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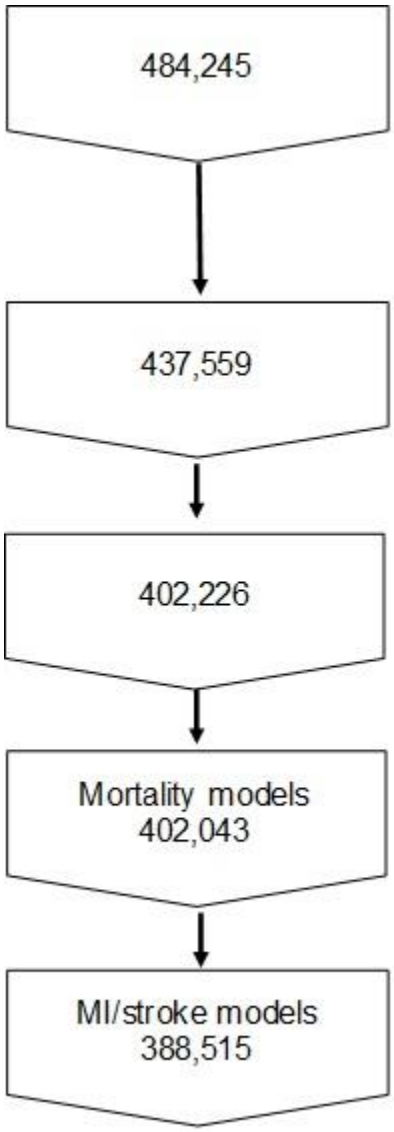
Appendix A: Sample Selection

Figure A1: Sample Selection

Patients meeting the following criteria:

a) VA-Medicare eligible patients ≥65 years old
b) Two outpatient visits or one inpatient visit with an ICD-9 code for diabetes (362.0X, 357.2, 250.X, 366.41), or prescription for a diabetes medication (exclude metformin alone unless accompanied by ICD-9 diabetes codes)
c) ≥4 A1c tests in a 3-year baseline period between 2005-2015
d) A1c tests <365 days for interpolation of time in range



Exclude patients with missing diagnosis data

Exclude patients with missing data on other covariates (e.g. demographics and labs)

Include patients with all months of outcome period. Exclude patients from Station 358 (facility outside of the US)

Exclude patients with an MI/stroke during the baseline period

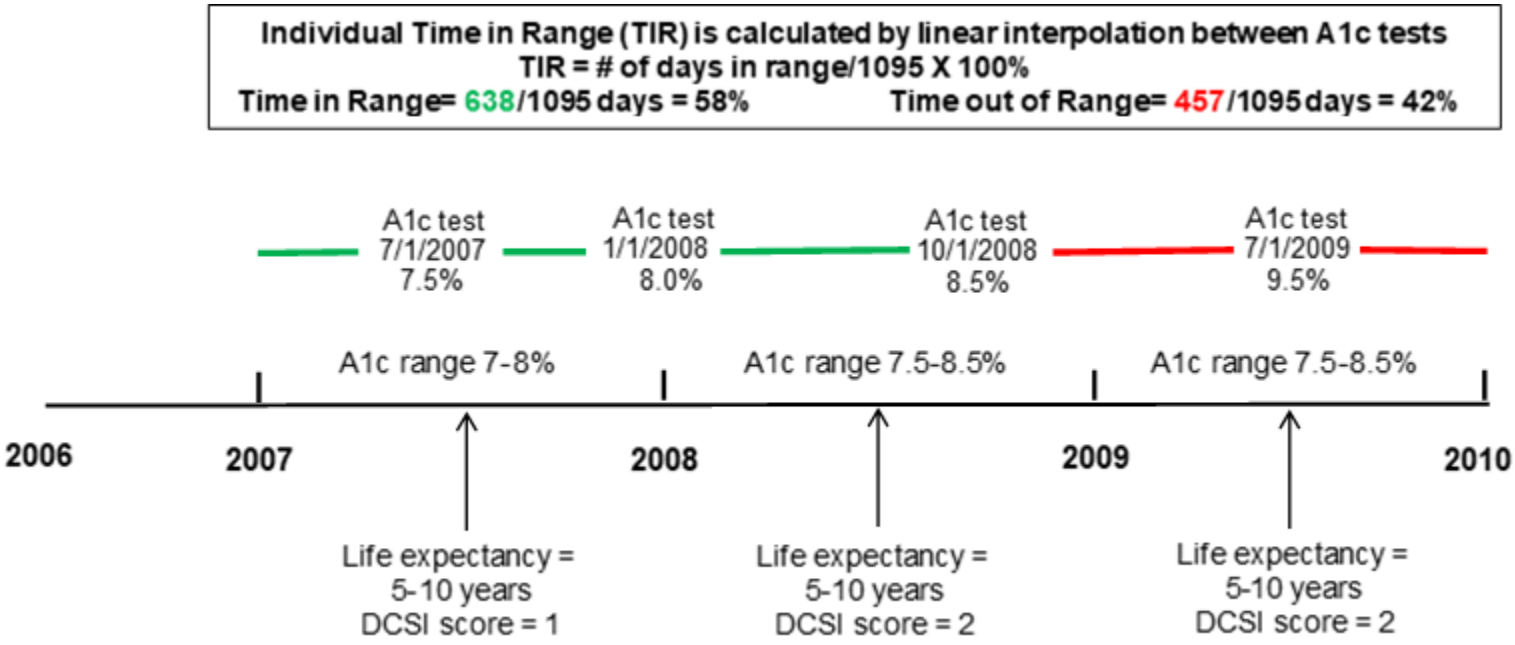
Appendix B: Operationalizing A1c time-in-range (A1c TIR)

Here we provide an individual who entered the study sample on 1/1/2007. Diagnosis codes, lab values and utilization data were collected for 2006. Assume this individual was predicted to live 5-10 years and had a DCSI score of 1.0. The corresponding individualized A1c target range is 7-8% (53 -64 mmol/mol). Between 1/1/2007 and 12/31/2007, this individual developed retinopathy complications that generate a DCSI score 2.0, but they are still predicted to live 5-10 years. Their individualized A1c target range is now 7.5-8.5% (58 -69 mmol/mol) at the beginning of year 2 of the baseline period. With no other significant changes in their health, their individualized A1c target range remains 7.5-8.5% (58 -69 mmol/mol) through year 3 of the baseline period.

A1c TIR was determined by calculating the number of days this individual was in these ranges after linear interpolation between their 4 A1c tests during the baseline period. This individual is found to be in range 638 out of 1095 days during baseline, resulting in a TIR 58% (i.e. 638/1095).

Patients with >365 days between the start of the baseline period and their first A1c test or between the last A1c test and the end of the baseline period were excluded because we found increasing inaccuracy with interpolation over longer periods of time.

Figure B1: A1c time-in-range (TIR) Calculation



Note: The units of A1c values can be converted from NGSP HbA1c (%) to IFCC HbA1c (mmol/mol) as follows: 6.0% as 42 mmol/mol, 7.0% as 53 mmol/mol, 8.0% as 64 mmol/mol, 8.5% as 69 mmol/mol; 9.0% as 75 mmol/mol; 9.5% as 80 mmol/mol. The range of A1c in the above figure can be converted between units: 6.0-7.0% (42-53 mmol/mol); 7.0-8.0% (53-64 mmol/mol); 7.5-8.5% (58-69 mmol/mol). Source: http://www.ngsp.org/convert1.asp

Appendix C: Relationship Between A1c TIR, A1c Mean and A1c SD

Mean A1c and SD for each A1c TIR during three-year baseline period

TIR category	Mean A1c level	A1c SD
0-<20% (n=195,949)	6.79	1.13
20-<40% (n=76,801)	7.26	0.86
40-<60% (n=51,609)	7.37	0.72
60-<80% (n=41,042)	7.18	0.68
80-100% (n=36,642)	6.85	0.61

Appendix D: Full Results from the Primary Analyses

Table D1: Cox Proportional Hazard Model Predicting Mortality (N= 402,043)[a,b]

Parameters	Hazard Ratio	P Value	95% Confidence Interval
Individual A1c TIR (reference =80-100%; n=36,642)			
60-<80% (n=41,042)	1.10	<.001	1.07 – 1.12
40-<60% (n=51,609)	1.11	<.001	1.09 – 1.14
20-<40% (n=76,801)	1.14	<.001	1.12 – 1.17
0-<20% (n=195,949)	1.22	<.001	1.20 – 1.25
A1c standard deviation during baseline	1.14	<.001	1.13 – 1.16
A1c average during baseline	1.04	<.001	1.03 – 1.05
Number of A1c tests during baseline	1.00	0.68	1.00-1.00
Sex (ref=Female)	0.77	<.001	0.74 – 0.81
Race/Ethnicity (ref=White)			
Black	0.78	<.001	0.77 – 0.80
Hispanic	0.91	<.001	0.88 – 0.95
Asian	0.86	<.001	0.80 – 0.93
Other	0.89	<.001	0.85 – 0.93
Age at Follow-up (ref=68-72)			
73-76	1.25	<.001	1.24 – 1.27
77-81	1.63	<.001	1.61 – 1.65
82-105	2.57	<.001	2.53 – 2.61
Service Connected Disability			
Yes (ref=No)	0.84	<.001	0.84 – 0.85
Copayment Required			
Yes (ref=No)	0.91	<.001	0.90 – 0.92
Marital Status (ref=Married)			
Divorced/Separated	1.15	<.001	1.13 – 1.16
Widowed	1.15	<.001	1.14 – 1.17
Other	1.19	<.001	1.16 – 1.21
Provider Type (ref=Physician)			
Physician Assistant/Nurse Practitioner	1.00	0.99	0.99 – 1.01
Other	0.98	0.14	0.95 – 1.01

Provider is Primary Care Physician (ref=No)	0.96	<.001	0.95 – 0.97
Number of Days Used to Calculated the Provider A1c TIR	1.00	0.08	1.00 – 1.00
Provider's % of Other Patients' A1c Tests >=9% [c]	1.00	<.001	1.00 – 1.00
Provider's % of Other Patients' LDL > 100 mg/dL [c]	1.00	0.13	1.00 – 1.00
Provider's % of Other Patients' Blood Pressure > 140/90 mm Hg [c]	1.00	0.37	1.00 – 1.00
Young Diabetes Severity Index (Highest Score during the Baseline Period) (ref=0)			
1-2	1.18	<.001	1.15 – 1.21
3-5	1.35	<.001	1.31 – 1.38
6-8	1.49	<.001	1.45 – 1.53
9+	1.62	<.001	1.57 – 1.68
Albumin/Creatinine Ratio (Urine) (ref: <30 mg/g)			
30-300	1.27	<.001	1.26 – 1.29
>300	1.62	<.001	1.58 – 1.67
Missing	1.29	<.001	1.27 – 1.31
LDL (ref: <100 mg/dL)			
100-159	1.04	<.001	1.03 – 1.05
>=160	1.20	<.001	1.14 – 1.27
Missing	1.08	0.02	1.01 – 1.15
HDL (ref: <40 mg/dL)			
40-60	0.95	<.001	0.95 – 0.96
>60	1.03	0.01	1.01 – 1.05
Missing	1.10	0.03	1.01 – 1.21
Creatinine (ref: <0.6 mg/dL)			
0.6-1.2	0.45	<.001	0.38 – 0.54
>1.2	0.49	<.001	0.41 – 0.58
Missing	0.45	<.001	0.37 – 0.54
Albumin (ref: <3.5 g/dL)			
>=3.5	0.66	<.001	0.65 – 0.67
Missing	0.63	<.001	0.62 – 0.64
BMI (ref: 18.5-24.9 kg/m^2) [d]			

<18.5	1.71	<.001	1.57 – 1.87
25-29.9	0.80	<.001	0.79 – 0.81
30-39.9	0.77	<.001	0.76 – 0.78
>=40	0.89	<.001	0.86 – 0.91
Missing	0.81	<.001	0.79 – 0.83
Triglycerides (ref: <200 mg/dL)			
>=200	1.01	0.16	1.00 – 1.02
Missing	1.14	0.02	1.02 – 1.28
Blood Pressure Systolic (ref: <140 mm Hg)			
140-179	1.04	<.001	1.03 – 1.05
>=180	1.29	<.001	1.13 – 1.47
Missing	1.30	0.10	0.95 – 1.77
Medications: (ref=No)			
Alpha-glucosidase Inhibitors	1.00	0.89	0.97 – 1.03
Biguanides	0.89	<.001	0.88 – 0.90
Insulin	1.15	<.001	1.14 – 1.17
Multidrug	0.94	<.001	0.91 – 0.98
Sulfonylureas	1.05	<.001	1.04 – 1.06
Thiazolidinediones	0.87	<.001	0.86 – 0.88
Medication Adherence: Any Diabetes Medications with Proportion of Days Covered >=80% (ref: <80%)	0.98	<.001	0.97 – 0.99
Congestive Heart Failure (ref=Not Observed)			
Observed in Year 3 of the Baseline Period	1.34	<.001	1.31 – 1.37
Observed in Year 2 and 3 of the Baseline Period	1.31	<.001	1.28 – 1.33
Observed in Year 1, 2, 3 of the Baseline Period	1.44	<.001	1.43 – 1.46
Pulmonary Hypertension (ref=Not Observed)			
Observed in Year 3 of the Baseline Period	1.22	<.001	1.19 – 1.26
Observed in Year 2 and 3 of the Baseline Period	1.16	<.001	1.13 – 1.20
Observed in Year 1, 2, 3 of the Baseline Period	1.09	<.001	1.07 – 1.12
Peripheral Vascular Disorders (ref=Not Observed)			
Observed in Year 3 of the Baseline Period	1.07	<.001	1.05 – 1.09

Observed in Year 2 and 3 of the Baseline Period	1.06	<.001	1.04 – 1.08
Observed in Year 1, 2, 3 of the Baseline Period	1.16	<.001	1.14 – 1.17
Uncomplicated Hypertension (ref=Not Observed)			
Observed in Year 3 of the Baseline Period	0.94	0.01	0.90 – 0.98
Observed in Year 2 and 3 of the Baseline Period	0.97	0.09	0.93 – 1.01
Observed in Year 1, 2, 3 of the Baseline Period	0.88	<.001	0.86 – 0.91
Complicated Hypertension (ref=Not Observed)			
Observed in Year 3 of the Baseline Period	0.99	0.38	0.97 – 1.01
Observed in Year 2 and 3 of the Baseline Period	0.95	<.001	0.93 – 0.97
Observed in Year 1, 2, 3 of the Baseline Period	0.92	<.001	0.90 – 0.93
Renal Failure (ref=Not Observed)			
Observed in Year 3 of the Baseline Period	1.05	<.001	1.03 – 1.07
Observed in Year 2 and 3 of the Baseline Period	1.05	<.001	1.03 – 1.07
Observed in Year 1, 2, 3 of the Baseline Period	1.13	<.001	1.11 – 1.14
Liver Disease (ref=Not Observed)			
Observed in Year 3 of the Baseline Period	1.08	<.001	1.04 – 1.12
Observed in Year 2 and 3 of the Baseline Period	0.99	0.51	0.95 – 1.02
Observed in Year 1, 2, 3 of the Baseline Period	1.01	0.57	0.98 – 1.03
Metastatic Cancer (ref=Not Observed)			
Observed in Year 3 of the Baseline Period	2.32	<.001	2.23 – 2.41
Observed in Year 2 and 3 of the Baseline Period	1.72	<.001	1.63 – 1.81
Observed in Year 1, 2, 3 of the Baseline Period	1.40	<.001	1.35 – 1.45
Tumor (ref=Not Observed)			
Observed in Year 3 of the Baseline Period	1.20	<.001	1.17 – 1.23
Observed in Year 2 and 3 of the Baseline Period	1.07	<.001	1.04 – 1.10
Observed in Year 1, 2, 3 of the Baseline Period	1.08	<.001	1.06 – 1.09
Obesity (ref=Not Observed)			
Observed in Year 3 of the Baseline Period	0.91	<.001	0.89 – 0.93
Observed in Year 2 and 3 of the Baseline Period	0.92	<.001	0.91 – 0.94
Observed in Year 1, 2, 3 of the Baseline Period	0.95	<.001	0.94 – 0.96
Fluid and Electrolyte Disorders (ref=Not Observed)			
Observed in Year 3 of the Baseline Period	1.16	<.001	1.14 – 1.18

Observed in Year 2 and 3 of the Baseline Period	1.11	<.001	1.09 – 1.13
Observed in Year 1, 2, 3 of the Baseline Period	1.07	<.001	1.06 – 1.09
Anemia (ref=Not Observed)			
Observed in Year 3 of the Baseline Period	1.09	<.001	1.07 – 1.11
Observed in Year 2 and 3 of the Baseline Period	1.06	<.001	1.04 – 1.08
Observed in Year 1, 2, 3 of the Baseline Period	1.05	<.001	1.04 – 1.07
Psychosis (ref=Not Observed)			
Observed in Year 3 of the Baseline Period	1.33	<.001	1.29 – 1.37
Observed in Year 2 and 3 of the Baseline Period	1.27	<.001	1.23 – 1.32
Observed in Year 1, 2, 3 of the Baseline Period	1.27	<.001	1.24 – 1.29
Depression (ref=Not Observed)			
Observed in Year 3 of the Baseline Period	1.20	<.001	1.17 – 1.22
Observed in Year 2 and 3 of the Baseline Period	1.12	<.001	1.09 – 1.14
Observed in Year 1, 2, 3 of the Baseline Period	1.08	<.001	1.06 – 1.09

[a] Model is controlled for the following comorbidities: cardiac arrhythmias, valvular disease, paralysis, other neurological disorders, pulmonary circulation disorders, hypothyroidism, peptic ulcer disease, human immunodeficiency virus (HIV), lymphoma, rheumatoid arthritis/collagen vascular disease, coagulopathy, weight loss, blood loss anemia, alcohol abuse and drug abuse.
[b] Model is also controlled for the following variables: the VA medical center, the calendar quarter a patient entered their outcome period, and number of days used to calculate the provider A1c TIR to adjust for the provider caseload assigned.
[c] We excluded the individual's own values in the following calculations of provider characteristics: Provider's % of Other Patients' A1c Tests >=9%, Provider's % of Other Patients' LDL > 100 mg/dL, and Provider's % of Other Patients' Blood Pressure > 140/90 mm Hg.
[d] BMI = Body Mass Index. LDL = Low-Density Lipoproteins. HDL = High-Density Lipoproteins.

Table D2: Cox Proportional Hazard Model Predicting MI/Stroke (N=388,515)[a,b]

Parameters	Hazard Ratio	P Value	95% Confidence Interval
Individual A1c TIR (reference =80-100%; n=36,309)			
60-<80% (n=40,181)	1.06	<.001	1.02 – 1.10
40-<60% (n=50,015)	1.07	<.001	1.04 – 1.11
20-<40% (n=73,980)	1.08	<.001	1.04 – 1.11
0-<20% (n=188,030)	1.14	<.001	1.11 – 1.18
A1c standard deviation during baseline	1.03	<.001	1.02 – 1.05
A1c average during baseline	1.12	<.001	1.11 – 1.13
Number of A1c tests during baseline	1.00	1.00	1.00-1.00
Sex (ref=Female)	0.99	0.80	0.93 – 1.06
Race/Ethnicity (ref=White)			
Black	0.91	<.001	0.89 – 0.94
Hispanic	1.04	0.16	0.99 – 1.10
Asian	0.92	0.19	0.82 – 1.04
Other	0.90	<.001	0.84 – 0.97
Age at Follow-up (ref=68-72)			
73-76	1.14	<.001	1.12 – 1.17
77-81	1.32	<.001	1.29 – 1.35
82-105	1.62	<.001	1.58 – 1.66
Service Connected Disability			
Yes (ref=No)	0.92	<.001	0.90 – 0.93
Copayment Required			
Yes (ref=No)	0.95	<.001	0.93 – 0.97
Marital Status (ref=Married)			
Divorced/Separated	1.12	<.001	1.09 – 1.14
Widowed	1.09	<.001	1.07 – 1.12
Other	1.08	<.001	1.05 – 1.12
Provider Type (ref=Physician)			
Physician Assistant/Nurse Practitioner	0.99	0.44	0.98 – 1.01
Other	0.99	0.52	0.95 – 1.03

Parameters	Hazard Ratio	P Value	95% Confidence Interval
Provider is Primary Care Physician (ref=No)	0.95	<.001	0.93 – 0.97
Number of Days Used to Calculated the Provider A1c TIR	1.00	0.79	1.00 – 1.00
Provider's % of Other Patients' A1c Tests >=9% [c]	1.00	<.001	1.00 – 1.01
Provider's % of Other Patients' LDL > 100 mg/dL [c]	1.00	0.23	1.00 – 1.00
Provider's % of Other Patients' Blood Pressure > 140/90 mm Hg [c]	1.00	0.05	1.00 – 1.00
Young Diabetes Severity Index (Highest Score during the Baseline Period) (ref=0)			
1-2	1.35	<.001	1.30 – 1.41
3-5	1.87	<.001	1.79 – 1.95
6-8	2.47	<.001	2.37 – 2.58
9+	3.01	<.001	2.86 – 3.18
Albumin/Creatinine Ratio (Urine) (ref: <30 mg/g)			
30-300	1.18	<.001	1.16 – 1.21
>300	1.46	<.001	1.40 – 1.53
Missing	1.20	<.001	1.17 – 1.22
LDL (ref: <100 mg/dL)			
100-159	1.15	<.001	1.14 – 1.17
>=160	1.59	<.001	1.48 – 1.71
Missing	1.04	0.48	0.93 – 1.16
HDL (ref: <40 mg/dL)			
40-60	0.91	<.001	0.90 – 0.92
>60	0.88	<.001	0.85 – 0.91
Missing	1.03	0.71	0.89 – 1.20
Creatinine (ref: <0.6 mg/dL)			
0.6-1.2	0.86	0.41	0.61 – 1.23
>1.2	0.91	0.61	0.65 – 1.30
Missing	0.90	0.56	0.63 – 1.28
Albumin (ref: <3.5 g/dL)			
>=3.5	0.84	<.001	0.81 – 0.86

Parameters	Hazard Ratio	P Value	95% Confidence Interval
Missing	0.81	<.001	0.78 – 0.85
BMI (ref: 18.5-24.9 kg/m^2) [d]			
<18.5	0.99	0.94	0.82 – 1.20
25-29.9	0.92	<.001	0.90 – 0.94
30-39.9	0.87	<.001	0.85 – 0.89
>=40	0.80	<.001	0.77 – 0.83
Missing	0.90	<.001	0.86 – 0.94
Triglycerides (ref: <200 mg/dL)			
>=200	1.10	<.001	1.08 – 1.12
Missing	1.03	0.77	0.85 – 1.25
Blood Pressure Systolic (ref: <140 mm Hg)			
140-179	1.22	<.001	1.20 – 1.24
>=180	1.77	<.001	1.47 – 2.13
Missing	1.72	0.02	1.08 – 2.73
Medications: (ref=No)			
Alpha-glucosidase Inhibitors	0.99	0.58	0.94 – 1.03
Biguanides	0.97	<.001	0.96 – 0.99
Insulin	1.10	<.001	1.08 – 1.13
Multidrug	0.95	0.08	0.90 – 1.01
Sulfonylureas	1.05	<.001	1.04 – 1.07
Thiazolidinediones	0.93	<.001	0.91 – 0.94
Medication Adherence: Any Diabetes Medications with Proportion of Days Covered >=80% (ref: <80%)	0.95	<.001	0.94 – 0.97
Congestive Heart Failure (ref=Not Observed)			
Observed in Year 3 of the Baseline Period	1.19	<.001	1.15 – 1.23
Observed in Year 2 and 3 of the Baseline Period	1.10	<.001	1.07 – 1.14
Observed in Year 1, 2, 3 of the Baseline Period	1.16	<.001	1.14 – 1.18
Pulmonary Hypertension (ref=Not Observed)			
Observed in Year 3 of the Baseline Period	1.02	0.54	0.97 – 1.07
Observed in Year 2 and 3 of the Baseline Period	1.02	0.46	0.97 – 1.08

Parameters	Hazard Ratio	P Value	95% Confidence Interval
Observed in Year 1, 2, 3 of the Baseline Period	0.95	0.01	0.91 – 0.98
Peripheral Vascular Disorders (ref=Not Observed)			
Observed in Year 3 of the Baseline Period	1.05	<.001	1.01 – 1.08
Observed in Year 2 and 3 of the Baseline Period	1.04	0.02	1.01 – 1.07
Observed in Year 1, 2, 3 of the Baseline Period	1.15	<.001	1.13 – 1.17
Uncomplicated Hypertension (ref=Not Observed)			
Observed in Year 3 of the Baseline Period	0.99	0.74	0.91 – 1.07
Observed in Year 2 and 3 of the Baseline Period	1.08	0.02	1.01 – 1.15
Observed in Year 1, 2, 3 of the Baseline Period	1.10	<.001	1.05 – 1.15
Complicated Hypertension (ref=Not Observed)			
Observed in Year 3 of the Baseline Period	1.00	0.82	0.97 – 1.03
Observed in Year 2 and 3 of the Baseline Period	0.97	0.09	0.94 – 1.00
Observed in Year 1, 2, 3 of the Baseline Period	1.00	0.87	0.98 – 1.02
Renal Failure (ref=Not Observed)			
Observed in Year 3 of the Baseline Period	0.95	<.001	0.92 – 0.98
Observed in Year 2 and 3 of the Baseline Period	0.96	0.02	0.93 – 0.99
Observed in Year 1, 2, 3 of the Baseline Period	1.01	0.43	0.99 – 1.03
Liver Disease (ref=Not Observed)			
Observed in Year 3 of the Baseline Period	0.93	0.02	0.88 – 0.99
Observed in Year 2 and 3 of the Baseline Period	0.89	<.001	0.84 – 0.95
Observed in Year 1, 2, 3 of the Baseline Period	0.95	0.01	0.91 – 0.99
Metastatic Cancer (ref=Not Observed)			
Observed in Year 3 of the Baseline Period	1.12	0.01	1.02 – 1.23
Observed in Year 2 and 3 of the Baseline Period	1.03	0.58	0.92 – 1.15
Observed in Year 1, 2, 3 of the Baseline Period	0.97	0.37	0.90 – 1.04
Tumor (ref=Not Observed)			
Observed in Year 3 of the Baseline Period	0.98	0.34	0.94 – 1.02
Observed in Year 2 and 3 of the Baseline Period	0.95	0.03	0.92 – 0.99
Observed in Year 1, 2, 3 of the Baseline Period	0.96	<.001	0.95 – 0.98
Obesity (ref=Not Observed)			

Parameters	Hazard Ratio	P Value	95% Confidence Interval
Observed in Year 3 of the Baseline Period	0.93	<.001	0.90 – 0.97
Observed in Year 2 and 3 of the Baseline Period	0.96	0.01	0.93 – 0.99
Observed in Year 1, 2, 3 of the Baseline Period	0.94	<.001	0.92 – 0.96
Fluid and Electrolyte Disorders (ref=Not Observed)			
Observed in Year 3 of the Baseline Period	1.07	<.001	1.04 – 1.10
Observed in Year 2 and 3 of the Baseline Period	1.05	<.001	1.02 – 1.08
Observed in Year 1, 2, 3 of the Baseline Period	1.04	<.001	1.02 – 1.06
Anemia (ref=Not Observed)			
Observed in Year 3 of the Baseline Period	1.00	0.90	0.96 – 1.04
Observed in Year 2 and 3 of the Baseline Period	1.02	0.30	0.98 – 1.06
Observed in Year 1, 2, 3 of the Baseline Period	1.00	0.90	0.98 – 1.03
Psychosis (ref=Not Observed)			
Observed in Year 3 of the Baseline Period	1.24	<.001	1.18 – 1.30
Observed in Year 2 and 3 of the Baseline Period	1.12	<.001	1.05 – 1.19
Observed in Year 1, 2, 3 of the Baseline Period	1.14	<.001	1.10 – 1.18
Depression (ref=Not Observed)			
Observed in Year 3 of the Baseline Period	1.15	<.001	1.11 – 1.19
Observed in Year 2 and 3 of the Baseline Period	1.11	<.001	1.07 – 1.16
Observed in Year 1, 2, 3 of the Baseline Period	1.11	<.001	1.09 – 1.13

[a] Model is controlled for the following comorbidities: cardiac arrhythmias, valvular disease, paralysis, other neurological disorders, pulmonary circulation disorders, hypothyroidism, peptic ulcer disease, human immunodeficiency virus (HIV), lymphoma, rheumatoid arthritis/collagen vascular disease, coagulopathy, weight loss, blood loss anemia, alcohol abuse and drug abuse.

[b] Model is also controlled for the following variables: the VA medical center, the calendar quarter a patient entered their outcome period, and number of days used to calculate the provider A1c TIR to adjust for the provider caseload assigned.

[c] We excluded the individual's own values in the following calculations of provider characteristics: Provider's % of Other Patients' A1c Tests >=9%, Provider's % of Other Patients' LDL > 100 mg/dL, and Provider's % of Other Patients' Blood Pressure > 140/90 mm Hg.

[d] BMI = Body Mass Index. LDL = Low-Density Lipoproteins. HDL = High-Density Lipoproteins.

Appendix E: Sensitivity Analyses

Table E1: Hazard Ratios of A1c time in range (A1cTIR) predicting mortality and cardiovascular disease at 24 months[a]

	Hazard Ratio	P Value	95% Confidence Interval
Mortality			
Cox Proportional Hazard Model (n=394,837)			
Individual A1c TIR (reference =80-100%; n=35,619)			
60-<80% (n=40,219)	1.12	<.001	1.07 – 1.19
40-<60% (n=50,722)	1.15	<.001	1.09 – 1.21
20-<40% (n=75,480)	1.20	<.001	1.14 – 1.26
0-<20% (n=192,797)	1.28	<.001	1.22 – 1.34
A1c standard deviation during baseline	1.21	<.001	1.19 – 1.24
A1c average during baseline	1.00	0.88	0.99 – 1.01
Myocardial infarction and stroke			
Cox Proportional Hazard Model (n=381,524)			
Individual A1c TIR (reference =80-100%; n=35,299)			
60-<80% (n=39,371)	1.09	<.05	1.02 – 1.16
40-<60% (n=49,152)	1.12	<.001	1.05 – 1.19
20-<40% (n=72,699)	1.12	<.001	1.05 – 1.19
0-<20% (n=185,003)	1.19	<.001	1.12 – 1.26
A1c standard deviation during baseline	1.03	<.05	1.00 – 1.07
A1c average during baseline	1.10	<.001	1.09 – 1.12

[a] Models also include all covariates listed when predicting the outcomes in Appendix B.

Table E2: Hazard Ratio of A1c TIR Predicting Mortality and MI/Stroke in Competing Risk Model[a]

	Hazard Ratio	P Value	95% Confidence Interval
Myocardial infarction and stroke			
Competing Risk Model (n=388,515)			
Individual A1c TIR (reference =80-100%; n=36,309)			
60-<80% (n=40,181)	1.06	<.001	1.02 – 1.09
40-<60% (n=50,015)	1.07	<.001	1.04 – 1.11
20-<40% (n=73,980)	1.07	<.001	1.03 – 1.10
0-<20% (n=188,030)	1.11	<.001	1.08 – 1.14
A1c standard deviation during baseline	0.98	0.01	0.96 - 0.99
A1c average during baseline	1.11	<.001	1.10 - 1.12

[a] Models also include all covariates listed when predicting the outcomes in Appendix B.