3)	50.5 (1)	50.1 (0.3)	51.9 (2.4)	48.4 (1.7)
1 A MM	40.7 (1.4)	42.3 (1.5)	41.7 (0.8)	42.2 (0.7)	41.5 (0.8)	42.2 (0.5)	39.3 (2.1)	43.7 (1)
0 A MM	6.9 (1.1)	6.1 (1.2)	8.2 (0.4)	8 (0.7)	8 (0.5)	7.7 (0.6)	8.8 (0.7)	8 (0.6)
2 B MM	68.5 (1.7)	68.7 (1.6)	69.6 (0.2)	69.1 (0.8)	69.3 (0.2)	69 (0.8)	70 (1.4)	70.8 (1.6)
1 B MM	28.3 (0.3)	28.5 (2.6)	26.8 (0.2)	27.4 (0.4)	27.1 (0.2)	27.6 (0.6)	27.5 (1.2)	26.1 (0.8)
0 B MM	3.2 (0.6)	2.8 (0.5)	3.7 (0.7)	3.5 (0.5)	3.6 (0.5)	3.3 (0.3)	2.5 (0.6)	3.1 (0.3)
2 DR MM	43.8 (1.9)	42.2 (2.2)	44.6 (1.1)	45.6 (1)	44.5 (0.7)	44.9 (0.8)	50 (1.8)	50.9 (1.8)
1 DR MM	44.3 (3)	46.9 (2.3)	44.4 (1.2)	43.7 (0.1)	44.4 (0.5)	44.3 (0.4)	43.9 (2.3)	43.6 (1.7)
0 DR MM	11.9 (0.8)	10.9 (0.4)	10.9 (0.5)	10.8 (0)	11.1 (0.3)	10.8 (0.1)	6.1 (0.3)	5.6 (1.2)
0 ABDR MM	1.1 (0.4)	0.5 (0.2)	1.4 (0.2)	1.5 (0.3)	1.3 (0.2)	1.3 (0.2)	1.1 (0.1)	1.3 (0.3)
Recipient African American	34.4 (1.3)	33 (2)	33.6 (0.4)	34.7 (1.2)	33.7 (0.3)	34.3 (0.8)	15.5 (1.5)	15.2 (2.8)
Recipient Hispanic	10.6 (1.2)	12.6 (0.7)	14 (0.6)	14.2 (1)	13.4 (0.7)	13.9 (0.7)	8.8 (0.6)	9.6 (2)
Recipient Caucasian	47.6 (2.2)	45.9 (0.6)	45.1 (0.5)	44.1 (0.8)	45.6 (0.6)	44.4 (0.6)	73.5 (1.8)	73.4 (2.7)
Recipient Other/Missing Race/Ethnicity	7.3 (1)	8.5 (1.5)	7.3 (0.3)	7.1 (0.3)	7.3 (0.4)	7.3 (0.5)	2.2 (0.3)	1.9 (1)
Recipient ABO = A	32 (1.7)	33.9 (1)	33.2 (0.5)	31.5 (1.1)	33 (0.4)	32 (0.7)	32.1 (0.8)	33.1 (1.9)
Recipient ABO = AB	5.1 (0.4)	4 (0.8)	5.5 (0.4)	5.3 (0.3)	5.4 (0.3)	5 (0.1)	3 (0.3)	2.7 (0.5)
Recipient ABO = B	12.4 (1.5)	10.8 (1.4)	13.8 (1)	13.9 (0.5)	13.6 (0.8)	13.3 (0.4)	7.7 (0.7)	6.6 (1.6)
Recipient ABO = O	50.5 (1.2)	51.4 (0.9)	47.4 (1)	49.3 (0.8)	48 (0.9)	49.7 (0.8)	57.2 (0.8)	57.7 (0.8)
Recipient < 18			9.7 (0.2)	8.6 (0.3)	7.9 (0.1)	6.9 (0.2)		0.3 (0.1)
Recipient 18-34	9.3 (0.8)	9 (1.1)	11.7 (0.3)	12.8 (0.3)	11.2 (0.2)	12.1 (0.4)	24.2 (1.9)	25.9 (2.8)
Recipient 35-49	25.2 (3.4)	25.5 (2.3)	30.9 (0.6)	31.1 (0.9)	29.8 (0.5)	30 (0.5)	58.6 (1.1)	57.9 (2.3)

Prepared by the Scientific Registry of Transplant Recipients

Run 21e, Organ: Period:	ECD		SCD		KIA		SPK	
	1-6m	7-12m	1-6m	7-12m	1-6m	7-12m	1-6m	7-12m
Recipient 50-64	46.2 (2.8)	47.4 (1.2)	37.4 (0.7)	37.3 (0.5)	39.1 (0.7)	39.3 (0.4)	17 (2.4)	15.9 (2.9)
Recipient 65+	19.3 (2.3)	18 (2.3)	10.3 (0.3)	10.2 (0.5)	12 (0.2)	11.7 (0.5)	0.3 (0.1)	
Recipient Diagnosis: Glomerular	17.3 (2.4)	18.3 (0.6)	22.8 (0.6)	23 (0.2)	21.7 (0.1)	22.1 (0.3)		
Recipient Diagnosis: HTN	20.8 (2)	22 (0.9)	20.2 (0.5)	20.6 (0.8)	20.3 (0.6)	20.9 (0.6)		
Recipient Diagnosis: Polycystic	7.1 (0.4)	7.1 (1)	6.9 (0.3)	7.1 (0.1)	6.9 (0.3)	7.1 (0.2)		
Recipient Diagnosis: Renovascular	0.4 (0.1)	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)		
Recipient Diagnosis: Other/Missing	19.7 (2.3)	18 (1.2)	22.9 (0.5)	22.2 (0.5)	22.3 (0.1)	21.4 (0.4)		
Recipient Diagnosis: DM (KI recipient)								
Recipient Diagnosis: DM (KI recipient) < 50	7.4 (1.2)	6.2 (1.1)	8 (0.2)	8.2 (0.3)	7.9 (0.2)	7.8 (0.4)		
Recipient Diagnosis: DM (KI recipient) 50+	27.2 (0.5)	28.1 (1.6)	19 (0.7)	18.8 (0.5)	20.6 (0.7)	20.6 (0.5)		
Recipient Diagnosis: DM (PA recipient)								
Recipient Diagnosis: DM (KP recipient)							100 (0.5)	100.1 (2.4)
Recipient Peak PRA Missing	6.1 (0.9)	4.6 (0.6)	3.5 (0.3)	3 (0.3)	4 (0.3)	3.3 (0.4)	8.6 (1.5)	9.1 (0.5)
Recipient Peak PRA <10	66.3 (1.3)	68.3 (2.2)	69.3 (0.2)	69 (0.9)	68.7 (0.4)	68.9 (1.1)	74.7 (1.4)	75.1 (1.2)
Recipient Peak PRA 10-80	21.1 (0.7)	21.2 (1)	17.3 (1.1)	17.5 (0.8)	18 (1)	18.2 (0.6)	10.1 (1)	10.7 (0.7)
Recipient Peak PRA 80+	6.5 (1.3)	6 (0.4)	9.9 (0.6)	10.5 (0.6)	9.3 (0.4)	9.6 (0.6)	6.6 (1.3)	5.2 (1.5)
Shared - payback								
Shared - nonpayback	22.6 (0.6)	20.2 (1.4)	12.3 (0.4)	12.1 (0.7)	14.3 (0.4)	13.7 (0.7)	12.8 (1)	13.1 (2)

Prepared by the Scientific Registry of Transplant Recipients

Run 22a: Continuous Age Matching, Kidney Follows Pancreas

Run 22a, Organ: Period:	ECD		SCD		KIA		SPK	
	1-6m	7-12m	1-6m	7-12m	1-6m	7-12m	1-6m	7-12m
2 A MM	49.5 (2.1)	49.7 (2.5)	50.5 (0.5)	50.1 (0.7)	50.4 (0.6)	50 (0.8)	51.4 (1.5)	51.2 (1.1)
1 A MM	42.5 (1.7)	43.6 (1.1)	42.4 (1.1)	42.8 (0.9)	42.4 (1.1)	43 (0.5)	40 (3.6)	40.5 (2.1)
0 A MM	8 (1.9)	6.7 (0.7)	7.1 (0.1)	7.1 (0.2)	7.2 (0.4)	7 (0.1)	8.5 (1.4)	8.3 (1.5)
2 B MM	67.9 (4)	69.3 (1.3)	69.5 (1.1)	69.6 (0.3)	69.2 (1.7)	69.5 (0)	71.7 (2.6)	72.2 (2.1)
1 B MM	29 (1.7)	28.2 (1.3)	27.6 (0.8)	28.3 (0.7)	27.8 (0.8)	28.3 (0.8)	24.7 (2.3)	25.2 (2.4)
0 B MM	3.1 (0.4)	2.5 (0.4)	2.9 (0.1)	2.2 (0.1)	2.9 (0)	2.2 (0.1)	3.5 (0.7)	2.7 (1)
2 DR MM	43.3 (1.5)	43.1 (3.4)	45.8 (0.7)	45.1 (1.1)	45.3 (0.7)	44.7 (1.6)	51.1 (2.4)	52.7 (1.9)
1 DR MM	46.4 (2.3)	45.3 (2)	43.9 (1.5)	45.5 (0.4)	44.4 (1.6)	45.5 (0.1)	42.2 (4.5)	40.7 (2.1)
0 DR MM	10.3 (0.1)	11.6 (1.6)	10.3 (0.4)	9.4 (0.5)	10.3 (0.3)	9.8 (0.7)	6.7 (0.7)	6.6 (0.7)
0 ABDR MM	0.5 (0.2)	0.4 (0.1)	0.2 (0.1)	0.2 (0)	0.3 (0)	0.2 (0)	1.7 (0.5)	1.3 (0.4)
Recipient African American	33.5 (2.2)	30.6 (0.4)	34.3 (1.2)	34.8 (1.1)	34.1 (1.4)	33.9 (0.9)	15.7 (0.7)	14.8 (0.1)
Recipient Hispanic	10.3 (0.6)	11 (1)	14.6 (0.8)	15.2 (0.2)	13.8 (0.8)	14.3 (0.3)	8.8 (0.7)	10.3 (0.2)
Recipient Caucasian	49.2 (1.1)	50.4 (2)	44.6 (1)	43.7 (1.3)	45.5 (1)	45.1 (1.4)	73.8 (3.4)	72.7 (3.8)
Recipient Other/Missing Race/Ethnicity	7.1 (0.8)	7.9 (0.6)	6.5 (0.9)	6.4 (0.2)	6.6 (0.8)	6.7 (0.3)	1.8 (0.4)	2.2 (0.6)
Recipient ABO = A	34.7 (0.5)	36.6 (1.6)	34.9 (0.6)	34.4 (0.7)	34.9 (0.6)	34.9 (0.5)	33.6 (2.6)	33.7 (2.1)
Recipient ABO = AB	4.9 (0.7)	5.6 (0.7)	5.8 (0.4)	5.4 (0.5)	5.6 (0.4)	5.4 (0.6)	2.9 (0.4)	2.8 (0.5)
Recipient ABO = B	9.1 (1.3)	8.7 (0.6)	11.4 (0.3)	11.3 (0.2)	11 (0.3)	10.8 (0.1)	7.4 (1.2)	8.2 (1)
Recipient ABO = O	51.3 (1.7)	49.1 (1.7)	47.9 (0.4)	48.9 (0.4)	48.5 (0.5)	48.9 (0.2)	56.1 (1.1)	55.3 (2.4)
Recipient < 18		0.2 (0.1)	10.1 (0.2)	8.3 (0.3)	8.2 (0.2)	6.6 (0.3)		0.2 (0)
Recipient 18-34	2.6 (0.4)	1.7 (0.6)	25.2 (1.1)	26.5 (1.2)	20.9 (1)	21.4 (1)	23.7 (0.9)	27 (2.1)
Recipient 35-49	13.8 (2.1)	14 (1.1)	40.3 (0.7)	40.8 (0.6)	35.3 (0.2)	35.3 (0.6)	60.5 (2.7)	58.6 (1.1)
Recipient 50-64	65.1	65.7	22.2	22.3	30.4	31.3	15.5	14.3

Prepared by the Scientific Registry of Transplant Recipients

Run 22a, Organ: Period:	ECD		SCD		KIA		SPK	
	1-6m	7-12m	1-6m	7-12m	1-6m	7-12m	1-6m	7-12m
	(1.4)	(2.7)	(0.4)	(0.2)	(0.4)	(0.7)	(0.9)	(2)
	18.6	18.4	2.1	2	5.3	5.4	0.4	
Recipient 65+	(1.9)	(1.2)	(0.2)	(0.1)	(0.2)	(0.2)	(0)	
Recipient Diagnosis:	14.9	13.1	27.7	27.7	25.3	24.7		
Glomerular	(0.6)	(1.1)	(1)	(1)	(0.8)	(1)		
	20.6	19.5	19.8	20.1	20	20		
Recipient Diagnosis: HTN	(1.4)	(1.5)	(0.3)	(0.6)	(0.2)	(0.3)		
Recipient Diagnosis:	7.5	8.5	5.7	6.3	6.1	6.7		
Polycystic	(0.6)	(0.9)	(0.2)	(0.2)	(0.2)	(0.3)		
Recipient Diagnosis:	0.3	0.4	0.2	0.2	0.2	0.3		
Renovascular	(0.1)	(0.1)	(0.1)	(0)	(0.1)	(0)		
Recipient Diagnosis:	15.4	14.6	25.6	24.8	23.7	22.7		
Other/Missing	(1.9)	(0.4)	(0.2)	(0.4)	(0.5)	(0.4)		
Recipient Diagnosis: DM (KI recipient)								
Recipient Diagnosis: DM (KI recipient) < 50	3.7	3.7	11.2	10.9	9.8	9.4		
	(0.1)	(0.6)	(0.2)	(0.3)	(0.2)	(0.4)		
Recipient Diagnosis: DM (KI recipient) 50+	37.6	40.3	9.7	10	15	16.3		
	(0.3)	(2)	(0.1)	(0.5)	(0)	(0.5)		
Recipient Diagnosis: DM (PA recipient)								
Recipient Diagnosis: DM (KP recipient)							100	100.1
							(4)	(3.4)
	4.8	5.1	3.4	3.2	3.7	3.6	7.5	9.2
Recipient Peak PRA Missing	(0.6)	(1.7)	(0.1)	(0.4)	(0)	(0.3)	(0.6)	(1.2)
	72.3	73.5	73	71.6	72.8	72	76.8	74.1
Recipient Peak PRA <10	(2.9)	(1.5)	(1.1)	(1)	(1.3)	(0.7)	(1.8)	(2)
	19.2	18	18.9	20	18.9	19.5	10.4	12.2
Recipient Peak PRA 10-80	(0.6)	(1.9)	(1)	(0.8)	(0.8)	(0.3)	(2.8)	(2.8)
	3.7	3.3	4.8	5.3	4.6	4.9	5.3	4.6
Recipient Peak PRA 80+	(0.3)	(0.4)	(0.3)	(0.3)	(0.2)	(0.3)	(0.9)	(0.6)
Shared - payback								
	24.1	21.3	10.4	10	13	12.3	12.7	13.2
Shared - nonpayback	(1.1)	(1.7)	(0.4)	(0.4)	(0.5)	(0.6)	(1.3)	(1.1)

Prepared by the Scientific Registry of Transplant Recipients

Run 24: LYFT + 0.5 Dialysis Years for SCD, Dialysis Years for ECD, KI follows PA

Run 24, Organ: Period:	ECD		SCD		KIA		SPK	
	1-6m	7-12m	1-6m	7-12m	1-6m	7-12m	1-6m	7-12m
2 A MM	51.6 (1.7)	51.6 (1.7)	51.1 (0.5)	49.9 (0.7)	51.2 (0.2)	50.3 (0.3)	49.2 (3.6)	52.3 (3.8)
1 A MM	41.3 (0.9)	41.9 (1.4)	41.5 (0.6)	41.7 (0.6)	41.4 (0.4)	41.7 (0.8)	43.9 (3.8)	40.4 (1.8)
0 A MM	7.2 (0.7)	6.6 (0.5)	7.4 (0.3)	8.4 (0.6)	7.4 (0.3)	8 (0.5)	6.9 (1.3)	7.4 (0.9)
2 B MM	67.2 (2.4)	69.5 (1.3)	69.5 (1)	69.6 (1.4)	69.1 (1.1)	69.6 (0.9)	70.8 (1.2)	73.6 (2.6)
1 B MM	29.7 (3)	27.5 (0.4)	26.6 (0.6)	27 (0.6)	27.1 (0.8)	27.1 (0.5)	26.1 (2.4)	23.9 (0.9)
0 B MM	3.1 (0.3)	2.9 (0.6)	3.9 (0.1)	3.5 (0.4)	3.8 (0.1)	3.4 (0.4)	3.1 (0.9)	2.7 (0.5)
2 DR MM	43.8 (3.8)	42.8 (0.3)	42.1 (0.5)	41.9 (0.5)	42.4 (1.1)	42.1 (0.4)	54.1 (3.4)	51.8 (1.5)
1 DR MM	44.8 (3.7)	45.6 (1)	45.9 (0.1)	45.5 (0.3)	45.7 (0.7)	45.6 (0.1)	40 (3.2)	42.2 (1)
0 DR MM	11.4 (1.8)	11.6 (0.4)	12.1 (0.7)	12.6 (0.4)	12 (0.8)	12.4 (0.4)	5.8 (0.8)	6.1 (1)
0 ABDR MM	1 (0.2)	0.6 (0.3)	1.2 (0)	1.4 (0.3)	1.2 (0)	1.3 (0.2)	1.3 (1)	1.4 (0.6)
Recipient African American	35.5 (1.9)	33.4 (1.7)	36.7 (0.7)	36.8 (1.5)	36.5 (0.7)	36.1 (1.5)	15.7 (1.9)	14.6 (0.4)
Recipient Hispanic	12 (1.9)	11.6 (1.4)	15.5 (0.3)	15.1 (0.7)	14.9 (0.5)	14.4 (0.5)	9.1 (1.9)	10.9 (1)
Recipient Caucasian	45.5 (1.4)	47.6 (2.1)	40.5 (0.7)	41.5 (0.3)	41.4 (0.4)	42.7 (0.6)	72.5 (2)	72.4 (0.5)
Recipient Other/Missing Race/Ethnicity	7 (1.5)	7.3 (0.8)	7.3 (0.6)	6.6 (0.5)	7.3 (0.3)	6.8 (0.5)	2.7 (0.4)	2.2 (0.6)
Recipient ABO = A	32.2 (1.8)	33.4 (2.1)	32.6 (1.1)	31.8 (1.2)	32.5 (1.3)	32.1 (0.6)	32.1 (1)	32 (1.2)
Recipient ABO = AB	4.1 (0.8)	4.9 (1.4)	5.6 (0.3)	5.2 (0.2)	5.4 (0.3)	5.1 (0.1)	2.6 (0.3)	3.9 (0.2)
Recipient ABO = B	12.3 (1.4)	11.8 (0.8)	14 (0.8)	14.1 (0.5)	13.7 (0.8)	13.6 (0.5)	7.4 (0.7)	7.4 (0.9)
Recipient ABO = O	51.5 (0.4)	49.8 (2.4)	47.8 (0.8)	49 (1.1)	48.4 (0.6)	49.2 (0.4)	57.9 (1.2)	56.7 (1.5)
Recipient < 18			9.6 (0.4)	8.1 (0.6)	7.9 (0.4)	6.5 (0.5)		0.2 (0)
Recipient 18-34	7.5 (1.1)	6.1 (0.4)	38 (0.8)	36.5 (0.5)	32.6 (0.7)	30.4 (0.4)	23.6 (3.5)	26.8 (2.9)
Recipient 35-49	26 (1.5)	25.6 (3.1)	33.2 (0.6)	34.1 (0.8)	31.9 (0.5)	32.4 (1.2)	60.6 (2.8)	57.3 (2.1)
Recipient 50-64	46	47.7	16.4	18.2	21.7	24.1	15.5	15.8

Prepared by the Scientific Registry of Transplant Recipients

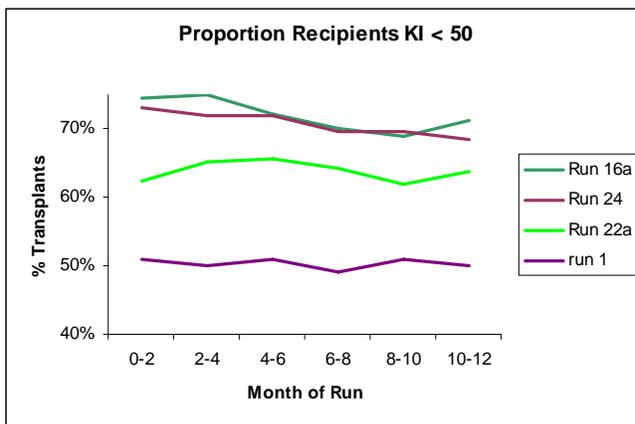
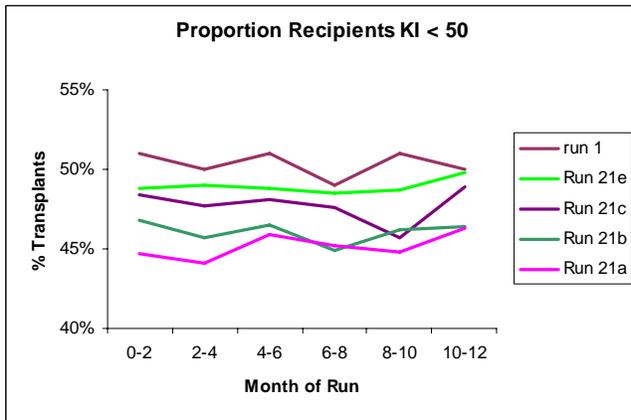
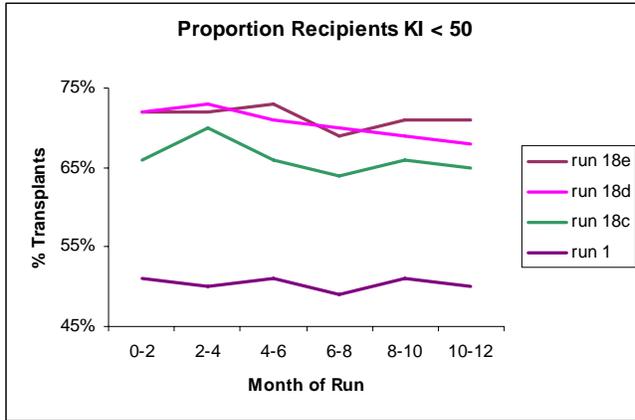
Run 24, Organ: Period:	ECD		SCD		KIA		SPK	
	1-6m	7-12m	1-6m	7-12m	1-6m	7-12m	1-6m	7-12m
	(2.2)	(2.8)	(0.6)	(0.4)	(0.3)	(0.6)	(1.1)	(1)
Recipient 65+	20.5	20.6	2.8	3.1	6	6.6	0.3	
	(1.4)	(0.7)	(0.3)	(0.4)	(0.4)	(0.2)	(0.1)	
Recipient Diagnosis: Glomerular	17.4	18.5	32.5	32.3	29.8	29.5		
	(1.8)	(0.7)	(0.7)	(1.1)	(0.8)	(0.9)		
	22.4	21.3	23.1	23.5	23	23.1		
Recipient Diagnosis: HTN	(1.8)	(1.8)	(0.6)	(0.5)	(0.3)	(0.7)		
Recipient Diagnosis: Polycystic	7.5	8.2	7	7.4	7.1	7.6		
	(0.8)	(1.4)	(0.2)	(0.4)	(0.2)	(0.4)		
Recipient Diagnosis: Renovascular	0.3	0.2	0.2	0.2	0.2	0.2		
	(0)	(0.2)	(0)	(0)	(0)	(0.1)		
Recipient Diagnosis: Other/Missing	17.2	16.5	29.1	27.5	27	25.3		
	(1.3)	(1.1)	(1)	(0.6)	(0.6)	(0.2)		
Recipient Diagnosis: DM (KI recipient)								
Recipient Diagnosis: DM (KI recipient) < 50	6.9	6.1	3.9	4.1	4.4	4.5		
	(1)	(0.5)	(0.2)	(0.2)	(0.2)	(0.1)		
Recipient Diagnosis: DM (KI recipient) 50+	28.3	29.2	4.2	5	8.5	9.9		
	(0.4)	(3)	(0.2)	(0.4)	(0.1)	(0.6)		
Recipient Diagnosis: DM (PA recipient)								
Recipient Diagnosis: DM (KP recipient)							100	100.1
							(2.6)	(1.9)
	5.2	5.4	3.3	3.1	3.6	3.6	8.6	10
Recipient Peak PRA Missing	(0.9)	(0.1)	(0.1)	(0.2)	(0.2)	(0.1)	(0.8)	(0.7)
	68.7	68.1	72.4	71.2	71.7	70.6	78.2	75.2
Recipient Peak PRA <10	(1.6)	(2.3)	(0.6)	(0.8)	(0.7)	(0.3)	(1.9)	(2.3)
	20.6	20.4	18.3	19	18.7	19.3	9.4	10
Recipient Peak PRA 10-80	(1.4)	(1.8)	(0.6)	(0.1)	(0.8)	(0.3)	(1.3)	(0.9)
	5.6	6.1	6	6.7	6	6.6	3.8	4.9
Recipient Peak PRA 80+	(1.3)	(0.5)	(0.5)	(0.1)	(0.2)	(0.2)	(0.6)	(1.1)
Shared - payback								
	20.8	21.1	14.4	13	15.6	14.6	13.2	15.3
Shared - nonpayback	(1)	(2.5)	(0.6)	(0.7)	(0.6)	(0.7)	(1.8)	(1.3)

Graphic Depiction of Change in Percentage of KI-Alone Transplants Going to Recipients < 50 Throughout Runs

The following graphics are an attempt to show whether the bolus effect, if it occurs for a particular run, has ended within the first year or not. They depict the percentage of kidney transplants (SCD + ECD, but not SPK) going to recipients under the age of 50 by 2-month intervals throughout the year of the runs. The runs allocating by LYFT + DY and weighted by continuous DPI (i.e. 18 c-e) are grouped together. All the quintile and decile matching runs (i.e.

Prepared by the Scientific Registry of Transplant Recipients

21 a, b, c, and e) are also grouped together. The current rules run is included in each graph as a baseline for comparison. The order of the runs in the legend (top to bottom) is the same as the order of the runs in months 10-12 (top to bottom).



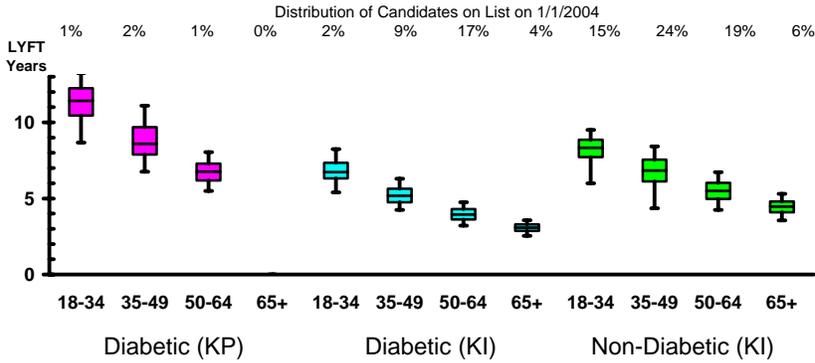
Prepared by the Scientific Registry of Transplant Recipients

Transplants by Region for Each Run

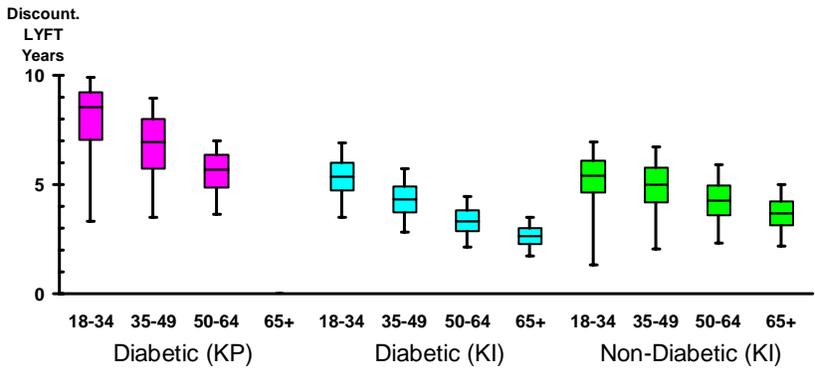
Numbers shown are percentages of transplants within each region (each column adds to 100%) of kidney transplants (ECD + SCD, but not SPK) that occurred within each run.

Region	Run 1: Current national allocatn. system	Run 16a: LYFT no HLA A,B, Dgn PKD /DM/Oth	Run 18c: LYFT v. DY by Cont DPI	Run 18d: LYFT v. DY by Cont DPI^2	Run 18e: LYFT v. DY by Cont DPI^3	Run 21a: Quint: LYFT v. DPI	Run 21b: Quint: PT v. DPI	Run 21c: Quint: PT v. DPI + PRA80	Run 21e: Dec: PT v. DPI + PRA80	Run 22a: Cont age match	Run 24: LYFT + 0.5 DY (SCD)
1	3.2	3.4	3.5	3.4	3.3	3.4	3.4	3.4	3.4	3.4	3.4
2	12.5	13.0	12.9	13.0	13.0	13.0	13.0	13.1	13.1	12.8	13.0
3	14.6	14.9	14.6	14.7	14.8	14.7	14.9	14.4	14.4	15.2	14.7
4	10.2	9.7	9.9	9.7	9.8	9.7	9.6	9.7	9.5	9.7	9.8
5	15.2	15.3	15.4	15.4	15.4	15.5	15.5	15.6	15.7	15.2	15.4
6	4.6	4.3	4.4	4.4	4.4	4.4	4.4	4.4	4.5	4.3	4.3
7	8.8	9.2	9.0	9.1	9.0	9.0	9.1	8.9	9.1	8.8	9.0
8	6.1	5.7	5.8	5.7	5.8	5.8	5.6	5.7	5.8	5.8	5.8
9	5.2	5.3	5.4	5.4	5.3	5.4	5.4	5.3	5.4	5.2	5.4
10	9.4	9.4	9.3	9.4	9.3	9.3	9.3	9.4	9.2	9.4	9.3
11	10.1	9.9	9.9	9.9	9.9	10.0	9.9	10.0	9.9	10.2	9.9

Distribution of LYFT By Candidate Age and Diabetes Status



Distribution of Discounted (3%/year) LYFT By Candidate Age and Diabetes Status



Variables Used or Investigated for Use in LYFT Calculation

Effects in LYFT Models

The following tables show the hazard ratios from the Cox proportional hazards models used in the LYFT calculation for the variables used and for some of the variables investigated for use. In each table, each column represents a separate model, and rows within each column for variables not used for a particular model will be blank.

There are separate models for the three main types of survival: candidate survival without transplant on the waitlist or after removal for reasons other than transplant (WL), recipient survival with a transplant (PT), and graft survival (GS). Short- and long-term survival for each type was handled using separate models.

Short-term survival during the 0-4 year period after offer (WL) or transplant (PT or GS) is indicated by the "0-4" in the column header. Long term survival is indicated by the "4-15" in the column header. ***Bold italics*** indicates that the variable was significant ($p < 0.05$) in the specific model indicated by the column header.

Prepared by the Scientific Registry of Transplant Recipients

Variables Used in LYFT Calculation

Factor	WL	WL	PT	PT	GS	GS
	0-4	4-15	0-4	4-15	0-4	4-15
Candidate age at offer or transplant	1.033	1.037	1.037	1.042	1.003	1.013
0 ABDR MM			0.957	0.953	0.805	0.951
0 A MM			0.999	0.982	0.935	0.957
1 A MM			0.962	0.998	0.938	0.987
0 B MM			0.942	0.962	0.92	0.926
1 B MM			0.959	0.982	0.956	0.962
0 DR MM			0.841	0.915	0.866	0.927
1 DR MM			0.93	0.988	0.943	0.984
Shared organ			1.049	1.042	1.1	1.047
DCD			0.885	0.76	0.948	0.854
Donor age (continuous years)			0.98	1.001	0.979	0.997
Donor age change in slope (>18)			1.028	1.005	1.034	1.014
Donor cause of death: anoxia			1.015	1.039	1.033	1.019
Donor cause of death: CVA (ref = head trauma)			1.128	1.099	1.156	1.065
Donor cause of death: CNS tumor (ref = head trauma)			0.997	0.871	0.959	0.873
Donor cause of death: other/unk (ref = head trauma)			1.196	1.095	1.248	1.098
Donor CMV negative			0.961	0.983	0.953	0.973
Donor HTN			0.97	0.991	1.016	1.059
ln(donor weight in kg + 1)			0.88	0.999	0.818	1.048
Donor weight missing			0.854	1.148	0.695	1.34
ln(years since ESRD start + 1)	1.335	1.1	1.178	1.148	1.148	1.122
Candidate had not developed full ESRD by sample date	1.094	0.387	0.791	0.666	0.832	0.759
Candidate had not developed full ESRD by sample date (KI DM interaction)	0.282	1.039	1.424	1.316	1.208	1.134
Candidate had not developed full ESRD by sample date (KP DM interaction)	0.629	1.621	1.429	2.403	1.203	1.784
Candidate age at offer or transplant	1.033	1.037	1.037	1.042	1.003	1.013
Candidate BMI	0.967	1.019	0.935	0.958	0.965	0.977
Candidate BMI missing	0.516	1.319	0.281	0.453	0.541	0.648
Candidate BMI change in slope (>20)	1.027	0.983	1.08	1.058	1.053	1.037
Candidate albumin	0.626	0.688	0.792	0.94	0.783	0.828
Candidate albumin change in slope (>3.5)	1.426	1.246	1.15	0.991	1.236	1.266
Candidate albumin missing	0.225	0.318	0.438	0.794	0.423	0.533
Candidate Dgn.: other/missing	1.209	1.022	0.231	0.24	1.105	0.748
Candidate Dgn.: polycystic	0.78	0.871	0.163	0.156	0.796	0.488
Candidate Dgn.: HTN	1.026	0.981	0.248	0.265	1.28	0.899
Candidate Dgn.: glomerular	(ref)	(ref)	0.212	0.205	1.039	0.738
Candidate previous transplant (any)	0.882	0.861	1.194	1.015	1.056	0.963
Candidate Peak PRA 10-79 (ref = <10)	0.977	0.973	1	1.018	1.044	1.031
Candidate Peak PRA 80+ (ref = <10)	1.04	1.021	1.157	1.126	1.294	1.085
Candidate Peak PRA missing (ref = <10)	1.048	1.101	1.079	0.945	1.071	1.052
Year of offer or transplant	0.991	1.009	0.952	0.954	0.947	0.964
0 ABDR MM			0.957	0.953	0.805	0.951
0 A MM			0.999	0.982	0.935	0.957
1 A MM			0.962	0.998	0.938	0.987
0 B MM			0.942	0.962	0.92	0.926
1 B MM			0.959	0.982	0.956	0.962

Prepared by the Scientific Registry of Transplant Recipients

Factor	WL 0-4	WL 4-15	PT 0-4	PT 4-15	GS 0-4	GS 4-15
0 DR MM			0.841	0.915	0.866	0.927
1 DR MM			0.93	0.988	0.943	0.984
Shared organ			1.049	1.042	1.1	1.047
DCD			0.885	0.76	0.948	0.854
Donor age (continuous years)			0.98	1.001	0.979	0.997
Donor age change in slope (>18)			1.028	1.005	1.034	1.014
Candidate age interaction with KI-alone diabetes (age*KI DM)	0.974	0.982	0.983	0.986	1.006	1.004
Candidate age interaction with SPK (age*KP DM)	1.011	0.988	1	0.992	1	0.989
Candidate albumin interaction with SPK (albumin*KP DM)	1.001	1.047	1.001	0.918	1.02	0.963
Candidate BMI interaction with SPK (BMI * KP DM)	1.001	1.004	0.998	0.994	0.998	1.002
PRA 10+ interaction with SPK (PRA 10+ * KP DM)	0.791	1.205	1.059	0.821	1.007	0.986
Candidate previous transplant interaction with SPK (previous Tx * KP DM)	0.984	0.752	0.812	0.925	0.878	0.937

Prepared by the Scientific Registry of Transplant Recipients

Additional Variables Considered for LYFT Calculation

Factor	Reason not used	WL 0-4	WL 4-15	PT 0-4	PT 4-15	GS 0-4	GS 4-15
Candidate angina noted	Low impact on LYFT score	1.262	1.26	1.3	1.305	1.177	1.198
Candidate Cerebrovascular disease missing	Inconsistent and non-significant results in various age- and diabetes-specific models	1.039	1.15	1.046	1.048	1.037	1.017
Candidate Cerebrovascular disease	Inconsistent and non-significant results in various age- and diabetes-specific models	1.251	1.188	1.197	1.366	1.198	1.26
Candidate peripheral vascular disease	Low LYFT impact	1.404	1.424	1.442	1.406	1.259	1.24
Candidate previous malignancy	Inconsistent and non-significant results in various age- and diabetes-specific models	1.162	1.108	1.182	1.119	1.127	1.046
Candidate previous malignancy missing	Inconsistent and non-significant results in various age- and diabetes-specific models	1.03	1.103	1.021	1.044	1.034	1.01
Candidate female	Low LYFT impact, inappropriate for allocation	0.98	0.974	0.92	0.909	0.956	0.932
Candidate insurance: private primary	Low LYFT impact, not medical criterion	0.874	0.952	0.786	0.739	0.813	0.766
Candidate insurance: other/missing	Low LYFT impact, not medical criterion	1.003	1.114	0.975	0.955	0.979	0.936
Candidate insurance: public primary	Low LYFT impact, not medical criterion	.	.	.	.	.	.
Candidate drug-treated hypertension	Not appropriate for allocation	1.024	0.916	1.005	0.982	1.01	1.011
Candidate drug-treated hypertension missing	Not appropriate for allocation	0.989	1.256	1.04	1.048	1.016	1.004
Candidate on peritoneal dialysis at listing	Not appropriate for allocation	1.271	1.144	0.896	0.854	0.871	0.838
Candidate dialysis modality at listing missing or none	Not appropriate for allocation	0.96	1.194	0.899	0.929	0.879	0.905
Candidate on hemodialysis at listing	Not appropriate for allocation	.	.	.	.	.	.
Candidate race/ethnicity African American	Not objective, not appropriate for allocation	0.726	0.782	1.008	1.169	1.315	1.403
Candidate race/ethnicity other or missing	Not objective, not appropriate for allocation	0.605	0.774	0.765	0.707	0.774	0.797
Candidate race/ethnicity Hispanic	Not objective, not appropriate for allocation	1.147	0.99	0.991	1.175	1.118	1.206
Candidate race/ethnicity Caucasian (non-Hispanic)	Not objective, not appropriate for allocation	.	.	.	.	.	.

Approximate contribution of covariates to LYFT

The following results are only approximate. Due to the number of interaction terms required to adequately describe LYFT in a linear model, isolating the contribution of each group of factors is incomplete. The technique for this calculation involved observing the drop in explained variation due to the removal of each covariate or group of covariates, then re-scaling the percentages. While these numbers should provide guidance as to the relative rankings of the covariates, they should not be interpreted as the absolute percentage of variation explained.

Covariate group	% Explained	% Explained w/o Preemptive
Candidate had not developed full ESRD by sample date	32.5%	Excluded
Candidate age at offer	24.4%	37.7%
KI DM/KI non-DM/KP DM	15.8%	20.8%
Donor age + spline	9.2%	13.1%
HLA MM	5.7%	9.4%
ln(years since ESRD start + 1)	3.4%	2.5%
Year of offer	1.8%	0.8%
Donor weight variable + missing	1.8%	3.1%
DCD	1.3%	1.8%
Donor cause of death category	1.2%	1.8%
Previous transplant	0.6%	5.2%
Shared organ	0.5%	0.7%
Donor CMV negative	0.4%	0.7%
BMI variable + spline + missing	0.4%	0.6%
Albumin	0.4%	0.2%
Candidate Dgn. (excluding DM)	0.3%	0.3%
Candidate peak PRA category	0.3%	1.3%
Donor HTN	0.0%	0.0%
Donor ECD	0.0%	0.0%

Prepared by the Scientific Registry of Transplant Recipients

All Else Equals Tables

Each row represents a change from the modal patient (a non-diabetic 45.5 year-old kidney candidate). The columns show the altered LYFT, remaining waitlist (WL) lifespan, the post-transplant lifespan from an average SCD organ (PT), the time until graft failure (GF), and the value held by the modal patient with reference to the characteristic examined. The first table shows the years of LYFT and lifespan for the change illustrated in each row, and the second table shows the difference between the new LYFT and lifespans and those of the modal patient. Unless otherwise specified, each change is made “all else equals”; with all other covariates held constant. This allows examination of the effects of each factor isolated from the effects of co-varying factors.

For some rows, such as “KP diabetic candidate age (=20),” changes from two different factors are combined in the same row. This specific row shows the result of changing the patient from the modal 45 year-old non-diabetic kidney candidate/recipient to a 20 year-old kidney-pancreas candidate/recipient.

Years

Kidney Recipients	LYFT	WL	PT	GF	Mode
Modal patient (non-diabetic, 45 year-old, KI only, etc.)	7.6	8.4	15.2	10.6	
Kidney-alone (KI) diabetic (DM)	5.5	5.0	9.8	8.1	0.0
Kidney-Pancreas (KP)	8.9	4.1	12.8	10.0	0.0
Female (ref = male)	7.6	8.4	15.2	10.6	0.0
Diagnosis: other/missing	7.7	8.1	15.2	10.4	0.0
Diagnosis: polycystic	7.5	8.8	15.4	10.9	0.0
Diagnosis: HTN	7.4	8.4	15.1	10.2	0.0
Diagnosis: glomerular	7.6	8.4	15.2	10.6	1.0
Previous transplant	7.3	8.6	15.1	10.5	0.0
Years on dialysis at offer = 1	8.3	9.1	16.5	11.4	4.3
Years on dialysis at offer = 2	7.9	8.8	15.9	10.9	4.3
Years on dialysis at offer = 3	7.6	8.5	15.4	10.7	4.3
Years on dialysis at offer = 4	7.4	8.3	15.0	10.4	4.3
Years on dialysis at offer = 5	7.2	8.2	14.6	10.2	4.3
Years on dialysis at offer = 6	7.0	8.1	14.3	10.1	4.3
Candidate had not started dialysis as of offer (non DM)	4.9	16.5	19.2	13.7	0.0
Candidate had not started dialysis as of offer (KI DM)	5.8	5.8	10.9	8.8	0.0
Candidate had not started dialysis as of offer (KP DM)	9.5	6.6	15.8	10.9	0.0
Peak PRA 10-79 (ref = <10)	7.5	8.5	15.2	10.5	0.0
Peak PRA 80+ (ref = <10)	7.4	8.4	15.1	10.1	0.0
Peak PRA <10	7.6	8.4	15.2	10.6	1.0
Non-diabetic candidate age = 20	9.6	15.8	24.7	12.6	45.0
Non-diabetic candidate age = 30	9.1	12.2	20.6	11.7	45.0
Non-diabetic candidate age = 40	8.1	9.5	17.0	10.9	45.0
Non-diabetic candidate age = 50	6.9	7.4	13.5	10.2	45.0
Non-diabetic candidate age = 60	5.8	5.8	10.7	9.6	45.0
Non-diabetic candidate age = 70	4.8	4.6	8.4	9.0	45.0
Non-diabetic BMI = 15	7.6	8.1	15.0	10.4	26.4
Non-diabetic BMI = 20	7.7	8.4	15.3	10.7	26.4
Non-diabetic BMI = 25	7.6	8.4	15.3	10.6	26.4
Non-diabetic BMI = 30	7.5	8.5	15.2	10.5	26.4
Non-diabetic BMI = 35	7.4	8.5	15.2	10.3	26.4
Non-diabetic albumin = 2.5	8.1	7.4	15.0	10.1	3.9
Non-diabetic albumin = 3.0	7.8	8.0	15.1	10.3	3.9
Non-diabetic albumin = 3.5	7.6	8.4	15.2	10.6	3.9
Non-diabetic albumin = 4.0	7.5	8.5	15.3	10.6	3.9
Non-diabetic albumin = 4.5	7.5	8.6	15.3	10.6	3.9

Prepared by the Scientific Registry of Transplant Recipients

Kidney Recipients	LYFT	WL	PT	GF	Mode
KI diabetic candidate age = 20	8.8	8.3	16.9	9.6	0.0
KI diabetic candidate age = 30	7.4	6.6	13.6	8.9	0.0
KI diabetic candidate age = 40	6.0	5.4	10.9	8.3	0.0
KI diabetic candidate age = 50	4.9	4.6	8.9	7.8	0.0
KI diabetic candidate age = 60	4.0	4.1	7.3	7.4	0.0
KI diabetic candidate age = 70	3.2	3.6	6.1	7.0	0.0
KI diabetic BMI = 15	5.7	4.3	9.5	8.0	0.0
KI diabetic BMI = 20	5.7	4.9	9.9	8.2	0.0
KI diabetic BMI = 25	5.5	5.0	9.8	8.1	0.0
KI diabetic BMI = 30	5.4	5.1	9.8	8.0	0.0
KI diabetic BMI = 35	5.3	5.1	9.7	7.9	0.0
KI diabetic albumin = 2.5	6.5	3.3	9.5	7.7	0.0
KI diabetic albumin = 3.0	6.1	4.0	9.7	7.9	0.0
KI diabetic albumin = 3.5	5.5	4.9	9.8	8.1	0.0
KI diabetic albumin = 4.0	5.4	5.0	9.8	8.1	0.0
KI diabetic albumin = 4.5	5.4	5.2	9.9	8.1	0.0
KP diabetic candidate age = 20	14.2	7.5	22.1	12.4	0.0
KP diabetic candidate age = 30	12.3	5.8	18.4	11.4	0.0
KP diabetic candidate age = 40	10.4	4.6	15.1	10.4	0.0
KP diabetic candidate age = 50	8.1	3.7	11.4	9.5	0.0
KP diabetic candidate age = 60	6.6	3.0	9.0	8.9	0.0
KP diabetic candidate age = 70	5.4	2.4	7.3	8.1	0.0
KP diabetic BMI = 15	9.0	3.5	12.4	9.7	0.0
KP diabetic BMI = 20	9.1	4.0	12.9	10.2	0.0
KP diabetic BMI = 25	9.0	4.1	12.8	10.0	0.0
KP diabetic BMI = 30	8.8	4.2	12.8	9.9	0.0
KP diabetic BMI = 35	8.7	4.3	12.7	9.7	0.0
KP diabetic albumin = 2.5	9.6	2.8	12.4	9.4	0.0
KP diabetic albumin = 3.0	9.3	3.3	12.5	9.7	0.0
KP diabetic albumin = 3.5	9.0	4.0	12.7	10.0	0.0
KP diabetic albumin = 4.0	8.9	4.2	12.8	10.0	0.0
KP diabetic albumin = 4.5	8.8	4.3	12.9	10.0	0.0
0 ABDR MM (ref = 1A, 1B, 1DR MM)	9.1	8.4	16.7	12.3	0.0
0 A MM (ref = 1)	7.7	8.4	15.4	10.8	0.0
2 A MM (ref = 1)	7.4	8.4	15.1	10.3	0.0
0 B MM (ref = 1)	7.7	8.4	15.4	10.9	0.0
2 B MM (ref = 1)	7.4	8.4	15.1	10.2	0.0
0 DR MM (ref = 1)	8.1	8.4	15.8	11.1	0.0
2 DR MM (ref = 1)	7.4	8.4	15.1	10.3	0.0
Shared organ	7.1	8.4	14.8	10.1	0.0
DCD	9.4	8.4	17.4	11.3	0.0
Donor age 20, rec age 25	10.3	13.8	23.4	13.5	32,45
Donor age 30, rec age 25	9.6	13.8	22.7	12.4	32,45
Donor age 40, rec age 25	8.9	13.8	22.1	11.4	32,45
Donor age 50, rec age 25	8.3	13.8	21.5	10.5	32,45
Donor age 60, rec age 25	7.6	13.8	20.9	9.7	32,45
Donor age 20, rec age 45	8.3	8.4	15.9	11.5	32,45
Donor age 30, rec age 45	7.7	8.4	15.4	10.7	32,45
Donor age 40, rec age 45	7.0	8.4	14.8	9.9	32,45
Donor age 50, rec age 45	6.4	8.4	14.2	9.2	32,45
Donor age 60, rec age 45	5.8	8.4	13.6	8.5	32,45
Donor age 20, rec age 65	5.8	5.2	9.9	10.1	32,45
Donor age 30, rec age 65	5.3	5.2	9.5	9.4	32,45

Prepared by the Scientific Registry of Transplant Recipients

Kidney Recipients	LYFT	WL	PT	GF	Mode
Donor age 40, rec age 65	4.9	5.2	9.2	8.8	32,45
Donor age 50, rec age 65	4.5	5.2	8.8	8.1	32,45
Donor age 60, rec age 65	4.1	5.2	8.5	7.6	32,45
Donor cause of death = anox (ref = head trauma)	7.3	8.4	15.0	10.4	0.0
Donor cause of death = cnst (ref = head trauma)	8.6	8.4	16.4	11.4	0.0
Donor cause of death = cva (ref = head trauma)	6.7	8.4	14.3	10.0	0.0
Donor CMV negative (ref = positive)	7.8	8.4	15.5	10.9	0.0
Donor HTN (ref = no HTN)	7.6	8.4	15.5	10.1	0.0
Donor weight (=50 kg)	7.5	8.4	15.2	10.6	73.7
Donor weight (=75 kg)	7.6	8.4	15.3	10.6	73.7
Donor weight (=100 kg)	7.6	8.4	15.3	10.6	73.7

Deltas

Kidney Recipients	LYFT	WL	PT	GF	Mode
Modal patient (non-diabetic, 45 year-old, KI only, etc.)	7.6	8.4	15.2	10.6	
Kidney-alone (KI) diabetic (DM)	-2.1	-3.4	-5.4	-2.5	0.0
Kidney-Pancreas (KP)	1.3	-4.3	-2.5	-0.6	0.0
Female (ref = male)	0.0	0.0	0.0	0.0	0.0
Diagnosis: other/missing	0.2	-0.3	-0.1	-0.2	0.0
Diagnosis: polycystic	-0.1	0.3	0.2	0.3	0.0
Diagnosis: HTN	-0.2	0.0	-0.1	-0.4	0.0
Diagnosis: glomerular	0.0	0.0	0.0	0.0	1.0
Previous transplant	-0.3	0.2	-0.1	-0.1	0.0
Years on dialysis at offer = 1	0.7	0.6	1.3	0.8	4.3
Years on dialysis at offer = 2	0.3	0.3	0.6	0.3	4.3
Years on dialysis at offer = 3	0.0	0.1	0.1	0.1	4.3
Years on dialysis at offer = 4	-0.1	-0.2	-0.3	-0.2	4.3
Years on dialysis at offer = 5	-0.4	-0.3	-0.6	-0.4	4.3
Years on dialysis at offer = 6	-0.6	-0.4	-0.9	-0.5	4.3
Candidate had not developed full ESRD by sample date (non DM)	-2.7	8.1	4.0	3.1	0.0
Candidate had not developed full ESRD by sample date (KI DM)	0.4	0.8	1.1	0.8	0.0
Candidate had not developed full ESRD by sample date (KP DM)	0.6	2.5	3.0	1.0	0.0
Peak PRA 10-79 (ref = <10)	-0.1	0.0	0.0	-0.1	0.0
Peak PRA 80+ (ref = <10)	-0.1	-0.1	-0.1	-0.5	0.0
Peak PRA <10	0.0	0.0	0.0	0.0	1.0
Non-diabetic candidate age = 20	2.0	7.4	9.4	2.0	45.0
Non-diabetic candidate age = 30	1.5	3.8	5.4	1.1	45.0
Non-diabetic candidate age = 40	0.6	1.1	1.7	0.3	45.0
Non-diabetic candidate age = 50	-0.7	-1.0	-1.8	-0.4	45.0
Non-diabetic candidate age = 60	-1.8	-2.6	-4.6	-1.0	45.0
Non-diabetic candidate age = 70	-2.8	-3.8	-6.8	-1.6	45.0
Non-diabetic BMI = 15	0.1	-0.3	-0.2	-0.2	26.4
Non-diabetic BMI = 20	0.1	-0.1	0.0	0.2	26.4
Non-diabetic BMI = 25	0.0	0.0	0.0	0.0	26.4
Non-diabetic BMI = 30	-0.1	0.0	0.0	-0.1	26.4
Non-diabetic BMI = 35	-0.2	0.1	-0.1	-0.3	26.4
Non-diabetic albumin = 2.5	0.5	-1.0	-0.2	-0.5	3.9
Non-diabetic albumin = 3.0	0.2	-0.5	-0.1	-0.3	3.9
Non-diabetic albumin = 3.5	0.0	-0.1	0.0	0.0	3.9

Prepared by the Scientific Registry of Transplant Recipients

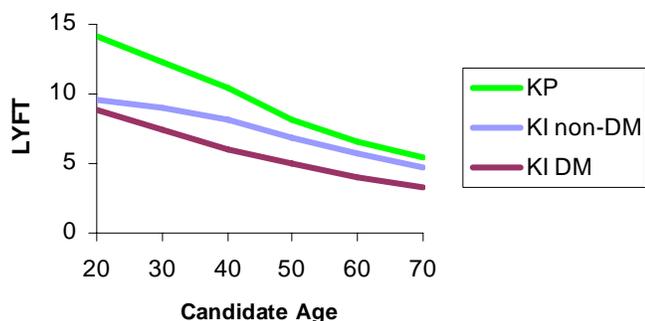
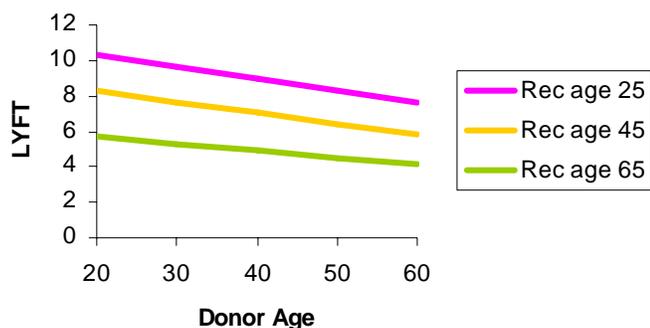
Kidney Recipients	LYFT	WL	PT	GF	Mode
Non-diabetic albumin = 4.0	0.0	0.0	0.0	0.0	3.9
Non-diabetic albumin = 4.5	-0.1	0.1	0.0	0.0	3.9
KI diabetic candidate age = 20	3.4	3.3	7.1	1.5	0.0
KI diabetic candidate age = 30	2.0	1.6	3.8	0.9	0.0
KI diabetic candidate age = 40	0.5	0.4	1.0	0.3	0.0
KI diabetic candidate age = 50	-0.5	-0.3	-1.0	-0.2	0.0
KI diabetic candidate age = 60	-1.5	-0.9	-2.5	-0.7	0.0
KI diabetic candidate age = 70	-2.2	-1.4	-3.7	-1.1	0.0
KI diabetic BMI = 15	0.3	-0.7	-0.3	-0.1	0.0
KI diabetic BMI = 20	0.2	-0.1	0.1	0.2	0.0
KI diabetic BMI = 25	0.0	0.0	0.0	0.0	0.0
KI diabetic BMI = 30	-0.1	0.1	0.0	-0.1	0.0
KI diabetic BMI = 35	-0.2	0.2	-0.1	-0.2	0.0
KI diabetic albumin = 2.5	1.0	-1.7	-0.3	-0.4	0.0
KI diabetic albumin = 3.0	0.6	-1.0	-0.2	-0.2	0.0
KI diabetic albumin = 3.5	0.1	-0.1	0.0	0.0	0.0
KI diabetic albumin = 4.0	0.0	0.0	0.0	0.0	0.0
KI diabetic albumin = 4.5	-0.1	0.2	0.1	0.0	0.0
KP diabetic candidate age = 20	5.3	3.4	9.4	2.4	0.0
KP diabetic candidate age = 30	3.4	1.7	5.6	1.4	0.0
KP diabetic candidate age = 40	1.5	0.5	2.3	0.4	0.0
KP diabetic candidate age = 50	-0.8	-0.4	-1.3	-0.4	0.0
KP diabetic candidate age = 60	-2.3	-1.1	-3.8	-1.1	0.0
KP diabetic candidate age = 70	-3.5	-1.7	-5.4	-1.9	0.0
KP diabetic BMI = 15	0.1	-0.6	-0.4	-0.2	0.0
KP diabetic BMI = 20	0.2	-0.1	0.1	0.2	0.0
KP diabetic BMI = 25	0.1	0.0	0.1	0.0	0.0
KP diabetic BMI = 30	-0.1	0.1	0.0	-0.1	0.0
KP diabetic BMI = 35	-0.2	0.2	-0.1	-0.3	0.0
KP diabetic albumin = 2.5	0.7	-1.4	-0.3	-0.6	0.0
KP diabetic albumin = 3.0	0.4	-0.8	-0.2	-0.3	0.0
KP diabetic albumin = 3.5	0.1	-0.1	0.0	0.0	0.0
KP diabetic albumin = 4.0	0.0	0.0	0.1	0.0	0.0
KP diabetic albumin = 4.5	-0.1	0.2	0.1	0.0	0.0
0 ABDR MM (ref = 1A, 1B, 1DR MM)	1.5	0.0	1.4	1.7	0.0
0 A MM (ref = 1)	0.1	0.0	0.1	0.2	0.0
2 A MM (ref = 1)	-0.2	0.0	-0.1	-0.3	0.0
0 B MM (ref = 1)	0.2	0.0	0.2	0.3	0.0
2 B MM (ref = 1)	-0.2	0.0	-0.1	-0.4	0.0
0 DR MM (ref = 1)	0.5	0.0	0.6	0.5	0.0
2 DR MM (ref = 1)	-0.2	0.0	-0.2	-0.3	0.0
Shared organ	-0.4	0.0	-0.4	-0.5	0.0
DCD	1.8	0.0	2.1	0.7	0.0
Donor age 20, rec age 25	2.8	5.4	8.1	2.9	32,45
Donor age 30, rec age 25	2.0	5.4	7.5	1.8	32,45
Donor age 40, rec age 25	1.4	5.4	6.9	0.8	32,45
Donor age 50, rec age 25	0.7	5.4	6.3	-0.1	32,45
Donor age 60, rec age 25	0.0	5.4	5.6	-0.9	32,45
Donor age 20, rec age 45	0.7	0.0	0.6	1.0	32,45
Donor age 30, rec age 45	0.1	0.0	0.1	0.2	32,45
Donor age 40, rec age 45	-0.5	0.0	-0.5	-0.7	32,45
Donor age 50, rec age 45	-1.1	0.0	-1.1	-1.4	32,45
Donor age 60, rec age 45	-1.7	0.0	-1.6	-2.1	32,45

Prepared by the Scientific Registry of Transplant Recipients

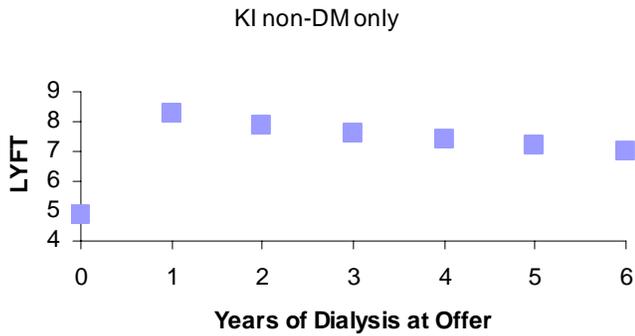
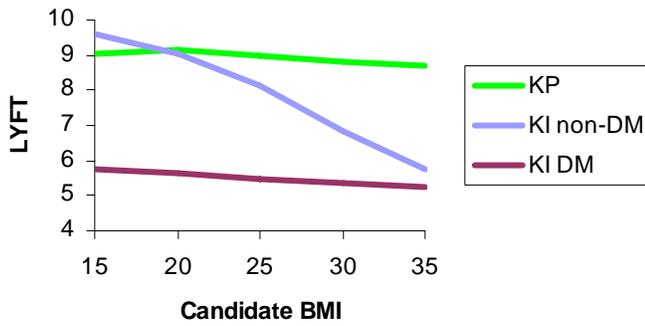
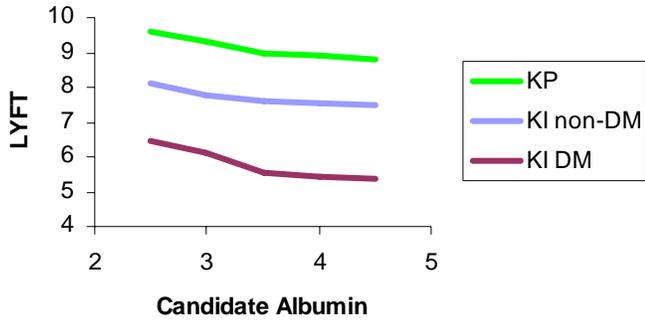
Kidney Recipients	LYFT	WL	PT	GF	Mode
Donor age 20, rec age 65	-1.8	-3.2	-5.3	-0.5	32,45
Donor age 30, rec age 65	-2.3	-3.2	-5.7	-1.2	32,45
Donor age 40, rec age 65	-2.7	-3.2	-6.1	-1.8	32,45
Donor age 50, rec age 65	-3.1	-3.2	-6.5	-2.5	32,45
Donor age 60, rec age 65	-3.4	-3.2	-6.8	-3.0	32,45
Donor cause of death = anox (ref = head trauma)	-0.3	0.0	-0.3	-0.2	0.0
Donor cause of death = cnst (ref = head trauma)	1.0	0.0	1.1	0.8	0.0
Donor cause of death = cva (ref = head trauma)	-0.9	0.0	-1.0	-0.6	0.0
Donor CMV negative (ref = positive)	0.2	0.0	0.2	0.3	0.0
Donor HTN (ref = no HTN)	0.1	0.0	0.2	-0.5	0.0
Donor weight (=50 kg)	0.0	0.0	0.0	0.0	73.7
Donor weight (=75 kg)	0.0	0.0	0.0	0.0	73.7
Donor weight (=100 kg)	0.0	0.0	0.0	0.0	73.7

Graphics of selected variables' effects

The following graphics show the elements of the "All Else Equals" tables graphically. They depict the estimated LYFT for single, hypothetical candidates who only differ by the factor noted. These are different from the box plots previously shown which use all the actual characteristics of candidates in each group shown to estimate LYFT and show the range within each group of the estimated LYFT.



Prepared by the Scientific Registry of Transplant Recipients



Overall Model Goodness of Fit Test Results

All Cox models used to calculate LYFT had overall goodness of fit p-values < 0.0001. This includes the 0-4 year v. 4-15 year periods for each of the event types: death without transplant, death with transplant, and graft failure. The -2 log likelihood ratios and degrees of freedom are as reported below:

Model	Time period	-2 Log likelihood ratio	DF	p
Survival without transplant	0-4 years	7661.514	25	<.0001
	4-15 years	2167.871	7	<.0001
Survival with transplant	0-4 years	4821.716	38	<.0001
	4-15 years	5235.186	19	<.0001
Graft survival	0-4 years	4652.328	38	<.0001
	4-15 years	1405.721	19	<.0001

Conclusion/Caveats

The runs as shown present predicted changes in outcomes due to a change in the national allocation system. These predicted changes are based on the assumption that everyone involved in the transplant process followed the rules with no independent decisions except those based on baseline waitlist characteristics. Sequential waitlist data is limited for kidney candidates (PRA and active/inactive status), and does not provide much information on patient health. KPSAM cannot incorporate physician judgment based on patient health information that is not available to KPSAM. Comparisons between systems of allocation rules are based on all other aspects (patient and organ characteristics, physician behavior, etc.) being equal.

From the table showing the “Survival Benefits Due to Transplant by KPSAM Run,” allocation methods that favor candidates with higher LYFT scores result in more life-years saved by a year’s worth of kidney transplants. Allocation methods that favor matching result in higher correlations between donor and recipient ages. The shifts in the demographics (generally towards younger recipients) are shown in the distribution tables on pages 15-31. None of the allocation systems shown are completely predictable; however, most of the allocation systems tested seem more predictable than the current system. There may be a difference in the short-term v. long term effects in terms of the distribution of recipients, as the demographics of kidney-alone recipients within the first six months can differ from the demographics in the last six months of the run by as much as three percentage points, e.g. 18-35 year-old recipients of kidney-alone transplants going from 35% of the recipients to 31.7% of the recipients in the beginning and end of the year respectively in run 18e (allocation by LYFT + dialysis years weighted by continuous DPI³).