



Chapter 5—Lung Transplantation



5 Lung Transplantation

The first single-lung transplant procedure in Canada was performed in 1983, followed by the first bilateral lung transplant in 1986. Since then, outcomes for lung transplant recipients have continued to improve for several reasons: better organ preservation techniques, improvements in pre- and peri-operative care, better follow-up medical management of recipients and advances in immunosuppression. Lung transplant activity almost doubled in the last decade in Canada. This section presents the evolving landscape of lung transplant procedures in Canada during the decade from 2004 to 2013.

There were 314 people on the waiting list for a lung transplant in 2013. Between 2004 and 2013, there was an increase in the annual number of lung transplants performed in Canada. During the decade, there were 1,791 lung transplants, with a large increase in 2013 over 2012 (247 and 191, respectively) (Table 45). Of the 247 reported lung transplants performed in 2013, 86% were bilateral lung transplants (Table 46). Since 2004, the number of bilateral lung transplants has increased by 116%, from 98 to 212. Single-lung transplant volumes have been steady over the past decade, averaging 28 procedures per year (Table 46).

In 2013, Ontario and Alberta had the highest rates of lung transplantation, at 7.7 RPMP each (Figure 17).

Rates of patient survival for lung transplant generally show a slight increasing trend (Figure 18). Three-year survival increased from 71% to 74% between 2004 and 2010. Similarly, five-year survival increased from 60% to 66% between 2004 and 2008. Three-month and one-year survival showed similar improvements (92% to 93% from 2004 to 2013, and 81% to 87% from 2004 to 2012, respectively).

There were 1,524 Canadians living with a transplanted lung in 2013 (Table 48).

Table 44: Lung Transplant Waiting List at December 31 and Waiting List Deaths, Canada, 2004 to 2013

	2004	2005	2006	2007	2008	2009	2010	2011	2012*	2013*	Total
Bilateral Lung	155	188	147	183	147	137	178	188	174	242	1,739
Single Lung	22	29	84	51	129	104	125	122	144	67	877
Heart–Lung	4	14	11	9	6	1	7	5	11	5	73
Total	181	231	242	243	282	242	310	315	329	314	2,689
Deaths on Waiting List	43	43	35	43	44	44	51	68	69	52	492

Note

* Results are supplemented with data from Transplant Québec. For more details, see Section 1.2.

Sources

Canadian Organ Replacement Register, 2014, Canadian Institute for Health Information.

Transplant Québec. *Statistiques officielles 2013*. http://www.transplantquebec.ca/sites/default/files/statistiques_2013_3.pdf.

February 2014. Accessed January 8, 2015.

Table 45: Lung Transplants by Year, Age Group and Re-Transplants, Canada, 2004 to 2013 (Number)

	2004	2005	2006	2007	2008	2009	2010	2011	2012*	2013	Total
First Graft, Age 18+	128	137	166	179	156	178	174	173	182	226	1,699
First Graft, Age 0–17	3	5	4	4	6	4	3	5	1	7	42
Re-Transplants	2	3	1	4	5	7	3	3	8	14	50
Total	133	145	171	187	167	189	180	181	191	247	1,791

Note

* Missing data for three lung transplants in Quebec in 2012.

Source

Canadian Organ Replacement Register, 2014, Canadian Institute for Health Information.

Table 46: Lung Transplants by Transplant Type, Canada, 2004 to 2013 (Number)

	2004	2005	2006	2007	2008	2009	2010	2011	2012*	2013	Total
Bilateral Lung	98	119	129	152	135	153	153	165	157	212	1,473
Single Lung	30	19	35	32	28	31	25	13	31	35	279
Living-Donor Lobar	2	1	1	0	0	0	0	1	0	0	5
Heart–Lung	3	6	6	3	4	5	2	2	3	0	34
Total	133	145	171	187	167	189	180	181	191	247	1,791

Note

* Missing data for three lung transplants in Quebec in 2012.

Source

Canadian Organ Replacement Register, 2014, Canadian Institute for Health Information.

Table 47: Primary Diagnoses* for Lung Transplant Recipients, First Graft, Canada, 2004 to 2013[†] (Number, Percentage)

	Bilateral Lung		Single Lung		Heart-Lung	
	N	%	N	%	N	%
Congenital	6	0.4	0	0	6	17.1
Alpha-1-Antitrypsin Deficiency	55	3.8	9	3.1	0	0
Cystic Fibrosis	356	24.5	11	3.8	2	5.7
Emphysema/Chronic Obstructive Pulmonary Disease	335	23.1	105	36.2	5	14.3
Idiopathic Pulmonary Fibrosis	373	25.7	127	43.8	3	8.6
Primary Pulmonary Hypertension	66	4.5	3	1.0	5	14.3
Unknown/Not Reported	40	2.8	5	1.7	3	8.6
Other[‡]	221	15.2	30	10.3	11	31.4
Total	1,452	100	290	100	35	100

Notes

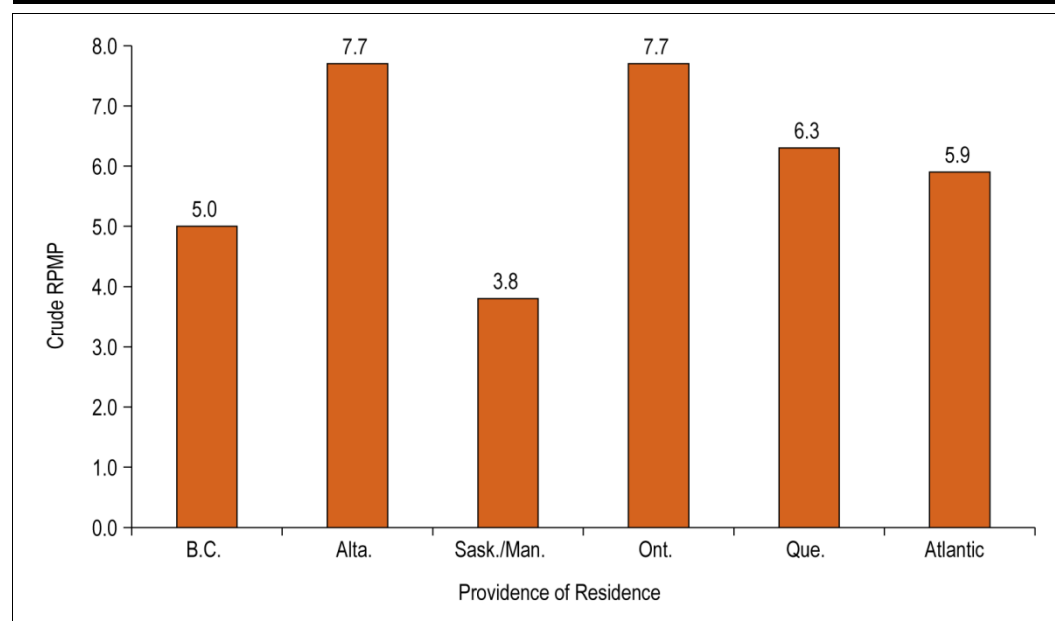
* More than one diagnosis can be reported for a patient.

† Missing data for three lung transplants in Quebec in 2012.

‡ For a list of all primary diagnoses captured by CORR, see Appendix F.

Source

Canadian Organ Replacement Register, 2014, Canadian Institute for Health Information.

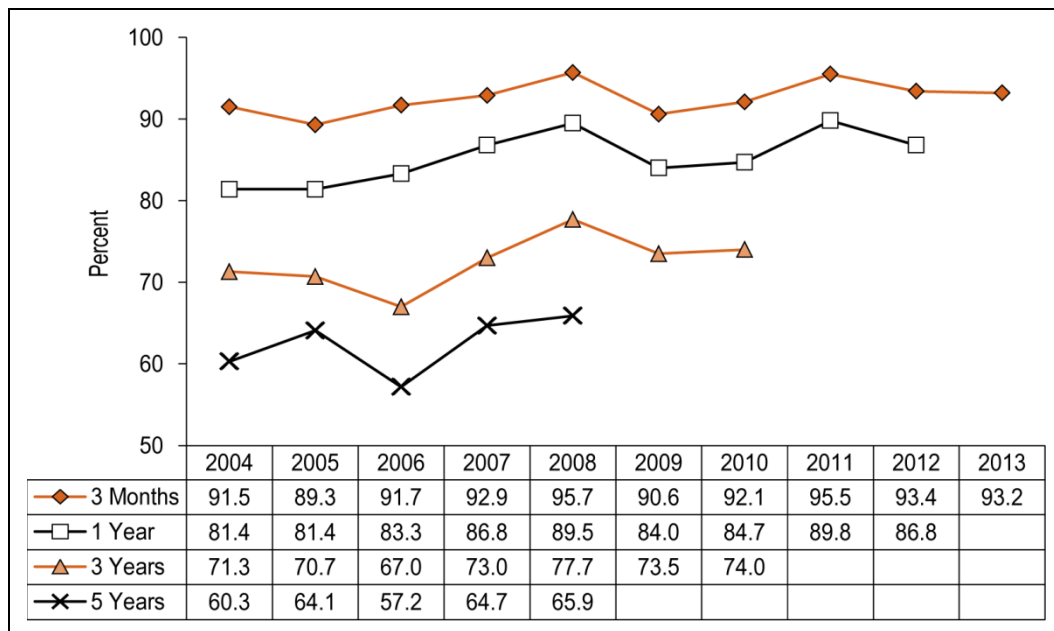
Figure 17: Lung Transplant Recipients by Province of Residence, Canada, 2013 (Crude Rate per Million Population)**Note**

Data from the Atlantic provinces was combined, as was data from Saskatchewan and Manitoba, because of small numbers.

Sources

Canadian Organ Replacement Register, 2014, Canadian Institute for Health Information; Statistics Canada.

Figure 18: Unadjusted Three-Month and One-, Three- and Five-Year Patient Survival Rates* for Lung Transplant Recipients, First Graft, Deceased-Donor Lungs, Canada, 2004 to 2013 (Percentage)



Note

* Survival rates may be affected by unreported lung transplants in Quebec in 2012 and unreported deaths in Quebec in 2011, 2012 and 2013. For more details, see Section 1.2.

Source

Canadian Organ Replacement Register, 2014, Canadian Institute for Health Information.

Table 48: Prevalent Lung Transplant Patients, by Province of Treatment/Follow-Up, 2004 to 2013 (Number)

	2004	2005	2006	2007	2008	2009	2010	2011	2012*	2013
B.C.	57	61	65	74	83	79	85	92	103	120
Alta.	148	168	187	206	222	225	244	260	272	279
Sask.	5	5	6	8	15	29	28	27	22	20
Man.	60	58	61	65	66	63	65	66	65	67
Ont.	330	362	409	476	516	558	589	644	691	765
Que.	157	155	169	186	192	211	224	235	248	273
Canada	757	809	897	1,015	1,094	1,165	1,235	1,324	1,401	1,524

Note

* Missing data for three lung transplants in Quebec in 2012.

Source

Canadian Organ Replacement Register, 2014, Canadian Institute for Health Information.