

Predictors of High-Risk Patients

■ **eAppendix Table 1. ACG Predictive Models: Dx-PM Risk Factors^{a,b}**

Adjusted Clinical Group (ACG)	
ACG label	ACG description
ACG group 1 (included in intercept)	ACG 0100 0200 0300 1100 1200 1600 5100 5110 5200 9900
ACG group 2	ACG 0400 0500 0600 0900 1000 1300 1800 1900 2000 2100 2200 2300 2400 2500 2800 2900 3000 3100 3400 3900 4000 1711 1721 1731 1741
ACG group 3	ACG 0700 0800 1400 1500 2600 2700 3200 3300 3500 3600 3700 3800 4100 4210 4310 4320 4410 4710 4720 4810 4820 5310 1751 1761 1771
17 × 2	All nondelivered pregnancy-related ACGs (1712, 1722, 1732, 1742, 1752, 1762, and 1772)
4220	4-5 Other ADG combinations, age 1-17 y, 1+ major ADGs
4330	4-5 Other ADG combinations, age 18-44 y, 2+ major ADGs
4420	4-5 Other ADG combinations, age >44 y, 1 major ADG
4430	4-5 Other ADG combinations, age >44 y, 2+ major ADGs
4510	6-9 Other ADG combinations, age 1-5 y, no major ADGs
4520	6-9 Other ADG combinations, age 1-5 y, 1+ major ADGs
4610	6-9 Other ADG combinations, age 6-17 y, no major ADGs
4620	6-9 Other ADG combinations, age 6-17 y, 1+ major ADGs
4730	6-9 Other ADG combinations, male, age 18-34 y, 2+ major ADGs
4830	6-9 Other ADG combinations, female, age 18-34 y, 2+ major ADGs
4910	6-9 Other ADG combinations, age >34 y, 0-1 major ADG
4920	6-9 Other ADG combinations, age >34 y, 2 major ADGs
4930	6-9 Other ADG combinations, age >34 y, 3 major ADGs
4940	6-9 Other ADG combinations, age >34 y, 4+ major ADGs
5010	10+ Other ADG combinations, age 1-17 y, no major ADGs
5020	10+ Other ADG combinations, age 1-17 y, 1 major ADG
5030	10+ Other ADG combinations, age 1-17 y, 2+ major ADGs
5040	10+ Other ADG combinations, age 18+ y, 0-1 major ADG
5050	10+ Other ADG combinations, age 18+ y, 2 major ADGs
5060	10+ Other ADG combinations, age 18+ y, 3 major ADGs
5070	10+ Other ADG combinations, age 18+ y, 4+ major ADGs
5320	All infant ACGs with 0-5 ADGs and 1+ major ADGs (5320, 5321, 5322)
5330	All infant ACGs with 6+ ADGs and no major ADG (5330, 5331, 5332)
5340	All infant ACGs with 6+ ADGs and 1+ major ADG (5340, 5341, 5342)
Expanded diagnostic clusters (EDCs)	
EDC label	EDC description
ADM03	Transplant status
ADM04	Complications of mechanical devices
ALL04	Asthma, without status asthmaticus
ALL05	Asthma, with status asthmaticus
ALL06	Disorders of the immune system
CAR03	Ischemic heart disease (excluding acute myocardial infarction)
CAR04	Congenital heart disease
CAR05	Congestive heart failure
CAR06	Cardiac valve disorders
CAR07	Cardiomyopathy
CAR09	Cardiac arrhythmia
CAR10	Generalized atherosclerosis
CAR12	Acute myocardial infarction

(Continued)

■ **eAppendix Table 1.** ACG Predictive Models: Dx-PM Risk Factors^{a,b} (Continued)

Expanded diagnostic clusters (EDCs) (continued)	
EDC label	EDC description
CAR13	Cardiac arrest, shock
CAR14	Hypertension, without major complications
CAR15	Hypertension, with major complications
END02	Osteoporosis
END06	Type 2 diabetes, without complication
END07	Type 2 diabetes, with complication
END08	Type 1 diabetes, without complication
END09	Type 1 diabetes, with complication
EYE03	Retinal disorders (excluding diabetic retinopathy)
EYE13	Diabetic retinopathy
GAS02	Inflammatory bowel disease
GAS04	Acute hepatitis
GAS05	Chronic liver disease
GAS06	Peptic ulcer disease
GAS10	Diverticular disease of colon
GAS11	Acute pancreatitis
GAS12	Chronic pancreatitis
GSI08	Edema
GSU11	Peripheral vascular disease
GSU13	Aortic aneurysm
GSU14	Gastrointestinal obstruction/perforation
GTC01	Chromosomal anomalies
GUR04	Prostatic hypertrophy
HEM01	Hemolytic anemia
HEM03	Thrombophlebitis
HEM05	Aplastic anemia
HEM06	Deep vein thrombosis
HEM07	Hemophilia and other coagulation disorders
INF04	HIV, AIDS
INF08	Septicemia
MAL02	Low-impact malignant neoplasms
MAL03	High-impact malignant neoplasms
MAL04	Malignant neoplasms, breast
MAL06	Malignant neoplasms, ovary
MAL07	Malignant neoplasms, esophagus
MAL08	Malignant neoplasms, kidney
MAL09	Malignant neoplasms, liver and biliary tract
MAL10	Malignant neoplasms, lung
MAL11	Malignant neoplasms, lymphomas
MAL12	Malignant neoplasms, colorectal
MAL13	Malignant neoplasms, pancreas
MAL14	Malignant neoplasms, prostate
MAL15	Malignant neoplasms, stomach
MAL16	Acute leukemia
MAL18	Malignant neoplasms, bladder
MUS03	Degenerative joint disease
MUS10	Fracture of neck of femur

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■ **eAppendix Table 1.** ACG Predictive Models: Dx-PM Risk Factors^{a,b} (Continued)

Expanded diagnostic clusters (EDCs) (continued)	
EDC label	EDC description
MUS14	Low back pain
MUS16	Amputation status
NUR03	Peripheral neuropathy and neuritis
NUR05	Cerebrovascular disease
NUR06	Parkinson's disease
NUR07	Seizure disorder
NUR08	Multiple sclerosis
NUR09	Muscular dystrophy
NUR11	Dementia and delirium
NUR12	Quadriplegia and paraplegia
NUR15	Head injury
NUR16	Spinal cord injury/disorders
NUR17	Paralytic syndromes, other
NUR18	Cerebral palsy
NUR19	Developmental disorder
NUT02	Nutritional deficiencies
PSY01	Anxiety and neuroses
PSY02	Substance use
PSY03	Tobacco abuse
PSY05	Attention-deficit disorder
PSY07	Schizophrenia and affective psychosis
PSY08	Personality disorders
PSY09	Depression
REC01	Cleft lip and palate
REC03	Chronic ulcer of the skin
REC04	Burns—second and third degree
REN01	Chronic renal failure
REN02	Fluid/electrolyte disturbances
REN03	Acute renal failure
REN04	Nephritis and nephrosis
RES02	Acute lower respiratory tract infection
RES03	Cystic fibrosis
RES04	Emphysema, chronic bronchitis, chronic obstructive pulmonary disease
RES08	Pulmonary embolism
RES09	Tracheostomy
RES10	Respiratory arrest
RHU01	Autoimmune and connective tissue diseases
TOX02	Adverse effects of medicinal agents
Hosdom	
HOSDOM0	Boolean indicator for 0 HOSDOM condition
HOSDOM1	Boolean indicator for 1 HOSDOM condition
HOSDOM2	Boolean indicator for 2 HOSDOM conditions
HOSDOM3+	Boolean indicator for 3 or more HOSDOM conditions
Frailty	
Frailty marker	Boolean indicator

ADG indicates Aggregated Diagnostic Group; Dx-PM, morbidity-based predictive model.

^aThe ACG predictive models are part of a proprietary system that is copyrighted by the Johns Hopkins University and distributed by DST Health Solutions. Information on how to obtain the software used in this research can be found at <http://acg.jhsph.edu/html/OrderACGProducts.htm>. The entire system, including the ACG case-mix software and the predictive models presented in the article, is made available at a nominal fee for researchers.

^bAge variables were 0-4, 5-11, 12-17, 18-34, 35-44, 45-54, and 55-64 years. Sex variables were male and female.

■ **eAppendix Table 2.** Rx-PM Risk Factors^a

Rx-Defined Morbidity Group (MG)	
Rx-MG label	Rx-MG description
Allergy/immunology	
ALLx010	Acute minor
ALLx030	Chronic inflammatory
ALLx040	Immune disorders
ALLx050	Transplant
Cardiovascular	
CARx010	Chronic medical
CARx020	Congestive heart failure
CARx030	High blood pressure
CARx040	Hyperlipidemia
CARx050	Vascular disorders
Ears-nose-throat	
EARx010	Acute minor
Endocrine	
ENDx010	Bone disorders
ENDx020	Chronic medical
ENDx030	Diabetes with insulin
ENDx040	Diabetes without insulin
ENDx050	Thyroid disorders
Eye	
EYEx010	Acute minor: curative
EYEx020	Acute minor: palliative
EYEx030	Glaucoma
Female reproductive	
FREx010	Hormone regulation
FREx020	Infertility
FREx030	Pregnancy and delivery
Gastrointestinal/hepatic	
GASx010	Acute minor
GASx020	Chronic liver disease
GASx030	Chronic stable
GASx040	Inflammatory bowel disease
GASx050	Pancreatic disorder
GASx060	Peptic disease
General signs and symptoms	
GSIx010	Nausea and vomiting
GSIx020	Pain
GSIx030	Pain and inflammation
Genitourinary	
GURx010	Acute minor
GURx020	Chronic renal failure

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■ **eAppendix Table 2. Rx-PM Risk Factors^a (Continued)**

Rx-Defined Morbidity Group (MG) (continued)	
Rx-MG label	Rx-MG description
Hematologic	
HEMx010	Coagulation disorders
Infections	
INFx010	Acute major
INFx020	Acute minor
INFx030	HIV/AIDS
INFx040	Tuberculosis
Malignancies	
MALx010	Malignancies
Musculoskeletal	
MUSx010	Gout
MUSx020	Inflammatory conditions
Neurologic	
NURx010	Alzheimer's disease
NURx020	Chronic medical
NURx030	Migraine headache
NURx040	Parkinson's disease
NURx050	Seizure disorder
Psychosocial	
PSYx010	Attention-deficit disorder
PSYx020	Addiction
PSYx030	Anxiety
PSYx040	Depression
PSYx050	Acute minor
PSYx060	Chronic unstable
Respiratory	
RESx010	Acute minor
RESx020	Chronic medical
RESx030	Cystic fibrosis
RESx040	Airway hyperreactivity
Skin	
SKNx010	Acne
SKNx020	Acute and recurrent
SKNx030	Chronic medical
Toxic effects/adverse effects	
TOXx010	Acute major
ZZZx000	Other and nonspecific medications
^a Age variables were 0-4, 5-11, 12-17, 18-34, 35-44, 45-54, and 55-64 years. Sex variables were male and female.	