| COMMENTS | -Affix label here- |
|--|--------------------|
| | Member ID: |
| To be completed by Physician Adjudicator | |
| Date Completed: | Central Case No.: |
| Adjudicator Code: | Case Copy No.: |

(For items 1-12, each question specifies "mark one" or "mark all" that apply.)

Complete Q1 - ECG, Q2 - Cardiac enzyme, and Q3 - Cardiac pain information for the following WHI Extension Study outcomes: Myocardial infarction (MI), coronary revascularization, and heart failure.

- 1. ECG pattern (Mark the one category that applies best.)
 - 1 Evolving Q-wave and evolving ST-T abnormalities*
 - 2 Equivocal Q-wave evolution; or evolving ST-T abnormalities; or new left bundle branch block
 - **Q**₃ Q-waves or ST-T abnormalities suggestive of an MI and not classified as code 1 or 2 above
 - 8 Other ECG pattern, ECG uncodable, or normal ECG pattern
 - ____9 ECG not available

*Mark if ECG formal interpretation report clearly indicates evidence for acute ST-segment elevation myocardial infarction (STEMI) when the actual ECG tracing cannot be obtained.

2. <u>Cardiac enzyme</u> information available?

 \square_0 No \longrightarrow Skip to Question 3 on page 2.

| 1 | Yes |
|---|-----|
| | |

2.1 Serum creatine kinase (CK): (Mark all that apply.) (Always record % or index if available.)

If CK-MB available:

CK-MB expressed as a % or index: (Record peak results only.)

|--|

| 2 | CK-MB greater | than upper l | limit of normal | but less than : | 2x upper limit | of normal for % or index |
|---|---------------|--------------|-----------------|-----------------|----------------|--------------------------|
| / | g | | | | | |

 \square_3 CK-MB within normal limits for % or index

CK-MB expressed in units (usually ng/ml): (Record peak results only.)

- \square_4 CK-MB at least 2x upper limit of normal for units
- 5 CK-MB greater than upper limit of normal but less than 2x upper limit of normal for units

\square_6 CK-MB within normal limits for units

| AS355 | 211 | CK MR pook result | | 212 | CK MR upper limit of permal | | |
|-------------|-------|----------------------|---|-------|------------------------------|---|--|
| COSMOS only | 2.1.1 | CR-IND peak result _ | · | 2.1.2 | CR-IND upper limit of normal | · | |

If CK-MB not available: o Total CK at least 2x upper limit of normal \Box_{10} Total CK greater than upper limit of normal but less than 2x upper limit of normal 11 Total CK within normal limits CK result not available AS355 2.1.3 Total CK peak result _____ 2.1.4 Total CK upper limit of normal _____ COSMOS only 2.2 Troponin lab test. (Mark the one category that applies best.) (If more than one test was conducted, record the type with the most elevated lab result.) ☐ Troponin C 2 Troponin I Go to Question 2.2.1. 3 Troponin T \checkmark Troponin, not specified \Box_{α} Troponin not available Go to Question 3. 2.2.1 Results (Mark the one category that applies best.) Troponin values should be coded using the upper limit of normal (ULN) and not upper limit of indeterminate/indecisive as the reference value. Thus, if 2 cutpoints are given, choose the lower cutpoint for the upper limit of normal. ¹ Troponin at least 2x upper limit of normal 2 Troponin greater than upper limit of normal but less than 2x upper limit of normal 3 Troponin within normal limits ____o Other AS355 COSMOS only

Most elevated Troponin:

WHI

2.2.2 Troponin peak result _____.

- 2.2.3 Troponin upper limit of normal _____.
- 3. <u>Cardiac pain</u> defined as: an acute episode of pain, discomfort or tightness in the chest, arm, throat or jaw. *(Mark the <u>one</u> category that applies best.)*
 - 1 Present
 - 2 Absent

9 Unknown/Not recorded

| WHI | | | Form 121 - Report of Cardiovascular Outcome | Ver. 10.1 | | | |
|------------------------|-----------------|-----|---|-----------------------|--|--|--|
| Yes □_ ₁ | № □_0 | 4. | Definite, probable, or aborted <u>myocardial infarction</u> (See Table 1 – Definition of Criter Diagnosis of Myocardial Infarction and Table 2 – Algorithm for Enzyme Diagnostic Cr the last page of this form.) | ria for riteria on | | | |
| | | 4.1 | Date of admission: | | | | |
| | | 4.2 | Diagnosis: <i>(Mark one.)</i> | | | | |
| | | | (Skip to Question 4.3.) \square_2 Myocardial infarction during or resulting from a procedure, i.e., within 30 days of any procedure \downarrow | | | | |
| | | | 4.2.1 Type and timing of Procedure <i>(Mark one.)</i> | | | | |
| | | | A myocardial infarction that followed a <u>cardiac</u> procedure <u>within 24 hours</u> (for diagnostic coronary catheterization, percutaneous coronary intervention (PCI) pacemaker insertion, or cardioversion). | example,), CABG, | | | |
| | | | A myocardial infarction that followed a <u>cardiac</u> procedure <u>within 2-30 days</u> (for examp diagnostic coronary catheterization, PCI, CABG, pacemaker insertion, or cardioversion). | | | | |
| | | | A myocardial infarction that followed a <u>non-cardiac</u> procedure <u>within 30 days</u> (example, any elective or emergency non-cardiac vascular procedure regardler of anesthesia, or any elective or emergency surgical procedure requiring more local anesthesia). <i>(Go to Question 4.3 below.)</i> | | | | |
| | | | Answer both questions: | | | | |
| | | | 4.2.2 Was the cardiac procedure a PCI? | | | | |
| | | | | | | | |
| | | | $\square_{1} \text{ Yes } \rightarrow 4.2.3 \text{ Were enzyme levels at least 3X ULN } No Yes \\ (99th percentile)? \square_{0} \square_{1}$ | Unknown | | | |
| | | | 4.2.4 Was the cardiac procedure a CABG? | | | | |
| | | | | | | | |
| | | | Image: No intermediate intermediationYesNo intermediation $1 	ext{ Yes } \rightarrow$ 4.2.5 Were enzyme levels at least 5X ULN (99th percentile) and Q-Wave, new LBBB or evidence for graft closure found for CABG?No intermediation | Unknown | | | |
| | | | | | | | |

4.3 Was a thrombolytic agent administered or emergent* revascularization procedure (e.g., angioplasty or stent) performed? *(Mark one.)*

*An emergent revascularization is conducted within 12 hours of symptom onset; code both here and in Q5. Non-emergent revascularization procedures are coded only under Q5. Examples of thrombolytic agents are streptokinase, reteplase (Retavase), tenecteplase (TNKase), alteplase tPA (Activase).

 \square_0 No \square_1 Yes \square_9 Unknown

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|-------|---|--------------|
| | AS355 COSMOS only | |
| 4.4 | Universal criteria of MI classification <i>(Mark one.)</i> | |
| | □ ₁ Type 1: Spontaneous MI | |
| | Type 2: Secondary MI | |
| | ☐ ₃ Type 3: MI resulting in death (no biomarkers available) | |
| | ☐ ₄ Type 4a: Post-PCI MI | |
| | ☐ ₅ Type 4b: MI related to stent thrombosis | |
| | ☐ ₆ Type 5: Post-CABG MI | |
| íes N | Io 5. <u>Coronary revascularization</u> . Categories A, C, D | |
| | 」 _{05.1} Date of Admission/Procedure: L L (M/D/Y) | |
| | 5.2 Type of procedure: Any one of the following procedures aimed at improving cardiac stat <i>(Mark all that apply.)</i> | us |
| | Coronary artery bypass graft (CABG) | |
| | Percutaneous transluminal coronary angioplasty (PTCA), coronary stent, or coronary atherectomy, percutaneous coronary intervention (PCI) | ary |
| | AS355 COSMOS only | |
| 5.2.1 | Coronary artery interventions (Mark all that apply.) | |
| | ☐ ₁ Left main coronary artery | |
| | 2 Left anterior descending artery or branches | |
| | \square_3 Left circumflex artery or marginal branches | |
| | Right coronary artery or branches | |
| | \square_5 Any vein bypass graft treated by PCI | |
| | \square_6 Internal thoracic (left or right internal mammary) artery (RIMA or LIMA) graft treated by PCI | |
| | 8 Other (Specify: |) |
| | 9 Information not available | |
| | 5.3 Second myocardial infarction (MI) (i.e., second MI <u>not</u> already reported in Question 4) oc result of or during the revascularization procedure. <i>(Mark one.)</i> | curring as a |
| | D ₀ No D ₉ Unknown | |
| | \square_1 Yes | |
| | 5.3.1 For PCL were enzyme levels at least 3X ULN (99th percentile)? | |

| 5.5.1 | i of i of, were enzym | | |
|-------|--|---|---|
| | □ ₀ No | □ ₁ Yes | 9 Unknown |
| 5.3.2 | For CABG, were enz evidence for graft clo | yme levels at least 5X l sure found? | JLN (99th percentile) and Q-Wave, new LBBB or |
| | □ ₀ No | □ ₁ Yes | 9 Unknown |

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|------------------------|-----------------------|-----|--|-------------------------------|
| | | | Categories A, C, D | |
| Yes □_₁ | No | 6. | Carotid artery disease requiring and/or occurring during hospitalization. Disease m symptomatic and/or requiring intervention (i.e., vascular or surgical procedure). | ust be |
| · | 0 | 6.1 | Date of Admission: | |
| | | 6.2 | Diagnosis: <i>(Mark one.)</i> | |
| | | | 1 Carotid artery occlusion and stenosis <u>without</u> documentation of cerebral infarction | |
| | | | \square_2 Carotid artery occlusion and stenosis <u>with</u> documentation of cerebral infarction | |
| | | 6.3 | Carotid artery disease based on (Hospitalization <u>plus</u> one or more of the following): <i>(Mark all that apply.)</i> | |
| | | | \Box_1 Symptomatic disease with carotid artery disease listed on the hospital discharge su | mmary |
| | | | Q Symptomatic disease with abnormal findings (≥ 50% stenosis) on carotid angiogram Doppler flow study | ו, MRA, or |
| | | | \square_3 Vascular or surgical procedure to improve flow to the ipsilateral brain | |
| | | | Categories A, C, D | |
| Yes □_ ₁ | № | 7. | Peripheral arterial disease (iliac arteries or below) requiring and/or occurring during hospitalization. Symptomatic disease including intermittent claudication, ischemic ulcers gangrene. Disease must be symptomatic and/or requiring intervention (e.g., vascular or s procedure for arterial insufficiency in the lower extremities). |] s, or surgical |
| | | 7.1 | Date of Admission: | |
| | | 7.2 | Diagnosis: (Mark the <u>one</u> category that applies best.) | |
| | | | \square_2 Atherosclerosis of arteries of the lower extremities | |
| | | | \square_3 Arterial embolism and/or thrombosis of the lower extremities | |
| | | 7.3 | Peripheral arterial disease based on (hospitalization <u>plus</u> one or more of the following): <i>(Mark all that apply.)</i> | |
| | | | ☐ 1 Ultrasonographically, angiographically, or MRI-demonstrated obstruction, or ulcerate (≥ 50% of the diameter or ≥ 75% of the cross-sectional area) demonstrated on ultra angiogram of the iliac arteries or below | ed plaque sound or |
| | | | \square_2 Absence of pulse by Doppler in any major vessel of lower extremities | |
| | | | | |
| | | | 4 Surgery, angioplasty, or thrombolysis for peripheral arterial disease | |
| | | | \square_5 Amputation of one or more toes or part of the lower extremity because of ischemia \square_5 | or gangrene |
| | | | Exertional leg pain relieved by rest and at least one of the following: (1) elevelisation discussed by physician or | |
| | | | (1) claudication diagnosed by physician, or (2) ankle-arm systolic blood pressure ratio ≤ 0.8 | |
| | | | Categories A, C, D, E | |
| Yes | No | 8. | Congestive heart failure requiring and/or occurring during hospitalization. (Physicia of new-onset or worsened congestive heart failure on this admission.) | an diagnosis |
| L 1 | ш ₀ | 8.1 | Date of Admission: | |
| | | | | |

| WHI | | | Form 121 - Report of Cardiovascular Outcome Ver. 10. | | |
|------------|-----------------------|------|---|----------------------------|--|
| | | 8.2 | Congestive heart failure based on one or more of the following: <i>(Mark all that apply.)</i> 1 Congestive failure diagnosed by physician and receiving medical treatment for CHF or admission (e.g., diuretic, digitalis, vasodilator and/or angiotensin-converting enzyme in | n this hibitor) | |
| | | | Congestive failure diagnosed by physician and receiving medical treatment on this administration plus current medical record documents a history of an imaging procedure showing impossibility or diastolic LV function | nission paired | |
| | | | \square_3 Pulmonary edema/congestion by chest X-ray on this admission | | |
| | | | On this admission, dilated ventricle or poor left (or right-side) ventricular function (e.g., motion abnormalities) by echocardiography; radionuclide ventriculogram (RVG)/multiga acquisition (MUGA), or other contrast ventriculography, or evidence of left ventricular or dysfunction | wall ated liastolic | |
| | | | Categories A, C, D | | |
| Yes | No | 9. | <u>Aortic aneurysm</u> Requires a hospitalization of one night or more. Disease must be symptomatic and/or requiring intervention (e.g., vascular or surgical procedure). | | |
| | 0 | 9.1 | Date of Admission: | | |
| | | 9.2 | Diagnosis: (Mark one.) Ultrasonographically- or angiographically-demonstrated (by any imaging modality) aort aneurysm Surgical or vascular procedure for aortic aneurysm | ic | |
| | | 9.3 | Location: (Mark one.) $\begin{bmatrix} 1 \\ 1 \end{bmatrix}$ Ascending aortic aneurysm (arising anywhere from the aortic valve to the left subclavia $\begin{bmatrix} 2 \\ 2 \end{bmatrix}$ Descending aortic aneurysm (thoracic aorta from the left subclavian artery to the diaph $\begin{bmatrix} 3 \\ 3 \end{bmatrix}$ Thoracoabdominal aortic aneurysm (descending aorta extending below the diaphragm $\begin{bmatrix} 4 \\ 4 \end{bmatrix}$ Abdominal aortic aneurysm (AAA) (abdominal aorta below the renal arteries only) $\begin{bmatrix} 8 \\ 9 \end{bmatrix}$ Unknown, not specified | an artery) iragm))) | |
| | | 4.0 | Categories A, C, D | | |
| Yes | No | 10. | Aortic dissection Requires a hospitalization of one hight or more. | | |
| - 1 | L ₀ | 10.1 | Date of Admission: | | |
| | | 10.2 | Diagnosis: <i>(Mark one.)</i> | | |
| | | | DeBakey Classification 1 Type I (Dissection of the ascending and descending thoracic aorta) 2 Type II (Dissection of the ascending aorta) 3 Type III (Dissection of the descending aorta) | | |
| | | | If DeBakey classification cannot be determined, complete the following: _4 Stanford Type A (Dissection involving the ascending aorta, regardless of the site of the primary tear) _5 Stanford Type B (Dissection of the descending aorta) _6 Not able to be classified with available documents | 9 | |

MHM

Category A, C

- Heart Valve Disease Requires a hospitalization of one night or more. Moderate to severe valvular disease involving one or more valves that requires medical treatment; surgical repair or replacement; or interventional procedure to treat stenosis or regurgitation. , °⊆ , ∠es
- Ļ ц т _ Г Date of Admission: 11.1
- Which valve(s) involved (causing symptoms, hospitalization, treatment, or complications) are specified? 11.2

| OS (Not 1ark the one | | Unknown |
|---|--------|--------------------|
| k Valve N ark Yes, n | Jnosis | Both |
| own, mar If you ma | Diaç | Insuffi- ciency |
| or each valve. If valve not kn intified in available records). | | Stenosis |
| r Yes fo not ide | | Yes |
| Which valves? (Mark No o) Otherwise Specified - i.e., | | No |

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11.2.2.1 11.2.3.1

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Pulmonic Tricuspid

11.2.3

11.2.4

11.2.2

11.2.1.1

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Aortic Mitral

11.2.1

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11.2.4.1

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11.2.5.1

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Valve NOS

11.2.5

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> Was a procedure or operation performed? 11.3

| No | Yes I | \rightarrow |
|----|----------|---------------|
| | | |

| <u>.</u> . |
|------------|
|------------|

Tricuspid Unknown

ი

Responsible Adjudicator Signature

| | Cardiac Enzyme Interpretation (see <i>Table 2</i> below) | | | |
|---|---|-------------|-----------------------|-------------|
| | Abnormal | Equivocal | Incomplete/ Absent | Normal |
| ECG Pattern/Symptoms | | | | |
| Cardiac pain present: | | | | |
| Evolving Q wave and evolving ST-T abnormalities | Definite MI | Definite MI | Definite MI | Definite MI |
| Equivocal Q wave evolution; or evolving ST-T abnormalities, or new left bundle branch block | Definite MI | Definite MI | Probable MI | No MI |
| Q waves or ST-T abnormalities suggestive of an MI and not classified above | Definite MI | Probable MI | No MI | No MI |
| Other ECG, ECG absent or uncodable | Definite MI | No MI | No MI | No MI |
| Cardiac Pain absent: | | | | |
| Evolving Q wave and evolving ST-T abnormalities | Definite MI | Definite MI | Definite MI | Probable MI |
| Equivocal Q wave evolution; or evolving ST-T abnormalities; or new left bundle branch block | Definite MI | Probable MI | No MI | No MI |
| Q waves or ST-T abnormalities suggestive of an | Duch shite MI | N- MI | N- MI | N-MI |

 Table 1

 Definition of Criteria for Diagnosis of Myocardial Infarction

 Table 2

 Algorithm for Enzyme Diagnostic Criteria***

Probable MI

No MI

| | | Interpretation | |
|---|-------------------------------------|-------------------------------------|--------------------------------|
| Cardiac Enzyme | Abnormal* | Equivocal | Normal |
| Creatine kinase MB fraction (CK-MB) | ≥ 2x ULN (as %, index, or units) | 1-2x ULN (as %, index, or units) | WNL |
| Troponin (C, I, or T)** | Troponin ≥ 2x ULN | Troponin 1-2x ULN | Troponin is WNL |
| Total creatine kinase (CK) (no MB available) | N/A | Total CK ≥ 2x ULN | Total CK is 1-2x ULN or WNL |

ULN = upper limit of normal WNL = within normal limits

MI and not classified above

Other ECG, ECG absent or uncodable

- * If both CK-MB and Troponin are available, Troponin must be elevated to be considered abnormal; if only CK-MB is available, abnormal levels are enough to code enzymes as abnormal, i.e., WHI considers Troponin as the most accurate indicator of myocardial injury.
- ** Code Troponin levels using the ULN and not Upper limit of undeterminate/indecisive as the reference value. Thus, if 2 cut points are given, choose the lower cut point for the ULN.
- *** For procedure related MI also code 5.3.1 or 5.3.2 with these definitions: 3X ULN (99th percentile) for PCI and 5X ULN (99th percentile) and Q-Wave, new LBBB or evidence for graft closure found for CABG.

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Table 3Universal Classification of Myocardial Infarction

Type 1: Spontaneous myocardial infarction

Spontaneous myocardial infarction related to atherosclerotic plaque rupture, ulceration, fissuring, erosion, or dissection with resulting intraluminal thrombus in one or more of the coronary arteries leading to decreased myocardial blood flow or distal platelet emboli with ensuing myocyte necrosis. The patient may have underlying severe CAD but on occasion non-obstructive or no CAD.

Type 2: Myocardial infarction secondary to an ischaemic imbalance

In instances of myocardial injury with necrosis where a condition other than CAD contributes to an imbalance between myocardial oxygen supply and/or demand, e.g., coronary endothelial dysfunction, coronary artery spasm, coronary embolism, tachy-/brady-arrhythmias, anemia, respiratory failure, hypotension, and hypertension with or without LVH.

Type 3: Myocardial infarction resulting in death when biomarker values are unavailable

Cardiac death with symptoms suggestive of myocardial ischemia and presumed new ischemic ECG changes or new LBBB, but death occurring before blood samples could be obtained, before cardiac biomarker could rise, or in rare cases cardiac biomarkers were not collected.

Type 4a: Myocardial infarction related to percutaneous coronary intervention (PCI)

Myocardial infarction associated with PCI is arbitrarily defined by elevation of cTn values >5 x 99th percentile URL in patients with normal baseline values (\geq 99th percentile URL) or a rise of cTn values >20% if the baseline values are elevated and are stable or falling. In addition, either (i) symptoms suggestive of myocardial

Type 4b: Myocardial infarction related to stent thrombosis

Myocardial infarction associated with stent thrombosis is detected by coronary angiography or autopsy in the setting of myocardial ischemia and with a rise and/or fall of cardiac biomarkers values with at least one value above the 99th percentile URL.

Type 5: Myocardial infarction related to coronary artery bypass grafting (CABG)

Myocardial infarction associated with CABG is arbitrarily defined by elevation of cardiac biomarker values >10 x 99th percentile URL in patients with normal baseline cTn values (\geq 99th percentile URL). In addition, either (i) new pathological Q waves or new LBBB, or (ii) angiographic documented new graft or new native coronary artery occlusion, or (iii) imaging evidence of new loss of viable myocardium or new regional wall motion abnormality.