Supplementary Appendix

Trends in the incidence of hospitalization for major diabetes-related complications in people with type 1 and type 2 diabetes in Australia, 2010-2019

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Classification of diabetes type in the NDSS

In addition to the National Death Index and hospital admissions data, the National Diabetes Services Scheme (NDSS) cohort in this study was linked to the Australian Pharmaceutical Benefits Scheme (PBS) to assign diabetes type. The PBS collects information on all prescriptions dispensed in Australia under the scheme, and includes virtually all prescriptions for insulin. We had data from 1 January 2002 to 31 December 2019 for this purpose.

Registrants were classified as having type 1 diabetes if they were assigned type 1 diabetes by the registering healthcare practitioner, and met any one of the following criteria: 1) there was less than a year between diagnosis of diabetes and their first prescription for insulin, 2) when date of diagnosis is missing, there was evidence of insulin use at registration on the NDSS and the registrant was <45 years of age at registration, or 3) for those with an age of diagnosis <30 years (or if missing a diagnosis date, registration at age <45 years) who registered on the NDSS prior to 2002, and whose insulin initiation date on the NDSS was missing, there had to be evidence of ongoing treatment with insulin early in the years we had data from the PBS available (from 2002). Additionally, type 1 status was assigned to registrants whose original assignment was type 2, but were <30 years old at diabetes onset and showed evidence of insulin use within a year, a pattern more consistent with type 1 diabetes. An additional requirement for assigning type 1 was evidence of ongoing treatment with insulin (≥ 2 prescriptions for insulin on the PBS), except when time to census/death was <2 years. Individuals satisfying none of these criteria were classified as having type 2 diabetes. Additionally, because type 2 diabetes is rarely diagnosed in children under 10 years of age, registrants who were classified as having type 2 diabetes diagnosed at <10 years of age were excluded from all analyses to decrease the likelihood of including people with type 1 diabetes.

Supplementary Table 1 – Population characteristics and number of hospitalizations for major diabetes-related complications, by diabetes type and financial year.

		Financial year								
		2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019
Type 1 diabetes										
N		52344	54002	55595	57253	58855	60584	62155	63851	65764
Male		28331 (54.1%)	29218 (54.1%)	30076 (54.1%)	30995 (54.1%)	31811 (54.0%)	32714 (54.0%)	33624 (54.1%)	34555 (54.1%)	35635 (54.2%)
Age at diagnosis of diabetes		23.0 (12.4, 33.6)	22.8 (12.3, 33.3)	22.6 (12.2, 33.1)	22.4 (12.1, 32.9)	22.1 (12.0, 32.7)	21.9 (11.9, 32.6)	21.8 (11.8, 32.4)	21.6 (11.7, 32.2)	21.5 (11.7, 32.1)
Duration of diabetes ¹		15.6 (7.0, 22.6)	16.0 (7.0, 23.3)	16.4 (7.1, 24.0)	16.6 (7.2, 24.7)	16.7 (7.4, 25.4)	16.8 (7.6, 26.1)	16.9 (7.8, 26.8)	17.1 (7.9, 27.4)	17.1 (7.9, 27.9)
Age ¹		38.0 (24.9, 51.9)	38.2 (25.1, 52.3)	38.4 (25.3, 52.6)	38.5 (25.4, 53.0)	38.6 (25.6, 53.4)	38.8 (25.8, 53.8)	39.0 (26.1, 54.1)	39.2 (26.3, 54.4)	39.4 (26.5, 54.8)
Age category ¹	0-19	16.6%	16.2%	15.7%	15.6%	15.3%	15.0%	14.6%	14.4%	14.1%
	20-39	37.4%	37.5%	37.4%	37.1%	37.1%	37.1%	37.1%	37.0%	36.9%
	40-59	34.4%	33.8%	33.4%	33.0%	32.6%	32.2%	31.9%	31.7%	31.4%
	60-79	11.2%	12.2%	13.1%	14.0%	14.7%	15.4%	16.0%	16.5%	17.1%
	80+	0.3%	0.3%	0.3%	0.3%	0.4%	0.3%	0.4%	0.4%	0.4%
Complications	Myocardial infarction	271	212	218	251	302	292	291	331	264
	Stroke	106	99	91	119	129	141	150	164	147
	Heart failure	156	177	176	237	237	262	251	237	254
	Lower extremity amputation	207	249	222	234	284	287	289	301	298
	Hypoglycemia	1168	1037	989	1122	1221	1165	1280	1207	1208
	Hyperglycemia	2658	2963	2907	3105	3238	3511	3618	3503	3441
Type 2 diabetes										
N		674271	715336	750746	782453	810131	832226	861629	885644	901646
Male		356368 (52.9%)	379716 (53.1%)	400198 (53.3%)	418809 (53.5%)	435180 (53.7%)	448587 (53.9%)	466022 (54.1%)	480759 (54.3%)	490851 (54.4%)
Age at diagnosis of diabetes		57.2 (48.0, 66.0)	57.2 (48.0, 66.0)	57.1 (48.0, 65.9)	57.0 (47.9, 65.7)	56.9 (47.8, 65.6)	56.8 (47.6, 65.4)	56.8 (47.6, 65.5)	56.7 (47.5, 65.4)	56.5 (47.4, 65.2)
Duration of diabetes ¹		7.7 (3.4, 13.1)	7.8 (3.6, 13.5)	8.0 (3.7, 13.9)	8.2 (3.9, 14.3)	8.5 (4.2, 14.7)	8.9 (4.6, 15.2)	9.3 (4.8, 15.6)	9.7 (5.0, 16.0)	10.1 (5.3, 16.5)
Age ¹		66.1 (56.6, 75.3)	66.2 (56.8, 75.4)	66.5 (57.0, 75.6)	66.8 (57.2, 75.8)	67.1 (57.5, 75.9)	67.4 (57.7, 76.1)	67.8 (58.1, 76.4)	68.1 (58.3, 76.6)	68.4 (58.6, 76.9)
Age category ¹	0-19	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%

	20-39	3.6%	3.4%	3.3%	3.2%	3.1%	3.0%	3.0%	2.9%	2.9%
	40-59	29.2%	28.9%	28.5%	28.0%	27.5%	27.0%	26.3%	25.8%	25.2%
	60-79	52.5%	52.6%	52.9%	53.2%	53.5%	53.7%	53.9%	54.1%	54.3%
	80+	14.7%	15.0%	15.3%	15.6%	15.8%	16.2%	16.7%	17.1%	17.6%
Complications	Myocardial infarction	6264	6248	6358	6600	6749	6760	7268	7125	6995
	Stroke	3536	3846	3935	4057	4366	4834	4998	5181	4834
	Heart failure	8851	9166	9615	10344	10952	11390	12180	11951	11692
	Lower extremity amputation	1717	1784	1957	1942	2282	2414	2543	2686	2699
	Hypoglycemia	2606	2446	2346	2452	2488	2334	2560	2371	2208
	Hyperglycemia	779	968	1055	1092	1197	1438	1639	1643	1806

Data presented as N, N(%), %, or median (25th-75th centile).

1: At end of follow-up

Supplementary Table 2 – Crude and age-adjusted incidence of hospitalization for major diabetes-related complications among people with type 1 diabetes and type 2 diabetes, and annual percent changes from 2010-2011 to 2018-2019.

		Incidence rate			Annual percent change (95% CI)			
		2010-2011	2014-2015	2018-2019	Trend 1		Trend 2	
					Years	APC	Years	APC
Type 1 diabetes								
Myocardial infarction	Crude	5.3 (4.7, 6.0)	5.3 (4.7, 5.9)	4.3 (3.8, 4.9)	2010-2011 to 2018-2019	0.6 (-3.0, 4.3)	-	-
	Age-adjusted	5.7 (5.0, 6.4)	5.3 (4.7, 5.8)	4.0 (3.5, 4.5)	2010-2011 to 2018-2019	-1.1 (-4.7, 2.6)	-	-
Stroke	Crude	2.1 (1.7, 2.5)	2.2 (1.9, 2.7)	2.5 (2.2, 3.0)	2010-2011 to 2018-2019	4.6 (2.1, 7.2)	-	-
	Age-adjusted	2.2 (1.7, 2.6)	2.2 (1.9, 2.6)	2.3 (2.0, 2.7)	2010-2011 to 2018-2019	2.5 (0.1, 4.8)	-	-
Heart failure	Crude	3.1 (2.6, 3.6)	4.1 (3.6, 4.7)	4.1 (3.7, 4.7)	2010-2011 to 2018-2019	3.2 (-0.1, 6.6)	-	-
	Age-adjusted	3.6 (3.0, 4.2)	4.1 (3.6, 4.6)	3.6 (3.1, 4.1)	2010-2011 to 2018-2019	-0.7 (-4.2, 2.9)	-	-
Lower extremity amputation	Crude	4.1 (3.5, 4.7)	4.9 (4.4, 5.6)	5.2 (4.6, 5.8)	2010-2011 to 2018-2019	2.4 (0.5, 4.3)	-	-
	Age-adjusted	4.3 (3.7, 4.9)	4.9 (4.4, 5.5)	5.0 (4.4, 5.6)	2010-2011 to 2018-2019	1.4 (-0.5, 3.3)	-	-
Hypoglycemia	Crude	22.9 (21.7, 24.3)	21.3 (20.1, 22.5)	19.7 (18.6, 20.8)	2010-2011 to 2018-2019	-0.7 (-2.7, 1.3)	-	-
	Age-adjusted	23.2 (21.8, 24.6)	21.3 (20.1, 22.4)	19.5 (18.4, 20.6)	2010-2011 to 2018-2019	-0.9 (-2.9, 1.1)	-	-
Hyperglycemia	Crude	52.2 (50.3, 54.3)	56.4 (54.5, 58.4)	56.1 (54.2, 58.0)	2010-2011 to 2016-2017	1.9 (0.1, 3.7)	2016-2017 to 2018-2019	-3.2 (-12.2, 6.7)
	Age-adjusted	50.5 (48.7, 52.4)	56.4 (54.5, 58.3)	57.6 (55.7, 59.4)	2010-2011 to 2016-2017	2.7 (1.0, 4.5)	2016-2017 to 2018-2019	-2.6 (-11.5, 7.1)
Type 2 diabetes								
Myocardial infarction	Crude*	9.9 (9.6, 10.1)	8.7 (8.5, 9.0)	8.4 (8.2, 8.6)	2010-2011 to 2012-2013	-4.7 (-11.6, 2.7)	2012-2013 to 2018-2019	-0.9 (-2.1, 0.3)
	Age-adjusted	10.2 (9.9, 10.4)	8.7 (8.5, 9.0)	8.2 (8.0, 8.3)	2010-2011 to 2012-2013	-5.4 (-12.2, 1.9)	2012-2013 to 2018-2019	-1.7 (-2.8, -0.5)

Stroke	Crude	5.6 (5.4, 5.8)	5.7 (5.5, 5.8)	6.2 (6.0, 6.4)	2010-2011 to 2018-2019	1.7 (0.8, 2.5)	-	-
	Age-adjusted	5.8 (5.6, 6.0)	5.7 (5.5, 5.8)	5.9 (5.7, 6.1)	2010-2011 to 2018-2019	0.5 (-0.3, 1.3)	-	-
Heart failure	Crude	14.0 (13.7, 14.3)	14.2 (13.9, 14.5)	14.1 (13.9, 14.4)	2010-2011 to 2018-2019	0.7 (-0.1, 1.4)	-	-
	Age-adjusted	14.6 (14.3, 14.9)	14.2 (13.9, 14.5)	13.2 (13.0, 13.5)	2010-2011 to 2018-2019	-0.8 (-1.5, 0.0)	-	-
Lower extremity amputation	Crude	2.7 (2.6, 2.8)	3.0 (2.8, 3.1)	3.5 (3.3, 3.6)	2010-2011 to 2018-2019	3.4 (2.2, 4.6)	-	-
	Age-adjusted	2.8 (2.6, 2.9)	3.0 (2.8, 3.1)	3.5 (3.3, 3.6)	2010-2011 to 2018-2019	3.1 (1.9, 4.4)	-	-
Hypoglycemia	Crude	4.1 (4.0, 4.3)	3.2 (3.1, 3.4)	2.7 (2.6, 2.8)	2010-2011 to 2018-2019	-4.4 (-5.8, -3.1)	-	-
	Age-adjusted	4.2 (4.1, 4.4)	3.2 (3.1, 3.4)	2.6 (2.4, 2.7)	2010-2011 to 2018-2019	-5.3 (-6.7, -3.9)	-	-
Hyperglycemia	Crude	1.2 (1.1, 1.3)	1.6 (1.5, 1.6)	2.2 (2.1, 2.3)	2010-2011 to 2018-2019	7.0 (5.4, 8.6)	-	-
	Age-adjusted	1.2 (1.1, 1.3)	1.6 (1.5, 1.6)	2.2 (2.1, 2.3)	2010-2011 to 2018-2019	7.4 (5.9, 9.0)	-	-

*Average APC from 2010-2011 to 2018-2019 was significant (-1.8% [-3.3, -0.4]).

Supplementary Table 3 – Age-adjusted incidence of major and minor lower extremity amputations among people with type 1 diabetes and type 2 diabetes, and annual percent changes from 2010-2011 to 2018-2019.

		Incidence rate			Annual percent change (95% CI)			
		2010-2011	2014-2015	2018-2019	Trend 1		Trend 2	
					Years	APC	Years	APC
Type 1 diabetes	Major amputation	1.1 (0.8, 1.4)	1.1 (0.8, 1.4)	1.1 (0.8, 1.4)	2010-2011 to 2018-2019	0.3 (-1.9, 2.6)	-	-
	Minor amputation	3.2 (2.7, 3.7)	3.8 (3.3, 4.4)	3.9 (3.4, 4.5)	2010-2011 to 2018-2019	1.7 (-0.6, 4.1)	-	-
Type 2 diabetes	Major amputation	0.7 (0.7, 0.8)	0.6 (0.6, 0.7)	0.6 (0.6, 0.7)	2010-2011 to 2018-2019	-1.7 (-4.2, 0.9)	-	-
	Minor amputation	2.0 (1.9, 2.1)	2.3 (2.2, 2.5)	2.9 (2.7, 3.0)	2010-2011 to 2018-2019	4.5 (3.5, 5.4)	-	-

Supplementary Table 4 – Age-adjusted incidence of hospitalization for major diabetes-related complications among people with type 1 diabetes and type 2 diabetes, and annual percent changes from 2010-2011 to 2018-2019, by sex.

	Sex	Incidence rate			Annual percent change (95% CI)			
		2010-2011	2014-2015	2018-2019	Trend 1		Trend 2	
					Years	APC	Years	APC
Type 1 diabetes								
Myocardial infarction	Males	6.0 (5.0, 7.0)	5.3 (4.5, 6.1)	4.3 (3.6, 5.0)	2010-2011 to 2018-2019	-1.6 (-4.6, 1.5)	-	-
	Females	5.5 (4.4, 6.5)	5.2 (4.3, 6.1)	3.6 (2.9, 4.3)	2010-2011 to 2018-2019	-0.8 (-5.9, 4.7)	-	-
Stroke	Males	2.3 (1.7, 2.9)	2.4 (1.9, 3.0)	2.3 (1.8, 2.8)	2010-2011 to 2018-2019	0.2 (-2.9, 3.4)	-	-
	Females	2.0 (1.4, 2.7)	2.0 (1.4, 2.5)	2.5 (1.8, 3.1)	2010-2011 to 2018-2019	6.1 (1.3, 11.0)	-	-
Heart failure	Males	3.4 (2.6, 4.3)	4.1 (3.4, 4.8)	3.7 (3.1, 4.3)	2010-2011 to 2018-2019	-0.5 (-2.6, 1.7)	-	-
	Females	3.8 (2.9, 4.7)	4.2 (3.4, 5.0)	3.4 (2.7, 4.1)	2010-2011 to 2018-2019	-1.0 (-7.3, 5.7)	-	-
Lower extremity amputation	Males	5.3 (4.3, 6.2)	6.1 (5.3, 7.0)	6.2 (5.3, 7.0)	2010-2011 to 2018-2019	1.6 (-1.2, 4.4)	-	-
	Females	3.1 (2.3, 3.9)	3.5 (2.8, 4.2)	3.6 (2.8, 4.3)	2010-2011 to 2018-2019	1.0 (-2.0, 4.0)	-	-
Hypoglycemia	Males	23.2 (21.4, 25.1)	20.8 (19.2, 22.4)	19.0 (17.5, 20.5)	2010-2011 to 2018-2019	-0.9 (-3.2, 1.4)	-	-
	Females	23.1 (21.1, 25.2)	21.8 (20.0, 23.5)	20.0 (18.3, 21.6)	2010-2011 to 2018-2019	-1.0 (-3.0, 1.0)	-	-
Hyperglycemia	Males	43.1 (40.8, 45.5)	48.6 (46.2, 51.0)	50.3 (47.9, 52.7)	2010-2011 to 2016-2017	2.8 (1.5, 4.0)	2016-2017 to 2018-2019	-2.4 (-8.7, 4.4)
	Females	59.0 (56.1, 61.9)	65.2 (62.3, 68.1)	65.8 (62.9, 68.7)	2010-2011 to 2018-2019	1.6 (0.3, 3.0)	-	-
Type 2 diabetes								
Myocardial infarction	Males	11.9 (11.5, 12.2)	10.7 (10.4, 11.0)	10.2 (9.9, 10.4)	2010-2011 to 2018-2019	-1.8 (-2.3, -1.3)	-	-
	Females	8.2 (7.9, 8.6)	6.4 (6.2, 6.7)	5.8 (5.6, 6.0)	2010-2011 to 2018-2019	-3.6 (-4.8, -2.4)	-	-

Stroke	Males	6.4 (6.1, 6.7)	6.3 (6.0, 6.5)	6.7 (6.5, 7.0)	2010-2011 to 2018-2019	0.9 (-0.2, 2.0)	-	-
	Females	5.1 (4.8, 5.4)	4.9 (4.7, 5.1)	4.9 (4.6, 5.1)	2010-2011 to 2018-2019	-0.2 (-0.9, 0.4)	-	-
Heart failure	Males	15.9 (15.4, 16.3)	15.6 (15.2, 16.0)	14.5 (14.2, 14.9)	2010-2011 to 2016-2017	0.4 (-0.3, 1.1)	2016-2017 to 2018-2019	-4.5 (-8.0, -0.9)
	Females	13.2 (12.8, 13.6)	12.6 (12.2, 12.9)	11.7 (11.4, 12.1)	2010-2011 to 2018-2019	-1.1 (-1.7, -0.4)	-	-
Lower extremity amputation	Males	3.9 (3.7, 4.1)	4.2 (4.0, 4.4)	4.8 (4.6, 5.1)	2010-2011 to 2018-2019	3.3 (2.0, 4.5)	-	-
	Females	1.5 (1.3, 1.6)	1.6 (1.4, 1.7)	1.8 (1.6, 1.9)	2010-2011 to 2018-2019	1.9 (-0.2, 4.1)	-	-
Hypoglycemia	Males	4.5 (4.2, 4.7)	3.4 (3.2, 3.6)	2.6 (2.5, 2.8)	2010-2011 to 2018-2019	-5.6 (-6.9, -4.2)	-	-
	Females	4.0 (3.8, 4.2)	3.0 (2.8, 3.2)	2.5 (2.3, 2.6)	2010-2011 to 2018-2019	-5.0 (-6.6, -3.4)	-	-
Hyperglycemia	Males	1.2 (1.1, 1.3)	1.6 (1.4, 1.7)	2.2 (2.1, 2.3)	2010-2011 to 2018-2019	6.7 (4.4, 9.1)	-	-
	Females	1.2 (1.1, 1.3)	1.5 (1.4, 1.7)	2.2 (2.1, 2.4)	2010-2011 to 2018-2019	8.1 (6.7, 9.5)	-	-

Supplementary Table 5 – Age-adjusted incidence of hospitalization for major diabetes-related complications among people with type 1 diabetes and type 2 diabetes, and annual percent changes from 2010-2011 to 2018-2019, by age group.

	Age	Financial year			Annual percent change (95% CI)			
		2010-2011	2014-2015	2018-2019	Trend 1		Trend 2	
					Years	APC	Years	APC
Type 1 diabetes								
Myocardial infarction	20-39	0.7 (0.3, 1.0)	1.0 (0.6, 1.5)	0.8 (0.5, 1.2)	2010-2011 to 2014-2015	10.0 (-3.9, 25.9)	2014-2015 to 2018-2019	-7.1 (-17.7, 4.8)
	40-59	8.4 (7.0, 9.7)	7.4 (6.2, 8.7)	5.7 (4.7, 6.8)	2010-2011 to 2018-2019	-1.5 (-6.1, 3.3)	-	-
	60-79	18.0 (14.3, 21.7)	17.2 (14.3, 20.0)	12.5 (10.3, 14.8)	2010-2011 to 2018-2019	-0.7 (-4.8, 3.5)	-	-
Stroke	20-39	0.6 (0.3, 0.9)	0.5 (0.2, 0.8)	1.1 (0.6, 1.5)	Not reported*	Not reported*	-	-
	40-59	3.2 (2.3, 4.0)	2.9 (2.2, 3.7)	3.1 (2.2, 3.9)	2010-2011 to 2018-2019	3.9 (-1.4, 9.4)	-	-
	60-79	6.2 (3.9, 8.5)	7.5 (5.6, 9.4)	6.3 (4.7, 7.9)	2010-2011 to 2018-2019	-0.6 (-4.0, 2.9)	-	-
Heart failure	20-39	0.3 (0.0, 0.5)	0.4 (0.1, 0.6)	1.0 (0.6, 1.4)	Not reported*	Not reported*	-	-
	40-59	3.6 (2.7, 4.5)	4.2 (3.3, 5.2)	2.8 (2.1, 3.6)	2010-2011 to 2018-2019	-1.6 (-7.4, 4.6)	-	-
	60-79	15.6 (11.8, 19.4)	17.0 (14.2, 19.8)	15.1 (12.7, 17.6)	2010-2011 to 2018-2019	-1.1 (-5.9, 4.0)	-	-
Lower extremity amputation	20-39	0.9 (0.5, 1.3)	2.0 (1.4, 2.6)	1.8 (1.3, 2.4)	2010-2011 to 2018-2019	3.9 (-1.4, 9.5)	-	-
	40-59	7.4 (6.1, 8.6)	7.8 (6.6, 9.1)	7.7 (6.4, 8.9)	2010-2011 to 2018-2019	1.2 (-1.5, 4.0)	-	-
	60-79	10.8 (7.6, 14.0)	11.5 (9.2, 13.8)	12.8 (10.4, 15.2)	2010-2011 to 2018-2019	1.0 (-1.8, 3.8)	-	-
Hypoglycemia	0-19	30.6 (27.0, 34.2)	30.3 (26.8, 33.9)	26.0 (22.7, 29.4)	2010-2011 to 2018-2019	-2.1 (-4.1, -0.1)	-	-
	20-39	19.2 (17.2, 21.1)	17.3 (15.6, 19.1)	15.6 (14.0, 17.2)	2010-2011 to 2018-2019	-0.4 (-3.2, 2.5)	-	-
	40-59	21.9 (19.7, 24.0)	20.5 (18.5, 22.5)	18.6 (16.7, 20.5)	2010-2011 to 2018-2019	-1.0 (-3.6, 1.7)	-	-
	60-79	28.5 (23.3, 33.6)	22.9 (19.7, 26.2)	24.1 (21.0, 27.2)	2010-2011 to 2012-2013	-11.2 (-23.6, 3.1)	2012-2013 to 2018-2019	2.0 (0.1, 4.0)

Hyperglycemia	0-19	126.2 (119.2, 133.2)	129.4 (122.5, 136.4)	109.3 (102.8, 115.8)	2010-2011 to 2015-2016	0.1 (-3.0, 3.3)	2015-2016 to 2018-2019	-6.2 (-12.9, 1.0)
	20-39	60.8 (57.5, 64.2)	67.5 (64.1, 70.8)	72.2 (68.8, 75.5)	2010-2011 to 2018-2019	2.2 (1.0, 3.4)	-	-
	40-59	21.3 (19.1, 23.4)	28.7 (26.4, 31.1)	33.1 (30.6, 35.6)	2010-2011 to 2018-2019	6.4 (3.5, 9.3)	-	-
	60-79	9.0 (6.2, 11.7)	12.1 (9.7, 14.5)	19.6 (16.7, 22.4)	2010-2011 to 2018-2019	10.5 (4.7, 16.5)	-	-
Type 2 diabetes								
Myocardial infarction	20-39	1.1 (0.7, 1.5)	2.0 (1.4, 2.5)	1.4 (0.9, 1.9)	2010-2011 to 2018-2019	0.1 (-5.5, 6.0)	-	-
	40-59	5.4 (5.0, 5.7)	5.1 (4.8, 5.4)	5.5 (5.2, 5.8)	2010-2011 to 2018-2019	0.5 (-0.4, 1.4)	-	-
	60-79	10.4 (10.1, 10.8)	8.9 (8.6, 9.2)	8.1 (7.8, 8.3)	2010-2011 to 2018-2019	-2.6 (-3.4, -1.7)	-	-
	80+	20.9 (19.9, 21.8)	16.8 (16.1, 17.6)	15.3 (14.6, 16.0)	2010-2011 to 2013-2014	-5.9 (-8.8, -2.8)	2013-2014 to 2018-2019	-2.4 (-3.8, -1.1)
Stroke	20-39	0.6 (0.3, 0.9)	0.5 (0.2, 0.8)	0.6 (0.3, 0.9)	2010-2011 to 2018-2019	0.6 (-5.1, 6.6)	-	-
	40-59	2.0 (1.8, 2.2)	2.0 (1.8, 2.1)	2.5 (2.3, 2.7)	2010-2011 to 2018-2019	3.1 (1.0, 5.3)	-	-
	60-79	5.8 (5.6, 6.1)	5.4 (5.2, 5.7)	5.9 (5.7, 6.1)	2010-2011 to 2018-2019	0.5 (-0.4, 1.5)	-	-
	80+	14.5 (13.7, 15.3)	15.0 (14.3, 15.7)	13.9 (13.2, 14.5)	2010-2011 to 2018-2019	-0.4 (-1.4, 0.6)	-	-
Heart failure	20-39	1.3 (0.8, 1.7)	0.8 (0.5, 1.2)	1.7 (1.2, 2.3)	2010-2011 to 2013-2014	-16.2 (-41.3, 19.6)	2013-2014 to 2018-2019	21.0 (3.6, 41.3)
	40-59	3.0 (2.7, 3.2)	3.6 (3.4, 3.9)	3.5 (3.2, 3.7)	2010-2011 to 2018-2019	2.2 (0.2, 4.1)	-	-
	60-79	14.4 (14.0, 14.8)	13.0 (12.7, 13.4)	12.1 (11.8, 12.4)	2010-2011 to 2018-2019	-1.4 (-2.3, -0.6)	-	-
	80+	41.7 (40.4, 43.1)	42.4 (41.3, 43.6)	39.2 (38.2, 40.3)	2010-2011 to 2016-2017	0.4 (-0.6, 1.4)	2016-2017 to 2018-2019	-3.9 (-8.7, 1.2)
Lower extremity amputation	20-39	0.6 (0.3, 0.9)	1.0 (0.6, 1.4)	1.3 (0.8, 1.7)	2010-2011 to 2018-2019	7.9 (1.7, 14.6)	-	-
	40-59	2.0 (1.8, 2.2)	2.6 (2.4, 2.8)	3.2 (3.0, 3.5)	2010-2011 to 2018-2019	5.9 (4.6, 7.3)	-	-

	60-79	3.1 (2.9, 3.2)	3.2 (3.0, 3.4)	3.7 (3.5, 3.8)	2010-2011 to 2018-2019	2.7 (1.3, 4.1)	-	-
	80+	3.6 (3.2, 4.0)	3.3 (3.0, 3.6)	3.6 (3.3, 4.0)	2010-2011 to 2018-2019	0.5 (-1.4, 2.3)	-	-
Hypoglycemia	20-39	2.5 (1.9, 3.2)	2.1 (1.6, 2.7)	2.4 (1.8, 3.0)	2010-2011 to 2018-2019	0.2 (-4.8, 5.5)	-	-
	40-59	1.7 (1.6, 1.9)	1.7 (1.5, 1.8)	1.3 (1.2, 1.5)	2010-2011 to 2018-2019	-1.1 (-4.0, 1.8)	-	-
	60-79	4.0 (3.8, 4.2)	3.0 (2.8, 3.1)	2.4 (2.2, 2.5)	2010-2011 to 2018-2019	-5.8 (-7.2, -4.4)	-	-
	80+	10.5 (9.8, 11.2)	7.5 (7.0, 8.0)	5.7 (5.3, 6.1)	2010-2011 to 2012-2013	-13.0 (-23.6, -1.0)	2012-2013 to 2018-2019	-5.0 (-7.1, -2.8)
Hyperglycemia	20-39	3.7 (2.9, 4.4)	5.6 (4.7, 6.5)	6.5 (5.5, 7.5)	2010-2011 to 2018-2019	8.0 (2.7, 13.6)	-	-
	40-59	1.6 (1.4, 1.7)	2.0 (1.8, 2.2)	3.0 (2.8, 3.2)	2010-2011 to 2018-2019	8.0 (6.0, 10.0)	-	-
	60-79	0.9 (0.8, 0.9)	1.0 (0.9, 1.1)	1.5 (1.4, 1.6)	2010-2011 to 2018-2019	7.0 (5.0, 9.1)	-	-
	80+	1.2 (1.0, 1.5)	1.7 (1.5, 2.0)	2.4 (2.1, 2.6)	2010-2011 to 2018-2019	6.8 (4.2, 9.4)	-	-

*Trends not reported because event counts were <5 in some years.

Supplementary Table 6 – Percentage of admissions in public and private hospitals in Queensland and Victoria by financial year.

Queensland						
	Sector	Financial year			Aggregate	p for trend
		2010-2011	2014-2015	2018-2019		
Myocardial infarction	Public	84.9	86.3	86.3	86.1	0.381
	Private	15.1	13.7	13.7	13.9	
Stroke	Public	80.8	83.7	87.0	84.7	<0.001
	Private	19.2	16.3	13.0	15.3	
Heart failure	Public	73.7	76.7	76.6	75.8	0.016
	Private	26.3	23.3	23.4	24.2	
Lower extremity amputation	Public	74.1	79.2	78.9	75.8	<0.001
	Private	25.9	20.8	21.1	24.2	
Hypoglycemia	Public	87.9	90.7	89.0	89.4	0.017
	Private	12.1	9.3	11.0	10.6	
Hyperglycemia	Public	92.7	94.3	94.8	94.7	0.113
	Private	7.3	5.7	5.2	5.3	
Victoria						
	Sector	Financial year			Aggregate	p for trend
		2010-2011	2013-2014	2016-2017		
Myocardial infarction	Public	89.4	84.6	86.6	86.1	0.085
	Private	10.6	15.4	13.4	13.9	
Stroke	Public	92.2	92.2	91.8	92.1	0.983
	Private	7.8	7.8	8.2	7.9	
Heart failure	Public	84.2	81.6	82.1	82.5	0.032
	Private	15.8	18.4	17.9	17.5	
Lower extremity amputation	Public	76.3	77.4	76.5	78.1	0.999
	Private	23.7	22.6	23.5	21.9	
Hypoglycemia	Public	95.1	94.5	94.5	94.7	0.842
	Private	4.9	5.5	5.5	5.3	
Hyperglycemia	Public	97.5	96.7	97.0	97.0	0.207
	Private	2.5	3.3	3.0	3.0	

p-values from logistic regression

Supplementary Table 7 – Crude incidence of hospitalization for major diabetes-related complications among people with type 1 diabetes and type 2 diabetes (combined), and average annual percent changes from 2010-2011 to 2018-2019 in Queensland and from 2010-2011 to 2016-2017 in Victoria, by age*, stratified by analyses including vs. excluding private hospital data.

	Age	Private hospital data	Financial year			Average annual percent change (95% CI)
			2010-2011	2014-2015	2018-2019	
Queensland						
Myocardial infarction	40-59	Private included	7.0 (6.3, 7.8)	6.2 (5.6, 6.8)	6.1 (5.5, 6.8)	-0.7 (-2.5, 1.1)
		Private excluded	6.2 (5.5, 6.9)	5.8 (5.2, 6.4)	5.6 (5.0, 6.2)	-0.5 (-2.4, 1.4)
	60-79	Private included	12.7 (11.9, 13.5)	10.7 (10.0, 11.3)	10.1 (9.5, 10.7)	-2.5 (-3.4, -1.5)
		Private excluded	10.9 (10.1, 11.6)	9.3 (8.7, 9.9)	8.5 (8.0, 9.1)	-2.6 (-3.8, -1.4)
	80+	Private included	25.2 (22.9, 27.6)	21.5 (19.7, 23.5)	17.9 (16.4, 19.5)	-4.8 (-6.0, -3.6)
		Private excluded	20.2 (18.2, 22.4)	17.0 (15.4, 18.8)	15.3 (13.9, 16.8)	-4.2 (-5.6, -2.8)
	Overall	Private included	11.3 (10.8, 11.9)	9.9 (9.5, 10.4)	9.4 (9.0, 9.8)	-2.1 (-3.0, -1.3)
		Private excluded	9.6 (9.1, 10.1)	8.6 (8.1, 9.0)	8.1 (7.7, 8.5)	-2.0 (-3.1, -1.0)
Stroke	60-79	Private included	6.0 (5.5, 6.6)	5.9 (5.4, 6.4)	6.6 (6.1, 7.1)	1.9 (0.3, 3.6)
		Private excluded	5.0 (4.6, 5.6)	5.0 (4.5, 5.4)	5.8 (5.3, 6.3)	2.6 (0.9, 4.4)
	80+	Private included	17.6 (15.8, 19.7)	15.9 (14.4, 17.6)	15.2 (13.8, 16.7)	-1.0 (-2.4, 0.5)
		Private excluded	12.1 (10.6, 13.8)	12.7 (11.3, 14.2)	12.4 (11.1, 13.8)	1.4 (-0.2, 3.0)
	Overall	Private included	5.8 (5.4, 6.1)	5.5 (5.2, 5.9)	6.3 (6.0, 6.6)	2.0 (0.3, 3.7)
		Private excluded	4.6 (4.3, 4.9)	4.6 (4.3, 4.9)	5.5 (5.2, 5.8)	3.2 (1.6, 4.8)
Heart failure	40-59	Private included	3.6 (3.1, 4.2)	4.2 (3.7, 4.8)	4.5 (4.0, 5.1)	3.1 (0.8, 5.4)
		Private excluded	3.2 (2.7, 3.7)	3.9 (3.5, 4.5)	4.2 (3.7, 4.7)	3.6 (1.0, 6.2)
	60-79	Private included	16.2 (15.4, 17.2)	16.1 (15.3, 16.9)	15.7 (15.0, 16.5)	0.4 (-0.5, 1.4)
		Private excluded	12.7 (11.9, 13.5)	12.9 (12.2, 13.7)	12.5 (11.9, 13.2)	0.4 (-0.7, 1.5)
	80+	Private included	53.0 (49.6, 56.5)	53.3 (50.4, 56.3)	51.7 (49.1, 54.5)	0.1 (-0.6, 0.8)
		Private excluded	33.8 (31.2, 36.7)	36.4 (34.0, 39.0)	36.0 (33.9, 38.3)	1.2 (0.2, 2.1)
	Overall	Private included	15.1 (14.5, 15.7)	15.8 (15.2, 16.4)	16.4 (15.8, 16.9)	1.6 (0.8, 2.4)
		Private excluded	11.1 (10.6, 11.6)	12.1 (11.6, 12.6)	12.5 (12.1, 13.0)	2.0 (1.0, 3.0)
Lower extremity amputation	40-59	Private included	3.0 (2.6, 3.6)	4.5 (4.0, 5.1)	4.9 (4.4, 5.6)	6.2 (3.5, 9.0)
		Private excluded	2.6 (2.2, 3.1)	4.1 (3.6, 4.7)	4.5 (4.0, 5.1)	7.4 (4.2, 10.7)
	60-79	Private included	4.4 (4.0, 4.9)	4.3 (3.9, 4.7)	5.6 (5.2, 6.1)	2.9 (0.3, 5.5)

		Private excluded	3.2 (2.9, 3.7)	3.4 (3.0, 3.8)	4.2 (3.9, 4.6)	3.4 (-0.7, 7.6)
	80+	Private included	5.4 (4.4, 6.6)	5.2 (4.4, 6.2)	5.9 (5.1, 6.9)	3.3 (0.2, 6.4)
		Private excluded	3.1 (2.4, 4.1)	3.0 (2.4, 3.8)	3.9 (3.2, 4.7)	6.3 (1.8, 11.0)
	Overall	Private included	3.8 (3.5, 4.1)	4.3 (4.0, 4.6)	5.2 (4.9, 5.5)	4.8 (2.9, 6.7)
		Private excluded	2.8 (2.6, 3.1)	3.4 (3.2, 3.7)	4.1 (3.8, 4.4)	6.0 (3.7, 8.4)
Hypoglycemia	40-59	Private included	4.7 (4.1, 5.3)	4.5 (4.0, 5.1)	3.7 (3.2, 4.2)	-1.4 (-4.4, 1.7)
		Private excluded	4.4 (3.8, 5.0)	4.3 (3.8, 4.9)	3.5 (3.0, 4.0)	-1.3 (-4.3, 1.9)
	60-79	Private included	5.6 (5.1, 6.1)	4.3 (3.9, 4.8)	4.0 (3.6, 4.3)	-4.0 (-6.7, -1.3)
		Private excluded	5.0 (4.5, 5.5)	4.0 (3.6, 4.4)	3.4 (3.1, 3.7)	-4.2 (-6.5, -1.8)
	80+	Private included	12.1 (10.6, 13.9)	10.9 (9.7, 12.4)	8.0 (7.0, 9.1)	-4.2 (-5.7, -2.7)
		Private excluded	8.8 (7.5, 10.4)	9.1 (7.9, 10.4)	6.7 (5.8, 7.7)	-2.6 (-4.9, -0.2)
	Overall	Private included	6.8 (6.4, 7.2)	6.0 (5.7, 6.4)	5.1 (4.8, 5.4)	-2.8 (-4.5, -1.1)
		Private excluded	6.0 (5.6, 6.4)	5.5 (5.1, 5.8)	4.5 (4.3, 4.8)	-2.5 (-4.4, -0.6)
Hyperglycemia	0-19	Private included	148.3 (133.4, 164.9)	181.2 (165.3, 198.6)	145.9 (131.9, 161.5)	-0.9 (-4.7, 3.0)
		Private excluded	137.9 (123.6, 153.9)	175.2 (159.6, 192.4)	137.7 (124.1, 152.9)	-0.8 (-4.6, 3.1)
	20-39	Private included	31.7 (28.5, 35.3)	36.2 (32.9, 39.9)	51.2 (47.3, 55.3)	7.0 (5.3, 8.7)
		Private excluded	30.4 (27.3, 33.9)	34.9 (31.6, 38.4)	49.7 (45.9, 53.8)	7.1 (5.4, 8.9)
	40-59	Private included	3.7 (3.2, 4.3)	5.2 (4.6, 5.8)	7.3 (6.7, 8.0)	8.4 (6.5, 10.2)
		Private excluded	3.3 (2.8, 3.9)	4.9 (4.3, 5.5)	7.0 (6.4, 7.7)	8.8 (6.8, 10.9)
	60-79	Private included	1.2 (0.9, 1.4)	1.4 (1.2, 1.7)	2.4 (2.1, 2.7)	9.3 (5.3, 13.4)
		Private excluded	1.0 (0.8, 1.3)	1.2 (1.0, 1.4)	2.2 (1.9, 2.5)	9.8 (5.6, 14.2)
	Overall	Private included	6.3 (5.9, 6.7)	7.0 (6.7, 7.4)	8.4 (8.0, 8.8)	3.5 (2.7, 4.4)
Private excluded		5.9 (5.5, 6.3)	6.6 (6.3, 7.0)	8.0 (7.6, 8.4)	3.7 (2.8, 4.5)	
Victoria						
	Age	Private hospital data	Financial year			Average annual percent change (95% CI)
			2010-2011	2013-2014	2016-2017	
Myocardial infarction	40-59	Private included	6.1 (5.5, 6.8)	5.1 (4.6, 5.7)	5.1 (4.6, 5.6)	-2.2 (-4.2, -0.1)
		Private excluded	5.5 (4.9, 6.1)	4.6 (4.1, 5.1)	4.7 (4.2, 5.2)	-1.5 (-3.9, 0.9)
	60-79	Private included	11.9 (11.3, 12.6)	9.2 (8.7, 9.8)	9.4 (8.9, 9.9)	-4.0 (-6.7, -1.2)
		Private excluded	10.7 (10.1, 11.3)	7.7 (7.3, 8.2)	8.1 (7.7, 8.6)	-5.0 (-8.3, -1.5)
	80+	Private included	26.1 (24.3, 28.0)	18.7 (17.3, 20.1)	17.4 (16.2, 18.7)	-6.3 (-9.3, -3.1)

	Overall	Private excluded	23.2 (21.5, 25.0)	15.3 (14.1, 16.6)	14.7 (13.6, 15.8)	-7.2 (-11.1, -3.1)
		Private included	11.3 (10.8, 11.7)	8.8 (8.5, 9.2)	8.9 (8.6, 9.3)	-3.9 (-6.3, -1.4)
		Private excluded	10.1 (9.7, 10.5)	7.5 (7.1, 7.8)	7.7 (7.4, 8.1)	-4.6 (-7.2, -2.0)
Stroke	60-79	Private included	6.5 (6.0, 7.0)	6.1 (5.6, 6.5)	6.4 (6.0, 6.8)	0.0 (-2.6, 2.7)
		Private excluded	6.0 (5.6, 6.5)	5.7 (5.3, 6.1)	5.9 (5.5, 6.3)	0.0 (-2.3, 2.3)
	80+	Private included	15.6 (14.2, 17.1)	14.4 (13.2, 15.7)	16.7 (15.5, 17.9)	-0.3 (-3.6, 3.2)
		Private excluded	14.0 (12.7, 15.4)	12.9 (11.8, 14.1)	15.0 (13.9, 16.2)	-0.4 (-4.0, 3.4)
	Overall	Private included	6.1 (5.7, 6.4)	5.7 (5.4, 6.0)	6.5 (6.2, 6.8)	0.9 (-1.5, 3.3)
		Private excluded	5.6 (5.3, 5.9)	5.3 (5.0, 5.6)	6.0 (5.7, 6.3)	0.8 (-2.6, 4.3)
Heart failure	40-59	Private included	3.5 (3.1, 4.0)	2.9 (2.5, 3.3)	3.1 (2.8, 3.6)	0.5 (-4.4, 5.7)
		Private excluded	3.1 (2.7, 3.6)	2.7 (2.3, 3.1)	2.9 (2.6, 3.3)	1.4 (-4.5, 7.6)
	60-79	Private included	18.0 (17.2, 18.8)	15.6 (14.9, 16.3)	15.6 (15.0, 16.3)	-1.4 (-4.4, 1.6)
		Private excluded	15.4 (14.7, 16.1)	13.1 (12.5, 13.7)	13.2 (12.6, 13.7)	-1.5 (-4.9, 2.1)
	80+	Private included	57.4 (54.7, 60.2)	53.1 (50.8, 55.5)	55.4 (53.2, 57.6)	-0.6 (-2.4, 1.2)
		Private excluded	46.5 (44.1, 49.1)	41.8 (39.7, 43.9)	44.2 (42.3, 46.2)	-1.2 (-2.9, 0.5)
	Overall	Private included	17.8 (17.2, 18.3)	16.3 (15.8, 16.8)	17.3 (16.8, 17.8)	-0.3 (-1.3, 0.7)
		Private excluded	14.9 (14.4, 15.4)	13.3 (12.9, 13.8)	14.3 (13.8, 14.7)	-0.6 (-2.6, 1.5)
Lower extremity amputation	40-59	Private included	2.8 (2.4, 3.2)	2.7 (2.4, 3.1)	3.1 (2.7, 3.5)	1.2 (-1.3, 3.8)
		Private excluded	2.3 (1.9, 2.7)	2.4 (2.1, 2.8)	2.7 (2.4, 3.1)	1.7 (-0.7, 4.2)
	60-79	Private included	4.0 (3.7, 4.4)	3.7 (3.4, 4.1)	4.0 (3.7, 4.3)	-0.1 (-2.5, 2.4)
		Private excluded	3.1 (2.8, 3.5)	2.9 (2.7, 3.2)	3.2 (2.9, 3.5)	0.5 (-2.5, 3.5)
	80+	Private included	5.2 (4.5, 6.1)	4.9 (4.3, 5.7)	4.2 (3.6, 4.8)	-3.9 (-7.0, -0.8)
		Private excluded	3.4 (2.8, 4.2)	3.1 (2.6, 3.7)	2.5 (2.0, 3.0)	-6.7 (-11.6, -1.5)
	Overall	Private included	3.6 (3.3, 3.9)	3.4 (3.2, 3.7)	3.6 (3.4, 3.8)	-0.3 (-2.0, 1.4)
		Private excluded	2.7 (2.5, 3.0)	2.7 (2.5, 2.9)	2.8 (2.6, 3.0)	-0.3 (-2.5, 2.0)
Hypoglycemia	60-79	Private included	4.3 (3.9, 4.7)	3.1 (2.8, 3.4)	3.3 (3.0, 3.6)	-5.1 (-10.8, 1.1)
		Private excluded	4.0 (3.7, 4.4)	2.9 (2.6, 3.2)	3.1 (2.8, 3.4)	-4.9 (-11.4, 2.1)
	80+	Private included	11.4 (10.2, 12.7)	7.4 (6.6, 8.4)	6.3 (5.6, 7.1)	-8.3 (-12.7, -3.7)
		Private excluded	10.3 (9.2, 11.6)	6.5 (5.8, 7.4)	5.6 (4.9, 6.3)	-8.8 (-13.3, -4.2)
	Overall	Private included	6.1 (5.8, 6.5)	4.2 (4.0, 4.5)	4.3 (4.1, 4.6)	-5.9 (-8.7, -2.9)
		Private excluded	5.8 (5.5, 6.2)	4.0 (3.8, 4.2)	4.1 (3.9, 4.3)	-5.9 (-8.5, -3.2)

Hyperglycemia	20-39	Private included	32.2 (29.2, 35.3)	36.9 (33.9, 40.1)	32.9 (30.2, 35.8)	0.6 (-3.6, 5.0)
		Private excluded	31.4 (28.5, 34.6)	35.8 (32.9, 39.0)	32.2 (29.6, 35.1)	0.7 (-3.7, 5.3)
	40-59	Private included	3.3 (2.9, 3.8)	3.3 (2.9, 3.7)	4.9 (4.4, 5.4)	6.8 (4.4, 9.3)
		Private excluded	3.2 (2.8, 3.7)	3.1 (2.8, 3.6)	4.8 (4.3, 5.3)	6.8 (4.4, 9.3)
	Overall	Private included	5.0 (4.7, 5.3)	5.1 (4.8, 5.3)	5.1 (4.9, 5.4)	0.3 (-2.0, 2.6)
		Private excluded	4.8 (4.5, 5.1)	4.9 (4.6, 5.2)	5.0 (4.7, 5.2)	0.2 (-2.2, 2.6)

*Certain age groups are not reported for some complications because of insufficient event numbers in private hospitals.

Supplementary Figure 1 – Crude incidence of hospitalization for major diabetes-related complications among people with type 1 diabetes and type 2 diabetes from 2010-2011 to 2018-2019. Trends significantly different from zero at $p < 0.05$ are displayed as dashed lines and labelled with the annual percent change (95% CI).

A. Type 1 diabetes

B. Type 2 diabetes

- Myocardial infarction ▲ Heart failure ◆ Hypoglycaemia
- Stroke ▼ Lower extremity amputation ● Hyperglycaemia