SASCI

South African Society of Cardiovascular Intervention

SASCI Coding Handbook
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1. Terms and conditions of use

Evidence-based medicine and the extent and nature of professional acts are, by their varying nature, based on consensus amongst appropriately qualified, trained and experienced healthcare professionals. As a body representing healthcare professionals practising in the field of cardiovascular intervention, SASCI publishes this Guideline to assist professionals, funders and other stakeholders as to the appropriate coding of professional acts.

This Coding Guideline is based on a scientific and professional analysis of the various professional acts which duly registered professionals are, by law, entitled to undertake in terms of their registration, under the Health Professions Act, 1974, and the Ethical Rules, and which acts are translated into codes that serves as a "short-hand" description of such acts.

The Guideline aims to connect the professional acts to the nature, scope, extent and inter-relatedness of various professional acts to codes.

This Guideline does not address and should not be construed as providing any guidance on fees, or as setting any fees or fee structure, neither does it attempt to make any pronouncements as to the reimbursement levels to be set by medical schemes in relation to the codes.

This Guideline constitutes the professional opinion expressed by the members of SASCI in relation to the professional acts of its members, according to the provisions of the Health Professions Act and the ethical rules thereof. This coding system constitutes what would be deemed to be professional acts within the context of evidence-based medicine, as defined in medical schemes legislation. It therefore gives effect to professional acts as separate and interrelated actions that would be professionally appropriate and for which a practitioner would be entitled to code and charge.

2. Disclaimer

SASCI takes no responsibility for the manner, in which this Guideline is used. It offers no guarantee or warranties to professionals, or other stakeholders, relating to reimbursement of the codes by medical schemes, other 3rd party payers or patients. Practitioners are urged to refrain from discussing any prices or fees to be attached to the codes outlined in this Guideline, and SASCI actively distances itself from the use of this Guide for any conduct that might be deemed anti-competitive.

Each practitioner makes his/her own business and professional decisions. SASCI's assistance and/or intervention in coding matters will be limited to an assessment of each specific situation referred to it. SASCI will look at the application of professional conduct rules as translated into codes, within the context of evidence-based medicine.

Practitioners should ensure that they code honestly, and that the provisions of Regulations 5 and 6 of the Medical Schemes Act are adhered to. In terms of Regulation 6, medical schemes that regard a specific code or coding practice as erroneous, will have to inform the practitioner of that assessment within 30 days after receiving such a claim. The scheme must provide the reasons for its assessment of the coding as erroneous.

Practitioners should in all circumstances (apart from emergencies) obtain informed consent for all care provided, ensuring that patients understand that such care is translated into codes, to which the practitioner attaches a fee. It is recommended that cost estimates and generally charged fees be provided to all patients, as is required by legislation and ethics.

This is a SASCI opinion intended for Interventional Cardiologists. At the time of going to press the CASSA opinion has not been finalised and will be included as soon as provided.

3. What is the purpose of this document?

SASCI understands that the state of coding amongst cardiologists currently varies widely. In an attempt to reduce the number of queries with medical funders, as well as to encourage transparency and debate, we would like to encourage a coding standard pertaining to common cardiology procedures. The purpose is not to force cardiologists to follow the guideline, but rather to encourage similar coding practices which we, as a small group of professionals generally regard as ethical, fair and defensible.

We would like to invite medical funders to create an open debate with our societies so that we can resolve differences of opinion regarding coding issues amicably and fairly. Furthermore, we would encourage cardiologists who have specific codes rejected to contact SASCI so that we can take the matter further with medical funders.

It should also be understood that this document is far from complete and should be regarded as a work in progress. There are glaring omissions and other issues which need to be resolved. The document will be periodically updated to reflect changes and decisions by SAMA and medical funders, where appropriate.

4. Can you help?

Should anyone feel, they can help, whether it be with proof reading, editing or working on updating specific sections, we would gladly be willing to delegate. Please contact the SASCI Office (sasci@sasci.co.za) if you wish to get involved or have specific queries and suggestions.

5. South African coding scheme overview

There are three (3) main coding schemes in South Africa pertaining to medical doctors.

- ICD-10 (International Statistical Classification of Diseases and Related Health Problems, 10th Edition)
- CCSA (Complete Current Procedural Terminology for South Africa)
- MDCM (Medical Doctors' Coding Manual)

A short overview of the usage in the current South African Healthcare industry is provided.

5.1. ICD-10: The South African Diagnostic Coding Scheme

ICD-10 = International Statistical Classification of Diseases and Related Health Problems, 10th Edition.
The WHO (World Health Organisation) is the custodian of ICD-10 coding.
It is an alpha-numeric coding structure. The code could be valid to the 3rd, 4th or 5th character.

	ICD-10						Description
Valid 3rd character	I10	1st **I**	2nd **1**	3rd **0**	4th	5th	Essential (primary) hypertension
Valid 4th character	I23.2	1st **I**	2nd **2**	3rd **3**	4th **2**	5th	Ventricular septal defect as current complication following acute myocardial infarction
Valid 5th character	I70.01	1st **I**	2nd **7**	3rd **0**	4th **0**	5th **1**	Atherosclerosis of aorta with gangrene

Please note that a "full stop" (.) is not seen as a "character".

5.2. CCSA: The South African Procedural Coding Scheme

CCSA = Complete Current Procedural Terminology for South Africa.

In America it is known as CPT (Physicians' Current Procedural Terminology). It is licenced to SAMA (South African Medical Association) by the AMA (American Medical Association). CCSA is a five (5) digit numerical coding structure, e.g. ***"93453 – Combined right and left heart catheterisation including intraprocedural injection(s) for left ventriculography, imaging supervision and interpretation, when performed".***

CPT is owned and maintained by the American Medical Association (AMA). **It is copyright protected and licenced.**

5.2.1 CPT History and Categories

The first CPT edition was published in 1966. The Health Care Financing Administration (HCFA), now the Centres for Medicare and Medicaid Services (CMS), adopted CPT for reporting physician services for Medicare in America in 1983-1987.

CPT codes are structured into 3 categories:

- Category I = Procedures within the scope of medical practice across the United States of America (USA)
- Category II = Tracking codes for performance improvement measurement (xxxx**F**)
- Category III = Temporary codes for new / emerging technology (xxxx**T**)

5.2.2 The CPT Code Development Process

The AMA has a CPT Editorial Panel. This panel consists of 11 physicians nominated by the National Medical Speciality Societies. All nominees must first be approved by the AMA Board of Directors.

The specialist societies develop an initial proposal, should the need arise, for a new CPT code. The AMA staff reviews the proposal and then sends it to the CPT Speciality Advisory Panel. The proposal is then sent to the CPT Editorial Panel. Once the new code proposal has been approved, it is sent for RUC (RVS Update Committee) valuation.

The RUC is a unique, multi-speciality committee, dedicated to describing the resources required to provide the service, as indicated in the new code using RBRVS (Resource Based Relative Value Scale). The RBRVS takes the physician's work, practice expense and PLI (Professional liability Insurance) into consideration. The RUC makes recommendations, but the final decisions remain with the CMS with regards to Medicare payment.

5.3 MDCM: The South African Procedural Billing Coding Scheme

MDCM = Medical Doctors' Coding Manual

This coding structure is also known as "Tariff" or "RPL". It is managed, licenced and distributed by SAMA. It has a four (4) digit numerical code structure, e.g. ***"1250 - Endomyocardial biopsy"***

The tariff coding history in South Africa, can be divided into 2 chapters. The period before 2004 and the period after 2004.

5.3.1 The period before 2004

The Medical Profession determined the codes and the descriptions of the codes. The Professional Associations set the private fees. The Health Professions Council of South Africa (HPCSA) calculated overcharging by using the private tariff (SAMA), plus 20%. Annual negotiations with Board of Healthcare Funders (BHF) and SAMA have resulted in the maintenance of the coding structure. SAMA and BHF set separate price adjustments for benefits and fees.

5.3.2 The period after 2004

The Competition Commission launched an investigation into the coding benefit calculations and fees. The process was declared illegal, and parties involved were fined. The Council for Medical Schemes were responsible for the publication of the National Health Reference Price List (NHRPL). Negotiations between CMS, SAMA and BHF resulted in the NHRPL model. During 2005 the first NHRPL was published by CMS. The costing was calculated using 2004 BHF + CPIX. HPCSA created an Ethical Tariff based on the SAMA tariff + CPIX. [SAMA tariff = (BHF x 3) +

CPIX]. Mid-2006-2007 the Department of Health (DoH) assumed responsibility for the further development of the NHRPL. The NHRPL was renamed to Reference Price List (RPL). The CMS model is still used, but the consultative process came to a halt. RPL was published in 2009 using 2008 NHRPL + CPIX.

HASA, SAPPF, twenty-two (22) disciplines and the Emergency services challenged the legality of the 2009 RPL. The RPL 2009 was declared illegal and invalid in July 2010. Minimal code maintenance has been done since the DoH intervention. New technology and improved procedures cannot be billed for correctly since no reimbursement tariff exists in the South African Healthcare sector.

The current coding structure is running out of numbers. South Africa needs a comprehensive coding structure for both public and private sectors, describing medical, surgical and diagnostic services rendered by all healthcare providers (medical and allied).

5.4 Governing rules and modifiers of the MDCM

A list of the most utilised rules and modifiers pertaining to the billing coding structure is briefly discussed. Please refer to the MDCM for a detailed description.

5.4.1 Rules governing the MDCM

It is important to remember that it is the responsibility of every medical doctor to acquaint himself/herself with the conditions of the Medical Schemes Act 1998, as well as with the regulations promulgated under the Act in connection with the rendering of accounts.

5.4.1.1 Rule B – Normal hours and after hours

If a non-emergency elective visit/consultation falls outside of the normal practice hours, and the patient requested the time for their own convenience, please refer to code 0148. Bona fide emergency consultation/visit (21h00 – 06:00 daily), refer to code 0149.

5.4.1.2 Rule C – Comparable service

A service that is not listed in this billing guide (MDCM) may be billed at a similar rate to a COMPARABLE SERVICE, listed in the billing guide. Such a service will be billed using:

- Code 6999 – Unlisted procedure or service
- The code for the comparable service
- Detailed motivation including:
  - ~ The definition or description of the procedure done
  - ~ Final diagnosis and ICD-10 code

5.4.1.3 Rule D – Cancellation of appointment

Should an appointment not be cancelled within 1 calendar day prior to the appointment, the service may be charged for.

- Payment for this service is the responsibility of the patient
- The patient must be informed that should the appointment not be kept, the service will be billed to the patient
- **Medical schemes do not pay for this service**

5.4.1.4 Rule E – Pre-operative visits

The appropriate consultation may be coded for all pre-operative visits. The exception to Rule E is a routine pre-operative visit at the hospital, since that routine pre-operative visit is included in the global surgical period for the procedure.

- ***Medical funders may use this rule not to compensate coding for hospital consultation fees, as described above.***
- For the moment the current status quo is that cardiologists continue to code for hospital visits on the day of the procedure.

Should you experience rejections or a threat of audit regarding this, please contact SASCI so that it can be taken up directly with the fund administrator.

Rule E concerns pre-operative care and is not applicable to percutaneous cardiac procedures, diagnostic or interventional.

5.4.1.5 Rule G – Post-operative care

Post-operative care, or aftercare, is seen as four weeks (4) after the procedure has been performed. Should a complication occur, or an underlying co-morbidity require care other than the normal aftercare, it may be charged as a follow-up visit, adding Rule G to the billing line.

The following does not qualify for the usage of Rule G:

- Post-operative pneumonia
- Pyrexia
- Wound complications
- Prolonged ileus (>5days)
- Deep vein thrombosis

Rule G applies to all ILR; pacemaker; ICD and BiVPM implants.

One cannot code for any follow-up visits, including a hospital visit, should the patient be kept overnight for a period of 30 days post-operatively.

Patient follow-up is included in the procedure up to and including 30 days post implant. This is because pacemaker implants fall under the 'surgical' category of procedures.

Note: this means that any follow-up within the 30-day period, is included in the original implant coding.

The general cardiology community does not agree with this, but it is an issue that has been dealt with before. SASCI's opinion is that this should again be taken up with fund administrators in the future. The general cardiology patient cannot be compared to a patient undergoing an elective surgical procedure. ***Device therapy should not fall under the same rules as general surgical procedures.***

Rule G is a grey area regarding lead extraction but, considering no device is implanted, Rule G SHOULD NOT apply. Coding for hospital follow-up is appropriate for lead extractions, as is coding for follow-up echocardiography.

Rule G regarding post-operative care is not applicable to percutaneous cardiac procedures, diagnostic or interventional procedures.

5.4.1.6 Rule J – Disproportionately low procedure units

From time to time, it does happen that more work is done during a procedure than what the units allow for. Higher units may be negotiated, with comprehensive motivation attached. A comprehensive motivation, including the complexity of the procedure and detailed theatre timeline, must be supplied. There is no guarantee that the higher units will be funded by the medical scheme. The patient may not be balance billed for Rule J.

5.4.1.7 Rule M – Surgical procedure planned to be performed later

Should a surgical procedure be planned for a later stage, at the time of a current consultation/visit, a routine pre-operative visit may not be charged for again at such a later occasion, because that routine pre-operative visit is included in the surgical global period for the procedure.

5.4.2 Modifiers governing the MDCM

It is important to remember that it is the responsibility of every medical doctor to acquaint himself/herself with the conditions of the Medical Schemes Act 1998, as well as with the regulations promulgated under the Act in connection with the rendering of accounts.

5.4.2.1 Modifier 0005 - Multiple procedures/operations under the same anaesthetic

Multiple procedures/operations: Unless where otherwise identified in the structure, when multiple procedures/operations add significant time and/or complexity, and when each procedure/operation is clearly identified and defined, the following values shall prevail:

- 100% (full value) for the first or major procedure/operation
- 75% for the second procedure/operation
- 50% for the third procedure/operation
- 25% for the fourth procedure/operation. ***(See MDCM for additional points).***

THIS DOES NOT APPLY TO PACEMAKER OR TEMPORARY PACEMAKER IMPLANTS.

SHOULD NOT APPLY TO MOST PCI CASES.

5.4.2.2 Modifier 0008 – Specialist surgeon assistant

A Specialised surgeon acting as an assistant surgeon may charge 40% of the units charged for by the specialist surgeon. For procedures requiring more than one assistant (specialist or general practitioner), the first assistant remuneration will be calculated using modifier 0008. The second assistant remuneration will be calculated using modifier 0009.

5.4.2.3 Modifier 0009 – Assistant

An assistant may charge 20% of the units charged for by the specialist surgeon, with a minimum of 36 clinical procedure units. The minimum fee payable may not be less than 36.00 clinical procedure units.

5.4.2.4 Modifier 0011 - Emergency procedures

Any bona fide, justifiable emergency procedure (all hours) in an operating theatre (or other setting in lieu of an operating theatre) will attract an additional 12.00 clinical procedure units

per half hour or part thereof, of the operating time for all members of the surgical team. Modifier 0011 may not be used for procedures on a scheduled list. **REMEMBER TO INDICATE THE TIME OF THE PROCEDURE. ONLY APPLIES TO PROCEDURE CODES (NOT ICU CODES ETC.)**

It is seldom that a permanent pacemaker is implanted under emergency conditions. Should a permanent or temporary pacemaker be inserted as an emergency we would encourage its use.

5.4.2.5 Modifier 0018 – BMI higher than 35

(Calculated according to kg/m2 = weight in kilograms divided by height in metres squared rounded off to the first decimal)

- Units for the procedure (including modifiers, except modifier 0011) + 50% of surgeon's units
- Anaesthesiologists / anaesthetists + 50% increase in anaesthetic time units only

This is a surgical modifier for persons with a BMI higher than 35. This modifier adds 50% of the clinical unit value to the surgical/procedure codes, if used. **When used you need to state the mass, height and BMI on the invoice.** It applies to surgical procedures, but anaesthetists also use it during coronary procedures. A patient's BMI adds considerable risk to a femoral cardiac catheterisation. We would, therefore, encourage the use of M0018 when catheterising obese patients. The reimbursement for modifier 0018 is funder specific.

5.4.2.6 Modifier 6305 – Multiple catheterisations and angiogram

When multiple catheterisation procedures are used (items 3557, 3559, 3560, 3562) and an angiogram investigation is performed at each level, the unit value of each such multiple procedure will be reduced by 20.00 radiological units for each procedure after the initial catheterisation. The first catheterisation is coded at 100% of the unit value.

M6305 is **VERY** important when using codes 3559 (selective first order catheterisation); 3560 (selective second order catheterisation); 3562 (selective third order catheterisation). Where more than one selective catheterisation is performed per case, modifier 6305 applies.

6. Scenario and procedure specific coding

6.1. Hospital consultation codes

Elective procedure: appropriate add-on code to 0173 is 0145. If the procedure is performed during hospitalisation follow-up, the appropriate code is 0109.
Note: code 0109 cannot be coded post operatively.

6.1.1. Device Implant

- It is appropriate to code for a hospital consultation (0173+0145) on the day of device implant, provided the patient is evaluated before and after the procedure.
- It is appropriate to perform an ECG on the day of device implant. Use code 1230 if this is performed.
- It is appropriate to perform an ECG the following day after a device implant. Due to rule G and the classification of implant procedures as 'surgical' ***any codes claimed up to 30 days after such a procedure will be rejected.***

Note: code 1230 cannot be combined with any ICU code (1204, 1205, 1206, 1208 or 1209). Any ECG performed while a patient is in Intensive Care, is regarded as part of standard ICU care, according to SAMA and the MDCM.

6.1.2. Implantable loop recorder

- It is inappropriate to code for an ECG interpretation on the day of the procedure (1230), as one of the reasons for the ILR (Implantable loop recorder) is a negative ECG work-up prior to implantation.

6.1.3. Implantable lead extractions

- Considering the high risk of post lead extraction, transthoracic echocardiography and category 2 ICU management post-operatively for 1 day is appropriate (0173+0145+1205)

6.1.4. Invasive diagnostic cardiology

- It is appropriate to code for a hospital consultation (0173) on the day of the procedure provided the patient is evaluated before and after the procedure. Most cardiology patients are complex and require clinical evaluation before and after the procedure.
- If the procedure is performed electively the appropriate add-on code to 0173 is 0145.
- If the procedure is performed during hospital follow-up the appropriate code is 0109 (hospital follow-up).

Note: code 0109 (hospital follow-up) and ICU codes ***CAN BE*** coded for post angiography as coronary angiography and Percutaneous Coronary Interventions (PCI) are not regarded as surgical procedures.

- It is appropriate to perform an ECG on the day of the intervention. Use code 1230 if this is performed.
- It is appropriate to perform an ECG the following day after the intervention.

Note: code 1230 cannot be combined with an ICU code and if you are coding 1204, 1205, 1206, 1209 or 1210 any ECG performed is regarded as part of ICU care according to SAMA and the MDCM.

6.1.5. Interventional coronary procedures

- It is appropriate to code for a hospital consultation (0173 + 0145) on the day of cardiac catheterisation.
- If the patient is stented it is appropriate to code 1205 (category 2 ICU) on the day of the procedure and 1204 (category 1 ICU/high care) on day 2.
- It is not unusual to perform an ECG on the day of cardiac catheterisation and code 1230 may be coded. Follow-up ECGs may not be coded for.
- If the patient is kept in hospital longer the 2 days additional hospital visits (0109) may be billed as required.
- If the patient needs additional ICU care, code for the appropriate level of care as indicated.

6.1.6. List of codes for hospital consultation

MDCM	Description
0173	First hospital consultation/visit of an average duration and/or complexity. Includes counselling with the patient and/or family and co-ordination with other health care providers or liaison with third parties on behalf of the patient
0145 (add-on)	For consultation/visit AWAY from the medical doctor's home or rooms (non-emergency): ADD only to the consultation/visit items 0190-0193, items 0173-0175, items 0161-0164, items 0166-0169 or item 0109 as appropriate. Note: Only one of items 0145, 0146, 0126 or 0147 may be coded and not combinations thereof
0109	Hospital follow-up visit to patient in ward or nursing facility - Refer to general rule G(a) for post-operative care (may only be coded once per calendar day) (not to be used with items 0111, 0146, 0147, 0166-0169 or ICU/High Care items 1204-1214).
1204	Intensive care: Category 1: Cases requiring intensive monitoring (to include cases where physiological instability is anticipated, e.g. diabetic pre-coma, asthma, gastro-intestinal haemorrhage, etc.): Per calendar day
1205	Intensive care: Category 2: Cases requiring active system support (where active specialised intervention is required in cases such as acute myocardial infarction, diabetic coma, head injury, severe asthma, acute pancreatitis, eclampsia, flail chest, etc. Ventilation may or may not be part of the active system support): First day
1206	Intensive care: Category 2: Cases requiring active system support (where active specialised intervention is required in cases such as acute myocardial infarction, diabetic coma, head injury, severe asthma, acute pancreatitis, eclampsia, flail chest, etc. Ventilation may or may not be part of the active system support): Subsequent days, per calendar day
1208	Intensive care: Category 3: Cases with multiple organ failure or Category 2 patients which may require multidisciplinary intervention: First day (primary medical doctor)
1209	Intensive care: Category 3: Cases with multiple organ failure or Category 2 patients which may require multidisciplinary intervention: First day (per involved medical doctor)
1230	Professional component for a physician interpreting an ECG: Without effort

6.2. Device implantation

6.2.1. Subclavian venography

- Sometimes it is necessary, or even preferable, to perform a subclavian venography via the brachial vein to assess the axillary, cephalic and subclavian veins prior to implant. When this is performed it is a separate procedure and should be coded appropriately.
- Code 3545 and code 3563. Code 3563 is for contrast injection.
- ***Do not code for 3545+3563 if subclavian venography is not performed. Ensure you capture runs of the venogram for reference.***

MDCM	Description
3545	Venography: Per limb
3563	Direct intravenous for limb: ADD

6.2.2. Temporary pacemaker

- If a temporary pacemaker is used during the procedure use code 1273. Temporary pacing is not routinely performed during permanent pacemaker implant and therefore this cannot be regarded as unbundling.

MDCM	Description
1273	Insertion of temporary pacemaker (modifier 0005 is not applicable)

6.2.3. Implantable loop recorder (ILR)

- **The main problem with ILR is that there is no RPL code for ILR implant**. The consensus is that ILR implant is a simple procedure and that we will use code 1273 as a surrogate for implant AND removal. **The fee for implant (1273) includes the fee for removal. Do not code for removal.** We should continue with this practice until an acceptable ILR specific code exists.

MDCM	Description
1273	Insertion of temporary pacemaker (modifier 0005 is not applicable)
1258	Pacemaker/pulse generator/neurostimulator: Permanent - single chamber
1266	Resiting pacemaker/pulse generator/neurostimulator generator
0883	Removal: Implant, e.g. buried wire/pin/rod, superficial

Note:

The code was changed from 1258 to 1273 in view of the newer devices which is small and easy to implant. It seems inappropriate to code 1258. Coding 1258 would be considered if implanting an older device which requires internal suturing. ***{Dr JP Theron}***

There seems to be a difference in opinion with regards to the Reveal Implantable loop recorder. Codes 1258 is used, with CPT 33282 as comparable CPT for implantation. For removal code 1266 or code 0883 is used. This needs to be a continuous discussion, until a proper code can be introduced.

6.2.3.1 Example of coding for implantable loop recorder (ILR)

Standard codes

0173 First hospital consultation

0145 For consultation/visit away from Drs home or rooms. ADD ON CODE.

1273 Insertion of temporary pacemaker (M0005 not applicable).

Follow-up

Use code 1268 for interrogation of an ILR during follow-up in rooms.

Acceptable codes to use for newer devices:

MDCM	Description
0173	First hospital consultation/visit of an average duration and/or complexity. Includes counselling with the patient and/or family and co-ordination with other health care providers or liaison with third parties on behalf of the patient
0145 (add-on)	For consultation/visit AWAY from the medical doctor's home or rooms (non-emergency): ADD only to the consultation/visit items 0190-0193, items 0173-0175, items 0161-0164, items 0166-0169 or item 0109 as appropriate. Note: Only one of items 0145, 0146, 0126 or 0147 may be coded and not combinations thereof
1273	Insertion of temporary pacemaker (modifier 0005 is not applicable)
1268	Threshold testing: Own equipment

OR

Acceptable codes to use for older devices:

MDCM	Description
0173	First hospital consultation/visit of an average duration and/or complexity. Includes counselling with the patient and/or family and co-ordination with other health care providers or liaison with third parties on behalf of the patient
0145 (add-on)	For consultation/visit AWAY from the medical doctor's home or rooms (non-emergency): ADD only to the consultation/visit items 0190-0193, items 0173-0175, items 0161-0164, items 0166-0169 or item 0109 as appropriate. Note: Only one of items 0145, 0146, 0126 or 0147 may be coded and not combinations thereof
1258	Pacemaker/pulse generator/neurostimulator: Permanent - single chamber
1268	Threshold testing: Own equipment

6.2.4. Single chamber pacemaker (SCPM)

- The main unresolved issue regarding SCPM implant is **coding 1270 for device programming**. The description of code 1270 is 'Programming of atrio-ventricular sequential pacemaker'. Technically a SCPM is not an AV sequential pacemaker and medical funders could use this as a reason not to reimburse code 1270. On the other hand, there is no code for programming a SCPM and ***we recommend members continue to use code 1270 and refer non-payment to the SASCI ExCo.***

6.2.4.1. Example of coding for single chamber pacemaker

Standard codes

0173 First hospital consultation
0145 For consultation/visit away from Drs home or rooms. ADD ON CODE.
1258 Pacemaker: permanent single chamber
1268 Threshold testing (RV)
1270 Programming of atrio-ventricular sequential pacemaker/pulse generator/ neurostimulator

Add on codes

1273 Insertion temporary pacemaker (modifier 005 not applicable)
1268 Threshold testing (temporary pacemaker – if used during procedure)
3545 Venography: per limb
3563 Direct intravenous for limb: ADD

Follow-up

Use codes 1268 + 1270 for interrogation and programming of a SCPM in rooms

6.2.5. Dual chamber pacemaker (DCPM)

- **Multiple use of code 1268. An interpretation difference pertaining to code 1268 exists.** In a "fee for service structure" it is ethical to code for a procedure, if that procedure was performed. Code 1268 is described as "threshold testing" but does not clarify further. Many cardiologists are coding 1268 multiple times, depending on the number of leads inserted.
- Other cardiologists have been coding 1268 once no matter how many leads are tested.
- SASCI recommends using code 1268 once for a SCPM; twice for a DCPM; and three times for a BiVPM. In addition, add 1268 for threshold testing with a temporary pacemaker (when inserted). When doing this it is important to specify a description of the lead tested adjacent to the code. If you have rejections based on multiple use of code 1268, please refer it to SASCI.

6.2.5.1. Example of coding for Dual chamber pacemaker

Standard codes

0173 First hospital consultation
0145 For consultation/visit away from Drs home or rooms. ADD ON CODE.
1259 Pacemaker: permanent dual chamber
1268 Threshold testing (RV)
1268 Threshold testing (RA) (two leads are tested therefor two leads should be coded)
1270 Programming of atrio-ventricular sequential pacemaker/pulse generator/ neurostimulator

Add on codes

1273 Insertion temporary pacemaker (modifier 005 not applicable)
1268 Threshold testing (temp. pacemaker)
3545 Venography: per limb
3563 Direct intravenous for limb: ADD

Follow-up

Use 1270+1268(RV) + 1268(RA) for interrogation and programming a DCPM in rooms.

6.2.6. Implantable cardioverter defibrillator (ICD)

- **Unit differential between dual and single chamber ICD.** There is a 74-unit differential between a single and a dual chamber pacemaker, but there exists only a single code for ICD. Therefore, there is no additional remuneration for a dual chamber ICD versus a single chamber ICD. We need a new code to differentiate between a single lead ICD and dual lead ICD.

- **Code 1264 – Test for implantable transvenous defibrillator.** Most cardiologists would use this code when performing a defibrillation threshold test (DFT). The description of the code does not mention a defibrillation threshold test specifically, and it only refers to a 'test'. Some cardiologists, therefore, assume it is correct to use this code in every ICD implant regardless of whether a DFT is performed or not. ***We would agree to code for 1264 routinely – whether or not a DFT has been performed.***

6.2.6.1. Example of coding for an Implantable cardioverter defibrillator

Standard codes

0173 First hospital consultation
0145 For consultation/visit away from Drs home or rooms. ADD ON CODE
1263 Insertion transvenous implantable defibrillator
1268 Threshold testing (RV)
1268 Threshold testing (RA) (if a dual chamber ICD is implanted)
(two leads are tested therefor two leads should be coded)
1270 Programming of atrio-ventricular sequential pacemaker/pulse generator/ neurostimulator
1264 Test for implantable transvenous defibrillator

Add on codes

1273 Insertion temporary pacemaker (modifier 005 not applicable)
1268 Threshold testing (temp. pacemaker)
3545 Venography: per limb
3563 Direct intravenous for limb: ADD

Follow-up

Use 0170+1268(RV)+1268(RA) for interrogation and programming a dual chamber ICD in rooms
Use 1270+1268 for a single chamber ICD

6.2.7. Biventricular pacemaker (BiVPM)

- **LV lead placement**
- Currently the only code that exists for coronary sinus lead placement is:
    - 1272 *[Coronary sinus lead implantation (add to either item 1258: Pacemaker: Permanent - single chamber or item 1259: Pacemaker: Permanent - dual chamber)]* (RVU 120.6).
    - This is equivalent to a temporary lead placement.
- This code has been 'under review' for several years. When a code is 'under review' it is marked as a "Z-code" in the MDCM. The idea of this is to see if the code is actually used in the real world. The problem is that if a Z code is used on an invoice, medical funders reject it automatically with a comment of 'under review'. A motivation is requested. This obviously discourages cardiologists from using new codes.
- ***We DO NOT recommend that code 1272 is used for 2 reasons:***
    - ***it has been under review since 2009 or longer***
    - ***it has the same clinical unit value as a temporary pacemaker***
- **Electrophysiological mapping**. Use of this code as part of BiVPM implantation is endorsed. Code 1262 is for electrophysiological mapping but used as a surrogate code for LV lead implant and cannulation of the coronary sinus. Continue to use this code until a suitable alternative is available. ***Report any non-payment or request for motivation to CASSA.***

6.2.7.1. Example of coding for a Biventricular pacemaker

Standard codes WITHOUT ICD functionality

0173 First hospital consultation.
0145 For consultation/visit away from Drs home or rooms. ADD ON CODE.
1259 Pacemaker: permanent dual chamber.
1262 Electrophysiological mapping.
3559 Selective first order catheterisation (of coronary sinus)
1268 Threshold testing (RV).
1268 Threshold testing (RA) (multiple leads are tested therefor multiple leads should be coded)
1268 Threshold testing (LV) (multiple leads are tested therefor multiple leads should be coded)
1270 Programming atrio-ventricular sequential pacemaker.

Note: *if no RA lead is placed (for example: chronic AF) change code 1259 to 1258 and delete 1268 (RA).*

Standard codes WITH ICD functionality

0173 First hospital consultation.
0145 For consultation/visit away from Drs home or rooms. ADD ON CODE.
1259 Pacemaker: permanent dual chamber.
1262 Electrophysiological mapping.
1263 Selective first order catheterisation (of coronary sinus)
1268 Threshold testing (RV).
1268 Threshold testing (RA) (multiple leads are tested therefor multiple leads should be coded)
1268 Threshold testing (LV) (multiple leads are tested therefor multiple leads should be coded)
1270 Programming atrio-ventricular sequential pacemaker.
1264 Test for implantable cardioverter defibrillator (if DFT is performed)

Note: *if no RA lead is placed (for example: chronic AF) delete 1268 (RA).*

Add on codes

1273 Insertion temporary pacemaker (modifier 005 not applicable) (if used – usually RV lead is used as a 'temporary' pacing lead).
1268 Threshold testing for temporary pacemaker.
3545 Venography: per limb.
3563 Direct intravenous for limb: ADD

Follow-up

Use 1270+1268(RA)+1268(RV)+1268(LV) when coding for interrogation and programming a BiVPM in rooms. Delete 1268(RA) if no atrial lead is present or tested.

6.2.8. Lead extractions

- If a venography is required during the lead extraction procedure, it should be coded using code 3545 and code 3563. Code 3563 is for contrast injection.
- If a temporary pacemaker is used during the procedure use code 1273.
- There are serious coding issues with lead extractions. This is a very risky procedure in many cases and there is no coding mechanism at this stage. There is no differentiation between the method and route used for lead extraction. At this stage the remuneration provided for lead extraction does not reflect the risk or difficulty level of this procedure.

6.2.8.1. Example of coding for lead extraction

0173 First hospital consultation.
0145 For consultation/visit away from Drs home or rooms. ADD ON CODE.
1205 Intensive care category 2.
1266 Resitting pacemaker generator.
1267 Repositioning catheter electrode.
3620 Echo: colour flow mapping
3621 Echo: M-mode
3622 Echo: 2D
3625 Echo: Doppler

Note: *if the generator is replaced with a new generator, then replace code 1266 with 1265 (renewal of pacemaker unit only). Code 1206 for the following day.*

6.2.9. Intra-aortic balloon pump

- Code 1356 is used to code the insertion and removal of an intra-aortic balloon pump.
- It is not appropriate to code twice for implant and removal of the intra-aortic balloon pump
- The use of modifier 0005 is not applicable when coding for an intra-aortic balloon pump

6.2.10. Device revisions

- There are currently no specific codes available for upgrading of devices.
- Threshold testing should be done per implanted lead (1268)
- Pulse generator renewal may be coded
- Coronary sinus lead implantation may be coded as an add-on code if it was inserted

6.3. Invasive diagnostic cardiology

6.3.1. Endomyocardial biopsy

- Code 1250 for endomyocardial biopsy excludes code 1252 or 1253. Considering the risk involved with endomyocardial biopsy and the fact that it is usually performed in centres where heart transplantation is performed this should be ignored. Code 1250 can be used in combination with 1252 or 1253.

6.3.2. Coronary angiogram with or without left heart catheterisation

- Code 1252 is the standard code used for left heart catheterisation and coronary angiogram. It comprises 140 units broken down into 70 units for left heart catheterisation and 70 units for coronary angiogram.
- There is no code for separate left heart catheterisation or coronary angiogram as in the CPT so if coronary angiogram is performed without LV gram and LV pressures code 1252 still applies.

6.3.3. Aortogram in combination with a coronary angiogram

- Code 3557 should be used in conjunction with 1252 when the clinical need arises, such as: aortic regurgitation, aorto-annular ectasia, vascular complications of the aorta, and difficulty in cannulating the coronary arteries, difficulty in cannulating grafts.
- The MDCM states that 3557 may not be coded as an "en passant" procedure on the way to selective angiography and it should, therefore, not be used routinely.
- ***Medical funders will interpret "en passant" to mean that 3557 should not be used under ANY circumstances together with 1252. This is incorrect – 3557 should not be coded for if it is not done or the aortogram is performed 'in passing'. If there is a legitimate clinical reason to perform an ascending aortogram (including searching for unmarked and unknown bypass grafts) 3557 SHOULD BE CODED FOR.***

6.3.4. Right heart catheterisation

- Code 1253 encompasses right heart catheterisation. It includes all procedures related to this except endomyocardial biopsy. Whether or not right heart injection is included is unclear at this point.
- Note that pressure tracings are regarded as proof for right heart catheterisation.
- There should be no issues with application of this code.

6.3.5. Pulmonary artery(s) catheterisation

- Catheterisation of the pulmonary arteries are seen as selective catheterisation with arteriogram. Therefore codes 3559, 3560 and 3562 would apply. I would suggest using 3559 for the left and right pulmonary artery and 3560 and 3562 when injections are made into specific branches [Dr JP Theron]
    - There is no specific code for the main pulmonary artery and if specifically injected I would consider using 3559 as a code for the MPA [Dr JP Theron]

6.3.6. Coronary artery bypass graft(s) catheterisation

- The intention of code 1254 is to code for catheterisation of ALL coronary artery bypass grafts including multiple venous grafts, arterial grafts and left or right internal mammary grafts. The unit value for this is only 40 units.

- To place this in perspective, consider that a typical coronary bypass case has 2-3 venous grafts which are essentially first order vessels and a LIMA to LAD which is a second order vessel. If one had to code according to the vascular surgery or radiological system that would equate to 3559; 3559+M6305; 3560 for 2 venous grafts and a LIMA to LAD. This comes to a unit value of 279 units (95+75+109).
- Considering the above, we encourage cardiologists to code 1254 for venous grafts plus 3560 for LIMA or RIMA to LAD. If both RIMA and LIMA are catheterised, then 3560 should be applied twice with modifier M6305 applied to the second code.
- Usually when the LIMA is catheterised the subclavian artery is also injected to exclude subclavian stenosis and steal syndrome. In this case code 3559 would be used for the subclavian artery.
- When a LIMA (or RIMA) is injected to assess prior to surgery then code 3560 is appropriate.
- LIMA LAD; subclavian artery; 2 venous grafts: 1254; 3559 (subclavian); 3560 (IMA)
- Three venous grafts only: 1254
- RIMA to RCA; LIMA to LAD and 3 venous grafts: 1254; 3560 (LIMA); 3560+M6305 (RIMA)

6.3.7. Renal angiogram during a coronary catheterisation

- Sometimes, during a cardiac catheterisation, a renal angiogram is performed. If this practice is performed, we would encourage there to be evidence of uncontrolled hypertension, hypertensive heart disease or severe hypertension during the cardiac catheterisation. In addition, use ICD10 code I10 (hypertension), E11.9 (hypertensive heart disease without heart failure) or E11.0 (hypertensive heart disease with heart failure) as secondary diagnostic codes.
- For example: if a cardiac catheterisation is performed for possible stable angina (ICD10 code I20.8) and a renal angiogram is performed for severe hypertension with LV hypertrophy the secondary code will be E11.9.
- When a renal angiogram is performed two first order vessels are catheterised: the left AND right renal arteries. The correct coding for this according to the eMDCM is 3559 (left renal artery) and 3559+M6305 (right renal artery). Remember that each time you apply a duplicate angiography code you need to use M6305 with the second and subsequent codes. Renal angiogram alone: 3559 (LRA); 3559+M6305 (RRA)
- We would discourage the practice of “en passant” renal angiography without clinical indication.

6.3.8. Vascular closure

- The remuneration for deployment of vascular closure devices have been a contentious issue for many years although adoption of radial artery access more recently, has made it less common.
- It is however an accepted practice, that the closure of a wound, incision or puncture site forms part of the procedure being done. Hence the absence of an operator code (MDCM) for vascular closure with or without devices.
- SASCI understands that hospitals will bill for the actual device when used and funders generally pay for that, but they do not pay for the deployment of the device (by the cardiologist/operator in this instance). This dichotomy has given rise to some confusion and needs to be clarified.
- A meta-analysis, as recent as 9 September 2022, looked at data on >3000 patients, showed that whilst time to hemostasis (cessation of bleeding from a blood vessel) is significantly

shortened, and allows earlier ambulation and possible earlier discharge there was no clinical superiority in the usage of vascular closure devices versus manual compression.

- In view of this meta-analysis, SASCI agrees that **routine** use of vascular closure devices have no significant clinical benefit over and above manual compression. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9482152/

- SASCI would like to emphasize the following:
  - SASCI therefore do not support the routine use of vascular closure devices.
  - SASCI believes that when the vessel needs to be exposed, either because of severe vascular disease at the site of puncture or to effect closure after a complication that has occurred e.g. excessive bleeding, dissection etc. the use of a closure device and operator time should be reimbursed.
  - SASCI believes that when large sheaths (=/> 8F) used for implantation of large devices the closure device and operator time should be reimbursed (as adequate closure requires considerable skill and time).
  - Proper clinical motivation should be submitted with such a large sheet claim.
  - SASCI propose that the operator time and skill need to be reimbursed utilising Rule C (Item 6999).
  - Item 1408 - Placement of Hickman catheter or similar (including subcutaneous port) (RVU = 91.00) is a fair comparator code to use the insertion of a vascular closure device.

6.3.9. Intravascular ultrasound and optical coherence tomography

- When performing an IVUS there are two codes which may be applied.
- The first is 5117 which is for a diagnostic procedure only. Use 5117 when NO angioplasty; stent is performed. It carries twice the value as the interventional ultrasound code (88 units) but may only be used ONCE per angiography procedure even if more than one vessel is applied.
- An example of use of code 5117 would be when assessing a lesion with IVUS and then deciding not to stent.
- When an angioplasty or stent is performed then code 5118 should be used. This applies specifically to IVUS during angioplasty or stenting. It is half the value of 5117 and may be applied TWICE per angiographic procedure if performed in more than one vessel.
- There is no code for optical coherence tomography, but the procedure is identical to IVUS, and we therefore encourage using the same codes for OCT.
- **3619** is a coronary specific code. It describes IVUS performed to guide insertion of a coronary stent.
- **3596** is a non-coronary specific code. Similar to the above but does not specify coronary vessels.
- IVUS of left main; LAD and RCA (without angioplasty and stenting): 5117 only

6.3.10. FFR and IFR

- Up to now we have been using IVUS codes interchangeably with IVUS and FFR/IFR. This is acceptable when ONLY FFR/IFR or IVUS/OCT are performed but sometimes these procedures are performed in tandem.
- In cases where FFR/IFR are performed together with IVUS/OCT we would encourage the use of add on codes for FFR. These codes are 1296 for the first vessel where FFR is performed and 1298 for any additional vessels.
- A standard motivation letter when FFR/IFR is performed in combination with IVUS, is suggested. Not all Funders accept codes that has been changed after RPL 2006.
- OCT of left main; LAD and RCA (without angioplasty and stenting) as well as FFR of left main/LAD and RCA: 5117+1296 (LAD/left main) 5117 + 1298 (RCA)
- IFR of distal RCA: 5117 only
- IFR and stenting of distal RCA: 5118
- IVUS and FFR of LAD with stenting and IVUS and FFR of RCA: 5118+1296(LAD); 5118+1298(RCA)
- IVUS and FFR of LAD, RCA and LCX (with stenting of all three vessels): 5118+1296 (LAD); 5118+1298(LCX); 1298 (RCA).
    - Note 5118 may only be applied twice. 1298 is applied twice because three vessels were investigated with FFR.
- **Note: 5117 may be used only once per angiographic procedure**
- **Note: 5118 may be used a maximum of twice per angiographic procedure**

6.3.11. Provocation testing

- No codes available

6.3.12. Intra-cardiac echocardiography

- No codes available

6.3.13. List of coding for invasive diagnostic cardiology

MDCM	Description
0173	First hospital consultation/visit of an average duration and/or complexity. Includes counselling with the patient and/or family and co-ordination with other health care providers or liaison with third parties on behalf of the patient
0145 (add-on)	For consultation/visit AWAY from the medical doctor's home or rooms (non-emergency): ADD only to the consultation/visit items 0190-0193, items 0173-0175, items 0161-0164, items 0166-0169 or item 0109 as appropriate. Note: Only one of items 0145, 0146, 0126 or 0147 may be coded and not combinations thereof
1205	Intensive care: Category 2: Cases requiring active system support (where active specialised intervention is required in cases such as acute myocardial infarction, diabetic coma, head injury, severe asthma, acute pancreatitis, eclampsia, flail chest, etc. Ventilation may or may not be part of the active system support): First day
1206	Intensive care: Category 2: Cases requiring active system support (where active specialised intervention is required in cases such as acute myocardial infarction, diabetic coma, head injury, severe asthma, acute pancreatitis, eclampsia, flail chest, etc. Ventilation may or may not be part of the active system support): Subsequent days, per calendar day

1250	Endomyocardial biopsy
1252	Left heart catheterisation with coronary angiography (with or without biopsy)
1253	Right heart catheterisation (with or without biopsy)
1254	Catheterisation of coronary artery bypass grafts and/or internal mammary grafts
1296	Fractional flow reserve (FFR): First vessel (add-on code)
1298	Fractional flow reserve (FFR): Each additional vessel (add-on code)
3557	Catheterisation aorta or vena cava, any level, any route, with aortogram/cavogram
3558	Translumbar aortic puncture, with full study
3559	Selective first order catheterisation, arterial or venous, with angiogram/ venogram
3560	Selective second order catheterisation, arterial or venous, with angiogram/ venogram
3562	Selective third order catheterisation, arterial or venous, with angiogram/ venogram
3596	Intravascular ultrasound per case, arterial or venous, for intervention
3619	Intravascular ultrasound imaging assesses the atherosclerotic process to guide the placement of an intracoronary stent. This item may be applied once per vessel (left anterior descending territory, circumflex territory and/or right coronary territory) in which a stent or multiple stents are deployed
5117	Diagnostic intravascular ultrasound (IVUS) imaging or wave wire mapping (without accompanying angioplasty). May be used only once per angiographic procedure
5118	Diagnostic intravascular ultrasound imaging or wave wire imaging (with accompanying angioplasty or accompanying intravascular ultrasound imaging or wave wire mapping in a different coronary artery [LAD (left anterior descending), circumflex or right coronary artery]. May be used a maximum of twice per angiographic procedure

7. Interventional cardiac procedures

7.1. Angioplasty

- Codes 1276, 1278 and 1280 include the codes used for angioplasty whether alone or with pre-dilation/post dilation. An important point regarding angioplasty for coronary disease is that the description clearly states the words ‘per lesion’. **This means that – unlike stenting – angioplasty can be applied multiple times during a single angiographic procedure.**
- This does not mean that it can be applied multiple times for a single lesion. If a LAD is stented after pre dilation and the stent is post dilated, the angioplasty code can only be applied once for that lesion.
- For example: If a LAD-D1 bifurcation and proximal RCA is stented the angioplasty codes would be 1252 + 1276 (LAD); 1278 (D1); 1280 (RCA).
- If angioplasty is performed on a long lesion encompassing more than one vessel segment this does not mean that one can code for more than one lesion. If a single balloon is used the code should only be applied once.

- **When angioplasty be applied to more than 3 lesions code 1280 needs to be applied multiple times with descriptions of the lesion according to vessel segment. For example: 1252 + 1276 (LAD); 1278 (LCX); 1280 (proximal RCA); 1280 (distal RCA).**
- The surgical modifier M0005 DOES NOT apply with multiple instances of 1280. It is already a reduced code AND PCI is regarded as a medical procedure.
- Pulmonary angioplasty will entail a right heart catheterisation (1253), for Main Pulmonary artery selective catheterisation, first order (3559) and subsequent order vessels 3560 and 3562, as well as Balloon procedures (1282)
- Please keep in mind that an Errata has been sent by SAMA, to the Healthcare industry with regards to the usage of code 1252 and 1276:
  - code 1252 refers to coronary catheterisation, which is a diagnostic procedure to determine if there are narrowing in the coronary arteries
  - code 1276 refers to an angioplasty, coronary lesion 1, 1st cardiologist - the latter is a therapeutic modality to dilate the narrowing with a balloon
  - code 1252 and code 1276 may be used in conjunction with one another

7.2. Drug eluting balloon

- The issue of drug eluting balloons has been previously discussed with medical funders. Application of a drug eluting balloon is regarded as an implant by funders and therefore the consensus with medical funders is that cardiologists should code for an intracoronary stent when coding for use of a drug eluting balloon. Since application of drug eluting balloon is considered as a 'stent' the same rules regarding stenting apply. (See stenting below).

7.3. Coronary Stenting

- Stenting remains a contentious issue and is in a constant state of flux. Even the medical funders cannot seem to consequently apply the rules.
- The main issue with stenting is the fact that the description includes the words "per vessel". We interpret "per vessel" to mean any of the main coronary arteries and their segments and significant branches. A significant branch would be defined as a vessel at least 1.5mm in diameter with a reasonable distal vascular bed.
- SAMA defines "per vessel" as only the LAD; LCX and RCA. When the left main artery is stented SAMA regards the left main as part of either the LCX or LAD. In other words, if a left main is stented as well as LAD, SAMA regards it as incorrect to code for a stent in the LMCA as well as the LAD.
- The SAMA ruling arose when LM stenting was never done. The technology has advanced considerably, and LM stenting has become an important and valid addition. LM should therefore be considered as another significant independent vessel {Dr Tom Mabin}
- Previously stenting was usually only performed for one or two vessels. Today complex bifurcation lesions, chronic total occlusions and stenting for three vessel disease is routinely performed. We strongly feel that the current state of affairs does not reflect the complexity, time and risk of procedures performed.
- ***Note**: modifier M0005 DOES NOT APPLY to stenting (1286) as this is an add on code.*
- We suggest that cardiologists code per lesion as with angioplasty above and add the description of the vessel stented. This is perfectly ethical if the procedure has been done. This may result in payment or non-payment.

- NOTE that the only way to guarantee payment when using code 1286 is not to use the code more than 3 times per procedure and not to use it more than once for the LCX, LAD or RCA.
- **Examples of angioplasty and stenting: Codes in red may result in non-payment**
  - PTCA distal RCA and stent LAD: 1252 + 1276 +1286 (LAD); 1278 (RCA)
  - Bifurcation stent LAD-D1 (2 stent) and PTCA distal PDA and distal RCA. DEB on distal LCX: 1252 + 1276+1286 (stent LAD); 1278+1286 (stent D1); 1280+1286 (DEB LCX); 1280 (distal PDA); 1280 (distal RCA).
  - Stent mid LMCA and mid LAD: 1252 + 1276+1286 (mid LMCA); 1278+1286 (mid LAD).
  - Please remember to add the angiogram code 1252 as well (see clarification under angioplasty)
  - Code 5117 (IVUS) may be added if it has been done

7.4. Thrombus aspiration

- Thrombus aspiration is an additional procedure occasionally performed in a modern catheterisation lab especially in cases of acute myocardial infarction.
- 5016 – is not a coronary specific code and valued at 219 units. It is the code commonly used currently. It specifies “per vessel”.
- 1274 – is a coronary specific code and valued at 260 units. This code does not specify per vessel. Considering aspiration is commonly only coded for once per angiographic procedure we encourage the use of code 1274 because it is NOT under review.
- The reason for a higher unit value with code 1274 over 5016 is that thrombus aspiration carries substantially more risk and requires a significant more expertise to perform than in a large non-mobile artery for example.
- Notes pertaining to 5016 state that it is applicable to each named vessel. In cardiology cases 1274 will generally be used once.
- Encourage use of 1274 once per procedure where thrombus aspiration is performed regardless of method (manual or Angiojet).
- After several randomised trials and metanalyses, the ESC/ACC/AHA changed their guidelines in 2017 for aspiration thrombectomy from Class I to Class II (could be considered), leaving it to the discretion of the cardiologist. SASCI recommends a special motivation to be submitted for thrombus aspiration (1274).
- Thrombus aspiration has been reclassified as Class III. It has fallen into disrepute, but it can still be occasionally justified and therefore coded {Dr Tom Mabin}.

7.5. Atherectomy

- A similar situation exists with atherectomy (Rotablation). Multiple codes exist; 5014; 1284 and 1285.
- Code 5014 is similar to code 5016 and is a non-coronary specific code for atherectomy which carries a value of 341 units.
- Code 1284 is a coronary specific code which carries the value of 300 units.
- **We encourage consistency and considering 1284 best describes atherectomy performed in coronary arteries we encourage the use of 1284 when performing Rotablation.**
- Code 1284 carries the description “Single lesion”. Awaiting feedback from SAMA regarding use in multiple vessels/lesions.
- Notes pertaining to Code 5014 say that the code is applicable to each named vessel or stented segment.

- An additional advantage of code 1284 is that it is associated with a second cardiologist code 1285 which can be used when the procedure is carried out with two operators. Code 1285 carries a unit value of 180 units.
- **Currently we encourage use of 1284 for first operator and 1285 for second operator. We also encourage multiple use of the code up to 3 times per procedure if it is performed more than once in different main vessels (e.g. LAD and LCX or LAD and RCA).**
- There is new technology which may be used instead of, or in addition to, RA. Shockwave Intravascular Lithotripsy (IVL). I suggest 1285+1286 as well. The catheter is expensive, but will be used by selective operators experienced with RA funding has not yet been approved but discussions pending {Dr Tom Mabin}

7.6. Microcatheter usage

- Microcatheter usage has become routine in certain complex coronary cases including chronic total occlusions whether via the anterograde approach or retrograde approach.
- Microcatheters are also used to hold position in vessels while wires are exchanged particularly with Rotablation use.
- In these instances, it is appropriate to code for microcatheter usage with code 3570. The code is only applied once per vessel.
- Please note that at this stage code 3570 only pertains to cerebral and pulmonary vessels. SASCI and SA Heart are working towards having coronary vessels included in the notes. It is inappropriate and unethical that radiologists are compensated for microcatheter usage in intracranial and pulmonary vessels and cardiologists are not compensated for microcatheter usage in coronary arteries.
- **Encourage use of 3570 when a microcatheter is used (regardless of type) per vessel (generally once per Rotablation or anterograde CTO and twice with retrograde CTO).**

7.7. Distal protection devices

- In 2018 the ESC (European Society of Cardiology) has downgrades distal protection devices from Class I to Class IIa in Saphenous vein grafts only. The usage of code 1278 is suggested, with motivation {Dr Tom Mabin}

7.8. Proximal Optimisation Technique (POT)

- Dilation of the main coronary artery after bifurcation coronary stenting is a technique used to ensure optimal expansion of the stent and improved blood flow in the vessel.
- This technique involves dilating the main vessel (proximal to the bifurcation) using a balloon catheter to create a larger vessel diameter and improve blood flow.
- The value of performing a POT dilation after bifurcation coronary stenting is to ensure that the stent is fully expanded, and there is no residual stenosis or compression of the stent.
- It is crucial to ensure optimal flow to the side branch of the bifurcation and is mandated by official recommendations. It can also help prevent stent deformation, which can occur due to the strong forces created by the blood flow at the bifurcation site.
- In addition, POT dilation can help reduce the incidence of adverse cardiac events such as restenosis, stent thrombosis, and myocardial infarction. It can also improve long-term outcomes and decrease the need for repeat procedures or interventions.

- Overall, performing a POT dilation of the main coronary artery after bifurcation coronary stenting is a valuable technique that can improve the success and safety of the procedure and enhance patient outcomes.
- PCI of a bifurcation lesion requires special skills and time to do correctly and yields a superior long-term outcome for the patient.
- There is no code specifically for POT and therefor using an additional code 1276 is suggested.

MDCM	Description	RVU
1276	Percutaneous transluminal angioplasty: First Cardiologist: Single lesion	260.00

8. Secondary operators

- Today, many coronary procedures are complex requiring more than one operator. In some cases, a second operator code exist and should be applied.
- For coronary angioplasty, codes 1277; 1279 and 1281 are used for first, second and subsequent lesions.
- Code 1287 is used when a stent is implanted and a second operator is present.
- Atherectomy has a second operator code which may be applied = 1285.
- Balloon procedures have a second operator code that may be applied = 1283
- One practical method to distribute codes between operators is to list all the codes for the procedure including second operator codes and then to split the codes between operators proportional to the amount of involvement.
- When using the above method, the first operator needs to send codes to the medical funder first before the second operator can do so otherwise the medical funder will reject the claim.

9. Structural heart disease

9.1. Atrial septal defect closure (ASD)

Transcatheter closure of an Atrial septal defect is less invasive than open heart surgery. The recovery time is much quicker. Repairs range from relatively simple operations to more complex procedures depending on the location, size, and characteristics of the ASD. Several anatomical, device-related and physiological issues may limit its results and feasibility. Furthermore, associated defects or the occurrence of complications represent known limitations. Transcatheter ASD closure remain the first line procedure for an ASD closure.

For echocardiographic guidance, trans-oesophageal echocardiography (TEE) (3636) has long been the standard modality for ASD closure.

9.1.1. List of coding for ASD closure

MDCM	Description
1253	Right heart catheterisation (with or without biopsy)
1282	Use of balloon procedures including: First cardiologist: Atrial septostomy; Pulmonary valve valvuloplasty; Aortic valve valvuloplasty; Coarctation dilation; Mitral valve valvuloplasty
1288	Cardiac catheterisation for congenital heart disease: All ages above 1 year old
3636	Trans-oesophageal echocardiography including passing the device
3557	Catheterisation aorta or vena cava, any level, any route, with aortogram/cavogram
3620	Cardiac examination plus Colour Flow mapping
3621	Cardiac examination (MMode)
3622	Cardiac examination: 2 Dimensional
3625	Cardiac examinations + doppler

9.2. Patent foramen ovale closure (PFO)

Catheter-based procedures are commonly used to diagnose and treat heart-related problems, such as patent foramen ovale.

9.2.1. List of coding for PFO closure

MDCM	Description
1253	Right heart catheterisation (with or without biopsy)
1282	Use of balloon procedures including: First cardiologist: Atrial septostomy; Pulmonary valve valvuloplasty; Aortic valve valvuloplasty; Coarctation dilation; Mitral valve valvuloplasty
1288	Cardiac catheterisation for congenital heart disease: All ages above 1 year old
3636	Trans-oesophageal echocardiography including passing the device
3557	Catheterisation aorta or vena cava, any level, any route, with aortogram/cavogram
3620	Cardiac examination plus Colour Flow mapping
3621	Cardiac examination (MMode)
3622	Cardiac examination: 2 Dimensional
3625	Cardiac examinations + doppler

9.3. Left atrial appendage occlusion (LAA)

Left atrial appendage ligation is a procedure used to reduce the risk of stroke in patients with atrial fibrillation. Sealing off the appendage, prevent blood from circulating through and pooling in the left atrial appendage. This potentially decreases the risk of stroke.

A code is present in the MDCM for a LAA: Code 1360 - Closure: Left atrial appendage (LAA). This code falls under Chapter 6.3.1.2 - Cardiac surgery: Open heart surgery: Acquired conditions. The history regarding the creation and submission of code 1360 in unclear in the SAMA archives.

Best coding practise will be to use code 1360 for a percutaneous left atrial appendage occlusion.

9.3.1. List of coding for LAA occlusion

MDCM	Description
1253	Right heart catheterisation (with or without biopsy)
1282	Use of balloon procedures including: First cardiologist: Atrial septostomy; Pulmonary valve valvuloplasty; Aortic valve valvuloplasty; Coarctation dilation; Mitral valve valvuloplasty
1251	Transeptal puncture
3636	Trans-oesophageal echocardiography including passing the device
1340	Mitral valvuloplasty

Use code 1360 where funders do reimburse the usage of code 1360.

MDCM	Description
1360	Closure: Left atrial appendage (LAA)

9.4. Paravalvular leak closure

A paravalvular leak is a leak caused by a space between the patient's natural heart tissue and a previous valve replacement (mechanical valve or bioprosthetic valve). It most commonly affects the mitral valve, but it can also occur in the aortic and tricuspid valves.

9.4.1. List of coding for Paravalvular leak closure

MDCM	Description
1251	Transeptal puncture
1252	Left heart catheterisation with coronary angiography (with or without biopsy)
1253	Right heart catheterisation (with or without biopsy)
1282	Use of balloon procedures including: First cardiologist: Atrial septostomy; Pulmonary valve valvuloplasty; Aortic valve valvuloplasty; Coarctation dilation; Mitral valve valvuloplasty
3570	Microcatheter insertion, any cranial vessel and/or pulmonary vessel, arterial or venous (including guiding catheter placement)
3557	Catheterisation aorta or vena cava, any level, any route, with aortogram/cavogram
1215	Insertion of arterial pressure cannula
5076	Intravascular foreign body removal, arterial or venous, any route
3636	Trans-oesophageal echocardiography including passing the device

9.5. Chronic total occlusion percutaneous coronary intervention (CTO PCI)

A CTO PCI can take much longer than a less complicated PCI. A game plan is necessary to set contrast, radiation, and table time limits.

9.5.1. List of coding for CTO PCI

MDCM	Description
1276	Percutaneous transluminal angioplasty: First cardiologist: Single lesion
1278	Percutaneous transluminal angioplasty: First cardiologist: Second lesion
1280	Percutaneous transluminal angioplasty: First cardiologist: Third or subsequent lesions (each)
1284	Atherectomy: Single lesion: First cardiologist
1286	Insertion of intravascular stent: First cardiologist
1252	Left heart catheterisation with coronary angiography (with or without biopsy)
1253	Right heart catheterisation (with or without biopsy)
3570	Microcatheter insertion, any cranial vessel and/or pulmonary vessel, arterial or venous (including guiding catheter placement)
3557	Catheterisation aorta or vena cava, any level, any route, with aortogram/ cavogram
1215	Insertion of arterial pressure cannula
1218	Insertion of central venous line via subclavian or jugular veins
5118	Diagnostic intravascular ultrasound imaging or wave wire imaging (with accompanying angioplasty or accompanying intravascular ultrasound imaging or wave wire mapping in a different coronary artery [LAD (left anterior descending), circumflex or right coronary artery]. May be used a maximum of twice per angiographic procedure

3560	Selective second order catheterisation, arterial or venous, with angiogram/ venogram
3562	Selective third order catheterisation, arterial or venous, with angiogram/ venogram

Remember to look at Modifier 6305 when coding multiple catheterisation procedures (3557/3559/3560/3562)

9.6. Balloon aortic valvuloplasty (BAV) and Balloon mitral valvuloplasty (BMV)

Balloon aortic valvuloplasty is a procedure that can be performed on either a child or an adult.

- Codes 1290 & 1291 should only be used for paediatric cases
- Codes 1282 & 1283 should be used for adult cases

9.6.1. List of coding for Balloon aortic valvuloplasty and Balloon mitral valvuloplasty

MDCM	Description
1252	Left heart catheterisation with coronary angiography (with or without biopsy)
1290	Use of balloon procedures including: First paediatric cardiologist (33): Atrial septostomy; Pulmonary valve valvuloplasty; Aortic valve valvuloplasty; Coarctation dilation; Mitral valve valvuloplasty; Closure atrial septal defect; Closure of patent ductus arteriosus
1291	Use of balloon procedure as in item 1290: Second paediatric cardiologist (33)
1273	Insertion of temporary pacemaker (modifier 0005 is not applicable)
1282	Use of balloon procedures including: First cardiologist: Atrial septostomy; Pulmonary valve valvuloplasty; Aortic valve valvuloplasty; Coarctation dilation; Mitral valve valvuloplasty
1283	Use of balloon procedure as in item 1282: Second cardiologist
1268	Threshold testing: Own equipment
3557	Catheterisation aorta or vena cava, any level, any route, with aortogram/cavogram
1218	Insertion of central venous line via subclavian or jugular veins
1215	Insertion of arterial pressure cannula
3636	Trans-oesophageal echocardiography including passing the device
3625	Cardiac examinations + doppler
3569	Intravascular pressure studies, arterial or venous, once-off per case

9.7. TAVI (Transcatheter aortic valve implantation)

A report of the South African Heart Association developed by the South African Society of Cardiovascular Intervention (SASCI) and the Society of Cardiothoracic Surgeons of South Africa (SCTSSA) were formulated in October 2016 by Dr Hellmuth Weich and Dr Jacques Scherman. https://www.sasci.co.za/uploads/files/2016.10._Joint_consensus_statement_and_guideline_on_transcatheter_aortic_valve_implantation_SASCI_SA_Heart_TAVI_Guidelines_in_South_Africa.pdf

The national SHARE-TAVI registry (South African Heart Association Registries – TAVI registry) was launched in September 2014. The aim of this registry is to report on local outcomes and benchmark them to registries in the developed world.

The funding of TAVI remains a problem in the South African Private Healthcare Sector. Rule C (Comparable service) must be applied to all TAVI claims.

NOTE: The way a TAVI procedure is performed, has evolved. Participation in up-coming discussions during early 2025 will be of the utmost importance. SASCI urges all TAVI operators to partake in the discussions. Keep an eye out for the invitation.

9.7.1. List of coding for TAVI

MDCM	Description
1341	Aortic valve replacement
6999	Unlisted procedure/service: A procedure/service that is not listed in this edition of the coding structure may be provided. Refer to general rule C for the criteria to use item 6999
1275	Termination of arrhythmia - programmed stimulation and lead insertion of temporary pacer
1273	Insertion of temporary pacemaker (modifier 0005 is not applicable)
1268	Threshold testing: Own equipment
1282	Use of balloon procedures including: First cardiologist: Atrial septostomy; Pulmonary valve valvuloplasty; Aortic valve valvuloplasty; Coarctation dilation; Mitral valve valvuloplasty
1283	Use of balloon procedure as in item 1282: Second cardiologist
3557	Catheterisation aorta or vena cava, any level, any route, with aortogram/ cavogram
1218	Insertion of central venous line via subclavian or jugular veins
1215	Insertion of arterial pressure cannula
3620	Cardiac examination plus Colour Flow mapping
3621	Cardiac examination (MMode)
3625	Cardiac examinations + doppler
3622	Cardiac examination: 2 Dimensional

9.8. Septal artery embolization for hypertrophic cardiomyopathy

- Alcohol septal ablation is a non-surgical procedure to treat hypertrophic cardiomyopathy.

9.8.1. List of coding for Septal artery embolization (Alcohol septal ablation)

MDCM	Description
1252	Left heart catheterisation with coronary angiography (with or without biopsy)
1273	Insertion of temporary pacemaker (modifier 0005 is not applicable)
1276	Percutaneous transluminal angioplasty: First cardiologist: Single lesion
1277	Percutaneous transluminal angioplasty: Second cardiologist: Single lesion
3560	Selective second order catheterisation, arterial or venous, with angiogram/ venogram
3562	Selective third order catheterisation, arterial or venous, with angiogram/ venogram
3570	Microcatheter insertion, any cranial vessel and/or pulmonary vessel, arterial or venous (including guiding catheter placement)
3636	Trans-oesophageal echocardiography including passing the device

9.9. Atrial Flow Regulator (AFR)

- Atrial flow regulators have been used with success in the management of heart failure as well as severe pulmonary hypertension
- Code 1288 may only be used if a congenital defect is present in the heart

9.9.1. List of coding for Atrial flow regulators (AFR)

MDCM	Description
1282	Use of balloon procedures including: First cardiologist: Atrial septostomy; Pulmonary valve valvuloplasty; Aortic valve valvuloplasty; Coarctation dilation; Mitral valve valvuloplasty
1283	Use of balloon procedure as in item 1282: Second cardiologist
1288	Cardiac catheterisation for congenital heart disease: All ages above 1 year old
1253	Right heart catheterisation (with or without biopsy)
3636	Trans-oesophageal echocardiography including passing the device
3557	Catheterisation aorta or vena cava, any level, any route, with aortogram/cavogram
3620	Cardiac examination plus Colour Flow mapping
3621	Cardiac examination (MMode)
3622	Cardiac examination: 2 Dimensional
3625	Cardiac examinations + doppler
1251	Transeptal puncture

10. Non-Cardiac Interventions

10.1. Renal stenting

- Renal stenting is a procedure that can be done by Cardiologist due to their experience with intravascular procedures and stent deployment.
- Renal angiogram: 3559 (LRA); 3559+M6305 (RRA)
- Code 5066 does include the angioplasty, drug eluting balloon as well as the stent.
- Code 5010 is only if an angioplasty was done.

10.1.1. List of coding for Renal stenting

MDCM	Description
3559	Selective first order catheterisation, arterial or venous, with angiogram/venogram
5010	Percutaneous transluminal angioplasty: Renal/Visceral/Brachiocephalic
5066	Stent insertion: Renal/visceral/brachiocephalic – including percutaneous transluminal angioplasty (PTA), including the use of a drug eluting balloon (DEB)

10.2. Carotid artery stenting

- Cardiologists and Vascular surgeons are performing carotid artery stenting.
- It is important to remember that code 5068 include the angioplasty, drug eluting balloon as well as the stent insertion.
- Use code 5012 when only a carotid angioplasty is performed

10.2.1. List of coding for Carotid stenting

MDCM	Description
3557	Catheterisation aorta or vena cava, any level, any route, with aortogram/cavogram
3570	Microcatheter insertion, any cranial vessel and/or pulmonary vessel, arterial or venous (including guiding catheter placement)
5012	Percutaneous transluminal angioplasty: Extracranial Carotid/Vertebral – stand alone procedure
5068	Stent insertion: Extracranial carotid/vertebral - including percutaneous transluminal angioplasty (PTA) - stand alone procedure, including the use of a drug eluting balloon (DEB)

10.2.1.1. Iliac artery stenting

- Cardiologists and Vascular surgeons are performing iliac artery stenting
- It is important to remember that code 5060 and code 5004 may be coded twice; once for the left iliac artery (LIA) and once for the right iliac artery (RIA). Do not code 5004 and 5060 for the same vessel. Code 5060 already includes PTA/DEB.

10.2.2. List of coding for Iliac artery stenting

MDCM	Description
5060	Stent insertion: Iliac/subclavian/AV fistula – including percutaneous transluminal angioplasty (PTA), including the use of a drug eluting balloon (DEB)
5004	Percutaneous transluminal angioplasty, arterial or venous, iliac vessel or subclavian vessel
3559	Selective first order catheterisation, arterial or venous, with angiogram/venogram

10.3. Renal denervation

- Renal denervation is a procedure using radiofrequency waves to disrupt the overactive sympathetic nerves running along the arteries in the kidneys
- Code 1300 - Renal denervation (RDN), per artery (modifier 0005 is applicable) is a "Z" code, introduced to the MDCM in 2014. This code is not recognised by the funders and thus does not get paid.

- Since there is not valid CPT code and RVU to use in this matter, the coding for renal denervation should be a Rule C submission
    - Code 6999 – Unlisted procedure or service
    - Code 1300 - Renal denervation (RDN), per artery (modifier 0005 is applicable)
        - Comparable service:
            - 5066 - Stent insertion: Renal/visceral/brachiocephalic – including percutaneous transluminal angioplasty (PTA), including the use of a drug eluting balloon (DEB)
            - 3559 - Selective first order catheterisation, arterial or venous, with angiogram/venogram
            - Please remember to submit a motivation letter
            - Please remember to submit the final ICD-10 Diagnostic code
- It has been debated that code 5066 (Stent insertion: Renal/visceral/brachiocephalic – including percutaneous transluminal angioplasty (PTA), including the use of a drug eluting balloon (DEB)) is more similar in expertise and effort to Renal Denervation than code 5010 (Percutaneous transluminal angioplasty: Renal/Visceral/Brachiocephalic)

11. List of Abbreviations

Abbreviation	Description
AF	Atrial fibrillation
AFR	Atrial flow regulator
AMA	American medical association
ASD	Atrial septal defect
AV fistula	Arteriovenous fistula
BAV	Balloon aortic valvuloplasty
BHF	Board of healthcare funders
BiVPM	Biventricular pacemakers
BMI	Body mass index
BMV	Balloon mitral valvuloplasty
CASSA	Cardiac arrhythmia society of Southern Africa
CCSA	Complete current procedural terminology for South Africa 2020
CMS	Centres for medicare and medicaid services (In the American set-up)
CMS	Council for medical schemes (in the South African set-up)
CPIX	Consumer price index excluding mortgage costs
CPT	Physicians' current procedural terminology
CTO	Chronic total occlusion
DCPM	Dual chamber pacemaker
DEB	Drug eluting balloon
DFT	Defibrillation threshold test
DoH	Department of health
ECG	Electrocardiogram
eMDCM	Electronic medical doctors' coding manual
ExCo	Executive committee
FFR	Fractional flow reserve
HASA	The hospital association of South Africa
HCFA	The health care financing administration
HPCSA	The health professions council of South Africa
ICD	Implantable cardioverter defibrillator
ICD-10	International statistical classification of diseases and related health problems, 10th edition
ICU	Intensive care unit
IFR	Instant wave-free ratio
ILR	Implantable loop recorder
IMA	Internal mammary artery
IVC	Inferior vena cava
IVUS	Intravascular ultrasound
LA	Left atrium
LAA	Left atrial appendage
LAD	Left anterior descending artery
LCX	Left circumflex artery
LIA	Left Iliac artery
LIMA	Left internal mammary artery
LRA	Left renal artery
LV	Left ventricle
MDCM	Medical doctors' coding manual

NHRPL	National health reference price list
OCT	Optical coherence tomography
PCI	Percutaneous coronary intervention
PFO	Patent foramen ovale
PLI	Professional liability Insurance
PTA	Percutaneous transluminal angioplasty
PTCA	Percutaneous transluminal coronary angioplasty
RA	Right atrium
RBRVS	Resource based relative value scale
RCA	Right coronary artery
RCFA	Right common femoral artery
RIA	Right Iliac artery
RIMA	Right internal mammary artery
RPL	Reference price list
RRA	Right renal artery
RRA	Right renal artery
RUC	RVS update committee
RV	Right ventricle
RVS	Relative value scale
SA Heart	The South African heart association
SAMA	South African medical association
SAPPF	South African private practitioner's forum
SASCI	South African society of cardiovascular intervention
SCPM	Single chamber pacemaker
SHARE	South African Heart Association Registries
TAVI	Transcatheter aortic valve implantation
USA	United States of America
WHO	World health organisation