

Author/Year	Patients/Setting	Dependent item of the model	Independent item of the model	Model performance
den Ouden et al (2013)	478 middle-aged or older persons (61.2 years on average) without ADL disability at baseline	ADL disability at 10 years follow-up	Age, Gender, Number of chronic diseases, MMSE, SPPB, BMI, Z-score muscle strength, Cholesterol/HDL ratio, Pulse wave velocity, Socioeconomic status, Degree of urbanization	c= 0.83
Clark et al (2012)	9,446 older adults (> 64 years) without ADL disability at baseline	ADL disability at 2 years follow-up	Age, Number of hospitalizations in past 2 years, Diabetes, Chronic lung disease, Congestive Heart failure, Stroke, Arthritis	c= 0.74
Falasca et al (2011)	All residents alive on 1 January 2006 and aged > 18 years in the Province of Ravenna (N= 296,641)	Emergency hospital admission and Mortality at 2 years follow-up	<i>The MoSaiCo Model:</i> Age, Gender, Citizenship, Charlson comorbidity index, Diabetes, Hypertension, CAD, CHF, asthma, COPD, Dementia, Polipharmacy, Socioeconomic status, Social services	c= 0.77
Billings et al (2013)	1,836,099 > 18 years residents in 5 Primary Care Trusts within England	Emergency hospital admission at 2 years follow-up	<i>The IPAEOPGP Model:</i> Age, Gender, BMI, Smoke, Number of chronic conditions, Charlson comorbidity index, Diabetes, Hypertension, CAD, CHF, CVD, asthma, COPD, Dementia, Renal failure, Cancer, Alcohol misuse, Previous AE visits, Previous GP visits, Previous OP visits, Previous emergency and elective admissions	c= 0.78
Charlson et al (2008)	5,861 middle-aged or older primary care patients (56 years on average)	Average annual per patient cost	Hypertension, CHF, MI, PVD, Cerebrovascular disease, Dementia, Chronic pulmonary disease, Connective tissue disease, Ulcer disease, Liver disease, Diabetes, Depression, Hemiplegia, Renal disease, Cancer, Leukemia, Lymphoma, Skin ulcer/cellulitis, AIDS, Use of Warfarin	The model explains 22.2% of the variance in the logarithm of total costs.
Donnan et al (2008)	186,523 residents in Tayside (Scotland), > 40 years with a 3 years history of prescribed drugs and hospital admission	Emergency hospital admission at 1 year follow-up	Age, Gender, Age at previous admission, Carstairs deprivation category, Total bed days, Prescribed drugs	c= 0.80
Liu V et al (2010)	205177 hospitalizations among 155474 unique patients (61 ± 19 years)	LOS (Length of stay), in hours	Age, sex, laboratory-based Acute Physiology Score (LAPS) and Comorbidity Point Score (COPS)	R ² : Predicted LOS within 24 hours - 34.9%; and within 48 hours - 62.9%

Malmstrom TK et al (2014)	Participants completed in-home assessments at baseline (N = 998) and 3- (n = 853) and 9- (n = 582) year follow-up. Participant baseline age according to tertile was 51.4 ± 1.1 (n = 263), 56.0 ± 1.5 (n = 254), and 61.5 ± 2.0 (n = 262)	Activity of daily living (ADL) and instrumental ADL difficulties at 3 and 9 years and 9-year mortality.	Age, sex and frailty measures including the International Academy of Nutrition and Aging (FRAIL), The Study of Osteoporotic Fractures (SOF), and the Cardiovascular Health Study (CHS) and the Frailty Index (FI).	One or more new IADLs at 3 years: FI (c=0.75), FRAIL (c=0.69), CHS (c = 0.63), and SOF (c=0.61) One or more new IADLs at 9 years: FI (c=0.70), FRAIL (c=0.62), CHS (c = 0.60), and SOF (c=0.63)
Newcomer R et al (2005)	Patients identified by their primary caregiver as having “maximum difficulty performing” two more ADLs (N= 2,255).	Medicare expenditures	Age, sex, ADL limitations, selected chronic conditions, prior year hospital stays, and relationship to caregiver	
Orueta JF et al (2013)	All citizens over 14 years, 1,964,337.persons	Model 1: the cost of the second year comparing three case-mixes (CRGs, DCG-HCC and ACG-PM) Model 2: identify people that will require high resource consumption the following year, indicating whether the person belongs to 5% and 1% of highest-consuming patients during the second period	For both models: Clinical variables (groups based on diagnoses or drugs from the case-mix), previous cost and socio-economic variables (deprivation index) and demographic variables (age and sex)	R²: Model 1: 0.21-0.24 for diagnosis and prescription-based data Model 2: 95th percentile-c > 0.79 and 99th percentile-c > 0.86
Orueta JF et al (2014)	All citizens over 14 years, 1,964,337.persons	Hospitalizations in the second year	Data from the first year (demographic, deprivation index , diagnoses, prescriptions , procedures , income and other contacts with the health service)	c > 0.8
Perkins RM et al (2013)	607 patients with CKD (chronic kidney) admitted with HF (heart failure) thus met criteria for cohort	30-day readmission. Admissions occurring more than 30 days after discharge from a prior	Medical history, demographic profile, smoking status; clinic, hospital, and emergency room encounter history; laboratory and radiographic orders and	c=0.743. At an estimated readmission

	inclusion during the observation period. Of these, 116 (19.1%) were readmitted within 30 days. (Not readmitted (74.1 ± 8.9) and readmitted (72.3 ± 8.6))	hospitalization during the study period were analyzed as a second primary hospitalization.	results; medication prescription orders; blood pressure, heart rate, and weight; comorbid conditions	probability of 20%, the model correctly classified readmission status for 73% of the population, Se=69% and Sp=73%.
Salvi F et al (2009)	A sample of 200 acutely ill ED patients aged ≥ 65 years (80.3 ± 7.4 years).	Single outcomes were: a) early (within 30 days) and b) late (within 6 months) unscheduled ED revisit, c) frequent ED return (≥ 3 unscheduled ED visits over 6 months), d) unscheduled hospital admission (within 6 months), e) 6-month functional decline (defined as loss of ≥ 1 activities of daily living (ADL)) and f) 6-month mortality. Composite outcomes at 6 months were: [1] the occurrence of one (death, long term condition (LTC) placement, or functional decline); [2] the occurrence of one among death, LTC placement, functional decline, any ED revisit or an hospital admission.	Age, gender, marital status, living status, arrival to emergency, final diagnosis patient disposition, Charlson Comorbidity Index, SPMSQ for cognitive function, ADL, LOS, length of in-hospital stay Since ISAR had a high correlation with geriatric assessment variables (i.e., ChI, SPMSQ, and ADL scores), these were subsequently excluded from the logistic regression model.	ISAR-positive patients (OR): [1] 4.77 and [2] 3.46. ISAR also predicted ED revisit and frequent use, hospitalization, functional decline at 6 months and 6-month mortality (Hazard Ratio 6.9)
Sun Y et al (2011)	A total of 317,581 ED visits were made by 207,069 patients who were alive at discharge from the ED. Of these, 30.2% resulted in an	Inpatient admission	demographics (age, sex, and ethnic group), chronic conditions (diabetes, hypertension, and dyslipidemia), arrival mode (ambulance, walk-in), PAC status, hospital admission, and ED visit in preceding 3 months	c= 0.849

	inpatient admission (Age of the admitted patients was 60.1 ± 19.9 years, compared to 39.4 ± 18.3 years among those not admitted).			
Zapatero A et al (2012)	Of 999,089 patients, 123,699 (12.4%) were readmitted at least once within 30 days of the index date of admission with the same Major Diagnostic Category as the main diagnosis. (70 ± 17.49).	Early readmission to hospital.	Patient-level variables, admission-level variables, and the presence or absence of the most common risk factors and acute medical illnesses were entered into the model: Demographics, age (less than 50 years, 51–70 years, 71–90 years, and more than 90 years), comorbidities, day of discharge, and length of stay, comorbidities and age-adjusted Charlson comorbidity index (CCI).	Modified logistic model to give a risk index- SEMI index. The predicted probability was 6% for patients with low SEMI scores and 23% for those with high scores.