

OPTN/UNOS Minority Affairs Committee
Report to the Board of Directors
June 21-22, 2010
Richmond, VA

Summary

I. Action Items for Board Consideration

- None

II. Other Significant Items

- The Committee is pursuing publication of a manuscript summarizing results of the *MAC Dialysis Facility Public Comment Opinion Survey* (Item 4, Page 11).
- The Committee is developing a methodology to distribute results of the *Survey on Referral to Kidney Transplantation* to encourage best practices in transplant center monitoring of referrals to kidney transplantation (Item 5, Page 13).
- The Committee is finalizing its *Survey on Referral to Liver Transplantation* to document transplant center practices in tracking and monitoring referrals to liver transplantation as well as explore barriers to liver referral and wait listing for different ethnic groups (Item 7, Page 16).
- The Committee is pursuing publication of an article reviewing OPTN organ allocation policy addressing minority access to transplantation over the last decade from the perspective of the Committee (Item 8, Page 17).

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**Report of the OPTN/UNOS Minority Affairs Committee to the Board of Directors
June 21-22, 2010
Richmond, VA**

**Henry B. Randall, MD, Chairman
Silas P. Norman, MD, Vice-Chairman**

This report includes items addressed by the Minority Affairs Committee (MAC) at its meetings held on November 20, 2009, and March 23, 2010.

1. Executive Summary of the Meeting of the Board of Directors

During the November meeting, the Committee was provided with the highlights of Board actions taken at its meeting on November 16, 2009 in Orlando FL.

2. Update on Development of a New Kidney Allocation System

In November, Oscar Grandas, MD, Kidney Transplantation Committee liaison to the MAC, provided the Committee with an update on development of a new kidney allocation system based on recent discussions by the Kidney Committee.

The Board of Directors directed the Kidney Committee to focus on allocating kidneys with the longest survival potential to candidates who can realize that potential. Additional feedback provided to the Kidney Committee was to avoid extreme mismatches, improve matching of donors and recipients and investigate other outcome metrics besides Life Years From Transplant (LYFT). As a result, the Kidney Committee is investigating prioritizing kidneys from the top 20% Donor Profile Index (DPI) for candidates with the 20% best projected survival and to candidates within 15 years of the donor's age. They are also considering using post-transplant survival in a limited fashion in an allocation system instead of LYFT. The new system would:

- Allocate kidneys from the top 20% of DPI donors to candidates with the top 20% post transplant survival.
- Allocate kidneys from donors less than the age of 35 to candidates less than the age of 35 (excluding pediatric candidates).
- Allocate kidneys to candidates who are within 10 years of the donor's age.
- Allocate kidneys to candidates who are within 15 years of the donor's age;
- Restrict kidneys from the top 20% of donors from going to the shortest lived 20% of candidates.
- Maintain priority for pediatric candidates and prior living donors
- Utilize sliding scale priority for sensitized candidates
- Eliminate absolute priority for 0-ABDR MM to unsensitized candidates.
- Eliminate kidney payback system.
- Allocate blood group A2 or A2B kidneys to B candidates with low anti-A titers
- Give SPK candidates absolute priority over other kidney candidates since most have very high LYFT scores.

The Committee was informed that the Kidney Committee has been collaborating with the Pancreas Transplantation Committee, the Pediatric Transplantation Committee and the Histocompatibility Committee in the development of the proposal. The Kidney Committee is currently reviewing assumptions to be used in updated simulation models and will review the results later this year. It was noted that policy development will continue into 2010.

The presentation was followed by discussion from the MAC. Several members of the Committee expressed concern with regard to restricting the allocation of kidneys from donors to recipients within a certain age range due to the potential to disadvantage African American candidates, who tend to be waitlisted at a much younger age as compared to Caucasians. Further, one member noted that under the proposed system there will be two different allocation systems for adult and pediatric kidney allocation. The member also expressed a concern that some of the benefit to minority candidates that may have been experienced in the previous proposed system incorporating LYFT would be lost during the time it would take to develop a new system. Another Committee member discussed the proposed inclusion of cardiovascular risk (CVR) measures in the new system. He commented that the current measures of CVR are not stable or accurate enough to reliably predict patient outcomes and thus are able to be manipulated. It was responded that the concerns would be communicated back to the Kidney Committee.

During the meeting on March 23rd, results of the most recent KPSAM computer modeling simulations were summarized for the benefit of the Committee. Keith McCullough, MS of the SRTR, presented the Committee with the data viewed by the Kidney Committee at its last meeting. (**EXHIBIT A**).

The Committee was presented with the results from six runs:

- Run 35 included the current rules as of January, 2009 (without OMM PRA < 20 sharing);
- Run 36 included the current rules as of January 2009 incorporating the A2-A2B into B alternative allocation system, the kidney follows pancreas locally only, no paybacks, and dialysis time in addition to waiting time rules;
- Run 37 included prioritization for the top 20% of candidates to the top 20% of donor organs;
- Run 39b included prioritization of candidates within 15 years of donor age;
- Run 40 included prioritization of the top 80% of candidates to the top 20% of donor organs; and
- Run 41 included runs 37 + 39b, (i.e. prioritization of the top 20% of candidates to the top 20% of donor organs with the remaining 80% of organs allocated first to candidates within 15 years of the donor's age).

Results of the individual runs were highlighted for the Committee:

Run 36

- Transferred 2-3% of all kidney-alone transplants from A₂ to B recipients;
- Reduced SPK transplants (note: SPK transplants currently moving between DSA according to ALUs were eliminated);
- Increased allocation to African American recipients by 3% of all kidney-alone transplants and decreased allocation to Caucasian recipients by 4% of kidney-alone transplants; and
- May have reduced PRA 80+ access by roughly 2% of kidney-alone transplants.

Runs 37 (top 20% to top 20%) and 40 (top 20% to top 80%)

37, 40: The top 20% to top 20% or top 20% to top 80% rules (compared to run 36)

- Run 37 shifted 719 kidneys from recipients over 50; Run 40 shifted 219 kidneys;
- Run 37 increased extra lifespan by 2,323, or 3.2 years per shifted kidney; Run 40 increased extra lifespan by 861, or 3.9 years per shifted kidney;
- Run 37 increased graft lifespan by 1,837, or 2.6 years per shifted kidney; Run 40 increased graft lifespan by 509 years, or 2.3 years per shifted kidney;
- Increased the lifespan after transplant (by 8,000 and 2,000 years for Run 37 and 39, respectively) and the total extra years of life (5,000 years and 2,000 years for Run 37 and 39, respectively) realized from the kidneys available in a year; and

- May have reduced transplants to diabetic recipients by 2-3% of kidney-alone transplants.

Run 39b: Within 15 years

39b: The within 15 years rule (*compared to run 36*)

- Shifted 1,318 kidneys from recipients over 50;
- Increased the extra lifespan* of the candidate list from a year's worth of transplants by 4,767 years, or 3.6 years per shifted kidney;
- Increased the graft lifespan by 3,711 years, or 2.8 years per shifted kidney;
- Did not substantially change the distributions of recipient race or blood type;
- May have reduced 0 ABDR and 0DR MM transplants by roughly 2% of kidney-alone transplants; and
- May have increased access among recipients with glomerular disease and decreased access among recipients with diabetes by roughly 3-4% of kidney-alone transplants.

Runs 41: (combines 37: top 20% to top 20% and 39b: within 15 years)

The top 20% to top 20% then within 15 years rules (*compared to run 36*)

- Run 41 shifted 1,179 kidneys from recipients over 50 compared to run 36;
- Run 41 increased extra lifespan by 5,112 over run 36, or 4.3 years per shifted kidney;
- Run 41 increased graft lifespan by 4,847, or 4.1 years per shifted kidney; and
- Run 41 resembled run 39b (within 15 years) in terms of years saved and distributions of recipients.

When determining the age brackets to be used for kidney allocation, the Committee considered three different age groupings. These included recipients aged within +/-10 years, +/-15 years, and +/-20 years of the donor's age. The +/- 10 years system resulted in fewer donors available to candidates in their mid to late 30's, while the +/-20 years system resulted in a substantial increase in donors available to these candidates. The +/- 15 years system was advantageous because the donor distribution is substantially younger than the candidate population. Further, the +/-15 years allocation represented a compromise system with a broader distribution of donor organs available across the spectrum of candidates. As a result, the Kidney Committee selected Run 41 as the basis for the kidney allocation proposal.

Results of the simulations by candidate characteristics were also summarized for the Committee. The percentage of kidneys allocated to candidates by race/ethnicity, blood type, diagnosis category, sensitization (PRA), and age as projected through KPSAM were reviewed. Overall, the KPSAM simulations did not show any major shifts in the percentage of kidneys allocated to candidates by race/ethnicity, ABO blood type, or degree of HLA mismatch as compared to the current system (Figure 1). A decrease in the proportion of transplants for candidates with Diabetes was observed (31% to 26%) while an increase in the proportion of transplants for candidates with GlomerularNephritis was also observed (21% to 24%) (Figure 2).

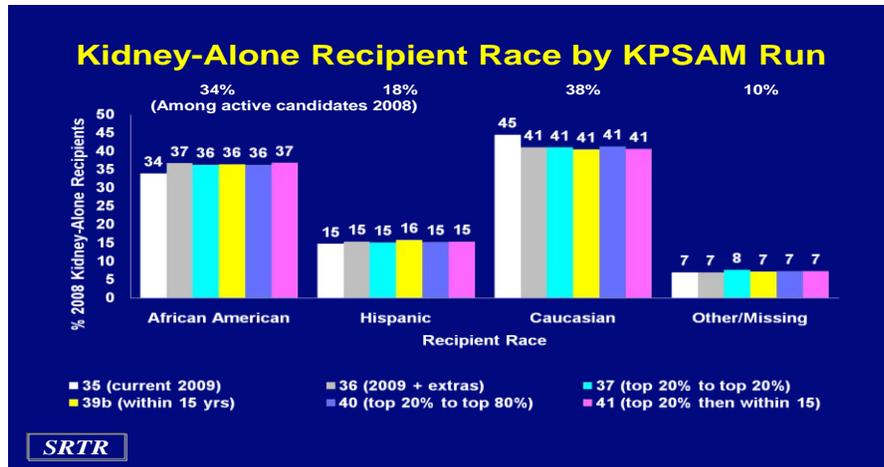


Figure 1

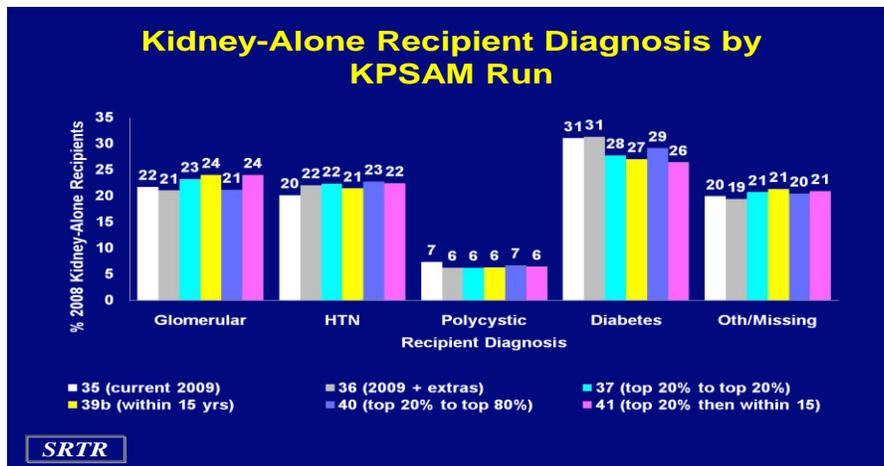


Figure 2

The most substantial changes observed were in the proportion of transplants by recipient age. For example, transplants for young adults (18 to 34) increased from 11% in the baseline system (current rules + extras) to 18% in the proposed system. Transplants also increased for candidates between the ages of 35 and 49 (27% to 31%). Transplants for candidates between the ages of 50 and 64 decreased (41% to 35%). Similarly, transplants for candidates over the age of 65 decreased in the proposed system (16% to 11%). (Figure 3).

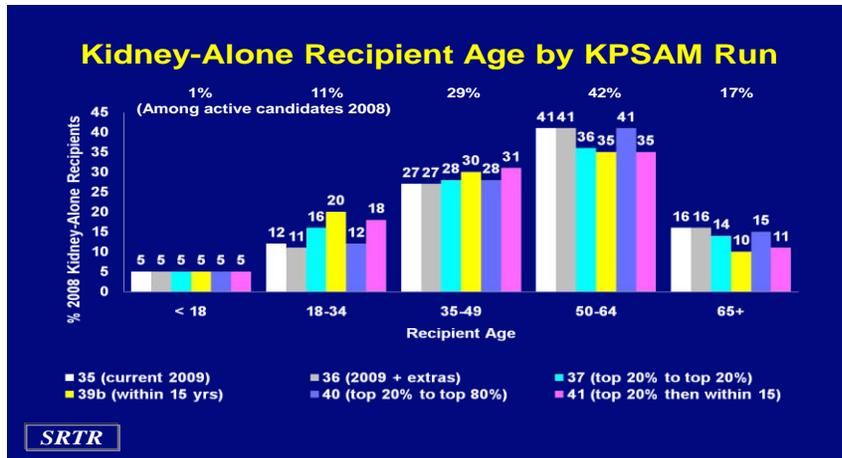


Figure 3

In summary, as compared the current system, the Committee was informed that the proposed system would result in gains in the total life span following transplant and total graft years of life. Additionally, the proposed allocation system would result in an additional 15,223 extra years of life following transplant for recipients during one year of deceased donor kidney transplantation (Figure 4).

Years	Run 35: current 2009 rules	Run 36: current 2009 rules + extras	Run 37: Top 20% to top 20%	Run 39b: Age match within 15 years	Run 40: Top 20% to top 80%	Run 41a: Top 20%, then within 15
Number of transplant recipients	10802	10974	10840	10788	10898	10930
Total lifespan after transplant	126155	125463	133542	139508	127542	140686
Total graft years of life	92808	92199	94036	95910	92708	97045
Total extra years*	54512	54197	56521	58965	55058	59309
Change in lifespan after transplant	691	(ref)	8,079	14,044	2,079	15,223
Change in graft years of life	610	(ref)	1,837	3,711	509	4,847
Change in extra years*	314	(ref)	2,323	4,767	861	5,112
Lifespan benefit per transplant	5.0	4.9	5.2	5.5	5.1	5.4

SRTR

*Not adjusted for quality of life

Figure 4

The Committee was then presented with an overview of the background of the proposal, timeline for distribution, and subsequent path forward determined by the Kidney Committee. Silas P. Norman, MD, Vice-Chairman of the MAC, presented the overview to the Committee. Ciara Samana, MS, liaison to the Kidney Transplantation Committee, participated in the discussion via teleconference.

A brief history of the kidney allocation policy development process, limitations of the current system, and the goals of the new system were described. A Kidney Allocation Review Subcommittee (KARS) was formed in 2004 to conduct a 360° review of the national kidney allocation system. Since that time, the Kidney Committee has analyzed and reviewed various computer simulation models based on the concept of allocating kidneys to those candidates most likely to experience the best utilization of the organ (as measured by the number of life years following transplantation). Two

public forums were convened to solicit input on the proposed concepts. Further direction with regard to a final proposal was provided by the OPTN Board of Directors. Suggestions regarding an acceptable approach to a new system were categorized into the following broad themes:

- Address the high discard rates of kidneys (especially those from expanded criteria donors (ECD) that could otherwise be allocated to candidates on the waiting list;
- Address the variability in access to transplantation by blood group and geographic location;
- Address the mismatch between potential survival of transplanted survival of the kidney and the recipient which increases the need for re-transplant and also results in hundreds of potential life years not being realized.
- The system should be:
 - Straightforward;
 - Easy to understand;
 - Flexible;
 - Incorporate common sense as well as clinical sense; and
 - Include some element of age-matching.

Based on the feedback and input provided throughout the process, the Kidney Committee developed the following goals for a new allocation system:

- Better match graft longevity and recipient longevity within biological reason and acceptable levels of accessibility;
 - Foster graft survival
 - Minimize loss of potential functioning
- Improve system efficiency and organ utilization;
- Make comprehensive data better available to patients and transplant programs;
- Address differences in accessibility for populations described in the National Organ Transplant Act.

The allocation of deceased donor kidneys under the proposed system was summarized for the Committee. The system would utilize a Kidney Donor Profile Index (KDPI) to better characterize donor kidneys and provide additional clinical information for patients and providers to consider during the transplant evaluation and organ offer process. Under the new system, the top 20% of kidneys would be allocated using the Kidney Donor Profile Index (KDPI) to the top 20% estimated recipient post-transplant survival. The majority of donor kidneys (80%) would be allocated to candidates who are within 15 years of the donor.

KDPI is a formula that summarizes the risk of graft failure following kidney transplant by combining a variety of donor factors into a single number. Unlike the current system which classifies kidneys into two discrete categories: expanded criteria donor (ECD) or standard criteria donor (SCD), KDPI represents a continuous score awarded to kidneys based on donor quality.

When calculating DPI, the following donor factors are considered:

- | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><u>KDPI Donor Characteristics</u></p> <ul style="list-style-type: none">• Donor age• Race/ethnicity• Hypertension• Diabetes• Serum creatinine• CVA Cause of Death• Height• Weight• DCD• HCV |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Figure 5

When calculating recipient post-transplant survival, the following factors are considered:

- | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><u>Characteristics for Estimating Recipient Post-Transplant survival</u></p> <ul style="list-style-type: none">• Candidate Age• Candidate Diabetes• Prior transplant• ESRD time |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Figure 6

Before a donor organ is offered through an Organ Procurement Organization (OPO), the specific donor information (Figure 5) is entered into the computer system. This information will be used to generate the KDPI score. If the score is $\leq 20\%$ (kidneys with the predicted longest function), the donor kidney would first be offered to local candidates who have at least the 20% longest estimated post-transplant survival before being offered to all other candidates. If the KDPI score is $>20\%$, the kidney would first be offered to candidates who are between 15 years older and 15 years younger than the donor before being offered to all other candidates. When a candidate is listed for a kidney transplant, the information entered during the listing process will be used to determine the candidate's estimated post-transplant survival (Figure 6).

Whether a candidate is in the first allocation group (20% Allocation Group) or in the second allocation group (80% Allocation Group) depends on the specific medical characteristics of the donor kidney and the medical characteristics of the candidate that has been entered into the computer. For example, if a donor kidney becomes available with a KDPI score of 35%, it will be allocated first to candidates within 15 years older or younger than the donor. In other words, a candidate's priority changes based on the donor's age in relationship to the candidate's age. However, a donor kidney with a KDPI score of $\leq 20\%$ will be first allocated to candidates with an estimated post-transplant score of $\leq 20\%$ regardless of donor age.

The order in which candidates are ranked on the waiting list of candidates within each of the allocation groups is based on the current national kidney allocation rules with the following exceptions: waiting time is calculated as either time on dialysis or time since listing with a $GFR \leq 20 \text{ ml/min}$, whichever is longer.

The table below (Figure 7) shows the high-level allocation sequence.

Current Allocation Sequence	Proposed Allocation Sequence
<ul style="list-style-type: none"> • Zero-antigen mismatches • Local prior living organ donor • Payback debts • Local pediatric • Local all candidates • Regional pediatric • Regional all candidates • National pediatric • National 	<ul style="list-style-type: none"> • Group A zero-antigen mismatches • Local prior living organ donor • Local pediatric • Local Group A (all remaining Group A Candidates) • Group B zero antigen mismatches • Regional pediatric • Regional Group A • Regional Group B (All remaining Regional Candidates) • National pediatric • National Group A • National Group B (All remaining Candidates)

Figure 7

The Committee was updated on the timeframe for public distribution of the proposed system. It was noted that the proposal would not be submitted for public comment, but a concept document outlining all of the elements of the proposed system would be submitted for public feedback through UNOS. The high level timeline includes the following:

- A kidney allocation concept document is planned for release in the Spring of 2010.
- A proposal document incorporating feedback from the document would be finalized during the Summer/Fall 2010.
- A public comment proposal including the details of the policy and policy language would be released in the Fall of 2010.
- The policy proposal would be revised based on public comment feedback during the Winter/Spring 2011.
- A final proposal would be sent to the Board for consideration in June 2011.

Following the presentation, the Committee discussed the elements of the new allocation system as compared to the previous LYFT-based system. Overall, the Committee was encouraged that the benefit to minority candidates shown in the simulations was comparable to the benefit shown in the previous system. However, Committee members also observed that the same groups (older age candidates and older age diabetics) would still receive less benefit under the new system as they would have with the LYFT-based system. Further, it was commented that the new model using the 20% threshold could be perceived as an arbitrary demarcation. It was remarked that the proposal had the potential to be viewed as a less scientific, less accurate, and more complex way of reaching the net benefit goal, possibly making the system less defensible. It was responded that the age-matching element was an attempt to respond to feedback from the public that improving the age correlation between donors and recipients should be an important goal of the system. The proposed system should result in more transplants between closely age matched donors and recipients. The Committee will continue to follow updates reported by the Kidney Committee.

3. Kidney Paired Donation (KPD) Update

In November of 2009, Dr. Grandas provided the Committee with an update on the status of the KPD pilot program. In June of 2008, the Board approved a national KPD pilot program to be administered

by the OPTN. KPD is a program which assists donor/recipient pairs who are incompatible or poorly matched with each other in finding another donor/recipient pair(s) with whom they can exchange kidneys. The matching program can enable more favorable compatibility between two donor/recipient pairs in order to allow a successful transplant to occur.

The Committee was informed that the project was on hold while the KPD Work Group, UNOS Leadership, and HRSA reviewed the requirements of the program. The review would focus on the specific safeguards that need to be established for living donors and whether the consequences for misconduct within KPD need to be codified in the bylaws.

During the March 23, 2010, meeting, Dr. Cherikh updated the Committee on the status of the program. She reported that the KPD Work Group was preparing to implement the pilot program. The Work Group recently facilitated a conference call between the four coordinating centers, which will result in approximately 80 transplant centers participating in the pilot program. The matching algorithm developed by Tuomas Sandholm, Ph.D, from the Carnegie Mellon University and Sommer Gentry, Ph.D, from the U.S. Naval Academy and Johns Hopkins University will be used. The coordinating centers have reviewed the operational guidelines of the KPD program and have agreed to comply with the requirements. Dr. Cherikh noted that the pilot will not incorporate the UNetSM system at this time as the programming time frame would delay the project. The pilot program is expected to be implemented in the Summer of 2010. UNOS will monitor the logistics and performance of participating centers. Following successful implementation of the KPD pilot program, the protocol will be implemented on a national scale.

4. MAC Public Education and Outreach Initiatives

Update on the MAC Dialysis Facility Public Comment Opinion/Outreach Survey - For the past several years, the Committee has expressed concern with regard to the inclusiveness of public comment and the possibility that important allocation policy decisions were being made without the input of affected patient populations.

In 2004, the Board of Directors approved a survey of dialysis patients to 1.) collect baseline information on public perception of organ allocation policy and 2.) assess public knowledge about the opportunity to provide input into the development of these policies through the public comment process. The survey results would help the Committee gauge the overall level of public understanding of organ allocation policy and awareness of public comment and possibly identify barriers to the process for all participants in transplantation. The results might also help identify demographic differences in these areas. The Committee has also hoped that the findings would help justify further refinement of the public comment process and the development of public education and outreach initiatives in this area.

In July of 2009, the Committee completed its survey which highlighted the following:

- Nearly all patients were aware of transplantation (99%).
- 73% of patients had discussed transplantation as an option with their physician.
- 74% believe they have a “good” or “fair” understanding of the policies for kidney allocation
- A low percentage of patients (across all demographic categories) were aware of public comment (25%) and very few have participated in the process (2%).
- 76% of patients were interested in expressing their opinion (but 23% did not know how to obtain a copy of the policies and 12% did not know how to express their opinions).
- Of those patients NOT interested in expressing their opinion (77% believed doctors were more qualified to make policy decisions and 23% did not believe their opinion would be taken seriously).

Final survey results were presented to the Board at its meeting on November 17-17, 2009.

During discussion at the November 2009 Committee meeting, the Committee determined that survey responses appear to document limited understanding of organ allocation policies (74%) and very limited participation in public comment among dialysis patients (2%). The Committee also noted that the results suggest the need for revisions and refinement of the public comment process and better education of patients with ESRD about organ allocation policy development. The Committee was encouraged that most patients appeared to have been approached about receiving a transplant; but acknowledged that there were differences in the level of patient education and understanding about transplantation. There was also discussion within the Committee regarding whether or not this was a result of inadequate information and education provided to patients. Lack of patient referral is only one barrier to transplantation; how information on transplantation is presented to the patient is equally important. Finally, the Committee also noted that the challenges with regard to patient education and outreach are multi-factorial and should involve a wide breadth of interventions across multiple communities (patient level, provider level, center level, and UNOS level interventions.)

During its March meeting, the Committee was informed that the fourth iteration of a draft manuscript summarizing the results had been prepared. The most recent version contained corrected analyses and revised tables. The updates were necessary due to several errors made during data entry. The Committee was informed that the manuscript is hoped to be published in the Summer of 2010.

The Committee also discussed additional ways to circulate the findings in the public domain. Suggestions included:

- Expanding patient outreach efforts (to patient and public advocacy groups).
- Collaboration with other groups to develop specific interventions or education and training within professional associations (Dialysis companies, ESRD Networks, NKF, NATCO, ASMHTP, ASN, HRSA, CMS, etc.) as appropriate.
- Further refinement of the OPTN public comment process.

Following the discussion, it was determined that the Subcommittee would be reconvened to discuss and execute the distribution of survey findings to dialysis patients, the transplant community, and the general public.

Collaboration with the DaVita Corporation on Patient Education Efforts - The Committee was updated regarding ongoing discussions within UNOS to collaborate with DaVita to provide its dialysis patients with supplemental transplant-related educational information. One of several proposed initiatives will be the publication of a feature entitled “Myth Busters” which will appear in the quarterly *DaVita Lifelines* newsletter. The article will present and refute myths about transplantation and donation commonly heard among dialysis patients. Because the Committee has been very interested in finding ways to reach out to this patient population for some time, the Committee was encouraged to submit the ideas for these myths which would then be developed into articles authored by staff in the UNOS Communication Department. Committee members forwarded the following myths to be incorporated in the article:

- Patients on dialysis are automatically placed on the waiting list for transplantation.
- Patients have to be referred by a physician for a transplant evaluation (patients can refer themselves).
- Patients need to be on dialysis for at least X years before being referred for a transplant.
- Famous people receive preferential treatment for a transplant.
- Dialysis patients cannot become organ donors.
- Only immediate family members can donate.

- Minorities do not donate.
- Transplantation does not work.
- Transplantation is an experimental procedure.

5. Survey on Referral to Kidney Transplantation

Over the past several years, the Committee has been exploring ways to examine the factors related to lower referral rates and delays for minority patients getting onto the kidney waitlist. Subsequently, a Subcommittee on Referral to Transplantation was formed to review evidence and other activities being undertaken by centers geared toward increasing referral and wait listing rates. The Subcommittee examined data which showed large geographic differences in access to the kidney transplant waiting list and once listed, to a kidney transplant. It also viewed data showing an unexplained negative correlation between the large percentage of African Americans reported as being informed about their transplant options and lower referral rates.

As a result, the Committee expressed interest in learning more about access to transplantation and best practices with respect to referring dialysis patients to the kidney waiting list for transplantation. In August of 2009, the Committee launched an online survey targeting kidney transplant centers to identify specific practices in use to ensure that dialysis patients eligible for transplant are referred to the kidney waiting list. The data was collected using the Key Survey software. The survey targeted medical and surgical directors at kidney transplant centers. Four-hundred and five surveys were distributed and 104 were returned with a response rate of 26%.

In November of 2009, the Committee viewed preliminary results from the survey which showed that many centers are actively monitoring and attempting to stimulate referrals; though many centers do not currently have a process in place to do this (**EXHIBIT B**). Charlotte Carroll, MS presented the highlights of the survey to the Committee:

- 50% of responders were surgical directors, and 32% were medical directors.
- Center sizes were distributed evenly across all size categories.
- The majority of responders were from Regions 4, 5, and 11.
- 92% of respondents actively monitor patient referrals.
- < 50% monitor the percentage of eligible patients referred.
- The most frequently used methods for determining eligibility for transplant are transplant physician review and nephrologists' review.
- 41% take no action if eligible patients are not referred, followed by other actions and letter to the nephrologist.
- The majority of patients are referred in < 6 months of dialysis or 1 – 2 years of dialysis (~ 23% each).
- Medical co-morbidities, other reasons, and patient unaware of transplant opportunity are the majority of reasons for delayed referral.
- 65% of respondents receive >150 referrals a year.
- On average over 50% responders felt that 75% -100% of referrals come in for evaluation.
- On average 50% of the kidney wait list for a center are Caucasian, 29% are African American, and 20% are Hispanic.
- Ethnic distribution of referrals is similar to ethnic distribution of patients on the wait list.
- Transplant centers use letters, brochures, and presentations to physicians and dialysis staff to enhance referrals.

The survey results show that 59% of centers take some proactive approach to determine if suitable dialysis patients are being referred to transplantation; though 41% report that they take no action to

follow up on referrals. It was noted that the centers that do monitor referrals are only capturing referrals from dialysis patients who constitute only a percentage of potential eligible transplant candidates. Additionally, the Committee commented on the finding that 21% of patients are not aware of transplantation as an alternative option to dialysis. The Committee felt that this percentage was still too high.

The Committee also discussed the findings with regard to reasons for delayed referral. On average, the largest percentage of respondents (31%) reported that patients experience delayed referral because of medical co-morbidities and the third largest percentage (18%) reported delayed referral due to financial considerations. However, the second highest percentage of respondents (25%) listed "Other" reasons for delayed referral. Upon further examination of responses in this category, the primary reason listed was that the nephrologist felt that the patient should be on dialysis before receiving a transplant. A member of the Committee commented that this is a common medical judgment approach among older-generation nephrologists. The member remarked that these physicians subscribe to the convention that patients must prove that they will take care of themselves in their disease state while on dialysis first, thus demonstrating that they will take care of themselves with a future transplant. It was suggested that a more disturbing underlying factor could be that patients on dialysis generate more revenue for a nephrology practice than patients referred to transplantation.

Additional concern was expressed by a member of the Committee with regard to how the survey findings would be presented. The member commented that the findings only capture the perceptions of the person answering the survey questionnaire. Further, the information reported is not necessarily based on actual data but on impressions of referral patterns from the respondent. Also, since the responses are only from a small number of transplant centers as compared to the total number of transplant centers across the country, the results would be difficult to generalize. It was suggested that the Committee be cognizant of these factors and not place emphasis on those centers that are not actively monitoring referrals. Rather, the Committee should highlight those centers which do have active programs, determine if those programs are improving referral and wait listing rates, and attempt to replicate the results in other localities by promoting them as best practices.

During the March 2010 meeting, the Committee briefly discussed possible next steps in developing a path forward, including:

- Analyzing survey results and data for trends (geographic differences, waiting list activity, ethnic composition, prevalence of disease, impact of the economy on minority donation rates etc).
- Supplementing data with anecdotal information collected from individual regions/transplant centers.
- Disseminating results via a white paper, journal article, and presentations at national conferences, etc. to support best practices for monitoring and stimulating referrals to the kidney waiting list.

It was determined that the MAC Subcommittee on Referral to Kidney Transplantation would be reconvened to consider these and additional suggestions.

6. Geographic Variation in Access to Liver Transplantation

The Committee has been actively reviewing data on access to liver transplantation by region and recipient ethnicity. In July 2009, the Committee was shown results of the waiting list and transplant MELD/PELD by region. In November 2009, the Committee viewed liver waiting list death rates, the number of additions, and the number of transplants in different regions by MELD/ PELD score and ethnicity. The data showed that adult registrations for African Americans have a higher median

MELD score than Whites or Hispanics within regions. Further, distribution of MELD scores at transplant varied across regions, but did not vary as much by race.

Diagnosis of Status 1 Liver Registrations/Transplants in Different Regions by Ethnicity and Age Group (Pediatric vs. Adult) - To obtain a better understanding of the differences of MELD/ PELD score and ethnicity across regions, the MAC requested to view results by age group (pediatric vs. adult) and separately for candidates/transplants with and without exceptions. As follow-up, the MAC requested to see diagnoses status 1 registrations/ transplants.

At its meeting on March 2010, the Committee viewed data on diagnoses of registrations/transplants for Status 1 in different regions by ethnicity and age group (pediatric vs. adult). Dr. Cherikh presented the information to the Committee. Diagnosis at listing for Status 1 liver registrations added to the waiting list during December 1, 2006 – November 30, 2009 and diagnosis at transplant for Status 1 deceased donor liver alone transplants during December 1, 2006 – November 30, 2009 were tabulated by region, ethnicity, and age (Pediatric: 0-17 yrs; Adult: 18+ yrs). The category Status 1 included Status 1A/1B for the pediatric population and Status 1A for the adult population. Information was based on OPTN data as of February 12, 2010. **(EXHIBIT C)**.

Data highlights include the following:

- The most frequent diagnoses for Status 1 adults at listing were Acute Hepatic Necrosis (52%), other diagnoses (30%), and Non-Cholestatic Cirrhosis (11%).
- Similarly, the most frequent diagnoses for Status 1 adult transplants were Acute Hepatic Necrosis (55%), other diagnoses (21%), and Non-Cholestatic Cirrhosis (14%).
- Although there is a variation in diagnosis distribution across regions, the most common diagnosis categories were Acute Hepatic Necrosis, other diagnoses, and Non-Cholestatic Cirrhosis.
- Acute Hepatic Necrosis seemed to be more common in adult Status 1 Black candidates and recipients and the least common in Hispanics and Whites.
- Non-Cholestatic Cirrhosis and metabolic disease seemed to be more frequent in adult Status 1 Hispanic candidates and least common in Black candidates.
- Metabolic disease was more common in adult Status 1 Hispanic and White candidates/recipients and less common in Black candidates/recipients.

The data showed that frequent diagnoses at listing did not seem to vary across regions for both the pediatric and adult cohorts. However, Malignant Neoplasms showed up as a frequent diagnosis at transplant for the pediatric cohort (14%) but not as frequently at listing (2%). Differences in diagnoses in the adult population across ethnicities were noticeable with Hispanic patients showing a higher percentage of registrations with Non-Cholestatic Cirrhosis (16%) at listing than the other ethnic groups; with Asians showing a higher percentage of Non-Cholestatic Cirrhosis (20%) at transplant than the other ethnic groups. Further, Black and Other patient populations showed higher percentages of registrations with a diagnosis of Acute Hepatic Necrosis. Dr. Cherikh reported that results should be viewed with caution because the number of registrations and transplants are small when stratified by exception status, region, age group (pediatric vs. adult), ethnicity, and diagnosis category.

Members suggested that there appeared to be misclassification within diagnosis categories as many adult patients with Acute Hepatic Necrosis and Cirrhosis are being included in the Status 1 category. For the July 2010 meeting, the Committee requested to view an updated analysis using re-categorization of individual diagnoses that will be provided by the Committee.

Region 8 “Share 29” Liver Policy: Results from the Second Year - The “Share 29” liver policy was implemented in Region 8 on May 9, 2007. Under this allocation sequence, livers from adult donors

would be shared regionally for adult and pediatric candidates with MELD/PELD of 29 or greater, except for candidates with exceptions.

The MAC was presented with the preliminary results of the 1st year of the Share 29 policy at its meeting in March 2009. As in prior years, the data continued to indicate potential differences in access to the liver waiting list by ethnicity and by ethnicity within regions.

In November 2009, the Committee viewed updated information on wait list death rates by ethnicity, distribution of deceased donor transplants by MELD/PELD (M/P) score by ethnicity, and graft survival by recipient ethnicity following implementation of the “Share 29” policy in Region 8 (excluding registrations/ patients with exception points). Charlotte Carroll, MS, presented the data to the Committee. **(EXHIBIT D)**.

Death rates in various MELD/PELD categories were computed for all candidates ever listed on the liver waiting list in Region 8 between May, 9, 2005 and May 8, 2009, by candidate ethnicity and waiting list period (pre-policy: May 9, 2006- May 8, 2007 and post-policy: May 9, 2007- May 8, 2009). Information provided was based on the OPTN data as of October 23, 2009.

The Region 8 allocation sequence is as follows:

- OPO LI Status 1A
- Regional LI Status 1A
- OPO LI Status 1B
- Regional LI Status 1B
- OPO LI MELD/PELD ≥ 29 - Not to include HCC and/or exception cases
- Regional LI MELD/PELD ≥ 29 - Not to include HCC and/or exception cases
- OPO LI MELD/PELD ≥ 15
- Regional LI MELD/PELD ≥ 15
- OPO LI MELD/PELD < 15
- Regional LI MELD/PELD < 15

The data showed that after the implementation of the “Share 29” policy in Region 8 (excluding registrations/ patients with exception points):

- Death rates remained relatively similar or seemed to go down for all ethnicities all status/score categories combined.
- Death rates for Status 1A/1B seemed to have decreased for whites, blacks, and other ethnic category.
- Death rates increased for all ethnicities in the M/P 15-28 group, with the exception of other ethnic category.
- Death rates in M/P 29+ seemed to have decreased for the Black and Hispanic populations, but increased in the white population.

Also, median MELD/ PELD scores at transplant for all ethnicities were comparable before and after the implementation of the “Share 29” policy in Region 8. One year graft survival rates were not any worse across all ethnic groups after “Share 29” policy implementation.

7. Survey on Referral to Liver Transplantation

Various data reviewed by the Committee over time has shown higher MELD/PELD scores for minorities at wait listing and a lower overall wait listing rate for minorities. Further, the results show

a fairly consistent wait listing rate for all groups, except a significant reduction is shown for the African American group.

The Committee has been interested in trying to gain a better understanding of the reasons for the variability in the MELD/PELD scores and exception points and in bringing some uniformity to the system. The questions the Committee has attempted to address are: 1.) What is driving the variability for these patients? 2.) Is the problem limited access to the waiting list or are patients being referred late in the process?

The Committee has been developing an online *Survey on Referral to Liver Transplantation* to explore barriers to liver referral and wait listing for different ethnic groups. The survey is in the final stages of development and was modeled after the *MAC Survey on Referral to Kidney Transplantation*. The initial online survey questionnaire will target transplant centers. Another more specific questionnaire will target hepatologists and gastroenterologists through newsletters and websites of professional organizations and other communication vehicles. The Subcommittee will be reconvened to finalize the questionnaire and determine the launch date and appropriate response period.

During its meeting on November 20, 2009, Charlotte Carroll, MS conducted a review of the draft questionnaire developed by the Subcommittee. Following brief discussion, it was determined that additional refinements to questionnaire were needed before the survey was distributed.

The Liver Referral Subcommittee met on January 29, 2010 to make additional modifications to the survey questionnaire. During its meeting on March 23rd, the full Committee briefly reviewed the revised questionnaire. Following the review, it was determined that the questionnaire should be distributed to the Subcommittee for final approval as well as to determine a schedule and timeline for distribution.

8. MAC Review Article

To support the Committee objective to build upon the body of evidence to improve minority access to transplantation, the Committee began preparing a comprehensive review of its work over the last decade. The MAC Review Article Subcommittee initially proposed three papers which would focus on the following major topics: 1.) Minority access to transplantation; 2.) Minority organ donation trends; and, 3.) Minority transplant outcomes. The format of the article was later revised to comprise one paper with three topic areas. During discussion at a subsequent meeting, a member expressed concern that the broad focus areas would present inadequate coverage of the topics and may not provide enough information to be useful. To take advantage of available SRTR resources and provide an opportunity to conduct primary research in an original subject area, the topic of minority transplant outcomes was further developed and addressed in a separate paper by the SRTR with several members of the Committee serving as authors.

The Subcommittee was reconvened in January 2010 to review the original topic areas considered for the paper to determine if changes were necessary. During the meeting, it was determined that the focus of the paper should be revised to examine the OPTN policy development process through a historical review and analysis of allocation policy advancing access to transplantation for minority candidates from the perspective of the Minority Affairs Committee.

During the March meeting, the Committee was updated on the new direction for the paper and presented with a draft outline developed by a Subcommittee member. The Committee was also informed that development of the paper would require considerable staff resources and so it would probably assume priority for the Committee following submission of the dialysis facility survey paper.

9. MAC Transplant Outcomes Article

During the March meeting, the Committee was informed that the manuscript on minority transplant outcomes was accepted for publication in the American Journal of Transplantation (AJT) as part of the Annual State of Transplantation series. The article is expected to appear in the late Summer or early Fall issue of the AJT.

10. OPTN Policy Rewrite Project

The Committee was presented with information regarding a plan in progress to translate all of the OPTN policies into plain language. Deanna Parker, MPA, liaison to the MAC Committee, presented the information to the group. UNOS has created a detailed plan to approach and implement a comprehensive Policy Rewrite Project. The project will be implemented in two phases. The first phase will address the non-organ specific policies and the second phase will address the organ allocation policies. There will be substantial internal and external review of the rewritten phases during each state of the project. While the policies are being translated, other policy development activities will continue concurrently. The Committee was informed that there would be routine updates regarding progress of the project for the Board and Executive leadership. The Committee was also informed that due to the administrative nature of the project, it will not be necessary for the rewritten policies to be subject to public comment but will instead undergo a 30 day period of public consultation. The public consultation would include a targeted stakeholder communication to the transplant community, the Committees and Regions, as well as a dedicated page on the OPTN website to solicit feedback on the rewritten policies.

11. Ongoing Review of CPRA

Phase I of the calculated PRA (CPRA) policy was implemented on December 5, 2007. During this phase, centers are required to enter at least one unacceptable antigen in order for their highly sensitized patients (PRA \geq 80%) to receive the additional 4 points to receive deceased donor kidney transplant. As of October 1, 2009, CPRA instead of PRA is used for allocation in the match run. Since this time, the MAC has viewed results of on-going Histocompatibility Committee analyses to monitor the policy by comparing CPRA and PRA by the old method. In November of 2009, Charlotte Carroll, MS presented the Committee with updated results by ethnicity. **(EXHIBIT E)**. The data show that:

- Over one third of the active registrations have CPRA values present.
- Concordance between match PRA and CPRA for registrations with PRA 80+% is 90% or higher across all races.
- Concordance between match PRA and CPRA for black registrations is comparable with concordance for other ethnicities.
- The distribution of Match PRA and CPRA for White and Black registrations are similar to the distribution for the overall active registration with PRA > 0 and CPRA > 0.
- Fifty percent of the registrations have CPRA equal to or within 10% of Match PRA.
- Distribution of differences between CPRA and Match PRA are similar for all ethnicities.

The Committee will continue to review periodic updates to the data as it is made available by the Histocompatibility Committee.

12. OMB Forms Changes

During its meeting on November 2010, the Committee was updated on the upcoming submission of changes to OPTN data collection forms through the process mandated by the federal government. Wida Cherikh, Ph.D, presented the information to the Committee. The Committee was informed that it would have an opportunity to view the proposed changes when the information is submitted for public comment in the Spring of 2010.

13. OPTN Board and Committee Strategic Planning Activity

During the March meeting, the Committee was updated on the OPTN/UNOS Board and Committee strategic planning activity held on March 1, 2010. The update was provided by Henry Randall, MD, Chairman of the MAC Committee. The Committee was informed that the activity included the President and vice-President of the OPTN, Committee Chairs, Committee staff, and the SRTR. The purpose of the activity was to attempt to prioritize Committee activities within to help define the strategic direction for the Committees and the Board in the coming years. The Committee was informed that internal efforts were currently underway in preparation for meetings with the President and Executive Committee. The Committee requested to be updated as new developments arise.

14. 2009-2010 Committee Goals

In November, the Committee was referred to its Committee goals for the 2009-2010 year as an informational item.

15. Discussion of Public Comment Proposals Distributed on March 5, 2010 and March 19, 2010

Proposed Modifications to Data Elements on Tiedi® Forms – On the evening of March 22nd, 2010, a MAC Data Forms Subcommittee reviewed the details of the OMB forms revision changes and presented its comments and recommendations to the group during the full Committee meeting. Committee feedback consisted of the following overall themes:

- Many data items are being proposed for addition, but their utility is questionable.
- There is a need to better define and clarify some of the proposed additions.
- Certain fields may not be appropriate to be collected by the OPTN, especially if being used primarily for research purposes.
- Travel for additional tests may be difficult for minorities who live in remote regions, and this may delay the wait listing of these patients.
- The additional testing required will increase costs to patients and may negatively impact minorities.
- The proposed data additions will significantly increase staffing resources and will be an additional burden to members.

Summary of Discussion of Liver Proposals – The Committee discussed the four liver proposals as a unit and provided the following feedback to the Liver Transplantation Committee.

The Minority Affairs Committee supports the concept of split liver transplantation but has significant concerns regarding adequate protection of the index patient. The Committee recommends that split liver transplantation should be performed only if the index patient is size unsuitable for a whole organ transplant. The Committee also supports the concept that the institution performing the split should retain the second portion of the liver for transplantation of a candidate on its own waiting list.

Further, if the proposal is approved, the Committee wishes to examine data before and after implementation of the ALU showing the impact on minorities from the patient safety perspective.

Proposal to Develop an Efficient, Uniform Pancreas Allocation System - The Committee viewed a presentation of the pancreas proposal by David Axelrod, MD, Vice-Chair of the Pancreas Transplantation Committee. After reviewing the data presented in the proposal, the Committee determined that there would be no net change in the distribution of pancreata among ethnic groups. The Committee did not identify a minority impact or other reason why the proposal should not proceed; however it declined a formal vote.

Proposal to Modify OPO and Transplant Center Requirements for Screening, Communicating and Reporting All Potential or Confirmed Donor-Related Disease and Malignancy Transmission Events - After brief presentation of the proposal, the Committee determined that there was no minority impact and declined a formal vote. However, the Committee noted that it supports appropriate reporting of information on all infectious diseases. The Committee declined a formal vote noting that there did not appear to be an overt minority impact with regard to the proposal.

Proposal to Update HLA Equivalency Tables – The proposal was presented to the Committee by Karen Sullivan, Ph.D, of the Histocompatibility Committee. Following the presentation, the Committee discussed the possibility that minorities could be disadvantaged in OPOs unable to split antigens, though data was unavailable to prove this has occurred. The broader the antigen is defined the lower the likelihood of receiving organ offers. Therefore, the Committee believes that the proposal may have a beneficial impact on organ offers in areas with a high minority population, as minorities are more heterogeneous with regard to HLA.

Proposal to Require that Deceased donor HLA typing be performed by DNA Methods and Identify Additional Antigens for Kidney, Kidney-Pancreas, and Pancreas Islet Offers - The proposal was presented to the Committee by Karen Sullivan, Ph.D, of the Histocompatibility Committee. After brief discussion, the Committee determined that it supports the Histocompatibility Committee in its efforts to standardize HLA typing and clean up reporting of split antigen HLA typing. The Committee is also very interested in examining the data following implementation to review for minority impacts.

Proposal for the Placement of Non-Directed Living Donor Kidneys - The Committee discussed the potential of the proposal to increase inappropriate bypassing of patients on the list versus the societal responsibility to the altruistic donor to make best use of the organ. The Committee also expressed concern about whether minorities would be more likely to be listed at Centers that do not have the infrastructure or resources to attract altruistic donors.

Following the discussion, the MAC determined that it supported the policy proposal as written.

Proposal to Require Reporting of Non-Utilized and Redirected Living Donor Organs - After brief discussion, the Committee did not identify a minority impact with the proposal and voted to support the proposal as written.

Proposal to Require Use of a Standardized Internal Label that is distributed by the OPTN and that Transplant Centers Notify the Recovering OPO when They Repackage an Organ - The Committee did not identify a minority impact with the proposal that would require formal comment from the Committee.

16. Discussion of Public Comment Proposals Distributed on October 15, 2009 and November 13, 2009

Proposal to Improve the Variance Appeal Process – During the November meeting, the Committee reviewed and discussed a policy proposal that would clarify how an OPTN member may appeal a variance decision and the role of the relevant committee and POC in the appeal process. The Committee determined that there was no minority impact resulting from the proposal. After very brief discussion, Committee members participating on the call unanimously approved the proposal.

Proposal to Add a Valuable Consideration Disclosure to the Bylaws – During the November meeting, the Committee reviewed and discussed a bylaw proposal requiring that transplant centers document that potential living organ donors be informed that the sale or purchase of human organs is a federal crime and that centers maintain this documentation as part of the patient's medical record.

A member of the Committee expressed concern about the language in the policy proposal. The member commented that the language appeared to introduce potential legal liability onto the center. The wording of the proposal seemed to place the burden of proving that there was no advance knowledge of illegal activity between a donor and recipient, onto the transplant center. The Committee discussed the fact that the intent of the proposal was not to be prescriptive, but incorporate a documentation requirement for this issue as part of the normal informed consent process. The member acknowledged that though there is no requirement in the proposal specifying how a transplant center should document the discussion, developing a procedure to comply with the policy would still need to be approved by the legal counsel at the transplant center, which would not be a simple process.

It was suggested that UNOS develop a standard form for donor recipient pairs to sign indicating that they understand the law as it applies to human organ trafficking. It was noted that this would encourage uniformity and consistency in documentation, would address the issue from both sides, and would make it easier for UNOS to audit compliance with the policy. Further, if UNOS were responsible for developing the documentation, it would be more likely to include language that could withstand legal scrutiny.

After additional discussion, the Committee determined that it supported the proposal in concept but recommended that uniformity be applied to the process with a standard form developed by UNOS to be signed by both the donor and recipient.

As such, Committee members participating on the call voted to disapprove the proposal as written.

Vote: 9 For, 4 Against, 0 Abstentions

ATTENDANCE FOR THE NOVEMBER 20, 2009
OPTN/UNOS MINORITY AFFAIRS COMMITTEE MEETING
(Teleconference Call)

Committee Members	Position	In Attendance
Henry B. Randall, MD	Chair	Yes
Silas P. Norman, MD	Vice-Chair	Yes
Sayeed K. Malek, MD	Region 1 Representative	No
Kenny Boyd, EMT-P, CPTC	Region 2 Representative	No
Rosaline Rhoden, MPH	Region 3 Representative	Yes
Ronald H. Kerman, Ph.D	Region 4 Representative	Yes
R. Kelvin Satcher, MBA, CPTC	Region 5 Representative	No
AJ Johnson	Region 6 Representative	No
Beth Plahn, RN, BA, MHA	Region 7 Representative	Yes
Ioana Dumitru, MD	Region 8 Representative	No
Joselito Nuqui	Region 9 Representative	No
Remonia A. Chapman	Region 10 Representative	Yes
David G. Jacobs, MD	Region 11 Representative	Yes
L. Ebony Boulware, MD	At-Large	Yes

Oscar H. Grandas, MD	At-Large	Yes
Camille Hill –Blue, PA-C	At-Large	Yes
Eddie Island, MD	At-Large	No
Terri Rihner, MSW, LCSW	At-Large	Yes
M. Christina Smith, MD	At-Large	Yes
Rachel C. Thomas, MBA, BSN, RN, CNN	At-Large	No
Roberta L. Wager, RN	At-Large	No
Carlton J. Young, MD	At-Large	Yes
Pang-Yen Fan, MD	Ex-Officio	Yes
Mesmin Germain, MBA, MPH	Ex-Officio, HRSA	No
Richard Laeng, MPH	Ex-Officio, HRSA	No
Bobby A. Howard	Visiting Board Member	No
UNOS Staff		
Deanna L. Parker, MPA	Committee Liaison/Policy Analyst	Yes
Charlotte Carroll, MS	Research Biostatistician	Yes
Wida Cherikh, PhD	Sr. Research Biostatistician	Yes
Stacy J. Burson, MS	Business Analyst	Yes
Arbor Research Staff		

Valarie Ashby, MS	SRTR Analytic Staff	Yes
Alan B. Leichtman, MD	SRTR Principal Biostatistician	Yes
Guests		

ATTENDANCE FOR THE MARCH 23, 2010

OPTN/UNOS MINORITY AFFAIRS COMMITTEE MEETING

Committee Members	Position	In Attendance
Henry B. Randall, MD	Chair	Yes
Silas P. Norman, MD	Vice-Chair	Yes
Sayed K. Malek, MD	Region 1 Representative	Yes
Kenny Boyd, EMT-P, CPTC	Region 2 Representative	No
Rosaline Rhoden, MPH	Region 3 Representative	Yes
Ronald H. Kerman, PhD	Region 4 Representative	Yes
R. Kelvin Satcher, MBA, CPTC	Region 5 Representative	Yes
AJ Johnson	Region 6 Representative	No
Beth Plahn, RN, BA, MHA	Region 7 Representative	Yes
Ioana Dumitru, MD	Region 8 Representative	Yes
Joselito Nuqui	Region 9 Representative	Yes
Remonia A. Chapman	Region 10 Representative	Yes
David G. Jacobs, MD	Region 11 Representative	No
L. Ebony Boulware, MD	At-Large	Yes
Oscar H. Grandas, MD	At-Large	No

Camille Hill –Blue, PA-C	At-Large	Yes
Eddie Island, MD	At-Large	Yes
Terri Rihner, MSW, LCSW	At-Large	Yes
M. Christina Smith, MD	At-Large	Yes
Rachel C. Thomas, MBA, BSN, RN, CNN	At Large	No
Roberta Wagner, RN	At-Large	No
Carlton J. Young, MD	At-Large	Yes
Bobby A. Howard	Visiting Board Member	No
Pang-Yen Fan, MD	Ex-Officio	Yes
Mesmin Germain, MBA, MPH	Ex-Officio, HRSA	Yes
Richard Laeng, MPH	Ex-Officio, HRSA	No
UNOS Staff		
Deanna L. Parker, MPA	Committee Liaison/Policy Analyst	Yes
Charlotte Carroll, MS	Research Biostatistician	No
Wida Cherikh, PhD	Sr. Research Biostatistician	Yes
Stacy J. Burson, MS	Business Analyst	Yes(Phone)
Arbor Research Staff		
Valarie Ashby, MS	SRTR Analytic Staff	Yes

Pandu Rao, MD	SRTR Analytic Staff	Yes
Alan B. Leichtman, MD	SRTR Principal Biostatistician	No
Keith McCollum, MS	SRTR Analytic Staff	Yes
Guests		