



Organ Donation and Transplantation in Canada

2016 System Progress Report Update

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Organ Donation and Transplantation in Canada

2016 System Progress Report Update

Record outcomes from organ donation and transplantation

In 2016, 2,903 lifesaving or life-enhancing transplants were performed in Canada.

In 2016

2,835 organ transplant procedures were performed in Canada.

4,492 people on Canada's organ transplant wait-lists.

260 patients on wait-lists died before receiving transplants.

2,903

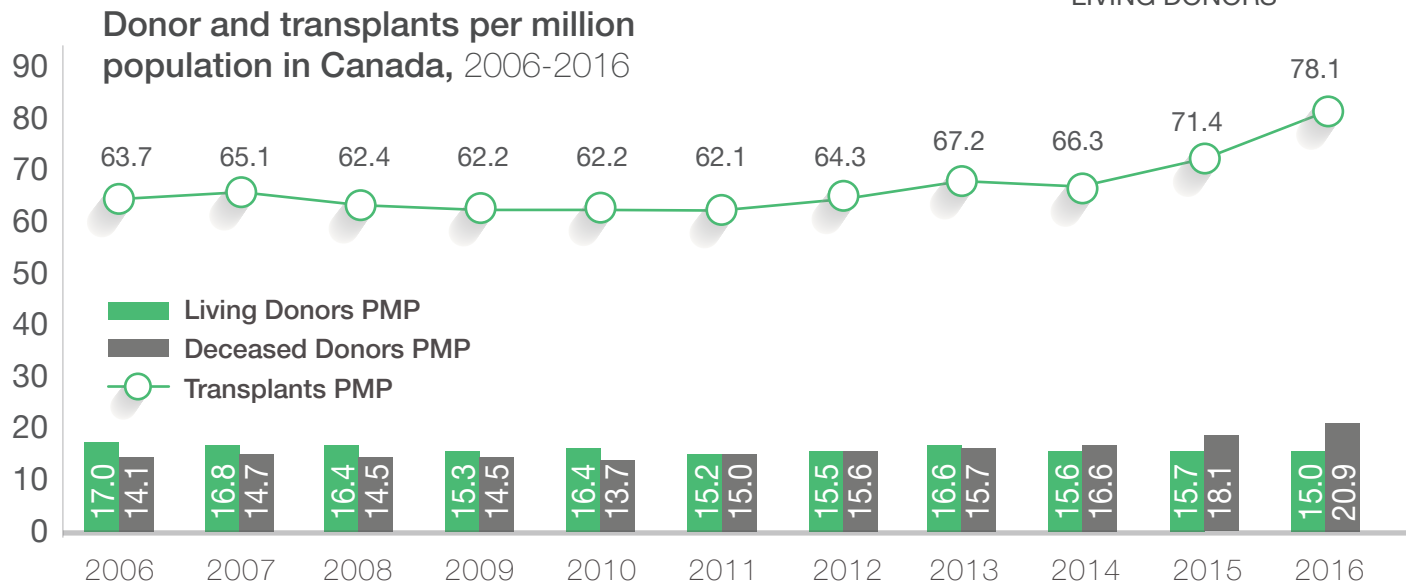
LIFESAVING TRANSPLANTS
PERFORMED FROM

758

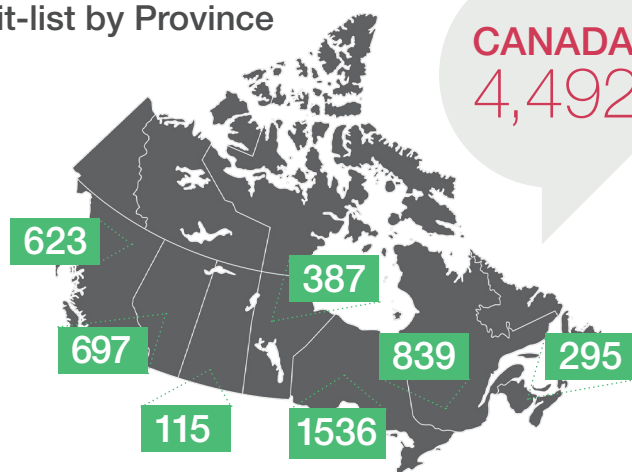
DECEASED DONORS AND

544

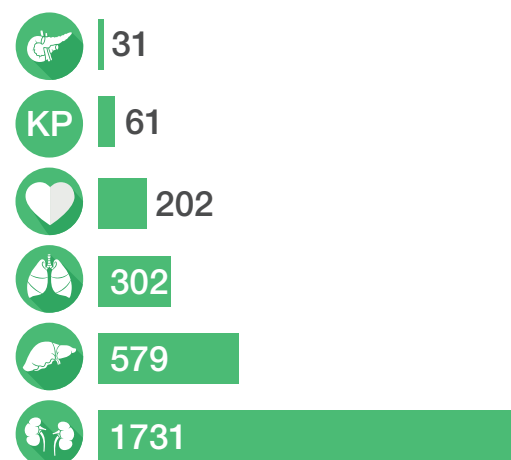
LIVING DONORS



Patients on Transplant Wait-list by Province



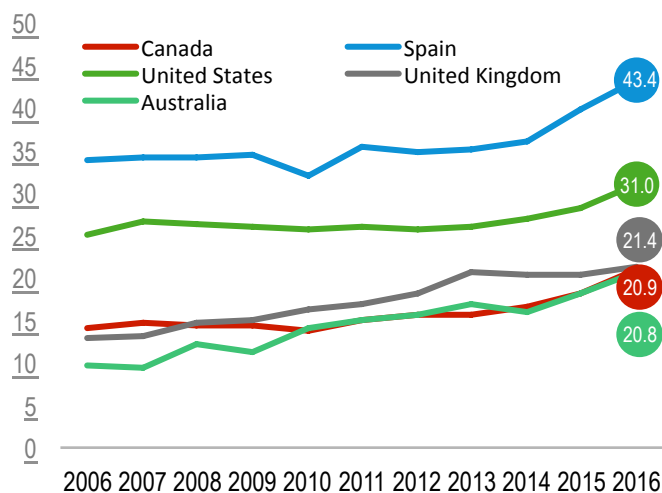
Transplanted Organs



Transplant results presented here refer only to kidney, liver, heart, lung, and whole pancreas transplants.

Deceased donation performance results

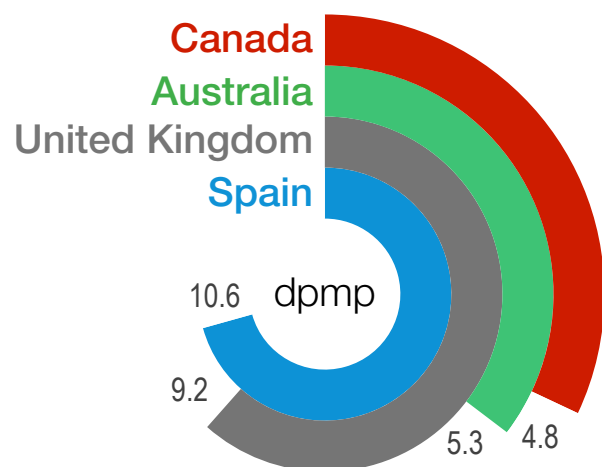
The deceased donation rate in Canada is on par with Australia and the United Kingdom, despite Canada adopting a more conservative definition in tracking donation performance than is typically used by the international community. Canada remains at less than half of the rate shown by Spain.



* For the DPMP metric, most countries report actual donors, a figure that only requires an organ to be removed or an incision made in the operating room for the purposes of transplantation. Canada, however, reports utilized donors, a metric that requires at least one organ to have been transplanted into a patient. Annual reports on organ donation and transplantation activity issued by the National Health Service in the United Kingdom (2012–2015) estimate differences of between four to eight per cent when comparing actual donors and utilized donors.

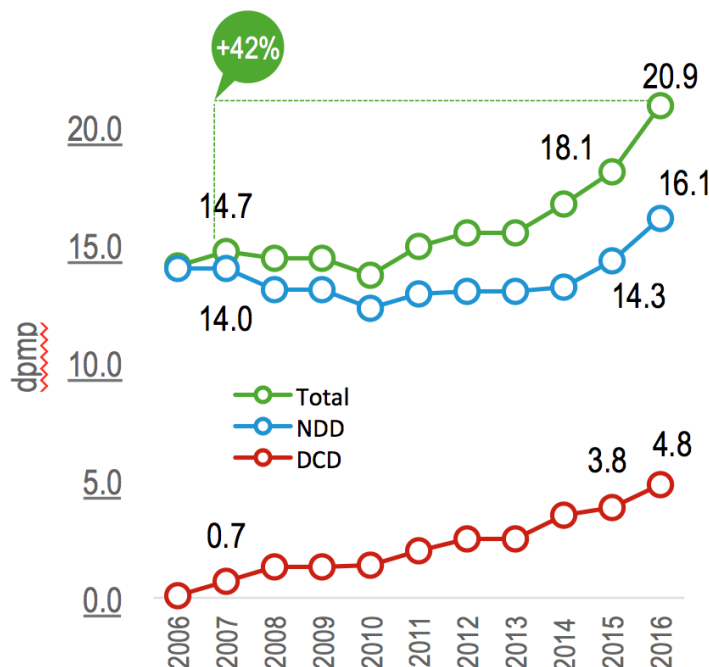
When comparing the utilization of donation after circulatory death internationally, Canada still does not rank among the highest rates internationally. This represents a critical area of potential for the future.

DCD donors per million population

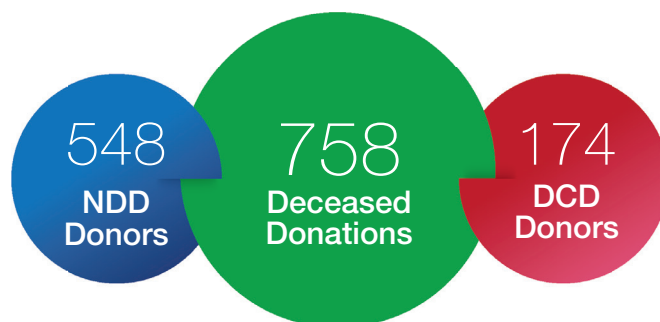


Canada has shown a sustained improvement in deceased donation to a degree which represents an important achievement for our country. This is the result of the collective efforts of the provincial ODO's, transplant programs, and ODT researchers including CIHR/CNTRP and intensive care units in Canada.

Organ donation after death accounts for the majority of transplants; a single donor has the potential to provide as many as 8 organ transplants, with a typical donor making 3 to 4 transplants possible.



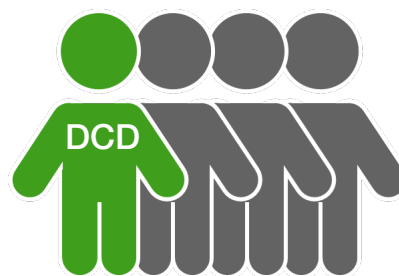
Canada's national deceased donation rate has increased by 42 per cent since 2007, from 14.7 to 20.9 DPMP in 2016, with results for 2016 exceeding the rate in 2015 (18.1) by 15 per cent. Despite this recent increase, the national deceased donation rate remains below the target of 22 DPMP proposed in *Call to Action, a strategic plan to improve organ and tissue donation and transplantation performance for Canadians.*†



†This document can be found at blood.ca

National performance: Continued success hinges on donation after circulatory death

If Canada is to continue improving its deceased donation rate, it must increase the number of donors making donations after circulatory death (DCD). Donations made in 2016 by DCD donors represent 23 per cent of the total number of donations made by deceased donors — and the area of the organ donation and transplantation system with the greatest potential for growth.

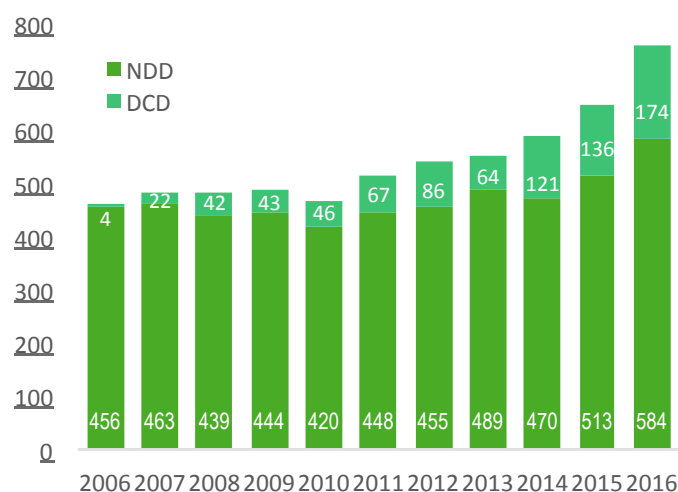


APPROXIMATELY

1 in 4

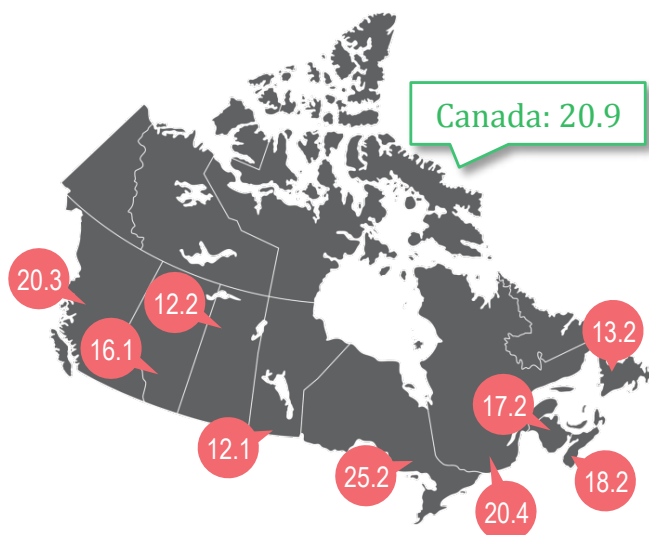
DONATIONS ARE MADE THROUGH DCD

Deceased donation in Canada 2006-2016



Quantitatively, DCD accounts for the largest increase in deceased donation over time and the greatest future donation potential. DCD has been implemented in 5 of 11 provincial ODOs. Two other provincial ODOs are beginning implementation.

2016 deceased donation rates by province

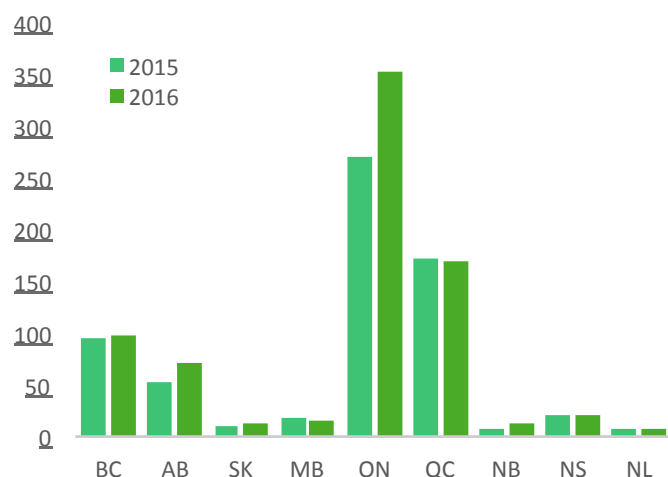


2016 donation rates for SK/MB based on best available data, and may overestimate provincial rate by 0.7-0.9 dpmp

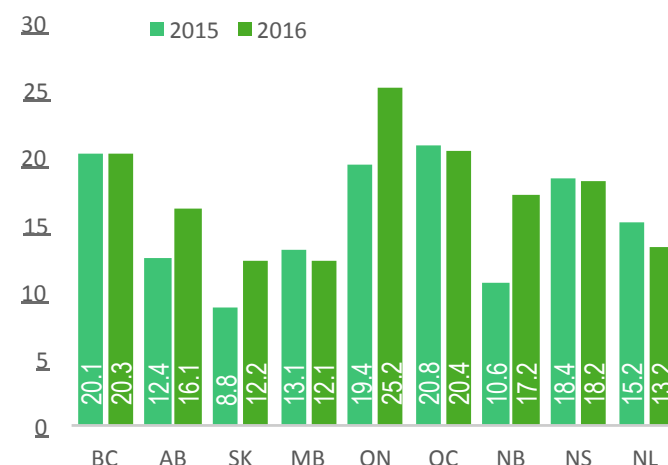
Performance among provinces varies

The degree to which provincial variability in performance affects variability in national performance trends is an important consideration. In 2012, the ODT community set a first-tier target of 22 DPMP, and national donation rates are presently continuing to approach that target at 20.9 DPMP in 2016.

Deceased donation by province 2015 - 2016



Deceased donation by province 2015 - 2016 (dpmp)



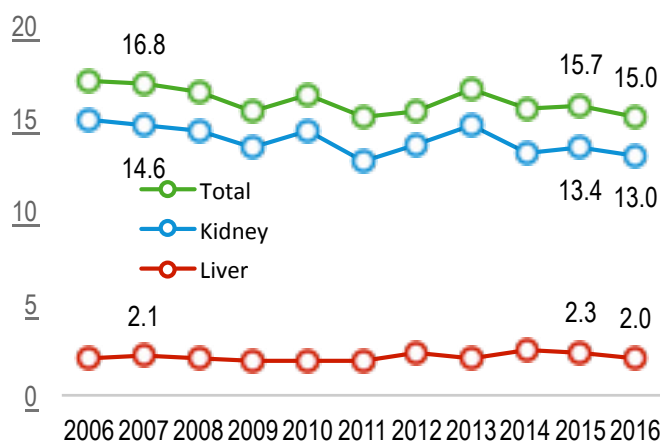
Canada's living donation rate (i.e., organ donation rate by living donors) in 2016 was 15.0 DPMP, which is down from 4% from 15.7 DPMP in 2015.

This rate — which is primarily made up of kidney donors, but does include liver and lung donors — has decreased by 11 per cent since 2006

11%

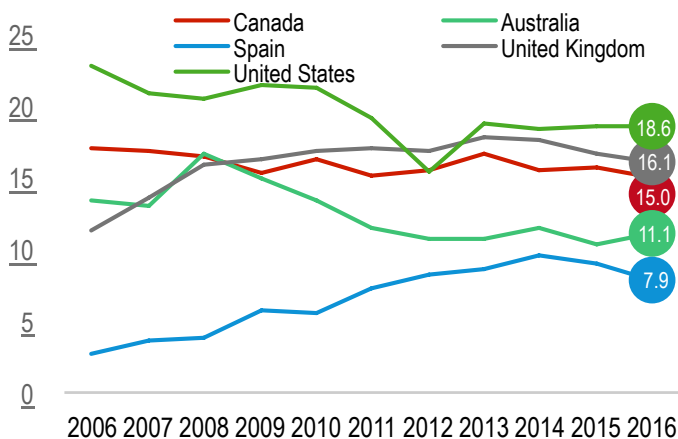
DECREASE
IN LIVING
DONATION
SINCE 2006

Living donation in Canada 2006-2016 (dpmp)

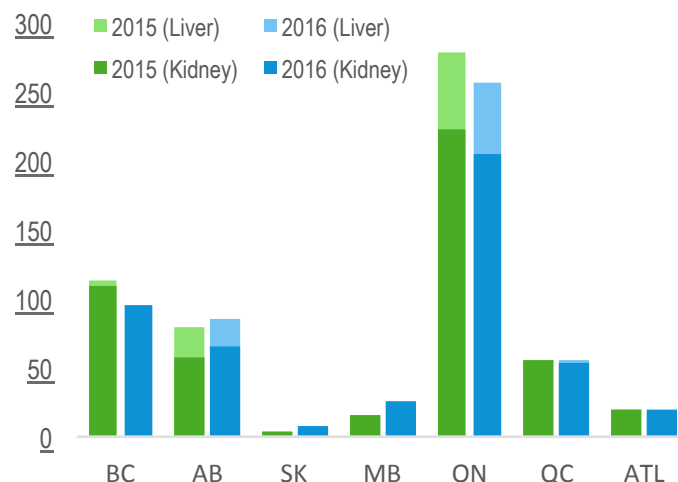


Living donation offers advantages to recipients, including better short-term and long-term health outcomes relative to deceased donation.

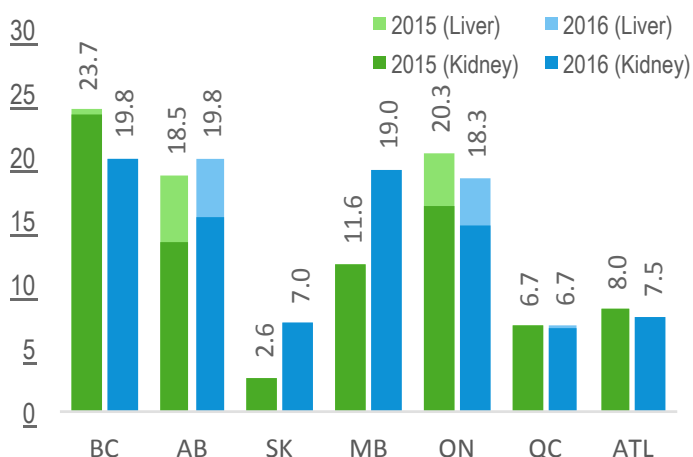
International living donation rates, 2006-2016 (dpmp)



Number of living donors by province 2006-2016

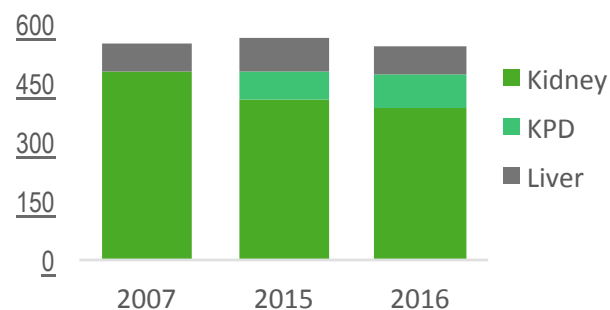


Living donor rates by province 2006-2016 (dpmp)



In 2016 there were 544 living donor transplants a 3% decrease from 2015; however, the Kidney Paired Donation (KPD) program saw its second most successful year since its 2009 inception and has facilitated 474 transplants as of 2016.

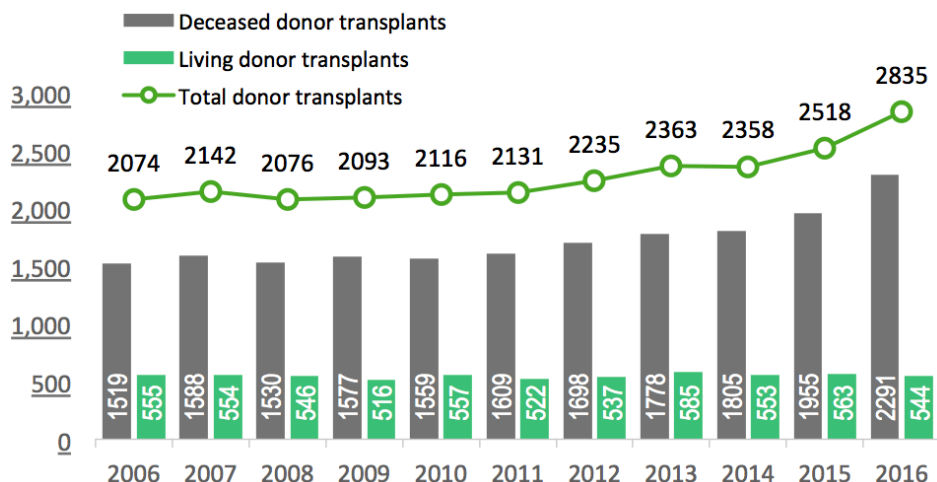
Living donor transplants 2009, 2015, 2016



Transplantation performance results

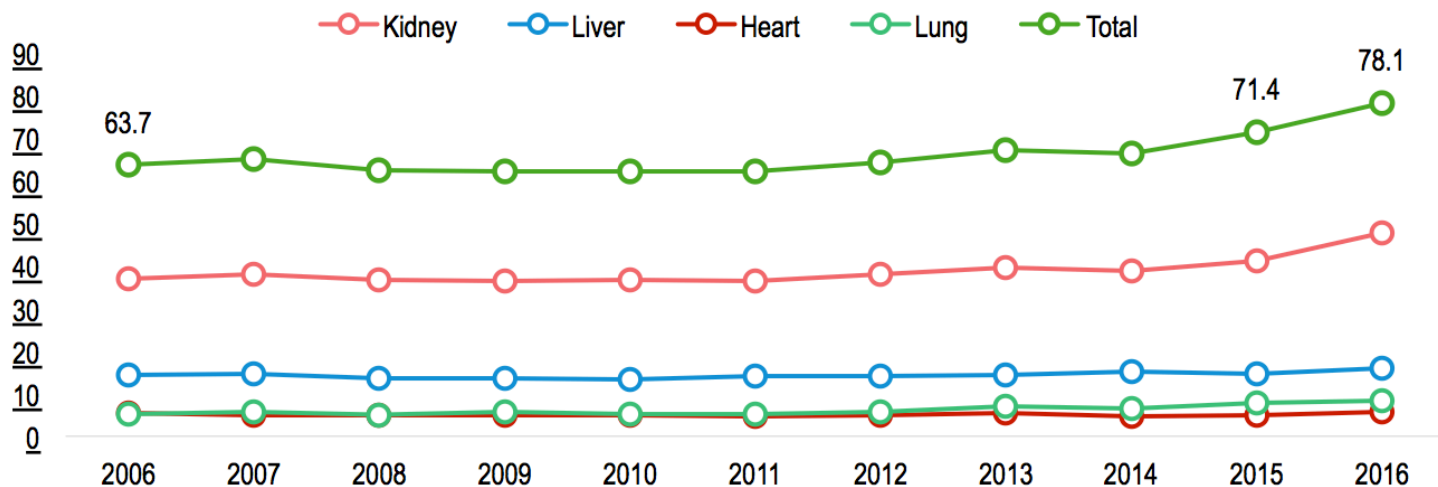
In spite of the increases in transplant numbers, Canada still has a shortage of organs. Approximately 4,500 patients are waiting for transplants at any given time. Since Canada will continue to have a shortage of organs into the future, there is a need to provide equitable access to the limited number of donated organs for all potential recipients.

Number of solid organ transplants in Canada by donor type 2006–2016



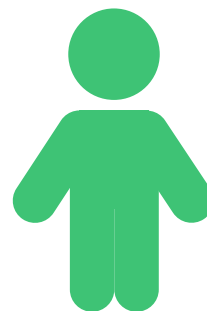
Between 2006 and 2015, Canada's transplant rate (which includes organs from both deceased and living donors) increased from 63.7 to 71.4 transplants per million population, and in 2016 this rate climbed even higher to 78.1 transplants per million population. This represents an 9 per cent increase relative to 2015 and a 23 per cent increase relative to 2006. The number of transplant procedures in 2016 (2,835) represents a 32 per cent increase from 2007.

Transplants per million population in Canada by organ type, 2006–2016



Transplant results presented here refer only to kidney, liver, heart, lung, and whole pancreas transplants.

Patients waiting for transplants in 2016



4,492

CANADIANS WAITING



3,421



433



256



117



26



189



48*



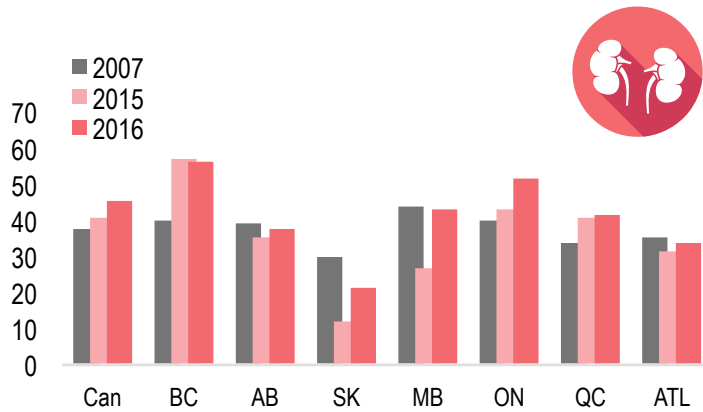
2

*Does not include islet patients (49)

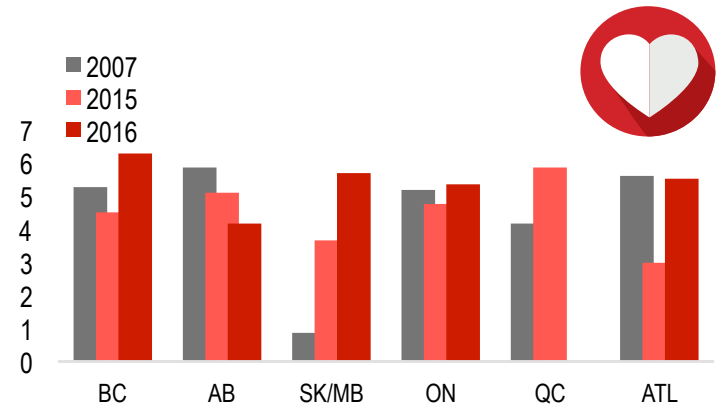
260

PATIENTS DIED ON THE WAITLIST IN 2016

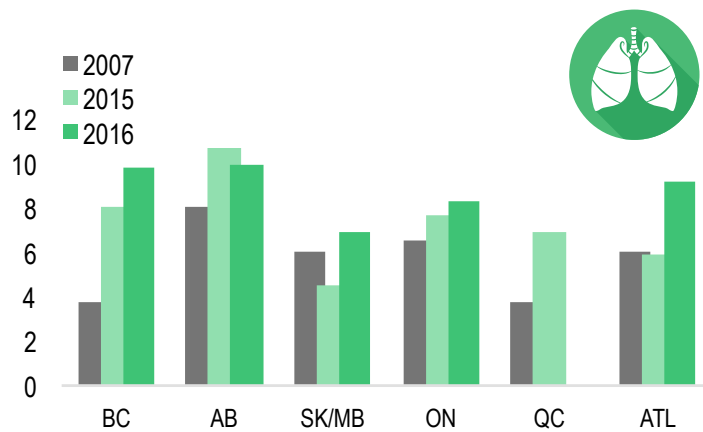
Kidney transplants by province per million population, 2006–2016



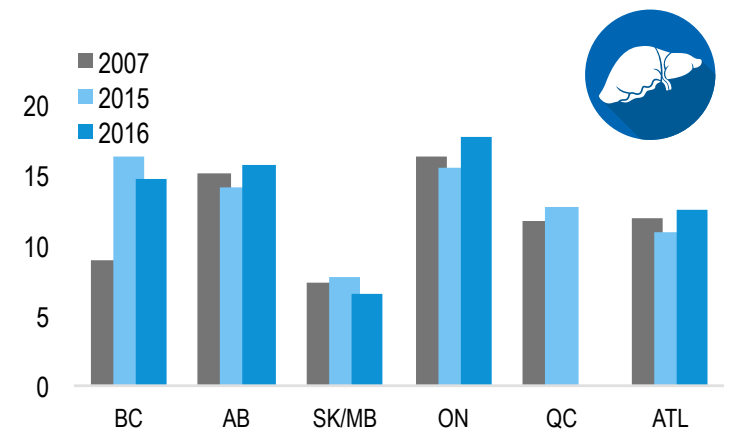
Heart transplants by province per million population, 2006–2016



Lung transplants by province per million population, 2007–2015



Liver transplants by province per million population, 2007–2015



*2016 heart, lung, and liver transplant rates for Quebec not available

Transplant results presented here refer only to kidney, liver, heart, lung, and whole pancreas transplants.

Acknowledgements

This report acknowledges the generosity of organ donors and their families, and those patients with end-stage organ failure who depend on all organizations involved to improve opportunities for donation and transplantation.

This report was made possible through the dedicated efforts of the members of the Organ Donation and Transplantation Expert Advisory Committee. It includes input from the Canadian Institutes of Health Research, the Canadian National Transplant Research Program, the Canadian Institute for Health Information, the Deceased Donation Advisory Committee, the Donation and Transplant Administrators Advisory Committee, the Kidney Transplant Advisory Committee and the Living Donation Advisory Committee.

Data Sources

The Canadian data collected for this report was compiled from a number of sources and standardized and validated to the greatest degree possible by experts from Canadian Blood Services. Source material was derived from figures compiled from the Canadian Transplant Registry, and materials published by the Canadian Institute for Health Information and the Canadian Organ Replacement Register. Canadian Blood Services' personnel also collected and validated 2015-2016 data from the various provincial organ donation organizations.

The international donation and transplantation data collected for this report was compiled from a number of sources and standardized and validated to the greatest degree possible by experts from Canadian Blood Services. Source material was derived from figures compiled from the International Registry on Organ Donation and Transplantation, the Organ Procurement and Transplantation Network in the United States, and the Organizacion Nacional de Trasplantes in Spain.

In accordance with Canadian Institute of Health Information (CIHI) standards, demographic data for estimates per million population (PMP) are based on Statistics Canada, Demography Division. Estimates of population (2011 Census and administrative data), by age group and sex for July 1st, Canada, provinces, territories, health regions (2015 boundaries). For the purpose of this calculation, PMP rates for British Columbia are based on the combined populations of British Columbia and Yukon, PMP rates for Alberta are based on the combined populations of Alberta, Northwest Territories and Nunavut, and Atlantic population includes New Brunswick, Nova Scotia, Prince Edward Island, and Newfoundland and Labrador. For deceased donation by province, rate for Nova Scotia is based on the combined populations of Nova Scotia and Prince Edward Island.