Preferred patient pathways

Expediting living donor candidates to enhance transplant volume and success

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Every year, the gap widens between numbers of patients awaiting transplants and available organs. But more living donor patients could be attracted by applying fundamental patient flow solutions. Tactics such as early ID of recipient/donor pairs and synchronizing referral and intake could impact both transplant volume and patient outcomes.

Optimized patient care capacity management requires providers to improve patient flow in critical areas from perioperative services to inpatient units—as well as in linkages between domains, which includes patient intake channels, such as outpatient clinics.

For many institutions, the transplant center is one of the most specialized areas that stands to benefit from broad-scale capacity management optimization. Such improvements will allow transplant programs to make tremendous progress toward achieving its two major objectives: to increase the number of organ transplants and to ensure successful clinical outcomes.

Continuing organ shortages

In the United States, abdominal transplants account for the lion’s share of transplantation procedures—most of which are kidney or liver. According to the Organ Procurement and Transplantation Network (OPTN) and the Scientific Registry of Transplant Recipients (SRTR), there were 27,578 organ transplants in 2007. Of those, 16,119 (58%) were kidney transplants and 5,890 (21%) were liver transplants.

The number of patients needing abdominal transplants far exceeds the number of available organs. In the past decade, the number of patients receiving these transplants remained relatively steady, while demand has increased, especially from patients with kidney failure. For new registrants to the kidney waitlist in 1998, the median time to transplant was 3.16 years. Some experts have predicted that by the end of 2010, the median waiting time will be at least 10 years.

This growing gap from listing to transplantation has been difficult to close primarily because most kidneys and livers come from cadaveric donors whose organs are allocated (via the United Network for Organ Sharing) based on geographic location, time on the waitlist, and antigen match. In 2007, for example, live donors accounted for just 37% of kidney transplants (6,037 of 16,119) and 4.5% of liver transplants (265 of 5,890).

We believe transplant programs can help offset this shortage by bringing more live donors into the system—and into their facilities. The solution: the application of fundamental patient flow and capacity management principles to:

- Optimize the synchronization of referral and intake processes
- Create preferred pathways—supported by a concierge program—for living donor patients who have cleared initial medical and psychosocial hurdles for transplant

Such program enhancements not only have the potential to increase transplant volume, but, more important, will minimize the time to transplant. They also could help transplant centers and affiliated hospitals better manage capacity, facilitating optimal allocation of resources.

Lastly, increasing the percentage of live donors can help transplant programs fulfill the second part of their mission: to ensure successful outcomes. Statistics show that living donor transplantation increases the patient’s chances of survival. Using a cohort based on recipients transplanted in 2001-06, the five-year survival rate for patients whose new kidneys came from live donors was 90.6%, while those with cadaveric kidneys had an 81.0% survival rate.

An expedited workflow

Based on our experience in environments from outpatient imaging centers to oncology clinics to multi-organ transplant programs, we have developed an optimized workflow that expedites recipient/donor pairs through intake, evaluation, testing, and surgery.

With this strategy, patient outreach begins in the offices of key referring physicians. Education in the referring offices and dialysis centers will give the patient direct access to the transplant clinic’s living donor program to initiate the process at the time of referral.
To avoid overwhelming the system, the transplant center screens potential donor recipient pairs at referral to determine which are viable candidates by using current medical, financial, and psychosocial criteria. Specific patients are then selected to be expedited through the center via a new, more sophisticated workflow that applies fundamental patient flow principles to processes, systems, and structures. Designed to ensure a smooth and tightly synchronized course for recipients and their donors, this workflow does not compromise the service provided to other transplantation candidates. Instead, new efficiencies are built in—for instance, by scheduling administrative and clinical activities for the recipient and donor to occur concurrently rather than sequentially, with all necessary laboratory workups, radiology, and other testing completed in a matter of days rather than weeks or months.

The overall clinic schedule is likely to need modification to ensure adequate add-on appointments will be available, and to preserve capacity for optimal utilization of the exam and consult rooms required by the broader program. Each step in the process—from medical and financial evaluations through compatibility testing, selection committee review, and listing—would be subject to restructuring for greater efficiency. And whenever possible, multiple resources within the transplant program would be leveraged, all to minimize time to transplant. Throughout their journey, patients and families alike could be served in parallel by a comprehensive concierge program designed to help manage the logistics of their transplant experience. This program could include securing short- and long-term housing and arranging for transportation and business services. It also might provide unique services, such as help in navigating the insurance labyrinth.

**Mission-critical advantages**

There are relatively few factors that today’s transplant centers can control to increase transplant volume and market share, while also improving clinical outcomes. Living donor programs governed by strategies such as those outlined here could position transplant centers nationwide to fulfill these objectives and meet their overall mission.

### Reducing time to transplant for patients with live donors

**Living donor workflow**

<table>
<thead>
<tr>
<th>BEFORE</th>
<th>AFTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Referral to transplant center</td>
<td>Referral to transplant center</td>
</tr>
<tr>
<td>OK to evaluate (medical/financial clearance)</td>
<td>OK to evaluate (medical/financial clearance)</td>
</tr>
<tr>
<td>Education of living donor program</td>
<td>Education of living donor program</td>
</tr>
<tr>
<td>Transplant candidate brought into evaluation clinic</td>
<td>Transplant candidate presented at selection committee meeting, whether to test</td>
</tr>
<tr>
<td>Transplant candidate presented at selection committee meeting, whether to test</td>
<td>Majority of testing complete—donor/recipient</td>
</tr>
<tr>
<td>Any additional testing—recipient and/or donor</td>
<td>Transplant candidate presented at selection committee meeting, whether to test</td>
</tr>
<tr>
<td>Patient placed on transplant list</td>
<td>Patient placed on transplant list</td>
</tr>
</tbody>
</table>

*Typical and optimized transplant-center workflows.*

In the Before scenario illustrated above, the typical living donor workflow is characterized by sequential processing of first the recipient and then the donor, with few concurrent efficiencies to reduce time to transplant.

With this process, education begins at the initial evaluation appointment in the transplant center. It’s here that most patients first learn that a live donor could minimize their time to transplant.

If a potential donor is identified in clinic, the donor contacts the living donor coordinator to initiate the process. The donor then undergoes a high-level assessment—and, if he or she passes, proceeds to full-scale medical, financial, and psychosocial evaluation as the clinic schedule permits. This is typically followed by other testing and presentation to a selection committee that will approve or turn down transplantation.

In the After workflow shown above, optimized for patients with live donors, we can see the potential for dramatic reductions in the time to transplant.

With this approach, education begins in the referring physician offices, where the patient is provided with literature and contact information to reach the transplant center’s living donor coordinators.

With a potential donor identified, donor coordinators phone screen him or her to determine the likeliness of a transplant. A donor deemed appropriate then follows an expedited pathway that includes ABO compatibility, labs, cardiology consultation, radiology testing, and a full multi-disciplinary evaluation—a pathway that can be completed in a matter of days rather than months.

Viable donor-recipient pairs are presented at the next weekly selection committee, listed and placed on the elective surgical schedule.
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