

Title	Predicting 1#year mortality in older hospitalized patients: external validation of the HOMR Model				
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JEA	Points		ED vis	sits	Points		Home O <sub>2</sub>	Poir	nts			Admitting service	Points
Female	0	- F	Fema	le	0		No	0			Medicine		
Male	1		Male		1		Yes	1				General medicine	10
Admission	n directly	Poir	nts		Admis	sions by	Points		Sex	P	Points	Cardiology	8
to ICU					ambu	lance			No	C	)	Gastroenterology/	9
No		0			0		0		N	1		nephrology/	
Yes		1			1		3		Yes 1			neurology	
<b>D</b> '				2		4					Palliative care	28	
Diagnostic	Diagnostic Risk Score			≥3		5					Heamatology/ oncology	14	
See Apper	See Appendix										Gynecology	7	
Charlson C	Comorbidity	Index	score									Surgery	
Diagnosis	Diagnosis			Points Diagnos		Diagnosi	S			Points		General surgery	8
Myocardia	I infarction			1	. Diabete		with chronic	with chronic complic		ons 2		Cardiovascular	9
Heart failu	re			2	Hemi- or		paraplegia	araplegia		1		surgery	5
Peripheral	vascular dis	ease		1		Renal dis	ease		3		3	Neurosurgery	10
Cerebrova	scular diseas	se		1		Nonmeta	astatic cancer			_	2	Orthonedic/ plastic	7
Dementia				3		Moderat	e to severe li	ver dis	ease		4	surgerv	,
Chronic re	spiratory dis	ease		2		Metastat	tic cancer			_	6	Thoracic/	7
Mild liver of	disease			2		HIV infec	tion			_	4	transplant surgery	
Diabetes w	vithout com	plicatio	ons	1		Total cor	norbidity sco	ore				Trauma	8
Charlson C	Comorbidity	Index	score:	Age x	comorb	oidity						Urology	6
Age, yr	0	1		2	3	3	4	5		≥€	5		
20-24.9	0	3		5		7	8	9		10	)		
25-29.9	2	5		7	ę	9	10	11		11	1	Covariate	Total
30-34.9	4	7		9	:	11	12	12		13	3	covariate	points
35-39.9	7	9		11		12	13	14		15		Sex	<b>P</b>
40-44.9	8	11		13		14	15	15		16	5	ED visits	
45-49.9	10	13		14		15	16	17		17	7	Home O <sub>2</sub>	
50-54.9	12	14		16		17	17	18		18	3	Diagnostic Risk Score	
55-59.9	14	16		17		18	19	19		17		Admission to ICU	
										18			
60-64.9	15	17		18	:	19	20	20		18	3	Admissions by	
60-64.9 65-69.9	15 17	17 19		18 20		19 21	20 21	20 22		18	3	Admissions by ambulance	
65-69.9 70-74.9	15 17 18	17 19 20		18 20 21		19 21 22	20 21 22	20 22 23		18 20 21	3 ) L	Admissions by ambulance Urgent readmission	
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**Supplementary appendix S1**: The original HOMR model. Covariates used to calculate a patient's Hospital-patient One-year Mortality Risk (HOMR) score. ED = emergency department. ICU = intensive care department.

	Dependent
	variable:
	1 year post-
	hospitalization
	mortality
DRS	0.11 (0.07, 0.15)
sqrt(Age)	1.45 (0.60, 2.30)
Male (vs Female)	0.44 (0.12, 0.77)
Rehab	0.82 (-1.75, 3.38)
Homecare	1.16 (-0.24, 2.56)
Nursing Home	1.56 (0.13, 2.99)
log(CCI)	2.78 (-2.76, 8.33)
sqrt(Ed visits in the previous year + 1)	0.16 (-1.23, 1.55)
1/(Admissions by ambulance in previous year +1)	-2.03 (-4.75, 0.70)
Other (vs General Medicine)	-0.68 (-1.58, 0.22)
ED w/o Ambulance	-0.83 (-3.16, 1.49)
ED w/Ambulance	-1.21 (-3.41, 0.98)
Urgent readmission	0.60 (0.07, 1.12)
Sqrt(Age) log(CCI)	-0.23 (-0.84, 0.38)
Rehab 1/(Admissions by ambulance in previous year +1)	-0.15 (-3.66, 3.36)
Homecare 1/(Admissions by ambulance in previous year +1)	0.31 (-1.23, 1.85)
Nursing Home 1/(Admissions by ambulance in previous year +1)	-0.20 (-1.91, 1.52)
ED w/o Ambulance 1/(Admissions by ambulance in previous year +1)	1.04 (-1.73, 3.81)
ED w/Ambulance 1/(Admissions by ambulance in previous year +1)	1.91 (-0.71, 4.53)
Intercept	-14.79 (-22.86, -
	6.72)
Observations	1,409
Log Likelihood	-523.28
Akaike Inf. Crit.	1,086.55
Note: Admiting convice recorded to Constal Medicine ve Other, due to	
small call sizes ICII admission from the model was omitted as there were	
only 3 cases of this hannening. Home O2 was omitted from the model	
since no patients in our sample were using it.	

**Supplementary Appendix S2**: Re-estimated HOMR model with regression coefficients. CCI = Charlson Comorbity Index; ED = emergency department; ICU = Intensive care unit.

Model	Description	<u>C-Statistic:</u> Derivation	Validation	Independent validation
HELP, 2000 <sup>28</sup>	Patients ≥80 years, emergency admissions	C= 0.73 (N=1266)	C=0.74 (N=150)	-
Walter et al, 2001 <sup>29</sup>	Patients ≥70 years, discharged from general medicine service	C=0.75 (N=1495)	C=0.79 (N=1427)	C=0.72 <sup>25</sup> (N=100; patients ≥75; 1 year mortality prediction )
BISEP, 2003 <sup>30</sup>	Patients ≥70 years, admitted under general medicine service	C=0.83 (N=525)	C=0.77 (N=1246)	C=0.72 <sup>25</sup> (N=100; patients ≥75; 1 year mortality prediction )
CARING, 2006 <sup>31</sup>	Adult patients admitted under general medicine service	C=0.82 (N=435)	C=0.79 (N=1064)	C=0.63 <sup>25</sup> (N=100; patients ≥75; 1 year mortality prediction )
Levine et al, 2007 <sup>32</sup>	Patients ≥65 years discharged from general medicine service	C=0.67 (N=2739)	C=0.65 (N=3643)	C=0.64 <sup>25</sup> (N=100; patients ≥75; 1 year mortality prediction )
MPI, 2008 <sup>33</sup>	Patients ≥65 years admitted to geriatric unit	C=0.75	C=0.75 <sup>34</sup>	-
SAFES, 2008 <sup>35</sup>	Patients ≥75 admitted through the emergency department	C=0.72 (N=870)	C=0.71 (N=436)	-
Silver Code, 2010 <sup>36</sup>	Patients ≥75 admitted through the emergency department	C=0.66 (N=5457)	C=0.64 (N=5456)	0.51 <sup>25</sup> (N=100; patients ≥75; 1 year mortality prediction )
HOMR, 2014 <sup>5</sup>	Adult patients of all ages admitted under non- psychiatric hospital services	C=0.92 (N=319 531)	C=0.89 - 0.92 <sup>6</sup> (N= 2 862 996)	C=0.78 (N=1409; patients ≥65 years discharged from geriatric service; model re- calibrated for validation sample)

**Supplementary Appendix S3:** Summary of prognostic models used to predict mortality in hospitalized older patients.

Legend: BISEP = Burden of Illness Score for Elderly Persons; CARING = cancer, ≥2 admissions, residence in a nursing home, intensive care unit admission with multiorgan failure, ≥2 noncancer hospice guidelines; HELP = Hospitalized Elderly Longitudinal Project; HOMR = Hospital patient One year Mortality Risk; MPI = Multidimensional Prognostic Index; SAFES = Sujet Agé Fragile—Evaluation et Suivi (Frail Elderly Subject – Assessment Follow-up).