Annual Statistics on Organ Replacement in Canada
Dialysis, Transplantation and Donation, 2006 to 2015

This summary document provides key findings from the latest annual statistics from the Canadian Organ Replacement Register (CORR) at the Canadian Institute for Health Information (CIHI). The statistics examine characteristics of and trends in dialysis, transplantation, donation and patient outcomes in Canada over the decade 2006 to 2015. Full statistics are presented as tables and figures in the companion data tables.

This summary document includes data for Quebec where possible in national totals for transplantation and organ donor statistics. Summary findings on end-stage kidney disease (ESKD) and corresponding tables and figures do not include Quebec because of ongoing under-reporting from this province. For more information on under-reporting in CORR, please refer to Data Quality Documentation for Users: Canadian Organ Replacement Register, 2006 to 2015 Data.
End-stage kidney disease in Canada

In 2015, there were 36,251 Canadians (excluding Quebec) living with ESKD, 58.5% of whom were receiving some form of dialysis. The remaining 41.5% had a functioning kidney transplant.

- Of the 21,214 patients on dialysis, more than three-quarters were receiving institutional hemodialysis, the most expensive treatment option.
- In 2015, a total of 5,438 ESKD patients started renal replacement therapy (dialysis or transplant).
- More than half (53%) of the ESKD patients who started renal replacement therapy were age 65 and older.
- Approximately 38% of patients who started renal replacement therapy had diabetes as the main cause of their kidney failure.
- According to the latest available data, 44.8% of patients on dialysis treatments survived at least 5 years.
- According to the latest available data, 88.8% and 84.1% of kidneys transplanted into adults from living and deceased donors, respectively, were still functioning at least 5 years after transplant.
- The average age of patients receiving a deceased donor kidney transplant was 56, and nearly 47% of patients were 60 and older.

Transplantation and donation in Canada

In 2015, a total of 2,515 transplant procedures were performed in Canada (including Quebec), 157 more than were performed in 2014. The number of transplants performed increased over the previous 5 years, up from 2,116 in 2010. The 2,515 transplant procedures performed in 2015 resulted in 2,570 solid organs being transplanted. A summary of transplanted organs over the last 2 years is presented below.

<table>
<thead>
<tr>
<th>Organ type</th>
<th>Number of transplanted organs</th>
<th>Number of patients on waiting list as of December 31</th>
<th>Number of patients who died waiting for an organ transplant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kidney</td>
<td>2015 1,513*</td>
<td>2015 3,471</td>
<td>2015 73</td>
</tr>
<tr>
<td></td>
<td>2014 1,426*</td>
<td>2014 3,377</td>
<td>2014 67</td>
</tr>
<tr>
<td>Liver</td>
<td>2015 533</td>
<td>2015 473</td>
<td>2015 74</td>
</tr>
<tr>
<td></td>
<td>2014 537</td>
<td>2014 507</td>
<td>2014 119</td>
</tr>
<tr>
<td>Lung</td>
<td>2015 278</td>
<td>2015 275</td>
<td>2015 68</td>
</tr>
<tr>
<td></td>
<td>2014 226</td>
<td>2014 300</td>
<td>2014 70</td>
</tr>
<tr>
<td>Heart</td>
<td>2015 170</td>
<td>2015 197</td>
<td>2015 20</td>
</tr>
<tr>
<td></td>
<td>2014 161</td>
<td>2014 177</td>
<td>2014 22</td>
</tr>
<tr>
<td>Pancreas*</td>
<td>2015 76</td>
<td>2015 169</td>
<td>2015 —</td>
</tr>
<tr>
<td></td>
<td>2014 78</td>
<td>2014 153</td>
<td>2014 —</td>
</tr>
<tr>
<td>Total</td>
<td>2015 2,570</td>
<td>2015 4,585</td>
<td>2015 235</td>
</tr>
<tr>
<td></td>
<td>2014 2,428</td>
<td>2014 4,514</td>
<td>2014 278</td>
</tr>
</tbody>
</table>

Notes
* Includes simultaneous kidney–pancreas (SKP) transplants.
— Not applicable.
This table includes aggregate data from Transplant Québec to supplement national totals.

Source
Canadian Organ Replacement Register, 2016, Canadian Institute for Health Information.

i. This section includes aggregate data from Transplant Québec to supplement national totals.
In 2015, there were 649 deceased organ donors in Canada (including Quebec), 57 more than the 592 reported in 2014. In addition, there were 563 living organ donors.

- The deceased donor rate was 18.1 donors per million population, an increase of 28% since 2006. The living donor rate was 15.7 donors per million population.
- The number of deceased donors increased 41% over the 10-year period studied, from 461 in 2006 to 649 in 2015. The number of living donors was mostly steady over the same time period.

### Additional highlights from the annual statistics

#### Kidney

- At the end of 2015, there were 36,251 Canadians (excluding Quebec) living with ESKD. This number had grown 36% since 2006, from 26,729.
- Of these patients, 21,214 were on dialysis and 15,037 were living with a functioning kidney transplant.
- Of the 5,438 patients who started renal replacement therapy in 2015, 76% received hemodialysis as their initial treatment.
- According to the latest available data on unadjusted 5-year patient survival, 43.3% of patients on hemodialysis treatments survived at least 5 years, compared with 51.0% of patients on peritoneal dialysis.

#### Liver

- There were 5,051 Canadians (excluding Quebec) living with a liver transplant in 2015.
- Hepatitis C and cancer were each the cause of liver failure for 20% of liver transplant patients between 2006 and 2015.
- According to the latest available data on unadjusted 5-year patient survival, 82.4% of patients who received a first liver transplant from a deceased donor survived at least 5 years.

#### Heart

- There were 1,958 Canadians (excluding Quebec) living with a transplanted heart in 2015.
- Between 2006 and 2015, 22% of heart transplants resulted from a weakening of the heart muscle that had become stretched and thinner (dilated cardiomyopathy).
- According to the latest available data on unadjusted 5-year patient survival, 79.5% of patients who received a first heart transplant survived at least 5 years.
Lung

- There were 1,429 Canadians (excluding Quebec) living with a lung transplant in 2015.
- Between 2006 and 2015, 34% of lung transplants resulted from lung tissue scarring with no known cause (idiopathic pulmonary fibrosis). Emphysema and chronic obstructive pulmonary disease (COPD) were the causes of an additional 25% of lung transplants.
- According to the latest available data on unadjusted 5-year patient survival, 65.5% of patients who received a first lung transplant from a deceased donor survived at least 5 years.

Pancreas

- According to the latest available data on unadjusted 5-year graft survival, 90.9% of simultaneous kidney–pancreas transplants survived at least 5 years.

Small intestine

- Small intestine transplantation is an emerging and evolving field with the potential to improve the outcomes of children and adults with intestinal failure in Canada. Between 1996 and 2015, there were 53 such procedures performed in Canada (excluding Quebec), with more than half (53%) of the recipients younger than age 18.

Organ donors

- A living donor provides a single organ for transplant, but a deceased organ donor can provide up to 8 organs.
- In 2015, a total of 54% of living organ donors (excluding Quebec) were not related to the transplant recipient. Spouses accounted for 17.3% of these living donors, while the remaining 36.2% had no relationship with the organ recipient. This latter group has grown from 14.9% in 2006, in part due to the increased frequency of living donor paired exchange kidney transplants.

Conclusion and additional information

End-stage organ failure presents complex issues and challenges for Canadian patients, clinicians and health care systems. Treatment options continue to evolve, and organ donation practices and processes are continuously examined to optimize outcomes. It is only through the ongoing and systematic collection of data that sound information can be produced to assist with decision-making. These statistics provide information that may help to improve the health of Canadians with end-stage organ failure.
In addition to these annual summary statistics, more information and data tables are available online at www.cihi.ca/corr, in the form of special reports, Quick Stats (pre-formatted and interactive data tables) and reports from organ procurement organizations entitled *e-Statistics on Organ Transplants, Waiting Lists and Donors*.

If you have questions about these annual statistics or would like further information, please write to CORR at corr@cihi.ca.