

Supplementary Online Content

Bradley SM, Borgerding JA, Wood GB, Maynard C, Fihn SD. Incidence, risk factors, and outcomes associated with in-hospital acute myocardial infarction. *JAMA Netw Open*. 2019;2(1):e187348. doi:10.1001/jamanetworkopen.2018.7348

eTable 1. Model Development for Risk-Factors of In-Hospital Myocardial Infarction

eTable 2. Predictors and Outcomes of In-Hospital Acute Myocardial Infarction (IHAMI) Concordance of Data Abstraction—Phase 2 Preliminary Results

eTable 3. Predictors and Outcomes of In-Hospital Acute Myocardial Infarction (IHAMI) Concordance of Data Abstraction—Preliminary Phase 3 Results

This supplementary material has been provided by the authors to give readers additional information about their work.

eTable 1. Model Development for Risk-Factors of In-Hospital Myocardial Infarction

Candidate Variables	Model 1: Demographics, bed type, and past history	Model 1a: Model 1 + acute conditions	Model 2: Model 1 + vitals	Model 3: Model 1 + labs	Model 4: Significant covariates
Gender	0.16	0.13	0.18	0.13	
Married	0.03 *	0.03 *	0.007 *	0.005 *	<0.001 *
Bed type	<0.001 *	<0.001 *	<0.001 *	<0.001 *	<0.001 *
White	0.39	0.4	0.33	0.46	
Atrial fibrillation	0.006 *	0.005 *	0.004 *	0.03 *	0.02 *
Alcohol dependence/abuse	0.19	0.16	0.74	0.39	
Anemia	0.05 *	0.06 *	0.06 *	<0.001 *	<0.001 *
Obstructive sleep apnea	0.55	0.49	0.65	0.8	
Prior coronary artery bypass graft	0.38	0.38	0.5	0.61	
Coronary artery disease	0.07 *	0.06 *	0.05 *	0.03 *	<0.001 *
Heart failure	0.42	0.54	0.26	0.28	
Chronic kidney disease	0.02 *	0.02 *	0.09 *	0.63	NS in final model
Chronic obstructive pulmonary disease	0.84	0.91	0.85	0.34	
Cerebrovascular disease	0.03 *	0.03 *	0.04 *	0.16	NS in final model
Dementia	0.19	0.2	0.17	0.12	
Depression	0.05 *	0.05 *	0.03 *	0.04 *	0.02 *
Diabetes	0.58	0.49	0.6	0.8	
Hypertension	0.57	0.56	0.6	0.46	
Hyperlipidemia	0.98	0.97	0.93	0.86	
Liver disease	0.2	0.22	0.31	0.36	
Malignant neoplasm	0.75	0.89	0.47	0.35	
Prior myocardial infarction	<0.001 *	<0.001 *	0.001 *	<0.001 *	0.001 *
Prior percutaneous coronary intervention	0.24	0.26	0.22	0.33	
Post-traumatic stress disorder	0.88	0.91	0.84	0.92	

Candidate Variables	Model 1: Demographics, bed type, and past history	Model 1a: Model 1 + acute conditions	Model 2: Model 1 + vitals	Model 3: Model 1 + labs	Model 4: Significant covariates
Peripheral vascular disease	<0.001 *	<0.001 *	<0.001 *	0.002 *	0.001 *
Tobacco use	0.69	0.68	0.63	0.27	
Coagulopathy		0.49			
Fluid/electrolyte disorder		0.39			
Gastrointestinal bleed		0.53			
Hypoxia		0.24			
Body mass index			0.33		
Systolic blood pressure			0.14		
Heart rate			<0.001 *		<0.001 *
Blood urea nitrogen				0.09 *	0.01 *
Creatinine				0.88	
Hemoglobin				<0.001 *	<0.001 *
Potassium				0.57	
Sodium				0.47	
White blood cell count				<0.001 *	<0.001 *

* Achieved threshold for inclusion in Model 4 ($p < 0.10$)

eTable 2. Predictors and Outcomes of In-Hospital Acute Myocardial Infarction (IHAMI)
Concordance of Data Abstraction – Phase 2 PRELIMINARY Results

Dataset	# Records Entered			Variable	% Agreement
	Abstr 1	Abstr 2	Abstr 3		
Demographics	77	77	77	Gender (<i>M, F</i>)	86% (66/77)
				Ethnicity (<i>AA, C</i>)	84% (65/77)
				Marital Status (<i>D, M, N, S, W</i>)	84% (65/77)
Hospital Details	174	168	165	Admission Date	82% (154/188)
				➤ Discharge Date ^a	94% (144/154)
Discharge Diagnoses	723	673	743	Diagnosis	80% (633/787)
Follow-up	432	435	597	Follow-up Date	51% (353/689)
				➤ Follow-up Type ^a (<i>APPT_CARDIOLOGY, APPT_PC, APPT_SURGEON, HOMECARE, TELEHEALTH, TEST_STRESS, etc.</i>)	89% (315/353)
In-hospital Meds	1495	1521	1630	Med Name & Timing (<i>BEFORE, DISCHARGE, AFTER</i>)	76% (1342/1764)
				➤ Med Route ^a (<i>INH, INJ, IV, MOUTH, NEB, SL, TOP</i>)	92% (1239/1342)
Labs	1892	1847	1953	Lab Name & Date/Time	64% (1478/2317)
Vitals	526	548	618	Vital Type and Date/Time	53% (396/744)

^a For these variables, the denominator used to calculate the % agreement is based on the number of records that matched across abstractors according to the merging variable(s).

eTable 3. Predictors and Outcomes of In-Hospital Acute Myocardial Infarction (IHAMI)
Concordance of Data Abstraction – Preliminary Phase 3 Results

Dataset	# Records		Variable	% Agreement
	Abstr	Abstr		
Hospital Events	446	360	All Events (<i>e.g., Dyspnea, Angina,</i>	74% (348/472)
			All Events & Dates	56% (262/472)
			All Events & When (<i>Event occurred before/on/after enrollment date</i>)	64% (301/472)
	68	58	Dyspnea/Shortness of breath - SOB & When	94% (66/70) 80% (56/70)
	31	22	Angina - Angina & When	71% (22/31) 65% (20/31)
	29	21	Hypotension - Hypotension & When	70% (21/30) 57% (17/30)
Procedures	279	260	All Procedures (<i>e.g., EKG, Cardiology,</i>	84% (251/299)
			All Procedures & Dates	66% (196/299)
			All Procedures & End Dates	67% (195/299)
			All Procedures & Physician Deferred	81% (241/299)
			All Procedures & Patient Declined	83% (248/299)
	51	45	EKG done - EKG & Date	85% (44/52) 54% (28/52)
	43	40	Cardiology done - Cardiology & Date	93% (40/43) 86% (37/43)
	23	22	Transfusion done	88% (21/24)
	37	37	- Transfusion & Date	48% (21/44)
	36	34	Echo done - Echo & Date	84% (32/38) 68% (26/38)
	26	27	Cath/PCI done	96% (26/27)
	32	31	- Cath/PCI & Date	73% (24/33)
	17	18	Stress test done - Stress test & Date	89% (17/19) 84% (16/19)

Dataset	# Records Entered		Variable	% Agreement
	Abstr	Abstr		
Cath Lab Details	15	15	Type (<i>Cath, PCI, Both</i>)	100% (15/15)
			Type & Bare metal stent	93% (14/15)
			Type & Drug eluting stent	93% (14/15)
			Type & Distal protection	100% (15/15)
			Type & Thrombus removal	100% (15/15)
	1	0	Type & Complications	(14/15 w/ no compl)
EKG Details	73	71	Type (<i>e.g., Ischemic changes, Normal, ST-depression, T- wave changes</i>)	57% (52/92)
Echo Details	28	26	Source (<i>Hospital floor, Cath, Prev Hx</i>)	73% (22/30)
			EF Percent (<i>Normal</i> ≥55%, <i>Mild</i> 45-54%, <i>Moderate</i> 30- 44%, <i>Severe</i> <30%)	60% (18/30)
			Wall Motion (<i>Normal, Abnormal</i>)	63% (19/30)
Stress Test Details	6	2	Type (<i>Nuclear, EKG, Echo</i>)	Database would not allow partial
			Method (<i>Pharmacologic, Maximal, Sub-</i>	-
			Result (<i>Negative, Positive, Equivocal,</i>	-
			Risk (<i>Low, Medium, High</i>)	-