

Supplemental Material

Figure S1: Study Sample Selection Process

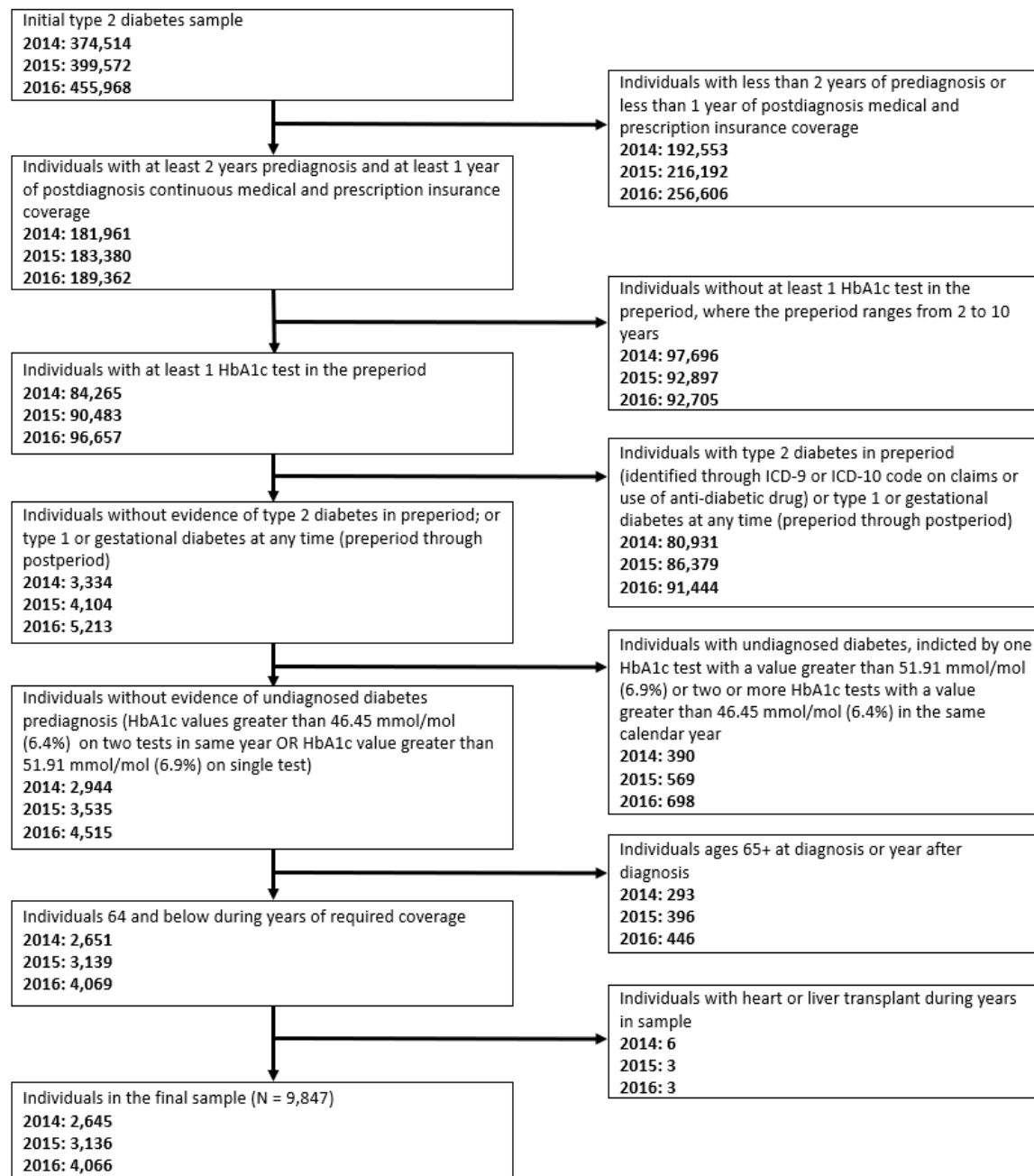


Figure S2: Demonstration of Study Periods by Diagnosis Year

													Diagnosis Year	
-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2		
2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018		

The bolded column at period 0 indicates the year of diabetes diagnosis for an individual. The dark grey boxes indicate years of required coverage for an individual to be included in the sample. Individuals may have up to 10 prediagnosis years and up to two postdiagnosis years, depending on if they have maintained continuous insurance coverage during that time.

Figure S3: Average Medical Spending By Category By Years Before and After Type 2 Diabetes Diagnosis

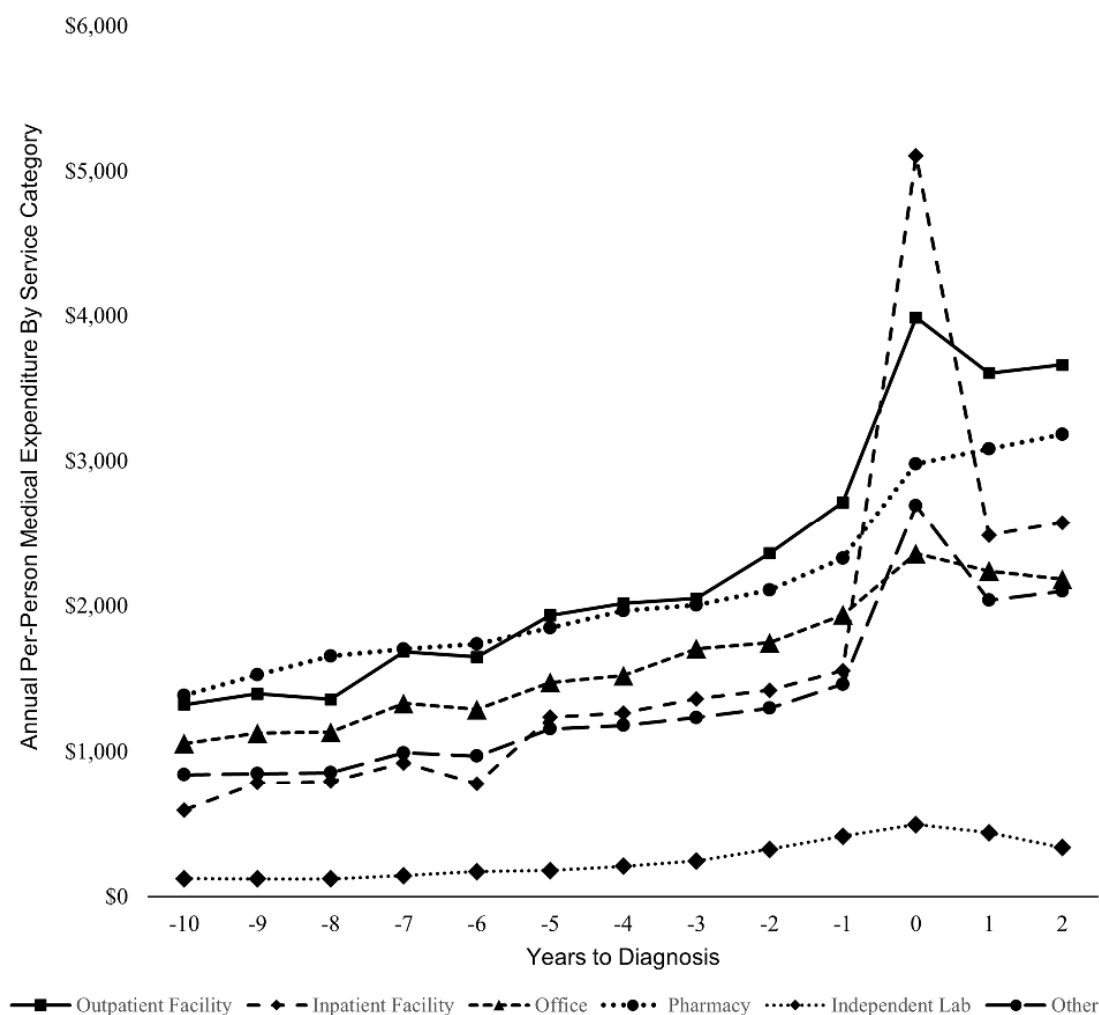


Table S1: Diagnosis Codes for Condition Identification

Condition	ICD-9 Diagnosis/Procedure Code*			ICD-10 Diagnosis/Procedure Code*			DRG*
Type 2 Diabetes	250.00	250.32	250.70	E11.00	E11.622	E13.36	
	250.02	250.40	250.72	E11.01	E11.628	E13.39	
	250.10	250.42	250.80	E11.21	E11.630	E13.40	
	250.12	250.50	250.82	E11.22	E11.638	E13.41	
	250.20	250.52	250.90	E11.29	E11.641	E13.42	
	250.22	250.60	250.92	E11.311	E11.649	E13.44	
	250.30	250.62		E11.321	E11.65	E13.49	
				E11.331	E11.69	E13.51	
				E11.341	E11.8	E13.52	
				E11.351	E11.9	E13.59	
				E11.36	E13.00	E13.610	
				E11.39	E13.01	E13.618	
				E11.40	E13.10	E13.620	
				E11.41	E13.11	E13.621	
				E11.42	E13.21	E13.622	
				E11.43	E13.22	E13.628	
				E11.44	E13.29	E13.630	
				E11.49	E13.321	E13.638	
				E11.51	E13.329	E13.641	
				E11.52	E13.331	E13.649	
			E11.59	E13.339	E13.65		
			E11.610	E13.341	E13.69		
			E11.618	E13.349	E13.8		
			E11.620	E13.351	E13.9		
			E11.621	E13.359			
Type 1 Diabetes	250.01	250.33	250.71	E10.10	E10.39	E10.621	
	250.03	250.41	250.73	E10.11	E10.40	E10.622	
	250.11	250.43	250.81	E10.21	E10.43	E10.628	
	250.13	250.51	250.83	E10.22	E10.44	E10.630	
	250.21	250.53	250.91	E10.29	E10.49	E10.638	
	250.23	250.61	250.93	E10.311	E10.51	E10.641	
	250.31	250.63		E10.321	E10.52	E10.649	
				E10.331	E10.59	E10.65	
				E10.341	E10.610	E10.69	
				E10.351	E10.618	E10.8	
			E10.36	E10.620	E10.9		
Gestational Diabetes During Pregnancy †	648.8			O24.41			
Diabetes Mellitus Secondary	249.00	249.31	249.70	E08.00	E09.00	E13.00	
	249.01	249.40	249.71	E08.01	E09.01	E13.01	
	249.10	249.41	249.80	E08.10	E09.10	E13.10	
	249.11	249.50	249.81	E08.11	E09.11	E13.11	
	249.20	249.51	249.90	E08.21	E09.21	E13.21	
	249.21	249.60	249.91	E08.22	E09.22	E1322	
	249.30	249.61		E08.29	E09.29	E13.29	
				E08.311	E09.311	E13.311	
				E08.319	E09.319	E13.319	
				E08.321	E09.321	E13.321	
				E08.329	E09.329	E13.329	
				E08.331	E09.331	E13.331	
				E08.339	E09.339	E13.339	
				E08.341	E09.341	E13.341	
				E08.349	E09.349	E13.349	

Condition	ICD-9 Diagnosis/Procedure Code*	ICD-10 Diagnosis/Procedure Code*	DRG*
		E08.351 E09.351 E13.351 E08.359 E09.359 E13.359 E08.36 E09.36 E13.36 E08.39 E09.39 E13.39 E08.40 E09.40 E13.40 E08.41 E09.41 E13.41 E08.42 E09.42 E13.42 E08.43 E09.43 E13.43 E08.44 E09.44 E13.44 E08.49 E0949 E13.49 E08.51 E09.51 E13.51 E08.52 E09.52 E13.52 E08.59 E09.59 E13.59 E08.610 E09.610 E13.610 E08.618 E09.618 E13.618 E08.620 E09.620 E13.620 E08.621 E09.621 E13.621 E08.622 E09.622 E13.622 E08.628 E09.628 E13.628 E08.630 E09.630 E13.630 E08.638 E09.638 E13.638 E08.641 E09.641 E13.641 E08.649 E09.649 E13.649 E08.65 E09.65 E13.65 E08.69 E09.69 E13.69 E08.8 E09.8 E13.8 E08.9 E09.9 E13.9	
Malignant Cancer †	140-165 170-208 209.0 209.1 209.2 209.3 209.7 230-239	C00 – C79 C7A C7B C80-C96 D03 D37-D49 Q85	
HIV/AIDs	042	B20	
Childbirth †, ‡	V27.0 648.51 663.31 V27.2 648.52 663.41 V27.5 648.61 663.51 V30 648.62 663.61 V30.0 648.71 663.81 V30.00 648.72 663.91 V30.01 648.81 664.01 V30.1 648.82 664.11 V30.2 648.91 664.21 V31 648.92 664.31 V31.0 649.01 664.41 V31.00 649.02 664.51 V31.01 649.11 664.61 V31.1 649.12 664.81 V31.2 649.21 664.91 V32 649.22 665.01 V32.0 649.31 665.11 V32.00 649.32 665.22	O10.02 O698.9 O99.214 O10.12 O70.0 O99.284 O10.22 O70.0 O99.314 O10.32 O70.1 O99.324 O10.42 O70.1 O99.334 O10.92 O70.2 O99.344 O11.4 O70.20 O99.354 O12.04 O70.21 O99.42 O12.14 O70.22 O99.52 O12.24 O70.23 O99.62 O13.4 O70.3 O99.72 O14.04 O70.3 O99.814 O14.14 O70.4 O99.824 O14.24 O70.4 O99.834 O14.94 O70.5 O99.844 O16.4 O70.9 O9A.12 O24.02 O74.0 O9A.22 O24.12 O74.1 O9A.32	

Condition	ICD-9 Diagnosis/Procedure Code*			ICD-10 Diagnosis/Procedure Code*			DRG*
	V32.01	649.41	665.31	O24.32	O74.2	O9A.42	
	V32.1	649.42	665.41	O24.420	O74.3	O9A.52	
	V32.2	649.51	665.51	O24.424	O74.4	Z37.0	
	V34	649.71	665.61	O24.425	O74.5	Z37.2	
	V34.0	650	665.71	O24.429	O74.6	Z37.3	
	V34.00	651.01	665.81	O24.82	O74.7	Z37.50	
	V34.1	651.11	665.91	O24.92	O74.8	Z37.51	
	V34.2	651.21	666.02	O25.2	O74.9	Z37.52	
	V35	651.31	666.12	O26.62	O75.0	Z37.53	
	V35.0	651.41	666.22	O26.72	O75.1	Z37.54	
	V35.00	651.51	666.32	O42.02	O75.5	Z37.59	
	V35.01	651.61	667.02	O42.12	O75.81	Z37.60	
	V35.1	651.71	667.12	O42.92	O75.82	Z37.61	
	V35.2	651.81	668.01	O60.22	O75.89	Z37.62	
	V36	651.91	668.02	O60.23	O75.9	Z37.63	
	V36.0	652.01	668.11	O63.2	O76	Z37.64	
	V36.00	652.11	668.12	O66.5	O77.0	Z37.69	
	V36.01	652.21	668.21	O67.0	O77.1	Z37.9	
	V36.1	652.31	668.22	O67.8	O77.8	Z38.00	
	V36.2	652.41	668.81	O67.9	O77.9	Z38.01	
	V37	652.51	668.82	O68	O80	Z38.1	
	V37.0	652.61	668.91	O69.0	O82	Z38.2	
	V37.00	652.71	668.92	O69.1	O88.02	Z38.30	
	V37.01	652.81	669.01	O69.2	O88.12	Z38.31	
	V37.1	652.91	669.02	O69.2	O88.22	Z38.4	
	V37.2	653.01	669.11	O69.3	O88.32	Z38.5	
	V39	653.11	669.12	O69.4	O88.82	Z38.61	
	V39.0	653.21	669.21	O69.5	O98.02	Z38.62	
	V39.00	653.31	669.22	O69.81	O98.12	Z38.63	
	V39.01	653.41	669.32	O69.82	O98.22	Z38.64	
	V39.1	653.51	669.41	O69.82	O98.42	Z38.65	
	V39.2	653.61	669.42	O69.89	O98.52	Z38.66	
	V27.3	653.71	669.51	O69.89	O98.62	Z38.68	
	V27.6	653.81	669.61	O69.89	O98.72	Z38.69	
	V33	653.91	669.71	O69.89	O98.82	Z38.7	
	V33.0	654.01	669.81	O69.89	O98.92	Z38.8	
	V33.00	654.02	669.82	O69.9	O99.12		
	V33.1	654.11	669.91				
	V33.2	654.12	669.92				
	641.01	654.21	670.02				
	641.11	654.31	670.12				
	641.21	654.32	670.22				
	641.31	654.51	670.32				
	641.81	654.52	670.82				
	641.91	654.61	671.01				
	642.01	654.62	671.02				
	642.02	654.71	671.11				
	642.11	654.72	671.12				
	642.12	654.81	671.21				
	642.21	654.82	671.22				
	642.22	654.91	671.31				
	642.31	654.92	671.42				
	642.32	655.01	671.51				
	642.41	655.11	671.52				
	642.42	655.21	671.81				

Condition	ICD-9 Diagnosis/Procedure Code*			ICD-10 Diagnosis/Procedure Code*	DRG*
	642.51	655.31	671.82		
	642.52	655.41	671.91		
	642.61	655.51	671.92		
	642.62	655.61	672.02		
	642.71	655.71	673.01		
	642.72	655.81	673.02		
	642.91	655.91	673.11		
	642.92	656.01	673.12		
	643.01	656.11	673.21		
	643.11	656.21	673.31		
	643.21	656.31	673.32		
	643.81	656.51	673.81		
	643.91	656.61	673.82		
	644.21	656.71	674.01		
	645.11	656.81	674.02		
	645.21	656.91	674.12		
	646.01	657.01	674.22		
	646.11	658.01	674.32		
	646.12	658.11	674.42		
	646.21	658.21	674.51		
	646.22	658.31	674.52		
	646.31	658.41	674.82		
	646.41	658.81	674.92		
	646.42	658.91	675.01		
	646.51	659.01	675.02		
	646.52	659.11	675.11		
	646.61	659.21	675.12		
	646.62	659.31	675.21		
	646.71	659.41	675.22		
	646.81	659.51	675.81		
	646.82	659.61	675.82		
	646.91	659.71	675.91		
	647.01	659.81	675.92		
	647.02	659.91	676.01		
	647.11	660.01	676.02		
	647.12	660.11	676.11		
	647.31	660.21	676.12		
	647.32	660.31	676.21		
	647.41	660.41	676.22		
	647.42	660.51	676.31		
	647.51	660.61	676.32		
	647.52	660.71	676.41		
	647.61	660.81	676.42		
	647.62	660.91	676.51		
	647.81	661.01	676.52		
	647.82	661.11	676.61		
	647.91	661.21	676.62		
	647.92	661.31	676.81		
	648.01	661.41	676.82		
	648.02	661.91	676.91		
	648.11	662.01	676.92		
	648.12	662.11	678.01		
	648.21	662.21	678.11		
	648.22	662.31	679.01		
	648.31	663.01	679.02		

Condition	ICD-9 Diagnosis/Procedure Code*			ICD-10 Diagnosis/Procedure Code*			DRG*
	648.32	663.11	679.11				
	648.41	663.21	679.12				
	648.42						
Hypertension	401.1	403.9	404.9	I67.4			
	401.9	403.90	404.90	I11.9			
	402.00	403.91	404.91	I15.0			
	402.01	404.0	404.92	I15.1			
	402.10	404.00	404.93	I15.2			
	402.11	404.01	401.0	I15.8			
	402.90	404.02	405.01	I15.9			
	402.91	404.03	405.09	I16.0			
	403.0	404.1	405.11	I16.1			
	403.00	404.10	405.19	I16.9			
	403.01	404.11	405.91	I10			
	403.1	404.12	405.99				
	403.10	404.13	437.2				
	403.11						
Hyperlipidemia	272.0			E78.0			
	272.1			E78.00			
	272.2			E78.01			
	272.3			E78.1			
	272.4			E78.2			
				E78.3			
			E78.4				
			E78.41				
			E78.49				
			E78.5				
Chronic Obstructive Pulmonary Disease	492.8	491.22	491.9	J41.0	J43.1	J44.1	
	496	490	492.0	J41.1	J43.2	J44.9	
	491.2	491.0	494	J41.8	J43.8	J47.0	
	491.20	491.1	494.0	J42	J43.9	J47.1	
	491.21	491.8	494.1	J43.0	J44.0	J47.9	
Dementia	290.0	290.9	310.2	F01.50	F05	G30.8	
	290.10	293.0	310.8	F01.51	F07.81	G30.9	
	290.11	293.1	310.81	F02.80	F07.89	G31.01	
	290.12	294.0	310.89	F02.81	F48.2	G31.09	
	290.13	294.1	310.9	F03.90	G30.0	G31.1	
	290.20	294.10	331.0	F03.91	G30.1	G31.83	
	290.21	294.11	331.1	F04			
	290.3	294.20	331.11				
	290.40	294.21	331.19				
	290.41	294.8	331.2				
	290.42	294.9	331.82				
	290.43	310.0	797				
	290.8						
Paralysis	342.0	343.1	344.30	G04.1	G82.20	G83.22	
	342.00	343.2	344.31	G81.00	G82.21	G83.23	
	342.01	343.3	344.32	G81.01	G82.22	G83.24	
	342.02	343.4	344.4	G81.02	G82.50	G83.30	
	342.1	343.8	344.40	G81.03	G82.51	G83.31	
	342.10	343.9	344.41	G81.04	G82.52	G83.32	
	342.11	344.0	344.42	G81.10	G82.53	G83.33	
	342.12	344.00	344.5	G81.11	G82.54	G83.34	
	342.80	344.01	344.60	G81.12	G83.0	G83.4	

Condition	ICD-9 Diagnosis/Procedure Code*			ICD-10 Diagnosis/Procedure Code*			DRG*
	342.81	344.02	344.8	G81.13	G83.10	G83.5	
	342.82	344.03	344.81	G81.14	G83.11	G83.81	
	342.9	344.04	344.89	G81.90	G83.12	G83.82	
	342.90	344.09	344.9	G81.91	G83.13	G83.83	
	342.91	344.1	780.72	G81.92	G83.14	G83.84	
	342.92	344.2	781.4	G81.93	G83.20	G83.89	
	343.0	344.3		G81.94	G83.21	G83.9	
	571.5	790.4	704.4	K72.01	B16.2	B18.9	
	571.6	790.5	704.9	K72.11	B16.9	B19.0	
	570	794.8	705	K72.91	B17.0	B19.10	
	571.8	V42.7	705.1	K70.40	B17.10	B19.11	
	571.9	700	705.2	K70.41	B17.11	B19.20	
	572.0	701	705.3	K72.00	B17.2	B19.21	
	572.1	702	705.4	K72.10	B17.8	B19.9	
	572.2	702.0	705.9	K72.90	B17.9	B25.1	
	572.3	702.1	706	B00.81	B18.0	B26.81	
	572.4	702.2	707.0	B15.0	B18.1	B58.1	
	572.8	702.3	707.1	B15.9	B18.2	K70.10	
	573.0	703	709	B16.0	B18.8	K70.11	
	573.4	703.0	727.1	B16.1			
	573.5	703.1	573.1				
	573.8	703.2	573.2				
	573.9	703.3	573.3				
	782.4	704	571.40				
	789.1	704.1	571.41				
	789.5	704.2	571.42				
	789.59	704.3	571.49				
	533.10	531.40	533.20	K25.0	K26.6	K28.4	
	533.11	531.41	533.21	K25.2	K27.0	K28.6	
	533.30	531.60	533.40	K25.4	K27.2	K62.5	
	533.31	531.61	533.41	K25.6	K27.4	K92.0	
	533.50	532.00	533.60	K26.0	K27.6	K92.1	
	533.51	532.01	533.61	K26.2	K28.0	K92.2	
	533.70	532.20	534.00	K26.4	K28.2		
	533.71	532.21	534.01				
	533.90	532.40	534.20				
	533.91	532.41	534.21				
	V12.71	532.60	534.40				
	531.00	532.61	534.41				
	531.01	533.00	534.60				
	531.20	533.01	534.61				
	531.21						
	714.0			M05.20	M05.442	M05.879	
	714.1			M05.211	M05.449	M05.89	
	714.2			M05.212	M05.451	M05.9	
	714.30			M05.219	M05.452	M06.00	
	714.31			M05.221	M05.459	M06.011	
	714.32			M05.222	M05.461	M06.012	
	714.33			M05.229	M05.462	M06.019	
	714.4			M05.231	M05.469	M06.021	
	714.81			M05.232	M05.471	M06.022	
	714.89			M05.239	M05.472	M06.029	
	714.9			M05.241	M05.479	M06.031	
	720.0			M05.242	M05.49	M06.032	

Condition	ICD-9 Diagnosis/Procedure Code*	ICD-10 Diagnosis/Procedure Code*	DRG*		
		M05.249	M05.00	M06.039	
		M05.251	M05.011	M06.041	
		M05.252	M05.012	M06.042	
		M05.259	M05.019	M06.049	
		M05.261	M05.021	M06.051	
		M05.262	M05.022	M06.052	
		M05.269	M05.029	M06.059	
		M05.271	M05.031	M06.061	
		M05.272	M05.032	M06.062	
		M05.279	M05.039	M06.069	
		M05.29	M05.041	M06.071	
		M05.30	M05.042	M06.072	
		M05.311	M05.049	M06.079	
		M05.312	M05.051	M06.08	
		M05.319	M05.052	M06.09	
		M05.321	M05.059	M06.1	
		M05.322	M05.061	M06.20	
		M05.329	M05.062	M06.211	
		M05.331	M05.069	M06.212	
		M05.332	M05.071	M06.219	
		M05.339	M05.072	M06.221	
		M05.341	M05.079	M06.222	
		M05.342	M05.09	M06.229	
		M05.349	M05.60	M06.231	
		M05.351	M05.611	M06.232	
		M05.352	M05.612	M06.239	
		M05.359	M05.619	M06.241	
		M05.361	M05.621	M06.242	
		M05.362	M05.622	M06.249	
		M05.369	M05.629	M06.251	
		M05.371	M05.631	M06.252	
		M05.372	M05.632	M06.259	
		M05.379	M05.639	M06.261	
		M05.39	M05.641	M06.262	
		M05.50	M05.642	M06.269	
		M05.511	M05.649	M06.271	
		M05.512	M05.651	M06.272	
		M05.519	M05.652	M06.279	
		M05.521	M05.659	M06.28	
		M05.522	M05.661	M06.29	
		M05.529	M05.662	M06.30	
		M05.531	M05.669	M06.311	
		M05.532	M05.671	M06.312	
		M05.539	M05.672	M06.319	
		M05.541	M05.679	M06.321	
		M05.542	M05.69	M06.322	
		M05.549	M05.70	M06.329	
		M05.551	M05.711	M06.331	
		M05.552	M05.712	M06.332	
		M05.559	M05.719	M06.339	
		M05.561	M05.721	M06.341	
		M05.562	M05.722	M06.342	
		M05.569	M05.729	M06.349	
		M05.571	M05.731	M06.351	
		M05.572	M05.732	M06.352	

Condition	ICD-9 Diagnosis/Procedure Code*	ICD-10 Diagnosis/Procedure Code*	DRG*
		M05.579 M05.739 M06.359 M05.59 M05.741 M06.361 M05.10 M05.742 M06.362 M05.111 M05.749 M06.369 M05.112 M05.751 M06.371 M05.119 M05.752 M06.372 M05.121 M05.759 M06.379 M05.122 M05.761 M06.38 M05.129 M05.762 M06.39 M05.131 M05.769 M06.4 M05.132 M05.771 M06.80 M05.139 M05.772 M06.811 M05.141 M05.779 M06.812 M05.142 M05.79 M06.819 M05.149 M05.80 M06.821 M05.151 M05.811 M06.822 M05.152 M05.812 M06.829 M05.159 M05.819 M06.831 M05.161 M05.821 M06.832 M05.162 M05.822 M06.839 M05.169 M05.829 M06.841 M05.171 M05.831 M06.842 M05.172 M05.832 M06.849 M05.179 M05.839 M06.851 M05.19 M05.841 M06.852 M05.40 M05.842 M06.859 M05.411 M05.849 M06.861 M05.412 M05.851 M06.862 M05.419 M05.852 M06.869 M05.421 M05.859 M06.871 M05.422 M05.861 M06.872 M05.429 M05.862 M06.879 M05.431 M05.869 M06.88 M05.432 M05.871 M06.89 M05.439 M05.872 M06.9 M05.441	
Heart Transplant §	37.51 37.66	02YA0Z0 02YA0Z1 02YA0Z2 02HA0QZ 02HA3QZ 02HA4QZ	001 002
Liver Transplant §	505.9 505.1 469.7	0FY00Z0 0FY00Z1 0FY00Z2 0DY80Z0 0DY80Z1 0DY80Z2 0DYE0Z0 0DYE0Z1 0DYE0Z2	005 006
Morbid Obesity	278.01 278.03 V85.4	E66.01 E66.2 Z68.41	

Condition	ICD-9 Diagnosis/Procedure Code*	ICD-10 Diagnosis/Procedure Code*	DRG*
	V854.1 V854.2 V854.3 V854.4 V854.5	Z68.42 Z68.43 Z68.44 Z68.45	
Obesity	278.0 278.00 V85.30 V85.31 V85.32 V85.33 V85.34 V85.35 V85.36 V85.37 V85.38 V85.39	E66.09 E66.8 E66.9 Z68.30 Z68.31 Z68.32 Z68.33 Z68.34 Z68.35 Z68.36 Z68.37 Z68.38 Z68.39	

*ICD-9, International Classification of Diseases, Ninth Revision. ICD-10, International Classification of Diseases, Tenth Revision. DRG, Diagnosis-related group. † Includes all subcodes. ‡ Childbirth code list adapted from Sarayani et al, 2020 [1]. § ICD-9 and ICD 10 procedure codes were used to identify heart and liver transplants. All other ICD-9 and 10 codes used were diagnosis codes.

Table S2: Number of Individual by Years to Diagnosis

Variable	N (Total Medical Expenditures)	N (Has at Least 1 HbA1c Result)
Number of Individuals in Year		
-10	1,697	53
-9	2,423	72
-8	3,195	172
-7	3,909	282
-6	4,735	530
-5	5,658	831
-4	6,751	1,324
-3	8,140	2,428
-2	9,847	4,251
-1	9,847	6,049
0	9,847	7,262
1	9,847	6,589
2	7,630	4,690

Table S3: Annual Medical Expenditures (2020 USD) and Average HbA1c Values Before and After the Diagnosis of Type 2 Diabetes Estimated from the Panel Linear Regression with Fixed Effects Among Individuals with Obesity

Variable	Total Medical Expenditure, 2020 USD (n = 50,986)			Average HbA1c, mmol/mol (n = 21,001)		
	Coefficient	Std. Error	p-value	Coefficient	Std. Error	p-value
Time						
-10	-\$9,090	\$850	<.0001	-11.83	1.37	<.0001
-9	-\$8,525	\$738	<.0001	-8.10	1.23	<.0001
-8	-\$8,798	\$667	<.0001	-9.11	0.81	<.0001
-7	-\$7,761	\$616	<.0001	-8.45	0.62	<.0001
-6	-\$8,358	\$575	<.0001	-7.33	0.48	<.0001
-5	-\$7,244	\$538	<.0001	-6.94	0.37	<.0001
-4	-\$7,217	\$505	<.0001	-6.45	0.30	<.0001
-3	-\$7,045	\$476	<.0001	-6.09	0.24	<.0001
-2	-\$6,516	\$448	<.0001	-5.31	0.19	<.0001
-1	-\$6,358	\$445	<.0001	-3.65	0.17	<.0001
0	(Ref)	-	-	(Ref)	-	-
1	-\$2,860	\$442	<.0001	-1.89	0.16	<.0001
2	-\$2,515	\$476	<.0001	-1.43	0.18	<.0001
High cost						
Cancer	\$9,110	\$440	<.0001	-0.17	0.21	0.4331
HIV/AIDS	\$1,864	\$5,286	0.7244	-1.00	2.46	0.6835
Childbirth	\$15,849	\$1,486	<.0001	-3.15	0.85	0.0002
Comorbidities						
Hypertension	\$5,869	\$347	<.0001	0.31	0.20	0.1091
Hyperlipidemia	\$446	\$310	0.1503	0.05	0.17	0.7548
Chronic obstructive pulmonary disease	\$8,112	\$649	<.0001	-0.11	0.34	0.7524
Dementia	\$26,510	\$2,257	<.0001	-1.08	1.10	0.3260
Paralysis	\$57,648	\$2,676	<.0001	-0.87	1.28	0.4986
Liver disease	\$4,474	\$418	<.0001	-0.20	0.20	0.3295
Ulcers	\$17,181	\$1,154	<.0001	-0.34	0.47	0.4630
Rheumatoid disease	\$12,078	\$1,162	<.0001	-0.59	0.54	0.2820
Unadjusted Mean Outcome During Index Year	\$18,662			47.6 mmol/mol		

Coefficients in the total medical expenditure regression are in 2020 dollars. Coefficients in average HbA1c regression are in mmol/mol. The HbA1c sample includes person-years where an individual has at least one HbA1c test value during the year and is a subsample of the total medical expenditure sample. Obesity subgroup includes individuals with any claims-based evidence of obesity during the study period.

Table S4: Annual Medical Expenditures (2020 USD) and Average HbA1c Values Before and After the Diagnosis of Type 2 Diabetes Estimated from the Panel Linear Regression with Fixed Effects Among Individuals Without Obesity

Variable	Total Medical Expenditure, 2020 USD (n = 32,540)			Average HbA1c, mmol/mol (n = 13,532)		
	Coefficient	Std. Error	p-value	Coefficient	Std. Error	p-value
Time						
-10	-\$7,919	\$1,107	<.0001	-13.45	2.30	<.0001
-9	-\$8,490	\$953	<.0001	-6.58	1.64	<.0001
-8	-\$7,903	\$845	<.0001	-7.10	1.12	<.0001
-7	-\$7,687	\$779	<.0001	-6.43	0.79	<.0001
-6	-\$7,478	\$720	<.0001	-6.70	0.54	<.0001
-5	-\$6,694	\$677	<.0001	-6.09	0.45	<.0001
-4	-\$6,770	\$638	<.0001	-5.61	0.36	<.0001
-3	-\$6,139	\$597	<.0001	-5.14	0.28	<.0001
-2	-\$6,241	\$560	<.0001	-4.24	0.22	<.0001
-1	-\$4,896	\$557	<.0001	-3.26	0.19	<.0001
0	(Ref)	-	-	(Ref)	-	-
1	-\$3,631	\$551	<.0001	-2.17	0.18	<.0001
2	-\$2,417	\$604	<.0001	-1.93	0.21	<.0001
High cost						
Cancer	\$9,213	\$559	<.0001	-0.15	0.25	0.5410
HIV/AIDS	\$9,029	\$4,485	0.0441	-0.28	2.04	0.8909
Childbirth	\$15,674	\$1,804	<.0001	-2.23	0.95	0.0190
Comorbidities						
Hypertension	\$6,381	\$456	<.0001	-0.14	0.22	0.5270
Hyperlipidemia	\$829	\$397	0.0367	-0.36	0.20	0.0750
Chronic obstructive pulmonary disease	\$3,974	\$945	<.0001	-0.38	0.45	0.4008
Dementia	\$47,212	\$3,043	<.0001	-1.45	1.28	0.2593
Paralysis	\$48,052	\$4,390	<.0001	0.64	1.89	0.7352
Liver disease	\$3,533	\$562	<.0001	0.03	0.25	0.8964
Ulcers	\$7,940	\$1,612	<.0001	-0.43	0.61	0.4882
Rheumatoid disease	\$9,295	\$1,569	<.0001	-0.74	0.67	0.2694
Unadjusted Mean Outcome During Index Year	\$15,999			46.2 mmol/mol		

Coefficients in the total medical expenditure regression are in 2020 dollars. Coefficients in average HbA1c regression are in mmol/mol. The HbA1c sample includes person-years where an individual has at least one HbA1c test value during the year and is a subsample of the total medical expenditure sample. Obesity subgroup includes individuals without any claims-based evidence of obesity during the study period.

Table S5: Annual Medical Expenditures (2020 USD) and Average HbA1c Values Before and After the Diagnosis of Type 2 Diabetes Estimated from the Panel Linear Regression with Fixed Effects Among Individuals With 10 Years of Preperiod Coverage

Variable	Total Medical Expenditure, 2020 USD (n = 21,732)			Average HbA1c, mmol/mol (n = 6,319)		
	Coefficient	Std. Error	p-value	Coefficient	Std. Error	p-value
Time						
-10	-\$9,912	\$819	<.0001	-12.58	1.25	<.0001
-9	-\$9,373	\$813	<.0001	-8.07	1.17	<.0001
-8	-\$9,760	\$806	<.0001	-8.93	0.86	<.0001
-7	-\$9,367	\$801	<.0001	-7.16	0.77	<.0001
-6	-\$9,329	\$796	<.0001	-7.35	0.64	<.0001
-5	-\$8,168	\$794	<.0001	-7.54	0.58	<.0001
-4	-\$8,400	\$792	<.0001	-6.89	0.51	<.0001
-3	-\$8,086	\$790	<.0001	-5.83	0.42	<.0001
-2	-\$7,503	\$788	<.0001	-5.08	0.38	<.0001
-1	-\$6,645	\$784	<.0001	-3.74	0.34	<.0001
0	(Ref)	-	-	(Ref)	-	-
1	-\$4,178	\$781	<.0001	-2.76	0.31	<.0001
2	-\$1,519	\$831	0.0674	-2.36	0.34	<.0001
High cost						
Cancer	\$9,075	\$599	<.0001	0.01	0.38	0.9892
HIV/AIDS	\$8,755	\$8,267	0.2896	0.43	7.14	0.9516
Childbirth	\$13,148	\$2,360	<.0001	-4.05	2.07	0.0504
Comorbidities						
Hypertension	\$5,004	\$486	<.0001	0.56	0.35	0.1129
Hyperlipidemia	\$413	\$437	0.3442	-0.56	0.32	0.0806
Chronic obstructive pulmonary disease	\$4,642	\$962	<.0001	0.10	0.67	0.8769
Dementia	\$30,915	\$3,466	<.0001	-1.19	1.95	0.5436
Paralysis	\$58,491	\$4,512	<.0001	-2.11	2.60	0.4163
Liver disease	\$3,621	\$602	<.0001	-0.60	0.39	0.1213
Ulcers	\$9,260	\$1,912	<.0001	0.22	0.89	0.8075
Rheumatoid disease	\$11,757	\$1,688	<.0001	-1.10	0.97	0.2584
Unadjusted Mean Outcome During Index Year	\$19,144			47.7 mmol/mol		

Coefficients in the total medical expenditure regression are in 2020 dollars. Coefficients in average HbA1c regression are in mmol/mol. The HbA1c sample includes person-years where an individual has at least one HbA1c test value during the year and is a subsample of the total medical expenditure sample. Sample includes individuals with 10 years of continuous insurance coverage during the prediagnosis period.

Table S6: Annual Medical Expenditures (2020 USD) and Average HbA1c Values Before and After the Diagnosis of Type 2 Diabetes Estimated from the Panel Linear Regression with Fixed Effects Including those Individuals with HbA1c > 6.4% Before the Index Year

Variable	Total Medical Expenditure, 2020 USD (n = 95,504)			Average HbA1c, mmol/mol (n = 39,863)		
	Coefficient	Std. Error	p-value	Coefficient	Std. Error	p-value
Time						
-10	-\$8,671	\$664	<.0001	-12.49	1.30	<.0001
-9	-\$8,353	\$573	<.0001	-8.39	1.09	<.0001
-8	-\$8,387	\$513	<.0001	-9.08	0.71	<.0001
-7	-\$7,512	\$474	<.0001	-8.10	0.53	<.0001
-6	-\$7,867	\$440	<.0001	-7.62	0.39	<.0001
-5	-\$6,895	\$413	<.0001	-7.01	0.31	<.0001
-4	-\$7,080	\$388	<.0001	-6.39	0.25	<.0001
-3	-\$6,843	\$364	<.0001	-5.93	0.19	<.0001
-2	-\$6,504	\$342	<.0001	-5.02	0.15	<.0001
-1	-\$6,047	\$340	<.0001	-2.61	0.13	<.0001
0	(Ref)	-	-	(Ref)	-	-
1	-\$3,022	\$337	<.0001	-2.13	0.13	<.0001
2	-\$2,538	\$365	<.0001	-1.78	0.14	<.0001
High cost						
Cancer	\$9,473	\$346	<.0001	-0.14	0.17	0.4307
HIV/AIDS	\$6,323	\$3,241	0.0510	-1.32	1.63	0.4168
Childbirth	\$15,814	\$1,177	<.0001	-2.78	0.70	<.0001
Comorbidities						
Hypertension	\$6,427	\$272	<.0001	0.04	0.16	0.8013
Hyperlipidemia	\$1,122	\$242	<.0001	-0.30	0.14	0.0303
Chronic obstructive pulmonary disease	\$6,855	\$533	<.0001	-0.01	0.29	0.9793
Dementia	\$32,170	\$1,834	<.0001	-1.62	0.92	0.0779
Paralysis	\$65,253	\$2,262	<.0001	-1.95	1.10	0.0766
Liver disease	\$4,166	\$336	<.0001	-0.14	0.17	0.4283
Ulcers	\$13,047	\$937	<.0001	-0.40	0.40	0.3177
Rheumatoid disease	\$11,288	\$948	<.0001	-0.77	0.46	0.0972
Unadjusted Mean Outcome During Index Year	\$17,467			49.0 mmol/mol		

Coefficients in the total medical expenditure regression are in 2020 dollars. Coefficients in average HbA1c regression are in mmol/mol. The HbA1c sample includes person-years where an individual has at least one HbA1c test value during the year and is a subsample of the total medical expenditure sample. Sample includes individuals with 10 years of continuous insurance coverage during the prediagnosis period.

References:

1. Sarayani A, Wang X, Thai TN, Albogami Y, Jeon N, Winterstein AG. Impact of the Transition from ICD-9-CM to ICD-10-CM on the Identification of Pregnancy Episodes in US Health Insurance Claims Data. *Clin Epidemiol*. 2020 Oct 15;12:1129-1138. doi: 10.2147/CLEP.S269400. PMID: 33116906; PMCID: PMC7571578.