

1 TABLE A3: FREQUENCIES OF ALL ANALYZED CONCEPTS

Suggested UMLS-Code	Concept Name	Included Concepts	Data-Type	Codelist	Unit of measurement	Absolute Frequency
C1532338	Percutaneous Coronary Intervention (PCI)	History of PCI, Percutaneous coronary revascularization, History of revascularization, Reason for delay in PCI, Date of most recent PCI, Indication for PCI, Contraindication for PCI, Reperfusion therapy, Primary PCI, Patient refused PCI, Total number of PCI procedures, Date of Coronary Revascularization, Reason for Revascularization, Urgent revascularization				98
C0038454	Stroke/TIA	History of Stroke, TIA, History of TIA, Type of stroke, Date of most recent stroke, Hemorrhagic stroke	Bool			77
C0001779	Date of birth	Age	DateTime			73
C0019080	Hemorrhage other than stroke	Gastrointestinal bleeding, Major bleed, Minor bleed, Intracranial hemorrhage, History of bleeding from GI system, Bleeding treatment, Date of hemorrhage, Bleeding location, Spontaneous bleed, Re-operation due to bleeding	Bool			69
C0010055	Coronary Artery Bypass	History of CABG, Date of most				53

	Graft (CABG)	recent CABG, Date of CABG				
C0002962	Angina pectoris	Unstable angina pectoris, CCS Classification, History of Angina, Angina, Stable angina pectoris, Secondary cause of angina	Bool			48
C0871470	Blood pressure	Systolic Blood Pressure, Diastolic Blood Pressure, Blood Pressure	ItemGroup			47
C1306577	Death	Date of death, Cause of death, Time of Death, Survival status at discharge, Discharge status, Death witnessed	ItemGroup			47
C0085532	Coronary Angiography	Cardiac Catheterization, Lävokardiographie, Prior catheterization, Indication for coronary angiography, Date of Coronary angiography, Contraindication for angiography				46
C0027051	Myocardial infarction	History of myocardial infarction, Date of most recent MI, Acute MI, Isolated posterior MI, Recurrent MI, Posterior Infarction	Bool			44
C0018801	Heart failure	CHF, History of heart failure, Date of heart failure, Heart failure, Dekomp. Herzinsuffizienz	Bool			43
C0004057	Aspirin/ASS	Aspirin contraindication, Asprin discharge, Aspirin in first 24h,				42

		Aspirin dose				
C0040044	Thrombolytics	Thrombolytics contraindication, Fibrinolytics, Date of Fibrinolytic, Thrombolytic dosage, Plättchenhemmer				42
C0523952	Troponin	Troponin I, Troponin T, Peak troponin value, Troponin T ULN, Troponin I ULN	Float			40
C1299487	Patient name	Patient initials, Patient middle name, Patient first name, Patient last name	Text			40
C0070166	Clopidogrel	Clopidogrel contraindicated, Clopidogrel dosage, Clopidogrel (discharge), Clopidogrel time, start time				36
C0011849	Diabetes mellitus	Diabetes therapy, Insulin use, Insulin, Oral diabetes treatment	Bool			31
C0523584	CK-MB	CK-MB ULN, CK-MB peak value	Float			31
C0018810	Heart rate		Float		bpm	30
C0151744	Myocardial ischemia	ECG signs of myocardial ischemia, ECG abnormal for ischemia, Recurrent ischemic symptoms, Number of all other episodes of cardiac ischaemic symptoms	Bool			30
C0003280	Anticoagulation	Oral anticoagulants, Contraindication to anticoagulation, Anticoagulant therapy, Indication for				29

		anticoagulation, Anticoagulant (parenteral), Anticoagulant start date, Stop date, Dose				
C0013798	Electrocardiogram	Time of ECG, ECG time, ECG findings				28
C0021430	Informed consent	Date signed informed consent	Bool			28
C0520886	ST elevation	Anterior ST elevation, Inferior ST elevation, Lateral ST elevation	Bool			28
C0543467	Surgical procedure (other than CABG)	History of surgery, Non-cardiovascular invasive procedure				28
C0079399	Gender		CodeList	Male, Female, Other		27
C0005910	Weight		Float		kg	25
C0304516	Beta-Blocker	Beta-Blocker contraindication				25
C0549206	Pregnancy	Pregnant woman, Pregnancy test	Bool			25
C0948089	Acute Coronary Syndrome		Bool			25
C1384495	Myocardial stress test	Non-invasive stress test, Stress echocardiography, Stress test pos/neg, Stress test date, Date of stress test				25
C1536220	STEMI	Anterior STEMI, STEMI date	Bool			25
C0035078	Impaired renal function	Renal insufficiency, Renal failure, Chronic renal disease, Renal insufficiency	Bool			24
C3536766	Low molecular weight	Enoxaparin, LMWH contraindication, LMWH start				24

	heparin	date, LMWH dose				
C0036980	Cardiogenic shock	IV Cardiogenic shock: Signs include hypotension (systolic pressure of 9 mmHg or less) and evidence of peripheral vasoconstriction such as oliguria, cyanosis and diaphoresis, Date of cardiogenic shock	Bool			23
C0360714	Statins	Statin contraindicated, Statins before admission, Statin dose				23
C1620287	Prasugrel	Prasugrel Dose, Prasugrel contraindicated, Prasugel start time				23
C0003015	ACE Inhibitors	ACE inhibitor contraindicated				22
C3640054	Glycoprotein 2b/3a inhibitors	Iib/IIIa blocker dosage, Iib/IIIa start time, Reason for GP .. Administration, Stop Date, Contraindiacted				22
C0005890	Height		Float		cm	21
C0020538	Hypertension	History of Hypertension, Hypertensive crisis	Bool			21
C0232187	Cardiac rhythm	Sinus rhythm, cardiac arrhythmia, Atrial arrhythmia	CodeList	Sinus rhythm, Atrial fibrillation or flutter, Paced, Other rhythm		21
C0428772	Left ventricular ejection fraction	LVEF planned for after discharge, Linksventrikuläre Funktion, LVEF assessed	Float		%	21
C0520887	ST depression	Inferior ST depression, Anterior ST depression, Lateral ST	Bool			21

		depression				
C0521942	Angiotensin 2 Receptor Antagonists	ARB Contraindication, ARC contraindicated				21
C1999375	Ticagrelor	Ticagrelor dosage, Ticagrelor contraindication, Ticagrelor start time				21
C2825026	Unfractionated heparin	Unfractionated heparin contraindication, Unfractionated heparin dose, Unfractionated heparin start time				21
C0013516	Echocardiography	Date of Echocardiogram				20
C0030163	Cardiac Pacemaker	Pacemaker implantation, Paced rhythm, Permanent pacemaker, Temporary pacemaker				25
C0201976	Creatinine	Peak Creatinine	Float			20
C0543414	Tobacco consume		Bool			20
C2584899	Date of examination					20
C0019046	Hemoglobin	Anaemia	Float			18
C1320532	Arrival time at hospital/ER	Arrival date, Presentation date/time	DateTime			18
C3537184	NSTEMI		Bool			18
C2361123	Date of discharge	Time of hospital discharge for index event	DateTime			17
C1320528	Time of symptom onset	Duration of symptoms, Onset date of index event	DateTime			16
C1879316	Transfusion of blood	Date of first transfusion, Declines blood transfusion				16

C0021860	Intra-aortic balloon pump					15
C0043031	Warfarin	Warfarin contraindicated				15
C0429090	Significant Q waves	Q waves in anterior leads, Q waves in inferior leads, significant Q waves in anterior leads	Bool			15
C1273352	Intracardial defibrillator (ICD)	Temporary pacemaker ICD, ICD implantation date				15
C0023211	Left bundle branch block		Bool			14
C0085605	Impaired hepatic function	Chronic liver disease	Bool			14
C1302393	Date of admission		DateTime			14
C0011900	Diagnosis	Präoperative diagnosis	Text			13
C0013404	Dyspnea		Bool			13
C0018821	Cardiac surgery					13
C0040405	X-ray tomography	CT location				0
C0525032	INR	Quick, Quick	Float			13
C1553892	Current medication list	On blood pressure treatment, Medication list				13
C3251812	Increased bleeding risk		Bool			13
C0004238	Atrial fibrillation	Atrial fibrillation date, Vfib date	Bool			12
C0008031	Chest pain		Bool			12
C0018790	Cardiac arrest	Date of cardiac arrest, Cardiac	Bool			12

		arrest outside facility				
C0019993	Hospitalization since previous visit		Bool			12
C0024485	MRI imaging	Contraindications to MRI				6
C0455404	Family history of coronary heart disease	Familienanamnese	Bool			12
C0017887	Nitrates	Oral Nitrates, Amount of sublingual nitrates, Topical nitrates, Nitroglycerin	Float			11
C0020517	Allergies	Allergy to study drug	Text			11
C0087153	Ventilator					11
C0190658	Pulmonary Artery Catheter	Swan Gans Catheter				11
C0201973	Creatine Kinase	CK maximum value, CK ULN	Float			11
C0421449	Patient address	Street	Text			11
C0520888	Pathological T wave	T inversion	Bool			11
C0013801	Holter monitoring					10
C0168273	Bivalirudin	Bivalirudin contraindicated, Bivalirudin start time				10
C0220825	Evaluation					10
C0242339	Dyslipidaemia	Hyperlipidemia	Float			10
C0428472	LDL Cholesterol		Float			10
C0679831	Patient history	Medical history				10
C1445957	Total cholesterol	Hypercholesterinemia	Float			10

C1546432	Transfer from other hospital	Date of transfer, Time of transfer	DateTime			10
C1550330	Urgency	Urgent procedure				10
C1881056	Peripheral arterial disease		Bool			10
C3272316	Cardiac stent placement	Insertion of Drug Coated Stent(s), Stent type				10
C0005821	Platelet count	Thrombocytopenia	Float			9
C0006826	Malignom	Intracranial neoplasm, Tumorerkrankungen	Bool			9
C0085612	Ventricular arrhythmia		Bool			9
C0151942	Other arterial thrombotic event		Bool			9
C0181598	Left ventricular assist device		Bool			9
C0242231	Coronary stenosis	RCA, PDA, RPL and AM branches percent stenosis	Bool			9
C0332144	Final/discharge diagnosis		Text			9
C0421454	Post code		Text			9
C0600290	Rehospitalization	Readmission reason, Readmission date, Gesamtzahl aller Rehospitalisationen, Date of Readmission	ItemGroup			9
C0677490	Pulmonary angiography					9
C0877248	Adverse events		Text			9

C1096021	Antiplatelet therapy					9
C1320303	Visit date		DateTime			9
C1446476	Electrophysiology study		Bool			9
C2348585	Patient ID		Text			9
C3177142	Symptoms at admission	Reason for hospitalization, Primary reason for hospitalization, Clinical symptoms	Text			9
C0002007	Aldosterone Blocking Agent	Aldosterone blocking agent contraindicated, Dose				8
C0012798	Diuretics					8
C0040207	Ticlopidine	Ticlopidine dose, Ticlopidin contraindicated				8
C0201657	CRP		Float			8
C0560738	Ventilation/perfusion scan					8
C0581603	Revascularization					8
C0589120	Follow up	Follow up date	DateTime			8
C0948369	Reinfarction	Reinfarction date	Bool			8
C2348568	Study participation status		Text			8
C2361125	Attending physician name	Physician name, Physician name, Resident physician name	Text			8
C3272266	TIMI Score		Integer			8
C0003367	Non-statin lipid					7

	lowering agent					
C0007203	Cardiopulmonary Resuscitation					7
C0019004	Hemodialysis					7
C0232326	ST-segment changes	Nonspecific ST/T Change, ST deviation	Bool			7
C0332135	Working diagnosis on admission	Führende Diagnose nach Herzkatheter	Text			7
C0428474	Serum LDL measurement		Float			7
C0700589	Contraception	Kontrazeptiva				7
C0948268	Hemodynamic instability	Hemodynamics	Bool			7
C1098510	Fondaparinux	Contraindication to fondaparinux				7
C1271630	Cardiac biomarker measurements		Float			7
C1299364	Culprit artery	Bypass stenosis	CodeList	LAD, LCx, RCA, LM, Graft/Stent,Unknown		7
C1956346	Coronary Artery Disease	History of Coronary Artery disease	Bool			7
C0001948	Alcohol consumption	History of alcohol consumption	Text			6
C0002940	Aneurysm	Aneurysma, Intracranial aneurysm	Bool			6
C0015031	Ethnic group		CodeList			6
C0018935	Hematocrit		Float			6

C0019018	HbA1c		Float			6
C0021672	Insurance		Text			6
C0030605	PTT		Float			6
C0034510	Race		CodeList			6
C0202042	Blood Glucose	Fasting Glucose	Float			6
C0202236	Triglycerides		Float			6
C2024081	Number of stents	Number of drug eluting stents, Number of bare metal stents				6
C2024776	Cardiac risk factors	History and risk factors, Cardiovascular risk factors, risk factor for cardiovascular complication	Bool			6
C2348066	Dabigatran	Dabigatran contraindicated				6
C2983649	QRS annotation	QRS duration	Bool			6
C3258270	Means of transport	Means of transfer				6
C0003211	NSAIDs (other than Aspirin)					5
C0003857	Arteriovenous malformation		Bool			5
C0017654	GFR		Float			5
C0023508	White blood cell count	Leukozyten	Float			5
C0031809	Physical examination					5
C0040034	Thrombocytopenia		Float			5
C0087111	Procedure					5

C0243095	Findings					5
C0455829	Waist circumference		Float		cm	5
C1515258	Telephone number		Text			5
C1858274	Reduced life expectancy		Bool			5
C2315323	Indication					5
C2936588	Thienopyridine					5
C3275120	Number of diseased vessels		Integer			5
C3838354	Arrival time at Cath Lab		DateTime			5
C0004245	AV block		Bool			4
C0006684	Calcium channel blocker					4
C0007177	Cardiac Tamponade		Bool			4
C0013604	Edema		Bool			4
C0014772	Red blood cell count		Float			4
C0015259	Exercise	Excercise counseling				4
C0018818	Ventricular Septal Defect	Septal defect	Bool			4
C0021641	Insulin					4
C0042514	Ventricular tachycardia	Vtach date	Bool			4
C0201836	Alanine aminotransferase		Float			4
C0201899	Aspartate aminotransferase		Float			4

C0202230	TSH		Float			4
C0253563	Eptifibatide					4
C0337443	Sodium		Float			4
C0369183	MCH		Float			4
C0421456	Occupation	Berufsanamnese	Text			4
C0474535	MCHC		Float			4
C0570562	Allergy to contrast medium		Bool			4
C0700431	Cardiac rehabilitation					4
C0741921	Cardiac markers elevated		Float			4
C1273715	Smoking counseling					4
C1948043	MCV		Float			4
C2267235	Vitamin-K antagonists					4
C2348570	Premature termination of study		Bool			4
C3272298	Arterial access site					4
C3536847	Oral Thrombin inhibitor					4
[C0023303, C0021708]	Days spent in ICU		Integer			3
[C0184666, C0450429]	Admission location					3
[C3261085, C1264639]	EMS dispatch time		DateTime			3

C0004096	Asthma		Bool			3
C0004239	Atrial Flutter		Bool			3
C0005902	Body surface area		Float		qm	3
C0009566	Complications		Text			3
C0009924	Contrast medium	Kontrastmittelmenge				3
C0011946	Dialysis					3
C0020443	Hypercholesterolemia		Float			3
C0024117	COPD		Bool			3
C0026266	Mitral regurgitation		Bool			3
C0031050	Pericard					3
C0031444	Marcumar					3
C0073633	Ranolazine					3
C0202194	Potassium		Float			3
C0206461	Dalteparin	Dalteparin contraindicated				3
C0304509	Inotropic agent					3
C0332677	Trauma	History of trauma	Bool			3
C0360703	Antiarrhythmics	Antiarrhythmics (discharge)				3
C0429028	QT interval	QT	Text			3
C0455713	Type of procedure					3
C0457617	Mechanical support					3
C0577789	Aortic valve					3
C0577791	Mitral valve					3

C0577797	Tricuspid valve					3
C0745041	Event prolonged hospitalization					3
C0849535	Lab results					3
C1095989	BNP		Float			3
C1112720	Unspecific ST changes		Bool			3
C1305855	Body mass index		Float		kg/qm	3
C1510472	Drug dependence	Documented or self-reported cocaine use within the past 48 hours (acute)	Bool			3
C1739768	Rivaroxaban	Contraindication				3
C1831808	Apixaban	Contraindication				3
C1959586	Cardiac Wall rupture	Cardiac rupture	Bool			3
C2348485	X-ray Exposure time					3
C2733251	EQ-5D-3L Quality of Life		Text			3
[C0011008, C3495034]	Time of transfer from Emergency department		DateTime			2
C0003873	Rheumatoid arthritis		Bool			2
C0004398	Autopsy performed		Bool			2
C0004936	Mental illness		Bool			2
C0005903	Body temperature		Float		°C	2
C0007282	Carotid stenosis		Bool			2
C0007412	Catecholamines					2

C0010520	Cyanosis		Bool			2
C0012265	Digoxin					2
C0017319	Primary physician		Text			2
C0018823	History of heart transplant					2
C0020649	Hypotension		Bool			2
C0022671	History of kidney transplant		Bool			2
C0023303	Length of stay		Integer			2
C0030657	Infectivity					2
C0034065	Pulmonary embolism		Bool			2
C0035234	Breathing sound		Text			2
C0038418	Streptokinase					2
C0039070	Syncope		Bool			2
C0040338	Snusning		Bool			2
C0042071	Urokinase					2
C0042510	Ventricular fibrillation		Bool			2
C0085615	Right branch bundle block		Bool			2
C0150521	Comfort measures only					2
C0151814	Coronary Occlusion		Bool			2
C0161817	Vascular complication		Text			2
C0190173	Valve replacement					2

C0190211	Angioplasty					2
C0201913	Total bilirubin		Float			2
C0202035	Gamma-glutamyl transpeptidase		Float			2
C0235029	Neurological complications		Text			2
C0247025	Tirofiban					2
C0257190	Ivabradin					2
C0288672	Abciximab					2
C0332138	Secondary diagnosis		Text			2
C0340643	Aortic dissection		Bool			2
C0358591	Proton pump inhibitors					2
C0373595	Creatinine Clearance		Float			2
C0373675	Magnesium		Float			2
C0392209	Nutritional status		Text			2
C0428977	Increased risk of bradycardia		Bool			2
C0449462	Stent length					2
C0449494	Type of graft					2
C0450990	Physical status		Text			2
C0455503	Depression		Bool			2
C0489625	QTc time		Float		ms	2
C0523961	Urea		Float			2

C0553514	Admission source		CodeList			2
C0577786	Left ventricle					2
C0577787	Right ventricle					2
C0681902	Laboratory results					2
C0805839	Date of last contact		DateTime			2
C1148438	Current condition					2
C1167690	PQ time		Float		ms	2
C1269041	Abdominal wall					2
C1269890	Right atrium					2
C1269894	Left atrium					2
C1277187	Left ventricular systolic dysfunction		Bool			2
C1287726	Puls status		Text			2
C1291006	Lung percussion					2
C1291017	Cardiac auscultation					2
C1320531	Time of first medical contact		DateTime			2
C1322815	Drug eluting balloon					2
C1550373	OPS-Codes		Text			2
C2145202	Brachytherapy					2
C2700391	Procedures					2
C2825221	Left main stenosis		Bool			2
C2825222	LAD Stenosis	Stenosis in LAD	Bool			2

C3267166	Right coronary artery					2
C3532907	Aorta					2