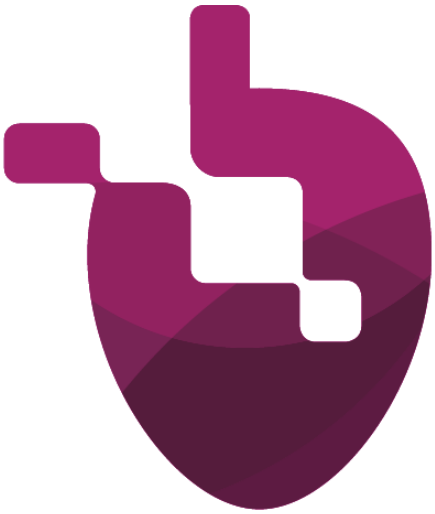

NATIONAL CARDIAC REGISTRY

National Cardiac Registry (NCR)
Data Dictionary
Version 1.2
September 2024
Endorsed by the NCR Board 03/2024

Data Dictionary Version History

Date	Version	Description of changes
15 March 2023	1.0	Initial version
30 March 2023	1.1	Minor updates to the 'justification' for some elements.
30 September 2024	1.2	New data elements added including; SEIFA, ARIA, Smoking, Grade of stenosis, Functional test results, Adjunctive device required, Adjunctive device type and Type of mechanical ventricular support.

Contents

Abbreviations

ACS	Acute Coronary Syndrome
ARC	Academic Research Consortium
ARIA	Accessibility/Remoteness Index of Australia
BARC	Bleeding Academic Research Consortium
BMI	Body Mass Index
BMS	Bare Metal Stent
BP	Blood Pressure
BRS	Bioresorbable Stent
CABG	Coronary Artery Bypass Graft
CAD	Coronary Artery Disease
CCL	Cardiac Catheter Laboratory
CCS	Canadian Cardiovascular Society
CK-MB	Creatine Kinase MB
CT	Computerised Tomography
DAPT	Dual Antiplatelet Therapy
DBT	Door to Balloon Time
DES	Drug Eluting Stent
ECG	Electrocardiogram
ECMO	Extracorporeal Membrane Oxygenation
EF	Ejection Fraction
FMC	First Medical Contact
GFR	Glomerular Filtration Rate
GP	General Practitioner
Hg	Mercury (Used to measure pressure)
IABP	Intra-Aortic Balloon Pump
ICD-10	International Classification of Diseases 10
IV	Intravenous
LUCAS	Lund University Cardiac Arrest System (mechanical chest compression device)
LV	Left Ventricular
LVAD	Left Ventricular Assist Device
LVEF	Left Ventricular Ejection Fraction
MACCE	Major Adverse Cardiac and/or Cerebrovascular Event
MACE	Major Adverse Cardiac Event
MI	Myocardial Infarction
MR(I)	Magnetic Resonance (Imaging)
NSTEMI	Non-ST Elevation Myocardial Infarction
PCI	Percutaneous Coronary Intervention
POBA	Plain Balloon Angioplasty
PVD	Peripheral Vascular Disease
QI	Quality Indicator
SEIFA	Socio-Economic Indexes for Areas
STEMI	ST Elevation Myocardial Infarction
TIMI	Thrombolysis in Myocardial Infarction
TLR	Target Lesion Revascularisation
TVR	Target Vessel Revascularisation
ULN	Upper Limit of Normal

Foreword

The NCR Data Dictionary was created by the National Cardiac Registry Project Team, School of Public Health and Preventative Medicine, Monash University, on behalf of/by National Cardiac Registry Ltd. Members of the following committees, without whom the data dictionary and dataset would not be possible, are named below.

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Timeline of the National Cardiac Registry

November 2016	Ischaemic Heart Disease named as the #1 priority area in The Australian Commission on Safety and Quality in Health Care's Prioritised list of clinical domains for clinical quality registry development final report.
March 2016	The Department and existing State registries agree to form a National Cardiac Registry.
October 2018	Engagement of clinicians from States & Territories and development of strategy.
January-March 2019	Development of an initiation and establishment Plan.
April 2019	NCR project team employed through Monash University.
August 2019	Funding approved for States and Territories to help facilitate in participation in NCR.
November 2019	Inaugural Steering Committee meeting held with clinical and jurisdictional representatives from all eight States & Territories.
January 2020	NCR Minimum Dataset and Dictionary Approved by the NCR Data Subcommittee.
May 2020	NCR Ltd incorporated by the Australian Securities and Investments Commission.
July 2020	NCR Ltd. Inaugural board meeting
October 2020	NCR inaugural status report
July 2021	NCR Platform goes live
April 2022	Funding secured within federal budget to support registry operations.
May 2022	Launch of first public facing Annual Status Report
July 2022	All eight jurisdictions contributing data elements into the NCR Platform.
September 2023	The NCR dataset was updated with new data items added to the minimum dataset.
December 2024	The release of the fourth NCR annual status report was based on a cumulative analysis of PCI treatments.

Data Collection

Data for the NCR is collected at state/territory level by the following contributing state and territory registries:

ACT Cardiac Outcomes Registry (ACTCOR)

Coronary Angiogram Database of South Australia (CADOSA)

New South Wales Cardiac Outcomes Registry (NSWCOR)

Northern Territory Top End Coronary Database (NTTCD)

Queensland Cardiac Outcomes Registry (QCOR)

Victorian Cardiac Outcomes Registry (VCOR)

Western Australia (WA)

Tasmania participates via VCOR

Contributing registries upload a CSV file to the NCR platform at agreed time intervals. Direct entry sites can manually enter or import their data into the RedCAP database. Data is checked and validated as part of the import process to ensure that the data provided meets the business rules as outlined in the following pages. For more information on this process please see https://nationalcardiacregistry.org.au/data-flow/.

Inclusion/Exclusion Criteria

Patients aged 18 years or older, who present to a participating hospital in Australia and are treated with percutaneous coronary intervention (PCI).

A PCI is deemed to have taken place if any coronary device approaches, probes or crosses one or more coronary lesions with the intention of performing a coronary intervention. Usually, this device will be a guide wire. The only exception to this is patients who have an adverse cardiac event (during an attempted PCI) that necessitates procedure termination prior to the introduction of a coronary device. This rare type of case will also be defined as a PCI and therefore this will classify as a complication. That is, any patient who crosses the threshold of the cardiac catheter lab for the purpose of PCI as defined above, is recorded in the NCR dataset.

Dataset Definition Sources

American College of Cardiology 2021. 2021 Guideline for the Evaluation and Diagnosis of Chest Pain. American College of Cardiology (ACC).

Australia New Zealand Trauma Registry 2021. Bi-National Trauma Minimum Dataset (BNTMDS) Australia and New Zealand Core Data Items Data Dictionary. Australia New Zealand Trauma Registry (ATR).

Australian Commission on Safety and Quality in Health Care 2019. Acute Coronary Syndromes Clinical Care Standard. Australian Commission on Safety and Quality in Health Care.

Canadian Cardiovascular Society 2012. The Canadian Cardiovascular Society Data Dictionary - Core Elements and Demographics Data Elements and Definitions. Canadian Cardiovascular Society (CCS).

Ibanez, B., James, S., Agewall, S., Antunes, M. J., Bucciarelli-Ducci, C., Bueno, H., Caforio, A. L. P., Crea, F., Goudevenos, J. A., Halvorsen, S., Hindricks, G., Kastrati, A., Lenzen, M. J., Prescott, E., Roffi, M., Valgimigli, M., Varenhorst, C., Vranckx, P., Widimsky, P. & Group, E. S. C. S. D. 2018. 2017 ESC Guidelines for the management of acute myocardial infarction in patients presenting with ST-segment elevation: The Task Force for the management of acute myocardial infarction in patients presenting with ST-segment elevation of the European Society of Cardiology (ESC). *Eur Heart J,* 39, 119-177.

Lawton, J. S., Tamis-Holland, J. E., Bangalore, S., Bates, E. R., Beckie, T. M., Bischoff, J. M., Bittl, J. A., Cohen, M. G., DiMaio, J. M., Don, C. W., Fremes, S. E., Gaudino, M. F., Goldberger, Z. D., Grant, M. C., Jaswal, J. B., Kurlansky, P. A., Mehran, R., Metkus, T. S., Jr., Nnacheta, L. C., Rao, S. V., Sellke, F. W., Sharma, G., Yong, C. M. & Zwischenberger, B. A. 2022. 2021 ACC/AHA/SCAI Guideline for Coronary Artery Revascularization: A Report of the American College of Cardiology/American Heart Association Joint Committee on Clinical Practice Guidelines. *Circulation,* 145, e18-e114.

National Institute for Cardiovascular Outcomes Research 2015. National Audit of Percutaneous Coronary Interventions Minimum Data Standard. United Kingdom: National Institute for Cardiovascular Outcomes Research (NICOR).

National Institute for Health Care and Excellence 2011. Stable Angina: Management. United Kingdom: National Institute for Health Care and Excellence (NICE).

Swedish Web-system for Enhancement and Development of Evidence-based care in Heart disease Evaluated According to Recommended Therapies (SWEDEHEART) 2021. SWEDEHEART Annual Report 2021. Swedish Web-system for Enhancement and Development of Evidence-based care in Heart disease Evaluated According to Recommended Therapies (SWEDEHEART).

The National Institute for Cardiovascular Outcomes Research: National Cardiac Audit Programme 2021. National Audit of Percutaneous Coronary Intervention (NAPCI). The National Institute for Cardiovascular Outcomes Research (NICOR): National Cardiac Audit Programme (NCAP).

Victorian Cardiac Outcomes Registry 2020. PCI Data Definitions. Victorian Cardiac Outcomes Registry (VCOR).

Guide to Meanings of Categories and Headings

Defining Attributes

Name:

Name of the collected variable.

Field Name:

The actual code used in the platform.

Definition:

Concise statement expressing essential nature of a data field and its differentiation from all other data fields. Supporting definition without Codes or Variables.

Justification:

The reason for collecting the data field.

Obligation:

Mandatory/optional for the purpose of meeting the minimum dataset as predetermined by NCR. It is understood that not all sites and registries collect the minimum dataset.

Representational Attributes

Permitted Values:

Set of possible values for the data field. May be a code set, or description of possible values.

Range:

The minimum and maximum possible values allowed for the data field.

Guide for Use:

Comments to assist in further defining aspects of the data element.

Validation Rules:

Assist in reducing input error. Where validation rules are known to exist, they have been included.

Maximum Field Size:

The number of characters to represent the data field values. Includes special characters.

Related Data Field:

Other data fields in this data dictionary that have some direct relationship with the data fields being described. Specifies fields that may be derived from, or may contribute to deriving the value of the field being defined.

Data Type:

Type of symbol or character or other designation used to represent the data field, for example alphanumeric values are text, number or date/time.

Parent / Child:

The relationship of the data field to the primary key i.e., if the field is parent there may be one or many values per field per primary key

Behaviour:

Data rules as per the platform.

Approval and Limitations

This version of the NCR Data Dictionary has been approved by the NCR Board and Steering Committee. The data dictionary is periodically reviewed and updated to reflect changes. There may be specific limitations in version 1.2 which do not affect the NCR purpose or definitions.

NCR Data Definitions

Site

NCR Hospital ID

Defining Attributes

Name	NCR Hospital ID
Field Name	ncrhid
Definition	
Justification	Used to identify a unique hospital.
Obligation	Always

Representational Attributes

Permitted Values	Values must match the list provided to the NCR by the state registry.
Range	NNNNNN
Guide for Use	Each Hospital has a set of defining attributes. These include: State/Territory, Public or Private facility, Emergency Department Y/N and if Hospital perform Coronary Artery Bypass Graft Surgery (CABG) Y/N.
Validation Rules	Field cannot be blank
Maximum Field Size	6
Related Data Field	hid
Data Type	Text
Parent / Child Behaviour	

1. Patient

1.1. Patient ID NCR

Defining Attributes	
Name	Patient ID NCR
Field Name	ncrpatientid
Definition	State generated ID, must be unique to each patient
Justification	Used to identify a unique patient record.
Obligation	Always
Representational Attributes	
Permitted Values	N
Range	
Guide for Use	System generate unique ID number = site state code + site public/private code + PatientID
Validation Rules	Field cannot be blank
Maximum Field Size	18
Related Data Field	
Data Type	Text/ Number
Parent / Child	
Behaviour	Reject file if NULL

1.2. Patient ID State Code

Defining Attributes	
Name	PatientID State Code
Field Name	patientid
Definition	Unique patient identification number, generated by each State.
Justification	Collected to allow contributing registries to identify a record within their own registry system.
Obligation	Always
Representational Attributes	
Permitted Values	N
Range	
Guide for Use	Values must match or be able to be mapped back to the state level patient ID.
Validation Rules	Field cannot be blank
Maximum Field Size	18
Related Data Field	
Data Type	Text/ Number
Parent / Child	
Behaviour	Reject file if NULL

1.3. Sex

Defining Attributes		
Name	Sex	
Field Name	sex	
Definition	The sex of an individual.	
Justification	Collected to determine differences in incidence, management and mortality associated with biological sex and risk adjustment modelling.	
Obligation	Always	
Representational Attributes		
Permitted Values	Code	Description
	1	Male
	2	Female
Range	1-2	
Guide for Use		
Validation Rules	Field cannot be blank	
Maximum Field Size	1	
Related Data Field		
Data Type	Number	
Parent / Child		
Behaviour	Reject file if NULL	

1.4. Indigenous Status

Defining Attributes

Name	Indigenous Status
Field Name	inds
Definition	Australian Indigenous Status, including Aboriginal, Torres Strait Islander, Both, or Neither.
Justification	Collected to determine differences in incidence, management and mortality associated with Indigenous Status.
Obligation	Always

Representational Attributes

Permitted Values	Code	Description
	0	Neither
	1	Aboriginal
	2	Torres Strait Islander
	3	Both Aboriginal and Torres Strait Islander
	-1	Unknown
Range	-1 – 3	
Guide for Use	Is the patient Aboriginal or Torres Strait Islander, Both, Neither, or is their Indigenous status Unknown?	
Validation Rules	Field cannot be blank	
Maximum Field Size	2	
Related Data Field		
Data Type	Number	
Parent / Child		
Behaviour	Reject file if NULL	

1.5. Postcode

Defining Attributes	
Name	Postcode
Field Name	pcode
Definition	Primary residential postal code, if known. Numeric descriptor for postal delivery area by suburb or locality.
Justification	Collected for demographic statistical reporting at time of admission and SEIFA and ARIA status.
Obligation	Always, if ARIA and SEIFA = Null

Representational Attributes	
Permitted Values	NNNN
Range	0-9999
Guide for Use	What was the patient's postcode at the time of admission?
Validation Rules	Field cannot be blank when ARIA and SEIFA are both null.
Maximum Field Size	4
Related Data Field	ARIA and SEIFA
Data Type	Number
Parent / Child Behaviour	Reject file if pcode, aria and seifa are all NULL.

1.6. ARIA

Defining Attributes

Name	ARIA+
Field Name	aria
Definition	The Accessibility/Remoteness Index of Australia (ARIA+) defines geographic remoteness areas for the purpose of analysing statistics.
Justification	Collected for demographic statistical reporting at time of admission.
Obligation	Always, if postcode = null

Representational Attributes

Permitted Values	Coding	Description
	1	Major Cities
	2	Inner Regional
	3	Outer Regional
	4	Remote
	5	Very Remote
Range	1-5	
Guide for Use	What was the patient's ARIA status at the time of admission?	
Validation Rules	Field cannot be blank when postcode = null.	
Maximum Field Size	1	
Related Data Field	ARIA and SEIFA	
Data Type	Number	
Parent / Child Behaviour	Reject file if aria and pcode are both null.	

1.7. SEIFA

Defining Attributes

Name	SEIFA
Field Name	seifa
Definition	Socio-Economic Indexes for Areas (SEIFA) indicates the average socio-economic characteristics of people living in an area.
Justification	Collected for demographic statistical reporting at time of admission.
Obligation	Always, if postcode = null

Representational Attributes

Permitted Values	Coding	Description
	1	Most Disadvantaged
	2	
	3	
	4	
	5	
	6	
	7	
	8	
	9	
	10	Least Disadvantaged
Range	1-10	
Guide for Use	What was the patient's SEIFA status at the time of admission?	
Validation Rules	Field cannot be blank when postcode = null.	
Maximum Field Size	2	
Related Data Field	ARIA and SEIFA	
Data Type	Number	
Parent / Child Behaviour	Reject file if seifa and pcode are both null.	

1.8. Hospital ID

Defining Attributes	
Name	Hospital ID
Field Name	hid
Definition	Hospital identification number allocated by State/Territory Staff when setting up a new hospital in their system.
Justification	Collected to monitor clinical guideline compliance.
Obligation	Always

Representational Attributes	
Permitted Values	NNNNNN
Range	0-999999
Guide for Use	Enter the unique code associated with the hospital at which the PCI was undertaken.
Validation Rules	Field cannot be blank
Maximum Field Size	6
Related Data Field	
Data Type	Number
Parent / Child	
Behaviour	Reject file if NULL

2. Admission and Preprocedural

2.1. Admission and Clinical Presentation

2.1.1. Date of Arrival at PCI Hospital

Defining Attributes	
Name	Date of arrival at PCI hospital
Field Name	doa
Definition	Date the patient was admitted or transferred to the hospital in which their PCI was performed.
Justification	Collected to identify a unique PCI procedure. Collected to allow reporting of NCR QIs – Time from door to PCI-mediated reperfusion.
Obligation	Always
Representational Attributes	
Permitted Values	DD/MM/YYYY
Range	NN/NN/NNNN
Guide for Use	On what date did the patient arrive at the PCI hospital?
Validation Rules	Field cannot be blank. Field cannot be the same as Time of Arrival, Date of Procedure, Time of Procedure and Patient ID across multiple entries.
Maximum Field Size	10
Related Data Field	
Data Type	Date/Time
Parent / Child	
Behaviour	Reject file if NULL Reject file if doa, toa, dop, top and patientID are all the same across multiple entries.

2.1.2. Time of Arrival at PCI Hospital

Defining Attributes	
Name	Time of arrival at PCI hospital
Field Name	toa
Definition	Time the patient was admitted or transferred to the hospital in which their PCI was performed. This is the time the patient was triaged (entered into the hospital administrative system).
Justification	Collected to identify a unique PCI procedure. Collected to allow reporting of NCR QIs – Time from door to PCI-mediated reperfusion.
Obligation	Always
Representational Attributes	
Permitted Values	HH:MM
Range	00:00-23:59
Guide for Use	At what time did the patient arrive at the PCI hospital? This is the time when they were triaged (entered into the hospital administrative system).
Validation Rules	Field cannot be blank. Field cannot be the same as Time of Arrival, Date of Procedure, Time of Procedure and Patient ID across multiple entries.
Maximum Field Size	5
Related Data Field	
Data Type	Date/Time
Parent / Child	
Behaviour	Reject file if NULL Reject file if doa, toa, dop, top and patientID are all the same across multiple entries.

2.1.3. Patient Age

Defining Attributes		
Name	Patient Age	
Field Name	age	
Definition	Age of the patient at the date of procedure, measured as number of years.	
Justification	Collected to determine the patient's pre-existing risk profile and risk adjustment models.	
Obligation	Always	
Representational Attributes		
Permitted Values	Code	Description
	18-110	Valid Age
	0-18	Invalid Age
Range	18-110	
Guide for Use	How old is the patient at the date of procedure?	
Validation Rules	Field cannot be blank. Field cannot <18.	
Maximum Field Size	3	
Related Data Field		
Data Type	Number	
Parent / Child		
Behaviour	Reject file if NULL. Reject file if <18	

2.1.4. Patient Height

Defining Attributes	
Name	Patient Height
Field Name	htm
Definition	Height in centimeters in bare or stockinged feet. Can be self-reported, estimated, or measured.
Justification	Collected to calculate BMI.
Obligation	Always
Representational Attributes	
Permitted Values	NNN
Range	111-231
Guide for Use	How tall is the patient in centimeters?
Validation Rules	
Maximum Field Size	3
Related Data Field	
Data Type	Number
Parent / Child	
Behaviour	Reject file if NULL

2.1.5. Patient Weight

Defining Attributes	
Name	Patient Weight
Field Name	wkg
Definition	Weight in kilograms in light clothing. Can be self-reported, estimated or measured.
Justification	Collected to calculate BMI.
Obligation	Always
Representational Attributes	
Permitted Values	NNN
Range	35-300
Guide for Use	How much does the patient weigh in kilograms?
Validation Rules	
Maximum Field Size	3
Related Data Field	
Data Type	Number
Parent / Child	
Behaviour	Reject file if NULL

2.1.6. PCI Procedure Date

Defining Attributes	
Name	PCI Procedure Date
Field Name	dop
Definition	Date on which the patient crossed the threshold of entry into the cardiac catheter laboratory for the current PCI in DD/MM/YYYY format. Note: Where multiple procedures occur during the index hospitalisation, a separate entry must be recorded for every relevant procedure.
Justification	Collected to identify a unique PCI procedure and to benchmark performance and timeliness of treatment.
Obligation	Always
Representational Attributes	
Permitted Values	DD/MM/YYYY
Range	NN/NN/NNNN
Guide for Use	On what date was the PCI performed?
Validation Rules	Field cannot be blank. PCI Procedure Date must be < date of file import. PCI Procedure Date must be > Date of Arrival at PCI Hospital. Date of Arrival at PCI Hospital, Time of Arrival at PCI Hospital, PCI Procedure Date and Patient ID cannot be the same across multiple entries.
Maximum Field Size	10
Related Data Field	
Data Type	Date/Time
Parent / Child	
Behaviour	Reject file if dop is > date of file import Reject file if dop is NULL Reject file if dop is <doa Reject file if doa, toa, dop, top and patientID are all the same across multiple entries within this import

2.1.7. PCI Procedure Time

Defining Attributes	
Name	PCI Procedure Time
Field Name	top
Definition	Time the patient crossed the threshold of entry into the cardiac catheter laboratory for the current PCI. Note: Where multiple procedures occur during the index hospitalisation, a separate entry must be recorded for every relevant procedure.
Justification	Collected to identify a unique PCI procedure and to benchmark performance and timeliness of treatment.
Obligation	Always
Representational Attributes	
Permitted Values	HH:MM
Range	00:00-23:59
Guide for Use	At what time was the PCI performed?
Validation Rules	Field cannot be blank. PCI Procedure Date cannot = Date of Arrival when PCI Procedure Time < Time of Arrival at PCI Hospital. Date of Arrival at PCI Hospital, Time of Arrival at PCI Hospital, PCI Procedure Date and Patient ID cannot be the same across multiple entries.
Maximum Field Size	10
Related Data Field	
Data Type	Date/Time
Parent / Child	
Behaviour	Reject file if dop=doa and top<toa Reject file if top is NULL Reject file if doa, toa, dop, top and patientID are all the same across multiple entries within this import

2.1.8. Primary Operator

Defining Attributes	
Name	Primary Operator
Field Name	po
Definition	Unique code of the cardiologist/clinician who is ultimately responsible for the PCI as allocated by the State Registry.
Justification	To be used in the future for clinician level reporting. Note: The NCR does not currently undertake any clinician level reporting.
Obligation	Optional
Representational Attributes	
Permitted Values	
Range	
Guide for Use	Who was the interventional cardiologist responsible for the PCI?
Validation Rules	
Maximum Field Size	
Related Data Field	
Data Type	Text
Parent / Child	
Behaviour	

2.1.9. Body Mass Index (BMI) (kg/m^2)

Defining Attributes	
Name	Body Mass Index [kg/m^2]
Field Name	bmi
Definition	Body Mass Index gives an indication as to a patient's body size.
Justification	A characteristic as to the risk profile of the patient.
Obligation	Derived Variable
Representational Attributes	
Permitted Values	NN.N (kg/m^2)
Range	
Guide for Use	What is the patient's BMI?
Validation Rules	
Maximum Field Size	3
Related Data Field	
Data Type	Number
Parent / Child	
Behaviour	Derived - No import on this field. BMI = wkg/(htm/100)^2

2.2 Pre-Procedural Risk Factors

2.2.1. Smoking Status

Defining Attributes

Name	Smoking Status
Field Name	smk
Definition	History confirming any form of tobacco used in the past. This includes manufactured (packet) cigarettes, roll-your-own cigarettes, cigars and pipes.
Justification	Collected to determine the patient's pre-existing risk profile
Obligation	Optional

Representational Attributes

Permitted Values	Coding	Description
	0	Never Smoked
	1	Previously smoked - more than one month prior to this admission
	2	Currently smoking - within one month of this admission
Range	0-2	
Guide for Use	Is the patient a current or past tobacco smoker?	
Validation Rules		
Maximum Field Size	2	
Related Data Field		
Data Type	Number	
Parent / Child		
Behaviour	Reject file if value entered > 2	

2.2.2a Diabetes

Defining Attributes

Name	Diabetes
Field Name	db
Definition	Indicate if the patient has been diagnosed with diabetes mellitus regardless of duration of disease and, this includes a medical diagnosis made during the current admission.
Justification	Collected to determine the patient's pre-existing risk profile.
Obligation	Always

Representational Attributes

Permitted Values	Code	Description
	0	No
	1	Yes
Range	0-1	
Guide for Use	Does the patient have a diagnosis of diabetes?	
Validation Rules	Field cannot be blank.	
Maximum Field Size	1	
Related Data Field	dbm	
Data Type	Number	
Parent / Child	Parent	
Behaviour	Reject file if NULL.	

2.2.2b Diabetes Management Type

Defining Attributes

Name	Diabetes Management Type
Field Name	dbm
Definition	The diabetes management type for patients with a diagnosis of diabetes. **Oral**: Patient requires oral hypoglycaemic medication to control their condition. **Insulin**: Patient requires insulin to control their condition, with or without oral therapy. **Diet**: Patient has received dietary advice appropriate to their condition but is not taking medication to lower blood sugar.
Justification	Collected to determine the patient's pre-existing risk profile.
Obligation	Always, if Diabetes = Yes

Representational Attributes

Permitted Values	Code	Description
	1	Oral
	2	Insulin
	3	Diet
Range	1-3	
Guide for Use	Where Diabetes =Yes, indicate the management type	
Validation Rules	Field cannot be blank if Diabetes = Yes. Field cannot be complete if Diabetes = No.	
Maximum Field Size	1	
Related Data Field	db	
Data Type	Number	
Parent / Child	Child	
Behaviour	Reject file if db=0, and data is in dbm Reject file if db=1 AND dbm is NULL	

2.2.3a Peripheral Vascular Disease History 1 – With Intervention

Defining Attributes

Name	Peripheral Vascular Disease History 1 – With Intervention
Field Name	pvd1
Definition	The patient displays evidence of either chronic or acute PVD. The presence of PVD must be demonstrated by vascular reconstruction or amputation for arterial insufficiency, bypass surgery or percutaneous intervention. Note: This definition of PVD must be accompanied with intervention such as reconstruction, amputation, surgery or percutaneous intervention. Includes the aorta, extremities and carotid vessels. If no intervention, select the broader option of PVD 2.
Justification	Collected to determine the patient's pre-existing risk profile and risk adjustment models.
Obligation	Always, if pvd2 is blank.

Representational Attributes

Permitted Values	Code	Description
	0	No
	1	Yes
Range	0-1	
Guide for Use	Does the patient have a history of PVD with intervention?	
Validation Rules	Field cannot be complete if pvd2 is complete. Field cannot be blank if pvd2 is blank.	
Maximum Field Size	1	
Related Data Field	pvd2	
Data Type	Number	
Parent / Child		
Behaviour	Reject file if pvd1 and pvd2 both have data Reject file if pvd1 and pvd2 are both NULL	

2.2.3b Peripheral Vascular Disease History 2 – Broader Definition

Defining Attributes

Name	Peripheral Vascular Disease History 2 – Broader Definition
Field Name	pvd2
Definition	The patient has a current or previous history of peripheral vascular disease (includes subclavian, iliac, femoral, and upper- and lower-extremity vessels; excludes renal, coronary, cerebral, and mesenteric vessels and aneurysms). This can include: Claudication on exertion, amputation for arterial vascular insufficiency, vascular reconstruction, bypass surgery, or percutaneous revascularisation in the arteries of the extremities, positive non-invasive test (e.g., ankle brachial index ≤0.9, ultrasound, MR, CT imaging of >50% diameter stenosis in any peripheral artery (i.e., subclavian, femoral, iliac) or angiographic imaging.
Justification	Collected to determine the patient's pre-existing risk profile and risk adjustment models.
Obligation	Always, if pvd1 is blank.

Representational Attributes

Permitted Values	Code	Description
	0	No
	1	Yes
Range	0-1	
Guide for Use	Does the patient have a history of PVD with or without intervention?	
Validation Rules	Field cannot be complete if pvd1 is complete. Field cannot be blank if pvd1 is blank.	
Maximum Field Size	1	
Related Data Field	pvd1	
Data Type	Number	
Parent / Child		
Behaviour	Reject file if pvd1 and pvd2 both have data Reject file if pvd1 and pvd2 are both NULL	

2.2.4a Previous CABG

Defining Attributes

Name	Previous CABG
Field Name	pcabg
Definition	Previous Coronary Artery Bypass Graft (CABG) Surgery prior to the current PCI procedure
Justification	Collected to determine the patient's pre-existing risk profile.
Obligation	Always

Representational Attributes

Permitted Values	Code	Description
	0	No
	1	Yes
Range	0-1	
Guide for Use	Has the patient previously undergone a CABG?	
Validation Rules	Field cannot be blank.	
Maximum Field Size	1	
Related Data Field		
Data Type	Number	
Parent / Child	Parent	
Behaviour	Reject file if NULL	

2.2.4b When was the most recent CABG?

Defining Attributes	
Name	When was the most recent CABG?
Field Name	dpcabg
Definition	The date on which patient had their most recent CABG in DD/MM/YYYY format. Note: If only the year is known or estimated, this will suffice, enter as 01/01/YYYY.
Justification	Collected to determine the patient's pre-existing risk profile.
Obligation	Always, if pcabg=1.

Representational Attributes	
Permitted Values	NN/NN/NNNN
Range	DD/MM/YYYY
Guide for Use	If Previous CABG is coded 1=Yes, on what date?
Validation Rules	Field cannot >Date of PCI Procedure. Field cannot be complete if Previous CABG = No. Field cannot be empty if Previous CABG = Yes.
Maximum Field Size	10
Related Data Field	pcabg
Data Type	Date/Time
Parent / Child	Child
Behaviour	Reject file if dpcabg is > dop Reject file if pcabg = 0 AND dpcabg has data Reject file if pcabg = 1 AND dpcabg is NULL

2.2.5a Previous PCI

Defining Attributes

Name	Previous PCI
Field Name	ppci
Definition	Indicate if the patient has had a prior Percutaneous Transluminal Coronary Angioplasty, Coronary Atherectomy, and/or coronary stent inserted at any time prior to the current PCI procedure. Note: This may include a PCI performed during the current admission.
Justification	Collected to determine the patient's pre-existing risk profile.
Obligation	Always

Representational Attributes

Permitted Values	Code	Description
	0	No
	1	Yes
Range	0-1	
Guide for Use	Has the patient had a prior PCI?	
Validation Rules	Field cannot be blank.	
Maximum Field Size	1	
Related Data Field		
Data Type	Number	
Parent / Child	Parent	
Behaviour	Reject file if NULL	

2.2.5b When was the most recent PCI?

Defining Attributes	
Name	When was the most recent PCI?
Field Name	dppci
Definition	The date on which the patient had their most recent PCI in DD/MM/YYYY format. Note: if only the year is known or estimated, this will suffice, enter as 01/01/YYYY.
Justification	Collected to determine the patient's pre-existing risk profile.
Obligation	Always, if Previous PCI = Yes
Representational Attributes	
Permitted Values	NN/NN/NNNN
Range	DD/MM/YYYY
Guide for Use	If Previous PCI is coded 1 = Yes, on what date?
Validation Rules	Field cannot be blank if Previous PCI = Yes. Date of Previous PCI must ≤ PCI Procedure Date. Field cannot be complete if Previous PCI = No.
Maximum Field Size	10
Related Data Field	ppci
Data Type	Date/Time
Parent / Child	Child
Behaviour	Reject file if dpcabg is >dop Reject file if pcabg =0 AND dpcabg has data Reject file if pcabg = 1 AND dpcabg is NULL

2.2.6 Pre-Procedural Renal Status

2.2.6a Last Pre-Procedure Creatinine (µmol/L)

Defining Attributes	
Name	Last Pre-Procedure Creatinine (µmol/L)
Field Name	pcr
Definition	The last serum creatinine levels recorded within 60 days prior to the current PCI (in µmol/L). Note: To convert from mmol/L to µmol/L, multiply by 1000 or move decimal point 3 spaces to the right.
Justification	Collected to determine the patient's pre-existing risk profile and risk adjustment models.
Obligation	Always, if npcr is blank

Representational Attributes	
Permitted Values	NN-NNNN µmol/L
Range	20-2000
Guide for Use	What was the last pre-procedure creatinine?
Validation Rules	Field must be complete, if Creatinine Result Not Available is blank. Field must be blank, if Creatinine Result Not Available is complete.
Maximum Field Size	4
Related Data Field	npcr
Data Type	Number
Parent / Child	
Behaviour	Reject file if npcr=1 and pcr have data Reject file if both pcr AND ncpr are NULL

2.2.6b Creatinine Result Not Available

Defining Attributes

Name	Creatinine Result Not Available
Field Name	npcr
Definition	Last pre-procedure creatinine results not available.
Justification	Used to determine if no creatinine test was undertaken.
Obligation	Always, if pcr is blank

Representational Attributes

Permitted Values	Code	Description
	1	Yes, not available
Range	1	
Guide for Use	Is the last pre-procedure creatinine result not available?	
Validation Rules	Field cannot be complete if Last Pre-Procedure Creatinine is complete. Field cannot be blank if Last Pre-Procedure Creatinine is blank.	
Maximum Field Size	1	
Related Data Field	pcr	
Data Type	Number	
Parent / Child		
Behaviour	Reject file if there is a value in pcr and npcr=1 Reject file if both pcr AND npcr are NULL	

2.3. Left Ventricular (LV) Function

2.3.1a LVEF Test Performed

Defining Attributes

Name	LVEF Test Performed
Field Name	eftp
Definition	For all patients (excluding STEMIs – see note below) indicate whether the patient's ventricular ejection fraction (EF) was measured (or estimated) within 6 months prior to the current procedure up to 4 weeks post-discharge. This includes the period leading up to and including the cardiac catheter lab visit, after the lab visit and up to 30 days after the patient was discharged. If multiple test results are available during this period, select the test result closest to the date/time of the index PCI. Note: For STEMI patients a LVEF test must have been recorded during the index admission or up to 30 days post-discharge for this item to be coded 'yes'. For these patients, where no LVEF test was performed during the index admission, code 'no'.
Justification	Collected to determine the patient's pre-existing risk profile and risk adjustment models.
Obligation	Always

Representational Attributes

Permitted Values	Code	Description
	0	No
	1	Yes
Range	0-1	
Guide for Use	For STEMI patients, was a LVEF test performed during the index admission or up to 30 days post-discharge, and for other patients was a LVEF test performed within 6 months prior, or up to 30 days post-discharge?	
Validation Rules	Field cannot be blank.	
Maximum Field Size	1	
Related Data Field		
Data Type	Number	
Parent / Child	Parent	
Behaviour	Reject file if NULL	

2.3.1b Date of LVEF Test

Defining Attributes	
Name	Date of LVEF test
Field Name	def
Definition	The date of the most recent LVEF test. Note: Where multiple LVEF test results exist within the 6-month period leading up to the index admission or anytime during the index admission but within 30 days post-discharge, record the test result closest to the index PCI date/time.
Justification	Collected to determine the patient's pre-existing risk profile and risk adjustment models.
Obligation	Always, if LVEF Test Performed = Yes
Representational Attributes	
Permitted Values	NN/NN/NNNN
Range	DD/MM/YYYY
Guide for Use	Where LVEF test performed= Yes, on what date was the most recent LVEF test?
Validation Rules	If Type of ACS is not coded STEMI, then Date of LVEF test must be between [6 months prior to Date of Procedure] and [Date of Discharge/Hospital Mortality+30 days] If Type of ACS is STEMI, then Date of LVEF test must be between Date of Arrival and [Date of Discharge/Hospital Mortality+30 Days] Field must be blank, if LVEF Test Performed = No. Field must be complete if LVEF Test Performed = Yes. Date of LVEF Test must <Date of Discharge/Hospital Mortality+30 days.
Maximum Field Size	10
Related Data Field	eftp
Data Type	Date/Time
Parent / Child	Child
Behaviour	Reject file if eftp=0 and def has data Reject file if eftp =1 and def is NULL Reject file if def is >dod+30 days Reject file if acst=3 AND def <dop Reject file if acst is NOT =3 and def is <dop-6 months

2.3.1c LVEF Test Type

Defining Attributes

Name	LVEF Test Type
Field Name	eft
Definition	Select ONE of the following: Echocardiography; Angiography Gated Cardiac Blood Pool Scan; Magnetic resonance imaging (MRI) Myocardial Perfusion Scan; Not Stated/Inadequately described.
Justification	Collected to determine the patient's pre-existing risk profile and risk adjustment models.
Obligation	Always, if LVEF Test Performed = Yes

Representational Attributes

Permitted Values	Code	Description
	1	Echocardiography
	2	Angiography
	3	Gated Cardiac Blood Pool Scan
	4	Magnetic Resonance Imaging (MRI)
	5	Myocardial Reperfusion Scan
	6	Not Stated/Inadequately Described
Range	1-6	
Guide for Use	Where LVEF test performed is coded 'yes', what was the most recent LVEF test type?	
Validation Rules	Field must be blank if LVEF Test Performed = No. Field must be complete if LVEF Test Performed = Yes.	
Maximum Field Size	1	
Related Data Field	eftp	
Data Type	Number	
Parent / Child	Child	
Behaviour	Reject file if eftp=0 and eft has data Reject file if eftp =1 and eft is NULL	

2.3.1d Ejection Fraction (EF) Test Result Digitally Derived

Defining Attributes	
Name	Ejection Fraction (EF) Test Result Digitally Derived %
Field Name	ef
Definition	The digitally derived EF result (where the EF test result is a computed, digital EF percentage). Note: The patient's digitally derived EF result should ONLY be expressed as a whole number (between 10 and 80), expressed as a percentage of blood emptied from the left ventricle at the end of contraction.
Justification	Collected to determine the patient's pre-existing risk profile and risk adjustment models.
Obligation	Always, if LVEF Test Performed = Yes, and Ejection Fraction (EF) Test Result Estimated = Blank

Representational Attributes	
Permitted Values	Must be reported as a percentage (%). If a percentage range was reported, report the lowest number of the range BELOW (i.e., 50-55%, is reported as 50%).
Range	01-99
Guide for Use	Where LVEF test performed is coded 'yes', what was the digitally derived EF test result? Only answer digitally derived or estimated not both.
Validation Rules	Field must be blank if LVEF Test Performed = No. Field must be blank if Ejection Fraction Test Result Estimated is complete. Field must be complete if Ejection Fraction Test Result Estimated is blank, and LVEF Test Performed = Yes.
Maximum Field Size	2
Related Data Field	eftp
Data Type	Number (%)
Parent / Child	Child
Behaviour	Reject file if eftp=0 and ef has data Reject file if ef has data & efes has data Reject file if eftp =1 and both efes and ef are NULL

2.3.1e Ejection Fraction (EF) Test Result Estimated

Defining Attributes

Name	Ejection Fraction (EF) Test Result Estimated
Field Name	efes
Definition	The patient's ejection fraction (EF) is the amount of blood emptied from the left ventricle at the end of contraction. EF is estimated where the test itself has not computed a digital EF percentage to express ventricular function.
Justification	Collected to determine the patient's pre-existing risk profile and risk adjustment models.
Obligation	Always, if LVEF Test Performed = Yes, and Ejection Fraction (EF) Test Result Digitally Derived % = No.

Representational Attributes

Permitted Values	Code	Description
	1	Normal Function (>50%)
	2	Mild Dysfunction/Impairment (45-49%)
	3	Moderate Dysfunction/Impairment (35-44%)
	4	Severe Dysfunction/Impairment (<35%)
Range	1-4	
Guide for Use	Where LVEF test performed is coded 'yes', what was the estimated EF test result? Only answer digitally derived or estimated not both.	
Validation Rules	Field must be blank if Ejection Fraction (EF) Test Digitally Derived is complete. Field must be complete if LVEF test performed = Yes. Field must be blank If LVEF test performed = No.	
Maximum Field Size	1	
Related Data Field	eftp	
Data Type	Number	
Parent / Child	Child	
Behaviour	Reject file if eftp=0 and efes has data Reject file if ef has data & efes has data Reject file if eftp =1 and both efes and ef are NULL	

2.3.1f Estimated Glomerular Filtration Rate Imported

Defining Attributes	
Name	Estimated Glomerular Filtration Rate Imported
Field Name	egfri
Definition	Where a hospital system calculates an egfr this can be included here as per the hospital's definition.
Justification	Collected to determine the patient’s pre-existing risk profile and risk adjustment models.
Obligation	Optional
Representational Attributes	
Permitted Values	NNN.NN
Range	1.00-999.00
Guide for Use	What was the hospital system calculated EGFR? As per hospital definition.
Validation Rules	
Maximum Field Size	5
Related Data Field	
Data Type	Number (include 2 decimal places)
Parent / Child	
Behaviour	

2.3.1g Estimated Glomerular Filtration Rate (Cockroft-Gault formula)

Defining Attributes	
Name	Estimated Glomerular Filtration Rate (Cockroft-Gault formula)
Field Name	egfr
Definition	An overall measure of kidney function, the glomerular filtration rate measures how well kidneys filter the wastes from the blood. It is calculated using age, weight (in kg) and last pre-procedure creatinine.
Justification	Collected to determine the patient's pre-existing risk profile and risk adjustment models.
Obligation	Derived Variable
Representational Attributes	
Permitted Values	NNN.NN
Range	1-999.00
Guide for Use	
Validation Rules	Estimated Glomerular Filtration Rate = (140 – age) x Weight x Constant / Pre-Procedure Creatinine (in µmol/L) [Constant = 1.23 for men and Constant=1.04 for women]
Maximum Field Size	5
Related Data Field	
Data Type	Number (include 2 decimal places)
Parent / Child	
Behaviour	Derived – no import

2.4. Clinical Presentation

2.4.1 Cardiogenic Shock

Defining Attributes

Name	Cardiogenic Shock
Field Name	shock
Definition	Indicate if the patient was in cardiogenic shock at the time of index PCI. Cardiogenic supporting definition: Transient episodes of hypotension reversed with IV fluid or atropine do not constitute cardiogenic shock. Cardiogenic shock is coded as 'yes' if all of the following apply: 1. Sustained (>30 minutes) episode of systolic blood pressure <90 mm Hg (or vasopressors required to maintain BP >90 mm Hg); AND 2. Evidence of elevated filling pressures (e.g. pulmonary congestion on examination or chest radiograph); AND 3. Evidence of end organ hypoperfusion (e.g. urine output 30mL/hour; or cold/diaphoretic extremities; or altered mental status, etc.).
Justification	Collected to determine patient risk profile and risk adjustment models.
Obligation	Always

Representational Attributes

Permitted Values	Code	Description
	0	No
	1	Yes
Range	0-1	
Guide for Use	Was the patient in cardiogenic shock at the time of index PCI?	
Validation Rules	Field cannot be blank.	
Maximum Field Size	1	
Related Data Field		
Data Type	Number	
Parent / Child		
Behaviour	Reject file if NULL	

2.4.2 Out-of-Hospital Cardiac Arrest (OHCA)

Defining Attributes

Name	Out-of-Hospital Cardiac Arrest
Field Name	oca
Definition	The patient has experienced an out of hospital cardiac arrest (i.e. the lack of effective cardiac output) including if the person was under cardiac arrest at the time of presentation to the hospital.
Justification	Collected to determine patient risk profile and risk adjustment models.
Obligation	Always

Representational Attributes

Permitted Values	Code	Description
	0	No
	1	Yes
Range	0-1	
Guide for Use	Has the patient had an Out-of-Hospital Cardiac Arrest?	
Validation Rules	Field cannot be blank.	
Maximum Field Size	1	
Related Data Field		
Data Type	Number	
Parent / Child		
Behaviour	Reject file if NULL	

2.4.3 Pre-Procedural Intubation

Defining Attributes

Name	Pre-Procedure Intubation
Field Name	pint
Definition	The patient received intubation prior to the PCI procedure.
Justification	Collected to identify high risk patients.
Obligation	Always

Representational Attributes

Permitted Values	Code	Description
	0	No
	1	Yes
Range	0-1	
Guide for Use	Was the patient intubated prior the PCI procedure commenced? Note: Intubation during the procedure should be coded under "Procedural intubation required: pintr"	
Validation Rules	Field cannot be blank.	
Maximum Field Size	1	
Related Data Field		
Data Type	Number	
Parent / Child		
Behaviour	Reject file if NULL	

2. 5 Procedure

2.5.1. Symptoms

2.5.1a ACS

Defining Attributes

Name	Acute Coronary Syndrome (ACS)
Field Name	acs
Definition	ACS encompasses clinical features comprising chest pain or overwhelming shortness of breath, defined by accompanying clinical, ECG and biochemical features. Specifically, ACS refers to unstable angina, non-ST-Elevation Myocardial Infarction (NSTEMI) and/or ST-Elevation Myocardial Infarction (STEMI).
Justification	Collected to determine patient risk profile and risk adjustment models.
Obligation	Always

Representational Attributes

Permitted Values	Code	Description
	0	No
	1	Yes
Range	0-1	
Guide for Use	Was the patient suffering from an acute coronary syndrome (ACS) in the 7-day period leading up to and including the index PCI?	
Validation Rules	Field cannot be blank.	
Maximum Field Size	1	
Related Data Field		
Data Type	Number	
Parent / Child	Parent	
Behaviour	Reject file if NULL	

2.5.1b Date of ACS Symptom Onset

Defining Attributes	
Name	Date of ACS Symptom Onset
Field Name	dso
Definition	In the event of stuttering symptoms, ACS symptom onset is the date when symptoms became constant in quality or intensity. ACS symptoms may include: tightness, pressure, heaviness, fullness or squeezing in the chest which may spread to the neck and throat, jaw, shoulders, back, upper abdomen, either or both arms and even into the wrists and hands, dyspnoea, nausea/vomiting, cold sweat or syncope. Seeking medical attention could include the person presenting to their GP who then refers them to hospital or the person presenting directly to hospital (via ambulance or own form of transport). If the person is already a patient at the hospital for another reason then the time recorded would be when they advised hospital staff of their symptoms. Medical attention is defined as either at hospital or from a general practitioner. Restrict coding to 7 days prior to current procedure.
Justification	Collected to determine if patient is an inpatient at the time of ACS, and to benchmark performance and timeliness of treatment.
Obligation	Always, if ACS = Yes
Representational Attributes	
Permitted Values	NN/NN/NNNN
Range	DD/MM/YYYY [Date of Procedure]-7 Days – [Date of Procedure]
Guide for Use	Where item Acute Coronary Syndrome = Yes, on what date did the ACS symptoms start that prompted them to seek medical treatment?
Validation Rules	Field cannot be blank if ACS = Yes. Date of symptom onset must be ≤Date of Procedure, and >[Date of Procedure-7 Days]
Maximum Field Size	10
Related Data Field	acs
Data Type	Date/Time
Parent / Child	Child
Behaviour	Reject file if dso is < dop-7 Reject file if dso is > dop Reject file if acs=1 and dso is NULL

2.5.2a Time of ACS Symptom Onset

Defining Attributes	
Name	Time of ACS Symptom Onset
Field Name	tso
Definition	The time at which a person experienced ACS symptoms that prompted them to seek medical attention (on the date outlined in 'Date of ACS symptom onset' in 24-hour clock (HH:MM) format. If the symptom onset time is not specified in the medical record, it may be recorded as 0700 for morning; 1200 for lunchtime; 1500 for afternoon; 1800 for dinnertime; 2200 for evening and 0300 if awakened from sleep.
Justification	Collected to determine if patient is an inpatient at the time of ACS, and to benchmark performance and timeliness of treatment.
Obligation	Always, if ACS = Yes
Representational Attributes	
Permitted Values	HH:MM
Range	00:00-23:59
Guide for Use	Where item Acute Coronary Syndrome = Yes, at what time did the ACS symptoms start that prompted them to seek medical treatment?
Validation Rules	Field cannot be blank if ACS = Yes and Onset Time Not Available is blank. Field cannot be complete if Onset Time Not Available = Yes.
Maximum Field Size	5
Related Data Field	acs
Data Type	Date/Time
Parent / Child	Child
Behaviour	Reject file if acs=1 and tso AND ntso is NULL Reject file if tso has data and ntso =1

2.5.2b Onset Time Not Available

Defining Attributes

Name	Onset Time Not Available
Field Name	ntso
Definition	Where time of symptom onset is not available, specify here. Only applicable if time is missing.
Justification	Used to determine that the ACS onset time is not available.
Obligation	Always, if ACS Symptom Onset Time Not Available

Representational Attributes

Permitted Values	Code	Description
	1	Yes
Range	1	
Guide for Use	Is the time of symptom onset not available?	
Validation Rules	Field cannot be complete if Time of ACS Symptom Onset is complete.	
Maximum Field Size	1	
Related Data Field	tso	
Data Type	Number	
Parent / Child	Child	
Behaviour	Reject file if tso has data and ntso =1	

2.5.3. Type of ACS

Defining Attributes

Name	Type of ACS
Field Name	acst
Definition	Unstable Angina: Symptoms must include at least one of the following: 1. Angina that occurred at rest and was prolonged, usually lasting >20 mins; 2. New-onset angina of at least CCS class III severity; 3. Recent acceleration of angina reflected by an increase in severity of at least 1 CCS class (to at least CCS class III). Non ST-Elevation Myocardial Infarction (NSTEMI): <u>At least one</u> of the following biomarkers for detecting myocardial necrosis <u>must</u> be present: 1. Troponin T or I: Maximal concentration of Troponin T or I greater than the MI diagnostic limit on at least one occasion within 24 hours from the index clinical event; 2. CK-MB: Maximal value of CK-MB >2x the upper limit of normal (ULN) on one occasion during the first hours after the index clinical event; OR Maximal value of CK-MB (preferable CK-MB mass) > ULN on two successive samples. 3. Total CK: Only where Troponin or CK-MB assays are unavailable, total CK >2x the ULN (or the B fraction of CK) may be employed. Note: The preferred assay to use as biomarkers for myocardial necrosis is Troponin. In the absence of troponin, CK-MB is the next best alternative, but total CK can be used in the absence of troponin and CK-MB and one of the following: 1. Either ST segment depression or T wave abnormalities in the ECG; or 2. Ischaemic symptoms in the presence or absence of chest discomfort. Ischaemic symptoms may include: Unexplained nausea and vomiting; or Persistent shortness of breath secondary to left ventricular failure; or Unexplained weakness, dizziness, light-headedness, or Syncope. ST-Elevation Myocardial Infarction (STEMI): <u>At least one</u> of the following biomarkers for detecting myocardial necrosis MUST be present (refer to Note regarding Reference Control Limits): 1. Troponin T or I: Maximal concentration of Troponin T or I > the MI diagnostic limit on at least

one occasion within 24 hours from the index clinical event;
2. CK- MB: Maximal value of CK-MB >2x the upper limit of normal (ULN) on one occasion during the first hours after the index clinical event; OR Maximal value of CK-MB (preferable CK-MB mass) > ULN on two successive samples.
3. Total CK: Only where Troponin or CK-MB assays are unavailable, total CK >2x the ULN (or the B fraction of CK) may be employed.

Note: The preferred assay to use as biomarkers for myocardial necrosis is Troponin. In the absence of troponin, CK-MB is the next best alternative, but total CK can be used in the absence of troponin and CK-MB and one of the following ECG changes:
1. ST-segment elevation: New or presumed new ST segment elevation at the J point in two or more contiguous leads with the cut-off points ≥ 0.2mV in leads V1, V2, or V3, or ≥0.1 mV in other leads.
2. Development of any Q wave in leads V1 through V3, or the development of a Q-wave ≥ 30ms (0.03s) in leads I, II, aVL, aVF, V4, V5, orV6. (Q wave changes must be present in any two contiguous leads, and be ≥1mm in depth).
Reference Control Limits (MI Diagnostic Limit and Upper Limit of Normal): Reference values must be determined in each laboratory by studies using specific assays with appropriate quality control, as reported in peer- reviewed journals. Acceptable imprecision (coefficient of variation) at the 99th percentile for each assay should be defined as < or = to 10%. Each individual laboratory should confirm the range of reference values in their specific setting.

Justification: Collected to assess clinical appropriateness of procedure.
Obligation: Always, if ACS = Yes

Representational Attributes

Permitted Values	Code	Description
	1	Unstable Angina
	2	NSTEMI
	3	STEMI

Range	1-3
Guide for Use	What is the type of ACS?
Validation Rules	Field cannot be blank.
Maximum Field Size	1
Related Data Field	acs
Data Type	Number
Parent / Child	Child
Behaviour	Reject file if acs=1 and acst is NULL

2.5.4. Self-presenter

Defining Attributes

Name	Self-Presenter
Field Name	spr
Definition	The patient presented to hospital by way of their own means e.g., not in an ambulance or other emergency vehicle.
Justification	Collected to assess method of presentation to hospital
Obligation	Optional when type of ACS = 3, STEMI

Representational Attributes

Permitted Values	Code	Description
	0	No
	1	Yes
Range	0-1	
Guide for Use	Where patient 'Type of ACS' coded as ‘STEMI’, did the patient present to the hospital without an ambulance?	
Validation Rules	Field cannot be left blank if ACS type = STEMI	
Maximum Field Size	1	
Related Data Field	acst	
Data Type	Number	
Parent / Child	Child	
Behaviour		

2.5.5. Inter-Hospital Transfer

Defining Attributes

Name	Inter-Hospital Transfer
Field Name	iht
Definition	The patient was admitted to the PCI hospital following transfer from another acute care facility.
Justification	Collected to allow reporting of NCR QI – Time from door to PCI-mediated reperfusion
Obligation	Always, if Type of ACS = 3, STEMI

Representational Attributes

Permitted Values	Code	Description
	0	No
	1	Yes
Range	0-1	
Guide for Use	Where patient 'Type of ACS' coded as ‘STEMI’, was the patient transferred from another acute care facility?	
Validation Rules	Field cannot be left blank if ACS type = STEMI	
Maximum Field Size	1	
Related Data Field	acst	
Data Type	Number	
Parent / Child	Child	
Behaviour	Reject file if acst=3 and iht is NULL	

2.5.6. Pre-Hospital Notification

Defining Attributes

Name	Pre-Hospital Notification
Field Name	phn
Definition	PCI hospital was notified via electronic ECG transmission (or equivalent) from a paramedic field triage service prior to their arrival at the PCI hospital.
Justification	Collected to allow reporting of NCR QI – Time from door to PCI-mediated reperfusion.
Obligation	Always, if Type of ACS = 3, STEMI

Representational Attributes

Permitted Values	Code	Description
	0	No
	1	Yes
Range	0-1	
Guide for Use	Where patient 'Type of ACS' coded as 'STEMI', Indicate if the PCI hospital was notified via electronic ECG transmission (or equivalent) from a paramedic field triage service prior to their arrival at the PCI hospital.	
Validation Rules	Field cannot be left blank if ACS type = STEMI	
Maximum Field Size	1	
Related Data Field	acst	
Data Type	Number	
Parent / Child	Child	
Behaviour	Reject file if acst=3 and phn is NULL	

2.5.7. Balloon/device time

Defining Attributes	
Name	Balloon/Device Time
Field Name	tbd
Definition	The time the first device was used to treat the target lesion. Examples of the first device used include, but are not limited to: balloon; thrombectomy device; atherectomy device or stent. If the lesion cannot be crossed by the guidewire or device, use the time that the guide catheter was introduced. Note: This is a process measure, not a clinical outcomes measure and, as such, is not related to the timing of or whether Thrombolysis in Myocardial Infarction (TIMI) 3 (Complete Perfusion) flow was/was not restored.
Justification	Collected to allow reporting of NCR QI – Time from door to PCI-mediated reperfusion and Time from diagnostic electrocardiogram to PCI mediated reperfusion.
Obligation	Always, if Type of ACS = 3, STEMI
Representational Attributes	
Permitted Values	HH:MM
Range	00:00-23:59
Guide for Use	Where 'Type of ACS' coded as 'STEMI', at what time was the first device used?
Validation Rules	Field cannot be left blank if ACS type = STEMI
Maximum Field Size	5
Related Data Field	acst
Data Type	Date/Time
Parent / Child	Child
Behaviour	Reject file if acst=3 and tbd is NULL

2.5.8. Date of first medical contact

Defining Attributes	
Name	Date of First Medical Contact
Field Name	dfmc
Definition	The date on which the patient first received medical attention (either by ambulance arriving, attendance at hospital or from a general practitioner) for their ACS symptoms. Note: Seeking medical attention could include the person presenting to their GP who then refers them to hospital or the person presenting directly to hospital, or the arrival of the ambulance service. If the person is already a patient at the hospital for another reason then the date recorded would be when they advised hospital staff of their symptoms.
Justification	Collected to benchmark performance and timeliness of treatment.
Obligation	Always, if Type of ACS = 3, STEMI
Representational Attributes	
Permitted Values	NN/NN/NNNN
Range	DD/MM/YYYY
Guide for Use	Where 'Type of ACS' coded as 'STEMI', what was the date of First Medical Contact?
Validation Rules	Field cannot be blank if Type of ACS = STEMI. Date of First Medical Contact cannot > Date of Procedure, Date of Symptom Onset +7, Date of Diagnostic ECG. Date of First Medical Contact cannot < Date of Symptom Onset.
Maximum Field Size	10
Related Data Field	acst
Data Type	Date/Time (Minutes)
Parent / Child	Child
Behaviour	Reject file if acst = 3 and dfmc is NULL Reject file if dfmc>dop Reject file if dfmc>dso+7 Reject file if dfmc<dso Reject file if dfmc>decgd

2.5.9. Time of first medical contact

Defining Attributes	
Name	Time of First Medical Contact
Field Name	tfmc
Definition	The time at which the patient first received medical attention (either by ambulance arriving, attendance at hospital or from a general practitioner) for their ACS symptoms. Note: Seeking medical attention could include the person presenting to their GP who then refers them to hospital or the person presenting directly to hospital, or the arrival of the ambulance service. If the person is already a patient at the hospital for another reason then the time recorded would be when they advised hospital staff of their symptoms.
Justification	Collected to benchmark performance and timeliness of treatment.
Obligation	Always, if Type of ACS = 3, STEMI
Representational Attributes	
Permitted Values	HH:MM
Range	00:00-23:59
Guide for Use	Where 'Type of ACS' coded as ‘STEMI’, what was the time of First Medical Contact?
Validation Rules	Field cannot be blank if Type of ACS = STEMI. Time of First Medical Contact cannot < Time of Symptom Onset when Date of First Medical Contact = Date of Symptom Onset. Time of First Medical Contact cannot > Time of Procedure when Date of First Medical Contact = Date of Procedure
Maximum Field Size	5
Related Data Field	acst
Data Type	Date/Time
Parent / Child	Child
Behaviour	Reject file if acst = 3 and tfmc is NULL Reject file when tfmc<tso and dfmc=dso Reject file when tfmc>top and dfmc=dop

2.5.10. Date of diagnostic ECG

Defining Attributes	
Name	Date of Diagnostic ECG
Field Name	decgd
Definition	The date of the diagnostic electrocardiogram (ECG). The ECG recorded that shows evidence of ECG abnormalities consistent with a STEMI or suspected STEMI event. Note: The diagnostic ECG may have been before admission to this hospital.
Justification	Collected to allow reporting of NCR QI – Time from diagnostic electrocardiogram to PCI mediated reperfusion.
Obligation	Always, if ACS Type = STEMI
Representational Attributes	
Permitted Values	NN/NN/NNNN
Range	DD/MM/YYYY
Guide for Use	Where 'Type of ACS' coded as 'STEMI', what was the date of diagnostic ECG?
Validation Rules	Field cannot be blank if Type of ACS = STEMI
Maximum Field Size	10
Related Data Field	acst
Data Type	Date/Time
Parent / Child	Child
Behaviour	Reject file if acst = 3 and decgd is NULL

2.5.11. Time of diagnostic ECG

Defining Attributes	
Name	Time of Diagnostic ECG
Field Name	tecgd
Definition	The time of the diagnostic ECG. The ECG recorded that shows evidence of ECG abnormalities consistent with a STEMI or suspected STEMI event. Note: The diagnostic ECG may have been before admission to this hospital.
Justification	Collected to allow reporting of NCR QI – Time from diagnostic electrocardiogram to PCI mediated reperfusion.
Obligation	Always, if ACS Type = STEMI
Representational Attributes	
Permitted Values	HH:MM
Range	00:00-23:59
Guide for Use	Where 'Type of ACS' coded as 'STEMI', what was the time of diagnostic ECG?
Validation Rules	Field cannot be blank if ACS Type = STEMI. Time of Diagnostic ECG cannot > PCI Procedure Time when Date of Diagnostic ECG = Date of PCI Procedure. Time of Diagnostic ECG cannot ≤ Time of ACS Symptom Onset when Date of Diagnostic ECG – Date of Symptom Onset. Time of Diagnostic ECG cannot ≤ Time of First Medical Contact when Date of Diagnostic ECG = Date of First Medical Contact
Maximum Field Size	5
Related Data Field	acst
Data Type	Date/Time
Parent / Child	Child
Behaviour	Reject file if acst = 3 and tecgd is NULL Reject file when tecgd > top and decgd = dop Reject file when tecgd ≤ tso and decgd=dso Reject file when tecgd ≤ tfmc when decgd = dfmc

2.5.12. Balloon/Device Date

Defining Attributes	
Name	Balloon/Device Date
Field Name	dbd
Definition	The date the first device was used to treat the target lesion. Examples of the first device used include, but are not limited to: balloon; thrombectomy device; atherectomy device or stent. If the lesion cannot be crossed by the guidewire or device, use the time that the guide catheter was introduced. Note: This is a process measure, not a clinical outcomes measure and, as such, is not related to the timing of or whether Thrombolysis in Myocardial Infarction (TIMI) 3 (Complete Perfusion) flow was/was not restored.
Justification	Collected to allow reporting of NCR QI – Time from door to PCI-mediated reperfusion and Time from diagnostic electrocardiogram to PCI mediated reperfusion.
Obligation	Derived Variable
Representational Attributes	
Permitted Values	NN/NN/NNNN
Range	DD/MM/YYYY
Guide for Use	Where patient 'Type of ACS' coded as 'STEMI', on what date was the first device used?
Validation Rules	If [Balloon/Device Time ≤ PCI Procedure Time] then Balloon/Device Date = PCI Procedure Date + [1 day] If [Balloon/Device Time > PCI Procedure Time] then Balloon/Device Date = PCI Procedure Date
Maximum Field Size	10
Related Data Field	acst
Data Type	Date/Time
Parent / Child	Child
Behaviour	If [tbd=<top] then dbd=dop + [1 day] If [tbd>top] then dbd=dop

2.5.13. Symptom onset to reperfusion

Defining Attributes

Name	Symptom Onset to Reperfusion
Field Name	sor
Definition	Time between symptom onset, and PCI mediated reperfusion.
Justification	Collected to benchmark performance and timeliness of treatment.
Obligation	Derived Variable

Representational Attributes	
Permitted Values	NNNN
Range	0-9999
Guide for Use	What is the time between Symptom Onset and Reperfusion of the Occluded Vessel?
Validation Rules	Symptom Onset to Reperfusion = [Balloon/Device Time – Time of ACS Symptom Onset] + [Balloon/Device Date – Date of ACS Symptom Onset]
Maximum Field Size	4
Related Data Field	
Data Type	Integer (Duration in Minutes)
Parent / Child	
Behaviour	sor = [tbd-tso] + [dbd-dso] (expressed in minutes)

2.5.14. Door to Balloon/Device Time

Defining Attributes	
Name	Door to Balloon/Device Time
Field Name	dbdt
Definition	Time between a patient arriving at the PCI hospital to inflation of the balloon/device insertion.
Justification	Collected to benchmark performance and timeliness of treatment.
Obligation	Derived Variable
Representational Attributes	
Permitted Values	NNNN
Range	0-9999
Guide for Use	What is the time between the patient's entry into the hospital's administrative system and the first device used to treat the target lesion?
Validation Rules	Door to Balloon Time = [Balloon/Device Time - Time of Arrival at PCI Hospital] + [Balloon/Device Date = Date of Arrival at PCI Hospital]
Maximum Field Size	4
Related Data Field	acst
Data Type	Integer (Duration in Minutes)
Parent / Child	Child
Behaviour	dbdt = [tbd-toa] + [dbd-doa]

2.5.15. Symptom Onset to FMC

Defining Attributes	
Name	Symptom Onset to FMC
Field Name	sofmc
Definition	Derived variable to determine the time between symptom onset and first medical contact.
Justification	Collected to benchmark performance and timeliness of treatment.
Obligation	Derived Variable
Representational Attributes	
Permitted Values	NNNNN
Range	0-99999
Guide for Use	
Validation Rules	Symptom Onset to First Medical Contact = [Time of First Medical Contact – Time of Symptom Onset] + [Date of First Medical Onset- Date of Symptom Onset]
Maximum Field Size	5
Related Data Field	
Data Type	Integer (Duration in Minutes)
Parent / Child	
Behaviour	sofmc= [tfmc-tso] + [dfmc-dso]

2.5.16. FMC to Reperfusion

Defining Attributes	
Name	FMC to Reperfusion
Field Name	fmctr
Definition	Derived variable to determine the time between first medical contact to reperfusion.
Justification	Collected to benchmark performance and timeliness of treatment.
Obligation	Derived Variable
Representational Attributes	
Permitted Values	NNNN
Range	0-9999
Guide for Use	Derived variable to determine the time between first medical contact to reperfusion.
Validation Rules	First Medical Contact to Reperfusion = [Balloon/Device Time – Time of First Medical Contact] + [Balloon/Device Date – Date of First Medical Contact]
Maximum Field Size	4
Related Data Field	
Data Type	Integer (Duration in Minutes)
Parent / Child	
Behaviour	fmctr= [tbd-tfmc] + [dbd-dfmc]

2.5.17. FMC to Door

Defining Attributes	
Name	FMC to Door
Field Name	fmctd
Definition	Derived variable to determine the time between first medical contact to hospital door.
Justification	Collected to benchmark performance and timeliness of treatment.
Obligation	Derived Variable
Representational Attributes	
Permitted Values	NNNN
Range	0-9999
Guide for Use	Derived variable to determine the time between first medical contact to reperfusion.
Validation Rules	First Medical Contact to Door= [Time of Arrival -Time of First Medical Contact] + [Date of Arrive – Date of First Medical Contact]
Maximum Field Size	4
Related Data Field	
Data Type	Integer (Duration in Minutes)
Parent / Child	
Behaviour	fmctd= [toa-tfmc] + [doa-dfmc]

2.5.18. FMC to diagnostic ECG

Defining Attributes	
Name	FMC to Diagnostic ECG
Field Name	fmctecg
Definition	The time between First Medical Contact to Diagnostic ECG Note: The diagnostic ECG may have been before admission to this hospital.
Justification	Collected to benchmark performance and timeliness of treatment.
Obligation	Derived Variable
Representational Attributes	
Permitted Values	NNN
Range	0-100
Guide for Use	
Validation Rules	First Medical Contact to Diagnostic ECG = [Time of Diagnostic ECG – Time of First Medical Contact] + [Date of Diagnostic ECG – Date of First Medical Contact] (expressed in minutes)
Maximum Field Size	3
Related Data Field	
Data Type	Integer (Duration in Minutes)
Parent / Child	
Behaviour	fmctecg= [tecgd-tfmc] + [decgd-dfmc] (expressed in minutes)

2.5.19. Diagnostic ECG to Balloon

Defining Attributes	
Name	Diagnostic ECG to Balloon
Field Name	ecgdb
Definition	The time between Diagnostic ECG and inflation of Balloon/Device Note: The diagnostic ECG may have been before admission to this hospital
Justification	Collected to allow reporting of NCR QI – Time from diagnostic ECG to PCI-mediated reperfusion
Obligation	Derived Variable
Representational Attributes	
Permitted Values	NNN
Range	0-100
Guide for Use	
Validation Rules	Diagnostic ECG to Balloon= [Time of Diagnostic ECG – Balloon/Device Time] + [Date of Diagnostic ECG – Date of Balloon/Device]
Maximum Field Size	3
Related Data Field	
Data Type	Integer (Duration in Minutes)
Parent / Child	
Behaviour	ecgdb = [tecgd-tbd] + [decgd-dbd] (expressed in minutes)

2.5.20. Inpatient at time of ACS

Defining Attributes

Name	Inpatient at Time of ACS
Field Name	inp
Definition	Was the patient an inpatient in the hospital at the Time of ACS onset?
Justification	Collected to allow reporting of NCR QI – Time from door to PCI-mediated reperfusion
Obligation	Derived Variable

Representational Attributes

Values	Code	Description
	0	No
	1	Yes
Range	0-1	
Guide for Use	Was the patient an inpatient in the hospital at the Time of ACS Onset?	
Validation Rules	Inpatient = No if ACS = Yes & [Date of Symptom Onset & Time of Symptom Onset] ≤ [Date of Arrival & Time of Arrival]	
	Inpatient = Yes if ACS = Yes & [Date of Symptom Onset & Time of Symptom Onset] > [Date of Arrival & Time of Arrival]	
	Inpatient = NULL if ACS = 0	
Maximum Field Size	1	
Related Data Field	acs	
Data Type	Number	
Parent / Child	Child	

3. PCI Indication

3.1.1. Procedure

Defining Attributes

Name	PCI Indication
Field Name	PCI

Definition

1. Primary PCI for patient with STEMI (or STEMI equivalent) within 12 hours of symptom onset.
2. PCI for patient with STEMI (or STEMI equivalent) between 12-24 hours of symptom onset
3. Rescue PCI for STEMI (or STEMI equivalent) after a failed full-dose lysis
4. PCI for STEMI (or STEMI equivalent) where the patient is stable after receiving fill-dose lysis
5. PCI for STEMI (1-7 days no prior lysis)
6. PCI for STEMI (1-7 days – following lysis)
7. PCI for cardiac arrest/cardiogenic shock (Not STEMI) – PCI performed post-cardiac arrest or cardiogenic shock but without ECG or biomarker evidence of acute myocardial infarction.

Note: This does not include any PCI cases for Myocardial Infarction (MI).

8. PCI for NSTEMI, including patients who have high risk features for short-term risk of death or nonfatal MI. High risk features include at least one of the following:

- History - accelerating tempo of ischaemic symptoms in preceding 48 hours
- Character of pain - prolonged ongoing (greater than 20 minutes) rest pain
- Clinical findings: Pulmonary oedema, most likely due to ischemia
- New or worsening mitral regurgitation murmur
- S3 or new worsening crackles/crepitations
- Hypotension, bradycardia, tachycardia
- Age greater than 75 years
- ECG: Angina at rest with transient ST-segment changes greater than 0.5 mm
- Bundle-branch block, new or presumed new
- Sustained ventricular tachycardia.
- Cardiac markers - NSTEMI patients with elevated cardiac Tn-T, Tn-I, or CK-MB.

9. PCI for unstable angina (<7 days) – Includes patients with unstable angina who have high risk features for short-term risk of death or nonfatal MI.

High risk features include at least one of the following

- History – accelerating tempo of ischaemic symptoms in preceding 48 hours
- Character of pain – prolonged ongoing (greater than 20 minutes) rest pain
- Clinical findings – pulmonary oedema, most likely due to ischaemia

Justification	Collected to allow reporting of NCR QI – Time from door to PCI-mediated reperfusion and procedures are undertaken for appropriate reasons and for clinical presentation reporting.
Obligation	Always

Representational Attributes		
Permitted Values	Code	Description
	1	Primary PCI for STEMI<12 hours
	2	PCI for STEMI (12-24 hours)
	3	Rescue PCI for STEMI (<24 hours – unstable following lysis)
	4	PCI for STEMI (<24 hours – stable following lysis)
	5	PCI for STEMI (1-7 days no prior lysis)
	6	PCI for STEMI (1-7 days following lysis)
	7	PCI for cardiac arrest/cardiogenic shock (without evidence of STEMI)
	8	PCI for NSTEMI (<7 days)
	9	PCI for unstable angina (<7 days)
	10	PCI for recent ACS (7-30 days)
	11	Staged PCI
	12	Angina/angina equivalent symptoms
	13	No angina/angina equivalent symptoms
Range	1-13	
Guide for Use	What was the reason for the current PCI?	
Validation Rules	PCI Indication cannot = Primary PCI for STEMI<12 hours, PCI for STEMI (12-24 hours), Rescue PCI for STEMI (<24 hours – unstable following lysis), PCI for STEMI (<24 hours – stable following lysis), PCI for STEMI (1-7 days no prior lysis) or PCI for STEMI (1-7 days following lysis) if Acute Coronary Syndrome = No. PCI Indication cannot = PCI for cardiac arrest/cardiogenic shock (without evidence of STEMI), PCI for NSTEMI (<7 days), PCI for unstable angina (<7 days), PCI for recent ACS (7-30 days), Staged PCI, Angina/angina equivalent symptoms, No angina/angina equivalent symptoms if Type of ACS = STEMI. PCI Indication must = 8, if Type of ACS = NSTEMI. PCI Indication must = 9 if Type of ACS = Unstable Angina	
Maximum Field Size	2	
Related Data Field		
Data Type	Number	
Parent / Child		
Behaviour	Reject file if acs = 0 and pci = 1, 2, 3, 4, 5 or 6. Reject file if acst=3 and pci = 7, 8, 9, 10, 11, 12 or 13. Reject file if acst = 2 and pci does not =8 Reject file is acst=1 and pci does not =9 Reject file if NULL	

3.1.2. Grade of Stenosis

Defining Attributes

Name	Grade of Stenosis
Field Name	gos
Definition	Where the indication for the current PCI is: Staged, Angina/angina equivalent symptoms or No Angina/angina equivalent, please record the grade of stenosis for the lesion treated.
Justification	Collected to assist in determining the appropriateness of the PCI procedure.
Obligation	Where PCI = 11, 12 or 13

Representational Attributes

Values	Code	Description
	1	High Grade Stenosis >70%
	2	Medium Grade Stenosis 50-70%
	3	Low Grade Stenosis <50%
Range	1-3	
Guide for Use	What is the grade of stenosis for the lesion treated?	
Validation Rules	Field cannot be blank when PCI indication is Angina/angina equivalent symptoms o r No angina/angina equivalent symptoms	
Maximum Field Size	1	
Related Data Field		
Data Type	Number	
Parent / Child	Child	
Behaviour	Reject file if PCI = 11, 12 or 13 and field is NULL.	

3.1.3. Functional test result

Defining Attributes

Name	Functional test result
Field Name	fut
Definition	Where the indication for the current PCI is: Staged, Angina/angina equivalent symptoms or No Angina/angina equivalent, please records the functional test result. **Positive functional test** = suggestion of ischaemia or abnormality **Negative function test** = No suggestion of ischaemia or abnormality **Functional test equivocal** = Results were uninterpretable and/or cannot be determined if positive or negative. Functional tests can comprise of: Exercise stress test, stress echocardiogram (exercise or pharmacological stress), nuclear stress test (exercise or pharmacological stress), CT scan or FFR. The test could be performed at this admission (but prior to the current PCI), or it could be a test that resulted in the admission.
Justification	Collected to assist in determining the appropriateness of the PCI procedure.
Obligation	Where PCI =11,12 or 13

Representational Attributes

Values	Code	Description
	1	Positive functional test
	2	Negative functional test
	3	Functional test equivocal
	4	Functional test not done
	5	Functional test results not available
Range	1-5	
Guide for Use	What is the result of the functional test performed prior to the current PCI?	
Validation Rules	Field cannot be blank when PCI indication is angina equivalent/no equivalent.	
Maximum Field Size	1	
Related Data Field		
Data Type	Number	
Parent / Child	Child	
Behaviour	Reject file if PCI = 11, 12 or 13 and field is NULL.	

3.2 Procedure Details

3.2.1. Percutaneous Entry Location

Defining Attributes

Name	Percutaneous Entry Location
Field Name	pel
Definition	The percutaneous entry location used to provide arterial vascular access for the procedure. Note: If crossover occurred, select the percutaneous entry location that successfully facilitated the index PCI procedure.
Justification	Collected for use in risk adjustment models and trends of best practice.
Obligation	Always

Representational Attributes

Permitted Values	Code	Description
	1	Brachial
	2	Radial
	3	Femoral
Range	1-3	
Guide for Use	Which entry location was used to provide access for the procedure?	
Validation Rules	Field cannot be blank.	
Maximum Field Size	1	
Related Data Field		
Data Type	Number	
Parent / Child		
Behaviour	Reject file if NULL	

3.2.2a Adjunctive Device Required

Defining Attributes

Name	Adjunctive Device required
Field Name	adr
Definition	Adjunctive device types include, but are not limited to: Intravascular ultrasound, Optical coherence tomography, Thrombus aspiration device, Rotational atherectomy, Pressure Wire/or any other devices used to facilitate balloon inflation or stent implantation during the current PCI.
Justification	Collected to assist in reporting on trends of best practice.
Obligation	Always

Representational Attributes

Values	Code	Description
	0	No
	1	Yes
Range	0-1	
Guide for Use	Were there any adjunctive devices used during the PCI procedure?	
Validation Rules	Field cannot be blank.	
Maximum Field Size	1	
Related Data Field		
Data Type	Number	
Parent / Child Behaviour	Reject file if NULL	

3.2.2b Adjunctive Device Type

Defining Attributes

Name	Adjunctive Device type
Field Name	adrt
Definition	Multiple options can be selected.
Justification	Collected to identify the type of adjunctive device used
Obligation	If adr=1

Representational Attributes

Values	Code	Description
	adrt_1	Intravascular ultrasound
	adrt_2	Optical coherence tomography
	adrt_3	Thrombus aspiration device
	adrt_4	Rotational atherectomy
	adrt_5	Orbital atherectomy
	adrt_6	Pressure wire
	adrt_7	Lithotripsy balloon
	adrt_8	Cutting balloon
	adrt_9	Other
Range	0-1	
Guide for Use	What were the types of adjunctive devices used during the PCI procedure? Select all devices used.	
Validation Rules	Field cannot be blank when adr=1.	
Maximum Field Size	1	
Related Data Field		
Data Type	Multi Select 1= Checked	
Parent / Child Behaviour	Reject file where adr=0 and adrt_1 - adrt_9 are all NULL or 0.	

3.2.3. Procedural Intubation Required

Defining Attributes

Name	Procedural Intubation Required
Field Name	pintr
Definition	Intubation required during the index PCI procedure.
Justification	Collected to identify high risk patients.
Obligation	Always

Representational Attributes

Permitted Values	Code	Description
	0	No
	1	Yes
Range	0-1	
Guide for Use	Was the patient intubated during the procedure?	
Validation Rules	Field cannot be blank.	
Maximum Field Size	1	
Related Data Field		
Data Type	Number	
Parent / Child		
Behaviour	Reject file if NULL	

3.2.4a Mechanical Circulatory Support

Defining Attributes		
Name	Mechanical Circulatory Support	
Field Name	vrs	
Definition	Mechanical ventricular support required prior to or during the index PCI procedure. Note: Mechanical ventricular support includes: intra-aortic balloon pump (IABP), cardiopulmonary bypass, left ventricular assist device (LVAD), extracorporeal membrane oxygenation (ECMO), mechanical chest compression device (e.g. Lund University Cardiac Arrest System - LUCAS) and/or catheter based cardiac assist device (e.g., IMPELLA heart pump).	
Justification	Collected to identify high risk patients and risk adjustment models.	
Obligation	Always	
Representational Attributes		
Permitted Values	Code	Description
	0	No
	1	Yes
Range	0-1	
Guide for Use	Was ventricular support required during the procedure?	
Validation Rules	Field cannot be blank.	
Maximum Field Size	1	
Related Data Field		
Data Type	Number	
Parent / Child		
Behaviour	Reject file if NULL	

3.2.4b Type of Mechanical Ventricular Support

Defining Attributes

Name	Type of mechanical ventricular support
Field Name	vsrt
Definition	Mechanical ventricular support types include; intra-aortic balloon pump, extracorporeal membrane oxygenation left ventricular assist device and Impella.
Justification	Collected to identify high risk patients and risk adjustment models.
Obligation	If vsr=1

Representational Attributes

Values	Code	Description
	1	Intra-aortic balloon pump (IABP)
	2	Extracorporeal membrane oxygenation (ECMO)
	3	Left ventricular assist device (LVAD)
	4	Impella
Range	1-4	
Guide for Use	What is the type of mechanical ventricular support used prior to or during the PCI procedure?	
Validation Rules	Field cannot be blank when vsr=1.	
Maximum Field Size	1	
Related Data Field		
Data Type	Number	
Parent / Child Behaviour	Reject file if vsr=1 and vsrt is NULL.	

3.3.1a Lesion Location

Defining Attributes

Name	Lesion Location
Field Name	lr1_lesion
Definition	The coronary segment that applies for EACH coronary lesion attempted during the current PCI. Every coronary lesion attempted during the current PCI must be recorded separately (add new lesion). Up to 5 lesions per PCI can be recorded. Select ONE segment for each lesion treated.
Justification	Collected to determine the lesion treated.
Obligation	Always

Representational Attributes

Permitted Values	Code	Description
	1	Left anterior descending artery (LAD)
	2	Diagonal artery
	3	Left circumflex (LCx)
	4	Left main coronary artery
	5	Posterior descending artery
	6	Right coronary artery
	7	Internal mammary graft
	8	Radial artery graft
	9	Saphenous vein graft
	10	Not stated/inadequately described
Range	1-10	
Guide for Use	What was the lesion location?	
Validation Rules	Field cannot be blank.	
Maximum Field Size	2	
Related Data Field		
Data Type	Number	
Parent / Child		
Behaviour	Reject file if NULL. Up to 5 lesions can be entered. Fields are coded in data extract as LR1_LESION, LR2_LESION … LR5_LESION.	

3.3.1b In-stent Restenosis (ISR)

Defining Attributes		
Name	In-stent Restenosis (ISR)	
Field Name	lr1_isr	
Definition	The current lesion location has had a pre-existing stent implanted from a prior PCI to the same site OR is within 5mm of the proximal or distal stent edges of a pre-existing stent from a previous PCI.	
Justification	Collected to identify trends and safely and efficacy of the treatment of clinical subsets.	
Obligation	Always	
Representational Attributes		
Permitted Values	Code	Description
	0	No
	1	Yes
Range	0-1	
Guide for Use	Does the current lesion location have a pre-existing stent implanted from a prior PCI to the same site?	
Validation Rules	Field cannot be blank. Field cannot be coded 1=Yes if Previous PCI = No and In-stent Restenosis = Yes	
Maximum Field Size	1	
Related Data Field		
Data Type	Number	
Parent / Child		
Behaviour	Reject file if NULL Reject file if ppci =0 AND lr1_isr=1 Up to 5 lesions can be entered. Fields are coded in data extract as LR1_LESION, LR2_LESION … LR5_LESION.	

3.3.1c Stent thrombosis

Defining Attributes

Name	Stent Thrombosis
Field Name	lr1_isrst
Definition	The current lesion was treated due to the presence of a thrombus in the pre-existing stent OR within 5mm of stent edges.
Justification	Collected to identify trends and safely and efficacy of the treatment of clinical subsets.
Obligation	Always

Representational Attributes

Permitted Values	Code	Description
	0	No
	1	Yes
Range	0-1	
Guide for Use	Was the current lesion treated due to the presence of a thrombus in a pre-existing stent?	
Validation Rules	Field cannot be blank. Field cannot be coded 1=Yes if Previous PCI = No and Stent Thrombosis = Yes	
Maximum Field Size	1	
Related Data Field		
Data Type	Number	
Parent / Child		
Behaviour	Reject file if NULL	
	Reject file if PPCI=0 AND lr1_isrst=1	
	Up to 5 lesions can be entered. Fields are coded in data extract as LR1_LESION, LR2_LESION … LR5_LESION.	

3.3.1d Lesion Successfully Treated

Defining Attributes

Name	Lesion Successfully Treated
Field Name	lr1_lst
Definition	The lesion was successfully treated. Successful dilation of a lesion is considered where: Residual stenosis is less than 10% following coronary stenting; OR Residual stenosis is less than 50% after POBA (balloon angioplasty/atherectomy) alone AND Coronary blood perfusion rates have reached TIMI 2 or TIMI 3 flow. Note: Thrombolysis in Myocardial Infarction (TIMI) 2 flow (partial reperfusion) is evidenced by delayed or sluggish antegrade flow with complete filling of the distal territory. TIMI 3 flow (complete perfusion) is normal flow which fills the distal coronary bed completely.
Justification	Collected to identify trends and safely and efficacy of the treatment of clinical subsets.
Obligation	Always

Representational Attributes

Permitted Values	Code	Description
	0	No
	1	Yes
Range	0-1	
Guide for Use	Was the lesion successfully treated?	
Validation Rules	Field cannot be blank. Field cannot be coded 1=Yes if Previous PCI = No and Stent Thrombosis = Yes	
Maximum Field Size	1	
Related Data Field		
Data Type	Number	
Parent / Child		
Behaviour	Reject file if NULL Up to 5 lesions can be entered. Fields are coded in data extract as LR1_LESION, LR2_LESION … LR5_LESION.	

3.3.1e Type of Stent(s) Implanted

Defining Attributes

Name	Type of Stent(s) Implanted
Field Name	lr1-5_sit
Definition	Select ONE of the following options: Bare metal stents (BMS): Where one or more bare metal coronary stent(s) were implanted in the current lesion (and no other type of stent/scaffold was implanted). Drug eluting stents (DES): Where one or more drug eluting coronary stent(s) were implanted in the current lesion (and no other type of stent was implanted). Mixed stents (combined BMS & DES): Where at least one BMS and at least one DES were implanted in the current lesion. Bioresorbable stent(s) (BRS): Where one or more bioresorbable coronary stent(s) were implanted in the current lesion (and no other type of stent/scaffold was implanted). Other: Where stent(s) or scaffold(s) were implanted into the current lesion, but the available options listed above do not apply. This would include combinations of metal stents and BVS(s) whether they were drug eluting and/or non-drug eluting devices. Enter the details of the stent/scaffold in the free text provided. POBA (Plain Balloon Angioplasty): Where the only treatment for this lesion was balloon inflation to recanalize coronary arteries; this includes both balloons/catheters coated in a drug (e.g. paclitaxel, etc.) or NOT coated with any drug. No Stent/No Balloon. Drug-eluting Balloon: Where the only treatment for this lesion was balloon inflation to recanalize coronary arteries AND the balloon/catheter WAS coated in a drug (e.g paclitaxel, etc.
Justification	Collected to identify trends and safely and efficacy of the treatment of clinical subsets.
Obligation	Always

Representational Attributes

Permitted Values	Code	Description
	1	Bare metal stent(s) only (BMS)
	2	Drug-eluting stent(s) (DES)
	3	Mixed stent(s) (Combined BMS & DES)
	4	Bioresorbable stent(s) (BRS)
	5	Other stents/scaffolds
	6	POBA (Plain Balloon Angioplasty)
	7	No Stent/No Balloon
	8	Drug-eluting Balloon
Range	1-8	

Guide for Use	What type of stent/balloon was used?
Validation Rules	Field cannot be blank.
Maximum Field Size	1
Related Data Field	
Data Type	Number
Parent / Child	
Behaviour	Reject file if NULL Up to 5 lesions can be entered. Fields are coded in data extract as LR1_LESION, LR2_LESION … LR5_LESION.

3.3.2. Total Entrance Radiation Dose (Air Kerma)

Defining Attributes	
Name	Total Entrance Radiation Dose (Air Kerma)
Field Name	tak
Definition	The total radiation dose (Cumulative Air Kerma, or Reference Air Kerma) recorded to the nearest milligray (mGy). The value recorded should include the total dose for the lab visit. Cumulative Air Kerma is the total Air Kerma accrued from the beginning of an examination or procedure and includes all contributions from fluoroscopic and radiographic irradiation.
Justification	Collected to assess radiation risk
Obligation	Optional

Representational Attributes	
Permitted Values	NNN
Range	0-99,999
Guide for Use	What was the total radiation dose?
Validation Rules	Field cannot >99,999
Maximum Field Size	3
Related Data Field	
Data Type	Number
Parent / Child	
Behaviour	Reject file if value entered >99,999.

3.3.3. Total Exam Dose Area Product in mGy/m²

Defining Attributes	
Name	Total Exam Dose Area Product in mGy/m²
Field Name	dap
Definition	The total fluoroscopy dose to the nearest integer. The value recorded should include the total dose for the lab visit.
Justification	Collected to assess radiation risk.
Obligation	Optional
Representational Attributes	
Permitted Values	NNN
Range	0-999
Guide for Use	What was the Dose Area Product?
Validation Rules	Field cannot >999
Maximum Field Size	3
Related Data Field	
Data Type	Number
Parent / Child	
Behaviour	Reject file if value entered >999.

3.3.4. Total Fluoroscopy Time

Defining Attributes	
Name	Total Fluoroscopy Time
Field Name	tft
Definition	The total fluoroscopy time in mins. Report to the nearest 0.1 min
Justification	Collected to assess radiation risk.
Obligation	Optional
Representational Attributes	
Permitted Values	NNN.N
Range	0.1-300.0
Guide for Use	What was the total fluoroscopy time?
Validation Rules	Field cannot >300.0
Maximum Field Size	3
Related Data Field	
Data Type	Integer (Duration in Minutes)
Parent / Child	
Behaviour	Reject file if value entered >300.0

4. Post Procedure

4.1. Post-Procedure & In-Hospital Complications

4.1.1. In-Hospital MI

Defining Attributes

Name	In-Hospital MI
Field Name	ihmi
Definition	The patient experienced the new presence of myocardial infarction (MI) either during the index cardiac catheter lab visit, after the lab visit or any subsequent lab visits, but prior to being discharged from the hospital. There may be some minor variation in the way participating registries define this item. Supporting definition: The in-hospital, PCI-related MI must be a distinct clinical event that can be identified as a separate event to the index PCI. As such, the in-hospital new or recurrent MI will differ among patients presenting with normal cardiac biomarker levels and those patients whose pre-procedure baseline biomarker levels are elevated. 1. Patients with normal baseline biomarker levels, the NEW or recurrent MI must include: Elevated biomarkers* >5 the upper limit of normal (ULN) ≤48 hours of index PCI and at least one of the following: Evolutionary ST segment elevation (≥0.1mV) distinct from the index event; Development of new Q-waves (≥40ms duration) in 2 or more contiguous ECG leads; Ischaemic symptoms (with or without chest discomfort) lasting ≥20mins; Angiographic evidence flow limiting complications (embolism, persistent slow-flow or no re-flow, etc.); Imaging evidence of new loss of myocardium or new regional wall flow abnormality. Note: CABG-related peri-procedural MI (within 48 hours of CABG) requires CK-MB ≥10x ULN. 2. Patients with elevated baseline cardiac biomarker levels. If cardiac biomarker levels are still rising (have not peaked) at the time of the index PCI procedure, an in-hospital NEW or recurrent MI cannot be diagnosed. For patients whose elevated cardiac biomarker level have peaked (no longer rising) by the current PCI procedure time, the in-hospital MI must include: A NEW elevation of biomarkers ≥20% from the pre-procedural cardiac biomarker levels and at least one of the following: Evolutionary ST segment elevation (≥0.1mV) distinct from the index event; Development of new Q-waves (≥40ms duration) in 2 or more contiguous ECG leads; Ischaemic symptoms (with or without chest discomfort) lasting >20mins; Angiographic evidence flow limiting complications (embolism, persistent slow-flow or no re-flow, etc.); Imaging evidence of new loss of myocardium or new regional wall flow abnormality. Note: CABG-related peri-procedural MI (within 48 hours of CABG) requires CK-MB ≥10x ULN. * Troponin (T or I) is the preferred cardiac biomarker for defining the presence of MI. In the absence of Troponin, CK-MB is the best alternative (but total CK can be used, where CK-MB and Troponin are both unavailable).
Justification	Collected to allow reporting of in-hospital and 30-day MACE and MACCE.
Obligation	Always

Representational Attributes		
Permitted Values	Code	Description
	0	No
	1	Yes
Range	0-1	
Guide for Use	Did the patient experience a myocardial infarction while an in-patient?	
Validation Rules	Field cannot be blank.	
Maximum Field Size	1	
Related Data Field		
Data Type	Number	
Parent / Child		
Behaviour	Reject file if NULL	

4.1.2a Subsequent PCI (in this admission)

Defining Attributes

Name	Subsequent PCI (in this admission)
Field Name	ihpci
Definition	The patient underwent a subsequent PCI (distinct from the index PCI) after the cardiac catheter lab visit, but prior to discharge. Note: This includes emergent PCI revascularisations and/or planned, staged PCI visits to the cardiac catheter lab during the index admission, but prior to discharge.
Justification	Collected to allow reporting of NCR QI Unplanned revascularisation within 30 days.
Obligation	Always

Representational Attributes

Permitted Values	Code	Description
	0	No
	1	Yes
Range	0-1	
Guide for Use	Did the patient undergo a subsequent PCI during the same admission?	
Validation Rules	Field cannot be blank.	
Maximum Field Size	1	
Related Data Field		
Data Type	Number	
Parent / Child	Parent	
Behaviour	Reject file if NULL	

4.1.2b Planned Subsequent PCI

Defining Attributes

Name	Planned Subsequent PCI
Field Name	ihpcip
Definition	The subsequent PCI was planned. Note: A 'planned in-hospital PCI' is defined as a staged or scheduled elective PCI only. For emergent PCI interventions that were not previously scheduled, code as 'no'. Note: Any target vessel revascularisation of a successfully treated lesion should be coded as 'unplanned'. Subsequent revascularisation of a previous unsuccessfully treated lesion is situation dependant.
Justification	Collected to allow reporting of NCR QI Unplanned revascularisation within 30 days.
Obligation	Always, if In-hospital PCI = Yes

Representational Attributes

Permitted Values	Code	Description
	0	No
	1	Yes
Range	0-1	
Guide for Use	Where item Subsequent PCI was coded 'yes', was the subsequent PCI planned?	
Validation Rules	Field cannot be blank if In-hospital PCI = Yes. Field cannot be complete if In-hospital PCI = No.	
Maximum Field Size	1	
Related Data Field	ihpci	
Data Type	Number	
Parent / Child	Child	
Behaviour	Reject file if ihpci=0 and ihpcip has data Reject file if ihpci=1 and ihpcip is NULL	

4.1.2c In-Hospital Target Vessel (PCI)

Defining Attributes

Name	In-Hospital Target Vessel (PCI)
Field Name	ihtvr
Definition	The target vessel was revascularised during the subsequent in-hospital PCI. Note: A PCI TVR is any revascularisation due to restenosis/occlusion within the target coronary artery and/or the same arterial branch that was treated during the index PCI. This includes any percutaneous revascularisation within the same arterial branch treated during the index PCI, regardless of whether the index PCI was successful.
Justification	Collected to allow reporting of NCR QI Unplanned revascularisation within 30 days
Obligation	Always, if In-hospital PCI = Yes

Representational Attributes

Permitted Values	Code	Description
	0	No
	1	Yes
Range	0-1	
Guide for Use	Where item Subsequent PCI was coded 'yes', was the target vessel revascularised?	
Validation Rules	Field cannot be blank if In-hospital PCI = Yes. Field cannot be complete if In-hospital PCI = No.	
Maximum Field Size	1	
Related Data Field	ihpci	
Data Type	Number	
Parent / Child	Child	
Behaviour	Reject file if ihpci=0 and intvr has data Reject file if ihpci =1 and ihtvr is NULL	

4.1.2d In-Hospital Target Lesion Revascularisation

Defining Attributes

Name	In-Hospital Target Lesion Revascularisation
Field Name	ihtlr
Definition	Indicate whether the target lesion was also revascularised during the subsequent in-hospital PCI. Note: A target lesion revascularisation (TLR) is any revascularisation of the same lesion treated during the index PCI. This includes treatment of a restenosis/occlusion within a stent implanted during the index PCI (or within 5-mm of the proximal and distal margins of the stent edges). It also includes attempts to revascularise the target lesion where a stent was not successfully implanted and/or plain old balloon angioplasty (POBA) was employed during the index PCI.
Justification	Collected to allow reporting of NCR QI Unplanned revascularisation within 30 days.
Obligation	Always, if In-hospital Target Vessel (PCI) = Yes

Representational Attributes

Permitted Values	Code	Description
	0	No
	1	Yes
Range	0-1	
Guide for Use	Where item Subsequent PCI was coded 'yes', was the target vessel revascularised?	
Validation Rules	Field cannot be blank if In-hospital PCI = Yes. Field cannot be complete if In-hospital PCI = No.	
Maximum Field Size	1	
Related Data Field	ihtvr	
Data Type	Number	
Parent / Child	Child	
Behaviour	Reject file if ihtvr=0 and ihtlr has data Reject file if ihtvr=1 and ihtlr is NULL	

4.1.3a In-Hospital Cardiothoracic Surgery

Defining Attributes

Name	In-Hospital Cardiothoracic Surgery
Field Name	ihcab
Definition	The patient underwent or was transferred for cardiothoracic surgery (whether or not this actually involved the placing of bypass grafts) either during the cardiac catheter lab visit, after the lab visit, but prior to discharge and/or any subsequent lab visits. Note: The surgery should be cardiothoracic (i.e. not related to peripheral vascular complications). The surgical indication may have been, but are not exclusive to: Prompted/indicated by a need to correct an emergency complication of the index PCI (e.g. abrupt vessel closure, cardiac vessel perforation, dissection of a thoracic great vessel, etc.); OR CABG to revascularise the target vessel treated during the index PCI; either during or after the catheter lab visit, but prior to discharge and/or any subsequent lab visits; OR For a patient who underwent a successful PCI (e.g. for an ACS) but required a CABG for anatomical or pre-existing CAD indications (e.g. left-main disease, triple-vessel disease, etc.). Note: If the patient was transferred from the index hospital to a tertiary facility for cardiothoracic surgery as part of ongoing treatment related to the index PCI (e.g. emergency CABG) then code as 'yes'.
Justification	Collected to allow reporting of NCR QI Unplanned revascularisation within 30 days.
Obligation	Always

Representational Attributes

Permitted Values	Code	Description
	0	No
	1	Yes
Range	0-1	
Guide for Use	Did the patient undergo or was transferred for cardiothoracic surgery prior to discharge?	
Validation Rules	Field cannot be blank.	
Maximum Field Size	1	
Related Data Field		
Data Type	Number	
Parent / Child	Parent	
Behaviour	Reject file if NULL	

4.1.3b Planned Cardiothoracic Surgery

Defining Attributes

Name	Planned Cardiothoracic Surgery
Field Name	ihpcab
Definition	The cardiothoracic surgery was planned. Note: A 'planned cardiothoracic surgery' is defined as a scheduled surgical event only. For emergent surgeries that were not scheduled or planned, code as 'no'. Note: Any target vessel revascularisation of a successfully treated lesion should be coded as 'unplanned'. Subsequent revascularisation of a previous unsuccessfully treated lesion is situation dependant. Please contact NCR project team if unsure.
Justification	Collected to allow reporting of NCR QI Unplanned revascularisation within 30 days.
Obligation	Always

Representational Attributes

Permitted Values	Code	Description
	0	No
	1	Yes
Range	0-1	
Guide for Use	Where item In-hospital cardiothoracic surgery was coded 'yes', was the cardiothoracic surgery was planned?	
Validation Rules	Field cannot be blank if In-hospital Cardiothoracic Surgery = Yes. Field cannot be complete if In-hospital Cardiothoracic Surgery = No.	
Maximum Field Size	1	
Related Data Field	ihcab	
Data Type	Number	
Parent / Child	Child	
Behaviour	Reject file if ihcab=0 and ihpcab has data Reject file if ihcab=1 and ihpcab is NULL	

4.1.3c In-Hospital TVR (CABG)

Defining Attributes

Name	In-Hospital TVR (CABG)
Field Name	ihtvcab
Definition	The surgery involved the placing of coronary artery bypass grafts to revascularise the target vessel that was treated during the index PCI. Note: A TVR CABG is a bypass revascularisation due to restenosis/occlusion within the target coronary artery and/or the same arterial branch treated during the index PCI.
Justification	Collected to allow reporting of NCR QI Unplanned revascularisation within 30 days.
Obligation	Always, if In-hospital Cardiothoracic Surgery = Yes

Representational Attributes

Permitted Values	Code	Description
	0	No
	1	Yes
Range	0-1	
Guide for Use	Where In-hospital cardiothoracic surgery was coded 'yes', did the surgery involve the placing of coronary artery bypass grafts to revascularise the target vessel?	
Validation Rules	Field cannot be blank if In-hospital Cardiothoracic Surgery = Yes. Field cannot be complete if In-hospital Cardiothoracic Surgery = No.	
Maximum Field Size	1	
Related Data Field	ihcab	
Data Type	Number	
Parent / Child	Child	
Behaviour	Reject file if ihcab=0 and ihtvcab has data Reject file if ihcab=1 and ihtvcab is NULL	

4.1.4a In-Hospital Stroke

Defining Attributes

Name	In-Hospital Stroke
Field Name	ihstr
Definition	The patient experienced a stroke or new central neurologic deficit (persisting for > 72 hours) during the cardiac catheter lab visit, after the lab visit, but prior to discharge and/or any subsequent lab visits. Note: Stroke is evidenced by persistent loss of neurological function caused by an ischaemic or haemorrhagic event.
Justification	Collected to allow reporting of NCR QI Peri-PCI stroke, and in-hospital MACCE.
Obligation	Always

Representational Attributes

Permitted Values	Code	Description
	0	No
	1	Yes
Range	0-1	
Guide for Use	Did the patient experience a stroke whilst an in-patient?	
Validation Rules	Field cannot be blank.	
Maximum Field Size	1	
Related Data Field		
Data Type	Number	
Parent / Child	Parent	
Behaviour	Reject file if NULL	

4.1.4b In-Hospital Stroke Type

Defining Attributes

Name	In-Hospital Stroke Type
Field Name	ihstrt
Definition	Indicate whether the type of stroke, either haemorrhagic or ischaemic. Select ONE of the following options: Haemorrhagic: Imaging evidence (MRI or CT), lumbar puncture, neurosurgery or autopsy evidence confirms haemorrhage in the cerebral parenchyma, or subdural/subarachnoid haemorrhage; Ischaemic: In the absence of haemorrhagic evidence, inadequate cerebral blood supply is the suspected cause of stroke. Cerebrovascular occlusion may be caused by (but is not limited to) thrombus, embolism or vasoconstriction, etc.; Unknown: Stroke type could not be conclusively determined.
Justification	Collected to allow reporting of NCR QI Peri-PCI stroke.
Obligation	Always, if In-hospital Stroke = Yes

Representational Attributes

Permitted Values	Code	Description
	1	Haemorrhagic
	2	Ischaemic
	-1	Unknown
Range	-1 – 2	
Guide for Use	Where In-hospital stroke was coded 'yes', specify the type of stroke.	
Validation Rules	Field cannot be blank if In-hospital Stroke = Yes. Field cannot be complete if In-hospital Stroke = No.	
Maximum Field Size	1	
Related Data Field	ihstr	
Data Type	Number	
Parent / Child	Child	
Behaviour	Reject file if ihstr=0 and ihstrt has data Reject file if ihstr=1 and ihstrt is NULL	

4.1.5a In-Hospital Bleeding

Defining Attributes

Name	In-Hospital Bleeding
Field Name	ihbl
Definition	The patient experienced a NEW bleeding event either during this cardiac catheter lab visit, after this lab visit but prior to any subsequent lab visits and prior to discharge. Bleeding Academic Research Consortium (BARC): Type 0: No bleeding; Type 1: Bleeding that is not actionable and does not cause the patient to seek treatment; Type 2: Any clinically overt sign of haemorrhage that "is actionable" and requires diagnostic studies, hospitalization, or treatment by a health care professional; Type 3a: Overt bleeding plus haemoglobin drop of 3 to < 5 g/dL (provided haemoglobin drop is related to bleed); transfusion with overt bleeding Type 3b: Overt bleeding plus haemoglobin drop ≥ 5 g/dL (provided haemoglobin drop is related to bleed); cardiac tamponade; bleeding requiring surgical intervention for control; bleeding requiring IV vasoactive agents; Type 3c: Intracranial haemorrhage confirmed by autopsy, imaging, or lumbar puncture; intraocular bleed compromising vision; Type 4: CABG-related bleeding within 48 hours; Type 5a: Probable fatal bleeding; Type 5b: Definite fatal bleeding (overt or autopsy or imaging confirmation).
Justification	Collected to allow reporting of NCR QI In-hospital major bleeding.
Obligation	Always

Representational Attributes

Permitted Values	Code	Description
	0	Type 0
	1	Type 1
	2	Type 2
	3	Type 3a
	4	Type 3b
	5	Type 3c
	6	Type 4
	7	Type 5a
	8	Type 5b

Range	0-8
Guide for Use	Did the bleeding occur during the admission?

Validation Rules	Field cannot be blank. Field cannot be coded Type 4 if In-Hospital Cardiothoracic Surgery = No. Field cannot be coded 5a or 5b if Discharge Status is not coded as Hospital Mortality.
Maximum field size	1
Data Type	Number
Parent/Child	Parent
Behaviour	Reject file if NULL Reject file if ihbl=6 and ihcab=0 Reject file if ihbl>6 and dis=6

4.1.5b In-Hospital Bleeding Site

Defining Attributes

Name	In-Hospital Bleeding Site
Field Name	ihblsite
Definition	The bleeding site from the following: Retroperitoneal: Indicate whether retroperitoneal bleeding occurred during or after the Cardiac Catheter Laboratory (CCL) visit and until discharge. Percutaneous entry site: Indicate whether bleeding occurred at the percutaneous entry site during or after the CCL visit and until discharge. Bleeding at the percutaneous entry site can be external or a haematoma >10cm for femoral access or >2cm for radial access or >5cm for brachial access. Gastrointestinal tract: Indicate whether gastrointestinal bleeding occurred during or after the CCL visit and until discharge. Cerebral: Indicate whether cerebral bleeding occurred during or after the CCL visit and until discharge. Genital/Urinary: Indicate whether genital or urinary bleeding occurred during or after the CCL visit and until discharge. Other: Other bleeding site not indicated above.
Justification	Collected to allow reporting of NCR QI In-hospital major bleeding.
Obligation	Always

Representational Attributes

Permitted Values	Code	Description
	1	Retroperitoneal
	2	Percutaneous Entry Site
	3	Gastrointestinal
	4	Cerebral
	5	Genital/Urinary
	6	Other
Range	1-6	
Guide for Use	Where in-hospital bleeding was coded 'Type 1, 2, 3a, 3b, 3c, 4, 5a, or 5b', specify the site.	
Validation Rules	Field cannot be blank if In-hospital Bleeding ≠ No. Field cannot be complete if In-hospital Bleeding = No.	
Maximum Field Size	1	
Related Data Field	ihbl	
Data Type	Number	
Parent / Child	Child	
Behaviour	Reject file if ihbl = 0 and ihblsite has data Reject file if ihbl >=1 and ihblsite is NULL	

4.1.6. In-Hospital Stent Thrombosis

Defining Attributes

Name	In-Hospital Stent Thrombosis
Field Name	ihst
Definition	A stent thrombosis occurred during hospitalisation, after the index PCI lab visit, but prior to discharge and/or any subsequent lab visits. Stent thrombosis is defined as the presence of a thrombus or angiographic documentation of vessel occlusion within a pre-existing stent OR within 5mm of the proximal or distal stent edges. Stent thromboses are classified by the Academic Research Consortium (ARC) as definite, probable, or silent. Select ONE of the following options that apply: No stent thrombosis: Where there are no acute coronary syndrome (ACS) symptoms or death after the index PCI lab visit and/or prior to discharge OR ACS symptoms occur during the defined period, but angiographic evidence does not indicate thrombus or occlusion. Definite stent thrombosis: The presence of an ACS with angiographic or autopsy evidence of thrombus or occlusion. Probable stent thrombosis: Includes unexplained deaths during the index admission after the procedure or acute myocardial infarction involving the target-vessel territory without angiographic or autopsy confirmation. Silent stent thrombosis: The incidental angiographic documentation of stent occlusion in the absence of clinical signs or symptoms is not considered stent thrombosis.
Justification	Collected to allow reporting of in-hospital and 30-day MACE and MACCE.
Obligation	Always

Representational Attributes

Permitted Values	Code	Description
	0	No Stent Thrombosis
	1	Definite Stent Thrombosis
	2	Probable Stent Thrombosis
	3	Silent Stent Thrombosis
Range	0-3	
Guide for Use	Did a stent thrombosis occur during the admission?	
Validation Rules	Field cannot be blank.	
Maximum Field Size	1	
Related Data Field		
Data Type	Number	
Parent / Child		
Behaviour	Reject file if NULL	

5. Discharge

5.1. Discharge Details

5.1.1. Discharge Status

Defining Attributes

Name	Discharge Status
Field Name	dis
Definition	The conditions under which the patient was discharged from the hospital following the index admission. Select one of the following options: Note: Patients who died during their index admission without being discharged from the acute care setting should be coded as hospital mortality. Home: Discharged to home, with no planned contact before routine review; Hospital in the Home: Discharged to home, with planned visits to home by medical or paramedical staff; Rehabilitation Unit/Hospital: Discharged for inpatient rehabilitation; Local or referring hospital: Discharged to another hospital for continuing care not related to any complications arising from the index PCI; Tertiary referral centre: Discharged to another hospital or centre for tertiary care related to a complication arising from the index PCI (e.g. patient had PCI complications that required advanced medical treatment/investigation that could not be performed by the PCI hospital); Hospital Mortality: Patient died in-hospital during or after the index PCI procedure, but prior to discharge.
Justification	Collected to allow reporting of NCR Qis In-hospital and 30-day mortality.
Obligation	Always

Representational Attributes

Permitted Values	Code	Description
	1	Home
	2	Hospital in the Home
	3	Rehab Unit/Hospital
	4	Local or Referring Hospital
	5	Tertiary Referral Centre
	6	Hospital Mortality
Range	1-6	
Guide for Use	Under what conditions was the patient discharged from the hospital?	
Validation Rules	Field cannot be blank. If In-hospital Bleeding is 5a = Probable fatal bleeding or 5b = Definite fatal bleeding (overt or autopsy or imaging confirmation), then Discharge Status must = Hospital Mortality.	
Maximum Field Size	1	
Related Data Field		
Data Type	Number	

Parent / Child Behaviour	Reject file if ihbl>6 and dis=1-5 Reject file if dis = NULL

5.1.2a Date of Discharge/Hospital Mortality

Defining Attributes	
Name	Date of Discharge/Hospital Mortality
Field Name	dod
Definition	The date the patient was discharged from the PCI hospital admission (or the date of death where the patient died during the index admission). Note*:* For a patient who dies in-hospital without being discharged from the acute care setting the discharge and death date are the same.
Justification	Collected to allow reporting of NCR QIs In-hospital and 30-day mortality.
Obligation	Always
Representational Attributes	
Permitted Values	NN/NN/NNNN
Range	DD/MM/YYYY
Guide for Use	On what date was the patient discharged or date of hospital mortality?
Validation Rules	Field cannot be blank. Date of Discharge/Hospital Mortality must be ≥ Date of Procedure
Maximum Field Size	10
Related Data Field	
Data Type	Date/Time
Parent / Child	Parent
Behaviour	Reject file if dod < dop Reject file if dod = NULL

5.1.2b Primary Cause of Death

Defining Attributes

Name	Primary Cause of Death
Field Name	mortc
Definition	The cause of death. Primary cause of death is the first significant abnormal event which ultimately led to death. Select ONE of the following options: **Non-cardiac**: The primary cause of death was clearly non-cardiac related AND there is documented evidence of a non-cardiac primary cause of death (e.g. cancer, renal failure, major trauma, etc.). **Cardiac:** The primary cause of death was diagnosed as clearly cardiac-related and includes, but is not exclusive to any of the following circumstances: chronic heart failure; acute coronary syndrome (e.g. STEMI, NSTEMI; recurrent or unstable angina, etc.); arrhythmia; and/or bleeding or other complications following a cardiac procedure.
Justification	Collected to allow reporting of NCR QI In-hospital mortality and 30-day mortality after PCI.
Obligation	Always, if Discharge Status/Hospital Mortality = Hospital Mortality

Representational Attributes

Permitted Values	Code	Description
	1	Cardiac
	2	Non-Cardiac
Range	1-2	
Guide for Use	Where Discharge status is coded “Hospital Mortality”, what was the Primary Cause of Death?	
Validation Rules	Field cannot be complete if Discharge Status/Hospital Mortality ≠ Hospital Mortality. Field cannot be blank if Discharge Status/Hospital Mortality = Hospital Mortality.	
Maximum Field Size	1	
Related Data Field	dis	
Data Type	Number	
Parent / Child	Child	
Behaviour	Reject file if dis < 6 and mortc has data Reject file if dis=6 and mortc is NULL	

5.1.3. Cardiac Rehabilitation Referral

Defining Attributes		
Name	Cardiac Rehabilitation Referral	
Field Name	crehab	
Definition	Written documentation of a patient referral to an outpatient cardiac rehabilitation program, or a documented reason why referral was not made (by physician, nurse, or other hospital personnel).	
Justification	Collected to allow reporting of NCR QI Patients referred to cardiac rehabilitation or other secondary prevention program.	
Obligation	Always, if Discharge Status/Hospital Mortality ≠ Hospital Mortality	
Representational Attributes		
Permitted Values	Code	Description
	0	No
	1	Yes
	-1	Unknown
Range	-1 – 1	
Guide for Use	Was the patient referred to cardiac rehabilitation program?	
Validation Rules	Field cannot be blank if Discharge Status/Hospital Mortality ≠ Hospital Mortality. Field cannot be complete if Discharge Status/Hospital Mortality = Hospital Mortality.	
Maximum Field Size	1	
Related Data Field		
Data Type	Number	
Parent / Child		
Behaviour	Reject file if dis=6 and crehab has data Reject file if dis < 6 crehab is NULL	

5.1.4. Length of Stay

Defining Attributes	
Name	Length of Stay
Field Name	los
Definition	To determine the length of hospital stay and patient discharged on the same day as their PCI.
Justification	Collected allow reporting on patients length of stay.
Obligation	Derived Variable
Representational Attributes	
Permitted Values	NNN
Range	
Guide for Use	How long did the patient remain an inpatient in the PCI hospital?
Validation Rules	Derived Variable
Maximum Field Size	3
Related Data Field	
Data Type	Number (Days)
Parent / Child	
Behaviour	los=[dod-doa]

5.2. Discharge Medications

5.2.1. Aspirin Prescribed at Discharge

Defining Attributes

Name	Aspirin Prescribed at Discharge
Field Name	dasp
Definition	The patient is prescribed and taking aspirin at discharge from the PCI admission. Aspirin agents include: aspirin, astrix, cardiprin, cartia, assasantin, aspro, disprin and solprin.
Justification	Collected to allow reporting of NCR QI Proportion of patients without a clear and documented contraindication for Aspirin and/or P2Y12 inhibitor discharged on DAPT.
Obligation	Always, if Discharge Status/Hospital Mortality ≠ Hospital Mortality

Representational Attributes

Permitted Values	Code	Description
	0	No
	1	Yes
	2	Contraindicated
	3	Not Collected
Range	0-3	
Guide for Use	Was aspirin prescribed at discharge?	
Validation Rules	Field cannot be blank if Discharge Status/Hospital Mortality ≠ Hospital Mortality. Field cannot be complete if Discharge Status/Hospital Mortality = Hospital Mortality.	
Maximum Field Size	1	
Related Data Field		
Data Type	Number	
Parent / Child		
Behaviour	Reject file if dis=6 and dasp has data Reject file if dis = 1-5 and dasp is NULL	

5.2.2. Other Antiplatelet Prescribed at Discharge

Defining Attributes

Name	Other Antiplatelet Prescribed at Discharge
Field Name	doap
Definition	The patient is prescribed and taking other antiplatelets at discharge from the PCI admission. Antiplatelets agents include: Thienopyridine agents (clopidogrel, ticlopidine, prasugrel), Ticagrelor.
Justification	Collected to allow reporting of NCR QI Proportion of patients without a clear and documented contraindication for Aspirin and/or P2Y12 inhibitor discharged on DAPT.
Obligation	Always, if Discharge Status/Hospital Mortality ≠ Hospital Mortality

Representational Attributes

Permitted Values	Code	Description
	0	No
	1	Yes
	2	Contraindicated
	3	Not Collected
Range	0-3	
Guide for Use	Were other antiplatelets (excluding aspirin) prescribed at discharge?	
Validation Rules	Field cannot be blank if Discharge Status/Hospital Mortality ≠ Hospital Mortality. Field cannot be complete if Discharge Status/Hospital Mortality = Hospital Mortality.	
Maximum Field Size	1	
Related Data Field		
Data Type	Number	
Parent / Child		
Behaviour	Reject file if dis=6 and doap has data Reject file if dis = 1-5 and doap is NULL	

5.2.3. Statin Prescribed at Discharge

Defining Attributes		
Name	Statin Prescribed at Discharge	
Field Name	dstp	
Definition	The patient is prescribed and taking a statin at discharge from the PCI admission. Statin agents include: atorvastatin, fluvastatin, pravastatin, rosuvastatin and simvastatin.	
Justification	Collected to allow reporting of NCR QI Patients without contraindication discharged on lipid-lowering therapy.	
Obligation	Always, if Discharge Status/Hospital Mortality ≠ Hospital Mortality	

Representational Attributes		
Permitted Values	Code	Description
	0	No
	1	Yes
	2	Contraindicated
	3	Not Collected
Range	0-3	
Guide for Use	Was a statin prescribed at discharge?	
Validation Rules	Field cannot be blank if Discharge Status/Hospital Mortality ≠ Hospital Mortality. Field cannot be complete if Discharge Status/Hospital Mortality = Hospital Mortality.	
Maximum Field Size	1	
Related Data Field		
Data Type	Number	
Parent / Child		
Behaviour	Reject file if dis=6 and dstp has data Reject file if dis = 1-5 and dstp is NULL	

5.2.4. Other Lipid Lowering Therapies Prescribed at Discharge

Defining Attributes		
Name	Other Lipid Lowering Therapies Prescribed at Discharge	
Field Name	doll	
Definition	The patient is prescribed and taking other Lipid Lowering Therapies at discharge from the PCI admission. Other lipid lowering agents include: ezetimibe and fibrates (gemfibrozil, fenofibrate and clofibrate).	
Justification	Collected to allow reporting of NCR QI Patients without contraindication discharged on lipid-lowering therapy.	
Obligation	Always, if Discharge Status/Hospital Mortality ≠ Hospital Mortality	
Representational Attributes		
Permitted Values	Code	Description
	0	No
	1	Yes
	2	Contraindicated
	3	Not Collected
Range	0-3	
Guide for Use	Were other Lipid Lowering Therapies (excluding statins) prescribed at discharge?	
Validation Rules	Field cannot be blank if Discharge Status/Hospital Mortality ≠ Hospital Mortality. Field cannot be complete if Discharge Status/Hospital Mortality = Hospital Mortality.	
Maximum Field Size	1	
Related Data Field		
Data Type	Number	
Parent / Child		
Behaviour	Reject file if dis=6 and doll has data Reject file if dis = 1-5 and doll is NULL	

6. 30 Day Follow Up

6.1. 30 Day Outcomes

6.1.1. Date of Follow-Up

Defining Attributes	
Name	Date of Follow-Up
Field Name	dfu30
Definition	Date the follow-up was undertaken. All patients must be followed up (or attempted to be followed up) at 30 days post discharge from the PCI admission.
Justification	Collected to allow reporting of 30-day outcomes.
Obligation	Always
Representational Attributes	
Permitted Values	NN/NN/NNNN
Range	DD/MM/YYYY
Guide for Use	On what date was the follow-up undertaken? All patients must be followed up (or attempted to be followed up) at 30 days post discharge from the PCI admission.
Validation Rules	Field cannot be blank if Discharge Status/Hospital Mortality ≠ Hospital Mortality. Field cannot be complete if Discharge Status/Hospital Mortality = Hospital Mortality. Date of Follow-Up cannot < Date of Discharge.
Maximum Field Size	10
Related Data Field	
Data Type	Date/Time
Parent / Child	
Behaviour	Reject file if dfu30 is NULL AND dis=1-5 Reject file if dis=6 and dfu30 contains data Reject file if dfu30 <dod

6.1.2a Follow-Up Status

Defining Attributes

Name	Follow-Up Status
Field Name	stat30
Definition	The patient's mortality status. I.e., whether the patient was alive or dead at 30 days after discharge from the index admission.
Justification	Collected to allow reporting of 30-day outcomes and NCR QI 30-day mortality.
Obligation	Always, if Discharge Status/Hospital Mortality ≠ Hospital Mortality

Representational Attributes

Permitted Values	Code	Description
	0	Alive
	1	Deceased
	-1	Lost to Follow-Up
Range	-1 – 1	
Guide for Use	Was the patient alive or dead at follow-up?	
Validation Rules	Field cannot be blank if Discharge Status/Hospital Mortality ≠ Hospital Mortality. Field cannot be complete if Discharge Status/Hospital Mortality = Hospital Mortality.	
Maximum Field Size	1	
Related Data Field		
Data Type	Number	
Parent / Child	Parent	
Behaviour	Reject file if stat30 is NULL AND dis=1-5 Reject file if dis=6 and stat30 contains data	

6.1.2b Date of Death

Defining Attributes	
Name	Date of Death
Field Name	dmort30
Definition	The date on which the patient died.
Justification	Collected to allow reporting of NCR QI 30-day mortality after PCI.
Obligation	Always, if Follow-Up Status = Deceased
Representational Attributes	
Permitted Values	NN/NN/NNNN
Range	DD/MM/YYYY
Guide for Use	Where the Follow-up status is coded as 'Deceased', what was the date of death?
Validation Rules	Field cannot be blank if Follow-Up Status = Deceased. Field cannot be complete if Follow-Up Status = Alive. Field cannot < Date of Discharge. Field cannot be complete if Discharge Status/Hospital Mortality = Hospital Mortality.
Maximum Field Size	10
Related Data Field	stat30
Data Type	Date/Time
Parent / Child	Child
Behaviour	Reject file if dmort30 <dod Reject file if stat30=1 and dmort30 is NULL Reject file if stat30=0 and dmort30 contains data Reject file if dis=6 and dmort30 contains data

6.1.2c Primary Cause of Death

Defining Attributes

Name	Primary Cause of Death
Field Name	mort30r
Definition	Primary cause of death is the first significant abnormal event which ultimately led to death. Select ONE of the following options: Non-cardiac: The primary cause of death was clearly non-cardiac related AND there is documented evidence of a non-cardiac primary cause of death (e.g. cancer, renal failure, major trauma, etc.). Cardiac: The primary cause of death was diagnosed as clearly cardiac-related and includes, but is not exclusive to any of the following circumstances: chronic heart failure; acute coronary syndrome (e.g. STEMI, NSTEMI; recurrent or unstable angina, etc.); arrhythmia; and/or bleeding or other complications following a cardiac procedure. Uncertain: The primary cause of death is not definitively known.
Justification	Collected to allow reporting of NCR QI 30-day mortality.
Obligation	Always, if Follow-Up Status = Deceased

Representational Attributes

Permitted Values	Code	Description
	1	Cardiac
	2	Non-Cardiac
	3	Uncertain
Range	1-3	
Guide for Use	Where the Follow-up status is coded as 'Deceased', what was the cause of death?	
Validation Rules	Field cannot be blank if Follow-Up Status = Deceased. Field cannot be complete if Follow-Up Status = Alive.	
Maximum Field Size	1	
Related Data Field	stat30	
Data Type	Number	
Parent / Child	Child	
Behaviour	Reject file if stat30=0 or -1 AND mort30r contains data Reject file if stat30=1 and mort30r is NULL	

6.1.3. New MI

Defining Attributes

Name	New MI
Field Name	mi30
Definition	The patient experienced a new myocardial infarction (MI) within 30 days from the date of discharge from the index admission. The new MI is defined by the following criteria: Non ST-Elevation Myocardial Infarction (NSTEMI): AT LEAST ONE of the following biomarkers for detecting myocardial necrosis MUST be present (refer to note regarding Reference Control Limits): 1. Troponin T or I: Maximal concentration of Troponin T or I > the MI diagnostic limit on at least one occasion within 24 hours from the index clinical event; 2. CK-MB: Maximal value of CK-MB >2x the upper limit of normal (ULN) on one occasion during the first hours after the index clinical event; OR Maximal value of CK-MB (preferable CK-MB mass) > ULN on two successive samples. 3. Total CK: Only where Troponin or CK-MB assays are unavailable, total CK >2x the ULN (or the B fraction of CK) may be employed. Note: The preferred assay to use as biomarkers for myocardial necrosis is Troponin. In the absence of troponin, CK-MB is the next best alternative but total CK can be used in the absence of troponin and CK-MB. AND ONE of the following: 1. Either ST segment depression or T wave abnormalities in the ECG; or 2. Ischaemic symptoms in the presence or absence of chest discomfort. Ischaemic symptoms may include: Unexplained nausea and vomiting; or Persistent shortness of breath secondary to left ventricular failure; or Unexplained weakness, dizziness, light-headedness or syncope. ST-Elevation Myocardial Infarction (STEMI): AT LEAST ONE of the following biomarkers for detecting myocardial necrosis MUST be present (refer to note regarding Reference Control Limits): 1. Troponin T or I: Maximal concentration of Troponin T or I > the MI diagnostic limit on at least one occasion within 24 hours from the index clinical event; 2. CK-MB: Maximal value of CK-MB >2x the upper limit of normal (ULN) on one occasion during the first hours after the index clinical event; OR Maximal value of CK-MB (preferable CK-MB mass) > ULN on two successive samples. 3. Total CK: Only where Troponin or CK-MB assays are unavailable, total CK >2x the ULN (or the B fraction of CK) may be employed. Note: The preferred assay to use as biomarkers for myocardial necrosis is Troponin. In the absence of troponin, CK-MB is the next best alternative but total CK can be used in the absence of troponin and CK-MB. AND ONE of the following ECG changes. 1. ST-segment elevation: New or presumed new ST segment elevation at the J point in two or more contiguous leads with the cut-off points ≥ 0.2mV in leads V1, V2, or V3, or ≥0.1 mV in other leads. 2. Development of any Q wave in leads V1 through V3, or the development of a Q-wave ≥ 30ms (0.03s) in leads I, II, aVL, aVF, V4, V5, or V6. (Q wave changes must be present in any two contiguous leads, and be ≥1mm in depth). Reference Control Limits (MI Diagnostic Limit and Upper Limit of Normal): Reference values must be determined in

	each laboratory by studies using specific assays with appropriate quality control, as reported in peer- reviewed journals. Acceptable imprecision (coefficient of variation) at the 99th percentile for each assay should be defined as < or = to 10%. Each individual laboratory should confirm the range of reference values in their specific setting.
Justification	Collected to allow reporting of 30-day MACE and MACCE.
Obligation	Always, if Follow-Up Status ≠ Lost to Follow-Up.

Representational Attributes		
Permitted Values	Code	Description
	0	No
	1	Yes
	-1	Unknown
Range	-1 –1	
Guide for use	Did the patient experience a myocardial infarction during the 30-day follow-up period?	
Validation Rules	Field cannot be blank if follow-up status ≠ Deceased. Field cannot be complete if Follow-Up Status = Lost to Follow-Up.	
Maximum Field Size	1	
Related Data Field		
Data Type	Number	
Parent/ Child		
Behaviour	Reject file if NULL and stat30≥0 Reject file if stat30=-1 and mi30 contains data Reject file if dis=6 and mi30 contains data	

6.1.4. New Stent Thrombosis

Defining Attributes

Name	New Stent-Thrombosis
Field Name	st30
Definition	A stent thrombosis occurred within 30 days from the date of discharge from the current admission. Stent thrombosis is defined as the presence of a thrombus or angiographic documentation of vessel occlusion within a pre-existing stent OR within 5mm of the proximal or distal stent edges. Stent thromboses are classified by the Academic Research Consortium (ARC) as definite, probable, or silent. Select ONE of the following options that apply: No stent thrombosis: Where there are no acute coronary syndrome (ACS) symptoms or death after the index PCI lab visit and/or prior to discharge OR ACS symptoms occur during the defined period, but angiographic evidence does not indicate thrombus or occlusion. Definite stent thrombosis: The presence of an ACS with angiographic or autopsy evidence of thrombus or occlusion. Probable stent thrombosis: Includes unexplained deaths during the index admission after the procedure or acute myocardial infarction involving the target-vessel territory without angiographic or autopsy confirmation. Silent stent thrombosis: The incidental angiographic documentation of stent occlusion in the absence of clinical signs or symptoms is not considered stent thrombosis. Unknown.
Justification	Collected to allow reporting of 30-day MACE and MACCE.
Obligation	Always, if Follow-Up Status ≠ Lost to Follow-Up.

Representational Attributes

Permitted Values	Code	Description
	0	No Stent Thrombosis
	1	Definite Stent Thrombosis
	2	Probable Stent Thrombosis
	3	Silent Stent Thrombosis
	-1	Unknown
Range	-1 – 3	
Guide for Use	Did a stent thrombosis occur during the 30-day follow-up period?	
Validation Rules	Field cannot be blank if Follow-Up Status ≠ Lost to Follow-Up. Field cannot be complete if Follow-Up Status = Lost to Follow-Up. Field cannot be complete if Discharge Status/Hospital Mortality = Hospital Mortality	
Maximum Field Size	1	
Related Data Field		
Data Type	Number	
Parent / Child		

Behaviour	Reject file if NULL and stat30≥0 Reject file if stat30=-1 and st30 contains data Reject file if dis=6 and st30 contains data

6.1.5a New Stroke

Defining Attributes

Name	New Stroke
Field Name	nstr
Definition	The patient experienced a stroke or new central neurologic deficit (persisting for > 72 hours) in the 30-days post discharge. Stroke is evidenced by persistent loss of neurological function caused by an ischaemic or haemorrhagic event.
Justification	Collected to allow reporting on 30-day stroke and 30-day MACCE.
Obligation	Always, if Follow-Up Status ≠ Lost to Follow-Up.

Representational Attributes

Permitted Values	Code	Description
	0	No
	1	Yes
	-1	Unknown
Range	-1 – 1	
Guide for Use	Did the patient experience a stroke during the 30-day follow-up period?	
Validation Rules	Field cannot be blank if Follow-Up Status ≠ Lost to Follow-Up. Field cannot be complete if Follow-Up Status = Lost to Follow-Up. Field cannot be complete if Discharge Status/Hospital Mortality = Hospital Mortality	
Maximum Field Size	1	
Related Data Field		
Data Type	Number	
Parent / Child	Parent	
Behaviour	Reject file if NULL and stat30≥0	
	Reject file if stat30=-1 and nstr contains data	
	Reject file if dis=6 and nstr contains data	

6.1.5b New Stroke Type

Defining Attributes

Name	New Stroke Type
Field Name	nstrt
Definition	Type of new stroke. Either haemorrhagic or ischaemic. Select ONE of the following options: Haemorrhagic: Imaging evidence (MRI or CT), lumbar puncture, neurosurgery or autopsy evidence confirms haemorrhage in the cerebral parenchyma, or subdural/subarachnoid haemorrhage; Ischaemic: In the absence of haemorrhagic evidence, inadequate cerebral blood supply is the suspected cause of stroke. Cerebrovascular occlusion may be caused by (but is not limited to) thrombus, embolism or vasoconstriction, etc. Unknown: Stroke type could not be conclusively determined.
Justification	Collected to allow reporting on 30-day stroke and 30-day MACCE.
Obligation	Always, if Follow-Up Status ≠ Lost to Follow-Up.

Representational Attributes

Permitted Values	Code	Description
	1	Haemorrhagic
	2	Ischaemic
	-1	Unknown
Range	-1 – 2	
Guide for Use	Where new stroke was coded 'yes', specify the type of stroke.	
Validation Rules	Field cannot be blank if New Stroke = Yes. Field cannot be complete if New Stroke = No.	
Maximum Field Size	1	
Related Data Field	nstr	
Data Type	Number	
Parent / Child	Child	
Behaviour	Reject file if nstr=1 and nstrt is NULL Reject file if nstr = 0 or -1 and nstrt contains data	

6.2. 30-Day Rehospitalisations

NOTE: Up to 6 rehospitalisations can be entered. Fields are coded: NAME; NAME_2; NAME_3-6.

6.2.1. Cardiac Rehospitalisation

Defining Attributes

Name	Cardiac Rehospitalisation
Field Name	crh30
Definition	The patient had a cardiac rehospitalisation, where a cardiac rehospitalisation is defined as an in-patient admission that includes, but is not limited to any of the following circumstances: heart failure; acute coronary syndrome (e.g STEMI, NSTEMI; recurrent or unstable angina); arrhythmia; elective (non-emergency) PCI or CABG etc. Include rehospitalisations with a primary diagnosis that has the following ICD-10 AM codes: I00-I02: Acute rheumatic fever; I05-I09: Chronic rheumatic heart disease; I10-I15: Hypertensive diseases; I20-I25: Ischaemic heart disease; I30-I52: Other forms of heart disease; I70-I72: Atherosclerosis, aortic aneurysm and dissection; I74: Arterial embolism and thrombosis; I77.0: Arteriovenous fistula, acquired; R00: Abnormalities of heart beat; R01: Cardiac murmurs and other cardiac sounds; R03: Abnormal blood pressure reading; R07: Pain in throat and chest; All other ICD-10 codes should be classified as non-cardiac.
Justification	Collected to allow reporting of NCR QI 30-day unplanned cardiac readmission rate after PCI.
Obligation	Always

Representational Attributes

Permitted Values	Code	Description
	0	No
	1	Yes
	-1	Unknown
Range	-1 – 1	
Guide for Use	Did the patient have a cardiac rehospitalisation within 30 days?	
Validation Rules	Field cannot be blank if Follow-Up Status ≠ Lost to Follow-Up. Field cannot be complete if Follow-Up Status = Lost to Follow-Up. Field cannot be complete if Discharge Status/Hospital Mortality = Hospital Mortality.	
Maximum Field Size	1	
Related Data Field		
Data Type	Number	
Parent / Child		

Behaviour	Reject file if crh30 is NULL and stat30≥0 Reject file if crh30 contains data and stat30=-1 Reject file if dis=6 and crh30 contains data

6.2.2. Cardiac Rehospitalisation

Defining Attributes	
Name	Cardiac Rehospitalisation Date
Field Name	rhdte
Definition	The date of cardiac rehospitalisation
Justification	Collected to allow reporting of NCR QI 30-day unplanned cardiac readmission rate after PCI.
Obligation	Always, if Cardiac Rehospitalisation = Yes.
Representational Attributes	
Permitted Values	NN/NN/NNNN
Range	DD/MM/YYYY
Guide for Use	Where cardiac rehospitalisation is coded as 'Yes', on what date was the rehospitalisation?
Validation Rules	Field cannot be blank if Cardiac Rehospitalisation = Yes. Field cannot be complete if Cardiac Rehospitalisation = No. Cardiac Rehospitalisation Date cannot > Date of Discharge + 30. Cardiac Rehospitalisation Date cannot < Date of Discharge.
Maximum Field Size	10
Related Data Field	crh30
Data Type	Date/Time
Parent / Child	Child
Behaviour	Reject file if rhdte >dod + 30 Reject file if rhdte <dod Reject file if crh30 =1 and rhdte is NULL Reject file if crh30=0 and rhdte has data

6.2.3. Planned Cardiac Rehospitalisation

Defining Attributes

Name	Planned Cardiac Rehospitalisation
Field Name	pc30
Definition	The cardiac rehospitalisation was planned. Note: A 'planned cardiac rehospitalisation' is defined as an in-patient admission to hospital for a scheduled visit only. For emergency admissions, code as 'no'.
Justification	Collected to allow reporting of NCR QI 30-day unplanned cardiac readmission rate after PCI.
Obligation	Always, if Cardiac Rehospitalisation = Yes.

Representational Attributes

Permitted Values	Code	Description
	0	No
	1	Yes
	-1	Unknown
Range	-1 – 1	
Guide for Use	Where Cardiac rehospitalisation is coded as 'Yes', was the hospitalisation planned?	
Validation Rules	Field cannot be blank if Cardiac Rehospitalisation = Yes. Field cannot be complete if Cardiac Rehospitalisation = No.	
Maximum Field Size	1	
Related Data Field	crh30	
Data Type	Number	
Parent / Child	Child	
Behaviour	Reject file if crh30=1 AND pc30 is NULL Reject file if crh30=0 and pc30 has data	

6.2.4a PCI Rehospitalisation

Defining Attributes

Name	PCI Rehospitalisation
Field Name	pci30
Definition	Indicate whether Percutaneous Coronary Intervention (PCI) was performed during the cardiac rehospitalisation admission
Justification	Collected to allow reporting of NCR QI Unplanned revascularisation within 30 days.
Obligation	Always, if Cardiac Rehospitalisation = Yes.

Representational Attributes

Permitted Values	Code	Description
	0	No
	1	Yes
	-1	Unknown
Range	-1 – 1	
Guide for Use	Where Cardiac Rehospitalisation is coded as 'Yes', was PCI performed during this admission?	
Validation Rules	Field cannot be blank if Cardiac Rehospitalisation = Yes. Field cannot be complete if Cardiac Rehospitalisation = No.	
Maximum Field Size	1	
Related Data Field		
Data Type	Number	
Parent / Child	Parent	
Behaviour	Reject file if crh30=1 AND pci30 is NULL Reject file if crh30=0 and pci30 has data	

6.2.4b Target Vessel Revascularisation (PCI)

Defining Attributes

Name	Target Vessel Revascularisation (PCI)
Field Name	tvr30
Definition	The target vessel was revascularised during the post-discharge subsequent PCI. Note: A PCI TVR is any repeated percutaneous revascularisation due to restenosis/occlusion within the target coronary artery and/or the same arterial branch that was treated during the index PCI. This includes any percutaneous revascularisation within the same arterial branch treated during the index PCI, regardless of whether the index PCI was successful.
Justification	Collected to allow reporting of NCR QI Unplanned revascularisation within 30 days.
Obligation	Always, if PCI Rehospitalisation = Yes.

Representational Attributes

Permitted Values	Code	Description
	0	No
	1	Yes
	-1	Unknown
Range	-1 – 1	
Guide for Use	Where PCI rehospitalisation is coded as 'Yes', was the target vessel revascularised during the post-discharge subsequent PCI?	
Validation Rules	Field cannot be blank if PCI Rehospitalisation = Yes. Field cannot be complete if PCI Rehospitalisation = No.	
Maximum Field Size	1	
Related Data Field	pci30	
Data Type	Number	
Parent / Child	Child	
Behaviour	Reject file if pci30 =0 or -1 and tvr30 has data Reject file if pci30=1 and tvr30 is NULL	

6.2.4c Target Lesion Revascularisation (TLR)

Defining Attributes

Name	Target Lesion Revascularisation (TLR)
Field Name	tlr30
Definition	The target lesion was revascularised during the post-discharge subsequent PCI. Note: A target lesion revascularisation (TLR) is any repeated percutaneous revascularisation of the same lesion treated during the index PCI. This includes treatment of a restenosis/occlusion within a stent implanted during the index PCI (or within 5-mm of the proximal and distal margins of the stent edges). It also includes attempts to revascularise the target lesion where a stent was not successfully implanted and/or plain old balloon angioplasty (POBA) was employed during the index PCI.
Justification	Collected to allow reporting of NCR QI Unplanned revascularisation within 30 days.
Obligation	Always, if Target Vessel Revascularisation = Yes.

Representational Attributes

Permitted Values	Code	Description
	0	No
	1	Yes
	-1	Unknown
Range	-1 – 1	
Guide for Use	Where PCI rehospitalisation is coded as 'Yes', was the target lesion revascularised during the post-discharge subsequent PCI?	
Validation Rules	Field cannot be blank if Target Vessel Revascularisation = Yes. Field cannot be complete if Target Vessel Revascularisation = No.	
Maximum Field Size	1	
Related Data Field	tvr30	
Data Type	Number	
Parent / Child	Child	
Behaviour	Reject file if tvr30 =0 or -1 and tlr30 has data Reject file if tvr30=1 and tlr30 is NULL	

6.2.5a CABG Rehospitalisation

Defining Attributes

Name	CABG Rehospitalisation
Field Name	cab30
Definition	Coronary Bypass Grafting (CABG) was performed during the cardiac rehospitalisation admission
Justification	Collected to allow reporting of NCR QI Unplanned revascularisation within 30 days.
Obligation	Always, if Cardiac Rehospitalisation = Yes.

Representational Attributes

Permitted Values	Code	Description
	0	No
	1	Yes
	-1	Unknown
Range	-1 – 1	
Guide for Use	Where Cardiac Rehospitalisation is coded as 'Yes', was CABG performed during this admission?	
Validation Rules	Field cannot be blank if Cardiac Rehospitalisation = Yes. Field cannot be complete if Cardiac Rehospitalisation = No.	
Maximum Field Size	1	
Related Data Field	crh30	
Data Type	Number	
Parent / Child	Child	
Behaviour	Reject file if crh30=1 AND cab30 is NULL Reject file if crh30=0, or -1, or NULL AND cab30 has data	

6.2.5b Target Vessel CABG

Defining Attributes

Name	Target Vessel CABG
Field Name	tvcab30
Definition	The surgery involved the placing of coronary artery bypass grafts to revascularise the target vessel treated during the index PCI.
Justification	Collected to allow reporting of NCR QI Unplanned revascularisation within 30 days.
Obligation	Always, if CABG Rehospitalisation = Yes.

Representational Attributes

Permitted Values	Code	Description
	0	No
	1	Yes
	-1	Unknown
Range	-1 – 1	
Guide for Use	Where CABG rehospitalisation is coded as 'Yes', did the surgery involved the placing of coronary artery bypass grafts to revascularise the target vessel treated during the index PCI?	
Validation Rules	Field cannot be blank if CABG Rehospitalisation = Yes. Field cannot be complete if CABG Rehospitalisation = No.	
Maximum Field Size	1	
Related Data Field	cab30	
Data Type	Number	
Parent / Child	Child	
Behaviour	Reject file if cab30 =0, or -1, or NULL and tvcab30 has data Reject file if cab30=1 and tvcab30 is NULL	

National Cardiac Registry Data Dictionary September 2024.

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The National Cardiac Registry is supported by funding from the Australian Government Department of Health.