Kidney and Pancreas Transplantation in the U.S., 1996-2005: Summary View From the 2006 *OPTN/SRTR Annual Report*

OVERVIEW

- Kidney and pancreas transplantation in 2005 improved in quantity and outcome quality, despite the increasing average age of kidney graft recipients, with 56% aged 50 or older.
- Overall, 6% more deceased donor kidney transplants were performed in 2005 with slight increases in standard criteria donors (SCD) and expended criteria donors (ECD). Geography and blood type contribute to the discrepancy in waiting time among the deceased donor candidates.
- The largest increase (39%) was in donation after cardiac death (DCD) from non-ECD donors. These DCD, non-ECD kidneys had equivalent outcomes to SCD kidneys. One- and five-year unadjusted graft survival was 91% and 70% for non-ECD-DD transplants, 82% and 53% for ECD-DD grafts, and 95% and 80% for living donor kidney transplants.
- In 2005, 27% of kidney transplant recipients were discharged without steroids compared to 3% in 1999. Acute rejection decreased to 11% in 2004.
- There was a slight increase in the number of simultaneous pancreas-kidney transplants (895), with fewer pancreas after kidney transplants (343) and a stable number of pancreas alone transplants (129). Pancreas underutilization appears to be an ongoing issue.

SUMMARY FIGURES

The figures on the following four pages are “dashboard” views of the state of kidney and pancreas transplantation. Details on the implications of these figures, and explanations of the methods used in creating them, are included in Chapter IV of this year’s report, available online at www.optn.org and www.ustransplant.org. These sites also include resources for interested readers, including a glossary, technical notes, other chapters on many aspects of organ transplantation, and a wealth of transplant data.

THE 2006 *OPTN/SRTR ANNUAL REPORT*

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The data and analyses reported in the 2006 Annual Report of the U.S. Organ Procurement and Transplantation Network and the Scientific Registry of Transplant Recipients have been supplied by UNOS and Arbor Research under contract with the Department of Health and Human Services. The authors alone are responsible for reporting and interpreting these data; the views expressed herein are those of the authors and not necessarily those of the U.S. Government.

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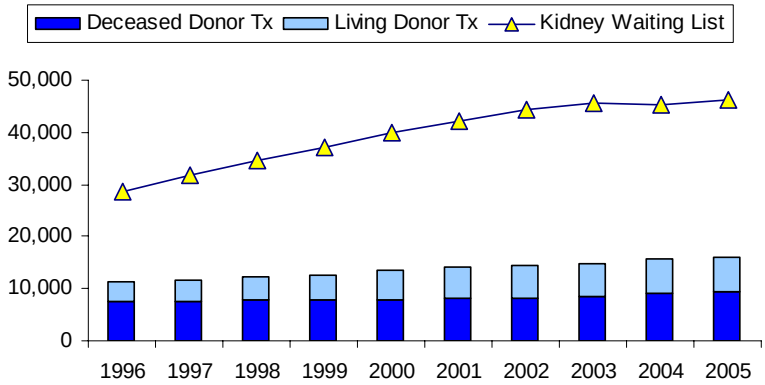
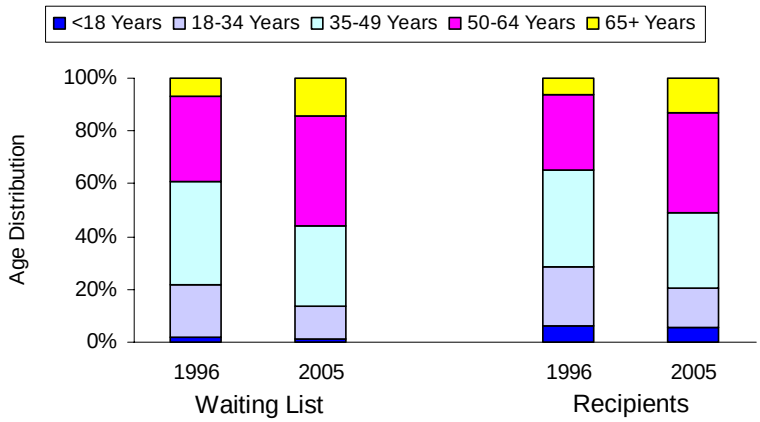
Publications based upon data in this report or supplied upon request must include the above citation.

Kidney Transplantation at a Glance



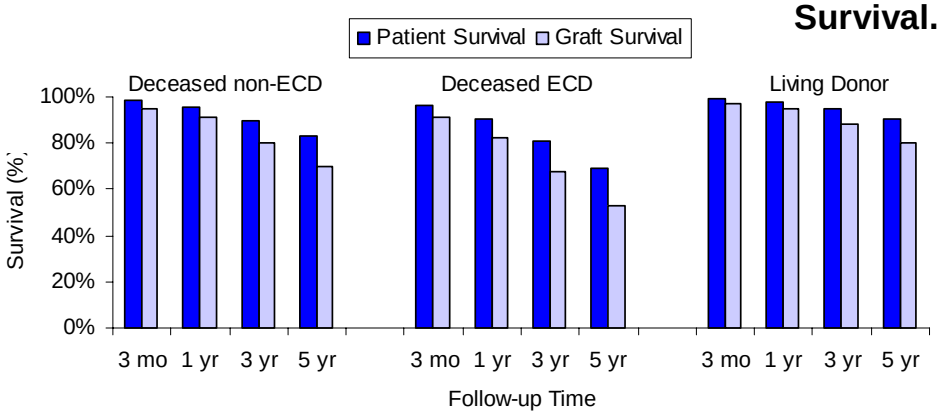
Number of Transplants and Size of Active Waiting List.

There is a very large gap between the number of patients waiting for a transplant and the number receiving a transplant. This gap has been widening, which means that the waiting times from listing to transplant continue to increase. Living donor transplants had increased until 2004 while deceased donor transplants increased gradually to 2005. Source: *2006 OPTN/SRTR Annual Report*, Tables 1.7, 5.1a.



Age Distribution of Recipients and Active Waiting List.

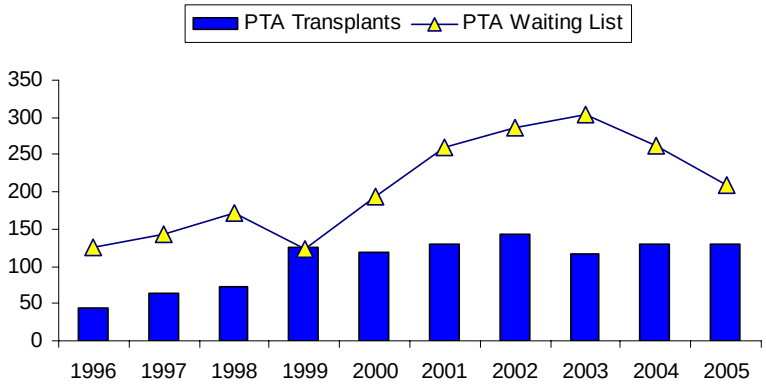
During the past decade the age distribution of candidates on the waiting list has changed such that older candidates now make up a much larger fraction of patients actively awaiting an organ. The same pattern is observed for transplant recipients except that ages <35 years show a greater representation than on the waiting list. Source: *2006 OPTN/SRTR Annual Report*, Tables 5.1a, 5.4a, 5.4b, 5.4c.



Unadjusted Patient and Graft Survival.

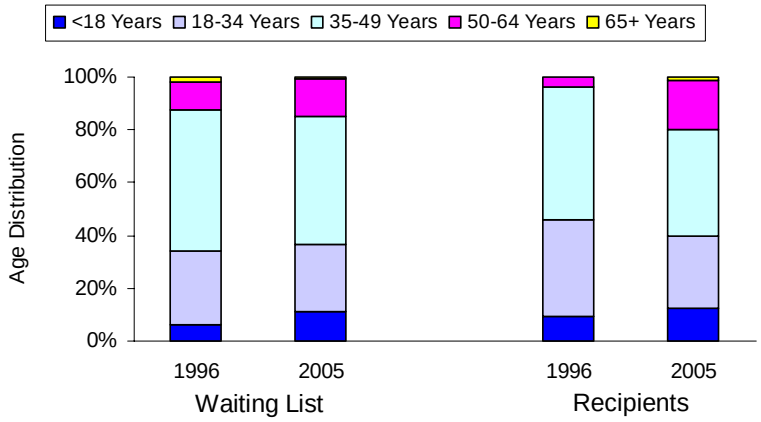
Patient survival in recent years has been improving. Five-year patient survival percentages based on transplants during 1999-2004 are clearly higher for living donors (90%) than for standard donor deceased donors (83%) and lowest among deceased donors (69%). Graft survival is lower since patients may live on dialysis or receive another transplant after graft failure. Source: *2006 OPTN/SRTR Annual Report*, Tables 5.10a, 5.10b, 5.10c, 5.14a, 5.14b, 5.14c.

Pancreas Transplantation Alone (PTA) at a Glance



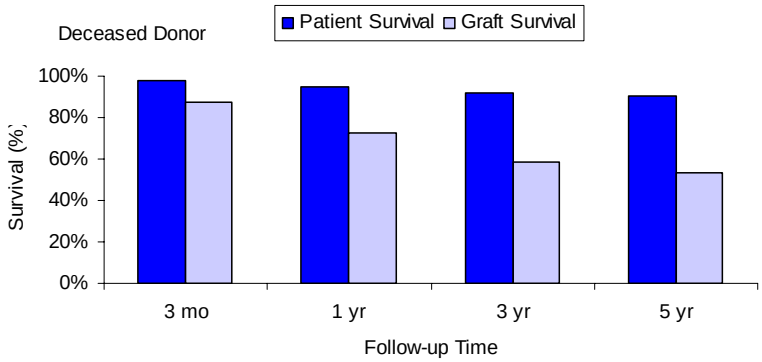
Number of Transplants and Size of Active Waiting List.

The number of patients on the waiting list for a pancreas transplant alone has decreased since 2003, which resulted in a narrowing gap between the number of patients waiting for a pancreas transplant alone (PTA) and the number receiving one. However, this gap was still present in 2005. The number of PTA per year has been stable in recent years. Source: *2006 OPTN/SRTR Annual Report*, Tables 1.7, 6.1a.



Age Distribution of Recipients and Active Waiting List.

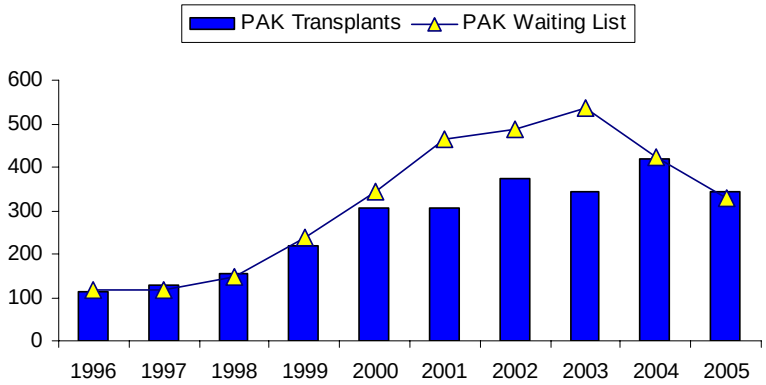
For PTA, more pediatric candidates were wait-listed and received a transplant in 2005 than in 1996. At the same time, the fraction of recipients over age 50 has grown. Pediatric diabetic patients rarely have kidney failure before age 18, but they are candidates for PTA. Source: *2006 OPTN/SRTR Annual Report*, Tables 6.1a, 6.4.



Unadjusted Patient and Graft Survival.

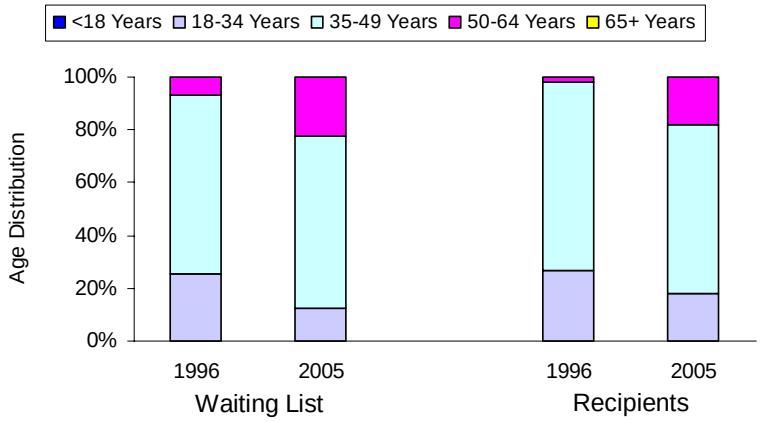
For PTA transplants, patient survival in recent years has been excellent; such patients do not usually have advanced kidney failure. The five-year patient survival is 90%. Graft survival is considerably lower since patients may live after graft failure through treatment with insulin. Source: *2006 OPTN/SRTR Annual Report*, Tables 6.10, 6.14.

Pancreas After Kidney (PAK) Transplantation at a Glance



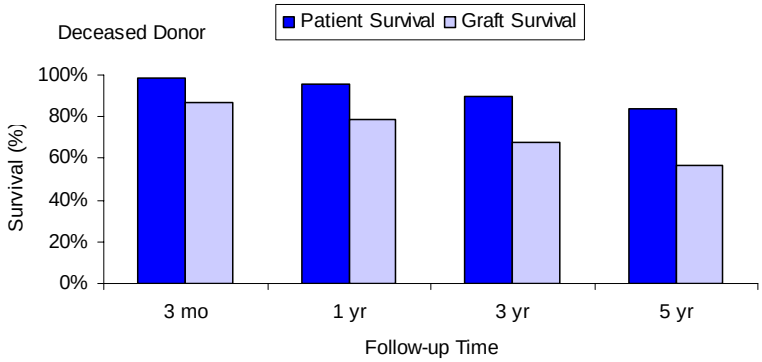
Number of Transplants and Size of Active Waiting List.

As with PTA, the number of patients on the waiting list for a PAK transplant has decreased since 2003. The gap between candidates and recipients decreased too. The number receiving a transplant matched the number of candidates at the end of 2004 and 2005. The number of PAK transplants has decreased in 2005 from its highest level of the decade in 2004. Source: *2006 OPTN/SRTR Annual Report*, Tables 1.7, 7.1a.



Age Distribution of Recipients and Active Waiting List.

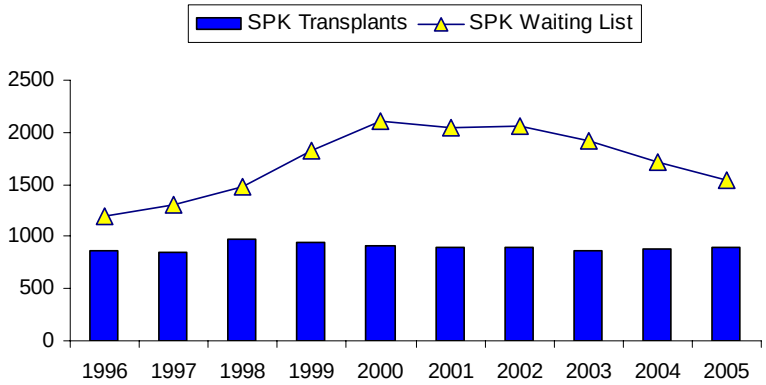
For PAK, more patients over 50 were wait-listed and received a transplant in 2005 than in 1996. At the same, time fewer candidates and recipients were in the age group of 18-34. Since recipients are mostly type 1 diabetics, the ages below 18 and above 65 are virtually unrepresented. Recipients include transplants from both living and deceased donors. Source: *2006 OPTN/SRTR Annual Report*, Tables 7.1a, 7.4.



Unadjusted Patient and Graft Survival.

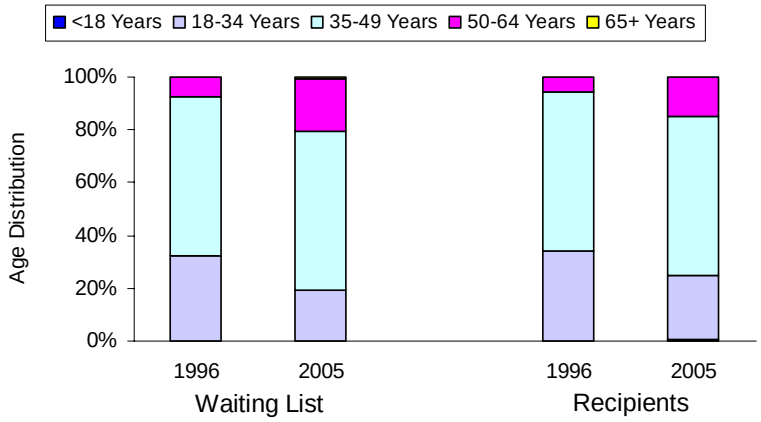
For PAK transplants, patient survival has been similar to that seen for simultaneous kidney-pancreas transplant recipients. Five-year patient survival is 84%. Graft survival is considerably lower since patients may live after graft failure through treatment with insulin. Source: *2006 OPTN/SRTR Annual Report*, Tables 7.10, 7.14.

Simultaneous Pancreas-Kidney (SPK) Transplantation at a Glance



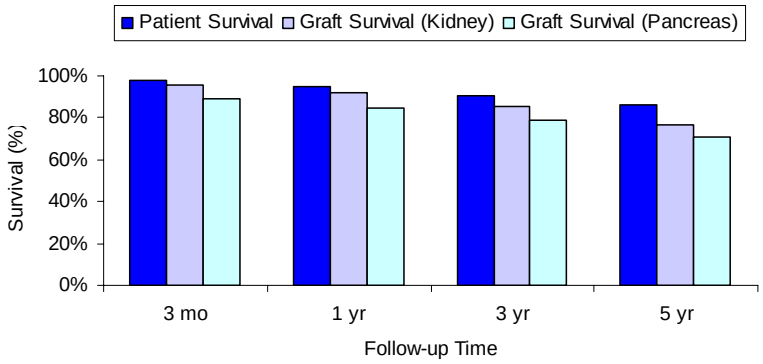
Number of Transplants and Size of Active Waiting List.

SPK accounts for the large majority of all pancreas transplants and has been stable over the last decade. The gap between the number of patients waiting for a transplant and the number receiving a transplant has been large, but has substantially decreased since 2000. Source: *2006 OPTN/SRTR Annual Report*, Tables 1.7, 8.1a.



Age Distribution of Recipients and Active Waiting List.

For SPK transplantation, a greater fraction of patients over age 50 were wait-listed and received a transplant in 2005 than in 1996. At the same time, fewer candidates and recipients were in the 18-34 age group. Since recipients are mostly type 1 diabetics, the ages below 18 and above 65 are virtually unrepresented. Recipients include transplants from both living and deceased donors. Source: *2006 OPTN/SRTR Annual Report*, Tables 8.1a, 8.4.



Unadjusted Patient and Graft Survival.

Patient survival has improved for SPK recipients in recent years. All SPK transplants are from deceased donors and their five-year patient survival is 86%. Graft survival is lower since patients may live after graft failure through treatment with insulin. Source: *2006 OPTN/SRTR Annual Report*, Tables 8.10, 8.14.