

Can information on functional and cognitive status improve short-term mortality risk prediction among community-dwelling older persons? A cohort study using a UK primary care database

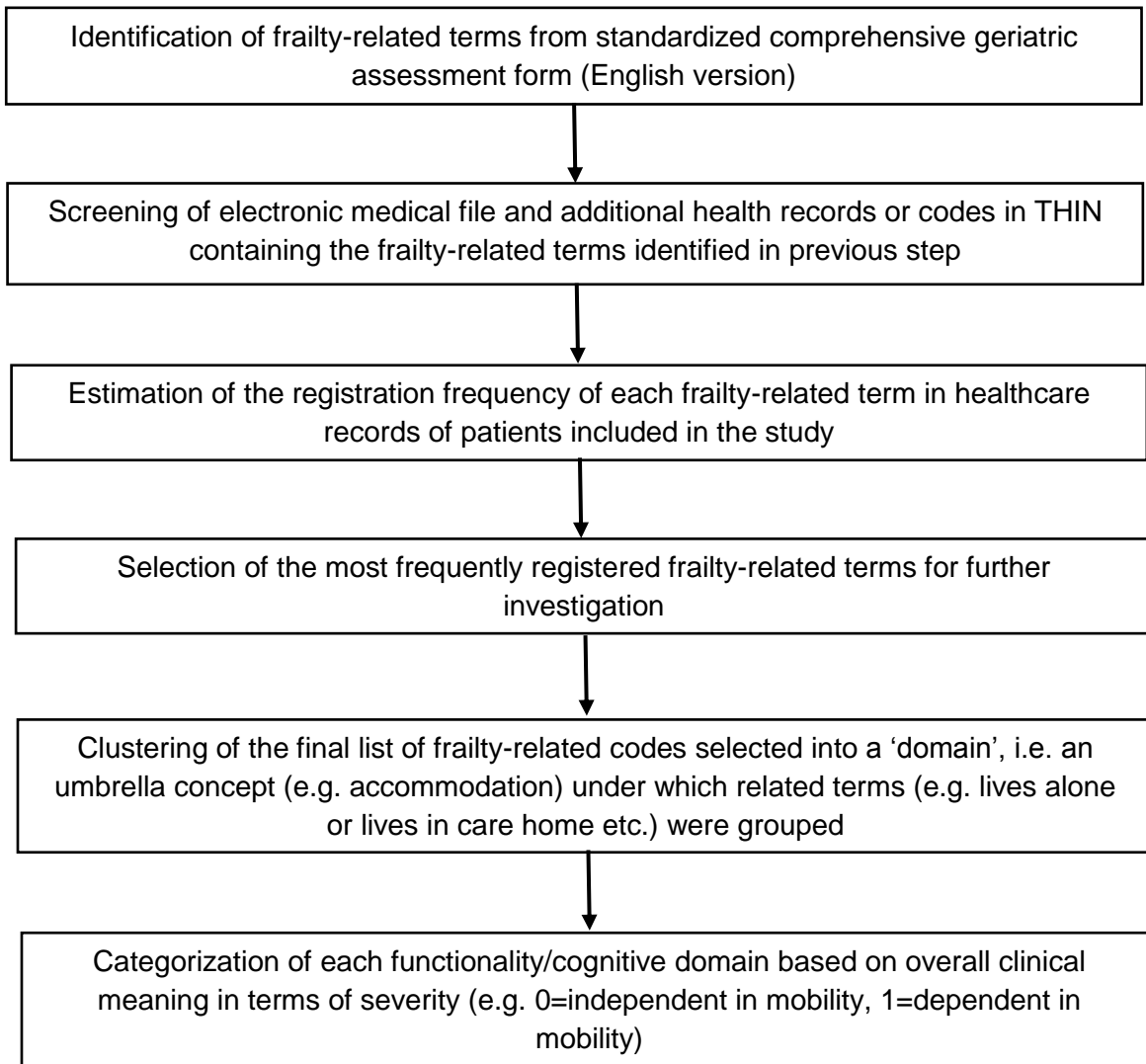
Supplementary material

Appendix A: Read codes used in the identification of Quality and Outcomes Framework (QOF) co-morbidities, of which only the indicated co-morbidities were used to construct the QOF co-morbidity score.

Disease	Read code
Asthma	H33..* (excluding H333., H33z1)
Atrial fibrillation [#]	G573.* (excluding G5731)
Cancer (excluding non-melanotic skin cancers) [#]	B0... - B32z., B34.. -B6z0., Byu.. - Byu41, Byu5. - ByuE0
Chronic kidney disease(stages 3-5)	1Z12. – 1Z16., 1Z1B. – 1Z1L.
Chronic obstructive pulmonary disease [#]	H3..., H31..* (excluding H3101, H31y0, H3122), H32..*, H36.. - H3z..
Coronary heart disease	G3... - G330z, G33z. - G3401, G342. - G366., G38.. - G3z..., Gyu3.*
Dementia [#]	Eu02.*, E00..*, Eu01.*, E02y1, E012.*, Eu00.*, E041., Eu041, F110. - F112., F116.
Depression	E0013, E0021, E112.*, E113.*, E118., E11y2. E11z2, E130., E135. E2003, E291.,E2B., E2B1., Eu204, Eu251, Eu32.*, Eu33.*, Eu341, Eu412
Diabetes [#]	C10E.*, C10F.* (excluding C10F8)
Epilepsy [#]	F1321, F25..* (excluding F2504, F2511, F2516, F256.*, F258. - F25A.), SC200
Heart failure [#]	585f., 585g., 662f. – 662i., G58..*, G581.*,G1yz1, G5yy9, G5yyA
Hypertension	G2..., G20..*, G24.. - G2z.. (excluding G24z1)
Hypothyroidism	C03..*, C04..*
Psychosis, schizophrenia, bipolar disorders [#]	E10..*, E110.*,E111.*, E1124, E1134, E114. – E117z, E11y.* (excluding E11y2), E11z., E11z0, E11zz, E12..*, E13.* (excluding E135.), E2122, Eu2..*, Eu30.*, Eu31.*, Eu323, Eu328, Eu333
Stroke or transient ischaemic attack [#]	F4236, G61..* (excluding G617.), G63y0 - G63y1, G64..*, G65.- G654., G656.- G65zz, G66..*, G6760, G6W., G6X., Gyu62 – Gyu66, Gyu6F, Gyu6G

*All the codes that follow; [#] Diseases included in the QOF co-morbidity score

Appendix B: Algorithm of cognitive/functional “domain” construction in THIN.



Appendix C: Functional domain with score assigned with the individual Read codes used.

Domain	Score	Score meaning	Read code	Read code description
Accommodation	0	Lives with relatives or not alone	13F1.00	Independent housing, not alone
			13FH.00	Lives with relatives
	1	Lives alone in non-institutional accommodation	13FJ.00	Independent housing, lives alone
			13F3.00	Lives alone -no help available
			13F3100	Lives alone needs housekeeper
			13FC.11	Lives in a bedsit
			13F9.11	Living in sheltered accommodation
			13Fa.00	Lives in non-institutional accommodation
			13F2.00	Lives alone - help available
	2	Lives in nursing home or other institutional accommodation	13F7100	Lives in a welfare home
			13FV.00	Lives in a welfare home
			13F4.11	Lives in warden controlled accommodation
			13F6100	Lives in a nursing home
			13FK.00	Lives in a residential home
			13F7200	Lives in an old people's home
			13FT.00	Lives in an old people's home
			13FX.00	Lives in care home
			13F6.00	Nursing/other home
			13F7.00	Residential institution
Dressing ability	0	Independent	Z8A6.00	Ability to dress
			Z8A..00	Ability to perform dressing activity
			ZM51.00	Ability to take care of clothes
			Z8A6100	Able to dress
			Z8A1.00	Able to perform dressing activity
			Z8A7100	Able to undress
			Z8A8311	Adjusts clothing
			Z8A6300	Does dress
			395..00	Dressing ability
			3952.00	Independent with dressing
	1	Dependent	3950.00	Dependent for dressing

			Z8A8500	Difficulty adjusting clothing
			Z8A6500	Difficulty dressing
			Z8A5.00	Difficulty performing dressing activity
			Z8A6400	Does not dress
			Z8A4.00	Does not perform dressing activity
			3951.00	Needs help with dressing
			173F.00	Short of breath dressing/undressing
			Z8A6200	Unable to dress
			Z8A2.00	Unable to perform dressing activity
Mobility	0	Independent	ZO9..00	Ability to mobilise using mobility aids
			ZO96.00	Ability to mobilise using wheelchair
			ZO91.00	Able to mobilise using mobility aids
			ZO96100	Able to mobilise using wheelchair
			ZO96300	Does mobilise using wheelchair
			3981.00	Independent in wheelchair
			3992.00	Independent on stairs
			3983.00	Independent walking
			3963.00	Independent: chair/bed transf.
			3982.00	Minimal help in wheelchair
			ZO93.11	Mobilises using mobility aids
			ZO96311	Mobilises using wheelchair
			13CZ.00	Mobility NOS
			13CG.00	Mobility fair
			8F75.00	Use of indoor mobility aids
			Z6R3.00	Wheelchair dancing therapy
			ZO96.11	Wheelchair mobility
			Z6R8100	Wheelchair sport
			398E.00	Does walk
			39B1.00	Stick only for walking
			ZOA6.00	Ability to manage stairs
			ZOA..00	Ability to manage steps and stairs
			ZOB2.00	Ability to use stair lift

			ZOA6611	Able to climb stairs
			ZOA6100	Able to manage stairs
			ZOA1.00	Able to manage steps and stairs
			ZOB2100	Able to use stair lift
			ZOA7B00	Able to walk down step
			ZOA6600	Able to walk up stairs
			ZOA7600	Able to walk up step
			ZOA6300	Does manage stairs
			ZOA6R00	Does manage stairs backwards
			ZOA6M00	Does manage stairs on bottom
			ZOA3.00	Does manage steps and stairs
			ZOB2300	Does use stair lift
			ZOA6C00	Does walk down stairs
			ZOA7D00	Does walk down step
			ZOA6700	Does walk up stairs
			ZOA7800	Does walk up step
			ZOA6311	Manages stairs
			ZOA3.11	Manages steps and stairs
			399..00	Stairs – ability
			ZOB2311	Uses stair lift
			ZOA6712	Walks up stairs
			ZOA7811	Walks up step
	1	Dependent	398A.00	Dependent on helper pushing wheelchair
			16ZB300	Dependent on others
			3960.00	Dependent: chair/bed transfer
			ZO95.00	Difficulty mobilising using mobility aids
			ZO96500	Difficulty mobilising using wheelchair
			3993.00	Difficulty walking up stairs
			ZO94.00	Does not mobilise using mobility aids
			ZO96400	Does not mobilise using wheelchair
			13CC.00	Immobile
			3980.00	Immobile

			N233100	Immobility syndrome
			13CP.00	Impaired mobility
			ZO51.00	Impaired mobility
			13CE.00	Mobility poor
			13CD.00	Mobility very poor
			ZO7T.11	Moves around supporting self on furniture
			ZO92.00	Unable to mobilise using mobility aids
			ZO96200	Unable to mobilise using wheelchair
			R00A.00	[D] Poor mobility
			R00C.00	[D]Immobility
			ZV4L011	[V] Poor mobility
			ZV4L300	[V]Need for assistance due to reduced mobility
			ZV4L000	[V]Reduced mobility
			Ryu3200	[X]Other and unspecified abnormalities of gait and mobility
			13C6.00	Bed-ridden
			13C6.11	Bedbound
			398D.00	Transfers using hoist
			13CA.00	Housebound
			663x.00	Asthma limits walking on the flat
			398B.00	Deterioration in ability to walk
			N097.00	Difficulty in walking
			N097z00	Difficulty in walking NOS
			N097300	Walking difficulty due to ankle and foot
			N097200	Walking difficulty due to lower leg
			N097400	Walking difficulty due to other specified site
			N097100	Walking difficulty due to pelvic region and thigh
			N097000	Walking difficulty due to unspecified site
			185..11	Walking distance reduced
			Z6A2.00	Walking with patient – mobilisation
			Ryu3100	[X]Difficulty in walking, not elsewhere classified
			663w.00	Asthma limits walking up hills or stairs
			ZOA6911	Difficulty climbing stairs

		ZOA6500	Difficulty managing stairs
		ZOA6J00	Difficulty managing stairs on all fours
		ZOA7500	Difficulty managing steps
		ZOA5.00	Difficulty managing steps and stairs
		ZOB2500	Difficulty using stair lift
		ZOA6E00	Difficulty walking down stairs
		ZOA7F00	Difficulty walking down step
		ZOA6900	Difficulty walking up stairs
		ZOA7A00	Difficulty walking up step
		ZOA6400	Does not manage stairs
		ZOA4.00	Does not manage steps and stairs
		ZOB2400	Does not use stair lift
		ZOA6D00	Does not walk down stairs
		ZOA6800	Does not walk up stairs
		3991.00	Needs help on stairs
		3990.00	Unable to climb stairs
		ZOA6200	Unable to manage stairs
		ZOA7200	Unable to manage steps
		ZOA2.00	Unable to manage steps and stairs
		ZOB2200	Unable to use stair lift
		ZOA6B00	Unable to walk down stairs
		ZOA7C00	Unable to walk down step
		ZOA7700	Unable to walk up step

Appendix D: Distribution of co-morbidities among all patients aged 65 and above, and those with dementia in THIN.

	All persons aged ≥65 years N=1,193,268	Persons aged ≥65 with dementia N=15,300*
	N (%)	N (%)
Age (mean ± standard deviation) (range)	70.7 ± 6.8 (65.0-75.5)	79.3 ± 6.2 (75.3-84.3)
Males	654,388 (54.8)	9,970 (65.2)
Atrial fibrillation [#]	48,068 (4.0)	1,110 (7.3)
Asthma	104,069 (8.7)	1,249 (8.2)
Cancer [#]	72,594 (6.1)	1,352 (8.8)
Congestive heart disease	160,766 (13.5)	2,490 (16.3)
Chronic kidney disease	23,718 (2.0)	1,529 (10.0)
Chronic obstructive pulmonary disease [#]	54,039 (4.5)	825 (5.4)
Dementia [#]	13,906 (1.2)	15,300 (100)
Depression	155,350 (13.0)	3,391 (22.2)
Diabetes mellitus [#]	72,025 (6.0)	1,209 (7.9)
Epilepsy [#]	16,123 (1.4)	425 (2.8)
Heart failure [#]	44,542 (3.7)	832 (5.4)
Hypertension	394,028 (33.0)	5,817 (38.0)
Hypothyroidism	69,542 (5.8)	1,447 (9.5)
Psychosis, schizophrenia, bipolar-affective disorders [#]	12,614 (1.1)	348 (2.3)
Stroke [#]	69,748 (5.8)	1,601 (10.5)
QOF score: 0	875,377 (73.4)	-
QOF score: 1	114,581 (9.6)	-
QOF score: 2	83,390 (7.0)	-
QOF score: 3	83,185 (7.0)	9,525 (62.3)
QOF score: 4	19,775 (1.7)	2,142 (14.0)
QOF score: 5	10,919 (0.9)	1,479 (9.7)
QOF score: 6	3,930 (0.3)	1,404 (9.2)
QOF score: 7	1,379 (0.1)	412 (2.7)
QOF score: ≥8	732 (0.1)	338 (2.2)

*The dementia cohort is composed of the 13,906 subjects (those with a diagnosis of dementia any time prior to the index date of the cohort aged ≥65), in addition to 1,394 subjects with a dementia diagnosis that were not captured in the cohort ≥65 because the dementia diagnosis was registered after their index date. [#] Co-morbidities included in the QOF score.

Appendix E: Number of persons aged 65 and over with codes for more than one functional domain registered and the number of deaths observed at one year and one month.

Functional/cognitive domain	N (%)	N. deaths at one year (%)	N. deaths at one month (%)
Accommodation and mobility	4,891 (0.41)	1,264 (25.8%)	206 (4.2%)
Accommodation and dressing	547 (0.05)	87 (15.9%)	4 (0.7%)
Mobility and dressing	1,139 (0.10)	160 (14.1%)	20 (1.8%)
Accommodation, mobility and dressing	217 (0.02)	40 (18.4%)	5 (2.3%)

Appendix F: One-year mortality risk prediction in a cohort of patients 65 and over in THIN, and those with dementia.

Sample	Patient subgroups	Events / N° subjects (%)	Logistic model	C-statistic (95%CI)	p-value*	IDI (95%CI)	p-value#	Calibration in the large†		Calibration in the slope†	
								Intercept (SE)	p-value cal. large	slope (SE)	p-value cal. slope
≥65 years	All patients	34,337/1,193,268 (2.9)	Age + Sex	0.78 (0.78-0.79)	---	[reference]	---	0.0000 (0.0056)	0.985	1.0000 (0.0051)	0.999
			Age + Sex + QOF	0.82 (0.81-0.82)	<0.001	0.0151 (0.0145; 0.0158)	<0.001	0.0001 (0.0057)	0.982	1.0000 (0.0046)	0.999
	Patients with accommodation registration only	3,764/23,684 (15.9)	Age + Sex + QOF	0.71 (0.70-0.72)	---	[reference]	---	0.0000 (0.0185)	0.998	0.9998 (0.0253)	0.994
			Age + Sex + QOF + Accommodation	0.76 (0.75-0.77)	<0.001	0.0360 (0.0333; 0.0387)	<0.001	0.0000 (0.0189)	0.998	1.0000 (0.0215)	1.000
	Patients with mobility registration only	11,069/55,597 (19.9)	Age + Sex + QOF	0.66 (0.65-0.66)	---	[reference]	---	0.0000 (0.0109)	1.000	1.0000 (0.0198)	0.999
			Age + Sex + QOF + Mobility	0.66 (0.66-0.67)	<0.001	0.0034 (0.0030; 0.0039)	<0.001	0.0000 (0.0109)	0.999	1.0001 (0.0192)	0.998
	Patients with dressing registration only	379/5,197 (7.3)	Age + Sex + QOF	0.70 (0.67-0.72)	---	[reference]	---	0.0000 (0.0544)	1.000	0.9998 (0.0795)	0.998
			Age + Sex + QOF + Dressing	0.72 (0.70-0.75)	<0.001	0.0207 (0.0138; 0.0276)	<0.001	0.0000 (0.0550)	1.000	1.0000 (0.0656)	1.000
≥65 years with dementia	All patients	1,656/15,300 (10.8)	Age + Sex	0.66 (0.64-0.67)	---	[reference]	---	0.0000 (0.0264)	0.999	1.0000 (0.0519)	0.999
			Age + Sex + QOF	0.66 (0.65-0.69)	<0.001	0.0052 (0.0037; 0.0068)	<0.001	0.0001 (0.0265)	0.997	1.0000 (0.0474)	0.999
	Patients with accommodation registration only	286/1,174 (24.4)	Age + Sex + QOF	0.63 (0.59-0.67)	---	[reference]	---	0.0001 (0.0694)	0.999	1.0000 (0.1515)	1.000
			Age + Sex + QOF + Accommodation	0.64 (0.61-0.68)	0.015	0.0098 (0.0051; 0.0146)	<0.001	0.0000 (0.0697)	1.000	1.0000 (0.1383)	0.999
	Patients with mobility registration only	348/1,497 (23.2)	Age + Sex + QOF	0.59 (0.55-0.62)	---	[reference]	---	0.0000 (0.0617)	0.999	1.0000 (0.1996)	0.999
			Age + Sex + QOF + Mobility	0.59 (0.55-0.62)	0.592	0.0015 (-.00003; 0.0033)	0.051	0.0000 (0.0618)	0.9997	1.0000 (0.1917)	1.000
	Patients with dressing registration only	28/143 (19.6)	Age + Sex + QOF	0.62 (0.51-0.73)	---	[reference]	---	0.0000 (0.2154)	1.000	0.9999 (0.4290)	0.999
			Age + Sex + QOF + Dressing	0.69 (0.58-0.80)	0.134	0.0333 (0.0047; 0.0618)	0.011	0.0000 (0.2189)	0.999	0.9998 (0.3353)	0.999

*p-value from DeLong test for difference between the two c-statistics;# p-value from test that IDI=0; † estimated intercept and slope, along with their standard errors (SE), from recalibration logistic models. P-values evaluated whether the intercept is equal to 0 (i.e. p-value calibration in the large) and the slope is equal to 1 (i.e. p-value calibration in the slope), respectively. **Abbreviations:** CI: confidence interval; IDI: Integrated Discrimination Improvement; QOF- quality outcomes framework score;

Appendix G: One-month mortality prediction in a cohort of patients 65 and over in THIN, and those with dementia.

Sample	Patient subgroups	Events / N° subjects (%)	Logistic model	C-statistic (95%CI)	p-value*	IDI (95%CI)	p-value#	Calibration in the large†		Calibration in the slope†	
								Intercept (SE)	p-value cal. large	slope (SE)	p-value cal. slope
≥65 years	All patients	3,166/1,193,268 (0.3)	Age + Sex	0.78 (0.78-0.79)	---	---	---	0.0001 (0.0178)	0.994	1.0000 (0.0169)	1.000
			Age + Sex + QOF	0.83 (0.82-0.83)	<0.001	0.0028 (0.0025; 0.0031)	<0.001	0.0000 (0.0179)	1.000	1.0000 (0.0142)	1.000
	Patients with accommodation registration only	503/23,684 (2.1)	Age + Sex + QOF	0.73 (0.71-0.75)	---	---	---	0.0000 (0.0455)	1.000	1.0000 (0.0578)	1.000
			Age + Sex + QOF + Accommodation	0.79 (0.77-0.80)	<0.001	0.0091 (0.0078; 0.0103)	<0.001	0.0000 (0.0457)	1.000	0.9998 (0.0514)	0.997
	Patients with mobility registration only	1,903/55,597 (3.4)	Age + Sex + QOF	0.65 (0.63-0.66)	---	---	---	0.0001 (0.0234)	0.997	1.0000 (0.0462)	0.999
			Age + Sex + QOF + Mobility	0.66 (0.65-0.67)	<0.001	0.0015 (0.0013; 0.0017)	<0.001	0.0001 (0.0235)	0.998	1.0001 (0.0440)	0.998
	Patients with dressing registration only	20/5,197(0.4)	Age + Sex + QOF	0.77 (0.65-0.89)	---	---	---	0.0001 (0.2249)	0.999	1.0000 (0.2347)	1.000
			Age + Sex + QOF + Dressing	0.80 (0.68-0.92)	0.368	0.0139 (0.0005; 0.0273)	0.021	0.0001 (0.2263)	0.999	1.0000 (0.1666)	1.000
≥65 years with dementia	All patients	171/15,300 (1.1)	Age + Sex	0.65 (0.60-0.69)	---	[reference]	---	0.0000 (0.0770)	0.999	1.0000 (0.1592)	0.999
			Age + Sex + QOF	0.67 (0.63-0.72)	0.027	0.0015 (0.0004; 0.0027)	0.004	0.0000 (0.0771)	0.999	0.9998 (0.1284)	0.999
	Patients with accommodation registration only	36/1,174(3.1)	Age + Sex + QOF	0.67 (0.58-0.76)	---	[reference]	---	0.0001 (0.1704)	0.999	0.9999 (0.2784)	0.999
			Age + Sex + QOF + Accommodation	0.71 (0.63-0.79)	<0.001	0.0052 (0.0037; 0.0066)	<0.001	0.0001 (0.1709)	0.999	1.0000 (0.2769)	0.999
	Patients with mobility registration only	50/1,497(3.3)	Age + Sex + QOF	0.67 (0.60-0.75)	---	[reference]	---	0.0000 (0.1447)	1.000	1.0001 (0.2558)	0.999
			Age + Sex + QOF + Mobility	0.69 (0.61-0.76)	<0.001	0.0021 (0.0015; 0.0027)	<0.001	0.0001 (0.1448)	0.999	1.0000 (0.2587)	0.999

*p-value from DeLong test for difference between the two c-statistics;#p-value from test that IDI=0; † estimated intercept and slope, along with their standard errors (SE), from recalibration logistic models. P-values evaluated whether the intercept is equal to 0 (i.e. p-value calibration in the large) and the slope is equal to 1 (i.e. p-value calibration in the slope), respectively. **Abbreviations:** CI: confidence interval; IDI: Integrated Discrimination Improvement; QOF- quality outcomes framework score;

Appendix H: One-year mortality risk prediction in a cohort of males aged 65 and over, and those with dementia in THIN.

Sample	Patient subgroups	Events/ N° subjects (%)	Logistic model	C-statistic (95%CI)	p-value*	IDI (95%CI)	p-value#	Calibration in the large [†]		Calibration in the slope [†]	
								Intercept (SE)	p-value cal. large	slope (SE)	p-value cal. slope
≥65 years	All patients	18,608/654,388 (2.8)	Age	0.80 (0.80-0.81)	---	[reference]	---	-0.0001 (0.0077)	0.986	1.0000 (0.0068)	1.000
			Age + QOF	0.83 (0.82-0.83)	<0.001	0.0129 (0.0121; 0.0138)	<0.001	0.0000 (0.0077)	0.999	1.0000 (0.0062)	0.999
	Patients with accommodation registration only	2,341/15,284 (15.3)	Age + QOF	0.71 (0.70-0.72)	---	[reference]	---	0.0002 (0.0233)	0.994	1.0000 (0.0326)	1.000
			Age + QOF + Accommodation	0.75 (0.74-0.76)	<0.001	0.0268 (0.0240; 0.0297)	<0.001	0.0000 (0.0237)	0.998	1.0000 (0.0284)	0.999
	Patients with mobility registration only	6,129/35,353 (17.3)	Age + QOF	0.65 (0.64-0.65)	---	[reference]	---	0.0000 (0.0143)	1.000	1.0000 (0.0281)	0.999
			Age + QOF + Mobility	0.65 (0.65-0.66)	<0.001	0.0032 (0.0027; 0.0037)	<0.001	0.0000 (0.0144)	0.999	1.0000 (0.0272)	0.999
	Patients with dressing registration only	194/3,053 (6.4)	Age + QOF	0.70 (0.67-0.74)	---	[reference]	---	0.0000 (0.0755)	1.000	1.0000 (0.1073)	1.000
			Age + QOF + Dressing	0.74 (0.70-0.77)	0.003	0.0269 (0.0164; 0.0373)	<0.001	0.0000 (0.0767)	1.000	1.0000 (0.0844)	1.000
≥65 years with dementia	All patients	1,003/9,970 (10.1)	Age	0.67 (0.65-0.69)	---	[reference]	---	0.0000 (0.0338)	0.999	1.0000 (0.0635)	1.000
			Age + QOF	0.68 (0.66-0.69)	0.327	0.0044 (0.0026 ; 0.0063)	<0.001	0.0000 (0.0339)	1.000	1.0000 (0.0589)	1.000
	Patients with accommodation registration only	189/852 (22.2)	Age + QOF	0.62 (0.57-0.66)	---	[reference]	---	0.0000 (0.0837)	1.000	1.0000 (0.2018)	1.000
			Age + QOF + Accommodation	0.63 (0.59-0.67)	0.051	0.0063 (0.0022; 0.0104)	0.001	0.0000 (0.0840)	1.000	1.0000 (0.1866)	0.999
	Patients with mobility registration only	216/1008 (21.4)	Age + QOF	0.58 (0.53-0.62)	---	[reference]	---	0.0000 (0.0773)	1.000	0.9999 (0.2662)	0.999
			Age + QOF + Mobility	0.59 (0.54-0.63)	0.116	0.0036 (0.0008; 0.0064)	0.006	0.0000 (0.0775)	1.000	1.0000 (0.2414)	0.999
	Patients with dressing registration only	21/96 (21.9)	Age + QOF	0.58 (0.44-0.71)	---	[reference]	---	0.0000 (0.2495)	0.999	1.0001 (0.7357)	0.999
			Age + QOF + Dressing	0.63 (0.49-0.77)	0.414	0.0254 (-0.0067; 0.0576)	0.061	0.0001 (0.2528)	0.999	1.0001 (0.4970)	0.999

*p-value from DeLong test for difference between the two c-statistics;#p-value from test that IDI=0; † estimated intercept and slope, along with their standard errors (SE), from recalibration logistic models. **Abbreviations:** CI: confidence interval; IDI: Integrated Discrimination Improvement; QOF- quality outcomes framework score;. P-values evaluated whether the intercept is equal to 0 (i.e. p-value calibration in the large) and the slope is equal to 1 (i.e. p-value calibration in the slope), respectively.

Appendix I: One-year mortality risk prediction in a cohort of females aged 65 and over, and those with dementia in THIN.

Sample	Patient subgroups	Events/ N° subjects (%)	Logistic model	C-statistic (95%CI)	p-value*	IDI (95%CI)	p-value#	Calibration in the large†		Calibration in the slope†	
								Intercept (SE)	p-value cal. large	slope (SE)	p-value cal. slope
≥65 years	All patients	15,729/538,880 (2.9)	Age	0.76 (0.75-0.76)	---	[reference]	---	-0.0001 (0.0083)	0.992	1.0000 (0.0078)	1.000
			Age + QOF	0.80 (0.80-0.81)	<0.001	0.0181 (0.0171; 0.0192)	<0.001	0.0001 (0.0084)	0.991	1.0000 (0.0069)	0.999
	Patients with accommodation registration only	1,423/8,400 (16.9)	Age + QOF	0.72 (0.70-0.73)	---	[reference]	---	0.0000 (0.0305)	0.999	0.9999 (0.0400)	0.997
			Age + QOF + Accommodation	0.77 (0.76-0.79)	<0.001	0.0503 (0.0450; 0.0556)	<0.001	0.0000 (0.0314)	0.999	1.0000 (0.0328)	1.000
	Patients with mobility registration only	4,940/20,244 (24.4)	Age + QOF	0.65 (0.64-0.66)	---	[reference]	---	0.0000 (0.0168)	0.999	1.0000 (0.0325)	1.000
			Age + QOF + Mobility	0.65 (0.65-0.66)	<0.001	0.0038 (0.0030; 0.0045)	<0.001	0.0000 (0.0168)	0.999	1.0000 (0.0315)	0.999
	Patients with dressing registration only	185/2,144 (8.6)	Age + QOF	0.69 (0.65-0.73)	---	[reference]	---	0.0000 (0.0785)	1.000	0.9999 (0.1173)	0.999
			Age + QOF + Dressing	0.71 (0.67-0.75)	0.022	0.0155 (0.0065; 0.0245)	<0.001	0.0000 (0.0792)	1.000	0.9999 (0.1018)	0.999
≥65 years with dementia	All patients	653/5,300(12.3)	Age	0.63 (0.61-0.65)	---	[reference]	---	0.0000 (0.0422)	0.999	1.0000 (0.0959)	1.000
			Age + QOF	0.65 (0.63-0.67)	0.002	0.0078 (0.0048; 0.0109)	<0.001	0.0001 (0.0424)	0.998	1.0000 (0.0820)	0.999
	Patients with accommodation registration only	97/322 (30.1)	Age + QOF	0.64 (0.58-0.71)	---	[reference]	---	0.0000 (0.1250)	1.000	1.0000 (0.2474)	1.000
			Age + QOF + Accommodation	0.66 (0.60-0.73)	0.219	0.0212 (0.0070; 0.0353)	0.002	0.0000 (0.1264)	0.999	1.0001 (0.2175)	0.999
	Patients with mobility registration only	132/489 (27.0)	Age + QOF	0.57 (0.51-0.63)	---	[reference]	---	0.0001 (0.1028)	0.999	1.0000 (0.3490)	1.000
			Age + QOF + Mobility	0.57 (0.51-0.63)	0.593	0.0000 (-0.0002; 0.0001)	0.512	0.0001 (0.1028)	0.999	1.0000 (0.3490)	1.000
	Patients with dressing registration only	7/47 (14.9)	Age + QOF	0.76 (0.58-0.94)	---	[reference]	---	0.0000 (0.4388)	1.000	1.0002 (0.7595)	0.999
			Age + QOF + Dressing	0.79 (0.59-0.98)	0.677	0.0353 (-0.0177; 0.0882)	0.096	0.0000 (0.4454)	1.000	1.0002 (0.6304)	0.999

*p-value from DeLong test for difference between the two c-statistics;#p-value from test that $IDI=0$; † estimated intercept and slope, along with their standard errors (SE), from recalibration logistic models. **Abbreviations:** CI: confidence interval; IDI: Integrated Discrimination Improvement; QOF- quality outcomes framework score; P-values evaluated whether the intercept is equal to 0 (i.e. p-value calibration in the large) and the slope is equal to 1 (i.e. p-value calibration in the slope), respectively.

Appendix J: Crude mortality rates within one year of follow-up among persons aged 65 and over in THIN with and without a functional domain recorded, irrespective of severity.

		Events	Subjects	Person-years	Mortality rate* (95% CI)
Accommodation registered?	No	34,021	1,169,584	1,114,671	3.05 (3.02 – 3.09)
	Yes	3,764	23,684	19,407	19.40 (18.79 – 20.03)
Dressing registered?	No	34,325	1,188,071	1,132,942	3.03 (2.99 – 3.06)
	Yes	379	5,197	4,552	8.33 (7.53 – 9.21)
Mobility registered?	No	33,621	1,137,671	1,082,965	3.11 (3.07 – 3.14)
	Yes	11,069	55,597	43,124	25.67 (25.19 – 26.15)

*Events per 100 person-years

Appendix K: Kaplan Meier curves plotting survival in persons aged 65 and over who had a functional domain and those who did not have a functional domain recorded, irrespective of severity.

