NHSN Cardiovascular (CVS) System Infection

Documentation Review Checklist	
CVS-CARDIOVASCULAR SYSTEM INFECTION	
CARD-Myocarditis or pericarditis	
Element	**Element Met**
Myocarditis or pericarditis must meet at least ***one*** of the following criteria:	
1. Patient has organism(s) identified from pericardial tissue or fluid by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment, for example, not Active Surveillance Culture/Testing (ASC/AST)	☐
2. Patient has at least ***two*** of the following signs or symptoms:	
• Fever (>38.0°C)	☐
• Chest pain*	☐
• Paradoxical pulse*	☐
• Increased heart size*	☐
AND Patient has at least ***one*** of the following:	
a. Abnormal EKG consistent with myocarditis or pericarditis	☐
b. Evidence of myocarditis or pericarditis on histologic exam of heart tissue	☐
c. 4-fold rise in paired sera from IgG antibody titer	☐
d. Pericardial effusion identified by echocardiogram, CT scan, MRI, or angiography.	☐
Patient ≤1 year of age	
3. Patient ≤1 year of age has at least ***two*** of the following signs or symptoms:	
• Fever (>38.0°C)	☐
• Hypothermia (<36.0°C)	☐
• Apnea*	☐
• Bradycardia*	☐
• Paradoxical pulse*	☐
• Increased heart size*	☐
AND at least ***one*** of the following:	
a. Abnormal EKG consistent with myocarditis or pericarditis	☐
b. Histologic examination of heart tissue shows evidence of myocarditis or pericarditis.	☐
c. 4-fold rise in paired sera from IgG antibody titer	☐
d. Pericardial effusion identified by echocardiogram, CT scan, MRI, or angiography	☐
*With no other recognized cause	
Comment: • Most cases of post cardiac surgery or post myocardial infarction pericarditis are not infectious.	

CVS-CARDIOVASCULAR SYSTEM INFECTION

ENDO-Endocarditis

Note: When meeting the Endocarditis (ENDO) definition:

- *The ENDO Infection Window Period is defined as the 21 days during which all site-specific infection criteria must be met. It includes the date the first positive diagnostic test that is used as an element of the ENDO criterion was obtained, the 10 calendars days before and the 10 calendar days after. The Infection Window Period is lengthened for this event to accommodate the* ***extended*** *diagnostic timeframe that is frequently required to reach a clinical determination of endocarditis.*
- *The RIT for Endocarditis (ENDO) is extended to include the remainder of the patient's current admission.*
- *When meeting the Endocarditis (ENDO) definition, the secondary BSI attribution period includes the 21-day infection window period* ***and all subsequent days of the patient's current admission.***

As a result of this lengthy secondary BSI attribution period, secondary BSI pathogen assignment for ENDO, is limited to organism(s) identified in blood specimen that match the organism(s) used to meet the ENDO definition.

Element	**Element Met**
Endocarditis of a natural or prosthetic heart valve must meet at least ***one*** of the following criteria:	
1. Organism(s) identified from cardiac vegetation*, embolized vegetation (for example, solid-organ abscess) documented as originating from cardiac source, or intracardiac abscess by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment, for example, not Active Surveillance Culture/Testing (ASC/AST).	☐
2. Organism(s) seen on histopathologic examination of cardiac vegetation, embolized vegetation, for example, solid organ abscess, documented as originating from cardiac source, or intracardiac abscess.	☐
3. Endocarditis seen on histopathologic examination of cardiac vegetation or intracardiac abscess.	☐
4. At least one of the following echocardiographic evidence of endocarditis*†:	
i. Vegetation on cardiac valve or supporting structures	☐
ii. Intracardiac abscess	☐
iii. New partial dehiscence of prosthetic valve	☐
And at least ***one*** of the following:	
a. Typical infectious endocarditis organism(s) (specifically, Viridans group streptococci, *Streptococcus bovis*, *Haemophilus* spp., *Actinobacillus actinomycetemcomitans*, *Cardiobacterium hominis*, *Eikenella corrodens*, *Kingella* spp., *Staphylococcus aureus, Enterococcus spp.)* identified from ≥2 blood collections drawn on separate occasions with no more than 1 calendar day between specimens by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment, for example, not Active Surveillance Culture/Testing (ASC/AST)	☐
b. Coxiella burnetii identified from blood by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment, for example, not Active Surveillance Culture/Testing (ASC/AST) or identified by anti-phase I IgG antibody titer >1:800	☐
5. At least ***three*** of the following:	
i. Prior endocarditis, prosthetic valve, uncorrected congenital heart disease, history of rheumatic heart disease, hypertrophic obstructive cardiomyopathy, or known IV drug use	☐
ii. Fever (>38.0°C)	☐

iii. Vascular phenomena: major arterial emboli (specifically, embolic stroke, renal infarct, splenic infarct or abscess, digital ischemic/gangrene from embolic source), septic pulmonary infarcts, mycotic aneurysm (documented by imaging, seen in surgery, or described in gross pathological specimen), intracranial hemorrhage, conjunctival hemorrhage, or Janeway's lesions documented	☐
iv. Immunologic phenomena: glomuleronephritis (documented on chart, or white cell or red blood cell casts on urinalysis), Osler's nodes, Roth's spots, or positive rheumatoid factor	☐
And at least ***one*** of the following:	
a. Typical infectious endocarditis organism(s) (specifically, *Viridans group streptococci, Streptococcus bovis, Haemophilus spp., Actinobacillus actinomycetemcomitans, Cardiobacterium hominis, Eikenella corrodens, Kingella spp., Staphylococcus aureus, Enterococcus spp*.) identified from ≥2 blood collections drawn on separate occasions with no more than 1 calendar day between specimens by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment, for example, not Active Surveillance Culture/Testing (ASC/AST)	☐
b. *Coxiella burnetii* identified from blood by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment, for example, not Active Surveillance Culture/Testing (ASC/AST)or identified by anti-phase I IgG antibody titer >1:800	☐
6. At least ***one*** of the following*†:	
i. Vegetation on cardiac valve or supporting structures seen on echocardiogram	☐
ii. Intracardiac abscess seen on echocardiogram	☐
iii. New partial dehiscence of prosthetic valve seen on echocardiogram	☐
And at least ***three*** of the following:	
a. prior endocarditis, prosthetic valve, uncorrected congenital heart disease, history of rheumatic heart disease, hypertrophic obstructive cardiomyopathy, or known IV drug use	☐
b. Fever (>38.0°C)	☐
c. vascular phenomena: major arterial emboli (specifically, embolic stroke, renal infarct, splenic infarct or abscess, digital ischemic/gangrene from embolic source), septic pulmonary infarcts, mycotic aneurysm (documented by imaging, seen in surgery, or described in gross pathological specimen), intracranial hemorrhage, conjunctival hemorrhage, or Janeway's lesions documented	☐
d. Immunologic phenomena: glomuleronephritis (documented in chart, or white cell or red blood cell casts on urinalysis), Osler's nodes, Roth's spots, or positive rheumatoid factor	☐
e. Identification of organism(s) from the blood by at least ***one*** of the following methods: • recognized pathogen(s) identified from blood by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment ,for example, not Active Surveillance Culture/Testing (ASC/AST) • same common commensal organism(s) identified from ≥2 blood collections drawn on separate occasions on the same or consecutive days by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment, for example, not Active Surveillance Culture/Testing (ASC/AST)	☐
7. All of the following criteria:	
a. Prior endocarditis, prosthetic valve, uncorrected congenital heart disease, history of rheumatic heart disease, hypertrophic obstructive cardiomyopathy, or known IV drug use	☐
b. Fever (>38.0°C)	☐
c. Vascular phenomena: major arterial emboli (specifically, embolic stroke, renal infarct, splenic infarct or abscess, digital ischemic/gangrene from embolic source), septic pulmonary infarcts,	☐

mycotic aneurysm (documented by imaging, seen in surgery, or described in gross pathological specimen), intracranial hemorrhage, conjunctival hemorrhages, or Janeway's lesions documented	
d. Immunologic phenomena: glomuleronephritis (documented on chart, or white cell or red blood cell casts on urinalysis), Osler's nodes, Roth's spots, or positive rheumatoid factor	☐
e. Identification of organism(s) from the blood by at least one of the following methods: • Recognized pathogen(s) identified from blood by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment ,for example, not Active Surveillance Culture/Testing (ASC/AST). • Same common commensal organism(s) identified from ≥2 blood collections drawn on separate occasions on the same or consecutive days by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment, for example, not Active Surveillance Culture/Testing (ASC/AST).	☐
*"Cardiac vegetation" includes vegetation on a pacemaker/ defibrillator lead or ventricular assist devices (VAD) components within the heart † Which if equivocal is supported by clinical correlation (specifically, physician documentation of antimicrobial treatment for endocarditis).	

CVS-CARDIOVASCULAR SYSTEM INFECTION	
MED-Mediastinitis	
Element	**Element Met**
Mediastinitis must meet at least ***one*** of the following criteria:	
1. Patient has organism(s) identified from mediastinal tissue or fluid by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment, for example, not Active Surveillance Culture/Testing (ASC/AST)	☐
2. Patient has evidence of mediastinitis on gross anatomic or histopathologic exam.	☐
3. Patient has at least ***one*** of the following signs or symptoms:	
• Fever (>38.0°C)	☐
• Chest pain*	☐
• Sternal instability*	☐
AND at least ***one*** of the following:	
a. Purulent drainage from mediastinal area	☐
b. Mediastinal widening on imaging test	☐
Patient ≤1 year of age:	
4. Patient ≤1 year of age has at least ***one*** of the following signs or symptoms:	
• Fever (>38.0°C)	☐
• Hypothermia (<36.0°C)	☐
• Apnea*	☐
• Bradycardia*	☐
• Sternal instability*	☐
AND at least ***one*** of the following:	
a. Purulent drainage from mediastinal area	☐
b. Mediastinal widening on imaging test	☐
**With no other recognized cause*	
Comment: • The mediastinal space is the area under the sternum and in front of the vertebral column, containing the heart and its large vessels, trachea, esophagus, thymus, lymph nodes, and other structures and tissues. It is divided into anterior, middle, posterior, and superior regions.	
Reporting instruction: • Report mediastinitis (MED) following cardiac surgery that is accompanied by osteomyelitis as SSI-MED rather than SSI-BONE.	

CVS-CARDIOVASCULAR SYSTEM INFECTION	
VASC-Arterial or venous infection	
Note: When meeting the Arterial or venous infection (VASC) definition: • Report infections of an arteriovenous graft, shunt, fistula or intravascular cannulation site without organism(s) identified from blood as CVS-VASC. • Report Organ Space VASC infections as an SSI and not an LCBI when you have an SSI with secondary BSI. ** Report intravascular infections with organism(s) identified from the blood and meeting the LCBI criteria, as BSI-LCBI. However, if the BSI meets the CLABSI criteria and BOTH of the following are present within the infection window period, mark the data field for risk factor "Central line" as "No": • Pus at the site ***AND*** • Specimen collected from the site of one of the following, has at least one matching organism to organism(s) identified in a blood specimen: o Arterial catheters o Arteriovenous fistula o Arteriovenous graft o Atrial catheters (also known as transthoracic intra-cardiac catheters, those catheters inserted directly into the right or left atrium via the heart wall) o Hemodialysis reliable outflow (HERO) dialysis catheters o Intra-aortic balloon pump (IABP) devices o Non-accessed central line (not accessed nor inserted during the hospitalization) o Peripheral IV or Midlines	
Element	**Element Met**
Arterial or venous infection must meet at least ***one*** of the following criteria:	
1. Patient has organism(s) from extracted arteries or veins identified by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment, for example, not Active Surveillance Culture/Testing (ASC/AST).	☐
2. Patient has evidence of arterial or venous infection on gross anatomic or histopathologic exam.	☐
3. Patient has at least one of the following signs or symptoms:	
• Fever (>38.0°C)	☐
• Pain*	☐
• Erythema*	☐
• Heat at involved vascular site*	☐
AND	
• More than 15 colonies cultured from intravascular cannula tip using semi-quantitative culture method.	☐
4. Patient has purulent drainage at involved vascular site	☐
Patient ≤1 year of age:	
• Hypothermia (<36.0°C)	☐

• Apnea*	☐
• Bradycardia*	☐
• Lethargy*	☐
• Pain*	☐
• Erythema*	☐
• Fever (>38.0°C)	☐
• Heat at involved vascular site*	☐
AND	
• More than 15 colonies cultured from intravascular cannula tip using semi-quantitative culture method	☐
* *With no other recognized cause*	