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MINISTRY OF HEALTH
SINGAPORE

MediShield Life Claims Rules for Cardiology Procedures

CLAIMS MANAGEMENT OFFICE

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MediShield Life Claims Rules for Cardiology

Contents

Definitions

Terminology	Definition
Complex electrophysiological techniques	Refers to the use of advanced techniques including, but not limited to, transeptal and/or epicardial access of the heart, or mapping multiple chambers of the heart, in procedures such as ablation of atrial fibrillation, atypical atrial flutter or macro-reentrant atrial tachycardias, with or without 3D mapping.
Complex percutaneous coronary intervention (PCI)	Refers to PCI that is performed for one or more coronary lesions that is/are more severe and relatively high-risk (see contrasted to "simple PCI" below). This typically includes left main lesions, aorto-ostial stenosis, chronic total occlusions (CTO), complex bifurcations and trifurcations, severe tortuosity, heavily calcified lesions, diffuse disease, thrombotic lesions, and cases requiring mechanical circulatory support.
GRACE score	Refers to risk scores from "Global Registry of Acute Coronary Events", a risk scoring system to estimate mortality risk in patients with acute coronary syndromes.
HEART score	Refers to risk scores from "History, EKG, Age, Risk factors, and Troponin", a risk scoring system to estimate the risk of major adverse cardiovascular events in patients presenting with acute chest pain suspected of acute coronary syndromes.
Left Heart Catheterisation	Refers to the passing of a catheter into the aorta and left side of the heart to assess cardiac and valve function by obtaining diagnostic information such as intracardiac pressures, oxygen saturations, and cardiac output. Can also refer to coronary angiography or left ventriculography.
Right Heart Catheterisation	Refers to the passing of a catheter into a vein, and thereafter into the right side of the heart and the main pulmonary arteries to obtain diagnostic information such as intravascular pressures, oxygen saturations, and cardiac output.
Simple percutaneous coronary intervention (PCI)	Refers to PCI that is performed for a coronary lesion that is assessed to fulfil Type A or B American College of Cardiology (ACC)/American Heart Association (AHA) coronary lesion definition (a single lesion intervention in one of the three native coronary arteries, relatively easy to access), including length of up to 20mm, concentric/eccentric, calcified lesions where preparation requires only use of cutting balloon or usual balloon, mild to moderately angulated (<90°) lesions, or mild to moderate proximal tortuosity lesions, but without any of the following: presence of thrombus, ostial / bifurcation location, total occlusions, calcifications requiring more than usual or cutting balloon for lesion preparation e.g. use of extra high pressure balloons for very high pressure inflations (e.g. OPN balloons) or other plaque modifying devices (e.g. atherectomy or Intravascular lithotripsy balloons).
Surgical/Procedural Episode	Refers to the entire suite of services provided during the time the patient arrives to the operating theatre complex until the patient leaves. If the patient requires anaesthesia, the continuous period under General Anaesthesia/Sedation is also defined under the same surgical episode.

General Comments

MediShield Life (MSHL) Claims Rules (CR) define parameters on what constitutes an appropriate claim under MSHL. MSHL is a basic, universal national health insurance scheme that is funded through premiums paid by Singapore Citizens and Permanent Residents. As such, there is a need to strike a balance between ensuring appropriate coverage and better protection against large bills for medically necessary treatments, whilst keeping premiums affordable for all.

2 The CR are not clinical practice guidelines. The CR document is put together by a group of specialists from the public and private sectors and are developed from evidence-based literature, clinical practice and cost-effective guidelines. It describes rules on clinical indications, setting, frequency, coding and mode of treatment for selected procedures from the Table of Surgical Procedures (TOSP). For instance, Claims Indicators (Settings) guide the setting(s), whether day surgery or inpatient admission, that are most appropriate for MSHL claims which follows peer practice in the medical fraternity. However, in order to manage medically unnecessary inpatient admissions, procedures usually done in a day surgery setting has a non-exhaustive list of conditions where claims for inpatient admission may be allowed. For avoidance of doubt, admissions made purely based on the request of a patient, without any evidence of clinical necessity, are not claimable under MSHL.

3 MSHL does not cover tests done for screening purposes for primary prevention. **'**Primary prevention' refers to medical services for generally healthy individuals to prevent a disease from ever occurring, in the absence of medical indications, e.g., general medical / health screening packages, general physical check-ups, vaccinations, etc. Hence, **screening coronary angiography**, i.e. coronary angiography done for patients without cardiac symptoms, or without known major coronary risk factors and non-invasive testing to suggest the presence of coronary atherosclerosis or myocardial ischemia or infarction, is not MSHL-claimable.

4 In contrast, **diagnostic coronary angiogram**, is generally MSHL-claimable. This is when coronary angiography is done with appropriate indications – including, but not limited to, i) clinical symptoms and/or non-invasive test findings, ii) to define the coronary anatomy and the degree of luminal obstruction of the coronary arteries, iii) to determine the presence and extent of obstructive coronary artery disease (CAD), and iv) to assess the feasibility and appropriateness of various forms of therapy – when coronary disease is uncertain and cannot be reasonably excluded by noninvasive techniques.

Message from Cardiology Claims Rules Workgroup

Coronary Artery Disease (CAD) remains a leading cause of morbidity and mortality in Singapore. In managing patients with CAD, treatment decisions should be based on clinical indications, regardless of sex, race, or ethnicity. The main modalities of treatment for patients with CAD are (i) Medical Therapy; and (ii) Coronary Revascularisation, which may be Percutaneous Coronary Intervention (PCI) or Coronary Artery Bypass Grafting (CABG) surgery. While medical therapy remains the mainstay of treatment for most CAD patients, some would eventually undergo coronary revascularisation. There are contemporary coronary revascularisation guidelines which provides recommendations based on latest evidence-based medicine for these patients, with the intent to improve quality of care and align with patients' interests. For patients whom the optimal treatment strategy is unclear, a multidisciplinary cardiac team approach is recommended. Ultimately, treatment decisions should be patient-centred.

2 Shared decision-making is vital to patient-centred care. It is a collaborative approach that provides patients with unbiased, evidence-based information on treatment choices. The process encourages dialogue between patients and providers, with the aim of making decisions that use scientific evidence and align with the patient's values, preferences, associated conditions and comorbidities. The clinician must act in the patient's best interest and convey the risks and benefits of all revascularisation treatment options, consult with additional specialists when appropriate, and allow the patient to consult family and other specialists.

Yours Sincerely,

Clin. Prof. Terrance Chua Siang Jin

Chairperson

On behalf of the Cardiology Claims Rules Workgroup, comprising:

(In Alphabetical Order)

A/Prof. Chin Chee Tang	A/Prof. Lim Yean Teng
Clin Prof. Terrance Chua Siang Jin	A/Prof. Adrian Low Fatt Hoe
Dr Michael Lim Chun Leng	Dr Dinesh Nair
Asst. Prof. Lim Toon Wei	Dr Teo Wee Siong

Cardiology Claims Rules

TOSP Code	Table Code	TOSP Description	Claims Indicators (Setting)	Claims Indicators (Clinical Indications/Frequency/Modality)
SD811H	**3A**	HEART, CORONARY ANGIOGRAPHY (NON-GRAFT) WITHOUT RIGHT HEART CATHETERIZATION	**Day Surgery/Inpatient** Claims can be made for the inpatient setting provided they fulfil one or more of the following conditions (including but not limited to): 1. The patient is presenting emergently with acute coronary syndromes, or 2. The patient's clinical or interventional condition necessitates inpatient admission (e.g. hemodynamically unstable, abnormal renal function, frail/elderly, haemorrhagic risk from femoral access), or 3. The patient has pre-existing cardiac conditions or prior non-invasive tests that suggest a high cardiac risk, or 4. The patient requires inpatient admission for other medically necessary treatment, or 5. The patient needs admission to fulfil the minimum safe monitoring period after their procedure.	**This procedure may be claimed according to the rules below:** **Clinical Indications**: 1. <u>Acute-onset chest pain</u>, including when suspecting STEMI, NSTEMI, or unstable angina (e.g. presented to ED or had an unscheduled or urgent clinic visit, ongoing or recent onset, or increasing frequency or unstable): a. in patients who are clinically suspected to be experiencing STEMI or NSTEMI, or b. in patients suspected to have unstable angina, who: i. are assessed to be high-risk by clinical features, ECG, and troponin levels, through combined clinical decision pathways (CDP) for risk scoring (e.g. GRACE / HEART score), or ii. are assessed to be intermediate-risk as assessed by CDP (e.g. GRACE / HEART score), and have cardiac testing (e.g. treadmill exercise testing, CT angiography, SPECT, echocardiography) indicating ischaemia or at least an intermediate (≥50%) stenosis, or iii. have experienced persistent or recurrent (stuttering) episodes of symptomatic ischemia, spontaneous or induced, with or without associated ECG changes, or iv. have developed shock, severe pulmonary congestion, or continuing hypotension, or v. are suspected to have developed mechanical complications of MI e.g. papillary muscle rupture (acute mitral regurgitation), acquired VSD, suspected free wall rupture; or c. in patients in whom CAD is known (prior MI, past CABG/PCI), who have: i. myocardial ischaemia testing indicating ischaemia or inconclusive results, or ii. CT angiography indicating intermediate (≥50%) or severe (≥70%) stenosis or inconclusive results, or iii. clinical features, ECG, and/or troponin indicating a high likelihood of ischaemia, or iv. worsening symptoms in the presence of known underlying coronary stenosis. 2. <u>For risk stratification in post-MI patients</u> with: a. ischemia at low levels of exercise with ECG changes (1-mm ST-segment depression or other predictors of adverse outcome) and/or imaging abnormalities, or b. clinically significant CHF, or c. an inability to perform an exercise test with LVEF ≤0.50, or

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				d. non–Q-wave MI, when the patient is an appropriate candidate for a revascularisation procedure, and coronary angiogram was not already done when hospitalized earlier, or e. a need to return to an unusually active form of employment, or f. a remote history of MI without evidence of CHF during the current event and without evidence of inducible ischemia, or g. recurrent ventricular tachycardia, fibrillation, or both, despite antiarrhythmic therapy, without ongoing myocardial ischemia. 3. <u>Stable (episodic, brought on by exercise or other factors) chest discomfort, or dyspnoea, thought to be due to obstructive CAD</u>, in patients who: a. have symptoms not adequately controlled with optimal medical therapy and have cardiac imaging testing indicating ischaemia, or, b. have symptoms that are satisfactorily controlled with optimal medical therapy, but: i. functional testing has revealed significant ischaemia, or ii. non-invasive testing has found a significant likelihood of left main stem or proximal three-vessel-disease, or iii. there is a high clinical suspicion of significant CAD from typical symptoms or high pre-test probability (PTP)* despite negative stress imaging testing, and iv. revascularisation is not already deemed to be inappropriate or unacceptable; or c. have angina and suspected coronary disease who, due to disability, illness, or physical challenge, cannot be adequately risk-stratified by other means, or d. have Canadian Cardiovascular Society (CCS) Class I or II angina with intolerance to adequate medical therapy or with failure to respond, or patients who have recurrence of symptoms during adequate medical therapy as defined above, or e. have a regulatory and/or occupational requirement (e.g. pilots, bus drivers that involves the safety of others), and have abnormal but not high-risk stress test results or multiple clinical features that suggest high risk, or f. have a recurrence of angina following prior revascularisation procedure(s). *Pre-test probability (PTP) should be assessed through formal systems e.g. CAD consortium, with PTP <15% indicating no need for further testing (or only treadmill exercise testing or coronary artery calcium scoring).

TOSP Code	Table Code	TOSP Description	Claims Indicators (Setting)	Claims Indicators (Clinical Indications/Frequency/Modality)
				4. In patients who have non-specific chest pain with: a. high-risk findings on non-invasive testing, or b. recurrent hospitalisations for chest pain who have abnormal (but not high-risk) or equivocal findings on non-invasive testing. 5. In patients undergoing pre-surgical assessment for cardiac, aorta, or peripheral vascular surgery, including that involving: a. valve repair or replacement surgery, b. diseases affecting the aorta, when knowledge of the presence or extent of coronary artery involvement is necessary of management (e.g. aortic dissection or aneurysm with known coronary disease), c. peripheral vascular surgery, in patients of advanced age or multiple CAD risk factors, when a test has shown evidence of CAD. d. cardiac surgical procedures (e.g. pericardiectomy, chronic pulmonary emboli), in patients with high risk of CAD. 6. Pre-operative coronary evaluation required for non-cardiac transplant surgery as mandated by hospital protocol. 7. Congenital heart disease (CHD): a. For CHD patients with (before surgical correction): i. chest discomfort or non-invasive testing evidence that is suggestive of associated CAD, or ii. suspected congenital coronary anomalies, such as congenital coronary artery stenosis, coronary arteriovenous fistula, and anomalous origin of left coronary artery; or b. For an adult patient with congenital heart disease, before corrective open heart surgery, whose risk profile increases the likelihood of coexisting coronary disease, or c. For investigation of coronary arteries in: i. patients with unexplained cardiac arrest, who are young or suspected to have coronary anomalies, or ii. patients with forms of congenital heart disease frequently associated with coronary artery anomalies that may complicate surgical management.

TOSP Code	Table Code	TOSP Description	Claims Indicators (Setting)	Claims Indicators (Clinical Indications/Frequency/Modality)
				8. In congestive heart failure (CHF) patients who: a. have CHF due to systolic dysfunction, with angina or regional wall motion abnormalities and/or scintigraphic evidence of reversible myocardial ischemia, and are being considered for revascularisation, or b. have CHF secondary to postinfarction ventricular aneurysm or other mechanical complications of MI, or c. have systolic dysfunction with unexplained causes despite non-invasive testing, or d. have normal systolic function, but episodic heart failure raises suspicion of ischemically-mediated left ventricular dysfunction, or e. are being assessed for cardiac transplantation. 9. In patients who have been successfully resuscitated following sudden cardiac arrest. 10. For pharmacological study in patients with suspected microvascular dysfunction or coronary spasm, who have: a. recurrent episodes of apparent ischemic cardiac pain at rest, and b. had a normal or only mildly abnormal coronary angiogram, with no clinical observations that substantiate the diagnosis of variant angina (i.e. ST-segment elevation during pain). 11. In other cardiac conditions: a. In patients with hypertrophic cardiomyopathy and angina: i. whose angina persists despite medical therapy, when knowledge of coronary anatomy might affect therapy, or ii. who have heart surgery planned. b. In patients with Kawasaki disease who have evidence of coronary aneurysm from non-invasive studies. c. In patients with infective endocarditis who have suspected coronary embolism.

TOSP Code	Table Code	TOSP Description	Claims Indicators (Setting)	Claims Indicators (Clinical Indications/Frequency/Modality)
SD840H	**3B**	HEART, CORONARY GRAFT ANGIOGRAPHY WITH/WITHOUT ANGIOGRAPHY OF NATIVE CORONARY ARTERIES	**Day Surgery/Inpatient** Claims can be made for the inpatient setting provided they fulfil one or more of the following conditions (including but not limited to): 1. The patient is presenting emergently with acute coronary syndromes, or 2. The patient's clinical or interventional condition necessitates inpatient admission (e.g. hemodynamically unstable, abnormal renal function, frail/elderly, haemorrhagic risk from femoral access), or 3. The patient has pre-existing cardiac conditions or prior non-invasive tests that suggest a high cardiac risk, or 4. The patient requires inpatient admission for other medically necessary treatment, or 5. The patient needs admission to fulfil the minimum safe monitoring period after their procedure.	**This procedure may be claimed according to the rules below:** **Clinical Indications:** 1. <u>Acute-onset chest pain</u>, including when suspecting STEMI, NSTEMI, or unstable angina (e.g. presented to ED or had an unscheduled or urgent clinic visit, ongoing or recent onset, or increasing frequency or unstable): a. in patients who are clinically suspected to be experiencing STEMI or NSTEMI, or b. in patients suspected to have unstable angina, who: i. are assessed to be high-risk by clinical features, ECG, and troponin levels, through combined clinical decision pathways (CDP) for risk scoring (e.g. GRACE / HEART score), or ii. are assessed to be intermediate-risk as assessed by CDP (e.g. GRACE / HEART score), and have cardiac testing (e.g. treadmill exercise testing, CT angiography, SPECT, echocardiography) indicating ischaemia or at least an intermediate (≥50%) stenosis, or iii. have experienced persistent or recurrent (stuttering) episodes of symptomatic ischemia, spontaneous or induced, with or without associated ECG changes, or iv. have developed shock, severe pulmonary congestion, or continuing hypotension, or v. are suspected to have developed mechanical complications of MI e.g. papillary muscle rupture (acute mitral regurgitation), acquired VSD, suspected free wall rupture; or c. in patients in whom CAD is known (prior MI, past CABG/PCI), who have: i. myocardial ischaemia testing indicating ischaemia or inconclusive results, or ii. CT angiography indicating intermediate (≥50%) or severe (≥70%) stenosis or inconclusive results, or iii. clinical features, ECG, and/or troponin indicating a high likelihood of ischaemia, or iv. worsening symptoms in the presence of known underlying coronary stenosis. 2. <u>For risk stratification in post-MI patients</u> with: a. ischemia at low levels of exercise with ECG changes (1-mm ST-segment depression or other predictors of adverse outcome) and/or imaging abnormalities, or b. clinically significant CHF, or c. an inability to perform an exercise test with LVEF ≤0.50, or

				d. non–Q-wave MI, when the patient is an appropriate candidate for a revascularisation procedure, and coronary angiogram was not already done when hospitalized earlier, or e. a need to return to an unusually active form of employment, or f. a remote history of MI without evidence of CHF during the current event and without evidence of inducible ischemia, or g. recurrent ventricular tachycardia, fibrillation, or both, despite antiarrhythmic therapy, without ongoing myocardial ischemia. 3. <u>Stable (episodic, brought on by exercise or other factors) chest discomfort, or dyspnoea, thought to be due to obstructive CAD,</u> in patients who: a. have symptoms not adequately controlled with optimal medical therapy and have cardiac imaging testing indicating ischaemia, or, b. have symptoms that are satisfactorily controlled with optimal medical therapy, but: i. functional testing has revealed significant ischaemia, or ii. non-invasive testing has found a significant likelihood of left main stem or proximal three-vessel-disease, or iii. there is a high clinical suspicion of significant CAD from typical symptoms or high pre-test probability (PTP)* despite negative stress imaging testing, and iv. revascularisation is not already deemed to be inappropriate or unacceptable; or c. have angina and suspected coronary disease who, due to disability, illness, or physical challenge, cannot be adequately risk-stratified by other means, or d. have Canadian Cardiovascular Society (CCS) Class I or II angina with intolerance to adequate medical therapy or with failure to respond, or patients who have recurrence of symptoms during adequate medical therapy as defined above, or e. have a regulatory and/or occupational requirement (e.g. pilots, bus drivers that involves the safety of others), and have abnormal but not high-risk stress test results or multiple clinical features that suggest high risk, or f. have a recurrence of angina following prior revascularisation procedure(s). *Pre-test probability (PTP) should be assessed through formal systems e.g. CAD consortium, with PTP <15% indicating no need for further testing (or only treadmill exercise testing or coronary artery calcium scoring).

				4. In patients who have non-specific chest pain with: a. high-risk findings on non-invasive testing, or b. recurrent hospitalisations for chest pain who have abnormal (but not high-risk) or equivocal findings on non-invasive testing. 5. In patients undergoing pre-surgical assessment for cardiac, aorta, or peripheral vascular surgery, including that involving: a. valve repair or replacement surgery, b. diseases affecting the aorta, when knowledge of the presence or extent of coronary artery involvement is necessary of management (e.g. aortic dissection or aneurysm with known coronary disease), c. peripheral vascular surgery, in patients of advanced age or multiple CAD risk factors, when a test has shown evidence of CAD. d. cardiac surgical procedures (e.g. pericardiectomy, chronic pulmonary emboli), in patients with high risk of CAD. 6. Pre-operative coronary evaluation required for non-cardiac transplant surgery as mandated by hospital protocol. 7. Congenital heart disease (CHD): a. For CHD patients with (before surgical correction): i. chest discomfort or non-invasive testing evidence that is suggestive of associated CAD, or ii. suspected congenital coronary anomalies, such as congenital coronary artery stenosis, coronary arteriovenous fistula, and anomalous origin of left coronary artery; or b. For an adult patient with congenital heart disease, before corrective open heart surgery, whose risk profile increases the likelihood of coexisting coronary disease, or c. For investigation of coronary arteries in: i. patients with unexplained cardiac arrest, who are young or suspected to have coronary anomalies, or ii. patients with forms of congenital heart disease frequently associated with coronary artery anomalies that may complicate surgical management.

				8. In congestive heart failure (CHF) patients who: a. have CHF due to systolic dysfunction, with angina or regional wall motion abnormalities and/or scintigraphic evidence of reversible myocardial ischemia, and are being considered for revascularisation, or b. have CHF secondary to postinfarction ventricular aneurysm or other mechanical complications of MI, or c. have systolic dysfunction with unexplained causes despite non-invasive testing, or d. have normal systolic function, but episodic heart failure raises suspicion of ischemically-mediated left ventricular dysfunction, or e. are being assessed for cardiac transplantation. 9. In patients who have been successfully resuscitated following sudden cardiac arrest. 10. For pharmacological study in patients with suspected microvascular dysfunction or coronary spasm, who have: a. recurrent episodes of apparent ischemic cardiac pain at rest, and b. had a normal or only mildly abnormal coronary angiogram, with no clinical observations that substantiate the diagnosis of variant angina (i.e. ST-segment elevation during pain). 11. In other cardiac conditions: a. In patients with hypertrophic cardiomyopathy and angina: i. whose angina persists despite medical therapy, when knowledge of coronary anatomy might affect therapy, or ii. who have heart surgery planned. b. In patients with Kawasaki disease who have evidence of coronary aneurysm from non-invasive studies. c. In patients with infective endocarditis who have suspected coronary embolism.

TOSP Code	Table Code	TOSP Description	Claims Indicators (Setting)	Claims Indicators (Clinical Indications/Frequency/Modality)
SD809H	**3C**	HEART, CORONARY GRAFT ANGIOGRAPHY WITH/WITHOUT ANGIOGRAPHY OF NATIVE CORONARY ARTERIES, WITH RIGHT HEART CATHETERISATION	**Day Surgery/Inpatient** Claims can be made for the inpatient setting provided they fulfil one or more of the following conditions (including but not limited to): 1. The patient is presenting emergently with acute coronary syndromes, or 2. The patient's clinical or interventional condition necessitates inpatient admission (e.g. hemodynamically unstable, abnormal renal function, frail/elderly, haemorrhagic risk from femoral access), or 3. The patient has pre-existing cardiac conditions or prior non-invasive tests that suggest a high cardiac risk, or 4. The patient requires inpatient admission for other medically necessary treatment, or 5. The patient needs admission to fulfil the minimum safe monitoring period after their procedure.	**This procedure may be claimed according to the rules below:** **Clinical Indications:** **As this code is for both coronary angiography <u>and</u> right heart catheterisation, there should be clinical indication(s) from both [A] <u>and</u> [B].** **[A] Clinical Indications for coronary angiography:** 1. <u>Acute-onset chest pain</u>, including when suspecting STEMI, NSTEMI, or unstable angina (e.g. presented to ED or had an unscheduled or urgent clinic visit, ongoing or recent onset, or increasing frequency or unstable): a. in patients who are clinically suspected to be experiencing STEMI or NSTEMI. b. in patients suspected to have unstable angina, who: i. are assessed to be high-risk by clinical features, ECG, and troponin levels, through combined clinical decision pathways (CDP) for risk scoring (e.g. GRACE / HEART score), or ii. are assessed to be intermediate-risk as assessed by CDP (e.g. GRACE / HEART score), and have cardiac testing (e.g. treadmill exercise testing, CT angiography, SPECT, echocardiography) indicating ischaemia or at least an intermediate (≥50%) stenosis, or iii. have experienced persistent or recurrent (stuttering) episodes of symptomatic ischemia, spontaneous or induced, with or without associated ECG changes, or iv. have developed shock, severe pulmonary congestion, or continuing hypotension, or v. are suspected to have developed mechanical complications of MI e.g. papillary muscle rupture (acute mitral regurgitation), acquired VSD, suspected free wall rupture; or c. in patients in whom CAD is known (prior MI, past CABG/PCI), who have: i. myocardial ischaemia testing indicating ischaemia or inconclusive results, or ii. CT angiography indicating intermediate (≥50%) or severe (≥70%) stenosis or inconclusive results, or iii. clinical features, ECG, and/or troponin indicating a high likelihood of ischaemia, or iv. worsening symptoms in the presence of known underlying coronary stenosis. 2. <u>For risk stratification in post-MI patients</u> with: a. ischemia at low levels of exercise with ECG changes (1-mm ST-segment depression or other predictors of adverse outcome) and/or imaging abnormalities, or

				b. clinically significant CHF, or c. an inability to perform an exercise test with LVEF ≤0.50, or d. non–Q-wave MI, when the patient is an appropriate candidate for a revascularisation procedure, and coronary angiogram was not already done when hospitalized earlier, or e. a need to return to an unusually active form of employment, or f. a remote history of MI without evidence of CHF during the current event and without evidence of inducible ischemia, or g. recurrent ventricular tachycardia, fibrillation, or both, despite antiarrhythmic therapy, without ongoing myocardial ischemia. 3. <u>Stable (episodic, brought on by exercise or other factors) chest discomfort, or dyspnoea, thought to be due to obstructive CAD</u>, in patients who: a. have symptoms not adequately controlled with optimal medical therapy and have cardiac imaging testing indicating ischaemia, or, b. have symptoms that are satisfactorily controlled with optimal medical therapy, but: i. functional testing has revealed significant ischaemia, or ii. non-invasive testing has found a significant likelihood of left main stem or proximal three-vessel-disease, or iii. there is a high clinical suspicion of significant CAD from typical symptoms or high pre-test probability (PTP)* despite negative stress imaging testing, and iv. revascularisation is not already deemed to be inappropriate or unacceptable; or c. have angina and suspected coronary disease who, due to disability, illness, or physical challenge, cannot be adequately risk-stratified by other means, or d. have Canadian Cardiovascular Society (CCS) Class I or II angina with intolerance to adequate medical therapy or with failure to respond, or patients who have recurrence of symptoms during adequate medical therapy as defined above, or e. have a regulatory and/or occupational requirement (e.g. pilots, bus drivers that involves the safety of others), and have abnormal but not high-risk stress test results or multiple clinical features that suggest high risk, or f. have a recurrence of angina following prior revascularisation procedure(s). *Pre-test probability (PTP) should be assessed through formal systems e.g. CAD consortium, with PTP <15% indicating no need for further testing (or only treadmill exercise testing or coronary artery calcium scoring).

				4. In patients who have non-specific chest pain with: a. high-risk findings on non-invasive testing, or b. recurrent hospitalisations for chest pain who have abnormal (but not high-risk) or equivocal findings on non-invasive testing. 5. In patients undergoing pre-surgical assessment for cardiac, aorta, or peripheral vascular surgery, including that involving: a. valve repair or replacement surgery, b. diseases affecting the aorta, when knowledge of the presence or extent of coronary artery involvement is necessary of management (e.g. aortic dissection or aneurysm with known coronary disease), c. peripheral vascular surgery, in patients of advanced age or multiple CAD risk factors, when a test has shown evidence of CAD. d. cardiac surgical procedures (e.g. pericardiectomy, chronic pulmonary emboli), in patients with high risk of CAD. 6. Pre-operative coronary evaluation required for non-cardiac transplant surgery as mandated by hospital protocol. 7. Congenital heart disease (CHD): a. For CHD patients with (before surgical correction): i. chest discomfort or non-invasive testing evidence that is suggestive of associated CAD, or ii. suspected congenital coronary anomalies, such as congenital coronary artery stenosis, coronary arteriovenous fistula, and anomalous origin of left coronary artery; or b. For an adult patient with congenital heart disease, before corrective open heart surgery, whose risk profile increases the likelihood of coexisting coronary disease, or c. For investigation of coronary arteries in: i. patients with unexplained cardiac arrest, who are young or suspected to have coronary anomalies, or ii. patients with forms of congenital heart disease frequently associated with coronary artery anomalies that may complicate surgical management.

				8. In congestive heart failure (CHF) patients who: a. have CHF due to systolic dysfunction, with angina or regional wall motion abnormalities and/or scintigraphic evidence of reversible myocardial ischemia, and are being considered for revascularisation, or b. have CHF secondary to postinfarction ventricular aneurysm or other mechanical complications of MI, or c. have systolic dysfunction with unexplained causes despite non-invasive testing, or d. have normal systolic function, but episodic heart failure raises suspicion of ischemically-mediated left ventricular dysfunction, or e. are being assessed for cardiac transplantation. 9. In patients who have been successfully resuscitated following sudden cardiac arrest. 10. For pharmacological study in patients with suspected microvascular dysfunction or coronary spasm, who have: a. recurrent episodes of apparent ischemic cardiac pain at rest, and b. had a normal or only mildly abnormal coronary angiogram, with no clinical observations that substantiate the diagnosis of variant angina (i.e. ST-segment elevation during pain). 11. In other cardiac conditions: a. In patients with hypertrophic cardiomyopathy and angina: i. whose angina persists despite medical therapy, when knowledge of coronary anatomy might affect therapy, or ii. who have heart surgery planned. b. In patients with Kawasaki disease who have evidence of coronary aneurysm from non-invasive studies. c. In patients with infective endocarditis who have suspected coronary embolism. **[B] Clinical Indications for Right Heart Catheterisation:** 1. In patients with: a. shock of indeterminate cause, to determine cardiac output (CO), and vascular resistances to guide management, or

				b. suspected intra- cardiac shunts, to provide further supportive evidence to guide management, or c. valve dysfunction where non-invasive assessment modalities are inconclusive or discordant with clinical findings and hence are not able to guide management, or d. suspected heart failure with preserved ejection fraction (HFpEF), to provide further supportive evidence to support the diagnosis and guide management, or e. suspected constrictive pericarditis, to provide further supportive evidence to guide management, or f. suspected restrictive cardiomyopathy, to provide further supportive evidence to guide management, or g. suspected pericardial tamponade where non-invasive assessment modalities are inconclusive or discordant with clinical findings, or h. suspected or confirmed pulmonary hypertension (PH): i. to provide supportive evidence to classify the Type of PH and guide management, or ii. for direct haemodynamic assessment of the response to vasodilator testing in patients with Type 1 PH, or iii. to assess haemodynamic response to treatment of PH. 2. In patients who require cardiac evaluation: a. prior to organ transplantation (including, but not limited to, cardiac, pulmonary, hepatic, stem cell), as per institution protocol, or b. prior to ventricular assist device implantation, or c. after heart transplant or ventricular assist device implantation for surveillance, as per institution protocol, or d. post-cardiac transplant with new or worsening symptoms suggestive of graft rejection, or e. as part of management for congenital heart disease*, for evaluation when non-invasive assessment modalities were inconclusive with regards to evaluation of disease severity, or for pre-operative planning. *RHC in patients with congenital heart disease should be only performed by procedurists with appropriate training and experience in treating paediatric heart conditions.

TOSP Code	Table Code	TOSP Description	Claims Indicators (Setting)	Claims Indicators (Clinical Indications/Frequency/Modality)
SD743H	**3C**	HEART, CORONARY ANGIOGRAPHY AND INTRACORONARY PHYSIOLOGICAL ASSESSMENT (INCLUSIVE OF PRESSURE WIRE) AND/OR IMAGING/VISUALISATION (INCLUSIVE OF IV U/S AND OCT), WITHOUT PCI	**Day Surgery/Inpatient** Claims can be made for the inpatient setting provided they fulfil one or more of the following conditions (including but not limited to): 1. The patient is presenting emergently with acute coronary syndromes, or 2. The patient's clinical or interventional condition necessitates inpatient admission (e.g. hemodynamically unstable, abnormal renal function, frail/elderly, haemorrhagic risk from femoral access), or 3. The patient has pre-existing cardiac conditions or prior non-invasive tests that suggest a high cardiac risk, or 4. The patient requires inpatient admission for other medically necessary treatment, or 5. The patient needs admission to fulfil the minimum safe monitoring period after their procedure.	**This procedure may be claimed according to the rules below:** **Clinical Indications:** **As this code is for both coronary angiography <u>and</u> physiological and/or imaging diagnostics, there should be clinical indication(s) from both [A] <u>and</u> [B].** **[A] Clinical Indications for coronary angiography:** 1. <u>Acute-onset chest pain</u>, including when suspecting STEMI, NSTEMI, or unstable angina (e.g. presented to ED or had an unscheduled or urgent clinic visit, ongoing or recent onset, or increasing frequency or unstable): a. in patients who are clinically suspected to be experiencing STEMI or NSTEMI, or b. in patients suspected to have unstable angina, who: i. are assessed to be high-risk by clinical features, ECG, and troponin levels, through combined clinical decision pathways (CDP) for risk scoring (e.g. GRACE / HEART score), or ii. are assessed to be intermediate-risk as assessed by CDP (e.g. GRACE / HEART score), and have cardiac testing (e.g. treadmill exercise testing, CT angiography, SPECT, echocardiography) indicating ischaemia or at least an intermediate (≥50%) stenosis, or iii. have experienced persistent or recurrent (stuttering) episodes of symptomatic ischemia, spontaneous or induced, with or without associated ECG changes, or iv. have developed shock, severe pulmonary congestion, or continuing hypotension, or v. are suspected to have developed mechanical complications of MI e.g. papillary muscle rupture (acute mitral regurgitation), acquired VSD, suspected free wall rupture; or c. in patients in whom CAD is known (prior MI, past CABG/PCI), who have: i. myocardial ischaemia testing indicating ischaemia or inconclusive results, or ii. CT angiography indicating intermediate (≥50%) or severe (≥70%) stenosis or inconclusive results, or iii. clinical features, ECG, and/or troponin indicating a high likelihood of ischaemia, or iv. worsening symptoms in the presence of known underlying coronary stenosis.

				2. For risk stratification in post-MI patients with: a. ischemia at low levels of exercise with ECG changes (1-mm ST-segment depression or other predictors of adverse outcome) and/or imaging abnormalities, or b. clinically significant CHF, or c. an inability to perform an exercise test with LVEF ≤0.50, or d. non–Q-wave MI, when the patient is an appropriate candidate for a revascularisation procedure, and coronary angiogram was not already done when hospitalized earlier, or e. a need to return to an unusually active form of employment, or f. a remote history of MI without evidence of CHF during the current event and without evidence of inducible ischemia, or g. recurrent ventricular tachycardia, fibrillation, or both, despite antiarrhythmic therapy, without ongoing myocardial ischemia. 3. Stable (episodic, brought on by exercise or other factors) chest discomfort, or dyspnoea, thought to be due to obstructive CAD, in patients who: a. have symptoms not adequately controlled with optimal medical therapy and have cardiac imaging testing indicating ischaemia, or, b. have symptoms that are satisfactorily controlled with optimal medical therapy, but: i. functional testing has revealed significant ischaemia, or ii. non-invasive testing has found a significant likelihood of left main stem or proximal three-vessel-disease, or iii. there is a high clinical suspicion of significant CAD from typical symptoms or high pre-test probability (PTP)* despite negative stress imaging testing, and iv. revascularisation is not already deemed to be inappropriate or unacceptable; or c. have angina and suspected coronary disease who, due to disability, illness, or physical challenge, cannot be adequately risk-stratified by other means, or d. have Canadian Cardiovascular Society (CCS) Class I or II angina with intolerance to adequate medical therapy or with failure to respond, or patients who have recurrence of symptoms during adequate medical therapy as defined above, or e. have a regulatory and/or occupational requirement (e.g. pilots, bus drivers that involves the safety of others), and have abnormal but not high-risk stress test results or multiple clinical features that suggest high risk, or f. have a recurrence of angina following prior revascularisation procedure(s).

				*Pre-test probability (PTP) should be assessed through formal systems e.g. CAD consortium, with PTP <15% indicating no need for further testing (or only treadmill exercise testing or coronary artery calcium scoring). 4. In patients who have non-specific chest pain with: a. high-risk findings on non-invasive testing, or b. recurrent hospitalisations for chest pain who have abnormal (but not high-risk) or equivocal findings on non-invasive testing. 5. In patients undergoing pre-surgical assessment for cardiac, aorta, or peripheral vascular surgery, including that involving: a. valve repair or replacement surgery, b. diseases affecting the aorta, when knowledge of the presence or extent of coronary artery involvement is necessary of management (e.g. aortic dissection or aneurysm with known coronary disease), c. peripheral vascular surgery, in patients of advanced age or multiple CAD risk factors, when a test has shown evidence of CAD. d. cardiac surgical procedures (e.g. pericardiectomy, chronic pulmonary emboli), in patients with high risk of CAD. 6. Pre-operative coronary evaluation required for non-cardiac transplant surgery as mandated by hospital protocol. 7. Congenital heart disease (CHD): a. For CHD patients with (before surgical correction): i. chest discomfort or non-invasive testing evidence that is suggestive of associated CAD, or ii. suspected congenital coronary anomalies, such as congenital coronary artery stenosis, coronary arteriovenous fistula, and anomalous origin of left coronary artery; or b. For an adult patient with congenital heart disease, before corrective open heart surgery, whose risk profile increases the likelihood of coexisting coronary disease, or c. For investigation of coronary arteries in: i. patients with unexplained cardiac arrest, who are young or suspected to have coronary anomalies, or

				ii. patients with forms of congenital heart disease frequently associated with coronary artery anomalies that may complicate surgical management. 8. In congestive heart failure (CHF) patients who: a. have CHF due to systolic dysfunction, with angina or regional wall motion abnormalities and/or scintigraphic evidence of reversible myocardial ischemia, and are being considered for revascularisation, or b. have CHF secondary to postinfarction ventricular aneurysm or other mechanical complications of MI, or c. have systolic dysfunction with unexplained causes despite non-invasive testing, or d. have normal systolic function, but episodic heart failure raises suspicion of ischemically-mediated left ventricular dysfunction, or e. are being assessed for cardiac transplantation. 9. In patients who have been successfully resuscitated following sudden cardiac arrest. 10. For pharmacological study in patients with suspected microvascular dysfunction or coronary spasm, who have: a. recurrent episodes of apparent ischemic cardiac pain at rest, and b. had a normal or only mildly abnormal coronary angiogram, with no clinical observations that substantiate the diagnosis of variant angina (i.e. ST-segment elevation during pain). 11. In other cardiac conditions: a. In patients with hypertrophic cardiomyopathy and angina: i. whose angina persists despite medical therapy, when knowledge of coronary anatomy might affect therapy, or ii. who have heart surgery planned. b. In patients with Kawasaki disease who have evidence of coronary aneurysm from non-invasive studies. c. In patients with infective endocarditis who have suspected coronary embolism.

				[B] Clinical Indications for physiological and/or imaging diagnostics: 1. Investigation of coronary vessel abnormality, such as in: a. Further assessment of coronary vessel stenosis for functional, physiological, and/or hemodynamic significance. b. Assessing or identifying culprit lesion(s) in multivessel disease. c. Aiding localisation of coronary lesion(s) if angiographic image is inadequate. d. Assessing patients for suspected microvascular dysfunction or coronary vasospasm.

TOSP Code	Table Code	TOSP Description	Claims Indicators (Setting)	Claims Indicators (Clinical Indications/Frequency/Modality)
SD810H	**4A**	HEART, SIMPLE SINGLE-VESSEL PERCUTANEOUS CORONARY INTERVENTION (PCI), WITH/WITHOUT CORONARY ANGIOGRAPHY, WITH/WITHOUT PHYSIOLOGICAL AND/OR IMAGING STUDIES *see Definitions section for "simple"	**Inpatient/Day Surgery** Claims can be made for the inpatient setting provided they fulfil one or more of the following conditions (including but not limited to): 1. The patient is presenting emergently with acute coronary syndromes, or 2. The patient's clinical or interventional condition necessitates inpatient admission (e.g. hemodynamically unstable, abnormal renal function, frail/elderly, haemorrhagic risk from femoral access), or 3. The patient has pre-existing cardiac conditions or prior non-invasive tests that suggest a high cardiac risk, or 4. The patient requires inpatient admission for other medically necessary treatment, or 5. The patient needs admission to fulfil the minimum safe monitoring period after their procedure.	**This procedure may be claimed according to the rules below:** **Clinical Indications:** 1. <u>Single-vessel coronary intervention in Acute Coronary Syndromes (ACS)</u>: a. in patients with NSTE-ACS (NSTEMI or unstable angina) who: i. present with unstable clinical condition, or ii. are high-risk as assessed by clinical features, ECG, and troponin levels through a combined clinical decision pathway (CDP) for risk scoring (e.g. GRACE / HEART score), or iii. are intermediate-risk as assessed by a CDP (e.g. GRACE / HEART score), and have: • cardiac testing (e.g. treadmill exercise testing, CT angiography, SPECT, echocardiography) indicating ischaemia or a significant (≥70%) stenosis, and • prior invasive coronary angiography indicating either a significant (≥70%) stenosis, or an intermediate (≥50%) stenosis with FFR <0.8 or iFR <0.89 or IVUS showing MLA of <6 mm^2 in LM and <4 mm^2 in other coronary vessels; or b. in patients who have known CAD (prior MI, past CABG, PCI), and have: i. myocardial ischaemia testing indicating ischaemia or inconclusive results, or ii. CT angiography indicating significant (≥70%) stenosis or inconclusive results (unable to exclude high grade lesions), or iii. clinical features, ECG, and/or troponin indicating a high likelihood of ischaemia, or iv. worsening symptoms in the presence of known left main, proximal LAD, or multivessel disease, or v. prior invasive coronary angiography indicating significant (≥70% stenosis), or either CT or invasive coronary angiography showing intermediate (≥50%) stenosis with FFR <0.8 or iFR <0.89 or IVUS showing MLA of <6 mm^2 in LM and <4 mm^2 in other coronary vessels. 2. <u>Single-vessel revascularisation in patients with stable (episodic, brought on by exercise or other factors) chest discomfort or dyspnoea thought to be due to obstructive CAD</u>: a. in patients in whom revascularisation is not already deemed to be unnecessary or inappropriate, and who have:

				i. symptoms not adequately controlled with medical therapy and have cardiac imaging testing indicating ischaemia, or ii. symptoms that are adequately controlled with optimal medical therapy, but functional testing has revealed significant myocardial ischemia (e.g. a nuclear study showing an area of ischemia of >15%, or stress echo showing 4 or more ischemia segments), or iii. a high clinical suspicion of having significant CAD due to typical anginal symptoms, or a high pre-test probability* despite negative myocardial imaging studies, or iv. an intermediate (≥50%) coronary lesion in single coronary vessel CAD, but coronary physiological study (e.g. FFR <0.8 or iFR <0.89) or IVUS study (including LM showing a MLA of <4 mm^2 or plaque burden of >70%) justify coronary intervention, or v. diabetes and multivessel CAD, for whom a single-vessel simple coronary revascularisation procedure would be appropriate, or vi. had previous CABG with patent left internal mammary artery (LIMA) to the left anterior descending (LAD) and need repeat simple single-vessel revascularisation, for whom PCI is reasonable. *Pre-test probability (PTP) should be assessed through formal systems e.g. CAD consortium, with PTP <15% indicating no need for further testing (or only treadmill exercise testing or coronary artery calcium scoring)

TOSP Code	Table Code	TOSP Description	Claims Indicators (Setting)	Claims Indicators (Clinical Indications/Frequency/Modality)
SD712H	**4B**	HEART, COMPLEX (E.G. LEFT MAIN, CTO INTERVENTION, COMPLEX BIFURCATION/TRIFURCATION, IABP), SINGLE-VESSEL PERCUTANEOUS CORONARY INTERVENTION (PCI), WITH/WITHOUT CORONARY ANGIOGRAPHY, WITH/WITHOUT PHYSIOLOGICAL AND/OR IMAGING STUDIES *see Definitions section for "complex"	**Inpatient/Day Surgery** Claims can be made for the inpatient setting provided they fulfil one or more of the following conditions (including but not limited to): 1. The patient is presenting emergently with acute coronary syndromes, or 2. The patient's clinical or interventional condition necessitates inpatient admission (e.g. hemodynamically unstable, abnormal renal function, frail/elderly, haemorrhagic risk from femoral access), or 3. The patient has pre-existing cardiac conditions or prior non-invasive tests that suggest a high cardiac risk, or 4. The patient requires inpatient admission for other medically necessary treatment, or 5. The patient needs admission to fulfil the minimum safe monitoring period after their procedure.	**This procedure may be claimed according to the rules below:** **Clinical Indications:** 1. <u>Single-vessel coronary intervention in Acute Coronary Syndromes (ACS):</u> a. in patients with NSTE-ACS (NSTEMI or unstable angina) who: i. present with unstable clinical condition, or ii. are high-risk as assessed by clinical features, ECG, and troponin levels through a combined clinical decision pathway (CDP) for risk scoring (e.g. GRACE / HEART score), or iii. are intermediate-risk as assessed by a CDP (e.g. GRACE / HEART score), and have: • cardiac testing (e.g. treadmill exercise testing, CT angiography, SPECT, echocardiography) indicating ischaemia or a significant (≥70%) stenosis, and • prior invasive coronary angiography indicating either a significant (≥70%) stenosis, or an intermediate (≥50%) stenosis with FFR <0.8 or iFR <0.89 or IVUS showing MLA of <6 mm^2 in LM and <4 mm^2 in other coronary vessels; or b. in patients who have known CAD (prior MI, past CABG, PCI), and have: i. myocardial ischaemia testing indicating ischaemia or inconclusive results, or ii. CT angiography indicating significant (≥70%) stenosis or inconclusive results (unable to exclude high grade lesions), or iii. clinical features, ECG, and/or troponin indicating a high likelihood of ischaemia, or iv. worsening symptoms in the presence of known left main, proximal LAD, or multivessel disease, or v. prior invasive coronary angiography indicating significant (≥70% stenosis), or either CT or invasive coronary angiography showing intermediate (≥50%) stenosis with FFR <0.8 or iFR <0.89 or IVUS showing MLA of <6 mm^2 in LM and <4 mm^2 in other coronary vessels.

				2. <u>Single-vessel revascularisation in patients with stable (episodic, brought on by exercise or other factors) chest discomfort or dyspnoea thought to be due to obstructive CAD</u>: a. in patients in whom revascularisation is not already deemed to be unnecessary or inappropriate, and who have: i. symptoms not adequately controlled with optimal medical therapy and have cardiac imaging testing indicating ischaemia, or ii. symptoms that are adequately controlled with optimal medical therapy, but • functional testing has revealed significant myocardial ischaemia (e.g. a nuclear study showing an area of ischemia of >15%, or stress echo showing 4 or more ischemia segments), or • non-invasive testing has found a significant likelihood of left main stem or proximal three-vessel-disease; or iii. a high clinical suspicion of significant CAD due to typical symptoms or high pre-test probability (PTP)* despite negative stress imaging testing, or iv. an intermediate (≥50%) coronary lesion in single coronary vessel CAD, but coronary physiological study (e.g. FFR <0.8 or iFR <0.89) or IVUS study (including LM showing a MLA of <4 mm^2 or plaque burden of >70%) justify coronary intervention. *Pre-test probability (PTP) should be assessed through formal systems e.g. CAD consortium, with PTP <15% indicating no need for further testing (or only treadmill exercise testing or coronary artery calcium scoring). **Modality:** **1. Impella®:** a. The use of Impella® has been assessed by ACE to have uncertain comparative safety, clinical effectiveness and cost effectiveness. If Impella® is inserted during a PCI procedure, only SD712H may be claimed for the PCI procedure. b. Impella® or its insertion alone may not be claimed under MSHL until further notice. 2. **Intravascular lithotripsy (IVL):** a. If IVL is utilised during a complex single-vessel PCI procedure, SD712H may be claimed as per the indications above for PCI. NB: IVL should be utilised in accordance with its HSA-registered description.

TOSP Code	Table Code	TOSP Description	Claims Indicators (Setting)	Claims Indicators (Clinical Indications/Frequency/Modality)
SD713H	**4B**	HEART, MULTIVESSEL PERCUTANEOUS CORONARY INTERVENTION (PCI), WITH/WITHOUT CORONARY ANGIOGRAPHY, WITH/WITHOUT PHYSIOLOGICAL AND/OR IMAGING STUDIES	**Inpatient/Day Surgery** Claims can be made for the inpatient setting provided they fulfil one or more of the following conditions (including but not limited to): 1. The patient is presenting emergently with acute coronary syndromes, or 2. The patient's clinical or interventional condition necessitates inpatient admission (e.g. hemodynamically unstable, abnormal renal function, frail/elderly, haemorrhagic risk from femoral access), or 3. The patient has pre-existing cardiac conditions or prior non-invasive tests that suggest a high cardiac risk, or 4. The patient requires inpatient admission for other medically necessary treatment, or 5. The patient needs admission to fulfil the minimum safe monitoring period after their procedure.	**This procedure may be claimed according to the rules below:** **Clinical Indications:** 1. <u>Multivessel (>1) coronary intervention in Acute Coronary Syndromes (ACS)</u>: a. in patients with NSTE-ACS (NSTEMI or unstable angina) who: i. present with unstable clinical condition, or ii. are high-risk as assessed by clinical features, ECG, and troponin levels through a combined clinical decision pathway (CDP) for risk scoring (e.g. GRACE / HEART score). iii. are intermediate-risk as assessed by a CDP (e.g. GRACE / HEART score), and have: • cardiac testing (e.g. treadmill exercise testing, CT angiography, SPECT, echocardiography) indicating ischaemia, or an intermediate (≥50%) or significant (≥70%) stenosis, and • prior invasive coronary angiography indicating either a significant (≥70%) stenosis, or an intermediate (≥50%) stenosis with FFR <0.8 or iFR <0.89 or IVUS showing MLA of <6 mm^2 in LM and < 4 mm^2 in other coronary vessels); or b. in patients who have known CAD (prior MI, past CABG, PCI), and have: i. myocardial ischaemia testing indicating ischaemia or inconclusive results, or ii. CT angiography indicating intermediate (≥50%) or significant (≥70%) stenosis or inconclusive results (unable to exclude high grade lesions), or iii. clinical features, ECG, and/or troponin indicating a high likelihood of ischaemia, or iv. worsening symptoms in the presence of known left main, or multivessel disease, or v. invasive coronary angiography indicating significant (≥70% stenosis), or either CT or invasive coronary angiography showing intermediate (40-70%) stenosis with FFR <0.8 or iFR <0.89 or IVUS showing MLA of <6 mm^2 in LM and <4 mm^2 in other coronary vessels) in more than one coronary arteries. 2. <u>Multivessel (>1) revascularisation in patients with stable (episodic, brought on by exercise or other factors) chest discomfort or dyspnoea thought to be due to obstructive CAD</u>: a. in patients in whom revascularisation is not already deemed to be unnecessary or inappropriate, and who have:

				i. symptoms not adequately controlled with optimal medical therapy and have cardiac imaging testing indicating ischaemia, or ii. symptoms that are satisfactorily controlled with optimal medical therapy, but • functional testing has revealed significant myocardial ischaemia (e.g. nuclear study showing area of ischemia of >15%, or stress echo showing 4 or more ischemia segments), or • non-invasive testing has found a significant likelihood of left main stem bifurcation and multivessel CAD; or iii. a high clinical suspicion of significant CAD from typical symptoms or high pre-test probability (PTP)* despite negative stress imaging testing, or iv. multivessel CAD with deterioration of LVEF, with evidence of myocardial ischemia on non-invasive testing, or evidence of viable myocardial ischemia, or v. intermediate (≥50%) coronary lesions in multiple coronary vessel CAD, but coronary physiological study (e.g. FFR <0.8 or iFR <0.89) or IVUS study (including LM showing a MLA of <4 mm2 or plaque burden of >70%) justify coronary intervention. *Pre-test probability (PTP) should be assessed through formal systems e.g. CAD consortium, with PTP <15% indicating no need for further testing (or only treadmill exercise testing or coronary artery calcium scoring). **Modality:** **1. Intravascular lithotripsy (IVL):** a. If IVL is utilised during a multi-vessel PCI procedure, SD713H may be claimed as per the indications above for PCI. NB: IVL should be utilised in accordance with its HSA-registered description.

TOSP Code	Table Code	TOSP Description	Claims Indicators (Setting)	Claims Indicators (Clinical Indications/Frequency/Modality)
SD714H	**4B**	HEART, PERCUTANEOUS CORONARY INTERVENTION (PCI) FOR ST-ELEVATION MYOCARDIAL INFARCTION	**Inpatient**	**This procedure may be claimed according to the rules below:** 1. Intervention in patients with acute STEMI who: i. present within 12 hours of symptom onset, or ii. present with, or subsequently develop, cardiogenic shock, or iii. present after 12 hours of symptom onset but have ongoing or stuttering chest pain and PCI is still deemed reasonable to improve clinical outcomes, or iv. have contraindications to fibrinolytic therapy, or were treated with fibrinolysis initially but have evidence to suggest failed coronary reperfusion (e.g. ST elevation is unresolved on ECG) or recurrent myocardial ischaemia, or v. have had successful fibrinolysis, but further angiographic assessment or intervention is still assessed to be beneficial. 2. Intervention in patients with Wellens syndrome.

TOSP Code	Table Code	TOSP Description	Claims Indicators (Setting)	Claims Indicators (Clinical Indications/Frequency/Modality)
SD724H	**5A**	HEART, PERCUTANEOUS CORONARY INTERVENTION (PCI) + ATHERECTOMY (E.G. ROTABLATION)	**Inpatient/Day Surgery** Claims can be made for the inpatient setting provided they fulfil one or more of the following conditions (including but not limited to): 1. The patient is presenting emergently with acute coronary syndromes, or 2. The patient's clinical or interventional condition necessitates inpatient admission (e.g. hemodynamically unstable, abnormal renal function, frail/elderly, haemorrhagic risk from femoral access), or 3. The patient has pre-existing cardiac conditions or prior non-invasive tests that suggest a high cardiac risk, or 4. The patient requires inpatient admission for other medically necessary treatment, or 5. The patient needs admission to fulfil the minimum safe monitoring period after their procedure.	**This procedure may be claimed according to the rules below:** **Clinical Indications:** **As this code is for both PCI <u>and</u> atherectomy, there should be clinical indication(s) from both [A] <u>and</u> [B].** **[A] Clinical Indications for PCI:** 1. <u>Intervention in Acute Coronary Syndromes (ACS)</u>: a. Acute STEMI in patients who: i. present within 12 hours of symptom onset, or ii. present with, or subsequently develop, cardiogenic shock, or iii. present after 12 hours of symptom onset but have ongoing or stuttering chest pain and PCI is still deemed reasonable to improve clinical outcomes , or iv. have contraindications to fibrinolytic therapy, or were treated with fibrinolysis initially but have evidence to suggest failed coronary reperfusion (e.g. ST elevation is unresolved on ECG) or recurrent myocardial ischaemia, or v. have had successful fibrinolysis, but further angiographic assessment or intervention is still assessed to be beneficial. b. NSTE-ACS (unstable angina or NSTEMI) in patients who: i. present with unstable clinical condition, or ii. are high-risk as assessed by clinical features, ECG, and troponin levels through a combined clinical decision pathway (CDP) for risk scoring (e.g. GRACE / HEART score), or iii. are intermediate-risk as assessed by a CDP (e.g. GRACE / HEART score), and have: • cardiac testing (e.g. treadmill exercise testing, CT angiography, SPECT, echocardiography) indicating ischaemia or a significant (≥70%) stenosis, and • prior invasive coronary angiography indicating either a significant (≥70%) stenosis, or an intermediate (≥50%) stenosis with FFR <0.8 or iFR <0.89 or IVUS showing MLA of <6 mm^2 in LM and <4 mm^2 in other coronary vessels; or c. in patients who have known CAD (prior MI, past CABG, PCI), and have: i. myocardial ischaemia testing indicating ischaemia or inconclusive results, or

				ii. CT angiography indicating intermediate (≥50%) or significant (≥70%) stenosis or inconclusive results (unable to exclude high grade lesions), or iii. clinical features, ECG, and/or troponin indicating a high likelihood of ischaemia, or iv. worsening symptoms in the presence of known left main, or multivessel disease, or v. invasive coronary angiography indicating significant (≥70% stenosis), or either CT or invasive coronary angiography showing intermediate (40-70%) stenosis with FFR <0.8 or iFR <0.89 or IVUS showing MLA of <6 mm2 in LM and <4 mm2 in other coronary vessels) in more than one coronary arteries. 2. <u>Revascularisation in patients with stable (episodic, brought on by exercise or other factors) chest discomfort or dyspnoea thought to be due to obstructive CAD</u>: a. in patients in whom revascularisation is not already deemed to be unnecessary or inappropriate, and who have: i. symptoms not adequately controlled with medical therapy and have cardiac imaging testing indicating ischaemia, or ii. symptoms that are adequately controlled with optimal medical therapy, but functional testing has revealed significant myocardial ischemia (e.g. a nuclear study showing an area of ischemia of >15%, or stress echo showing 4 or more ischemia segments), or iii. a high clinical suspicion of having significant CAD due to typical anginal symptoms, or a high pre-test probability* despite negative myocardial imaging studies, or iv. an intermediate (≥50%) coronary lesion in single coronary vessel CAD, but coronary physiological study (e.g. FFR <0.8 or iFR <0.89) or IVUS study (including LM showing a MLA of <4 mm^2 or plaque burden of >70%) justify coronary intervention, or v. diabetes and multivessel CAD, for whom a single-vessel simple coronary revascularisation procedure would be appropriate, or vi. had previous CABG with patent left internal mammary artery (LIMA) to the left anterior descending (LAD) and need repeat simple single-vessel revascularisation, for whom PCI is reasonable. **[B] Clinical Indications for atherectomy:** 1. In patients with fibrotic or heavily calcified de novo or restenosis lesions (by angiographic appearance and/or intravascular imaging), where balloon angioplasty has or is anticipated to not be able to result in procedural success, for whom plaque modification with atherectomy to facilitate PCI should be considered, or

				2. In patients with severely under-expanded stents that cannot be treated with balloon angioplasty, for whom atherectomy to ablate the stent should be considered by experienced operators. **Modality:** **1. Impella®:** a. SD724H should not be claimed when PCI is performed with Impella®. b. The use of Impella® has been assessed by ACE to have uncertain comparative safety, clinical effectiveness and cost effectiveness. If Impella® is inserted during a PCI procedure, only SD712H may be claimed for the PCI procedure. c. Impella® or its insertion alone may not be claimed under MSHL until further notice. **2. Intravascular lithotripsy (IVL):** a. If IVL is utilised during a PCI procedure with atherectomy, SD724H may be claimed as per the indications above. b. If IVL is utilised during a PCI procedure without atherectomy, SD712H or SD713H should be claimed instead, depending on whether it was single- or multi-vessel. NB: IVL should be utilised in accordance with its HSA-registered description.

TOSP Code	Table Code	TOSP Description	Claims Indicators (Setting)	Claims Indicators (Clinical Indications/Frequency/Modality)
SD727H	**1A**	HEART, SYNCHRONISED CARDIOVERSION	**Inpatient/Day Surgery** Claims can be made for the inpatient setting provided they fulfil one or more of the following conditions (including but not limited to): 1. The patient is presenting emergently with acute coronary syndromes, or 2. The patient's clinical or interventional condition necessitates inpatient admission (e.g. hemodynamically unstable, abnormal renal function, frail/elderly, haemorrhagic risk from femoral access), or 3. The patient has pre-existing cardiac conditions or prior non-invasive tests that suggest a high cardiac risk, or 4. The patient requires inpatient admission for other medically necessary treatment, or 5. The patient needs admission to fulfil the minimum safe monitoring period after their procedure.	**This procedure may be claimed according to the rules below:** **Clinical Indications:** 1. Intervention in patients with cardiac arrhythmias: a. Supraventricular Tachycardias (SVT), including atrioventricular nodal re-entry tachycardia/ atrioventricular re-entry tachycardia (AVNRT/AVRT), in patients who: i. have failed conversion by pharmacological treatment, or ii. have symptoms and signs of haemodynamic instability; or b. Wide-complex tachycardias (WCT), in patients who: i. have symptoms and signs of haemodynamic instability, or ii. do not have symptoms and signs of haemodynamic instability but for whom pharmacological cardioversion was attempted but unsuccessful; or c. Atrial Fibrillation (AF) or Atrial Flutter (AFL), in patients who: i. present with new-onset AF/AFL causing life-threatening haemodynamic instability. ii. present with acute onset of AF/AFL of less than 48 hours ago, and elected to undergo electrical synchronised cardioversion. iii. were initially treated with a rate-control strategy that was unsuccessful (e.g. persistent symptoms).

TOSP Code	Table Code	TOSP Description	Claims Indicators (Setting)	Claims Indicators (Clinical Indications/Frequency/Modality)
SD802H	**4A**	HEART, PERCUTANEOUS ABLATION OF ARRYTHMIA CIRCUIT OR FOCUS OR ISOLATION PROCEDURE INVOLVING 1 ATRIAL CHAMBER ONLY, WITH/WITHOUT THE USE OF 3D MAPPING, NOT REQUIRING COMPLEX ELECTROPHYSIOLOGICAL TECHNIQUES *see Definitions section for "complex electrophysiological techniques"	**Inpatient/Day Surgery** Claims can be made for the inpatient setting provided they fulfil one or more of the following conditions (including but not limited to): 1. The patient's clinical or interventional condition necessitates inpatient admission (e.g. hemodynamically unstable, abnormal renal function, frail/elderly, haemorrhagic risk from femoral access), or 2. The patient has pre-existing cardiac conditions or prior non-invasive tests that suggest a high cardiac risk, or 3. The patient requires inpatient admission for other medically necessary treatment, or 4. The patient needs admission to fulfil the minimum safe monitoring period after their procedure.	**This procedure may be claimed according to the rules below:** **Clinical Indications:** 1. Intervention in patients with cardiac arrhythmias: a. Supraventricular Tachycardias (SVT), including but not limited to atrioventricular nodal re-entry tachycardia (AVNRT), atrioventricular re-entry tachycardia (AVRT, utilising an accessory pathway), atrial tachycardias, or b. Atrial Flutter (AFL), in patients for whom cavotricuspid isthmus (CTI) ablation may be therapeutic for CTI-dependent AFL.

TOSP Code	Table Code	TOSP Description	Claims Indicators (Setting)	Claims Indicators (Clinical Indications/Frequency/Modality)
SD838H	**4C**	HEART, PERCUTANEOUS ABLATION OF ARRYTHMIA CIRCUITS OR FOCI, OR ISOLATION PROCEDURE, INVOLVING 1 OR MORE ATRIAL CHAMBERS AND REQUIRING COMPLEX ELECTROPHYSIOLOGICAL TECHNIQUES, WITH/WITHOUT 3D MAPPING PERFORMED ON THE SAME DAY *see Definitions section for "complex electrophysiological techniques"	**Inpatient/Day Surgery** Claims can be made for the inpatient setting provided they fulfil one or more of the following conditions (including but not limited to): 1. The patient's clinical or interventional condition necessitates inpatient admission (e.g. hemodynamically unstable, abnormal renal function, frail/elderly, haemorrhagic risk from femoral access), or 2. The patient has pre-existing cardiac conditions or prior non-invasive tests that suggest a high cardiac risk, or 3. The patient requires inpatient admission for other medically necessary treatment, or 4. The patient needs admission to fulfil the minimum safe monitoring period after their procedure.	**This procedure may be claimed according to the rules below:** **Clinical Indications:** 1. Intervention in patients with cardiac arrhythmias: a. Atrial Fibrillation (AF), in patients who: i. have symptomatic paroxysmal or persistent AF, for whom drug treatment was unsuccessful or unsuitable, or ii. have a symptomatic recurrence of AF, after a previous AF ablation procedure, or iii. for whom ablation may reverse LV dysfunction due to tachycardia-induced cardiomyopathy, or if there is concurrent heart failure with reduced ejection fraction (HFrEF) and ablation may improve survival or reduce hospitalisation. b. Atypical Atrial Flutter (AFL) (not CTI-dependent), or c. Complex supraventricular tachycardias requiring ablation.

TOSP Code	Table Code	TOSP Description	Claims Indicators (Setting)	Claims Indicators (Clinical Indications/Frequency/Modality)
SD716H	**3C**	HEART, HEART BLOCK/ARRYTHMIA, INSERTION OF DUAL CHAMBER PACEMAKER (PERMANENT)	**Inpatient/Day Surgery** Claims can be made for the inpatient setting provided they fulfil one or more of the following conditions (including but not limited to): 1. The patient's clinical or interventional condition necessitates inpatient admission (e.g. hemodynamically unstable, abnormal renal function, frail/elderly, haemorrhagic risk from femoral access), or 2. The patient has pre-existing cardiac conditions or prior non-invasive tests that suggest a high cardiac risk, or 3. The patient requires inpatient admission for other medically necessary treatment, or 4. The patient needs admission to fulfil the minimum safe monitoring period after their procedure.	**This procedure may be claimed according to the rules below:** **Clinical Indications:** 1. Intervention in Sinus Node Dysfunction (SND) not due to any reversible or transient cause, in patients with: a. documented bradycardia and sinus pauses which result in significant symptoms (e.g. fatigue, light-headedness, dizziness, syncope), or b. the bradycardia-tachycardia form of SND, resulting in symptoms, if ablation is not deemed to be a better option, or c. SND **and** symptomatic chronotropic incompetence**.** 2. Intervention in Atrioventricular Block (AVB) not due to any reversible or transient cause, in patients with: a. permanent or paroxysmal AVB that is 2nd (Type II or 2:1 block or high-degree) or 3rd degree, or b. atrial arrhythmia who have permanent or paroxysmal AVB that is 2nd (high-degree) or 3rd degree, or c. symptomatic AVB that is 2nd degree (Type I), or the block is documented to be intra- or infra-Hisian levels on EP study, or d. AVB that is 1st degree with persistent and uncontrolled symptoms, or e. AVB that is 1st degree, **and** inherited muscular dystrophies. 3. Intervention in other cardiac abnormalities, in patients with: a. unexplained syncope and have documented bifascicular block, if on EP study: i. His-ventricular interval is >70ms, or ii. 2nd/3rd degree intra- or infra-Hisian block is present during incremental atrial pacing, or, iii. there was an abnormal response to pharmacological challenge, or, iv. if the above could not be investigated because EP study was unsuitable for the patient; or b. alternating bundle branch block (BBB), or c. adult congenital heart disease (ACHD), who have a cardiac abnormality (e.g. AVB, bradycardia) and are symptomatic, or d. trifascicular block, or e. poorly-controlled atrial arrhythmias who are planned for atrioventricular nodal ablation.

TOSP Code	Table Code	TOSP Description	Claims Indicators (Setting)	Claims Indicators (Clinical Indications/Frequency/Modality)
SD721H	**6B**	HEART, LUNG, EXTRA CORPOREAL MEMBRANE OXYGENATION	**Inpatient**	**This procedure may be claimed according to the rules below:** **Clinical Indications:** 1. Intervention in severe, acute, and potentially reversible cardiopulmonary failure that is refractory to optimal conventional management, such as in patients with: a. severe acute cardiac failure, with decreased cardiac output and myocardial contractility (e.g. in MI, cardiogenic shock), b. severe acute hypoxemic or hypercapnic or mixed respiratory failure (e.g. in severe pneumonia, ARDS), c. a need for cardiopulmonary support in the context of cardiac or lung surgery (e.g. transplant). 2. Intervention in patients with cardiac arrest, alongside Advanced Life Support (ALS) (also known as Extracorporeal CPR).

Appropriate filing of Cardiology TOSP codes

On 30 Dec 2021, MOH issued a circular to remind all medical and dental practitioners on the appropriate utilisation of TOSP codes when making MediShield Life and MediSave claims for surgical procedures. Generally, it would be inappropriate to:

a. use proxy TOSP codes that do not accurately describe the procedure performed.
b. submit multiple TOSP codes for **a single surgical/procedural episode** of surgery or procedures consisting of multiple procedures that fall under a single TOSP code such as Whipple operation; and
c. perform and code sub-procedures as **separate surgical/procedural episodes** when all the procedures should be performed in a surgical episode and claimed under a single TOSP code. This constitutes to code-splitting.

2 To monitor and govern the TOSP filling and to ensure claims appropriateness, MOH has put together a list of **inappropriate combinations of Cardiology TOSP codes that should not be claimed for a single surgical/procedural episode in Table 1 below.** Please note that the list serves as a reference and may be non-exhaustive. These rules will be adapted into a Claim Analytics System (CAS) to detect and flag inappropriate claims upfront to enable systematic claim adjudication.

3 **All Cardiology TOSP codes are not allowed to be repeated (i.e. the same code submitted twice) in a single claim submission, except for clinically appropriate staged procedures that occurred in separate surgical/procedural episodes.**

4 The TOSP Code descriptions below are reflective of the upcoming revisions in TOSP that are to be announced around Oct 2023 and implemented around Jan 2024.

Table 1: Rules regarding inappropriate combinations of Cardiology CR TOSP codes for a single surgical/procedural episode

S/N	TOSP Code Category	Rules (for a single surgical/procedural episode)[1]
1	**A. Catheterisation/Angiography:** **SD830H (2C)** Heart, Right or Left Heart Catheterisation without Coronary Angiography (non-graft) **SD811H (3A)** Heart, Coronary Angiography (non-graft) without right heart catheterization **SD735H (3B)** Heart, Right and *Left Heart Catheterisation (*this can also refer to coronary angiography only) **SD840H (3B)** Heart, Coronary graft angiography with/without angiography of native coronary arteries **SD809H (3C)** Heart, Coronary graft angiography with/without angiography of native coronary arteries, with right heart catheterisation **SD743H (3C)** Heart, Coronary angiography and intracoronary physiological assessment (inclusive of pressure wire) and/or imaging/visualisation (inclusive of IV U/S and OCT), without PCI **B. Percutaneous Coronary Intervention (PCI):** **SD810H (4A)** Heart, Simple single-vessel percutaneous coronary intervention (PCI), with/without coronary angiography, with/without physiological and/or imaging studies **SD712H (4B)** Heart, Complex (e.g. left main, CTO intervention, complex bifurcation/trifurcation, IABP), single-vessel percutaneous coronary intervention (PCI), with/without coronary angiography, with/without physiological and/or imaging studies **SD713H (4B)** Heart, Multivessel percutaneous coronary intervention (PCI), with/without coronary angiography, with/without physiological and/or imaging studies **SD714H (4B)** Heart, Percutaneous coronary intervention (PCI) for ST-elevation myocardial infarction **SD724H (5A)** Heart, Percutaneous coronary intervention (PCI) + atherectomy (e.g. rotablation)	**For a single surgical/procedural episode:** **a. Only one code from [A. Catheterisation/angiography] or [B. PCI] may be claimed. In other words, no combination of two or more of these codes may be claimed.** **b. SD712H (4B) may not be claimed together with SD804A (3A) *[Aorta, Various Lesions, Insertion/Removal of Intra aortic Balloon],* and vice versa.**

[1]See Definitions section for definition of "single surgical/procedural episode".

S/N	TOSP Code Category	Rules (for a single surgical/procedural episode)[1]
2	**C. Related to mechanical circulatory support:** **SD804A (3A)** Aorta, Various Lesions, Insertion/Removal of Intra aortic Balloon **SD721H (6B)** Heart, Lung, Extra corporeal membrane oxygenation	**For a single surgical/procedural episode:** **a. SD804A (3A) may not be claimed together with SD712H (4B)** ***[Heart, Complex (e.g. left main, CTO intervention, complex bifurcation/trifurcation, IABP), single-vessel percutaneous coronary intervention (PCI), with/without coronary angiography, with/without physiological and/or imaging studies],*** **and vice versa.**
3	**D. Percutaneous ablation:** **SD802H (4A)** Heart, Percutaneous ablation of arrythmia circuit or focus or isolation procedure involving 1 atrial chamber only, with/without the use of 3D mapping, not requiring complex electrophysiological techniques **SD838H (4C)** Heart, Percutaneous ablation of arrythmia circuits or foci, or isolation procedure, involving 1 or more atrial chambers and requiring complex electrophysiological techniques, with/without 3D mapping performed on the same day **SD839H (5A)** Heart, mapping and percutaneous ablation of ventricular arrhythmia circuits or foci, including all associated electrophysiological studies performed on the same day **E. Arrhythmia surgery:** **SD704A (6B)** Arrhythmia Surgery MAZE (Includes the Mini-maze procedure with radiofrequency clam) **SD835H (6B)** Heart-Atrium, Arrhythmia, Arrhythmia Surgery **SD836H (7B)** Heart-Ventricle, Arrhythmia, Arrhythmia Surgery	**For a single surgical/procedural episode:** **a. Only one code from [D. Percutaneous ablation] or [E. Arrhythmia surgery] may be claimed. In other words, no combination of two or more of these codes may be claimed.** **i. Exception: if a [D. Percutaneous ablation] procedure and a [E. Arrhythmia surgery] procedure are performed in a combined surgery, both codes may be claimed.**

[1]See Definitions section for definition of “single surgical/procedural episode”.

S/N	TOSP Code Category	Rules (for a single surgical/procedural episode)[1]
4	**F. Implantable cardiac device-related:** **SD815H (3B)** Heart, Heart Block/Arrhythmia, Insertion of Single chamber Pacemaker (permanent) **SD716H (3C)** Heart, Heart block/arrythmia, Insertion of dual chamber pacemaker (permanent) **SD717H (2B)** Heart, Replacement of Pacemaker **SD718H (4A)** Heart, Implant of Epicardial Leads for Permanent Pacemakers **SD702H (4A)** Heart, Automatic Implantable Cardioverter Defibrillator (AICD)/Pacemaker Lead Extraction **SD703H (4C)** Heart, Automatic Implantable Cardioverter Defibrillator dual chamber (inclusive of defibrillation threshold testing (DFT)) **SD705H (4B)** Heart, Automatic Implantable Cardioverter Defibrillator single chamber (inclusive of DFT) **SD706H (5A)** Heart, Bivent Automatic Implantable Cardioverter Defibrillator (Inclusive of DFT) **SD803H (4C**) Heart, Arrhythmia, Implantable Cardioverter Defibrillator (ICD) Implantation **SD720H (1B)** Heart, Insertable loop recorder, **SD804H (4A)** Heart, Biventricular Pacing **SD814H (2C)** Heart, Heart Block, Replacement of Transvenous Electrode	**For a single surgical/procedural episode:** **a. Only one code from [F. Implantable cardiac device-related] may be claimed. In other words, no combination of two or more of these codes may be claimed.**
5	**G. Electrophysiology-related (other than in categories IV, V, VI):** **SD710H (MSP)** Heart, Defibrillation **SD711H (MSP)** Heart, External Cardiac pacing **SD727H (1A)** Heart, Synchronised cardioversion **SD725H (5A)** Heart, Placement of epicardial pacing wires **SD739H (3B)** Heart, Electrophysiology study without ablation	**For a single surgical/procedural episode:** **a. SD710H may not be claimed together with SD727H.** **b. SD739H may not be claimed together with any code from [D. Percutaneous ablation] or [E. Arrhythmia surgery].** **c. SD725H may not be claimed together with SD718H (4A) *[Heart, Implant of Epicardial Leads for Permanent Pacemakers].***

[1]See Definitions section for definition of "single surgical/procedural episode".