Canadian Cardiovascular Society
Leadership. Knowledge. Community.

Société canadienne de cardiologie
Communauté. Connaissances. Leadership.

THE CANADIAN CARDIOVASCULAR SOCIETY DATA DICTIONARY

A CCS Consensus Document

ACUTE CORONARY SYNDROME (ACS) DATA ELEMENTS AND DEFINITIONS

FINAL

Last Updated: June 2011

The Canadian Cardiovascular Society
222 Queen Street, Suite 1403
Ottawa, Ontario
Canada K1P 5V9
Email: healthpolicy@ccs.ca

Background

The Canadian Cardiovascular Society Data Dictionary is comprised of multiple "chapter" data elements and definitions that reflect national input and consensus on definitions within several spheres of cardiovascular disease, treatment and subspecialty expertise.

The Acute Coronary Syndrome (ACS) data dictionary chapter contains the guidelines for data elements and definitions relevant to the area of ACS and includes the collection of admission, in-hospital clinical events, medications, laboratory results and discharge information. The ACS data elements and definitions are a supplement to the Core Elements and Demographics data set.

TABLE OF CONTENTS

PART I - ADMISSION

A. ADMISSION AND FIRST MEDICAL CONTACT

DATA ELEMENT	CLASSIFICATION	DEFINITION
FIRST FACILITY		
Date-Time of First Medical Contact	CORE	Indicate the date and time of first medical contact. Note: First medical contact is defined as arrival of paramedic to patient or arrival at emergency if patient self-transports to the emergency department. 1. Date and Time values 2. Not Available
Initial Means of Transport	CORE	Indicate the means of transportation to the facility where the patient was evaluated first. Select code: Self/Family 1. Ambulance 2. Air 3. Not Available
Admit Location	CORE	Indicate the location where the patient was first evaluated. 1. Emergency Department 2. Cath Lab Area 3. Other Locations i.e. pre-op or post-op surgical units or general medicine floor/unit. Also includes intensive-care unit, coronary-care unit, general cardiac floor, step-down unit, or a monitored-bed unit separate from the ED.
Initial Hospital Type	CORE	Was the facility where the patient was first evaluated at a PCI centre? 1. Yes, with onsite Cardiac Surgery 2. Yes, without onsite Cardiac Surgery 3. No 4. Unknown
Arrival Date-Time At First Facility	CORE	Indicate the date and time the patient arrived at first facility. 1. Date and Time values 2. Not available
Admission Date-Time	CORE	Indicate the date and time the patient was admitted as an inpatient to first facility for the current episode of care. 1. Date and Time values 2. Not available
INTER-HOSPITAL TRANSFER		
Inter-hospital transfer?	CORE	Was the patient transferred to another hospital after assessment at first facility (regardless of whether treatment was received at first hospital or not)? 1. Yes 2. No
Inter-hospital transfer - Means of Transport	CORE	Indicate the means of inter-hospital transfer. Select code: 1. Ambulance 2. Air 3. Not Available
Date-Time of Patient Transfer between Facilities	CORE	Indicate the date and time the patient left the initial hospital. 1. Date and Time values 2. Not available

PCI CENTRE		
Arrival Date-Time At PCI Centre	CORE	Indicate the date and time the patient arrived at the PCI Centre for the current episode of care. 1. Date and Time values 2. Not available
Date-Time Admitted At PCI Centre	CORE	Indicate the date and time the patient was admitted at the PCI Centre. 1. Date and Time values 2. Not admitted 3. Not available

B. CARDIAC STATUS ON FIRST PHYSICIAN CONTACT

FIELD NAME	CLASSIFICATION	DEFINITION
Initial ACS Diagnosis at first medical contact	CORE	Indicate the ACS diagnosis 1. STEMI 2. Non-ST-ACS 3. Indeterminate
Where was initial ACS diagnosis based on Initial ECG made?	CORE	1. In ambulance / at scene 2. In emergency department 3. In cath lab 4. Other (eg. Physician's office)
Symptom Onset Date-Time	CORE	Record the date and time of the start of the symptoms that led the patient to seek medical care?
Location of First ECG	OPTIONAL	Indicate when the first (ECG) was obtained. 1. **Pre-Hospital** - The first electrocardiogram (ECG) was obtained prior to arrival at your hospital, either at a physician's office, during transport by emergency medical services (EMS), air ambulance, or other method of critical care transport. 2. **After First Hospital Arrival** - The first electrocardiogram (ECG) was obtained upon arrival to the first hospital at which the patient presented.
Pre-Hospital ECG Date-Time	OPTIONAL	Record the pre-hospital ECG date and time. 1. Date and Time values 2. Not available.
In-Hospital ECG Date-Time	CORE	Record the in-hospital ECG date and time. 1. Date and Time values 2. Not available

ECG Findings	CORE	Indicate if the ECG findings demonstrated either new or presumed new ST-segment elevation, new left bundle branch block, or isolated posterior myocardial infarction prior to any procedures and not more than 24 hours after arrival at first facility. 1. **ST Elevation** - ST-segment elevation is defined by new or presumed new sustained ST-segment elevation at the J-point in two contiguous electrocardiogram (ECG) leads with the cut-off points: >=0.1 mV i. If no exact ST-elevation measurement is recorded in the medical chart, physician's written documentation of ST-elevation or Q-waves is acceptable. If only one ECG is performed, then the assumption that the ST elevation persisted at least the required 20 minutes is acceptable. 2. **LBBB** - Left bundle branch block (LBBB) refers to LBBB that was not known to be old on the initial ECG. 3. **Isolated Posterior MI** - Isolated Posterior Myocardial Infarction refers to infarction of the posterobasal wall of the left ventricle. The use of posterior leads V7 to V9 will show ST segment elevation in patients with posterior infarction. If posterior leads were not applied, ST segment depression that is maximal in leads V1-V3, without ST-segment elevation in other leads, may be considered as indicative of posterior ischemia or infarction." 4. **Ventricular Paced Rhythm**
First Assessment Killip Class	CORE	Indicate the first assessment Killip class of the patient. 1. **Class 1** - Absence of rales over the lung field and absence of S3 2. **Class 2** - Rales over 50% or less of the lung field or the presence of an S3 3. **Class 3** – Rales over 50% of the lung field 4. **Class 4** – Shock: Defined by the clinical criteria of hypotension (SBP<90mmHg for at least 30 minutes or need for support measures to maintain SBP>90mmHg) and end organ hypoperfusion (cool extremities or urine output < 30 ml/hour and heart rate > 60 beats/minute). 5. **Not available**

Worst Killip Class	CORE	Indicate the worst Killip class of the patient within 24 hrs of hospital admission. 1. **Class 1** - Absence of rales over the lung field and absence of S3 2. **Class 2** - Rales over 50% or less of the lung field or the presence of an S3 3. **Class 3** – Rales over 50% of the lung field 4. **Class 4** – Shock: Defined by the clinical criteria of hypotension (SBP<90mmHg for at least 30 minutes or need for support measures to maintain SBP>90mmHg) and end organ hypoperfusion (cool extremities or urine output < 30 ml/hour and heart rate > 60 beats/minute). 5. Not available
Heart Rate	CORE	Indicate the patients first recorded heart rate (in beats per minute) reading. Note: If zero, take the first obtainable reading.
Systolic Blood Pressure	CORE	Indicate the patients first recorded systolic blood pressure (mm Hg) reading. Note: If zero, take the first obtainable reading.
Diastolic Blood Pressure	CORE	Indicate the patients first recorded diastolic blood pressure (mm Hg) reading. Note: If zero, take the first obtainable reading.
Pre-Hospital Cardiac Arrest	CORE	Indicate if the patient has had a cardiac arrest prior to presentation for this episode of care 1. Yes 2. No
Cardiac Arrest after Initial Presentation	CORE	Indicate if the patient has had a cardiac arrest after initial presentation during this episode of care 1. Yes 2. No

Reperfusion Strategy	CORE	Did the Patient Receive a Reperfusion Therapy? 1. Yes, record the type, strength of dose a. Fibrinolytics i. Type of Fibrinolytics 1. Tenecteplase a. Full Dose b. Reduced Dose 2. Ateplase a. Full Dose b. Reduced Dose 3. Reteplase a. Full Dose b. Reduced Dose 4. Streptokinase a. Full Dose b. Reduced Dose ii. Dose Start Date-Time of Fibrinolytics iii. Where was Fibrinolytics given? 1. Pre-hospital 2. In-hospital b. Primary angioplasty i. Was patient sent to CathLab 1. Yes 2. No ii. Indicate approach (arterial access site) used for angiogram 2. No - Indicate Primary Reason (select all that apply): a. Symptom duration > 12 hrs b. Excess bleeding risk c. Co-morbidity d. Missed diagnosis e. No longer needed (e.g. spontaneous reperfusion) f. ECG non-diagnostic or diagnosis unclear g. Patient / family refusal h. No culprit identified on coronary angiography or anatomy unsuitable for primary PCI i. Died before reperfusion therapy could be delivered

C. PROCEDURES AND TESTS

FIELD NAME	CLASSIFICATION	DEFINITION
Non-invasive Stress Testing performed in-hospital	CORE	Select all that apply and enter the date of each test performed in-hospital. 1. Treadmill exercise Test date a. Indicate risk/extent of ischemia i. low risk ii. intermediate risk iii. high-risk iv. unavailable 2. Nuclear Perfusion Test Date a. Nuclear Perfusion Test Results i. Normal ii. Abnormal 1. Indicate risk/extent of ischemia a. low risk b. intermediate risk c. high-risk d. unavailable ii. Indeterminate iii. Unavailable 3. Stress ECHO Test Date a. Stress ECHO Test Results i. Normal ii. Abnormal 1. Indicate risk/extent of ischemia a. low risk b. intermediate risk c. high-risk d. unavailable iii. indeterminate iv. Unavailable 4. CTA Test Date a. CTA Test Results i. no disease ii. Single vessel disease iii. Two vessel disease iv. Three vessel disease v. indeterminate vi. Unavailable 5. MRI Test Date a. Assessment of ischemia by MRI i. Normal ii. Abnormal iii. indeterminate iv. Unavailable

PCI details	CORE	Indicate if the patient underwent a PCI during this admission episode. 1. No 2. Yes, indicate date and time and indicate PCI Type: 1=Primary/direct (immediate mode of reperfusion in AMI) 2=Rescue (after failed thrombolysis) 3= Early PCI for cardiogenic shock 4=PCI for treatment of unstable angina 5=PCI for treatment of post-MI ischemia 6=Pharmacoinvasive PCI (routine early PCI within 24 hours after thrombolysis) 7=Non-emergent elective PCI

PART 2 – IN-HOSPITAL CLINICAL EVENTS

FIELD NAME	CLASSIFICATION	DEFINITION
Re-infarction **If yes, Re-infarction Date**	CORE	Indicate if there are clinical signs and symptoms of a new infarction or repeat infarction. See Footnote #1 for supporting definitions: Reinfarction[1]: If Yes, indicate the date when the clinical signs and symptoms of the new myocardial infarction first occurred.

[1] Reinfarction occurs when there are clinical signs and symptoms of ischemia that is distinct from the presenting ischemic event and meeting at least one of the following criteria:

1. Spontaneous (Prior to or without revascularization, >24 hours after PCI and/or >72 hours after CABG)

a. New, significant Q waves in at least two contiguous leads of an ECG that were not present with the presenting ischemic event

b. Patients whose most recent cardiac markers drawn prior to reinfarction which were normal require an increase in CK-MB or troponin above the ULN which is at least >=25% above the most recent value.

c. Patients whose most recent cardiac markers prior to reinfarction were above the upper limit of normal require an increase in CK-MB or troponin by >= 50% above the most recent value.

2. Within 24 hours after PCI:

a. Patients with normal CK-MB values (pre-procedure) who then develop an increase in CK-MB to a value at least 3 times the upper limit of normal for your laboratory (i.e., above 3 times the 99th percentile upper reference limit for a normal population) are indicative of peri-procedural myocardial necrosis. ECG changes or symptoms are not required to qualify. Note: Some patients presenting with acute coronary syndrome will not have biomarker elevations prior to the PCI. Elevated biomarker after PCI in these cases do not necessarily mean a reinfarction occurred.

b. Patients with elevated baseline (pre-procedure) cardiac biomarkers (CK-MB): there are two possible scenarios. In these scenarios, ECG changes or symptoms are not required to qualify.

i. Patients with cardiac markers above the upper limit of normal (pre-procedure) assumed to be in the midst of an acute myocardial infarction. In these patients, it is not possible to distinguish necrosis that resulted from the PCI vs. necrosis arising from the presenting acute MI, and these pts require an increase in CK-MB that must also be >= 50% above the most recent value.

ii. Patients with elevated biomarkers with a characteristic rise and fall in biomarker levels pre-procedure most likely have completed their presenting infarct. Further rises in CK-MB must be >= 50% above the most recent value to be coded as reinfarction.

c. Patients with new, significant Q waves in at least two contiguous leads of an ECG that were not present with the presenting ischemic event

3. Within the first 72 hours following CABG: A CABG-related myocardial infarction is defined by an increase of biomarkers greater than 5 times the upper limit of normal for your laboratory (i.e., above 5 times the 99th percentile upper reference limit for a normal population) compared with the pre-CABG biomarker value closest to the time of surgery plus one of the following:

a. new pathological Q waves or new LBBB;

b. angiographically documented new occlusion or thrombosis of a graft or native coronary artery since the preoperative angiogram;

c. imaging evidence of new loss of viable myocardium at rest in the absence of a non-ischemic cause.

Note: Patients with cardiac biomarkers above the upper limit of normal pre-CABG require the increase in CKMB to be >=50% above the most recent value.

Source: Joint ESC-ACC-AHA-WHF 2007 Task Force consensus document "Universal Definition of Myocardial Infarction"

LATE Cardiogenic Shock	CORE	Indicate if the patient developed late cardiogenic shock in your facility (after the first 24 hours). 1. No 2. Yes Note(s): Transient episodes of hypotension reversed with IV fluid or atropine do not constitute cardiogenic shock. The hemodynamic compromise (with or without extraordinary supportive therapy) must persist for at least 30 minutes. Cardiogenic shock is defined as a sustained (>30 minutes) episode of systolic blood pressure <90 mm Hg, and/or cardiac index <2.2 L/min/m2 determined to be secondary to cardiac dysfunction, and/or the requirement for parenteral inotropic or vasopressor agents or mechanical support (e.g., IABP, extracorporeal circulation, ventricular assist devices) to maintain blood pressure and cardiac index above those specified levels. (Source: Acute Coronary Syndromes Data Standards (JACC 2001 38: 2114 - 30)
NEW Heart Failure **If Yes, Heart Failure Date**	CORE	Indicate if the patient developed new or acute onset of heart failure after the first 24 hours of admission. Note: worst Killip class within 24 hours of admission is recorded under Part 1 -Admission.
CVA/Stroke **If Yes, CVA/Stroke Date** **If Yes, Type of Stroke**	CORE	Indicate if the patient had a cerebrovascular accident (CVA). Note(s): A stroke or CVA is documented by a loss of neurological function caused by an ischemic or hemorrhagic event with residual symptoms lasting at least 24 hours after onset or leading to death. For patients with extended hospital stays, restrict coding of post-procedure events to 30 days after the last procedure. 1. No 2. Yes – Indicate Date a. Indicate the type of Stroke the patient experienced i. Hemmorrhagic ii. Non-hemmorragic iii. Unknown

Suspected Bleeding Event If Yes, Event Date If Yes, Event Location If Yes, Surgical Procedure or Intervention Required	CORE	(Source: BARC definitions for Bleeding Academic Research Consortium) 1. **Type 0** No Bleeding 2. **Type 1** Bleeding that is not actionable and does not cause the patient to seek unscheduled performance of studies, hospitalization, or treatment by a health care professional. 3. **Type 2** Any overt, actionable sign of hemorrhage (e.g. more bleeding than would be expected for a clinical circumstance; including bleeding found by imaging alone) that does not fit the criteria for Types 3, 4, or 5, but does meet at least one of the following criteria: 1) Requiring non-surgical, medical intervention by a health care professional 2) Leading to hospitalization or increased level of care 3) Prompting evaluation 4. **Type 3** a. Type 3a ▪ Overt bleeding plus hemoglobin drop of 3 to <5*g/dL (provided hemoglobin drop is related to bleed) ▪ Any transfusion with overt bleeding b. Type 3b ▪ Overt bleeding plus hemoglobin drop ≥ 5*g/dL (provided hemoglobin drop is related to bleed) ▪ Cardiac tamponade ▪ Bleeding requiring surgical intervention for control (excluding dental/nasal/skin/hemorrhoid) ▪ Bleeding requiring intravenous vasoactive drugs c. Type 3c ▪ Intracranial hemorrhage (does not include microbleeds or hemorrhagic transformation; does include intraspinal). • Subcategories; Confirmed by autopsy or imaging or LP ▪ Intra-ocular bleed compromising vision **5. Type 4 - CABG–related bleeding** ▪ Perioperative intracranial bleeding within 48 hrs ▪ Reoperation following closure of sternotomy for the purpose of controlling bleeding ▪ Transfusion of ≥ 5 units of whole blood or packed red blood cells within a 48 period**. ▪ Chest tube output ≥ 2L within a 24 hour period ▪ If a CABG - related bleed is not adjudicated as at least a Type 3 severity event, it will be classified as 'not a bleeding event' 6. Type 5 - Fatal Bleeding a. Type 5a ▪ Probable fatal bleeding: no autopsy or imaging confirmation, but clinically suspicious b. Type 5b ▪ Definite fatal bleeding: overt bleeding or autopsy or imaging confirmation Obs: Platelet transfusions should be recorded and reported, but are not included in these definitions until further information is obtained about the relationship to outcomes. *Corrected for transfusion (1 unit PRBC or 1 unit whole blood = 1g/dL Hgb) * Only allogeneic transfusions are considered as transfusions for BARC Type 4 bleeding. Cell saver products will not be counted.

Renal Failure	CORE	Indicate Renal Failure: 1. No 2. Yes – defined as a 50% increase in baseline/first Creatinine recorded in hospital
Did patient have a new requirement for dialysis?	CORE	Indicate if a new requirement for dialysis: 1. No 2. Yes

PART 3 – MEDICATIONS

FIELD NAME	CLASSIFICATION	DEFINITION
Aspirin	CORE	Indicate if aspirin was administered in the first 24 hours before or after first medical contact, regardless of location of care (e.g., transferring facility or EMS). 1. No 2. Yes, provide the following a. Start Date - Indicate the date that aspirin was administered in the first 24 hours before or after first medical contact, regardless of location of care (e.g., transferring facility or EMS). If administered more than once, code the first date/time it was administered. b. Start Time - Indicate the time that aspirin was administered in the first 24 hours before or after first medical contact, regardless of location of care (e.g., transferring facility or EMS). If administered more than once, code the first date/time it was administered. 3. Contraindicated (Note: at admission and discharge are captured by Core Elements Chapter)
	OPTIONAL	Record if this medication was administered In-Hospital
Clopidogrel	CORE	Indicate if clopidogrel was administered, regardless of location of care (e.g., transferring facility or EMS). 1. No 2. Yes, provide a. Start Date - Indicate the date the initial dose of clopidogrel was administered, regardless of location of care (e.g., transferring facility or EMS). If administered more than once, code the first date/time it was administered. b. Start Time - Indicate the time the initial dose of clopidogrel was administered, regardless of location of care (e.g., transferring facility or EMS). If administered more than once, code the first date/time it was administered. c. Dose (mg) - Indicate the initial dose of clopidogrel. 3. Contraindicated 4. Blinded (Note: at admission and discharge are captured by Core Elements Chapter)
	OPTIONAL	Record if this medication was administered In-Hospital

Ticlopidine	CORE	Indicate if ticlopidine was administered, regardless of location of care (e.g., transferring facility or EMS). 1. No 2. Yes, provide a. Start Date - Indicate the date the initial dose of ticlopidine was administered, regardless of location of care (e.g., transferring facility or EMS). If administered more than once, code the first date/time it was administered. b. Start Time - Indicate the time the initial dose of ticlopidine was administered, regardless of location of care (e.g., transferring facility or EMS). If administered more than once, code the first date/time it was administered. c. Dose (mg) - Indicate the initial dose of ticlopidine. 3. Contraindicated (Note: at admission and discharge are captured by Core Elements Chapter)
	OPTIONAL	Record if this medication was administered In-Hospital
Prasugrel	CORE	Indicate if Prasugrel was administered, regardless of location of care (e.g.transferring facility or EMS). 1. No 2. Yes, provide a. Start Date - Indicate the date the initial dose of Prasugrel was administered, regardless of location of care (e.g. transferring facility or EMS). If administered more than once, code the first date/time it was administered. b. Start Time - Indicate the time the initial dose of Prasugrel was administered, regardless of location of care (e.g. transferring facility or EMS). If administered more than once, code the first date/time it was administered. c. Dose (mg) - Indicate the initial dose of Prasugrel administered. 3. Contraindicated 4. Blinded (Note: at admission and discharge are captured by Core Elements Chapter)
	OPTIONAL	Record if this medication was administered In-Hospital

Beta Blocker	CORE	Indicate if a beta blocker was administered, regardless of location of care (e.g., transferring facility or EMS). 1. No 2. Yes, provide a. Start Date - Indicate the date that beta blockers were administered, regardless of location of care (e.g., transferring facility or EMS). If administered more than once, code the first date it was administered. b. Start Time - Indicate the time that beta blockers were administered, regardless of location of care (e.g., transferring facility or EMS). If administered more than once, code the first time it was administered. 3. Contraindicated 4. Blinded (Note: at admission and discharge are captured by Core Elements Chapter)
	OPTIONAL	Record if this medication was administered In-Hospital
ACE Inhibitor	CORE	Indicate if an ACE inhibitor was administered, regardless of location of care (e.g., transferring facility or EMS). 1. No 2. Yes, provide 3. Contraindicated 4. Blinded (Note: at admission and discharge are captured by Core Elements Chapter)
	OPTIONAL	Record if this medication was administered In-Hospital
Angiotensin Receptor Blocker	CORE	Indicate if an angiotensin receptor blocker was administered, regardless of location of care (e.g., transferring facility or EMS). 1. No 2. Yes, provide 3. Contraindicated 4. Blinded (Note: at admission and discharge are captured by Core Elements Chapter)
	OPTIONAL	Record if this medication was administered In-Hospital

Aldosterone Receptor Blocking Agent	CORE	Indicate if an aldosterone blocking agent was administered, regardless of location of care (e.g., transferring facility or EMS). 1. No 2. Yes, provide 3. Contraindicated 4. Blinded (Note: at admission and discharge are captured by Core Elements Chapter)
	OPTIONAL	Record if this medication was administered In-Hospital
Statin	CORE	Indicate if a statin was administered, regardless of location of care (e.g., transferring facility or EMS). 1. No 2. Yes, provide 3. Contraindicated 4. Blinded (Note: at admission and discharge are captured by Core Elements Chapter)
	OPTIONAL	Record if this medication was administered In-Hospital
Non-Statin Lipid Lowering Agent	CORE	Indicate if a non-statin lipid-lowering agent was administered, regardless of location of care (e.g., transferring facility or EMS). 1. No 2. Yes, provide 3. Contraindicated 4. Blinded (Note: at admission and discharge are captured by Core Elements Chapter)
	OPTIONAL	Record if this medication was administered In-Hospital
GP IIb/IIIa Inhibitor	CORE	Refer to Core Elements Chapter definitions
Anticoagulant	CORE	Refer to Core Elements Chapter definitions

PART 4 – LABORATORY RESULTS

FIELD NAME	CLASSIFICATION	DEFINITION
Cardiac Markers		
Positive Cardiac Markers Within First 24 Hours	CORE	Indicate if any positive cardiac markers were present during the first 24 hours after arrival at first facility. **Note(s):** Qualifying cardiac biomarkers include the following: 1. Troponin I or T: Level is elevated if the lab value exceeds the upper limit of normal (ULN) according to the individual hospital's laboratory parameters. 2. Creatine kinase-myocardial band (CK-MB): Level is elevated if the lab value exceeds the ULN according to the individual hospital's laboratory parameters. 3. Positive bedside troponin assay: Level is elevated if the lab value exceeds the ULN according to the individual hospital's laboratory parameters. Arrival at first facility refers to either the time of arrival at your facility or the time of arrival at the transferring facility. 1. No 2. Yes

Troponin	CORE	**INITIAL** Indicate if an initial troponin sample was collected. **Note(s):** The initial sample refers to the first sample obtained within the first 24 hours of care, either from a transferring facility or your facility. 1. Collected: 2. No 3. Yes, record: a. Date - Indicate the date the initial troponin was collected (not date results reported). **Note(s):** Enter date the sample was collected (not date results reported). If patient was transferred in, data available from the transferring facility should take precedence. b. Time - Indicate the time the initial troponin sample was collected (not time results reported). **Note(s):** Enter time the sample was collected (not time results reported). If patient was transferred in, data available from the transferring facility should take precedence. c. Value (ng/mL) - Indicate the initial troponin value in ng/mL. **Note(s):** If value is reported using a < symbol (e.g., < 0.02), record the number only (e.g., 0.02). If patient was transferred in, data available from the transferring facility should take precedence. d. URL - Indicate the URL (Upper Reference Limit) for the initial troponin sample in ng/mL. **Note(s):** If you are unsure of which Upper Reference Limit value to report from a troponin assay, contact your lab manager to determine which value is consistent with the supporting definition. The initial sample value refers to the first sample obtained within the first 24 hours of care, either from a transferring facility or your facility. Supporting Definition: **Upper Reference Limit (URL):** Defined as the 99th percentile of troponin levels for a normal reference population. Source: Joint ESC-ACC-AHA-WHF 2007 Task Force consensus document "Universal Definition of Myocardial Infarction" 4. Yes – I 5. Yes – T

Troponin **(cont'd)**	CORE	**PEAK** Indicate if the peak Troponin, I or T, was collected. Collected: 1. No 2. Yes, record: a. Date - Indicate the date the peak troponin sample was collected (not date results reported). **Note(s):** If the initial value was also the peak value, record results in both initial and peak sections. b. Time - Indicate the date the peak troponin sample was collected (not date results reported). **Note(s):** If the initial value was also the peak value, record results in both initial and peak sections. c. Value (ng/mL) - Indicate the peak troponin value in ng/mL. **Note(s):** If value is reported using a < symbol (e.g., < 0.02), record the number only (e.g., 0.02). d. URL - Indicate the URL (Upper Reference Limit) for the peak troponin sample in ng/mL. **Note(s):** If you are unsure of which Upper Reference Limit value to report from a troponin assay, contact your lab manager to determine which value is consistent with the supporting definition. The initial sample value refers to the highest sample obtained either from a transferring facility or your facility. Supporting Definition: **Upper Reference Limit (URL):** Defined as the 99th percentile of troponin levels for a normal reference population. Source: Joint ESC-ACC-AHA-WHF 2007 Task Force consensus document "Universal Definition of Myocardial Infarction" 3. Yes – I 4. Yes – T

CK-MB	CORE	**INITIAL** Indicate if an initial CK-MB sample was collected. **Note(s):** If patient was transferred in, data available from the transferring facility should take precedence. The initial sample refers to the first sample obtained within the first 24 hours of care, either from a transferring facility or your facility. Collected: 1. No 2. Yes, record: a. Date - Indicate the date the initial CK-MB sample was collected (not date results reported). **Note(s):** If patient was transferred in, data available from the transferring facility should take precedence. The initial sample refers to the first sample obtained within the first 24 hours of care, either from a transferring facility or your facility. b. Time - Indicate the time the initial CK-MB sample was collected (not time results reported). **Note(s):** If patient was transferred in, data available from the transferring facility should take precedence. The initial sample refers to the first sample obtained within the first 24 hours of care, either from a transferring facility or your facility. c. Value - Indicate the initial CK-MB value. **Note(s):** If a CK-MB value was not calculated at baseline for normal CPK results, record a value of 0 (zero). If patient was transferred in, data available from the transferring facility should take precedence. The initial sample value refers to the first sample obtained within the first 24 hours of care, either from a transferring facility or your facility. d. Unit Indicate the initial CK-MB sample unit of measure. **Note(s):** If patient was transferred in, data available from the transferring facility should take precedence. The initial sample value refers to the first sample obtained within the first 24 hours of care, either from a transferring facility or your facility. i. IU/L ii. % iii. (mg/ML)/IU iv. ng/mL 3. ULN - Indicate the ULN (upper limit of normal) for the initial CK-MB sample. **Note(s):** If a range is given for ULN values, record the highest number in the range. Examples: If the reference range given is 0.0-1.5, record ULN as 1.5. If the reference range given is < 1.5, record ULN as 1.5 as well. The initial sample value refers to the first sample obtained within the first 24 hours of care, either from a transferring facility or your facility.

CK-MB (cont'd)	CORE	**PEAK** Indicate if the peak CK-MB was collected. Collected: 1. No 2. Yes, record: a. Date - Indicate the date the peak CK-MB sample was collected (not date results reported). Note(s): If the initial value was also the peak value, record results in both initial and peak sections. b. Time - Indicate the time the peak CK-MB sample was collected (not time results reported). Note(s): If the initial value was also the peak value, record results in both initial and peak sections. c. Value - Indicate the peak CK-MB value. Note(s): If value is reported using a < symbol (e.g., < 0.02), record the number only (e.g., 0.02). d. Unit- Indicate the peak CK-MB sample unit of measure.IU/L i. % ii. (mg/ML)/IU iii. ng/mL 3. ULN - Indicate the ULN (upper limit of normal) for the peak CK-MB sample. Note(s): If a range is given for ULN values, record the highest number in the range. Examples: If the reference range given is 0.0-1.5, record ULN as 1.5. If the reference range given is < 1.5, record ULN as 1.5 as well. The peak sample value refers to the highest sample obtained either from a transferring facility or your facility.
Creatinine	CORE	**INITIAL** Indicate if an initial creatinine was collected. Collected: a. No b. Yes, record: a. Date - Indicate the date the initial creatinine was collected. b. Time - Indicate the time the initial creatinine was collected. c. Value (mg/dL) - Indicate the results of the initial creatinine sample in mg/dL. **Note(s):** If patient was transferred in, data available from the transferring facility should take precedence. The initial creatinine sample may be obtained either at this facility or at the transferring facility.

Creatinine (cont'd)	CORE	**PEAK** Indicate if a peak creatinine was collected. Collected: 1. No 2. Yes, record: a. Date - Indicate the date of the peak creatinine. b. Time - Indicate the time of the peak creatinine. c. Value (mg/dL) - Indicate the results of the peak creatinine sample in mg/dL.
Hemoglobin	CORE	**INITIAL** Indicate if a baseline hemoglobin was collected. Collected: 1. No 2. Yes, record: a. Date - Indicate the date the initial hemoglobin sample was collected (not the date results reported). b. Time - Indicate the time the baseline hemoglobin sample was collected (not the time results reported). c. Value (g/dL) - Indicate the initial hemoglobin (HGB) value in g/dL. **Note(s):** If patient was transferred in, data available from the transferring facility should take precedence.
		LOWEST Indicate the lowest recorded hemoglobin. Collected: 1. No 2. Yes, record: a. Date - Indicate the date the lowest recorded hemoglobin sample was collected (not the date results reported). **Note(s):** Lowest recorded value collected at the transferring facility is acceptable. b. Time - Indicate the time the lowest recorded hemoglobin sample was collected (not the time results reported). **Note(s):** Lowest recorded value collected at the transferring facility is acceptable. c. Value (g/dL) - Indicate the lowest recorded hemoglobin (HGB) value in g/dL. **Note(s):** Lowest recorded value collected at the transferring facility is acceptable.
Initial Hemoglobin A1c	OPTIONAL	Indicate the date the hemoglobin A1C sample. Sample: 1. No 2. Yes, record: a. Date - Indicate the date the hemoglobin A1C sample. b. Time - Indicate the time the hemoglobin A1C sample was collected. c. Value (%) - Indicate the hemoglobin A1C percentage value.
Initial INR	OPTIONAL	Indicate if an initial international normalized ratio (INR) was collected. Collected: 1. No 2. Yes, record: a. Date - Indicate the date the international normalized ratio (INR) sample was collected. b. Time - Indicate the time the international normalized ratio (INR) sample c. Value - Indicate the international normalized ratio (INR) value.

Lipids (mmol/L)	OPTIONAL	Indicate if a lipid panel (TC, HDL, LDL, Triglycerides) was performed. Panel Performed: 1. No 2. Yes, then record the following: a. Date - Indicate the date the sample was collected (not the date results reported). **Note(s):** Lipids obtained with the first 24 hours of this admission should take precedence. If greater than 24 hours of admission, then enter the most recent values obtained (within six months) prior to this admission. b. Time - Indicate the time the sample was collected (not the time results reported). **Note(s):** Lipids obtained with the first 24 hours of this admission should take precedence. If greater than 24 hours of admission, then enter the most recent values obtained (within six months) prior to this admission. c. Value out of range: No/ Yes - Indicate if one or more cholesterol values from the most recent lipid panel cannot be determined. This occurs when a value is so high or low that the laboratory cannot return a valid measurement. **Note(s):** Lipid panel element(s) (e.g. Total Cholesterol, HDL, LDL, and/or Triglycerides) for which an exact value could not be determined should be left blank (e.g., if the reported value is > 500, leave blank, do not code 500) d. TC - Indicate the total cholesterol value in mmol/L. **Note(s):** Lipids obtained with the first 24 hours of this admission should take precedence. If greater than 24 hours of admission, then enter the most recent values obtained (within six months) prior to this admission. If an exact value could not be determined by the lab because it is too high or low, do not indicate a value for this element and indicate "Yes" for Lipid Panel Value Out of Range. e. HDL - Indicate the high density lipoprotein (HDL) cholesterol value in mmol/L. f. LDL - Indicate the low density lipoprotein (LDL) cholesterol value in mmol/L. **Note(s):** Lipids obtained with the first 24 hours of this admission should take precedence. If greater than 24 hours of admission, then enter the most recent values obtained (within six months) prior to this admission. If an exact value could not be determined by the lab because it is too high or low, do not indicate a value for this element and indicate "Yes" for Lipid Panel Value Out of Range. g. Triglycerides - Indicate the triglycerides value in mmol/L. **Note(s):** Lipids obtained with the first 24 hours of this admission should take precedence. If greater than 24 hours of admission, then enter the most recent values obtained (within six months) prior to this admission. If an exact value could not be determined by the lab because it is too high or low, do not indicate a value for this element and indicate "Yes" for Lipid Panel Value Out of Range. If the value is presented as a decimal, round up to the nearest whole number
Initial BNP	OPTIONAL	Indicate if a BNP was obtained during this admission. Collected: 1. No 2. Yes a. Value (pg/ml) - Indicate the initial BNP value in pg/ml.

Initial NT-proBNP	OPTIONAL	Indicate if an NT-pro BNP was obtained during this admission. Collected: 1. No 2. Yes a. Value (pg/ml) - Indicate the initial NT-proBNP value in pg/ml.
Blood Sugar	CORE	Indicate the blood sugar test and value on admission. 1. Random, indicate value 2. Fasting glucose

PART 5 – DISCHARGE

FIELD NAME	CLASSIFICATION	DEFINITION
Discharge Status	CORE	Indicate whether the patient was alive or deceased at discharge from this hospitalization. 1. Alive 2. Deceased
Discharge Date	CORE	Indicate the date the patient was discharged from hospital or left against medical advice or was transferred to another centre or died during this admission.
Location	CORE	Indicate the location to where the patient (if alive) was discharged. 1. Home 2. Extended Care/Transitional Unit 3. Other Hospital 4. Nursing Home 5. Hospice 6. Other 7. Left against medical advice
Referral to Cardiac Rehab	CORE	Indicate if there was a referral for the patient (by the physician, nurse, or other personnel) to an outpatient cardiac rehabilitation program. **Note(s):** The program may include a traditional cardiac rehabilitation program based on face-to-face interactions and training sessions or may include other options such as home-based approaches; as well as diet modifications and exercise counseling. 1. Yes 2. No
Referral to Smoking Cessation Program	CORE	Indicate if there was a referral for the patient to a smoking cessation program 1. Yes 2. No
Primary Diagnosis	CORE	Indicate the Discharge Diagnosis: 1. ACS 2. Other Cardiac – specify 3. Other - specify
Deceased	CORE	Indicate the Cause of Death: 1. Cardiac 2. Non-cardiac Indicate the Time of Death.

ACKNOWLEDGEMENT

The Canadian Cardiovascular Society would like to acknowledge the help and guidance of the following individuals in the development of these Acute Coronary Syndrome (ACS) element chapter data elements and definitions:

Data Definitions Acute Coronary Syndrome (ACS) Chapter Working Group

Warren Cantor (Chair), Southlake Regional Health Centre, ON
Peter Bogaty / Laurie Lambert, Agence d'évaluation des technologies et des modes d'intervention en santé
Christopher Buller, Hamilton Health Sciences, ON
Jafna Cox, Cardiovascular Health Nova Scotia, NS
Shaun Goodman, St. Michael's Hospital, ON
Michel Le May, University of Ottawa Heart Institute
Jack Tu, Canadian Cardiovascular Outcomes Research Team
Robert Welsh, University of Alberta Hospital
Representatives from the Public Health Agency of Canada

Data Definitions Steering Committee

Christopher Buller (Chair), Hamilton Health Sciences, ON
Jafna Cox, Cardiovascular Health Nova Scotia, NS
Ross Davies, University of Ottawa Heart Institute
Diane Galbraith, Alberta Provincial Project for Outcome Assessment in Coronary Heart Disease, AB
Karin Humphries, British Columbia Cardiac Registry
Kori Kingsbury, Cardiac Care Network of Ontario
Dennis Ko, Institute for Clinical Evaluative Studies
Laurie Lambert, Agence d'évaluation des technologies et des modes d'intervention en santé
Anne McFarlane, Canadian Institute for Health Information
Representatives from the Public Health Agency of Canada
Charlie Kerr, Past President, and Blair O'Neill, President, Canadian Cardiovascular Society, ex-officios

Project Support

Anne Ferguson, Chief Executive Officer, Canadian Cardiovascular Society
Louise Marcus, Project Director and Director, Health Policy/Advocacy, Canadian Cardiovascular Society
Holly Fan, Project Manager (external)

Production of these materials has been made possible by the Canadian Cardiovascular Society and through a financial contribution from the Public Health Agency of Canada.

DISCLAIMER

The views expressed herein do not necessarily represent the views of the Public Health Agency of Canada.

COPYRIGHT