

Supplementary Materials

Table S1. Cox-proportional hazards regression on survival from third follow-up interview.

	(1)	(2)	(3)
CI	2.661*** (0.153)	1.759*** (0.110)	1.755*** (0.109)
Male		1.848*** (0.114)	1.845*** (0.113)
Age at third follow-up interview		1.095*** (0.005)	1.095*** (0.005)
Living alone		1.044 (0.107)	1.042 (0.107)
HDB 1-2 Room		Ref.	Ref.
HDB 3-room		1.146 (0.150)	1.141 (0.149)
HDB 4-room		1.120 (0.148)	1.115 (0.147)
HDB 5-room		0.971 (0.136)	0.966 (0.135)
Private property or others		1.238 (0.263)	1.227 (0.260)
No formal education		Ref.	Ref.
Primary		0.922 (0.067)	0.924 (0.067)
Secondary and above		0.691*** (0.061)	0.692*** (0.062)
BMI group: Underweight		Ref.	Ref.
BMI group: Low CVD risk		0.770** (0.080)	0.770** (0.080)
BMI group: Moderate CVD risk		0.773** (0.082)	0.774** (0.082)
BMI group: High CVD risk		0.840 (0.106)	0.841 (0.106)
High blood pressure		1.058 (0.068)	1.056 (0.068)
Heart attack / angina / heart failure		1.701*** (0.167)	1.698*** (0.167)
Coronary bypass / angioplasty		1.075 (0.122)	1.071 (0.122)
Stroke		1.477*** (0.143)	1.470*** (0.142)
Diabetes		1.595*** (0.098)	1.594*** (0.097)
High cholesterol		0.687*** (0.042)	0.689*** (0.042)
Gout		0.964 (0.109)	0.967 (0.109)
Cancer		2.407*** (0.205)	1.000 (.)
Chronic lung disease		1.238 (0.269)	1.240 (0.266)
Arthritis		0.902 (0.065)	0.903 (0.065)

Kidney failure		4.018 ^{***}	4.024 ^{***}
		(0.560)	(0.557)
Parkinson's disease		2.059 ^{***}	2.068 ^{***}
		(0.501)	(0.506)
Stratified by cancer status	No	No	Yes
Proportional hazards test (joint <i>P</i> value)	0.344	0.010	0.370
Observations	16947	16941	16941

Notes: CI: cognitive impairment; CVD: cardiovascular disease. Estimates are hazard ratios. Robust standard errors are reported in parentheses. Statistical significance is indicated by asterisks: **P*<0.1, ***P*<0.05, ****P*<0.01. The model in column 3 was used to generate the ex-ante mortality risk.

Table S2. 10-fold out-of-sample receiver operating characteristic (ROC).

Fold	In-sample observations	Out-of-sample observation	Out-of-sample ROC area
1	15209	1732	0.761
2	15245	1696	0.751
3	15228	713	0.775
4	15200	1741	0.761
5	15283	1658	0.762
6	15276	1665	0.749
7	15275	1666	0.771
8	15210	1731	0.763
9	15281	1660	0.766
10	15262	1679	0.748

Table S3. Healthcare utilisation and cost in year following the interview (propensity score-matched sample).

Ex-ante mortality risk Cognitive status	All (n=5370)		Bottom 75% (n=2599)		Top 25% (n=2357)	
	No CI	CI	No CI	CI	No CI	CI
<u>Panel A: Any visit/admission, %</u>						
Outpatient	95.0	95.0	94.6	93.3	96.1	95.5
Emergency department	23.5	30.4***	15.6	18.5*	29.1	38.8***
Emergency department without admission	11.0	13.1***	9.2	10.1	11.5	15.6**
Inpatient	19.3	26.3***	11.7	14.7**	25.1	34.6***
Planned inpatient	6.4	6.7	4.9	4.3	6.6	8.4
Unplanned inpatient	16.0	23.1***	8.9	12.1**	22.4	31.0***
<u>Panel B: Number of visits/admissions, mean</u>						
Outpatient	10.9	10.7	9.86	9.97	11.4	11.3
Emergency department	0.38	0.56***	0.23	0.30**	0.49	0.78***
Emergency department without admission	0.13	0.16**	0.10	0.12	0.14	0.20***
Inpatient	0.32	0.49***	0.18	0.23*	0.44	0.68***
Planned inpatient	0.08	0.09	0.06	0.05	0.09	0.11
Unplanned inpatient	0.24	0.41***	0.13	0.18**	0.35	0.57***
<u>Panel C: Length of inpatient stay, mean days</u>						
All admissions	1.91	3.62***	1.13	1.73*	3.05	5.90***
Planned admissions	0.39	0.56**	0.36	0.26	0.54	1.38***
Unplanned admissions	0.24	0.41***	0.80	1.64***	2.52	4.86***
<u>Panel D: Costs (2021), SGD</u>						
Total	3921	4771***	2986	3100	5136	6928***
Outpatient	1810	1691*	1471	1521	2007	1925
Emergency department	88	123***	50	67**	127	190***
Emergency department without admission	33	40*	24	27	39	53*
Inpatient	2171	3309***	1765	1521	3547	5634***
Planned inpatient	759	870	863	432**	748	1323**
Unplanned inpatient	1362	2517***	916	1115	2716	4339***

Note: CI: cognitive impairment. Estimates are regression-adjusted, controlling for factors listed in Table 1 and time fixed effects. Statistically significant differences between the cognitively intact and impaired are indicated by asterisks: * p<0.1, ** p<0.05, *** p<0.01.

Table S4. Predicted survival probabilities and conditional healthcare cost over 5 years.

Starting age (<i>a</i>)	Year (<i>t</i>)	Probability of surviving <i>t</i> years ($S_{a,c,t}$)		Non-end-of-life cost, 2021 SGD ($Cost_{a+t-1,c}$)		End-of-life cost, 2021 SGD ($Cost_{EOL_{a+t-1,c}}$)	
		No CI	CI	No CI	CI	No CI	CI
65	1	0.996	0.993	2726	3080	50310	48390
	2	0.990	0.983	2864	3234	49367	47484
	3	0.983	0.970	2991	3379	47794	45972
	4	0.975	0.957	3115	3518	45961	44208
	5	0.968	0.944	3252	3673	43660	41995
70	1	0.993	0.987	3373	3810	42070	40465
	2	0.982	0.969	3461	3910	40264	38728
	3	0.969	0.947	3574	4037	39230	37733
	4	0.957	0.926	3683	4160	38118	36664
	5	0.944	0.904	3773	4262	37500	36071
75	1	0.988	0.979	3904	4410	36141	34763
	2	0.971	0.950	4047	4572	34815	33486
	3	0.950	0.915	4194	4737	33333	32061
	4	0.930	0.882	4348	4912	32704	31456
	5	0.909	0.849	4483	5064	31370	30174
80	1	0.980	0.965	4635	5236	30553	29387
	2	0.952	0.918	4771	5388	29517	2392
	3	0.919	0.865	4845	5473	29227	28112
	4	0.887	0.814	4976	5621	28161	27087
	5	0.855	0.766	5106	5768	27305	26263
85	1	0.970	0.948	5211	5886	26629	25614
	2	0.928	0.879	5306	6993	26388	25382
	3	0.879	0.801	5425	6128	25104	24147
	4	0.831	0.730	5418	6120	24041	23124
	5	0.786	0.664	5598	6323	23678	22775
90	1	0.956	0.925	5668	6402	22584	21722
	2	0.896	0.829	5673	6408	21493	20674
	3	0.829	0.726	5742	6487	21019	20218
	4	0.766	0.635	6097	6887	19910	19150
	5	0.707	0.556	6067	6845	19148	18417

Notes: CI: cognitive impairment. Costs are undiscounted.