OPTN/UNOS Kidney Transplantation Committee
Report to the Board of Directors
June 19-20, 2008
Richmond, VA

Summary

Action Items for Board Consideration

- The Board is asked to approve modifications to Policy 3.5.3 (Mandatory Sharing of Zero Antigen Mismatch Kidneys). (Item 1, Page 3)

- The Board is asked to approve a pilot program for a national Kidney Paired Donation (KPD) system. (Item 2, Page 7)

Non Action Items

- The Committee continued its work to develop a new national kidney allocation system by discussing current review by the Department of Health Human Services Office of Civil Rights, frequently asked questions, and kidney-pancreas allocation. (Item 3, Page 9)

- The Committee responded to a request from the Membership and Professional Standards Committee to review covariates used in the models for Center Specific Reports. (Item 4, Page 11)

- The Committee provided feedback on four public comment proposals from the Membership and Professional Standards, Living Donor, and Executive Committees. (Item 5, Page 11)

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

The following report contains deliberations by the Kidney Transplantation Committee during its March 12, 2008 meeting in Chicago IL, and its May 2, 2008, meeting by conference call.

1. Proposed Modifications to Policy 3.5.3 (Mandatory Sharing of Zero Antigen Mismatched Kidneys)

During a conference call and Live Meeting® on May 2, 2008, the Committee reviewed feedback from other committees, regions, and the general public on proposed modifications to Policy 3.5.3 (Mandatory Sharing of Zero Antigen Mismatched Kidneys). Responses to individual comments are provided in the policy briefing paper Exhibit A. Overall, responses to the proposal were mixed from the committees, regions, and general public. The Committee responded to each unique public comment response in the briefing paper.

The Committee discussed the comments received and identified areas where additional clarification of the policy proposal may be necessary. Many of the comments indicated concern that some candidates would no longer receive any zero-antigen mismatch offers. This is not factual as *all* candidates would continue to receive priority for zero-antigen mismatch offers from donors within their donor service area (DSA). Only adult candidates with CPRA<20% would no longer receive zero antigen mismatched kidney offers from regional or national donors.

Several comments indicated that the proposal was not timed appropriately since the Committee has been working to develop a new, national kidney allocation system. These comments expressed concern that implementation of this policy would divert resources away from the development of a new system. This is a valid concern as resource utilization is of increasing importance. However, even while developing a new system, the Committee is still responsible for reviewing the performance of the current kidney allocation system. From the evidence reviewed, the Committee determined that the impact on simultaneous kidney-pancreas candidate as well as the racial/ethnic disparity observed due to the current policies warrant policy modification at this time. Additionally, the Committee cannot estimate when a new allocation system may be formally proposed and does not believe that maintenance of the current system should be indefinitely postponed. Finally, before any new system can be implemented, the payback debts and credits must be settled as they cannot be feasibly transferred into a new allocation system.

Some comments indicated that the policy change was proposed only to alleviate administrative challenges of the zero-antigen mismatch policy (e.g., managing payback debt). While this was certainly a consideration in assessing the proposal, the proposal also addresses concerns that the current zero-antigen mismatch policy and kidney payback policies may have discrepancies across racial/ethnic groups. Other comments indicated that reducing opportunity for zero-antigen mismatch offers for unsensitized adult candidates was unfair to these candidates. The Committee reiterates that unsensitized adult candidates will continue to receive priority at the local level of allocation. The Committee offers that the *current* policy is may disadvantage certain types of candidates, especially those awaiting SPK transplantation. Additionally, the Committee offers that candidates served by OPOs with payback debt levels >9 may be negatively affected by the current policy. Local candidates do not receive as much priority for zero antigen mismatches from local donors when the debt levels exceed 9. At the Policy Oversight Committee's recommendation, the background and significance section of the policy Exhibit A has been modified to more clearly describe the rationale for the policy modification.

Some comments focused on the additional survival benefit gained from receiving a zero-antigen mismatched kidney. While the Committee agrees that there is a benefit for the recipient of the zero-antigen mismatched kidney, kidneys that are shared as paybacks tend to have slightly lower survival rates. A recent study found that shared payback kidneys have a higher failure rate compared to locally transplanted mismatched organs.[1] Some on the Committee expressed that while there is a benefit to a zero-antigen mismatched kidney, the survival with a lesser matched kidney is still quite good, even at five years. Futhermore, the intent of the zero antigen mismatched policy was to facilitate transplantation mostly for sensitized candidates who would otherwise not receive organ offers. From data reviewed, 65.7% of zero antigen mismatched kidneys are allocated and transplanted in candidates with PRA <20%.

Several comments proposed that the payback system should be eliminated while maintaining the current zero-antigen mismatch policy. While this approach seems like a simple solution, the Kidney Transplantation Committee cautions that this approach would result in severe unintended consequences. For instance, some OPOs would constantly have to share kidneys for zero-antigen mismatch, lessening the likelihood that local candidates would receive a mismatched transplant. Other OPOs, especially those that have candidate populations with common HLA, would import a high number of zero-antigen mismatch kidneys. Geographic disparity, which is currently being assessed by the OPTN, would increase, as would the racial/ethnic disparity caused by the zero-antigen mismatch policy. Essentially, the kidney allocation system would become less equitable and less efficient.

Following review of the comments, Committee members determined that the proposed policy modifications are a reasonable compromise that will allow access to zero-antigen mismatch for all candidates at the local level of allocation, maintain current access for pediatric candidates and adult candidates PRA>20%, reduce the racial/ethnic disparitities, and remove some barriers to transplant for candidates awaiting SPK transplantation. The Committee recommends the following for consideration by the Board:

[1] Leichtman, AB, Roys EC, Guidinger, MK, et al. US Policies for sharing of zero HLA mismatched deceased donor kidneys and payback do not improve net outcomes over local use. World Transplant Congress 2006, (439).

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3.5.3.2 Computer Entry. Information regarding each and every deceased kidney donor must be entered into UNet[SM] prior to kidney allocation, to determine whether there is a zero antigen mismatch between the donor and any candidate on the Waiting List. Pre-procurement tissue typing is expected consistent with Policy 2.7 (Expedited Organ Procurement and Placement) in allocating expanded criteria donor kidneys. In the absence of pre-procurement tissue typing, allocation of expanded criteria donor kidneys shall proceed pursuant to Policy 3.5.12 according to candidate waiting time. If pre-procurement tissue typing is not initiated, the Host OPO shall provide a written explanation of the reasons to the OPTN contractor.

3.5.3.3 Sharing. With the exception of deceased kidneys procured for simultaneous kidney and non-renal organ transplantation as described in Policy 3.5.3.4, and deceased kidneys procured from Donation after Cardiac Death donors[1] if there is ~~any candidate~~ a pediatric candidate or a sensitized adult candidate (CPRA>=20%) on the Waiting List for whom there is a zero antigen mismatch with a standard donor, the kidney(s) from that donor shall be offered to the appropriate OPTN Member for the candidate with the zero antigen mismatch subject to time limitations for such organ offers set forth in Policy 3.5.3.5. With the exception of deceased kidneys procured for simultaneous kidney and non-renal organ transplantation as described in Policy 3.5.3.4, and deceased kidneys procured from Donation after Cardiac Death donors[1], if there is ~~any candidate~~ a pediatric candidate or a sensitized adult candidate (CPRA>=20%) on the Waiting List who has agreed to receive expanded criteria donor kidneys for whom there is a zero antigen mismatch with an expanded criteria donor, the kidney(s) from that donor shall be offered to the appropriate OPTN Member for the candidate with the zero antigen mismatch who has agreed to be transplanted with expanded criteria donor kidneys subject to time limitations for such organ offers set forth in Policy 3.5.3.5. If both donor kidneys are transplantable, the recipient center that was offered the kidney for a candidate with a zero antigen mismatch does not have the implicit right to choose between the two kidneys.

The final decision as to which of the two kidneys is to be shared rests with the Host OPO. In lieu of the four additional points for a candidate with a PRA of 80% or higher and a preliminary negative crossmatch (Policy 3.5.11.3) four additional points will be added to all candidates for whom there is a zero antigen mismatch with a standard donor and whose PRA is 80% or higher regardless of preliminary crossmatch results. For kidneys procured from Donation after Cardiac Death donors, if there is any candidate on the Waiting List for whom there is a zero antigen mismatch with the donor, the kidney(s) from that donor shall be offered to the appropriate OPTN Member for the candidate listed locally with the zero antigen mismatch, by blood group identical and then compatible;

then to all other local candidates in point sequence according to Policy 3.5.11 (The Point System for Kidney Allocation) or 3.5.12 (The Point System for Expanded Criteria Donor Kidney Allocation) depending upon whether the donor is standard or defined by expanded criteria; then to regional and then national pediatric or sensitized adult candidates (CPRA>=20%) in point sequence according to Policy 3.5.11 (The Point System for Kidney Allocation) or 3.5.12 (The Point System for Expanded Criteria Donor Kidney Allocation) depending upon whether the donor is standard or defined by expanded criteria. When multiple zero antigen mismatches are found for a single donor, the allocation will be in the following sequence:

[1]For purposes of Policy 3.5 (Allocation of Deceased Kidneys), Donation after Cardiac Death donors shall be defined as follows: (1) A controlled Donation after Cardiac Death donor is a donor whose life support will be withdrawn and whose family has given written consent for organ donation in the controlled environment of the operating room; (2) An uncontrolled Donation after Cardiac Death donor is a candidate who expires in the emergency room or elsewhere in the hospital before consent for organ donation is obtained and catheters are placed in the femoral vessels and peritoneum to cool organs until consent can be obtained. Also, an uncontrolled Donation after Cardiac Death donor is a candidate who is consented for organ donation but suffers a cardiac arrest requiring CPR during procurement of the organs.

2. Kidney Paired Donation

The OPTN began looking into a national kidney paired donation system in 2004. At the time, there was some ambiguity as to whether kidney paired donation constituted "valuable consideration" under NOTA. As a result, a proposal for a national system was sent out for public comment in 2004 and 2006, but it was never sent to the OPTN/UNOS Board of Directors for consideration. Therefore, the OPTN could not approve or implement a national kidney paired donation system. It was not until Congress amended NOTA in 2007 that the OPTN could move forward. A briefing paper, including details for a national system and responses to public comment is attached as **Exhibit B**.

In the time since the proposal was sent out for public comment, advances have been made in the field of kidney paired donation. In October 2007, UNOS, as the OPTN contractor, sent out a request for information (RFI) on kidney paired donation. This RFI asked for information on software systems used to facilitate matching of potential kidney recipient and donor pairs. Nine groups responded, and presented to UNOS Staff, OPTN leadership, and EDS consultants on February 4, 2008. The following is a description of some of the advances that were presented and the Committee's recommendations whether to incorporate them into a national KPD system.

Closed Donor Chains

Based on the presentations on February 4th, it was apparent that many kidney paired donation systems currently incorporate altruistic donors and donor chains and that these systems would look for the inclusion of these features in a national system. There are two types of donor chains: closed chain and open chain. A "closed-chain" is simply an "n-way" matching if it involves only live donor pairs and is completed or "closed" during the same match cycle. A simple 2-pair exchange is classified as a 2-pair closed chain. Likewise, a 3-way paired exchange could be termed a 3-way closed chain. The 2006 proposal limited closed chains to 2-way exchanges. In March 2008, the Kidney Transplantation Committee voted to allow 3-way exchanges in the initial implementation of the system.

Since the logistics of closed chain donation can become complicated, the proposal is to make the basic 2-way exchange the default match in the system, but to allow transplant centers and candidates the option to be considered for 'n-way' or closed chains. Providing maximum flexibility and choices to the transplant centers, candidates, and potential live donors would encourage participation throughout the country, thus leading to greater probabilities of finding potential live donors for candidates.

Open Donor Chains

If an exchange is started from a non-directed donor kidney (often called an "altruistic" living donor; a living donor donating his or her kidney to any candidate), the last recipient will have a living donor(s) who has not donated during the match cycle - termed the "Bridge Donor(s)". This Bridge Donor can either donate to the deceased donor list and close the chain (a form of list exchange), or can be used to start the next chain in a subsequent match cycle (open-chain). If the system attempts to keep chains "open" as long as possible, the term "Never-Ending Kidney Donation" has been used in the field. In order to keep these open chains going, programs have used strategies such as only using a recipient to end a cycle chain who has more than one potential live bridge donor as it is less likely that one of two or more potential living donors will be unable to donate in the future. Programs may also prefer for the bridge donor(s) to be a person with a favorable blood type for donation, such as blood type O or A.

A closed chain system could be theoretically started with a donation from the deceased donor pool in a given region, then the final live donation could go back to that same deceased donor candidate pool so there is no penalty to the deceased donor candidates, while providing a significant gain to the recipients of living donor kidneys, as well as a decrease in the number of wait list candidates.

The open chain concept and the incorporation of kidneys from deceased donors were not included in the 2006 Kidney Paired Donation Proposal. Since these features are substantially different than the original proposal and incorporate altruistic and deceased donors, these concepts will be sent out for public comment and then sent to the Board for approval.

Allowing for Donor/Candidate Choices

The 2006 public comment proposal stated that donor and candidate preferences (travel, age, etc) would not be used to screen out matches in the initial match runs. However, many existing kidney paired donation programs already include this functionality. The groups attending the RFI meeting indicated that allowing donors and candidates flexibility in the system is necessary for the success of a kidney

paired donation program. Therefore at its March 2008 meeting, the Kidney Committee decided to allow donor and candidate preferences to screen out matches in the initial match runs.

In March 2008, the Kidney Transplantation Committee voted unanimously to send the proposal forward to the Board for consideration with the following resolution:

***RESOLVED, that the kidney paired donation system described in Exhibit B be implemented as a pilot project for voluntary participation by OPTN member centers with approved living donor kidney transplantation programs.**
(22 in favor, 0 opposed, 0 abstaining)

3. Kidney Allocation Review Update. Since the Committee's last meeting in December 2007, a subcommittee convened over the course of two months to draft the proposal for a new kidney allocation system. The proposal combines dialysis time, a donor profile index (DPI), and a measure of life years from transplant (LYFT), in a unique way to determine candidate kidney allocation scores (KAS).

Since the December 2007 meeting, the Department of Health and Human Services (DHHS) Office of Civil Rights (OCR) has been reviewing information on the proposed concepts. Specifically, OCR is reviewing the proposed concepts to assess whether the use of age in the LYFT calculation constitutes age discrimination under the Age Discrimination Act. Until this review is complete, OPTN/UNOS Leadership, on the recommendation of the leadership of the HHS Division of Transplantation (DOT), do not intend to release the proposal for formal public comment. Some members of the Committee expressed frustration over the delay that this review is causing.

Gregory Fant, PhD, a HRSA representative to the Committee provided some additional context for the review and the path forward. In December 2007, HRSA requested that the OCR review the concepts under consideration since age has not been used as a factor in allocation in this manner before. Since that time, HRSA has provided additional information to OCR, including a copy of the draft proposal. Due to the length and complexity of the proposal, the OCR requires additional time for review and comment.

A member of the Committee who had worked with the OCR on a matter unrelated to the OPTN commented on her experience with the process. She advised that HRSA and UNOS meet with OCR to establish a timeline and responsibilities for all three parties. Without a timeline, communication about the release of any proposal could be hampered and the duration of the review may be indeterminate. Dr. Fant explained that HRSA DOT has a good working relationship with OCR and that he did not expect a lengthy delay. Once feedback from OCR is obtained, the information will be shared with UNOS staff who will in turn communicate with the Committee.

Without a formal proposal for public comment, thorough vetting through OPTN/UNOS Regional meetings and a public forum was not possible. One member stated that this delay could be misunderstood as an attempt to withhold information from the public. Dr. Fant clarified that communication about the Committee's work to date is not prohibited. Regional Representatives can, therefore, continue to deliver updates at Regional meetings. Committee members can and should continue to present at professional meetings. One member expressed that continued efforts to communicate with the transplant community

and general public, even during this period of uncertainty, may improve understanding and promote dialogue.

The Committee reviewed a document prepared by the Proposal Subcommittee to address frequently asked questions. Once a proposal is circulated for public comment, the document will be posted to the OPTN and UNOS websites and updated throughout the public comment period. The Committee briefly discussed additional questions that they believe should be contained in a list of frequently asked questions including:

- Is the use of candidate age in the LYFT calculation age discrimination?
- What is the equation for DPI?
- Why are the dialysis years in the LYFT calculation weighted by a factor of 0.8?
- How do I improve my allocation score? Is there a region or DSA that I should move to?
- How will this proposal impact smaller programs?
- Will this proposal increase death on the waiting list?
- Is this proposal expected to decrease the rate of death with a functioning graft?
- Are LYFT and DPI accurate predictors?
- When will applications for alternative allocation systems be allowed in the proposed system?

The Committee specifically discussed how to answer the question "will there be a transition period from the current kidney allocation system to the proposed system." In developing the system, the Committee increased the weight applied to time on dialysis such that candidates with long waiting times will continue to have access to kidneys under the new system. While the system would be implemented for all candidates at the same time, there will be pre-implementation phases for transplant centers to ensure that they have the necessary data for all of their candidates. Additionally, the Committee is working to transition certain parts of the system in preparation for implementation of the proposed system. For example, the Committee supported the Histocompatibility Committee's work to convert the current method of identifying sensitization levels to a new method (calculated panel reactive antibody or CPRA). The Committee is also working to ensure that payback debts and credits are settled prior to implementation of a new system. A proposal currently out for public comment, would reduce payback debt levels through eliminating mandatory sharing of zero-antigen mismatched kidneys to non-sensitized adult candidates.

The Committee reviewed a letter from the American Society for Transplant Surgeons (ASTS) which requested additional information on the LYFT modeling, statistics, donor profile index, simulations, and logistics of the proposal. The Committee formed a subcommittee to respond to the ASTS' letter and other inquiries as they become available.

Finally, the Committee revisited its prior decision to allocate kidneys for simultaneous pancreas-kidney (SPK) candidates according to the pancreas allocation sequence in the new system. During a presentation to the Pediatric Transplantation Committee, some questioned whether this practice would harm pediatric candidates who may lose offers to adult SPK candidates. The Committee determined that priority SPK allocation should be limited to the local level of allocation with a vote of 25 in favor, 2 opposed, 0 abstaining.

4. Center Specific Reports

The Committee reviewed a request from the Membership and Professional Standards Committee (MPSC) regarding Center Specific Reports (CSR) for recipients of living and deceased donor kidneys. The MPSC asked that the Kidney Transplantation Committee review the covariates currently used in the CSR models and to make recommendations for improving the models. Keith McCullough, MS, of the Scientific Registry for Transplant Recipients provided a brief presentation on the CSR methodology. The Committee formed a subcommittee to review the current models in detail and to make recommendations for improvement.

5. Review and Responses to Public Comment Proposals

The Committee reviewed three public comment proposals from the Living Donor, Membership and Professional Standards, and Executive Committees. The following is a description of the Committee's review and recommendation for each proposal.

Proposal to Change the OPTN/UNOS Bylaws to Require Written Notification (or Disclosures) to Living Donors from the Recipient Transplant Programs (Proposed Modifications to Appendix-B, Section II, (F) "Patient Notification" of the OPTN Bylaws and Appendix B, Attachment I, XIII, D (13) of the UNOS Bylaws)

The Kidney Transplantation Committee reviewed this proposal during its March 2008 meeting. Many on the Committee expressed that this information would also be useful to donors *prior* to donation as a part of informed consent.

15 in favor, 0 opposed, 0 abstentions

Proposal to the OPTN and UNOS Bylaws: Restoration of Membership Privileges Following an Adverse Action (Proposed Changes to Appendix A, Section 3.01A Paragraphs (1) and (3) and Section 5.05A, Addition of Section 5.07A.)

The Kidney Transplantation Committee reviewed the requirements during its March 2008 meeting and agrees that the proposed modifications are necessary additions to the OPTN/UNOS Bylaws.

15 in favor, 0 opposed, 0 abstentions

Proposal to Require Transplant Centers to Inform Potential Recipients about Known High Risk Donor Behavior. (Proposed Revisions to Policy 4.0 - Acquired Immune Deficiency Syndrome (AIDS), Human

Pituitary Derived Growth Hormone (HPDGH), and Reporting of Potential Recipient Diseases Or Medical Conditions, Including Malignancies, of Donor Origin)

The Kidney Transplantation Committee reviewed this proposal in March 2008 and provided the following recommendations: OPOs need to be very clear when designating a donor as high risk if their institutional criteria for high risk differ from the CDC guidelines. Some on the Committee thought that the CDC guidelines are outdated and the policy language should be updated when the CDC updates its guidelines. Additionally, to facilitate implementation, the policy should specifically state what type of documentation the transplant center is required to maintain. Finally, the DonorNet® display should be updated to clearly alert centers that a potential donor meets one or more of the CDC high risk guidelines.

With these recommendations put forth for consideration, the Kidney Committee voted to support the policy: 14 in favor, 2 opposed, 0 abstentions.