Supplementary Material

eTable 1. Data sources

Outcome	Database
Palliative home care (provided by nonphysicians)	Home Care Database (HCD) using service recipient codes for Complex Care End of Life or End of Life (In-Home)
Palliative home visits provided by physicians	Ontario Health Insurance Plan (OHIP) service fee codes
Hospitalizations	Canadian Institute for Health Information–Discharge Abstract Database (CIHI-DAD)
Emergency department (ED) visits	National Ambulatory Care Reporting System (NACRS) **n.b.** Scheduled ED visits and visits where the patient left without being seen by a service provider were excluded.
Long-term care home admission	Continuing Care Reporting System (CCRS)
Date of death	Registered Persons Database
Location of death	Acute care hospitals: CIHI-DAD, NACRS and Same Day Surgery Database Long-term care home: CCRS Other institutional care settings: Ontario Mental Health Reporting System and National Rehabilitation Reporting System Community settings (i.e. outside of known institutional settings): OHIP Database and HCD

Appendix 1, as supplied by the authors. Appendix to: Murmann M, Manuel DG, Tanuseputro P, et al. Estimated mortality risk and use of palliative care services among home care clients during the last 6 months of life: a retrospective cohort study. *CMAJ* 2024. doi: 10.1503/cmaj.221513.

eMethods 1. Derivation of RESPECT risk score and bin

I. Cox Proportional Hazards Regression Model of 6-Month Mortality

Predictors	Derivation Cohort (N=405,689 assessments)	
	Hazard Ratio	(95% CI)
Age		
First segment of the restricted cubic spline (RCS) of age	1.015	(1.010 - 1.020)
Second segment of the RCS of age	0.996	(0.982 - 1.009)
Third segment of the RCS of age	1.069	(0.963 - 1.188)
Fourth segment of the RCS of age	1.043	(0.777 - 1.401)
Sex		
Female	1.000	(Reference)
Male	1.496	(1.460 - 1.532)
Diseases		
Stroke	0.817	(0.792 - 0.844)
Congestive heart failure (CHF)	1.458	(1.416 - 1.502)
Coronary heart disease (CHD)	1.023	(0.998 - 1.049)
Alzheimer disease or other dementias	0.936	(0.910 - 0.963)
Multiple sclerosis (MS)	0.578	(0.500 - 0.668)
Parkinson's	0.838	(0.794 - 0.884)
Signs and symptoms of health instability		
Vomiting in at least 2 of the last 3 days	1.397	(1.239 - 1.574)
Edema in at least 1 of the last 3 days	1.045	(1.020 - 1.070)
Dyspnea (shortness of breath)	1.226	(1.195 - 1.256)
Fluid intake less than four 8 oz cups per day (or less than 1000 cc per day) in last 3 days	1.210	(1.162 - 1.259)
Weight loss of > 5% in the last 30 days or > 10% in the last 180 days	1.461	(1.417 - 1.506)
Decrease in amount food or fluid usually consumed	1.420	(1.373 - 1.468)
Prognosis of less than 6 months to live		
No	1.000	(Reference)
Yes	2.836	(2.718 - 2.959)
No. of inpatient admissions (ED) over the past 90 days		
0	1.000	(Reference)
1	1.275	(1.245 - 1.307)
2	1.451	(1.386 - 1.519)
3+	1.498	(1.399 - 1.603)
No. of emergency department visits (ED) over past 90 days		
0	1.000	(Reference)
1	1.120	(1.091 - 1.151)
2	1.247	(1.190 - 1.306)
3+	1.268	(1.197 - 1.344)
Instrumental Activities of Daily Living (IADL) Difficulty scale		
0 = Independent in performing ordinary housework, meal preparation or phone use	1.000	(Reference)
1	1.021	(0.889 - 1.174)
2	1.032	(0.923 - 1.155)
3	1.065	(0.952 - 1.191)
4	1.229	(1.102 - 1.371)
5	1.420	(1.277 - 1.580)
6 = Total dependence in performing ordinary housework, meal preparation or phone use	1.810	(1.623 - 2.018)
Activities of Daily Living (ADL) Self-performance Hierarchy scale		

Predictors	Derivation Cohort (N=405,689 assessments)	
	Hazard Ratio	(95% CI)
0 = Independent in maintaining personal hygiene, toilet use, locomotion, and eating	1.000	(Reference)
1	0.925	(0.888 - 0.964)
2	1.065	(1.029 - 1.104)
3	1.187	(1.144 - 1.231)
4	1.575	(1.511 - 1.643)
5	1.977	(1.896 - 2.061)
6 = Total dependence in maintaining personal hygiene, toilet use, locomotion, and eating	3.234	(3.027 - 3.456)
Worsening ADL		
No	1.000	(Reference)
Yes	1.417	(1.381 - 1.454)
Cognitive skills for daily decision-making		
Worsening decision-making capacity	1.024	(0.997 - 1.051)
Reason for assessment		
First assessment	1.000	(Reference)
Routine reassessment	0.941	(0.918 - 0.918)
Discharge assessment or discharge tracking	1.156	(0.736 - 1.816)
Significant change in status reassessment	1.240	(1.198 - 1.284)
Other (e.g. research)	1.059	(0.889 - 1.261)
Year of Assessment		
2018	1.000	(Reference)
2019	0.992	(0.969 - 1.015)
Receipt of life-sustaining treatments or therapies		
Cancer present and no chemotherapy	1.000	(Reference)
Cancer present and chemotherapy ordered (implemented or not implemented)	1.616	(1.514 - 1.725)
No cancer and chemotherapy ordered (implemented or not implemented)	1.622	(1.243 - 2.117)
Chronic obstructive pulmonary disease (COPD) present and oxygen therapy ordered (implemented or not implemented)	1.000	(Reference)
COPD present and no oxygen therapy	0.627	(0.592 - 0.663)
No COPD and oxygen therapy ordered (implemented or not implemented)	1.824	(1.721 - 1.933)

II. Formula for deriving the RESPECT risk score (RESPECTScore)
Using the final model coefficients for the total cohort presented in the table above, the RESPECTScore can be calculated using the following formula:

RESPECTScore = (β_{Age_RCS1} * Age_RCS1) + (β_{Age_RCS2} * Age_RCS2) + (β_{Age_RCS3} * Age_RCS3) + (β_{Age_RCS4} * Age_RCS4) + (β_{Male} * Male) + (β_{Stroke} * Stroke) + (β_{CHF} * CHF) + (β_{CHD} * CHD) + ($\beta_{Alzheimer/Dementia}$ * Alzheimer/Dementia) + (β_{MS} * MS) + ($\beta_{ParkinsonsDisease}$ * ParkinsonsDisease) + (β_{IADL_1} * IADL_1) + (β_{IADL_2} * IADL_2) + (β_{IADL_3} * IADL_3) + (β_{IADL_4} * IADL_4) + (β_{IADL_5} * IADL_5) + (β_{IADL_6} * IADL_6) + (β_{ADL_1} * ADL_1) + (β_{ADL_2} * ADL_2) + (β_{ADL_3} * ADL_3) + (β_{ADL_4} * ADL_4) + (β_{ADL_5} * ADL_5) + (β_{ADL_6} * ADL_6) + ($\beta_{Worsening\_ADL}$ * Worsening_ADL) + ($\beta_{Worsening\_Cognition}$ * Worsening_Cognition) + ($\beta_{Symptoms\_Vomiting}$ * Symptoms_Vomiting) + ($\beta_{Symptoms\_Edema}$ * Symptoms_Edema) + ($\beta_{Symptoms\_Dyspnea}$ * Symptoms_Dyspnea) + ($\beta_{Symptoms\_WeightLoss}$ * Symptoms_WeightLoss) + ($\beta_{Symptoms\_DecrsConsumption}$ * Symptoms_ DecrsConsumption) + ($\beta_{Symptoms\_InsufficientFluid}$ * Symptoms_ InsufficientFluid) + ($\beta_{TerminalIllness}$ * TerminalIllness) + ($\beta_{COPD0\_OxygenTherapy1\_int}$ * COPD0_OxygenTherapy1_int) + ($\beta_{COPD1\_OxygenTherapy0\_int}$ * COPD1_OxygenTherapy0_int) + ($\beta_{Cancer1\_Chemo1\_int}$ * Cancer1_Chemo1_int) + ($\beta_{Cancer0\_Chemo1\_int}$ * Cancer0_Chemo1_int) + ($\beta_{Hospitalization1}$ * Hospitalization1) + ($\beta_{Hospitalization2}$ * Hospitalization2) + ($\beta_{Hospitalization3}$ * Hospitalization3) + (β_{ED1} * ED1) + (β_{ED2} * ED2) + (β_{ED3} * ED3) + ($\beta_{AssessmentTyp\_Other}$ * AssessmentTyp_Other) + ($\beta_{AssessmentTyp\_Routine}$ * AssessmentTyp_Routine) + ($\beta_{AssessmentTyp\_DischargeAss}$ * AssessmentTyp_DischargeAss) + ($\beta_{AssessmentTyp\_HealthChange}$ * AssessmentTyp_HealthChange) + ($\beta_{AssessmentYear\_2019}$ * AssessmentYear_2019)

For the restricted cubic spline (RCS) function with j = 1,…, k knots, its components can be derived using:
Age_RCS1 = X (the centred value for age)

and

$$Age\_RCS_{j+1} = \left(\frac{X - knot_j}{(knot_k - knot_1)^{2/3}}\right)_+^3 + (knot_{k-1} - knot_j)\left(\frac{X - knot_k}{(knot_k - knot_1)^{2/3}}\right)_+^3 - (knot_k - knot_j)\left(\frac{X - knot_{k-1}}{(knot_k - knot_1)^{2/3}}\right)_+^3 / (knot_k - knot_{k-1})$$

Reference: Harrell FE. Biostatistical Modeling. http://biostat.mc.vanderbilt.edu/wiki/pub/Main/BioMod/notes.pdf. Published June 1, 2004. Accessed July 25, 2020.

III. RESPECT risk bins

Using RESPECTScore, patients are placed into 1 of 61 risk bins. These bins were created to reflect incremental increases in estimated survival. Thresholds ranged from 0.2 percentile in the highest risk bins (bins 1-5) up to 3.0 percent in low risk bins (29-42).

Risk Bin	Minimum RESPECTScore	Maximum RESPECTScore	Percentile Rank in Mortality Risk
1	3.52	-	0.2
2	3.19	3.52	0.2
3	2.96	3.19	0.2
4	2.80	2.96	0.2
5	2.66	2.80	0.2
6	2.39	2.66	0.5
7	2.20	2.39	0.5
8	2.06	2.20	0.5
9	1.94	2.06	0.5
10	1.76	1.94	1.0
11	1.61	1.76	1.0
12	1.49	1.61	1.0
13	1.39	1.49	1.0
14	1.30	1.39	1.0
15	1.22	1.30	1.0
16	1.15	1.22	1.0
17	1.03	1.15	2.0
18	.92	1.03	2.1
19	.83	.92	1.9
20	.75	.83	1.9
21	.67	.75	2.1
22	.58	.67	2.6
23	.50	.58	2.5
24	.43	.50	2.4
25	.36	.43	2.6
26	.30	.36	2.3
27	.24	.30	2.4
28	.18	.24	2.5
29	.12	.18	2.7
30	.06	.12	2.7
31	.01	.06	2.4
32	-.04	.01	2.4
33	-.09	-.04	2.4
34	-.14	-.09	2.4
35	-.20	-.14	3.0

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Risk Bin	Minimum RESPECTScore	Maximum RESPECTScore	Percentile Rank in Mortality Risk
36	-.24	-.20	2.0
37	-.29	-.24	2.5
38	-.34	-.29	2.6
39	-.39	-.34	2.5
40	-.44	-.39	2.5
41	-.49	-.44	2.4
42	-.54	-.49	2.4
43	-.60	-.54	2.8
44	-.65	-.60	2.2
45	-.71	-.65	2.6
46	-.76	-.71	2.1
47	-.81	-.76	2.0
48	-.86	-.81	1.8
49	-.92	-.86	2.0
50	-.99	-.92	2.2
51	-1.02	-.99	0.8
52	-1.06	-1.02	1.0
53	-1.10	-1.06	1.0
54	-1.14	-1.10	0.9
55	-1.19	-1.14	1.0
56	-1.25	-1.19	1.1
57	-1.32	-1.25	1.0
58	-1.36	-1.32	0.5
59	-1.41	-1.36	0.5
60	-1.53	-1.41	0.9
61	-	-1.53	1.0

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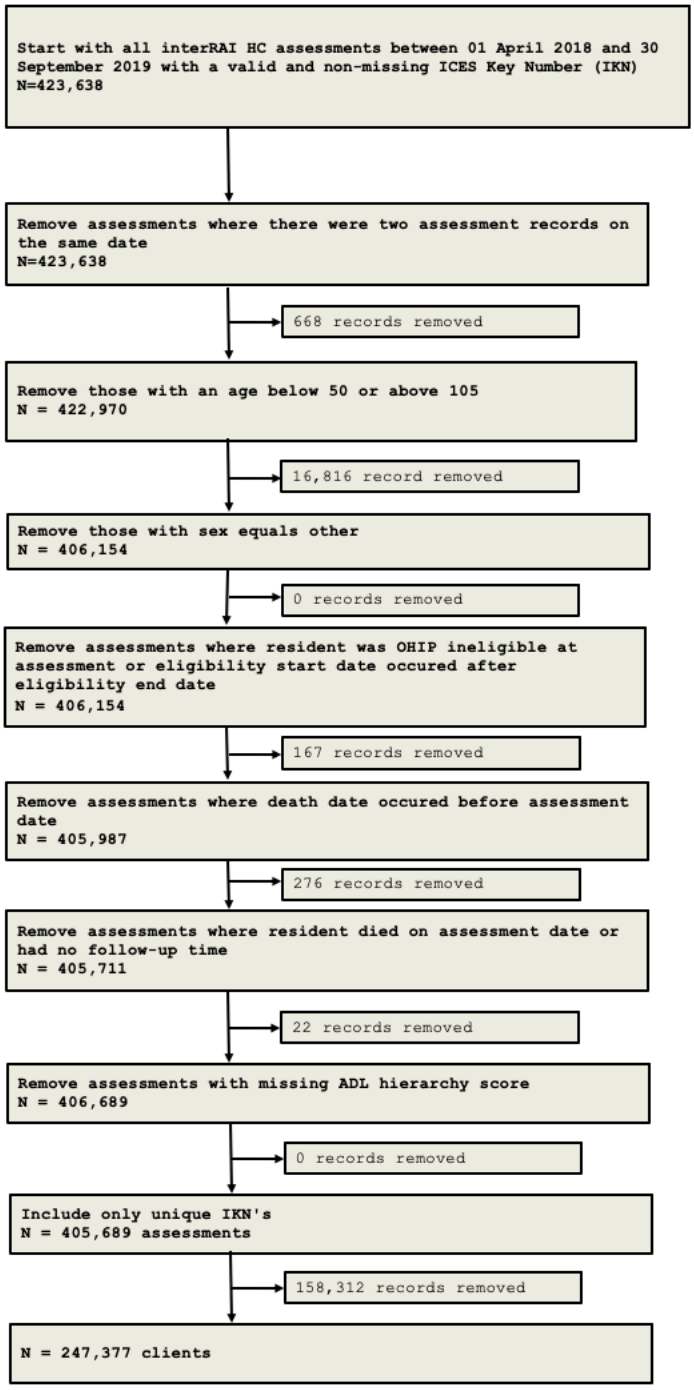
eFigure 1. Cohort creation



eTable 2. Predicted 6-month mortality risk and median survival across RESPECT risk bins

Risk Bin	N	Predicted Mortality Risk (%)	CI	Median Survival (days)
1	499	98.07%	(97.937 - 98.207)	30
2	498	91.61%	(91.441 - 91.779)	46
3	513	84.77%	(84.616 - 84.930)	65
4	472	79.22%	(79.078 - 79.357)	79
5	513	73.94%	(73.821 - 74.056)	82
6	1239	66.42%	(66.261 - 66.583)	114
7	1265	58.17%	(58.058 - 58.280)	146
8	1196	52.28%	(52.196 - 52.363)	172
9	1294	47.76%	(47.699 - 47.826)	204
10	2437	42.73%	(42.663 - 42.798)	241
11	2589	37.78%	(37.736 - 37.833)	292
12	2535	34.04%	(34.007 - 34.082)	329
13	2429	31.11%	(31.081 - 31.142)	378
14	2386	28.71%	(28.680 - 28.731)	431
15	2515	26.68%	(26.659 - 26.700)	465
16	2487	25.02%	(25.003 - 25.037)	517
17	4862	23.02%	(22.998 - 23.038)	563
18	5270	20.81%	(20.790 - 20.821)	652
19	4789	19.07%	(19.053 - 19.079)	666
20	4796	17.62%	(17.611 - 17.632)	734
21	5281	16.40%	(16.389 - 16.407)	783
22	6517	15.23%	(15.222 - 15.240)	821
23	6209	14.11%	(14.104 - 14.119)	889
24	5971	13.13%	(13.121 - 13.134)	933
25	6367	12.29%	(12.289 - 12.300)	981
26	5677	11.54%	(11.540 - 11.550)	1,020
27	6040	10.88%	(10.875 - 10.884)	1,100
28	6288	10.27%	(10.268 - 10.276)	1,106
29	6603	9.73%	(9.723 - 9.730)	1,150
30	6689	9.23%	(9.223 - 9.230)	1,188
31	5866	8.76%	(8.752 - 8.758)	1,237
32	5868	8.33%	(8.323 - 8.329)	1,265
33	5945	7.92%	(7.913 - 7.919)	1,263
34	6022	7.54%	(7.533 - 7.538)	1,315
35	7394	7.17%	(7.170 - 7.175)	1,325
36	5045	6.84%	(6.836 - 6.841)	1,351
37	6206	6.52%	(6.516 - 6.520)	1,388
38	6481	6.22%	(6.219 - 6.223)	1,399
39	6269	5.93%	(5.931 - 5.935)	1,422
40	6209	5.65%	(5.653 - 5.657)	1,451

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Risk Bin	N	Predicted Mortality Risk (%)	CI	Median Survival (days)
41	6034	5.39%	(5.385 - 5.389)	1,455
42	5927	5.12%	(5.120 - 5.123)	1,462
43	6923	4.87%	(4.865 - 4.869)	1,492
44	5489	4.61%	(4.610 - 4.614)	1,496
45	6439	4.37%	(4.363 - 4.367)	1,525
46	5181	4.15%	(4.144 - 4.147)	1,506
47	4831	3.95%	(3.948 - 3.951)	1,515
48	4524	3.75%	(3.750 - 3.753)	1,522
49	4997	3.55%	(3.549 - 3.552)	1,537
50	5341	3.34%	(3.338 - 3.341)	1,523
51	2053	3.18%	(3.177 - 3.180)	1,528
52	2548	3.06%	(3.063 - 3.066)	1,539
53	2525	2.95%	(2.947 - 2.949)	1,525
54	2211	2.83%	(2.829 - 2.832)	1,543
55	2486	2.70%	(2.699 - 2.702)	1,550
56	2643	2.57%	(2.566 - 2.569)	1,535
57	2449	2.41%	(2.412 - 2.416)	1,548
58	1246	2.29%	(2.284 - 2.287)	>1,505 at 35th percentile
59	1225	2.19%	(2.187 - 2.191)	>1,438 at 26th percentile
60	2317	2.02%	(2.014 - 2.020)	1,537
61	2457	1.62%	(1.613 - 1.630)	1,576

Note: Because follow up is censored by the end of study (June 29, 2022), we were unable to capture median survival for RESPECT risk bins 58 and 59. We therefore present the latest data point available in the specific risk bin indicating the relevant percentile captured.

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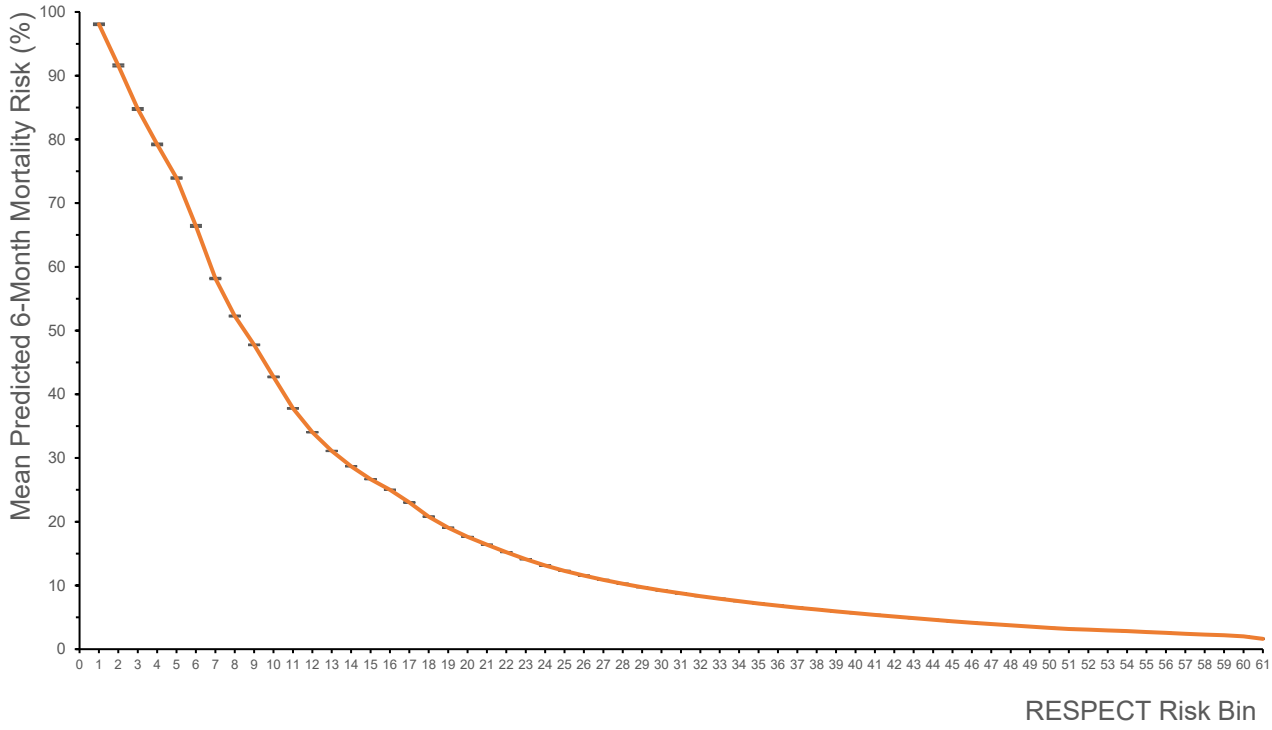
eFigure 2. Mean predicted 6-month mortality risk across risk groups



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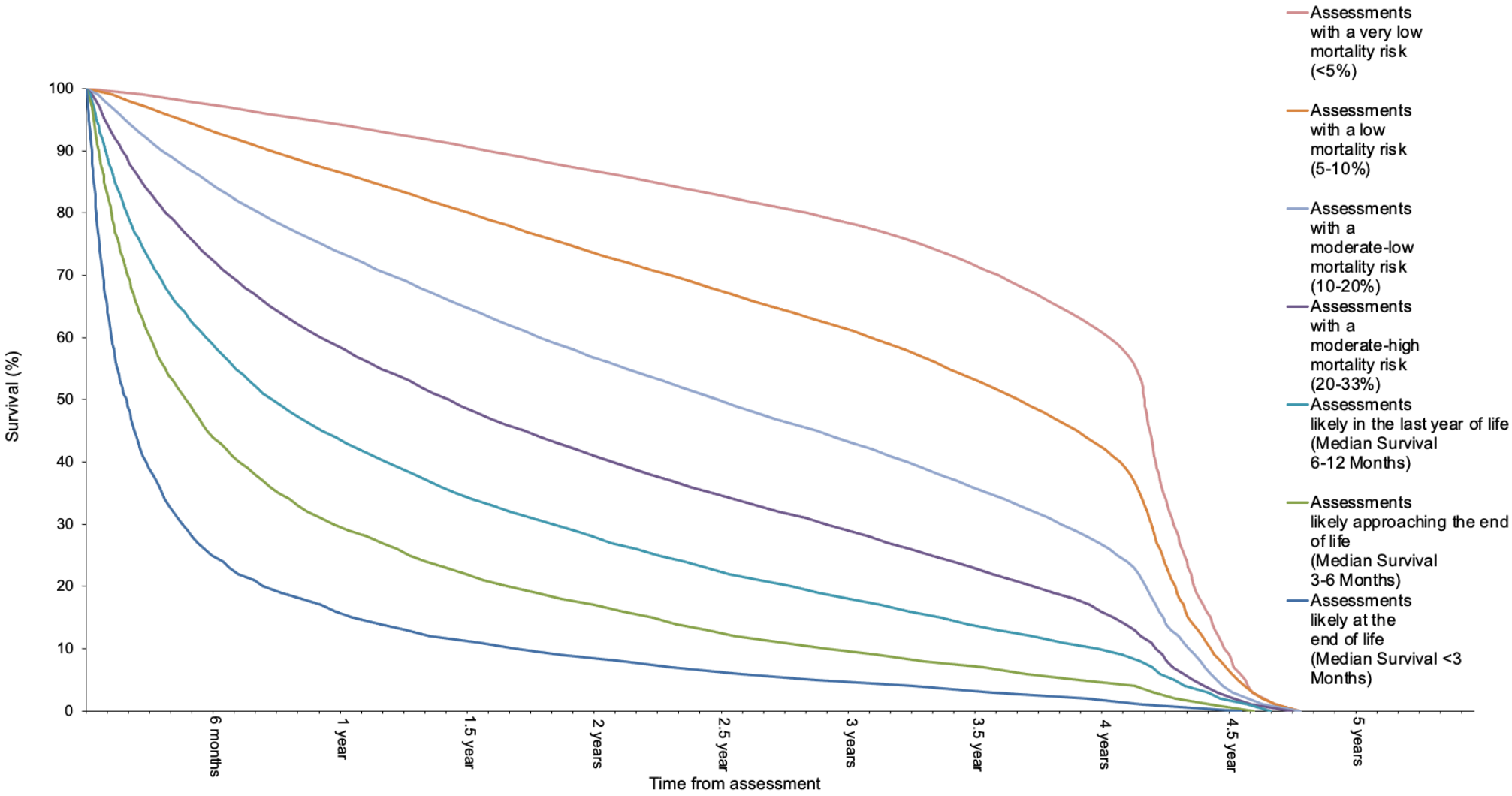
eFigure 3. Kaplan-Meier survival estimates of each mortality-risk profile



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eTable 3. Cause of death across mortality-risk profiles among home care users who died within 6 months of an interRAI Home Care assessment

Cause of Death	Mortality-Risk Profile, N (%)						
	Predicted median survival <3 months	Predicted median survival between 3-6 months	Predicted median survival between 6-12months	Predicted mortality risk between 20-33%	Predicted mortality risk between 10-20%	Predicted mortality risk between 5-10%	Predicted mortality risk between <5%
Frailty	134 (12.04)	141 (11.58)	309 (12.60)	484 (10.44)	717 (7.01)	330 (2.86)	68 (1.10)
Organ failure	365 (32.79)	343 (28.16)	618 (25.19)	903 (19.48)	1315 (12.86)	797 (6.91)	187 (3.04)
Sudden death	21 (1.89)	30 (2.46)	50 (2.04)	92 (1.98)	155 (1.52)	130 (1.13)	32 (0.52)
Terminal illness	398 (35.76)	328 (26.93)	419 (17.08)	527 (11.37)	585 (5.72)	303 (2.63)	42 (0.68)
Other	33 (2.96)	43 (3.53)	75 (3.06)	134 (2.89)	157 (1.53)	92 (0.80)	22 (0.36)
No valid cause of death in ORGD	27 (2.43)	26 (2.13)	36 (1.47)	38 (0.82)	67 (0.66)	29 (0.25)	10 (0.16)
Did not die during 6m follow-up*	135 (12.13)	307 (25.21)	946 (38.57)	2457 (53.01)	7233 (70.71)	9847 (85.42)	5797 (94.14)

*Cause of death data extracted from the Ontario Registrar General – Deaths database (ORGD) was only available until December 2018 at the time of this analysis and does not include the full study cohort.

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eTable 4. Proportion of decedents who had at least one healthcare service day and intensity of service use

	Mortality-Risk Profiles						
	Assessments likely at the end of life (Predicted median Survival <3 Months) (n=1,870)	Assessments likely approaching the end of life (Predicted median Survival 3-6 Months) (n=2,051)	Assessments likely in the last year of life (Predicted median Survival 6-12 Months) (n=3,602)	Assessments with a moderate-high mortality risk (20-33%) (n=5,473)	Assessments with a moderate-low mortality risk (10-20%) (n=8,821)	Assessments with a low mortality risk (5-10%) (n=5,881)	Assessments with a very low mortality risk (<5%) (n=1,722)
Non-Physician Palliative Home Care							
Proportion*	50.59	38.71	29.48	22.2	18.58	13.77	9.93
Mean number of visits	50.16	53.49	48.63	48.37	43.16	39.19	37.28
5th percentile	2	2	1	1	1	1	1
Lower quartile	10	13	10	9	8	6	4
Median number of visits	29.0	33.0	27.0	27.0	24.0	21.5	19.0
Upper quartile	71	79	67	69	57	51	56
95th percentile	180	180	180	180	180	154	143
Physician Palliative Home Care Visit							
Proportion*	27.81	28.33	26.12	26.04	23.53	19.37	13.53
Mean number of visits	1.98	2.14	2.07	2.11	1.94	2.02	2.06
5th percentile	1	1	1	1	1	1	1
Lower quartile	1	1	1	1	1	1	1
Median number of visits	1	1	1	1	1	1	1
Upper quartile	2	2	2	2	2	2	2
95th percentile	6	7	6	7	5	6	5
Emergency Department Visits							
Proportion*	41.28	55.24	63.38	71.88	79.61	83.66	82
Mean number of days§	1.64	1.74	1.78	1.84	1.89	1.91	1.95
5th percentile	1	1	1	1	1	1	1
Lower quartile	1	1	1	1	1	1	1
Median number of days§	1	1	1	1	1	1	1
Upper quartile	2	2	2	2	2	2	2
95th percentile	4	4	4	4	4	4	5

	Assessments likely at the end of life (Predicted median Survival <3 Months) (n=1,870)	Assessments likely approaching the end of life (Predicted median Survival 3-6 Months) (n=2,051)	Assessments likely in the last year of life (Predicted median Survival 6-12 Months) (n=3,602)	Assessments with a moderate-high mortality risk (20-33%) (n=5,473)	Assessments with a moderate-low mortality risk (10-20%) (n=8,821)	Assessments with a low mortality risk (5-10%) (n=5,881)	Assessments with a very low mortality risk (<5%) (n=1,722)
Acute Care Hospitalizations							
Proportion*	37.43	49.15	57.27	65.38	72.52	76.35	74.8
Mean number of days	13.63	15.73	16.08	17.51	17.72	18.54	17.29
5th percentile	1	1	1	1	1	1	1
Lower quartile	4	4	4	5	5	5	5
Median number of days	8	9	10	11	12	12	11
Upper quartile	18	21	20	23	23	24	23
95th percentile	41	50	53	54	55	59	55
Long-Term Care Admissions							
Proportion*	12.89	15.94	16.32	17.49	15.21	12.8	8.19
Mean number of days	50.53	57.15	52.48	56.80	55.79	56.52	50.75
5th percentile	4.0	5.0	5.0	5.0	5.0	5.0	5.5
Lower quartile	15.0	23.0	19.0	21.5	21.0	20.0	19.0
Median number of days	42.0	46.0	41.0	47.0	48.5	47.0	47.5
Upper quartile	75.0	84.0	81.0	88.0	84.0	86.0	72.0
95th percentile	130.0	142.0	132.0	142.0	136.0	135.0	120.5

*Proportion of decedents with at least one healthcare service day
§Number of days with at least 1 emergency department visit

eTable 5. Proportion and number of non-physician palliative home care visits provided to decedents, sensitivity analysis excluding individuals with a sudden death

	Mortality-Risk Profiles						
	Assessments likely at the end of life (Predicted median Survival <3 Months) (n=957)	Assessments likely approaching the end of life (Predicted median Survival 3-6 Months) (n=881)	Assessments likely in the last year of life (Predicted median Survival 6-12 Months) (n=1,457)	Assessments with a moderate-high mortality risk (20-33%) (n=2,086)	Assessments with a moderate-low mortality risk (10-20%) (n=2,841)	Assessments with a low mortality risk (5-10%) (n=1,551)	Assessments with a very low mortality risk (<5%) (n=329)
Proportion*	50.16	36.44	27.11	20.81	16.72	11.61	7.29
Mean number of visits	43.96	51.52	45.23	45.30	39.80	30.06	32.58
5th percentile	1	1	2	1	1	1	1
Lower quartile	9.0	13.0	10.0	7.0	8.0	4.5	4.0
Median number of visits	25.5	31.0	27.0	25.0	24.0	18.0	15.5
Upper quartile	59.0	71.0	61.0	62.0	49.0	42.5	56.5
95th percentile	176	180	180	180	167	107	113

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eTable 6. Baseline characteristics of decedents from the highest mortality-risk profiles, stratified by receipt of palliative home care visit provided by a physician or non-physician

	Predicted median survival <3 months		Predicted median survival between 3-6 months		Predicted median survival between 6-12 months	
	Palliative Home Care Received		Palliative Home Care Received		Palliative Home Care Received	
	No	*Yes*	*No*	*Yes*	*No*	*Yes*
	(n=1,091)	(n=1,404)	(n=2,061)	(n=1,639)	(n=5,859)	(n=2,996)
Age						
50-59	*25-29	29 (2.1%)	32 (1.6%)	54 (3.3%)	115 (2.0%)	91 (3.0%)
60-69	56 (5.1%)	107 (7.6%)	153 (7.4%)	146 (8.9%)	387 (6.6%)	269 (9.0%)
70-79	181 (16.6%)	268 (19.1%)	333 (16.2%)	333 (20.3%)	1,064 (18.2%)	555 (18.5%)
80-89	440 (40.3%)	560 (39.9%)	806 (39.1%)	627 (38.3%)	2,278 (38.9%)	1,066 (35.6%)
90-99	368 (33.7%)	408 (29.1%)	701 (34.0%)	449 (27.4%)	1,909 (32.6%)	952 (31.8%)
100+	*17-21	32 (2.3%)	36 (1.7%)	30 (1.8%)	106 (1.8%)	63 (2.1%)
Sex						
Female	390 (35.7%)	569 (40.5%)	734 (35.6%)	709 (43.3%)	2,242 (38.3%)	1,353 (45.2%)
Male	701 (64.3%)	835 (59.5%)	1,327 (64.4%)	930 (56.7%)	3,617 (61.7%)	1,643 (54.8%)
Diseases						
Stroke	172 (15.8%)	182 (13.0%)	333 (16.2%)	211 (12.9%)	944 (16.1%)	401 (13.4%)
Congestive heart failure	478 (43.8%)	516 (36.8%)	857 (41.6%)	552 (33.7%)	2,261 (38.6%)	901 (30.1%)
Coronary heart disease	481 (44.1%)	535 (38.1%)	924 (44.8%)	639 (39.0%)	2,532 (43.2%)	1,108 (37.0%)
Dementia (combined Alzheimer's and other dementias)	354 (32.4%)	373 (26.6%)	719 (34.9%)	435 (26.5%)	1,978 (33.8%)	846 (28.2%)
Multiple sclerosis	*1-5	*1-5	6 (0.3%)	*1-5	15 (0.3%)	10 (0.3%)
Parkinson’s	29 (2.7%)	37 (2.6%)	81 (3.9%)	60 (3.7%)	208 (3.6%)	110 (3.7%)
Cancer	671 (61.5%)	888 (63.2%)	1,140 (55.3%)	948 (57.8%)	2,655 (45.3%)	1,525 (50.9%)
Chronic obstructive pulmonary disease	362 (33.2%)	371 (26.4%)	627 (30.4%)	468 (28.6%)	1,699 (29.0%)	749 (25.0%)
Signs and Symptoms of Health Instability						

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Vomiting in at least 2 of the last 3 days	45 (4.1%)	78 (5.6%)	55 (2.7%)	46 (2.8%)	86 (1.5%)	60 (2.0%)
Edema in the last 3 days	471 (43.2%)	627 (44.7%)	901 (43.7%)	671 (40.9%)	2,483 (42.4%)	1,195 (39.9%)
Dyspnea (shortness of breath)	817 (74.9%)	1,087 (77.4%)	1,440 (69.9%)	1,174 (71.6%)	3,810 (65.0%)	1,915 (63.9%)
Fluid intake less than four 8 oz cups per day	422 (38.7%)	588 (41.9%)	471 (22.9%)	343 (20.9%)	1,010 (17.2%)	443 (14.8%)
Weight loss of >5% in the last 30 days or >10% in the last 6 months	695 (63.7%)	881 (62.7%)	1,023 (49.6%)	785 (47.9%)	2,269 (38.7%)	1,089 (36.3%)
Decrease in amount food or fluid usually consumed	695 (63.7%)	926 (66.0%)	901 (43.7%)	709 (43.3%)	1,906 (32.5%)	897 (29.9%)
Prognosis <6 months to live	716 (65.6%)	1,228 (87.5%)	600 (29.1%)	953 (58.1%)	562 (9.6%)	847 (28.3%)
Pain Symptoms						
Frequency with which patient complains or shows evidence of pain						
No pain	315 (28.9%)	359 (25.6%)	618 (30.0%)	481 (29.3%)	1,840 (31.4%)	908 (30.3%)
Present but not exhibited in last 3 days	64 (5.9%)	68 (4.8%)	126 (6.1%)	81 (4.9%)	341 (5.8%)	167 (5.6%)
Exhibited on 1-2 of last 3 days	125 (11.5%)	149 (10.6%)	227 (11.0%)	195 (11.9%)	652 (11.1%)	325 (10.8%)
Exhibited daily in last 3 days	587 (53.8%)	828 (59.0%)	1,090 (52.9%)	882 (53.8%)	3,026 (51.6%)	1,596 (53.3%)
Intensity of highest level of pain present						
No pain	379 (34.7%)	427 (30.4%)	744 (36.1%)	562 (34.3%)	2,181 (37.2%)	1,075 (35.9%)
Mild	89 (8.2%)	133 (9.5%)	198 (9.6%)	167 (10.2%)	592 (10.1%)	286 (9.5%)
Moderate	414 (37.9%)	479 (34.1%)	763 (37.0%)	553 (33.7%)	2,072 (35.4%)	1,028 (34.3%)
Severe	159 (14.6%)	255 (18.2%)	263 (12.8%)	269 (16.4%)	793 (13.5%)	471 (15.7%)
Time when pain is horrible or excruciating	50 (4.6%)	110 (7.8%)	93 (4.5%)	88 (5.4%)	221 (3.8%)	136 (4.5%)
Consistency of pain						
No pain	379 (34.7%)	427 (30.4%)	744 (36.1%)	562 (34.3%)	2,181 (37.2%)	1,075 (35.9%)
Single episode during last 3 days	14 (1.3%)	10 (0.7%)	19 (0.9%)	19 (1.2%)	52 (0.9%)	22 (0.7%)
Intermittent	527 (48.3%)	666 (47.4%)	960 (46.6%)	733 (44.7%)	2,632 (44.9%)	1,362 (45.5%)
Constant	171 (15.7%)	301 (21.4%)	338 (16.4%)	325 (19.8%)	994 (17.0%)	537 (17.9%)

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Experiences breakthrough pain	354 (32.4%)	498 (35.5%)	595 (28.9%)	499 (30.4%)	1,516 (25.9%)	827 (27.6%)
Pain control (adequacy or inadequacy of pain control measures)						
No issue of pain	379 (34.7%)	427 (30.4%)	744 (36.1%)	562 (34.3%)	2,181 (37.2%)	1,075 (35.9%)
Pain intensity acceptable to person, no treatment regimen or change in regimen required	96 (8.8%)	159 (11.3%)	221 (10.7%)	185 (11.3%)	618 (10.5%)	297 (9.9%)
Controlled adequately by therapeutic regimen	346 (31.7%)	427 (30.4%)	632 (30.7%)	509 (31.1%)	1,782 (30.4%)	925 (30.9%)
Controlled when therapeutic regiment followed, but not always followed as ordered	64 (5.9%)	83 (5.9%)	115 (5.6%)	72 (4.4%)	270 (4.6%)	145 (4.8%)
Therapeutic regimen followed, by pain control not adequate	157 (14.4%)	237 (16.9%)	279 (13.5%)	254 (15.5%)	800 (13.7%)	424 (14.2%)
No therapeutic regimen being followed for pain; pain not adequately controlled	49 (4.5%)	71 (5.1%)	70 (3.4%)	57 (3.5%)	208 (3.6%)	130 (4.3%)
Health Service Use						
Number of inpatient admissions over the past 90 days						
0	203 (18.6%)	466 (33.2%)	457 (22.2%)	613 (37.4%)	1,557 (26.6%)	1,214 (40.5%)
1	622 (57.0%)	625 (44.5%)	1,142 (55.4%)	769 (46.9%)	3,176 (54.2%)	1,359 (45.4%)
2	177 (16.2%)	219 (15.6%)	327 (15.9%)	188 (11.5%)	794 (13.6%)	305 (10.2%)
3+	89 (8.2%)	94 (6.7%)	135 (6.6%)	69 (4.2%)	332 (5.7%)	118 (3.9%)
Number of emergency room visits over the past 90 days						
0	625 (57.3%)	807 (57.5%)	1,226 (59.5%)	1,005 (61.3%)	3,471 (59.2%)	1,874 (62.6%)
1	279 (25.6%)	356 (25.4%)	480 (23.3%)	389 (23.7%)	1,455 (24.8%)	685 (22.9%)
2	108 (9.9%)	141 (10.0%)	200 (9.7%)	141 (8.6%)	538 (9.2%)	268 (8.9%)
3+	79 (7.2%)	100 (7.1%)	155 (7.5%)	104 (6.3%)	395 (6.7%)	169 (5.6%)
Receipt of life-sustaining treatments or therapies						
Chemotherapy[1]	89 (8.2%)	158 (11.3%)	187 (9.1%)	137 (8.4%)	376 (6.4%)	278 (9.3%)

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Dialysis[1]	25 (2.3%)	16 (1.1%)	63 (3.1%)	20 (1.2%)	154 (2.6%)	41 (1.4%)
Oxygen therapy, ventilator or respirator[1]	426 (39.0%)	486 (34.6%)	529 (25.7)	423 (25.8)	1124 (19.2%)	591 (19.7%)
Functional Capacity						
Instrumental Activities of Daily Living (IADL) Self Performance and Capacity Scale (in in performing ordinary housework, meal preparation or phone use)						
0 = Independent	0 (0.0%)	*2-6	*2-6	24 (0.4%)	19 (0.6%)	59 (0.4%)
1	0 (0.0%)	*1-5	0 (0.0%)	23 (0.4%)	*8-12	83 (0.6%)
2	7 (0.5%)	20 (1.0%)	*30-34	83 (1.4%)	80 (2.7%)	434 (3.0%)
3	17 (1.2%)	43 (2.1%)	*18-22	111 (1.9%)	88 (2.9%)	457 (3.1%)
4	41 (2.9%)	97 (4.7%)	87 (5.3%)	342 (5.8%)	186 (6.2%)	1,057 (7.2%)
5	382 (27.2%)	564 (27.4%)	553 (33.7%)	1,849 (31.6%)	1,050 (35.0%)	4,931 (33.5%)
6 = Total dependence	957 (68.2%)	1,330 (64.5%)	944 (57.6%)	3,427 (58.5%)	1,564 (52.2%)	7,681 (52.2%)
Activities of Daily Living (ADL) Self Performance Hierarchy scale (maintaining personal hygiene, toilet use, locomotion, and eating)						
0 = Independent	39 (3.6%)	79 (5.6%)	154 (7.5%)	186 (11.3%)	572 (9.8%)	431 (14.4%)
1	23 (2.1%)	39 (2.8%)	93 (4.5%)	107 (6.5%)	306 (5.2%)	180 (6.0%)
2	62 (5.7%)	136 (9.7%)	218 (10.6%)	219 (13.4%)	747 (12.7%)	437 (14.6%)
3	134 (12.3%)	198 (14.1%)	309 (15.0%)	296 (18.1%)	1,029 (17.6%)	492 (16.4%)
4	231 (21.2%)	303 (21.6%)	396 (19.2%)	281 (17.1%)	1,207 (20.6%)	499 (16.7%)
5	420 (38.5%)	434 (30.9%)	663 (32.2%)	382 (23.3%)	1,595 (27.2%)	657 (21.9%)
6 = Total dependence	182 (16.7%)	215 (15.3%)	228 (11.1%)	168 (10.3%)	403 (6.9%)	300 (10.0%)
Worsening ADL	1,057 (96.9%)	1,340 (95.4%)	1,898 (92.1%)	1,466 (89.4%)	5,272 (90.0%)	2,536 (84.6%)
Worsening decision-making capacity	669 (61.3%)	776 (55.3%)	1,046 (50.8%)	711 (43.4%)	2,769 (47.3%)	1,226 (40.9%)

[1]Ordered (implemented or not implemented)

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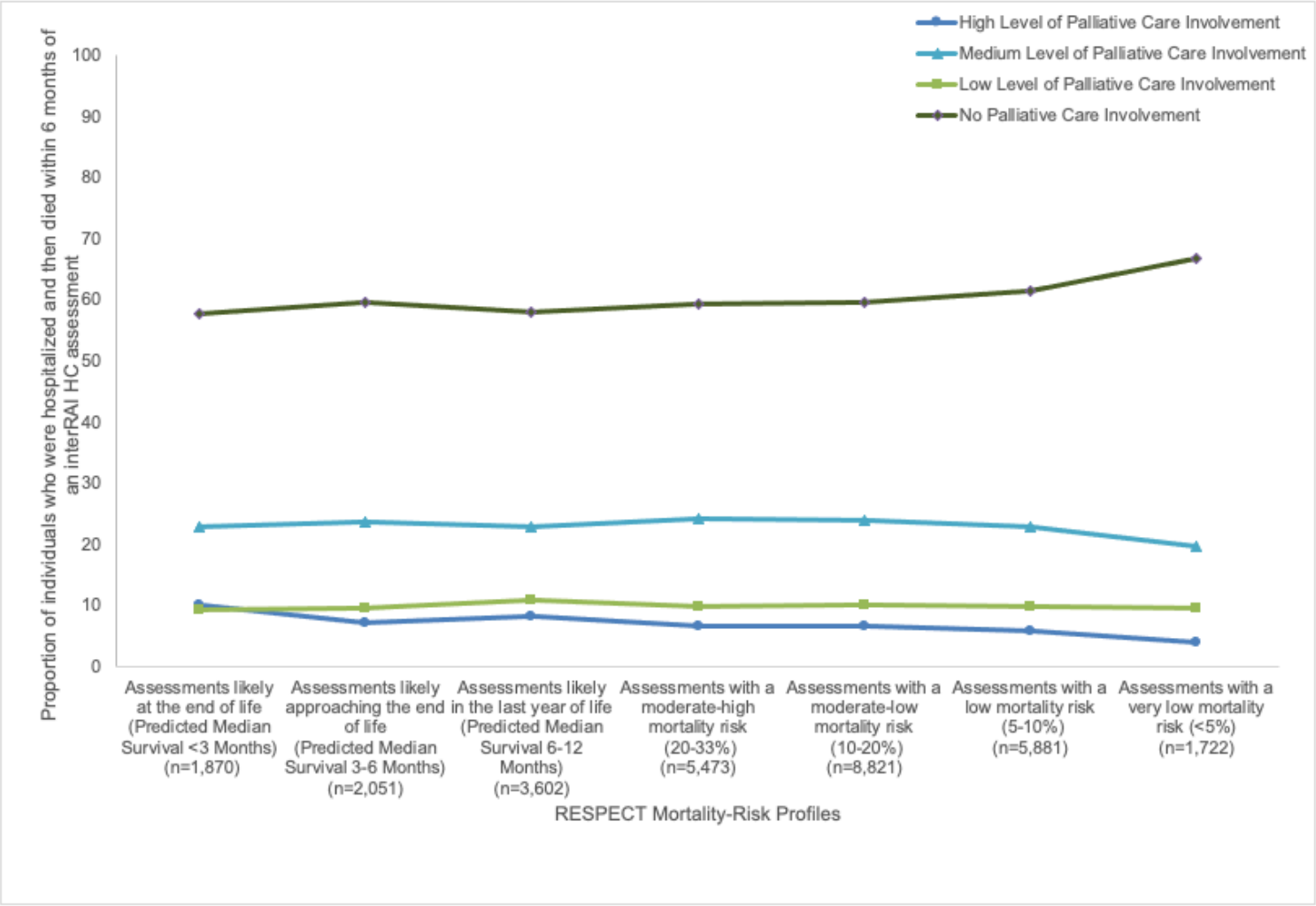
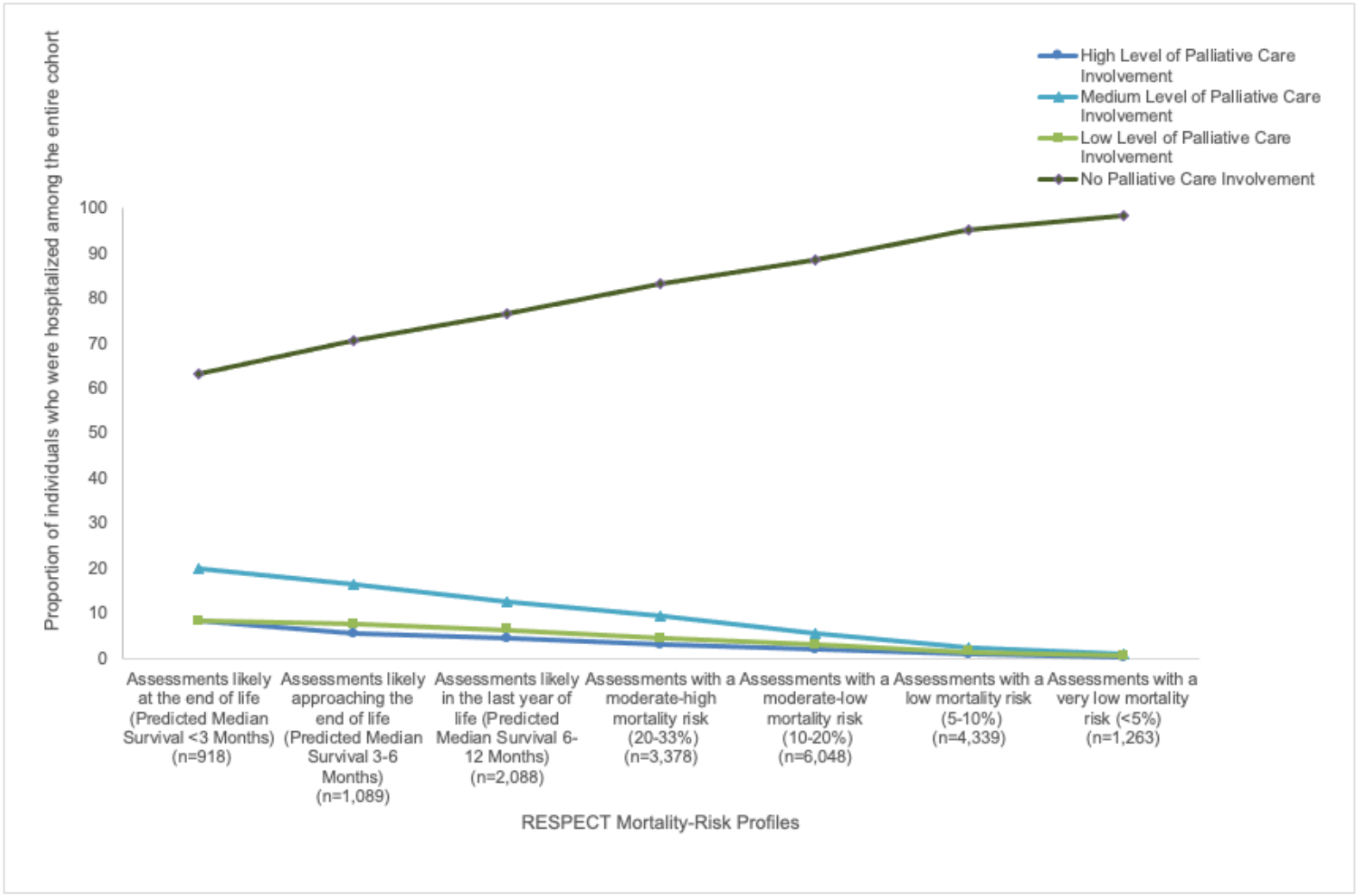
eFigure 4. Receipt and level of inpatient palliative care, stratified by mortality-risk profile

a) Level of hospital-based palliative care received among individuals who were hospitalized and died within 6 months of an interRAI Home Care assessment

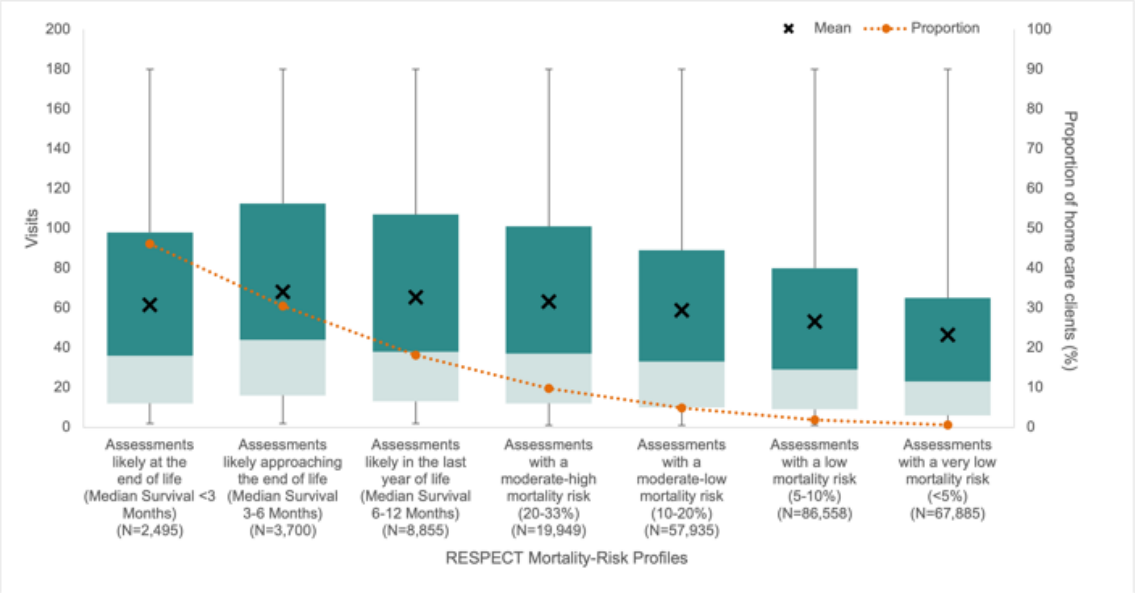


b) Level of hospital-based palliative care received among all clients hospitalized within 6 months of an interRAI Home Care assessment

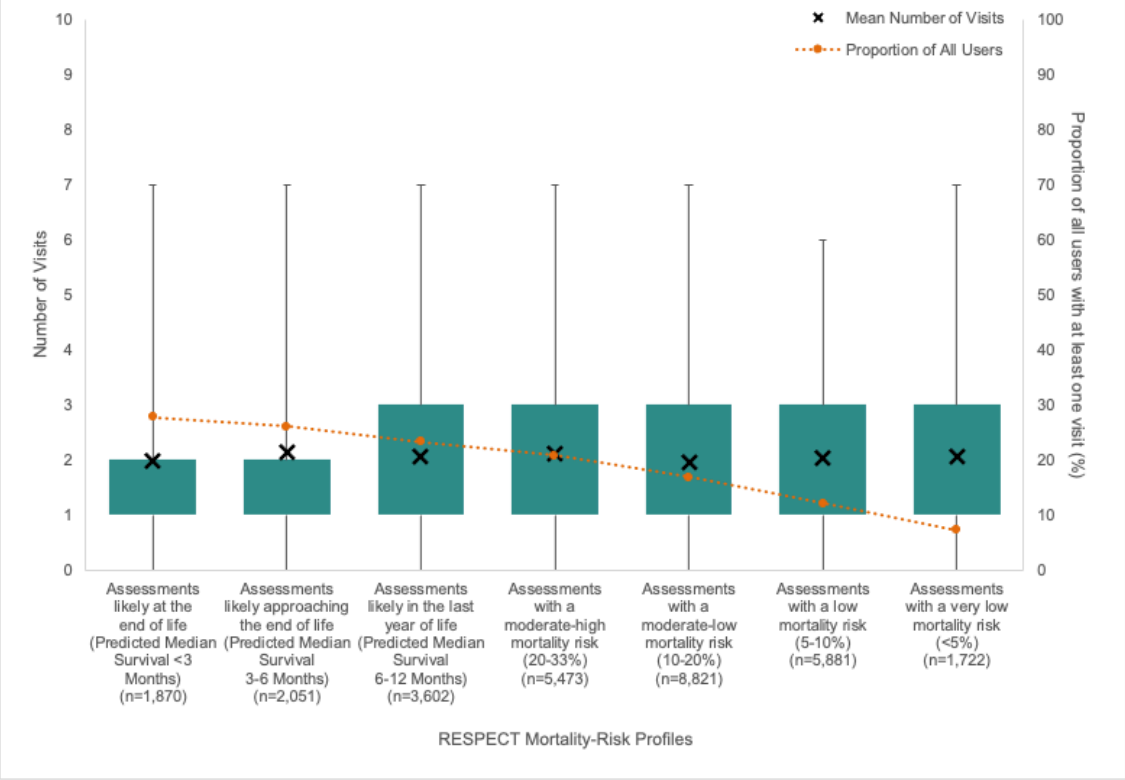


eFigure 5. Proportion of users (decedents and survivors) who had at least one healthcare service encounter and intensity of use

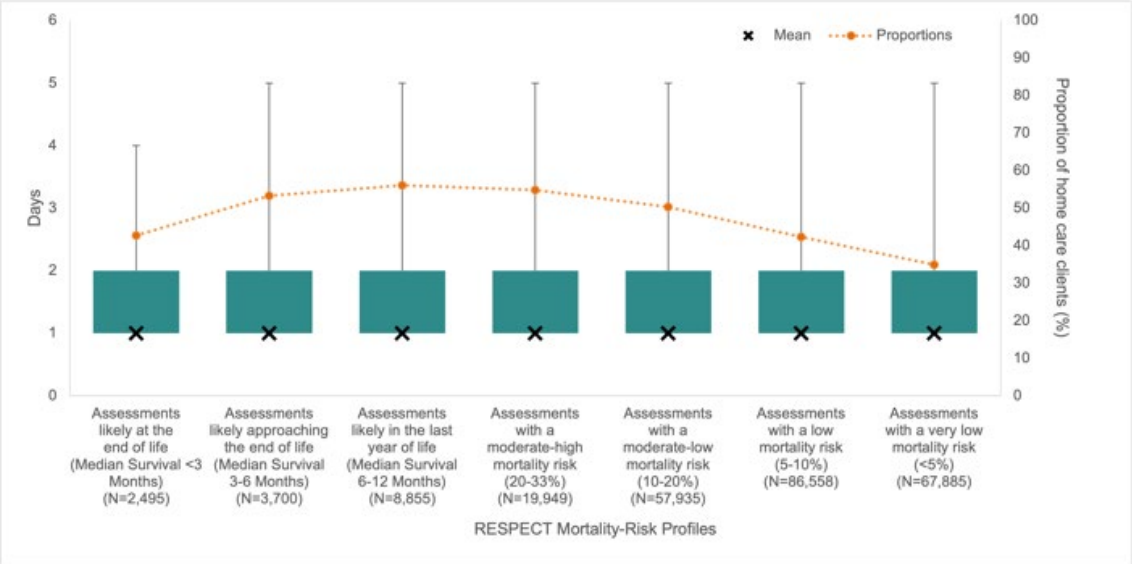
A) Non-Physician Palliative Care Home Visits



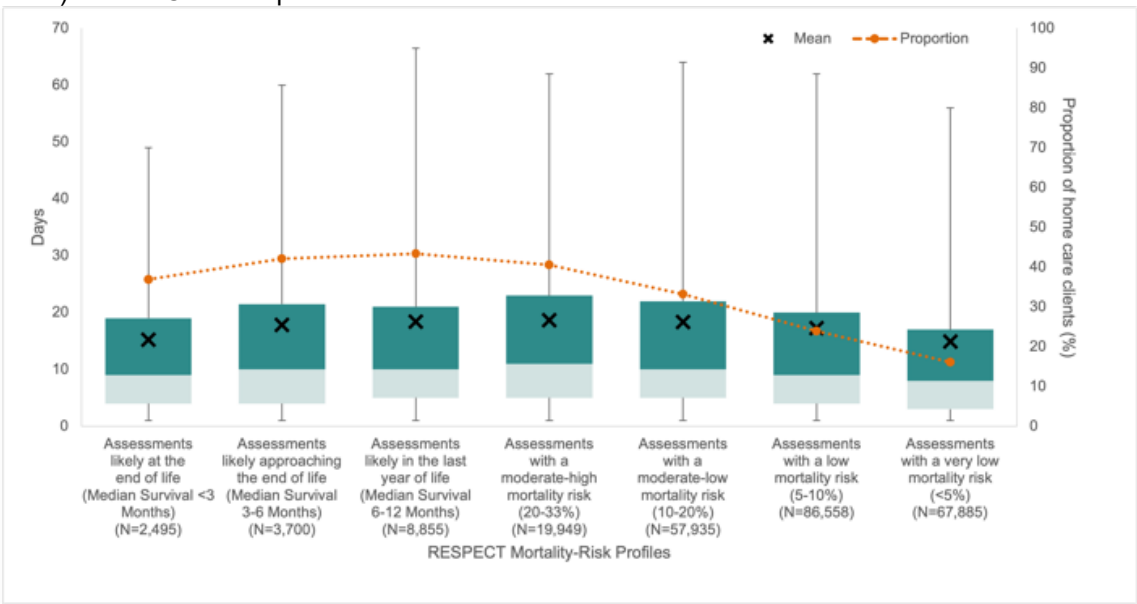
B) Physician Palliative Care Home Visits



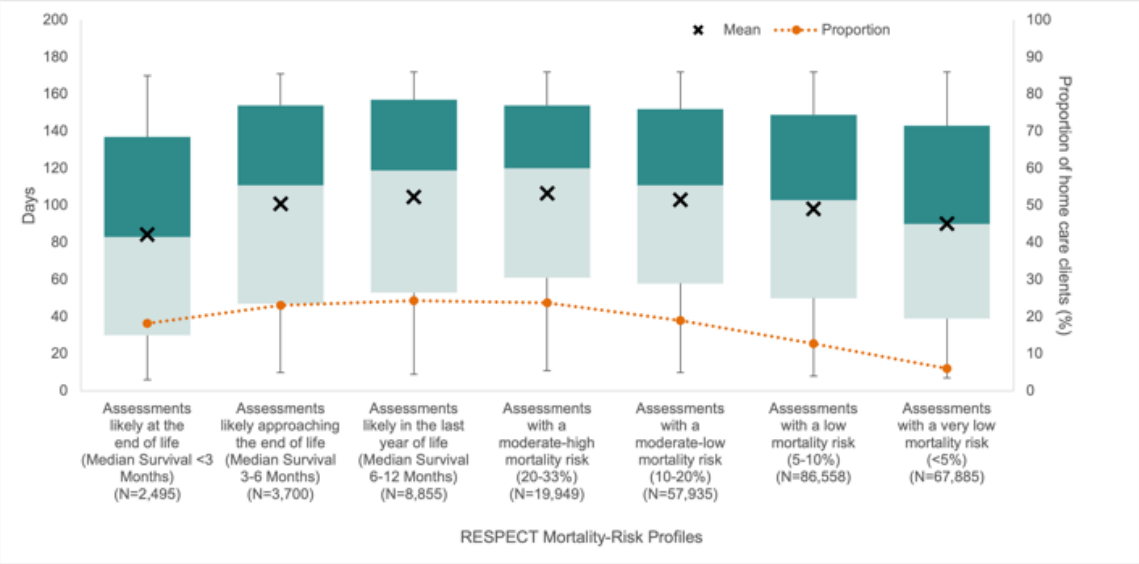
C) Emergency Department Visits



D) Acute Care Hospitalizations



E) Long-Term Care Home Admissions



Within our study cohort, 75.0%, 55.4% and 40.3% of assessments with a predicted median survival of <3 months, between 3 and 6 months, and between 6 and 12 months, respectively, died within 6 months of an interRAI Home Care assessment (Table 1). Healthcare utilization patterns of decedents are described in the main text. Here, we describe the place and length of care across all assessments, including those who survived beyond 6 months post-assessment.

Inclusive of those who survived beyond 6 months of their interRAI Home Care assessment, less than half (46.1%), roughly one-third (30.5%), and nearly one-fifth (18.1%) of those with a predicted median survival of <3 months, between 3 and 6 months, and between 6 and 12 months, respectively, received at least one palliative home care visit provided by a non-physician (eFigure 5). The median number of non-physician palliative home care visits in the three highest risk profiles were 36 (IQR: 12-98), 44 (IQR: 16-113) and 38 (IQR: 13-107), respectively. As was observed among decedents, the proportion of all assessments that received at least one visit as well as the median number of visits received declined with decreasing mortality risk. Less than a third (27.8%), nearly a quarter (26.1%), and less than a quarter (23.3%) of those in the highest three mortality risk profiles received at least one palliative home care visit provided b y a physician.

Unlike what was observed among decedents, the proportion of assessments with at least one day of institutional care follows an inverted U-shaped relationship, which peaked in assessments with a predicted median survival between 6 and 12 months. Among the three highest mortality-risk profiles, 42.7%, 53.3% and 56.1% visited the ED at least once. The median number of days in the ED was 1 (IQR: 1-2) for all three highest risk profiles. With respect to hospitalizations, 36.9%, 42.1% and 43.3% of assessments in the three highest-risk profiles were admitted to an acute care hospital at least once within 6 months of an interRAI Home Care assessment. The median number of days in hospital was 9 (IQR: 4-19), 10 (IQR: 4-21.5) and 10 (IQR: 5-21), respectively. Lastly, among the three highest mortality risk profiles, 18.2%, 23.1% and 24.2% were admitted to a long-term care home, respectively. The corresponding median number of days spent in long-term care homes was 30 (IQR: 83-137), 11(IQR: 47-154) and 119 days (IQR: 53-157), respectively.

eFigure 6. Place of death, stratified by mortality-risk profile