| Data Elements | **Definition** | **Value Domain** | **Mapping to Cardiovascular Domain Analysis Model (DAM)** |
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| New York Heart Association Class (NYHA) | Defined as patients with defined or presumed cardiac disease and one of the following:<br>● Class I: without limitations of physical activity. Ordinary physical activity does not cause undue fatigue, palpitation, or dyspnea.<br>● Class II: slight limitation of physical activity. They are comfortable at rest. Ordinary physical activity results in fatigue, palpitation, or dyspnea.<br>● Class III: marked limitation of physical activity. They are comfortable at rest. Less than ordinary activity causes fatigue, palpitation, or dyspnea.<br>● Class IV: inability to carry on any physical activity without discomfort. Symptoms are present even at rest or minimal exertion<br>(The Criteria Committee of the New York Heart Association. Nomenclature and Criteria for Diagnosis of Diseases of the Heart and Great Vessels. 9th ed. Boston, Mass: Little, Brown & Co; 1994:253-256.) | I<br>II<br>III<br>IV | PhysicalExam.observationTypeCode = *NYHA Class*<br>PhysicalExam.observationValue = *NYHA Class value* |

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| Canadian Cardiovascular Society Grading Scale (CCS) | Grading of patient's angina by class (Canadian Cardiovascular Society Grading Scale or CCS classification system):<br>• Class I: Ordinary physical activity, such as walking or climbing stairs, does not cause angina. Angina occurs with strenuous, rapid, or prolonged exertion at work or recreation.<br>• Class II: Slight limitation of ordinary activity. Angina occurs on walking or climbing stairs rapidly, walking uphill, walking or climbing stairs after meals, or in cold, in wind, or under emotional stress, or only during the few hours after awakening. Angina occurs on walking more than 2 blocks on the level and climbing more than 1 flight of ordinary stairs at a normal pace and in normal condition.<br>• Class III: Marked limitations of ordinary physical activity. Angina occurs on walking 1 to 2 blocks on the level and climbing 1 flight of stairs in normal conditions and at a normal pace.<br>• Class IV: Inability to perform any physical activity without discomfort—anginal symptoms may be present at rest. (Campeau L. Circulation. 1976;54:522. Letter) | I<br>II<br>III<br>IV | PhysicalExam.observationTypeCode = *CCS Grading Scale*<br>PhysicalExam.observationValue = *CCS grade* |

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| History of peripheral vascular disease | Indicate if the patient has a history of peripheral vascular disease. This can include:<br><br>1. Claudication either with exertion or at rest.<br>2. Amputation for arterial vascular insufficiency.<br>3. Aorto-iliac occlusive disease reconstruction, peripheral vascular bypass surgery, angioplasty or stent; or percutaneous intervention to the extremities.<br>4. Documented abdominal aortic aneurysm (AAA) repair or stent.<br>5. Positive non-invasive/invasive test.<br><br>This does not include procedures such as vein stripping, carotid disease, or procedures originating above the diaphragm. | Yes<br>No | MedicalHistory.observationTypeCode = *Peripheral Vascular Disease*<br>MedicalHistory.observationValue = *Yes/No* |

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| Unstable Angina Pectoris | Angina pectoris (or equivalent type of ischemic discomfort) with any 1 of the 3 following features:<br>a) Angina occurring at rest and prolonged, usually greater than 20 minutes;<br>b) New onset angina of at least Canadian Cardiovascular Society Grading Scale (or CCS classification system) classification severity III or greater<br>c) Recent acceleration in angina accentuated by an increase in severity of at least 1 CCS class to at least CCS class III. The biomarkers of necrosis are below the threshold of myocardial infarction. | Yes<br>No | PhysicalExam.observationTypeCode = *Unstable Angina Pectoris*<br>PhysicalExam.observationValue = *Yes/No* |
| Stable Angina Pectoris | Angina pectoris without a recent change in frequency or pattern. Angina is relieved by rest and/or sublingual/oral/transdermal medications. | Yes<br>No | PhysicalExam.observationTypeCode = *Stable Angina Pectoris*<br>PhysicalExam.observationValue = *Yes/No* |
| Angina Pectoris | Previous or current symptoms described as chest pain or pressure, jaw pain, arm pain, or other equivalent discomfort suggestive of cardiac ischemia. | Yes<br>No | PhysicalExam.observationTypeCode = *Angina Pectoris*<br>PhysicalExam.observationValue = *Yes/No* |

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| Date/time of Most Recent Angina Pectoris | The date and time of the most recent occurrence of angina pectoris. | DateTime | MedicalHistory.observationTypeCode = *Most Recent Angina Pectoris*<br>MedicalHistory.eventDateTime = *Date/Time of Most Recent Angina Pectoris* |
| Date/time of Onset of Angina Pectoris | The date and time that angina pectoris first occurred. If only the date is available then use the date data element instead. | DateTime | MedicalHistory.observationTypeCode = *First Ever Angina Pectoris*<br>MedicalHistory.eventDateTime = *Date/Time of First Ever Onset of Angina Pectoris* |
| Date of first ever Onset of Angina Pectoris (From Medical History) | The date of first ever angina pectoris | Date | MedicalHistory.observationTypeCode = *First Ever Angina Pectoris*<br>MedicalHistory.eventDateTime = *Date of First Ever Onset of Angina Pectoris* |
| Date/time of Angina Pectoris prompting medical attention | The date and time of the angina pectoris that lead the patient to seek medical attention. | DateTime | MedicalHistory.observationTypeCode = *Angina Pectoris Prompting Medical Attention*<br>MedicalHistory.eventDateTime = *Date/Time of Angina Pectoris Prompting Medical Attention* |
| Variant Angina Pectoris | (syn. Prinzmetal's angina or coronary artery vasospasm). It usually occurs spontaneously, and unlike typical angina, it nearly always occurs when a person is at rest and does not require physical exertion. It frequently is associated with transient ST-segment elevation. | Yes<br>No | PhysicalExam.observationTypeCode = *Variant Angina Pectoris*<br>PhysicalExam.observationValue = *Yes/No* |

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| History of coronary artery disease | Indicate whether there is a documented history of any of the following:<br>• Prior coronary artery bypass surgery (CABG)<br>• Prior percutaneous coronary intervention (PCI)<br>• Angiographically documented coronary artery stenosis greater than or equal to 50%<br>• Angiographically documented coronary atherosclerosis (not greater than 50%)<br>• Positive stress test<br>• Alternatively documented coronary atherosclerosis using other imaging techniques<br>• Prior myocardial infarction<br>• Prior angina pectoris | Yes<br>No | MedicalHistory.observationTypeCode = *Coronary Artery Disease*<br>MedicalHistory.observationValue = *Yes/No* |
| History of Cardiogenic Shock | An event with systolic BP < 90 mmHg for greater than 1 hour, not responsive to fluid resuscitation alone, and felt to be secondary to cardiac dysfunction. Associated signs of hypoperfusion (cool and clammy skin, oliguria, or altered sensorium) or a cardiac index of less than 2.2 L/min/$m^2$ are present. This includes when the systolic BP increases to > 90 mmHg in response to inotropic agents in less than 1 hour. | Yes<br>No | MedicalHistory.observationTypeCode = *Cardiogenic Shock*<br>MedicalHistory.observationValue = *Yes/No* |

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| History of Heart Failure | Physician documentation or report of any of the following symptoms of heart failure prior to this care encounter described as unusual dyspnea on light exertion, recurrent dyspnea occurring in the supine position, fluid retention, low cardiac output secondary to cardiac dysfunction; or the description of rales, jugular venous distension, or pulmonary edema. A previous hospital admission with principal diagnosis of heart failure is considered evidence of heart failure history. | Yes<br>No | MedicalHistory.observationTypeCode = *Heart Failure*<br>MedicalHistory.observationValue = *Yes/No* |
| Date of Most Recent Heart Failure | The date of the most recent occurrence of Heart Failure. | Date | MedicalHistory.observationTypeCode = *Most Recent Heart Failure*<br>MedicalHistory.eventDateTime = *Date of Most Recent Heart Failure* |
| Date of first ever Onset of Heart Failure | The date of first ever Heart failure | Date | MedicalHistory.observationTypeCode = *First Ever Onset of Heart Failure*<br>MedicalHistory.eventDateTime = *Date of First Ever Onset of Heart Failure* |
| Date of Heart Failure prompting medical attention | The date of the heart failure that lead the patient to seek medical attention. | Date | MedicalHistory.observationTypeCode = *Heart Failure Prompting Medical Attention*<br>MedicalHistory.eventDateTime = *Date of Heart Failure Prompting Medical Attention* |

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| History of Resuscitated Cardiac Arrest | [Sudden] cardiac arrest is the sudden cessation of cardiac activity so that the victim typically becomes unresponsive, with no normal breathing and no signs of circulation. If corrective measures are not taken rapidly, this condition progresses to sudden death. Cardiac arrest should be used to signify an event as described above, that is reversed, usually by CPR and / or defibrillation or cardioversion, or cardiac pacing. Sudden cardiac death should not be used to describe events that are not fatal.<br><br>Specify whether cardiac arrest occurred out-of-hospital or in-hospital. | Yes<br>No | MedicalHistory.observationTypeCode = *Resuscitated Cardiac Arrest*<br>MedicalHistory.observationValue = *Yes/No* |
| In-hospital Cardiac Arrest | Onset of cardiac arrest that occurred after arrival at emergency department or during hospital admission. | Yes<br>No | AdverseOutcome. observationTypeCode = *Cardiac Arrest*<br>AdverseOutcome.observationValue = *Yes/No* |
| Date of resuscitated Cardiac Arrest | Date that resuscitated cardiac arrest occurred | Date | MedicalHistory.observationTypeCode = *Resuscitated Cardiac Arrest*<br>MedicalHistory.eventDateTime = *Date of Resuscitated Cardiac Arrest*<br>**OR**<br>AdverseOutcome.eventDateTime = *Date of Resuscitated Cardiac Arrest* (if cardiac arrest occurred at ED or during hospital stay) |

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| Killip Class | Killip class of the patient at the time of hospital admission:<br>Class 1: Absence of rales over the lung fields and absence of S3<br>Class 2: Rales over 50% or less of the lung fields or the presence of an S3<br>Class 3: Rales over more than 50% of the lung fields<br>Class 4: Cardiogenic Shock (An event with systolic BP < 90 mmHg for greater than 1 hour, not responsive to fluid resuscitation alone, and felt to be secondary to cardiac dysfunction. Associated signs of hypoperfusion (cool and clammy skin, oliguria, or altered sensorium) or a cardiac index of less than 2.2 L/min/m2 are present. This includes when the systolic BP increases to > 90 mmHg in response to inotropic agents in less than 1 hour.) | I<br>II<br>III<br>IV | PhysicalExam.observationTypeCode = *Killip Class*<br>PhysicalExam.observationValue = *Killip Class value* |

*A Full DateTime would contain all the elements, YYYYMMDDhhmmss. Partial DateTime may be filled from the left, e.g., YYYY, YYYYMM, YYYYMMDD, YYYYMMDDhh, YYYYMMDDhhmm, YYYYMMDDhhmmss, etc. This business rule for reporting Partial DateTime is in agreement with the HL7 guidelines for exchange of DateTime information. The display format for DateTime information is determined by programmatic requirements.