

Appendix 1. Generalized linear model on healthcare expense for diabetes patients (n=4,233)

Variable	Coefficient	95% Confidence Interval		P-value
MVCC	0.42***	0.30	0.54	<0.001
Without MVCC (reference)	0			
Age groups (years)				
18-24 (reference)	0			
25-34	0.28	-0.19	0.74	0.24
35-44	0.24	-0.14	0.62	0.21
45-54	0.29	-0.07	0.65	0.12
55-64	0.42*	0.06	0.78	0.024
65+	0.47*	0.09	0.86	0.016
Gender				
Female	-0.05	-0.15	0.06	0.37
Race				
White (reference)	0			
Black	-0.07	-0.20	0.06	0.28
Asian	-0.43*	-0.77	-0.08	0.015
Other race	-0.16	-0.38	0.06	0.16
Hispanic ethnicity	-0.24**	-0.38	-0.10	0.001
Years of Education				
0 (reference)	0			
1-8	0.28*	0.02	0.55	0.037
9-11	0.41**	0.13	0.69	0.004
12	0.43**	0.16	0.70	0.002
13-16	0.34*	0.06	0.61	0.017
>16	0.49**	0.18	0.79	0.002
Income level				
Negative or poor (reference)	0			
Near poor	0.02	-0.20	0.24	0.88
Low income	-0.17*	-0.34	-0.01	0.041
Middle income	-0.10	-0.28	0.08	0.29
High income	-0.02	-0.21	0.16	0.80
Unemployed	0.02	-0.11	0.15	0.77
Health insurance				
Medicare	0.37***	0.20	0.53	<0.001
Medicaid	0.44***	0.28	0.60	<0.001
Private HMO	0.34***	0.19	0.48	<0.001
Other private plan	0.22**	0.08	0.35	0.002
Currently smoke	-0.02	-0.15	0.11	0.78
Number of CS categories	0.30***	0.25	0.34	<0.001
Nephropathy	0.33***	0.18	0.48	<0.001
Retinopathy	0.24***	0.11	0.38	<0.001
Neuropathy	0.61*	0.06	1.16	0.029

Note: positive coefficient indicates higher cost and negative coefficient indicates lower cost.

* p<0.05; ** p<0.01; *** p<0.001

Appendix 2. Negative binomial model on missed work days for diabetes patients (n=4,233)

Variable	IRR	95% Confidence Interval		P-value
MVCC	3.24***	2.20	4.77	<0.001
Without MVCC (reference)	1			
Age groups (years)				
18-24 (reference)	1			
25-34	2.34*	1.03	5.35	0.043
35-44	1.84	0.86	3.95	0.12
45-54	1.70	0.78	3.68	0.18
55-64	2.07	0.97	4.45	0.061
65+	2.04	0.80	5.19	0.14
Gender				
Female	1.00	0.75	1.33	0.98
Race				
White (reference)	1			
Black	0.83	0.60	1.14	0.25
Asian	0.64	0.30	1.37	0.25
Other race	1.20	0.69	2.10	0.52
Hispanic ethnicity	0.57*	0.36	0.89	0.013
Years of Education				
0 (reference)	1			
1-8	3.37*	1.30	8.74	0.012
9-11	3.08*	1.20	7.95	0.02
12	2.12	0.86	5.26	0.10
13-16	1.54	0.62	3.83	0.35
>16	1.89	0.49	7.24	0.35
Income level				
Negative or poor (reference)	1			
Near poor	0.82	0.43	1.57	0.55
Low income	0.87	0.49	1.56	0.65
Middle income	0.50**	0.30	0.84	0.009
High income	0.38**	0.22	0.67	0.001
Unemployed	0.09***	0.05	0.15	<0.001
Health insurance				
Medicare	0.70	0.35	1.40	0.31
Medicaid	1.03	0.61	1.72	0.91
Private HMO	1.92**	1.26	2.91	0.002
Other private plan	1.24	0.87	1.77	0.23
Currently smoke	0.80	0.58	1.10	0.17
Number of CS categories	1.44***	1.24	1.67	<0.001
Nephropathy	1.65*	1.04	2.64	0.034
Retinopathy	0.87	0.63	1.22	0.42
Neuropathy	12.8***	2.54	64.8	<0.001

Note: IRR: incidence-rate ratio, for which larger than 1 indicates higher number of days.

* p<0.05; ** p<0.01; *** p<0.001

Appendix 3. Negative binomial model on additional bed days for diabetes patients (n=4,233)

Variable	IRR	95% Confidence Interval		P-value
MVCC	1.41*	1.04	1.89	0.025
Without MVCC (reference)	1			
Age groups (years)				
18-24 (reference)	1			
25-34	0.44	0.13	1.49	0.19
35-44	0.36	0.12	1.09	0.072
45-54	0.43	0.14	1.30	0.13
55-64	0.33*	0.11	0.97	0.044
65+	0.30*	0.10	0.95	0.04
Gender				
Female	0.91	0.71	1.18	0.50
Race				
White (reference)	1			
Black	1.33	0.86	2.06	0.19
Asian	0.52	0.27	1.00	0.051
Other race	1.20	0.71	2.04	0.50
Hispanic ethnicity	0.59**	0.42	0.83	0.003
Years of Education				
0 (reference)	1			
1-8	1.16	0.51	2.66	0.73
9-11	2.22	0.91	5.40	0.079
12	1.39	0.60	3.23	0.44
13-16	1.41	0.60	3.29	0.43
>16	1.23	0.46	3.30	0.68
Income level				
Negative or poor (reference)	1			
Near poor	1.25	0.77	2.03	0.36
Low income	1.01	0.68	1.51	0.96
Middle income	0.80	0.54	1.19	0.28
High income	0.52**	0.34	0.78	0.002
Unemployed	2.93***	2.19	3.93	<0.001
Health insurance				
Medicare	1.67**	1.18	2.37	0.004
Medicaid	1.44*	1.05	1.97	0.023
Private HMO	0.87	0.58	1.29	0.49
Other private plan	0.51***	0.36	0.72	<0.001
Currently smoke	1.23	0.92	1.65	0.16
Number of CS categories	1.54***	1.38	1.72	<0.001
Nephropathy	1.43*	1.00	2.05	0.049
Retinopathy	1.25	0.92	1.68	0.15
Neuropathy	9.98**	2.06	48.36	0.004

Note: IRR: incidence-rate ratio, for which larger than 1 indicates higher number of days.

* p<0.05; ** p<0.01; *** p<0.001

Appendix 4. Generalized linear model on healthcare expense for all patients (n=46,617)

Variable	Coefficient	95% Confidence Interval		P-value
Diabetes	0.45***	0.36	0.54	<0.001
MVCC	0.78***	0.65	0.90	<0.001
Diabetes × MVCC	-0.50***	-0.69	-0.31	<0.001
No diabetes or MVCC (reference)	0			
Age groups (years)				
18-24 (reference)	0			
25-34	0.24***	0.14	0.34	<0.001
35-44	0.20***	0.10	0.30	<0.001
45-54	0.44***	0.34	0.55	<0.001
55-64	0.62***	0.50	0.75	<0.001
65+	0.32*	0.07	0.58	0.013
Gender				
Female	0.31***	0.26	0.36	<0.001
Race				
White (reference)	0			
Black	-0.21***	-0.29	-0.13	<0.001
Asian	-0.37***	-0.53	-0.22	<0.001
Other race	0.01	-0.21	0.24	0.91
Hispanic ethnicity	-0.42***	-0.51	-0.33	<0.001
Years of Education				
0 (reference)	0			
1-8	0.31	-0.12	0.73	0.16
9-11	0.28	-0.10	0.66	0.15
12	0.37	-0.01	0.75	0.055
13-16	0.45*	0.07	0.83	0.021
>16	0.54**	0.15	0.94	0.006
Income level				
Negative or poor (reference)	0			
Near poor	0.02	-0.13	0.17	0.78
Low income	-0.05	-0.17	0.06	0.39
Middle income	0.00	-0.11	0.12	0.96
High income	0.13*	0.00	0.25	0.045
Unemployed	0.15***	0.07	0.22	<0.001
Health insurance				
Medicare	0.59***	0.35	0.83	<0.001
Medicaid	0.74***	0.64	0.85	<0.001
Private HMO	0.54***	0.45	0.63	<0.001
Other private plan	0.50***	0.42	0.58	<0.001
Currently smoke	-0.07	-0.14	0.00	0.061
Number of CS categories	0.63***	0.61	0.66	<0.001
Nephropathy	0.10	-0.07	0.26	0.25
Retinopathy	0.21**	0.06	0.35	0.005
Neuropathy	0.57	-0.48	1.61	0.29

Note: positive coefficient indicates higher cost and negative coefficient indicates lower cost.

* p<0.05; ** p<0.01; *** p<0.001

Appendix 5. Negative binomial model on missed work days for all patients (n=46,617)

Variable	IRR	95% Confidence Interval		P-value
Diabetes	1.19*	1.03	1.38	0.041
MVCC	1.78***	1.36	2.33	<0.001
Diabetes × MVCC	1.47	0.87	2.50	0.15
No diabetes or MVCC (reference)	1			
Age groups (years)				
18-24 (reference)	1			
25-34	1.57***	1.36	1.81	<0.001
35-44	1.55***	1.32	1.82	<0.001
45-54	1.53***	1.29	1.81	<0.001
55-64	1.31*	1.06	1.62	0.014
65+	0.72	0.38	1.36	0.30
Gender				
Female	1.28***	1.15	1.42	<0.001
Race				
White (reference)	1			
Black	1.05	0.91	1.22	0.51
Asian	0.79	0.63	1.01	0.056
Other race	1.46**	1.13	1.87	0.003
Hispanic ethnicity	0.84*	0.73	0.98	0.028
Years of Education				
0 (reference)	1			
1-8	1.11	0.51	2.42	0.80
9-11	0.98	0.50	1.93	0.96
12	1.01	0.50	2.02	0.99
13-16	0.84	0.41	1.72	0.64
>16	0.92	0.45	1.91	0.83
Income level				
Negative or poor (reference)	1			
Near poor	1.04	0.79	1.37	0.78
Low income	0.84	0.69	1.03	0.088
Middle income	0.91	0.72	1.15	0.44
High income	0.71**	0.56	0.90	0.004
Unemployed	0.26***	0.18	0.35	<0.001
Health insurance				
Medicare	1.18	0.65	2.14	0.58
Medicaid	1.37**	1.10	1.70	0.005
Private HMO	1.37***	1.19	1.57	<0.001
Other private plan	1.10	0.95	1.27	0.20
Currently smoke	1.24**	1.10	1.40	0.001
Number of CS categories	2.14***	2.02	2.28	<0.001
Nephropathy	1.11	0.66	1.87	0.68
Retinopathy	0.85	0.59	1.22	0.37
Neuropathy	0.61	0.10	3.64	0.59

Note: IRR: incidence-rate ratio, for which larger than 1 indicates higher number of days.

* p<0.05; ** p<0.01; *** p<0.001

Appendix 6. Negative binomial model on additional bed days for all patients (n=46,617)

Variable	IRR	95% Confidence Interval		P-value
Diabetes	1.48*	1.06	2.06	0.020
MVCC	1.48**	1.16	1.89	0.002
Diabetes × MVCC	0.81	0.49	1.35	0.43
No diabetes or MVCC (reference)	1			
Age groups (years)				
18-24 (reference)	1			
25-34	1.51***	1.23	1.84	<0.001
35-44	1.59***	1.27	1.99	<0.001
45-54	1.67***	1.35	2.07	<0.001
55-64	1.27	0.99	1.63	0.065
65+	0.86	0.57	1.28	0.45
Gender				
Female	1.33***	1.18	1.50	<0.001
Race				
White (reference)	1			
Black	1.10	0.88	1.36	0.40
Asian	0.62**	0.45	0.86	0.004
Other race	1.99***	1.40	2.84	<0.001
Hispanic ethnicity	0.68***	0.55	0.83	<0.001
Years of Education				
0 (reference)	1			
1-8	0.74	0.29	1.89	0.52
9-11	1.00	0.39	2.56	1.00
12	0.87	0.34	2.23	0.77
13-16	0.88	0.34	2.30	0.80
>16	0.93	0.34	2.54	0.89
Income level				
Negative or poor (reference)	1			
Near poor	0.92	0.70	1.20	0.52
Low income	0.76**	0.63	0.93	0.007
Middle income	0.61***	0.49	0.76	<0.001
High income	0.53***	0.42	0.66	<0.001
Unemployed	2.29***	1.95	2.68	<0.001
Health insurance				
Medicare	2.59***	1.91	3.51	<0.001
Medicaid	1.57***	1.30	1.90	<0.001
Private HMO	0.80*	0.67	0.96	0.016
Other private plan	0.64***	0.53	0.76	<0.001
Currently smoke	1.57***	1.34	1.83	<0.001
Number of CS categories	2.21***	2.06	2.37	<0.001
Nephropathy	1.34	0.84	2.13	0.22
Retinopathy	0.91	0.66	1.24	0.55
Neuropathy	6.69***	2.82	15.89	<0.001

Note: IRR: incidence-rate ratio, for which larger than 1 indicates higher number of days.

* p<0.05; ** p<0.01; *** p<0.001