

Appendix 1. Medications Classified as ‘Known’ Risk of TdP 2024

ATC Classification	Medication*	[AHFS Class] Classification (medication ID)
(A)limentary tract and metabolism	Cisapride Domperidone Ondansetron Papaverine HCl (Intracoronary)	<ul style="list-style-type: none"> • [56:32] Prokinetic Agents (394006) • Domperidone NA • [56:22.20] 5-HT₃ Receptor Antagonists (392023) • [24:12.92] Vasodilating Agents, Misc. (382707)
(B)lood, blood forming organs	Cilostazol	[24:12.12] PhosphodiesteraseType5 Inhibitors (301045)
(C)ardiovascular system <i>(will be excluded from analysis given high risk of residual confounding by indication, severity of disease)</i>	Amiodarone Bepridil Disopyramide Dofetilide Dronedarone Flecainide Ibutilide Probucol Procainamide Quinidine Sotalol	<ul style="list-style-type: none"> • [24:04.04.20] Class III Antiarrhythmics (387009) • Bepridil NA • [24:04.04.04] Class Ia Antiarrhythmics (382408) • [24:04.04.20] Class III Antiarrhythmics (300008) • [24:04.04.20] Class III Antiarrhythmics (309025) • [24:04.04.12] Class Ic Antiarrhythmics (386009) • [24:04.04.20] Class III Antiarrhythmics (396017) • Probucol NA • [24:04.04.04] Class Ia Antiarrhythmics (382398) • [24:04.04.04] Class Ia Antiarrhythmics (382396) • [24:04.04.20] Class III Antiarrhythmics (393010)
(D)ermatologicals	Erythromycin Fluconazole	<ul style="list-style-type: none"> • [8:12.12.04] Erythromycins (382392) • [8:14.08] Azoles (390002)
(G)enitourinary system sex hormones	Terodiline	• Terodiline NA
(H)ormonal, systemic, excl sex hormones and insulins	Terlipressin	• Terlipressin NA
(J)Anti-infective for systemic use	Azithromycin Ciprofloxacin Clarithromycin Gatifloxacin Grepafloxacin Levofloxacin Moxifloxacin Roxithromycin Sparfloxacin	<ul style="list-style-type: none"> • [8:12.12.92] Other Macrolides (397037) • [8:12.18] Quinolones (Ciprofloxacin) • [8:12.12.92] Other Macrolides (392005) • [52:04.04] Antibacterials (303018) • Grepafloxacin NA • [8:12.18] Quinolones (397040) • [8:12.18] Quinolones (300002) • Roxithromycin NA • Sparfloxacin NA
(L) Antineoplastic and immunomodulating agents	Anagrelide Arsenic trioxide Oxaliplatin Vandetanib Mobocertinib	<ul style="list-style-type: none"> • [20:12.14] Platelet-reducing Agents (308022) • [10:00] Antineoplastic Agents (301014) • [10:00] Antineoplastic Agents (302033) • [10:00] Antineoplastic Agents (311024) • Mobocertinib NA
(M)usculo-skeletal system		
(N)ervous system	Psycholeptics (N05): Chlorpromazine Chlorprothixene Droperidol Haloperidol Methotrimeprazine Levosulpiride Mesoridazine Pimozide Sertindole Sulpiride Sultopride Thioridazine	<ul style="list-style-type: none"> • [28:16.08.24] Phenothiazines (382040) • Chlorprothixene NA • [28:24.92] Anxiolytics and Sedatives (382179) • [28:16.08.08] Butyrophenones (382180) • Methotrimeprazine NA • Levosulpiride NA • Mesoridazine NA • [28:16.08.92] Antipsychotics, Misc (386018) • Sertindole NA • Sulpiride NA • Sultopride NA • [28:16.08.24] Phenothiazines (382119)
	Psychoanaleptics(N06): Citalopram Donepezil	<ul style="list-style-type: none"> • [28:16.04.20] SSRIs (399001) • [12:04] Cholinergic Agents (397032)

	Escitalopram	<ul style="list-style-type: none"> • [28:16.04.20] SSRIs (302034)
	Anesthetics (N01): Cocaine Propofol Sevoflurane	<ul style="list-style-type: none"> • [52:16] Local Anesthetics (382372) • [28:04.92] General Anesthetics (302025) • [28:04.16] Inhalation Anesthetics (379153)
	Other CNS Drugs: Levomethadyl acetate Methadone	<ul style="list-style-type: none"> • Levomethadyl acetate NA • [28:08.08] Opiate Agonists (382134)
(P)Antiparasitic products, insecticides and repellents	Chloroquine Halofantrine Hydroxychloroquine Pentamidine Meglumine	<ul style="list-style-type: none"> • [8:30.08] Antimalarials (382318) • Halofantrine NA • [8:18.40] HCV Antivirals (382319) • [8:30.92] Antiprotozoals, Misc. (385029) • Meglumine NA
(R)respiratory system	Astemizole Terfenadine	<ul style="list-style-type: none"> • Astemizole NA • Terfenadine NA

* Medications **bolded** are those approved by Health Canada.

Appendix 2. QTP-MACE Primary Outcome Composite Components

MACE Outcome of Interest	Codes and Subcodes	Comments
Mortality		
Neurologically determined death	G93.81	<i>We will also use 'In-hospital death' designation in DAD. It is more reliable than these G and R codes</i>
Instantaneous death	R96.0	
Death < 24h from onset of symptoms, NOS	R96.1	
Unattended death	R98	
Other ill-defined unspecified causes of mortality	R99	
Sudden cardiac death		
Sudden cardiac death, so described	I46.1	
Cardiac arrest		
Cardiac arrest with successful resuscitation	I46.0	
Cardiac arrest, unspecified	I46.9	
Ventricular tachycardia		
Re-entry ventricular tachycardia	I47.0	
Ventricular tachycardia	I47.2	
Paroxysmal tachycardia, unspecified	I47.9	
Torsades de pointes	I47.21	
Ventricular fibrillation [1,4]	I49.00	
Ventricular flutter [1,4]	I49.01	
Cardiac arrhythmias		
Other specified cardiac arrhythmias	I49.8	
Cardiac arrhythmia, unspecified	I49.9	
Syncope		
Syncope and collapse	R55	

Appendix 3. Epic-Dovetale Data Validation - QTP-MACE Example

ITEM TO BE VALIDATED	TESTING SOURCE (DOVETALE, CIHI)	MANUAL/ COMPUTATIONAL VALIDATION	HOW VALIDATED?	NUMBER OF CHARTS CHECKED AND COMMENTS	RESULTS (DIAGNOSTIC PERFORMANCE VS AGREEMENT)
Section 1: Patient Demographics					
<i>Section 1a: Cohort Eligibility</i>					
Total number of patients in cohorts	Dovetale	Computational: Slicer Dicer	Total number of patients in the cohorts compared with Slicer Dicer	86,558 compared with Slicer Dicer 86,663	Plain Agreement > 99% accurate
Single identification number per patient (using MRN)	Dovetale –Table: Patient Column: Patient_MRN + OHIP field	Computational	Checking for duplicate charts, using OHIP number to identify patients with >1 MRN	68,179	Plain Agreement 100% agreement on MRN
Age > 18 at date of hospital admission	Dovetale	Computational: CIHI	Comparing age entered from Dovetale and CIHI data	10,065	Plain Agreement > 99% accurate
Admission to hospital (Y/N)	Dovetale	Computational: CIHI	Comparing MRN of patients in the Dovetale and CIHI data	10,065	Plain Agreement > 99% accurate
<i>Section 1b: Demographics</i>					
Age at Admission Date	Dovetale	Computational: CIHI	Comparing age entered from Dovetale and CIHI data	10,065	Plain Agreement > 99% accurate
Sex (Legal Sex)	Dovetale	Computational: Slicer Dicer	Comparing the prevalence of sex choices – female, male, other	52,320 (60.4%) female; 131 charts manually reviewed	Plain Agreement 100% accurate
Gender	Dovetale	Computational/ Manual	Gender Identity – multiple choices - non-binary, 2-spirit, transgender female, transgender male, something else, other, choose not to disclose, don't know.	3,658/86,558 (4.2%) have gender identity listed. 131 charts manually reviewed	Plain Agreement 100% accurate

Implausible age (Age > 103)	CIHI data/Dovetale	Manual: Chart Review, Computational: CIHI	Checking age entered in Dovetale, chart notes, and Slicer Dicer	13/70079 patients listed as > 103 yr old	Plain Agreement 100% accurate
Exclusion age (Age < 18)	CIHI-coded data/Dovetale	Manual: Chart Review, Computational: CIHI	Comparing age entered from Dovetale and CIHI data – DOB to date of admission	10065	Plain Agreement 100% accurate
Potential sex-based errors (e.g., males delivering babies, females having prostate surgery)	Dovetale	Manual: Chart Review, Computational: Slicer Dicer	Checking sex entered in Dovetale and chart notes to validate if sex was entered correctly, Slicer Dicer	68,179	Plain Agreement > 99% accurate N=68,177/68,179 plausible
Postal code	Dovetale	Manual: Chart Review	Checking postal code entered in Dovetale to see if it is extracted accurately	200 charts manually reviewed	Plain Agreement 100% accurate
Section 1c: Admission, Discharge, Transfer Flow					
Admission	CIHI/Dovetale	Manual: Chart Review, Computational: CIHI	Admission yes/no, completeness (checking single week of hospital encounters to see if they were admitted)	300 encounters	Plain Agreement 100% accurate
Presence in critical care	Dovetale	Manual: Chart Review	Extract patients who were present in critical care or stepdown from critical care units	12138 patients in critical care; 75 patients reviewed	Plain Agreement 100% accurate
Provider Service (Medicine, Surgery, Psychiatry, Obstetrics-Gynecology, etc)	CIHI/Dovetale	Manual: Chart Review, Computational: CIHI	Admitting provider's service of hospital encounter	75 patients	Plain Agreement 63/75 (84%) admitting provider accurate but 57/75 (76%) admitting service accurate. <i>For now, will use Main Patient Service from CIHI data</i>
Section 2: Exposure					

<i>Section 2a: Known QTPmed</i>					
Patients given 'known' QTP-Meds (MAIN EXPOSURE)	Dovetale	Manual: Chart Review	Dovetale extraction of Medication Administration Record and checking in chart for 'known' QTPmed.	335 charts checked of patients with and without MACE (235 MACE + 100 No MACE) 50,487 patients taking 'known' QTPMeds	Diagnostic Accuracy: PPV 100%, NPV 86%, Sn 95%, Sp 100%. NPV improving with additional word searching
Patients given >1 'known' QTP-med	Dovetale	Manual Chart Review	Reviewing Dovetale extraction of 'known' QTPmed administrations then manual chart review re: more than 1 QTP med	187/335 charts (56% >1 known QTPmed)	Plain Agreement 97% accurate
'Known' QTPMed Use in Epic-Dovetale	Dovetale	Manual: Chart Review, Computational: Slicer Dicer	List matches 'known' QTPMed list, dosage form is eligible dosage form (ATC code) – ie, no ophthalmic or otic.	30/36 marketed 'known' QTPmeds administered at SJHH;	Plain Agreement 100% accurate
<i>Section 2b: Possible QTPmed</i>					
Patients given 'possible' QTP-Meds	Dovetale	Manual Chart Review	Reviewing Dovetale extraction of possible QTP med administrations and checking whether chart review agrees.	In progress 21360 patients taking 'possible' QTPMeds	Plain Agreement In progress
Patients given >1 'possible' QTP-Meds	Dovetale	Manual Chart Review	Dovetale extraction of QTP possible med administrations, manual chart review to see if more than 1 possible QTP meds administered		Plain Agreement In progress
<i>Section 2c: Conditional QTPmed</i>					
Patients given 'conditional' QTPMeds	Dovetale	Manual: Chart Review	Reviewing Dovetale extraction of conditional QTP med administrations and	In progress 44402 patients taking 'conditional' QTPMeds	Plain Agreement In progress

			checking whether chart review agrees.		
Patients given >1 'conditional' QTP-Meds	Dovetale	Manual: Chart Review	Dovetale extraction of QTP conditional med administrations, manual chart review to see if more than 1 conditional QTP med administered		Plain Agreement In progress
Section 2d: No QTPmed					
Patients who were not given any QTP med	Dovetale	Manual: Chart Review	Random manual chart review confirming patients were not given QTP meds by searching the lists of 'known', 'possible', and 'conditional' QTP meds	4923 not taking any known, possible, or conditional meds (Control group)	Validation in progress
Section 3: Primary Outcome (MACE)					
Number of patients with at least 1 MACE outcome (MAIN OUTCOME)	Dovetale/CIHI	Manual Chart Review, Computational: CIHI, Slicer Dicer	Slicer Dicer for agreement on number of MACE; manual chart review re MACE confirmation. For CIHI data use post-admit comorbidity	235 charts manually reviewed – death, ventricular arrhythmias, non-fatal cardiac arrest, syncope	Diagnostic Performance: PPV 93%, NPV 98%, Sn 99%, Sp 81% (Syncope is weak component) <i>(w will use CIHI data for this)</i>
Number of patients with no MACE outcome	Dovetale/CIHI	Manual chart review; Computational	Review patient charts to confirm absence of MACE; Computational	100 patients	Plain Agreement 98% agreement
Number of patients with >1 MACE outcome in the same admission	Dovetale/CIHI	Manual: Chart Review, Computational: CIHI	Review patient charts to confirm the corresponding MACE outcomes occurred, compare MACE outcomes to CIHI data	127 admissions	Plain Agreement In progress
Number of patients with >1 MACE outcome in separate	Dovetale/CIHI	Manual: Chart Review, Computational: CIHI	Review patient charts to confirm the corresponding MACE outcomes occurred, compare MACE	93 patients	Plain Agreement In progress

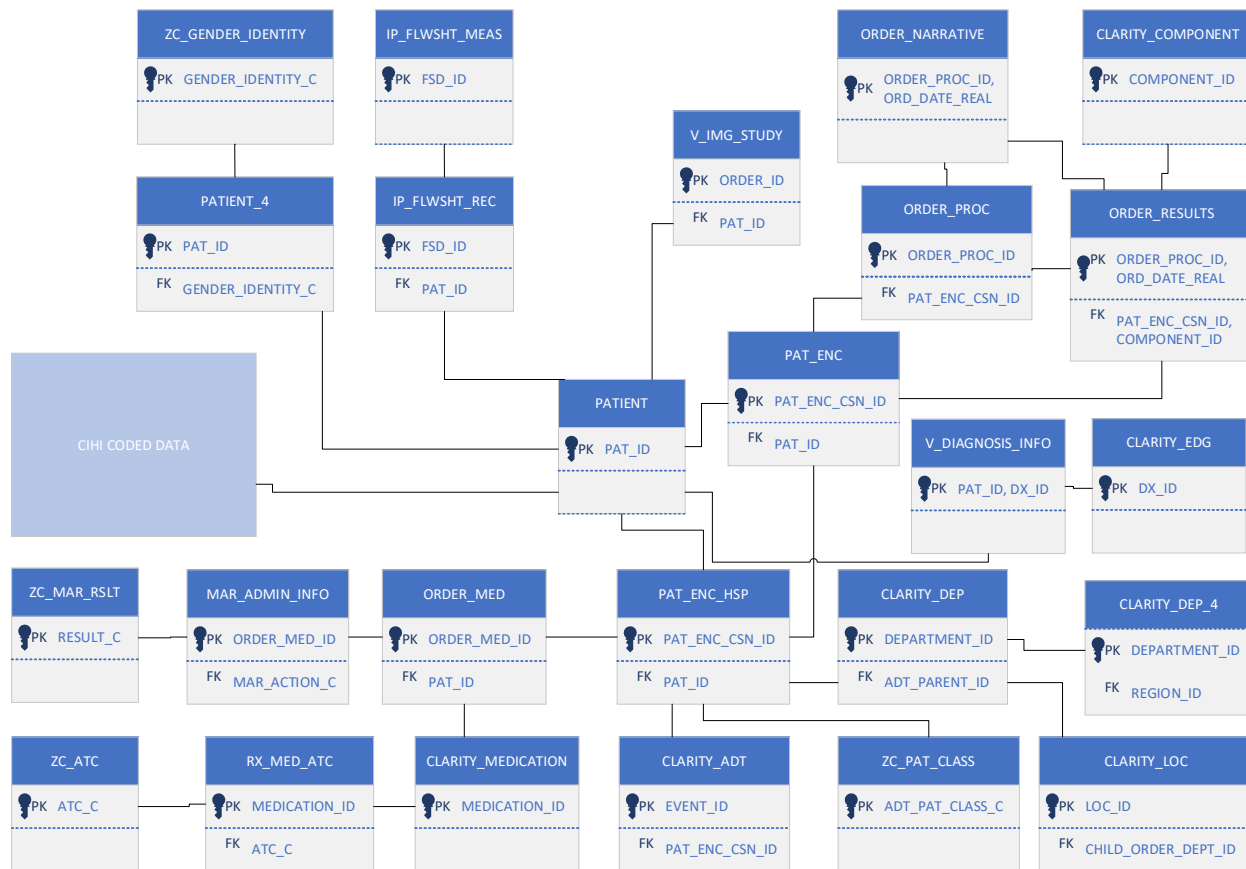
admissions			outcomes to CIHI data		
Ventricular Arrhythmia (sudden cardiac death, ventricular fibrillation, ventricular tachycardia)	Dovetale/CIHI	Manual: Chart Review, Computational: Slicer Dicer	Review patient charts to confirm corresponding MACE outcome occurred, use Slicer Dicer for number of specific MACE outcomes	46/51 eligible outcomes	Plain Agreement 90% accurate
Non-fatal cardiac arrest (cardiac arrest with successful resuscitation)	Dovetale/CIHI	Manual: Chart Review, Computational: Slicer Dicer	Review patient charts to confirm corresponding MACE outcome occurred, use Slicer Dicer for number of specific MACE outcomes	24/25 eligible outcomes	Plain Agreement 96% accurate
Death rate of patients with a MACE outcome (CIHI)	Dovetale/CIHI	Manual: Chart Review, Computational: CIHI	Review patient charts to confirm patient with a MACE outcome died, compare to CIHI 'Dischrge Disposition' tab	200/200 CIHI died charts manually reviewed	Plain Agreement 100% accurate
Torsades de Pointes (TdP) as Individual Outcome	Dovetale	Manual validation	Check Dovetale extraction of TdP	Only 6 unique patients identified by codes as TdP (but no ICD-10 code)	Plain Agreement 100% accurate Additional
Section 4: Confounders and Risk Factors					
<i>Section 4a: Diagnostics (lab, EKG, telemetry)</i>					
Laboratory Results	Dovetale	Manual: Chart Review	Reviewing in chart if the lab results are present and accurate (potassium, magnesium, calcium, troponin)	54,785 had at least one of the lab results of interest. 736 patient labs checked (50 patients)	Plain Agreement 100% accurate
EKG data	Dovetale	Manual: Chart Review	Reviewing for QTc-B interval and cardiac rhythm	32777 patients had at least 1 EKG ; 38 patients, 53 EKGs manually reviewed	Plain Agreement 100% accurate
Telemetry	Dovetale	Manual: Chart	Reviewing for cardiac	31856 patients had	Plain Agreement

		Review	rhythm	telemetry	In progress
Section 4b: Comorbidities and Concomitant Medications					
Cardiac confounders	Dovetale and CIHI data	Manual Chart Review, Computational: Slicer Dicer	Search for the eligible confounders (eg, MI, structural heart, congenital QT, AF, etc) in the patient chart and with Slicer Dicer	134 patients with congenital QT	Plain Agreement In progress
Heart Failure (manual)	Dovetale	Manual Chart Review	Search Problem List and Past Medical History then Clinical Notes.	50 patients with heart failure and 50 patients without heart failure	Diagnostic Accuracy 96% PPV 100% NPV Sn 100% Sp 93%
Diabetes	Dovetale and CIHI data	Computational: CIHI	Compare Dovetale with CIHI DAD patients with diabetes	560 patients in CIHI DAD MACE cohort with diabetes	Plain Agreement 93% agreement
Hypertension	Dovetale and CIHI data	Computational: CIHI	Compare Dovetale with CIHI DAD patients with hypertension	513 patients in CIHI DAD MACE cohort with hypertension	Plain Agreement 81% agreement <i>(Insufficient, will use CIHI data)</i>
Sepsis	Dovetale and CIHI data	Computational: CIHI	Compare Dovetale with CIHI DAD patients with sepsis	165 patients in CIHI DAD MACE cohort with sepsis	Plain Agreement 39% agreement <i>(Insufficient, will use CIHI data)</i>
Concomitant medications – phenytoin	Dovetale	Manual Chart Review	Search for eligible medications in patient chart – phenytoin, bupropion, clarithromycin, ketoconazole, diuretics	25 patients	Plain Agreement 100% agreement
Concomitant medications – bupropion	Dovetale	Manual Chart Review	Search for eligible medications in patient chart – phenytoin, bupropion, clarithromycin, ketoconazole, diuretics	25 patients	Plain Agreement 100% agreement
Concomitant medications –	Dovetale	Manual Chart Review	Search for eligible medications in patient	25 patients	Plain Agreement In progress

clarithromycin			chart – phenytoin, bupropion, clarithromycin, ketoconazole, diuretics		
Concomitant medications – ketoconazole	Dovetale	Manual Chart Review	Search for eligible medications in patient chart – phenytoin, bupropion, clarithromycin, ketoconazole, diuretics	8 patients (only 8 patients in cohort took ketoconazole)	Plain Agreement In progress
Concomitant medications – diuretics	Dovetale	Manual Chart Review	Search for eligible medications in patient chart – phenytoin, bupropion, clarithromycin, ketoconazole, diuretics	25 patients	Plain Agreement In progress
Section 5: Time Stamping					
Time of admission	Dovetale/CIHI	Manual: Chart Review, Computational: CIHI	Reviewing in the chart to see exactly when the patient was admitted – date and minute	10,065 patients	Plain Agreement > 99% accuracy
Time of medication administrations (exposure)	Dovetale	Manual Chart Review	Reviewing in the chart to see exact medication administration times	56 charts manually reviewed	Plain Agreement 100% accuracy
Timing of MACE outcome vs QTP-Med Exposure	Dovetale/CIHI	Manual Chart Review, Computational: CIHI	Once time of med administration known and time of MACE known, then computational check for med admin first. Manual chart review to validate	In progress	Plain Agreement In progress
Time of labs	Dovetale	Manual chart review	Review chart re: exact time of lab test reporting time	736 lab value times manually reviewed	Plain Agreement 100% accurate

Time of EKG	Dovetale	Manual chart review	Review chart re exact time of EKG administration	53 charts manually reviewed	Plain Agreement 100% accurate
Medication Alerts/ Warnings	Dovetale	Manual chart review	29 types of medication safety alerts Review timing of alert, provider receiving alert, alert description	2,208,017 medication safety-related alerts in 1 year	Plain Agreement In progress
QTP Medication Alerts/ Warnings	Dovetale	Manual chart review	10 types of QTP medication safety alerts Review timing of alert, provider receiving alert, alert description	160,311 QTP related alerts in 1 year	Plain Agreement In progress

2. Epic-Dovetale Entity Relationship Diagram



Appendix 5. QTP-MACE Comorbidity Codes

Comorbidity of interest	Codes and subcodes	Comments
Previous myocardial infarction		
Acute transmural MI of ant. Wall	I21.0	
Acute transmural MI of inf. Wall	I21.1	
Acute transmural MI of other sites	I21.2	
Acute transmural MI of unspec. site	I21.3	
Acute subendocardial MI	I21.4	
Subsequent MI of ant. Wall	I22.0	
Subsequent MI of inf. Wall	I22.1	
Subsequent MI of other sites	I22.8	
Subsequent MI of unspec. Sites	I22.9	
Old MI	I25.2	
Atrial fibrillation and flutter		
Atrial fibrillation	I48.0	
Paroxysmal atrial fibrillation	I48.0	
Persistent atrial fibrillation	I48.1	
Chronic atrial fibrillation	I48.2	
Typical atrial flutter	I48.3	
Atypical atrial flutter	I48.4	
Atrial fibrillation or flutter, unspecified	I48.9	
Heart failure		
Congestive heart failure	I50.0	
Left ventricular failure	I50.1	
Heart failure, unspec.	I50.9	
AV block		
Atrioventricular block, first degree	I440	
Atrioventricular block, second degree	I441	
Atrioventricular block, complete	I442	
Other and unspecified atrioventricular block	I443	
Cardiomyopathy		
Ischemic cardiomyopathy	I255	
Dilated cardiomyopathy	I420	
Obstructive hypertrophic cardiomyopathy	I421	
Other hypertrophic cardiomyopathy	I422	
Endomyocardial (eosinophilic) disease	I423	
Endocardial fibroelastosis	I424	
Other restrictive cardiomyopathy	I425	
Alcoholic cardiomyopathy	I426	
Cardiomyopathy due to drugs and other external agents	I427	
Other cardiomyopathies	I428	

Cardiomyopathy, unspecified	I429	
Cardiomyopathy in infectious and parasitic diseases classified elsewhere	I430	
Cardiomyopathy in metabolic diseases	I431	
Cardiomyopathy in nutritional diseases	I432	
Cardiomyopathy in other diseases classified elsewhere	I438	
Congenital long QT syndrome	I45.81	<i>New code</i>
Coronary artery disease		
Atherosclerotic heart disease of native coronary artery	I2510	
Atherosclerotic heart disease of autologous vein bypass graft	I2511	
Atherosclerotic heart disease of nonautologous biological bypass graft	I2512	
Atherosclerotic heart disease of artery bypass graft	I2513	
Atherosclerotic heart disease of unspecified type of bypass graft	I2514	
Atherosclerotic heart disease of coronary artery of transplanted heart	I2515	
Atherosclerotic heart disease of unspecified type of vessel, native or graft	I2519	
Coronary Artery Bypass Graft (CABG)	Z951	
Mechanical complication of coronary artery bypass and valve grafts	T822	
Percutaneous coronary intervention (PCI)	Z955	
Hypertension		
Essential (primary) hypertension	I10	
Hypertensive heart disease	I11	
Hypertensive renal disease	I12	
Secondary hypertension	I15	
Other Ischemia		
Angina pectoris	I20	
Acute myocardial infarction	I21	
Subsequent myocardial infarction	I22	
Certain current complications following acute myocardial infarction	I23	
Other acute ischaemic heart diseases	I24	
Left ventricular hypertrophy		
Obstructive hypertrophic cardiomyopathy	I42.1	
Other hypertrophic cardiomyopathy	I42.2	
Peripheral arterial disease		
Atherosclerosis	I70	
Aortic aneurysm and dissection	I71	
Other aneurysm	I72	
Other peripheral vascular diseases	I73	
Arterial embolism and thrombosis	I74	
Other disorders of arteries and arterioles	I77	
Disorders of arteries, arterioles and capillaries in diseases classified elsewhere	I79	
Recent cardioversion	5A2204Z	
Sick sinus syndrome	I495	
Liver dysfunction (acute or chronic)		

Acute hepatitis B	B16	
Other acute viral hepatitis	B17	
Chronic viral hepatitis	B18	
Unspecified viral hepatitis	B19	
Sequelae of viral hepatitis	B94.2	
Malignant neoplasm of liver and intrahepatic bile ducts	C22	
Disorders of copper metabolism	E83.0	
Oesophageal varices	I85	
Oesophageal varices without bleeding in diseases classified elsewhere	I98.2	
Alcoholic liver disease	K70	
Toxic liver disease with chronic persistent hepatitis	K71.3	
Toxic liver disease with chronic lobular hepatitis	K71.4	
Toxic liver disease with chronic active hepatitis	K71.5	
Toxic liver disease with fibrosis and cirrhosis of liver	K71.7	
Chronic hepatic failure	K72.1	
Hepatic failure, unspecified	K72.9	
Chronic persistent hepatitis, not elsewhere classified	K73.0	
Fibrosis and cirrhosis of liver	K74	
Granulomatous hepatitis, not elsewhere classified	K75.3	
Autoimmune hepatitis	K75.4	
Other specified inflammatory liver diseases	K75.8	
Inflammatory liver disease, unspecified	K75.9	
Other diseases of liver	K76	
Liver disorders in diseases classified elsewhere	K77	
Unspecified jaundice	R17	
Ascites	R18	
Hepatomegaly, not elsewhere classified	R16.0	
Hepatomegaly with splenomegaly, not elsewhere classified	R16.2	
Liver transplant status	Z94.4	
Hypothyroidism		
Subclinical iodine-deficiency hypothyroidism	E02	
Congenital hypothyroidism with diffuse goitre	E030	
Congenital hypothyroidism without goitre	E031	
Hypothyroidism due to medicaments and other exogenous substances	E032	
Postinfectious hypothyroidism	E033	
Atrophy of thyroid (acquired)	E034	
Myxoedema coma	E035	
Other specified hypothyroidism	E038	
Hypothyroidism, unspecified	E039	
Postprocedural hypothyroidism	E89.0	
Diabetes mellitus		
Type 1 Diabetes mellitus	E10	
Type 2 Diabetes mellitus	E11	

Other specified diabetes mellitus	E13	
Unspecified diabetes mellitus	E14	
Glomerular disorders in diabetes mellitus	N08.3	
Diabetes mellitus in pregnancy	O24	
Anorexia nervosa	F50.0	
Atypical anorexia nervosa	F50.1	
Bulimia nervosa	F50.2	
Atypical bulimia nervosa	F50.3	
Overeating associated with other psychological disturbances	F50.4	
Vomiting associated with other psychological disturbances	F50.5	
Other eating disorders	F50.8	
Eating disorder, unspecified	F50.9	
Kidney dysfunction (acute or chronic)		
Disorders resulting from impaired renal tubular function	N25	
Disorder of kidney and ureter, unspecified	N28.9	
Hypertensive renal failure	I120	
Kidney transplant status	Z94.0	
Type 1 diabetes mellitus with incipient diabetic nephropathy	E10.20	
Type 1 diabetes mellitus with end-stage renal disease [ESRD]	E10.22	
Type 2 diabetes mellitus with incipient diabetic nephropathy	E11.20	
Other specified diabetes mellitus with incipient diabetic nephropathy	E13.20	
Unspecified diabetes mellitus with incipient diabetic nephropathy	E14.20	
Unspecified diabetes mellitus with end-stage renal disease [ESRD]	E14.22	
Hypertensive heart and renal disease	I13	
Other specified diabetes mellitus with end-stage renal disease [ESRD]	E13.22	
Glomerular disorders in diseases classified elsewhere	N08	
Chronic kidney disease, stage 5	N18.5	
Unspecified kidney failure	N19	
Unintentional injury during kidney dialysis or other perfusion	Y60.2	
Foreign object accidentally left in body during kidney dialysis	Y61.2	
Failure of sterile precautions during kidney dialysis or other perfusion	Y62.2	
Kidney dialysis as the cause of abnormal reaction or later complication	Y84.1	
Care involving dialysis	Z49	
Dependence on renal dialysis	Z99.2	
Kidney transplant failure	T861	
Acute renal failure	N17	
Chronic renal failure	N18	
Unspecified kidney failure	N19	
Anuria and oliguria	R34	
Asthma	J45	
COPD		
Unspecified chronic bronchitis	J42	
Emphysema	J43	

Other chronic obstructive pulmonary disease	J44	
Sepsis		
Salmonella sepsis	A02.1	
Anthrax sepsis	A22.7	
Erysipelothrix sepsis	A26.7	
Listerial sepsis	A32.7	
Sepsis due to streptococcus, group A	A400	
Sepsis due to streptococcus, group B	A401	
Sepsis due to streptococcus, group D	A4020	
Sepsis due to enterococcus	A4021	
Sepsis due to Streptococcus pneumoniae	A403	
Other streptococcal sepsis	A408	
Streptococcal sepsis, unspecified	A409	
Sepsis due to Staphylococcus aureus	A410	
Sepsis due to other specified staphylococcus	A411	
Sepsis due to unspecified staphylococcus	A412	
Sepsis due to Haemophilus influenzae	A413	
Sepsis due to anaerobes	A414	
Sepsis due to Escherichia coli [E.coli]	A4150	
Sepsis due to Pseudomonas	A4151	
Sepsis due to Serratia	A4152	
Sepsis due to other Gram-negative organisms	A4148	
Gram-negative septicaemia, unspecified	A4159	
Other specified sepsis	A418	
Sepsis due to Enterococcus	A4180	
Other specified sepsis	A4188	
Sepsis, unspecified	A419	
Actinomycotic sepsis	A42.7	
Gonococcal sepsis	A54.86	
Candidal sepsis	B37.7	
Puerperal sepsis, delivered, mention of postpartum complication	O85.002	
Puerperal sepsis, postpartum condition or complication	O85.004	
Puerperal sepsis, unspecified, or not applicable	O85.009	
HIV infection		
Human immunodeficiency virus [HIV] disease	B24	
Dementia in human immunodeficiency virus [HIV] disease	F024	
Laboratory evidence of human immunodeficiency virus [HIV]	R75	
Asymptomatic [HIV] infection status	Z21	
Rheumatoid arthritis		
Felty's syndrome	M05.0	
Rheumatoid lung disease	M05.1	
Rheumatoid vasculitis	M05.2	
Rheumatoid arthritis with involvement of other organs and systems	M05.3	

Other seropositive rheumatoid arthritis	M05.8	
Seropositive rheumatoid arthritis, unspecified site	M05.9	
Seronegative rheumatoid arthritis	M06.0	
Rheumatoid bursitis	M06.2	
Rheumatoid nodule	M06.3	
Inflammatory polyarthropathy	M06.4	
Other specified rheumatoid arthritis	M06.8	
Rheumatoid arthritis, unspecified	M06.9	
Juvenile rheumatoid arthritis	M08.0	
Hypothermia	T68	
Hypothermia, not associated with low environmental temperature	R680	
Hypogonadism		
Testicular hypofunction	E29.1	
Primary ovarian failure	E283	
Panhypopituitarism		
Hypopituitarism	E230	
Drug-induced hypopituitarism	E23.1	
Postprocedural hypopituitarism	E893	
Hypoglycemia		
Type 1 DM with hypoglycemia adeq controlled with diet or oral agents	E1063.0	
Type1 DM with hypoglycemia adequately controlled with insulin	E1063.1	
Type 1 DM with hypoglycemia, inadequately controlled with diet or oral agents	E1063.2	
Type 1 DM with hypoglycemia, inadequately controlled with diet or oral agents but adequately controlled with insulin	E1063.3	
Type 1 DM with hypoglycemia, inadequately controlled with insulin	E1063.4	
Type 1 DM with hypoglycemia level of control unspecified	E1063.9	
Type 2 DM with hypoglycemia adequately controlled with diet or oral agents	E1163.0	
Type 2 DM with hypoglycemia adequately controlled with insulin	E1163.1	
Type 2 DM with hypoglycemia, inadequately controlled with diet or oral agents (and insulin not used to stabilize)	E1163.2	
Type 2 DM with hypoglycemia, inadequately controlled with diet or oral agents but adequately controlled with insulin	E1163.3	
Type 2 DM with hypoglycemia, inadequately controlled with insulin	E1163.4	
Type 2 DM with hypoglycemia level of control unspecified	E1163.9	
Other specified DM with hypoglycemia, adequately controlled with diet or oral agents	E1363.0	
Other specified DM with hypoglycemia, adequately controlled with insulin	E1363.1	
Other specified DM with hypoglycemia, inadequately controlled with diet or oral agents (and insulin not used to stabilize)	E1363.2	
Other specified DM with hypoglycemia, inadequately controlled with diet or oral agents but adequately controlled with insulin	E1363.3	
Other specified DM with hypoglycemia, inadequately controlled with insulin	E1363.4	
Other specified DM with hypoglycemia, level of control unspecified	E1363.9	
Unspecified DM with hypoglycemia, adequately controlled with diet or oral agents	E1463.0	
Unspecified DM with hypoglycemia, adequately controlled with insulin	E1463.1	

Unspecified DM with hypoglycemia, inadequately controlled with diet or oral agents (and insulin not used to stabilize)	E1463.2	
Unspecified DM with hypoglycemia, inadequately controlled with diet or oral agents but adequately controlled with insulin	E1463.3	
Unspecified DM with hypoglycemia, inadequately controlled with insulin	E1463.4	
Unspecified DM with hypoglycemia, level of control unspecified	E1463.9	
Primary aldosteronism	E260-Primary hyperaldosteronism	
Hypomagnesemia	E612-Magnesium deficiency	<i>will use lab results – more accurate</i>
Hypokalemia	E876-Hypokalaemia	<i>will use lab results – more accurate</i>
Hypocalcemia		<i>will use lab results – more accurate</i>
Aortic stenosis		
Rheumatic aortic stenosis	I060	
Rheumatic aortic stenosis with insufficiency	I062	
Aortic (valve) stenosis	I350	
Aortic (valve) stenosis with insufficiency	I352	
Stroke		
Subarachnoid haemorrhage from carotid siphon and bifurcation	I60.0	
Subarachnoid haemorrhage from middle cerebral artery	I60.1	
Subarachnoid haemorrhage from anterior communicating artery	I60.2	
Subarachnoid haemorrhage from posterior communicating artery	I60.3	
Subarachnoid haemorrhage from basilar artery	I60.4	
Subarachnoid haemorrhage from vertebral artery	I60.5	
Subarachnoid haemorrhage from other intracranial arteries	I60.6	
Subarachnoid haemorrhage from intracranial artery, unspecified	I60.7	
Other subarachnoid haemorrhage	I60.8	
Subarachnoid haemorrhage, unspecified	I60.9	
Intracerebral haemorrhage in hemisphere, subcortical	I61.0	
Intracerebral haemorrhage in hemisphere, cortical	I61.1	
Intracerebral haemorrhage in hemisphere, unspecified	I61.2	
Intracerebral haemorrhage in brain stem	I61.3	
Intracerebral haemorrhage in cerebellum	I61.4	
Intracerebral haemorrhage, intraventricular	I61.5	
Intracerebral haemorrhage, multiple localized	I61.6	
Other intracerebral haemorrhage	I61.8	
Intracerebral haemorrhage, unspecified	I61.9	
Cerebral infarction due to thrombosis of precerebral arteries	I63.0	
Cerebral infarction due to embolism of precerebral arteries	I63.1	
Cerebral infarction due to unspecified occlusion or stenosis of precerebral arteries	I63.2	
Cerebral infarction due to thrombosis of cerebral arteries	I63.3	
Cerebral infarction due to embolism of cerebral arteries	I63.4	

Cerebral infarction due to unspecified occlusion or stenosis of cerebral arteries	I63.5	
Cerebral infarction due to cerebral venous thrombosis, nonpyogenic	I63.6	
Other cerebral infarction	I63.8	
Cerebral infarction, unspecified	I63.9	
Stroke, not specified as haemorrhage or infarction	I64	
Alcohol Abuse		
Alcohol abuse counselling and surveillance	Z714	
Mental and behavioural disorders due to use of alcohol, harmful use	F101	
Personal history of alcohol abuse	Z8640	
Alcohol rehabilitation	Z502	
Poisoning/Overdose		
Intentional self-poison/ exposure to nonopioid analgesics, antipyretics and antirheumatics	X60	
Intentional self-poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified	X61	
Intentional self-poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified	X62	
Intentional self-poisoning by and exposure to other drugs acting on the autonomic nervous system	X63	
Intentional self-poisoning by and exposure to other and unspecified drugs, medicaments and biological substances	X64	
Intentional self-poisoning by and exposure to alcohol	X65	
Intentional self-poisoning by and exposure to organic solvents and halogenated hydrocarbons and their vapours	X66	
Intentional self-poisoning by and exposure to carbon monoxide from combustion engine exhaust	X670	
Intentional self-poisoning by and exposure to carbon monoxide from utility gas	X671	
Intentional self-poisoning by and exposure to carbon monoxide from other domestic fuels	X672	
Intentional self-poisoning by and exposure to carbon monoxide from other sources	X673	
Intentional self-poisoning by carbon monoxide from unspecified sources	X674	
Intentional self-poisoning by other specified gases and vapours	X678	
Intentional self-poisoning by unspecified gases and vapours	X679	
Intentional self-poisoning by and exposure to pesticides	X68	
Intentional self-poisoning by and exposure to other and unspecified	X69	
Intentional self-harm by hanging, strangulation and suffocation	X70	
Intentional self-harm by drowning and submersion	X71	
Intentional self-harm by handgun discharge	X72	
Intentional self-harm by rifle, shotgun and larger firearm discharge	X73	
Intentional self-harm by BB gun discharge	X7400	
Intentional self-harm by air gun discharge	X7401	
Intentional self-harm by other specified firearm discharge	X7408	
Intentional self-harm by unspecified firearm discharge	X7409	
Intentional self-harm by explosive material	X75	
Intentional self-harm by smoke, fire and flames	X76	
Intentional self-harm by steam, hot vapours and hot objects	X77	

Intentional self-harm by sharp object	X78	
Intentional self-harm by blunt object	X79	
Intentional self-harm by jumping from a high place	X80	
Intentional self-harm by jumping or lying before moving object	X81	
Intentional self-harm by crashing of motor vehicle	X82	
Intentional self-harm by other specified means	X83	
Intentional self-harm by unspecified means	X84	
history of suicide attempt	Z915	
Obesity	E66	
Smoker		
tobacco rehabilitation	Z508	
tobacco use	Z720	
tobacco abuse counselling	Z716	
tobacco disorders	F17	
history of tobacco abuse	Z864	
Hypercholesterolemia		
pure hypercholesterolemia	E780	
Cardiac Arrhythmias		
Other specified cardiac arrhythmias	I49.8	
Cardiac arrhythmia, unspecified	I49.9	
Cardiac Pacemaker or ICD		
presence of pacemaker	Z95	<i>Pacemaker and ICD share same codes</i>
pacemaker malfunction	T821	
pacemaker change	Z450	
Epilepsy		
Other and unspecified convulsions	R56.8	<i>Context is history of epilepsy or seizures</i>
Grand mal seizures, unspecified (with or without petit mal)	G40.6	
Petit mal, unspecified, without grand mal seizures	G40.7	
Schizophrenia and Delusional Disorders		
Schizophrenia	F20	
Schizotypal disorder	F21	
Persistent delusional disorders	F22	
Acute and transient psychotic disorders	F23	
Induced delusional disorder	F24	
Schizoaffective disorders	F25	
Other nonorganic psychotic disorders	F28	
Unspecified nonorganic psychosis	F29	

