

Supplementary material

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Appendix Table 1. The representativeness of HQMS

	All class 3 hospitals	Hospitals in HQMS
Hospitals, n	2340	1037
Average number of beds	1008.5	1014.6
Class		
3A, n (%)	1360 (58.1%)	647 (62.4 %)
3B, n (%)	445 (19.0 %)	176 (17.0 %)
Others, n (%)	535 (22.9 %)	214 (20.6 %)

Others: class 3C or unclassified class 3 hospitals.

Appendix Table 2. ICD-10 Codes used to define different diseases

Disease	ICD-10 Codes
T1DM	E10
T2DM	E11
Diabetic nephropathy	E10.2, E11.2, E12.2, E13.2, E14.2
Diabetic retinopathy	E10.3+H36.0*, E11.3+H36.0*, E12.3+H36.0*, E13.3+H36.0*, E14.3+H36.0*
Diabetic neuropathy	E10.4, E11.4, E12.4, E13.4, E14.4
Diabetic peripheral vascular disease	E10.5, E11.5, E12.5, E13.5, E14.5
Diabetic foot	China edition: E10.503+I79.2*, E10.504, E11.502, E11.601; Beijing edition: E10.521+I79.2*, E10.69*, E10.73, E11.521+I79.2*, E11.69*, E11.73*, E14.521+I79.2*, E14.69*, E14.73*; Clinic edition: E10.500x021+I79.2*, E10.500x04*, E10.500x05*, E10.503, E10.504, E10.505, E10.700x031, E10.700x032, E11.500x021+I79.2*, E11.500x04*, E11.500x05*, E11.503, E11.504, E11.505, E11.700x031, E11.700x032, E14.500x021+I79.2*, E14.500x04*, E14.500x05*, E14.700x031, E14.700x032
AMI [†]	I21
Stroke [†]	I61, I62, I63, I64
Kidney transplantation	Z94.0; ICD-9-CM procedure codes: 55.69*
Dialysis	Code of Hemodialysis and peritoneal dialysis
Hemodialysis	ICD-9-CM procedure codes: 39.2700*, 38.95*, 39.9500
Peritoneal dialysis	ICD-9-CM procedure codes: 54.93*, 54.98*
Heart failure	I50

*represents any possible number.

[†] Patients with the code as primary diagnosis were regarded as AMI or stroke

ICD, International Classification of Diseases; AMI, acute myocardial infarction.

Appendix Table 3. Temporal trends in inpatient demographics from 2013 to 2017

Demographic Characteristics	2013	2014	2015	2016	2017	P value
T1DM						
Total, n	12,786	20,740	19,815	20,422	18,650	
Male, n (%)	6,646 (52.0%)	10,986 (53.0%)	10,535 (53.2%)	10,772 (52.8%)	9,907 (53.1%)	0.244
Age, mean (\pm SD)	40.38 (19.2)	44.07 (20.3)	42.83 (20.3)	42.55 (20.5)	42.40 (20.5)	<0.0001
Age, median (IQR)	39 (25-55)	44 (27-60)	43 (26-59)	43 (26-59)	43 (26-59)	<0.0001
Rural, n (%)	2,444 (29.1%)	4,611 (34.5%)	4,078 (31.6%)	4,349 (32.6%)	3,794 (30.1%)	<0.0001
T2DM						
Total, n	897,086	1,257,244	1,298,079	1,363,837	1,277,792	
Male, n (%)	489,346 (54.6%)	673,765 (53.6%)	696,900 (53.7%)	737,717 (54.1%)	695,195 (54.4%)	<0.0001
Age, mean (\pm SD)	62.75 (12.7)	62.31 (12.5)	62.23 (12.5)	62.16 (12.43)	62.01 (12.4)	<0.0001
Age, median (IQR)	63 (54-72)	63 (54-72)	63 (54-71)	63 (54-71)	63 (54-71)	<0.0001
Rural, n (%)	119,783 (18.3%)	221,498 (23.3%)	223,152 (22.8%)	251,160 (24.4%)	240,332 (24.7%)	<0.0001

T1DM=type 1 diabetes mellitus. T2DM=type 2 diabetes mellitus. SD=standard deviation, IQR=inter-quartile range.

Appendix Table 4. Overall proportion of microvascular and macrovascular complications of inpatients with T1DM and T2DM from 2013 to 2017

Complications	T1DM(n=92,413)	T2DM(n=6,094,038)
Microvascular complications	34.1%	23.8%
Diabetic retinopathy	12.1%	8.5%
Diabetic nephropathy	12.1%	9.7%
Diabetic neuropathy	23.2%	15.3%
Diabetic foot	1.3%	1.4%
Macrovascular complications	18.2%	31.8%
Diabetic peripheral vascular disease	9.8%	7.4%
AMI	0.5%	2.9%
Stroke	3.8%	11.5%
Heart failure	5.7%	14.5%

T1DM=type 1 diabetes mellitus. T2DM=type 2 diabetes mellitus. AMI=acute myocardial infarction.

Appendix Table 5. The trends in the proportion of microvascular and macrovascular complications of inpatients with T1DM and T2DM from 2013 to 2017

Complications	2013	2014	2015	2016	2017	P value
T1DM						
Microvascular complications	29.9%	30.6%	30.2%	29.5%	31.6%	0.0175
Diabetic retinopathy	11.6%	10.4%	10.0%	10.0%	11.5%	0.5284
Diabetic nephropathy	10.1%	11.2%	11.1%	10.7%	11.1%	0.1813
Diabetic neuropathy	18.1%	19.9%	20.3%	20.5%	22.0%	<0.0001
Diabetic foot	1.0%	1.1%	1.0%	1.2%	1.0%	0.9417
Macrovascular complications	10.2%	16.6%	17.3%	17.3%	17.5%	<0.0001
Diabetic peripheral vascular disease	5.3%	8.1%	8.7%	8.7%	9.4%	<0.0001
AMI	0.2%	0.4%	0.4%	0.4%	0.5%	0.0002
Stroke	1.9%	3.3%	3.4%	3.5%	3.4%	<0.0001
Heart failure	3.3%	5.9%	6.0%	5.8%	5.2%	<0.0001
T2DM						
Microvascular complications	19.0%	20.3%	20.3%	20.4%	21.0%	<.0001
Diabetic retinopathy	6.4%	6.9%	6.9%	7.0%	7.4%	<0.0001
Diabetic nephropathy	8.4%	8.7%	8.4%	8.3%	8.2%	<0.0001
Diabetic neuropathy	11.1%	12.4%	12.6%	12.9%	13.6%	<0.0001
Diabetic foot	0.9%	1.0%	1.0%	1.2%	1.2%	<0.0001
Macrovascular complications	24.7%	25.8%	26.8%	28.1%	29.1%	<0.0001
Diabetic peripheral vascular disease	4.8%	5.3%	5.7%	6.2%	6.9%	<0.0001
AMI	1.8%	1.9%	2.1%	2.2%	2.3%	<0.0001
Stroke	8.1%	8.8%	8.9%	9.2%	9.5%	<0.0001
Heart failure	12.0%	12.2%	12.7%	13.3%	13.5%	<0.0001

T1DM=type 1 diabetes mellitus. T2DM=type 2 diabetes mellitus. AMI=acute myocardial infarction.

Appendix Table 6. The analysis of the trends in microvascular and macrovascular complications by logistic regression models

		Unadjusted		Adjusted		
		Odds Ratio(95%CI)	P value	Odds Ratio (95%CI)	P value	
T1DM	Microvascular complications	1.01 (1.00,1.02)	0.018	1.02 (1.01,1.03)	0.001	
	Diabetic nephropathy	1.01 (1.00,1.02)	0.182	1.00 (0.99,1.02)	0.544	
	Diabetic retinopathy	1.00 (0.99,1.02)	0.529	1.2 (1.01,1.04)	0.006	
	Diabetic neuropathy	1.05 (1.04,1.06)	<0.001	1.05 (1.04,1.06)	<0.001	
	Diabetic foot	1.11 (1.09,1.12)	<0.001	1.13 (1.11,1.16)	<0.001	
	Macrovascular complications	1.10 (1.08,1.11)	<0.001	1.11 (1.09,1.13)	<0.001	
	Diabetic peripheral vascular disease	1.00 (0.96,1.04)	0.942	1.01 (0.96,1.06)	0.622	
	AMI	1.14 (1.06,1.22)	<0.001	1.10 (1.02,1.19)	0.016	
	Stroke	1.09 (1.06,1.11)	<0.001	1.09 (1.06,1.12)	<0.001	
	Heart failure	1.05 (1.03,1.07)	<0.001	1.03 (1.00,1.05)	0.026	
	T2DM	Microvascular complications	1.02 (1.02,1.02)	<0.001	1.03 (1.03,1.03)	<0.001
		Diabetic nephropathy	0.99 (0.99,0.99)	<0.001	0.99 (0.99,1.00)	<0.001
		Diabetic retinopathy	1.03 (1.03,1.03)	<0.001	1.04 (1.04,1.04)	<0.001
Diabetic neuropathy		1.05 (1.05,1.05)	<0.001	1.05 (1.05,1.06)	<0.001	
Diabetic foot		1.10 (1.10,1.10)	<0.001	1.10 (1.10,1.11)	<0.001	
Macrovascular complications		1.06 (1.06,1.06)	<0.001	1.05 (1.05,1.05)	<0.001	
Diabetic peripheral vascular disease		1.08 (1.07,1.08)	<0.001	1.08 (1.07,1.09)	<0.001	
AMI		1.07 (1.07,1.07)	<0.001	1.06 (1.05,1.06)	<0.001	
Stroke		1.04 (1.04,1.04)	<0.001	1.03 (1.03,1.03)	<0.001	
Heart failure		1.04 (1.04,1.04)	<0.001	1.03 (1.03,1.03)	<0.001	

“Year” enters the model as a continuous variable.

T1DM=type 1 diabetes mellitus. T2DM=type 2 diabetes mellitus. AMI=acute myocardial infarction.

Appendix Table 7. The comparison of the proportion of AMI and stroke in inpatients with or without diabetes from 2013 to 2017

	2013	2014	2015	2016	2017	Total
T1DM						
Fatal AMI, n (%)	2 (0.01%)	12 (0.05%)	11 (0.04%)	22 (0.07%)	18 (0.06%)	65 (0.07%)
Non-fatal AMI, n (%)	30 (0.20%)	85 (0.33%)	94 (0.35%)	103 (0.35%)	111 (0.40%)	413 (0.45%)
AMI, n (%)	32 (0.21%)	97 (0.38%)	105 (0.39%)	125 (0.42%)	129 (0.47%)	478 (0.52%)
Fatal stroke, n (%)	16 (0.11%)	45 (0.18%)	42 (0.16%)	32 (0.11%)	31 (0.11%)	166 (0.18%)
Non-fatal stroke, n (%)	269 (1.79%)	791 (3.10%)	872 (3.22%)	990 (3.36%)	911 (3.28%)	3,376 (3.65%)
stroke, n (%)	285 (1.90%)	836 (3.27%)	914 (3.38%)	1,022 (3.47%)	942 (3.40%)	3,542 (3.83%)
T2DM						
Fatal AMI, n (%)	1,084 (0.10%)	1,783 (0.11%)	2,098 (0.11%)	2,496 (0.12%)	2,292 (0.11%)	9,753 (0.16%)
Non-fatal AMI, n (%)	18,752 (1.72%)	29,574 (1.76%)	37,040 (1.94%)	44,029 (2.08%)	44,905 (2.20%)	168,927 (2.77%)
AMI, n (%)	19,836 (1.82%)	31,357 (1.86%)	39,138 (2.05%)	46,525 (2.20%)	47,197 (2.31%)	178,680 (2.93%)
Fatal stroke, n (%)	1,494 (0.14%)	2,533 (0.15%)	2,829 (0.15%)	3,185 (0.15%)	2,847 (0.14%)	12,887 (0.21%)
Non-fatal stroke, n (%)	86,688 (7.96%)	145,288 (8.62%)	167,803 (8.78%)	191,401 (9.04%)	190,324 (9.33%)	687,369 (11.28%)
stroke, n (%)	88,182 (8.09%)	147,821 (8.77%)	170,632 (8.92%)	194,586 (9.19%)	193,171 (9.46%)	700,256 (11.49%)
Non-DM						
Fatal AMI, n (%)	2,867 (0.03%)	4,566 (0.03%)	5,198 (0.03%)	5,566 (0.03%)	4,888 (0.03%)	23,085 (0.03%)
Non-fatal AMI, n (%)	56,144 (0.53%)	91,462 (0.57%)	112,582 (0.64%)	129,712 (0.65%)	129,572 (0.68%)	510,986 (0.73%)
AMI, n (%)	59,011 (0.56%)	96,028 (0.60%)	117,780 (0.66%)	135,278 (0.68%)	134,460 (0.71%)	534,071 (0.76%)
Fatal stroke, n (%)	8,061 (0.08%)	11,622 (0.07%)	12,319 (0.07%)	12,579 (0.06%)	10,500 (0.06%)	55,071 (0.08%)
Non-fatal stroke, n (%)	346,556 (3.28%)	570,210 (3.55%)	636,242 (3.59%)	714,979 (3.61%)	707,669 (3.73%)	2,760,256 (3.93%)
stroke, n (%)	354,617 (3.36%)	581,832 (3.62%)	648,561 (3.66%)	727,558 (3.67%)	718,169 (3.79%)	2,815,327 (4.00%)

T1DM=type 1 diabetes mellitus. T2DM=type 2 diabetes mellitus. AMI=acute myocardial infarction.