The Transplant Nephrology Fellowship: Current and Future Challenges

By Milagros Samaniego, David Rothstein, and Michelle Josephson

For more than 20 years, the Membership and Professional Standards Committee of the Organ Procurement Transplant Network (OPTN) and the United Network for Organ Sharing (UNOS) have defined the training requirements for UNOS-certified transplant physicians.

Transplant physicians would be certified to function as medical directors of kidney transplant programs if they met the following requirements: training in the pre-, peri-, and posttransplant care of 35 kidney and kidney-pancreas recipients and in the evaluation and follow-up of living kidney donors; observation of at least three multiple organ procurements and kidney transplant procedures; and management of at least three deceased donor candidates.

During the pre-accreditation era of kidney transplant training, nephrology fellows interested in transplantation initiated their careers in transplant immunology laboratories and later developed into clinical and basic scientists. These individuals became medical directors of transplant programs through the "grandfather clause."

In 1998, the American Society of Nephrology (ASN) and the American Society of Transplantation (AST) joined efforts to standardize training in transplant nephrology to meet the OPTN/UNOS certification requirements. The societies crafted a comprehensive academic curriculum designed for board-eligible/certified nephrologists, in which the trainee would receive ample exposure to inpatient and outpatient transplant management. In addition, the AST instituted the Accreditation Committee, which, in concert with the ASN Fellowship Directors Committee, would ensure compliance with training requirements and pursue updating of the curriculum as needed.

Since 1998, 49 AST/ASN-accredited transplant nephrology fellowships—47 adult and two pediatric programs—have been established in the United States and four in Canada. These programs are not regulated or accredited by the American Board of Internal Medicine (ABIM)/Accreditation Council for Graduate Medical Education (ACGME).

Obstacles to increasing the number of transplant trainees

Funding of fellowship positions is one of the most important obstacles to increasing the number of transplant trainees. In a survey by the AST Accreditation Committee in which 60 percent of program directors participated, 70 percent of trainees were hired as fellows and 30 percent were hired as non-tenured clinical faculty.

The salary source varied from program to program, with the majority of fellows supported by hospital budgets (30 percent) and the rest by departmental, divisional, practice association, and industry-sponsored funds.

Furthermore, the need for trainees to spend a full six months in clinical service precludes most sources of research fellowship support. Not surprisingly, not all fellowship programs have been able to support fellows every year, and as many as one-third of transplant nephrology programs have lacked fellows or had only one fellow over any given period of years.

Fellows who have made the commitment to perform several years of transplant-related research have not had a direct mechanism to obtain transplant certification during their fellowship.

A shortage in the number of training positions is a concern because it will lead to limited manpower to care for the growing number of kidney transplant recipients. A shortage will likely have a negative impact because the future leaders of clinical transplantation are likely to emerge from this group of trainees.

Changes afoot in requirements for transplant fellowship programs

To address these issues, ASN’s Transplant Advisory Group and the AST Accreditation Committee have worked together to revise the requirements of ASN/AST-accredited transplant fellowship programs. A proposal to develop an alternative fellowship pathway has recently been approved by both the ASN Council and AST Board of Directors. The proposal puts forward an alternative pathway that will allow fellows committed to two or more years of transplant-related research during their renal fellowship to attain additional clinical experience in transplantation to qualify as AST/ASN-accredited transplant nephrology fellows.

Trainees would pursue this pathway during their nephrology training, making the alternative pathway more fully integrated with existing standard nephrology fellowships than is the current single added year of transplant fellowship training.

The modified transplant nephrology fellowship does not require trainees to be board-eligible/board-certified at the initiation of the transplant fellowship if the fellow is concurrently enrolled in an ACGME-certified standard nephrology fellowship with the following expectations:

- The transplant fellowship program is an ASN/AST-accredited program.
- All clinical training that is counted toward the transplant fellowship training is done in addition to the standard renal fellowship clinical requirements. This will be documented by the training program director, who will certify that the fellow has completed all requirements for both fellowship programs.
- In order to be considered for UNOS recognition as a certified transplant nephrologist, board certification must be obtained by the end of the training.
- Research performed during this training should be relevant to the field of transplantation.

While not proposing to do away with existing “free-standing” one-year fellowships, the hope is that this approach will increase the number of highly qualified applicants interested in attaining both full training in clinical transplantation and research. In the new proposal, the clinical experience is spread out over a longer period of time than the currently required six months, yet the total clinical and academic exposure to transplantation is increased, and the OPTN/UNOS certification requirements are fulfilled.

Another advantage of the proposal is that fellows pursuing the alternative pathway would be eligible for federal, society, or foundation grant support in addition to that provided by their mentors, thereby obviating the funding difficulties that many programs have had.

ABIM and ACGME certification of fellowship programs

Certification and oversight of the Transplant Nephrology Fellowship Program by ABIM and ACGME is also complex. The main issue stems from the fact that, by rule, the ABIM seeks to certify subspecialties that train several hundreds of trainees per year. Yet in 2008, for example, only 29 trainees completed training in transplant nephrology in U.S. ASN/AST-accredited programs.

The process of ABIM/ACGME accreditation is cumbersome, as we learned through the certification of the transplant hepatology fellowships. The certification requirement may add a significant administrative burden to programs already overextended in trying to meet the requirements for nephrology certification.

Although ABIM/ACGME certification is not likely in the immediate future of transplant nephrology fellowships, curricular changes that would foster the recruitment and development of clinical and basic scientists in the field of transplantation are feasible. It is in the success of such changes where the future of transplant nephrology as a vibrant subspecialty lies.

Milagros Samaniego, MD, is associate professor of medicine and medical director of kidney and kidney-pancreas transplantation at the University of Michigan Medical School. David Rothstein, MD, is professor of surgery, medicine, and immunology at the Thomas E. Starzl Transplantation Institute at the University of Pittsburgh Medical Center. Michelle Josephson, MD, is associate professor of medicine in the department of nephrology at the University of Chicago School of Medicine.
Table 1
Transplant nephrology program statistics

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of U.S. ASN/AST-accredited transplant nephrology fellowship programs</td>
<td>50</td>
</tr>
<tr>
<td>Number of transplant nephrology graduates in 2008</td>
<td>29</td>
</tr>
<tr>
<td>Number of living kidney transplant recipients in the United States at the end of 2005†‡</td>
<td>104,388</td>
</tr>
<tr>
<td>Number of wait-listed kidney transplant candidates¥</td>
<td>79,140</td>
</tr>
<tr>
<td>Number of self-reported nephrologists in the United States¶</td>
<td>7,410</td>
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</tbody>
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†Includes kidney transplant alone and kidney–pancreas transplant recipients
‡Source: OPTN/SRTR data as of May 1, 2007
¥Source: OPTN data as of April 3, 2009
¶Source: The American Medical Association U.S. physicians master file as of 2006 data (includes U.S. and foreign medical graduates)

Table 2
Standard ASN/AST-accredited transplant fellowship requirements

- Six months of transplant inpatient rotations
- Experience in histocompatibility and immunogenetics
- Experience in a nonrenal transplant service or clinical or basic research project
- Primary responsibility for 30 inpatient renal transplant recipients
- Primary responsibility for 30 outpatients (continuous for at least three months)
- Ten transplant biopsies
- Observe at least 3 kidney transplant procedures and 3 procurements
- Minimum training time: 1 year

Table 3
Modified ASN/AST-accredited transplant nephrology program

- Two to three months of transplant inpatient rotations per academic or calendar year†
- Experience in histocompatibility and immunogenetics
- Experience in a nonrenal transplant service
- Primary responsibility for 30 inpatient renal transplant recipients
- Primary responsibility for a minimum of 30 outpatient transplant recipients (continuous for at least 3 months) each year for a minimum of 2 training years‡
- Ten transplant biopsies
- Observe at least 3 kidney transplant procedures and 3 procurements
- Minimum training time: 3 years

†Keeps inpatient requirements to a total of 6 months through the length of the fellowship
‡Increases outpatient exposure from 30 to 60 patients

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