

# Tennessee Initiative for Perinatal Quality Care

## Cardiac Conditions in Obstetric Care



### EMR Data Guide

This document is designed to accompany the “Measures” section of the project “Toolkit.” It contains more specific data definitions, what data elements will need to be extracted from your EMR, and other details regarding data collection.

For this bundle, cardiac conditions refer to disorders of the cardiovascular system which may impact maternal health. Such disorders may include congenital heart disease, cardiac valve disorders, cardiomyopathies, arrhythmias, coronary artery disease, pulmonary hypertension, and aortic dissection. An ICD-10 codes list of cardiac conditions will be used when calculating outcome measures.

### Target population

All birthing people in Tennessee hospitals and urgent/emergent hospital care settings. These settings can include:

- Labor and Delivery
- Postpartum
- OB Triage
- Hospital Emergency Department

### Outcome measures – as defined by AIM

*Frequency of collection & reporting:* monthly

#### **#1. NTSV Cesarean Birth Rate Among Women with Cardiac Conditions**

- Denominator = Among women with *cardiac conditions*, those with live births who have their first birth  $\geq$  37 completed weeks gestation and have a singleton in vertex (Cephalic) position
- Numerator = among the denominator, all cases who had a cesarean birth

#### **Additional Denominator Description:**

Cardiac Conditions included in the AIM Obstetric Care Code list:

Variable	Definition
<b>Congenital Heart Disease</b>	Q200, Q201, Q202, Q203, Q204, Q205, Q206, Q208, Q209, Q210, Q211, Q212, Q213, Q214, Q218, Q219, Q220, Q221, Q222, Q223, Q224, Q225, Q226, Q228, Q229, Q230, Q231, Q232, Q233, Q234, Q238, Q239, Q240, Q241, Q242, Q243, Q244, Q245, Q246, Q248, Q249, Q250, Q251, Q2521, Q2529, Q253, Q254, Q2540, Q2541, Q2542, Q2543, Q2544, Q2545, Q2546, Q2547, Q2548, Q2549, Q255, Q256, Q257, Q2571, Q2572, Q2579, Q258, Q259, Q7960, Q7961, Q7962, Q7963, Q7969, Q8740, Q87410, Q87418, Q8742, Q8743

Variable	Definition
<b>Cardiac Valve Disorders</b>	I050, I051, I052, I058, I059, I060, I061, I062, I068, I069, I070, I071, I072, I078, I079, I080, I082, I083, I089, I090, I091, I092, I098, I0981, I0989, I099, I340, I341, I342, I348, I349, I350, I352, I358, I359, I360, I361, I362, I368, I369, I370, I371, I372, I378, I379, I38, I39
<b>Cardiomyopathies</b>	I420, I421, I422, I423, I424, I425, I426, I427, I428, I429, I43, I502, I5022, I503, I5032, I504, I5042, I508, I5081, I50812, O90
<b>Arrhythmias</b>	I440, I441, I442, I443, I4430, I4439, I444, I445, I446, I4460, I4469, I447, I450, I451, I4510, I4519, I452, I453, I454, I455, I456, I458, I4581, I4589, I459, I470, I471, I472, I479, I480, I4811, I4819, I482, I4820, I4821, I483, I484, I489, I4891, I4892, I490, I491, I492, I493, I494, I4940, I4949, I495, I498, I499
<b>Coronary Artery Disease</b>	I200, I201, I208, I209, I251, I2510, I2511, I25110, I25111, I25118, I25119, I252, I253, I254, I2541, I2542, I255, I256, I257, I2570, I25700, I25701, I25708, I2571, I25710, I25711, I25718, I25719, I2572, I25720, I25721, I25728, I25729, I2575, I25750, I25751, I25758, I25759, I2576, I25760, I25761, I25768, I25769, I2579, I25790, I25791, I25798, I25799, I2581, I25810, I25811, I25812, I2582, I2583, I2584, I2589, I259, M300, M301, M302, M303, M308
<b>Pulmonary Hypertension</b>	I2720, I2721, I2722, I2723, I2724, I2729, I278
<b>Other / Not Specified</b>	I300, I301, I308, I309, I310, I311, I312, I313, I314, I318, I319, I32, I400, I401, I408, I409, I41, O994, O9941, O99412, O99413, O99419, O9942, O9943, Z941, Z943, Z950, Z951, Z952, Z953, Z954, Z955, Z958, Z9581, Z95810, Z95811, Z95812, Z95818, Z9582, Z95820, Z95828, Z959

**NTSV Population:** Nulliparous women with a term, singleton baby in a vertex presentation.

- Nulliparous = first delivery/birth or Para Zero
- Term =  $\geq 37$  weeks gestation,
- Singleton = no twins or beyond
- Vertex position = Cephalic position; no breech or transverse positions

- In the TIPQC Project Toolkit nulliparous is defined as a patient's first delivery / birth or Para Zero. In this, "Para Zero" is similar to ACOG - no history of a previous pregnancy that reached at least 20 weeks gestation.

The definition specified by TJC eCQM also includes additional "exclusions" - inpatient hospitalizations for patients with abnormal presentation or placenta previa during the encounter.

On the surface, these definitions are very similar but there are nuances between them that could affect your data collection process – regardless of whether you are collecting data through manual chart review or via an EMR extraction. Your hospital may also be tracking and reporting NTSV cesarean birth rates to entities like TJC. *It is imperative that your team agrees upon how to define "nulliparous" for this project and the logic you will use to determine which patients meet the "inclusion criteria".* This definition and logic may be what your hospital has already been using (outside of this TIPQC project). We (TIPQC) understand that there may be some deviations at individual participating hospitals. We ask that you be consistent internally for the whole project.

Reference: <https://manual.jointcommission.org/releases/TJC2021A1/AppendixATJC.html>

<sup>1</sup> [https://ecqi.healthit.gov/ecqm/eh/2023/cms334v4#quicktabs-tab-tabs\\_measure-0](https://ecqi.healthit.gov/ecqm/eh/2023/cms334v4#quicktabs-tab-tabs_measure-0) (2023). **Parity:** the number of pregnancies reaching 20 weeks gestation regardless of the number of fetuses or outcomes. **Gravidity:** the number of pregnancies, current and past, regardless of the pregnancy outcome. **Preterm birth:** The number of births  $\geq 20$  weeks and  $< 37$  weeks gestation, regardless of outcome. **Term birth:** the number of births  $\geq 37$  weeks gestation, regardless of outcome.

#### **Additional Numerator Description:**

Cesarean Birth is defined by ACOG as the birth of a fetus from the uterus through an incision (cut) made in the woman's abdomen.

## **#2. Preterm Birth Rate Among Women with Cardiac Conditions**

- **Denominator:** Singleton live births among women with cardiac conditions
- **Numerator:** Among the denominator, preterm live births ( $< 37$  completed weeks gestation)

#### **Preterm Birth Definitions**

The World Health Organization (WHO) defines preterm birth as any birth before 37 completed weeks of gestation, or fewer than 259 days since the first day of the woman's last menstrual period (LMP). This is further subdivided based on gestational age (GA):

- Extremely preterm ( $< 28$  weeks)
- Very preterm (28 -  $< 32$  weeks)
- Moderate or late preterm (32 -  $< 37$  weeks)

This is the most extensively used and accepted definition of preterm birth.

Reference: Howson C.P., Kinney M.V., Lawn J. March of Dimes, PMNCH, Save the Children, WHO; 2012. Born Too Soon: the global action report on preterm birth.

The Centers for Medicare & Medicaid Services ICD-10-CM/PCS MS DRG Definitions Manual (v38.0) lists the following principal or secondary diagnosis codes for prematurity:

#### PREMATURITY

<b>P0700</b>	Extremely low birth weight newborn, unspecified weight
<b>P0710</b>	Other low birth weight newborn, unspecified weight
<b>P0714</b>	Other low birth weight newborn, 1000-1249 grams
<b>P0715</b>	Other low birth weight newborn, 1250-1499 grams
<b>P0716</b>	Other low birth weight newborn, 1500-1749 grams
<b>P0717</b>	Other low birth weight newborn, 1750-1999 grams
<b>P0718</b>	Other low birth weight newborn, 2000-2499 grams
<b>P0726</b>	Extreme immaturity of newborn, gestational age 27 completed weeks
<b>P0730</b>	Preterm newborn, unspecified weeks of gestation
<b>P0731</b>	Preterm newborn, gestational age 28 completed weeks
<b>P0732</b>	Preterm newborn, gestational age 29 completed weeks
<b>P0733</b>	Preterm newborn, gestational age 30 completed weeks
<b>P0734</b>	Preterm newborn, gestational age 31 completed weeks
<b>P0735</b>	Preterm newborn, gestational age 32 completed weeks
<b>P0736</b>	Preterm newborn, gestational age 33 completed weeks
<b>P0737</b>	Preterm newborn, gestational age 34 completed weeks
<b>P0738</b>	Preterm newborn, gestational age 35 completed weeks
<b>P0739</b>	Preterm newborn, gestational age 36 completed weeks

The Centers for Medicare & Medicaid Services ICD-10-CM/PCS MS DRG Definitions Manual (v40.0) lists the following diagnosis codes for weeks gestation of pregnancy

<b>Z3A24</b>	24 weeks gestation of pregnancy
<b>Z3A25</b>	25 weeks gestation of pregnancy
<b>Z3A26</b>	26 weeks gestation of pregnancy
<b>Z3A27</b>	27 weeks gestation of pregnancy
<b>Z3A28</b>	28 weeks gestation of pregnancy
<b>Z3A29</b>	29 weeks gestation of pregnancy
<b>Z3A30</b>	30 weeks gestation of pregnancy
<b>Z3A31</b>	31 weeks gestation of pregnancy
<b>Z3A32</b>	32 weeks gestation of pregnancy
<b>Z3A33</b>	33 weeks gestation of pregnancy
<b>Z3A34</b>	34 weeks gestation of pregnancy
<b>Z3A35</b>	35 weeks gestation of pregnancy
<b>Z3A36</b>	36 weeks gestation of pregnancy

<b>Z3A37</b>	37 weeks gestation of pregnancy
<b>Z3A38</b>	38 weeks gestation of pregnancy
<b>Z3A39</b>	39 weeks gestation of pregnancy
<b>Z3A40</b>	40 weeks gestation of pregnancy
<b>Z3A41</b>	41 weeks gestation of pregnancy

#### Potential differenced in outcomes across health-related needs:

Participating teams are asked to capture the “overall” numerator and denominator counts (in a given month) for each of the Outcome Measures as well as counts disaggregated by (1) maternal demographic factors and (2) payor type.

- **Maternal Demographic Factors** is defined as Non-Hispanic (NH) White, NH Black, Hispanic, and Other (Asian, Native American, Native Hawaiian/Pacific Islander, Muti-racial, and race not known, and unknown)
  - The denominator would translate to (for example) the number of NTSV patients who self-identified as White Non-Hispanic. The numerator would then count the number of these *White Non-Hispanic* women who had a cesarean birth.
  - If a woman’s stratified data is not one of these values or is missing in a medical record, the patient will be included in the “overall” numerator/denominator counts but excluded from the disaggregated counts.
- **Payor type** (insurance type / status) is defined as Medicaid (may include CHIP and Medicare); Private insurance; Other public insurance (may include military insurance, IHS, other state or federal source); or Uninsured (may include those who self-pay, are not charged for services, or another payer).

The following **EMR data elements** (*from the birthing patient’s chart*) will be needed to tally the required overall and disaggregated denominator and numerator counts for each Outcome measure monthly:

- Admission Date
- Discharge Date
- Maternal demographic factors
- Payor / Insurance status / type
- Gravity & Parity (*Obstetrical history*)
- Cardiac condition (*Obstetrical history*)
- Labor & Delivery encounter details, including
  - Gestational age
  - Position (e.g., if Vertex position)
  - Delivery type (e.g., Vaginal or Cesarean)
  - Delivery outcome (e.g., Live birth)

Depending on your current EMR and your hospital’s monthly delivery volume, your team may choose to collect the data from the relevant medical charts manually (i.e., manual chart review) or via an EMR extraction / report. Your team should determine the process in which your team will collect and capture the outcome measures for this project.

- Are the needed data elements documented in your EMR? If yes,
  - Can a report be generated on the existing fields to provide the monthly counts you need?
  - Do the fields need to be revised to meet the suggested data fields?
- If the data is not currently captured in your EMR, how could you (manually) capture the needed data on each birth of people with cardiac conditions to then provide the monthly counts?

The code list for cardiac conditions in obstetric care (as defined by AIM) and premature birth have been included above. Additional codes for capturing Outcome measures #1 and #2 can be found at the following links:

Specifications Manual for Joint Commission National Quality Measures (v2021A1) - Perinatal Care Cesarean Birth Performance Measure (PC-02) – <https://manual.jointcommission.org/releases/TJC2021A1/MIF0167.html>

- Perinatal Care measure page: <https://manual.jointcommission.org/releases/TJC2021A1/PerinatalCare.html>
- Code Tables: <https://manual.jointcommission.org/releases/TJC2021A1/AppendixATJC.html>

## Process Measures

**Process measures- as defined by AIM; #2, #3 NEW should be reported monthly**

### **Process Measure #2: Cardiovascular Disease (CVD) Assessment Among Pregnant and Postpartum Women**

- Utilize a standardized pregnancy risk assessment tool.
- Report N/D - Disaggregate data by maternal demographic factors and payor status
  - Denominator = All Birth admissions (entire population)
  - Numerator = Among the denominator, those with documentation of a cardiovascular disease assessment using a standardized tool

From the birthing population (all), how many received a cardiovascular disease assessment using a standardized tool?

The California Maternal Mortality Review Committee put together a toolkit contains two CVD screening algorithms published by the California maternal Quality Care Collaborative (CMQCC). These algorithms are described in the TIPQC toolkit. More information can be found here: [Screening for Cardiovascular Disease in Pregnancy: Is There a Need? - PMC \(nih.gov\)](#)

### **Process Measure #3 NEW: Percent of Women with a positive Cardiovascular Disease (CVD) Screening**

- Denominator = Those with documentation of a cardiovascular disease assessment using the screening tool
- Numerator = Among the denominator, those with documentation of a positive cardiovascular disease assessment

Of patients with cardiac conditions diagnosed prior to birth admission, how many had a multidisciplinary care plan in place prior to birth?

Care providers potentially participating in a multidisciplinary care plan include obstetricians, maternal fetal medicine (MFM) providers, cardiologist, anesthesiologist, obstetric anesthesia, cardiac anesthesia, pharmacy, intensive care providers, cardiac surgeons, interventional cardiologists, nursing, and social workers.

### **Process Measures #4-6 should be reported quarterly.**

*Participating hospitals to report estimates of cumulative proportions in 10% increments (0%, 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, 100%) at the end of every quarterly reporting period.*

### **Process Measure #4- OB Provider and Nursing Education- Cardiac Conditions**

- Cumulative proportion of delivering physicians, midwives, and nurses who have completed an education program on cardiac conditions.
- Report estimates in 10% increments (0%, 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, 100%)

At the end of this reporting period, what cumulative proportion of clinical OB providers and nursing staff has received within the last two years education on signs and symptoms of potential cardiac conditions in pregnant and postpartum women?

**Process Measure #5- OB Provider and Nursing Education- Respectful Care**

- Cumulative proportion of delivering physicians, midwives, and nurses who have completed an education program on Respectful Care
- Report estimates in 10% increments (0%, 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, 100%)

At the end of this reporting period, what cumulative proportion of clinical OB providers and nursing staff has completed within the last 2 years an education program on respectful care?

**Process Measure #6- ED Provider and Nursing Education- Cardiac Conditions**

- Cumulative proportion of ED providers, mid-level providers, and nurses who have completed an education program on cardiac conditions in pregnant and postpartum women.
- Report estimates in 10% increments (0%, 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, 100%)

At the end of this reporting period, what cumulative proportion of clinical ED providers and nursing staff has received within the last two years education on signs and symptoms of potential cardiac conditions in pregnant and postpartum people?

**Structure measures**

**Structure Measures** as defined by AIM - *Frequency of collection & reporting*: quarterly.

1. Multidisciplinary Pregnancy Heart Team (PHT)
  - Does your hospital have a multidisciplinary Pregnancy Heart team appropriate to the Maternal Level of Care to coordinate clinical pathways for people experiencing cardiac conditions in pregnancy and the post-partum period including as applicable cardiologist, anesthesiologist, maternal fetal medicine (MFM), obstetrics, obstetric anesthesia, cardiac anesthesia, pharmacy, emergency medicine, intensive care, cardiac surgeons, interventional cardiologists, electrophysiologists, HF Specialists, nursing, and social workers. [11]
  - Establish a multidisciplinary Pregnancy Heart Team
    - Each Quarter, report what the level of “completion” is for each structure measure on a 3-point Likert Scale. (1=Not Started, 3= Started, 5= Fully in Place)
2. ED Screening for Current or Recent Pregnancy
  - Integrate standardized verbal screening for current or recent pregnancy in the past year as part of the ED triage process.
    - Each Quarter, report what the level of “completion” is for each structure measure on a 3-point Likert Scale. (1=Not Started, 3= Started, 5= Fully in Place)
3. Patient Education Materials on Urgent Postpartum Warning Signs
  - Has your hospital integrated patient education on urgent postpartum warning signs that align with culturally and linguistically appropriate standards into discharge teaching (or other times)?
  - Do these education materials provided to patients encourage discussion with providers?
    - Each Quarter, report what the level of “completion” is for each structure measure on a 3-point Likert Scale. (1=Not Started, 3= Started, 5= Fully in Place)
4. Multidisciplinary Case Reviews for CCOC Bundle

- Care providers should establish a process and perform multidisciplinary case reviews of specific cases, including Critical care/ICU admissions for other than observation and those at the highest levels of risk, such as maternal WHO risk levels III and IV
  - Each Quarter, report what the level of “completion” is for each structure measure on a 3-point Likert Scale. (1=Not Started, 3= Started, 5= Fully in Place)
  
- 5. Patient Event Debriefs
  - Has your hospital developed and implemented a standardized process to conduct debriefs with patients after a severe event (include patient support networks during patient event debriefs, as requested; severe events may include the TJC sentinel event definition severe maternal morbidity, or fetal death).
    - Each Quarter, report what the level of “completion” is for each structure measure on a 3-point Likert Scale. (1=Not Started, 3= Started, 5= Fully in Place)
  
- 6. Patient/Family Partner
  - Hospital has a patient/family partner who engaged in appropriate education, e.g., Momma’s Voices’ Training, and is actively participating on the improvement team.
    - Each Quarter, report what the level of “completion” is for each structure measure on a 3-point Likert Scale. (1=Not Started, 3= Started, 5= Fully in Place)

## Additional Data Collection Details

### Data collection frequency & timeline:

Measures	Frequency	Timeline	
Outcome & Process #1-3	Monthly	Pilot teams: <ul style="list-style-type: none"> <li>• Baseline: Feb 2024</li> <li>• Active: Feb 2024 onward</li> </ul>	Non-pilot teams: <ul style="list-style-type: none"> <li>• Baseline: Jul 2024</li> <li>• Active: Jul 2024 onward</li> </ul>
Process # 4-6 & Structure	Quarterly	Pilot teams: <ul style="list-style-type: none"> <li>• Q3 2024 onward</li> </ul>	Non-pilot teams: <ul style="list-style-type: none"> <li>• Q4 2024 onward</li> </ul>

### Data entry:

The defined Outcome, Process, and Structure Measures will be collected using **Simple QI**. Each participating team will enter monthly and quarterly data into the SimpleQI platform. All data and graphs will be available to teams for viewing after entry. A detailed Data Collection Plan and EMR Guide will be provided for this project.

Whether you collect your monthly data via manual chart review or EMR extraction, your hospital’s monthly counts can easily be entered and stored internally using a Microsoft Excel spreadsheet using a similar layout to the following table, where D = denominator and N = numerator.

Month	Numerator	Denominator	%	Annotations
	All			
	Medicaid			
	Other Public			
	Private			
	Uninsured			
	African American			

	Hispanic				
	Other				
	White				

For your convenience, **paper data collection instruments** are provided to capture the specified monthly data are provided at the end of this guide. A paper data collection instrument will also be provided to capture your team’s quarterly measures.

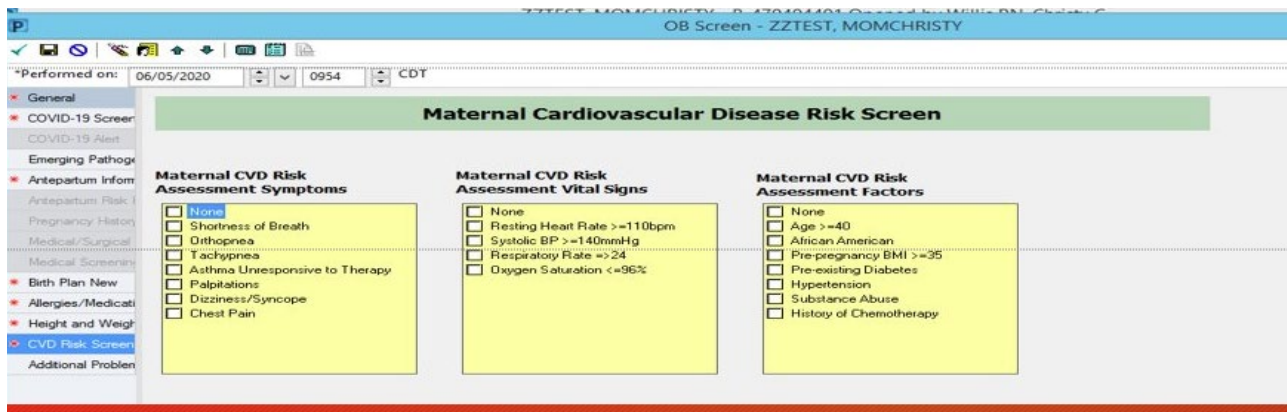
**Submission of data to AIM:**

TIPQC will periodically enter the captured Outcome, Process, and Structure Measures in the AIM Data Center for each of the participating hospitals. The AIM Data Center is a secure online system used to capture data from every state participating in any of the AIM maternal safety bundles. The identity of each participating hospital is masked in the Data Center – only TIPQC and each participating hospital will know the identity of each masked hospital. Each participating hospital will be able to generate any number of reports in the Data Center on their data.

**Electronic and Paper CVD Assessment Tools Examples**

Below are screenshots of the CVD Assessment in Cerner and EPIC. We hope your hospital can use these to help with the IT build of these assessments into your hospital EHR system. Due to these things taking time for IT to build into the system there is also an example of a paper CVD assessment form below that can be used.

**Cerner CVD Assessment Example**

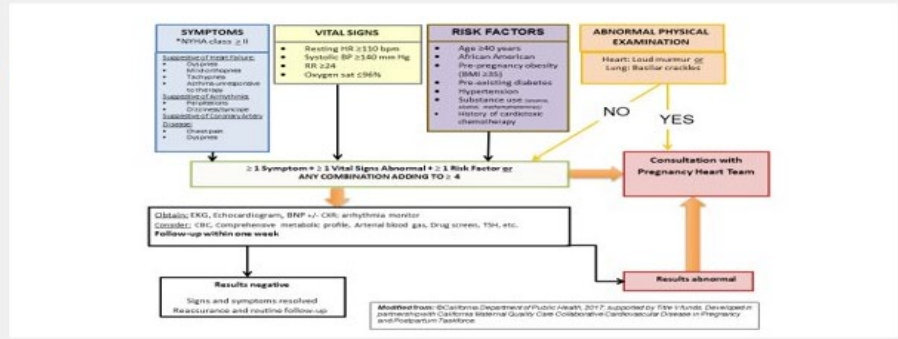


**Maternal CVD Risk Positive**

Yes  
 No

**Notify Provider to consider MFM/Cardiology Consult, (Provider to consider EKG, BNP, Echocardiogram, Holter Monitor, Other: CXR, CBC, Comprehensive Metabolic Panel, Arterial Blood Gas, Drugs Screen, TSH)**

**1 Symptom, + 1 Vital Sign + 1 Risk Factors**  
Or  
**Maternal CVD Risk Assessment Score (Greater than or equal to 4)**  
=  
**Maternal CVD Risk Assessment Positive**



ED Triage Part 2 - TESTING, VICKI

\*Performed on: 04/10/2024 14:46 EDT

### TRIAGE

**Patient Arrived From:** [Dropdown]  
**Reason for Visit:** [Text Field] *Pulls to Provider notes*  
**Here for COVID-19 Testing?**  Yes  No  
**Does the Patient have symptoms consistent with COVID-19?**  Yes  No

**Mode of Arrival:**  
 Personal Vehicle (POV)  
 Emergency Medical Service (EMS)  
 Police  
 Other:

**Treatment Prior to Arrival:**  
 Antiemetics  Intubation  Rapid Sequence Induction(  
 Aspirin  IV  SOLU MEDROL  
 Finger stick  Ketamine  Splint  
 Foley catheters  Morphine  Traction  
 Fluid  Nebulizer treatments  Transport only  
 Immobilization  nitroglycerin  Other:  
 Immobilized on backboard  Oxygen

**Triage Note:**  
Segue UI [Dropdown] 9 [Dropdown] [Rich Text Editor]

**VS taken within 30 minutes:**  
Temp (TA) [Dropdown] Temp (O) [Dropdown] Temp (R) [Dropdown] Pulse [Dropdown] Resp [Dropdown] B/P and B/P Method [Dropdown] SpO2 [Dropdown] O2 L/M [Dropdown] O2/ Del [Dropdown] FS Glucose [Dropdown] **If 500 or >, check Critical High ONLY**  Critical High

**Immunizations Current:** [Dropdown] **Last Tetanus:** [Dropdown] **Weight Method:** [Dropdown] **Weight (lbs):** [Dropdown] **Weight (kg):** [Dropdown] **Height feet/inches:** [Dropdown] **Height (in):** [Dropdown] **BMI:** [Dropdown] **IBW:** [Dropdown]

**Medical/Surgical Hx:** [Dropdown] **Usual Source of Medical Care:** [Text Field]

**Menstrual Status:** [Dropdown] **LMP:** [Dropdown] **Pregnancy Status:** [Dropdown] **Stated Due Date:** [Dropdown] *Data entered here will not flow to the Banner Bar*

**Are you currently pregnant or have you been pregnant within the last year?**  Yes  No  
**Have you been told you have or had high blood pressure while pregnant?**  Yes  No

**New Onset Neuro Symptoms:**  Yes  No  Unable to obtain  
**Is patient presenting with any of the following:** [Text Field]

**Vitals Hx:** [Text Field]

**No Data Available**  
24 Hr Tmax: No Data Available  
36 Hr Tmax: No Data Available

**EPIC CVD Assessment Example**

The questions below can be used to format a CVD screening template into a flowsheet. All questions would need to be answered and using the logic in EPIC a risk assessment can be calculated. See if your IT team can then add a screening result to auto populate with “Not at Risk” or “At Risk”. All questions would need to be answered for this to populate a score. Please refer to the paper CVD assessment when setting up the calculations.

Does the patient have shortness of breath with activity? <input type="radio"/> 1=Yes <input type="radio"/> 0=No	Is the patient's resting HR greater than or equal to 110 to 119 bpm? <input type="radio"/> 1=Yes <input type="radio"/> 0=No
Does the patient have shortness of breath at rest? <input type="radio"/> 4=Yes <input type="radio"/> 0=No	Is the patient's HR greater than or equal to 120bpm? <input type="radio"/> 4=Yes <input type="radio"/> 0=No
Does the patient have mild difficulty breathing when lying flat? <input type="radio"/> 1=Yes <input type="radio"/> 0=No	Is the patient's resting systolic BP greater than or equal to 140 mmHg? <input type="radio"/> 1=Yes <input type="radio"/> 0=No
Do the patient sleep on 4 or more pillows? <input type="radio"/> 4=Yes <input type="radio"/> 0=No	Is the patient's resting systolic BP greater than or equal to 160 mmHg? <input type="radio"/> 4=Yes <input type="radio"/> 0=No
Does the patient have rapid respirations? <input type="radio"/> 1=Yes <input type="radio"/> 0=No	Are the patient's respirations greater than or equal to 24? <input type="radio"/> 1=Yes <input type="radio"/> 0=No
If patient has asthma, is it unresponsive to therapy? <input type="radio"/> 1=Yes <input type="radio"/> 0=No or N/A	Are the patient's respirations greater than or equal to 30? <input type="radio"/> 4=Yes <input type="radio"/> 0=No
Does the patient have palpitations? <input type="radio"/> 1=Yes <input type="radio"/> 0=No	Is the patient's O2 sat 95-96%? <input type="radio"/> 1=Yes <input type="radio"/> 0=No
Does the patient have dizziness or syncope? <input type="radio"/> 1=Yes <input type="radio"/> 0=No	Is the patient's O2 sat less than 95% with or without personal hx of CVD? <input type="radio"/> 4=Yes <input type="radio"/> 0=No
Does the patient have chest pain? <input type="radio"/> 1=Yes <input type="radio"/> 0=No	
Does the patient have a cough? <input type="radio"/> 1=Yes <input type="radio"/> 0=No	

**BPA (Best Practice Advisory) in EPIC Example**

### Maternal Cardiac High Risk Patient Orders

- ✔ ! **Inpatient Consult to Maternal Cardiac**  
 Provider Care Team: GHI WOMEN'S HEART
- ✔ **N-Terminal proBNP**  
 Routine, Once, today at 1352, For 1 occurrence  
 Release to patient: Immediate
- ✔ ! **EKG 12 lead**  
 Routine, Once, today at 1352, For 1 occurrence  
 Release to patient: Immediate

**Cardiovascular Screening Tool**

Completing Provider: \_\_\_\_\_

Date: \_\_\_\_\_

**STEP 1: Enter a 1 for each of the following that are positive:**

Vital Signs	Symptoms	Risk Factors
Resting HR $\geq$ 110	Shortness of Breath	Age $\geq$ 40
SBP $\geq$ 140	Orthopnea	African American
Respiratory Rate $\geq$ 24	Syncope	Pre-Pregnancy BMI $\geq$ 35
SpO2 $\leq$ 96%	Dizziness	Pre-existing Diabetes
	Palpitations	Chronic HTN
	Chest Pain	Hx of Chemotherapy
	Asthma unresponsive to therapy	Substance use Cigarettes/Vaping THC EtOH
<b>Vitals Total Score:</b>	<b>Symptoms Total Score:</b>	<b>Risk Factors Total score:</b>

**STEP 2: Is each category's total score  $\geq$  1?** (Circle one)      No      Yes

**STEP 3: Add scores: Vitals + Symptoms + Risk Factors = \_\_\_\_**  $\rightarrow$  **Total  $\geq$  4?** (Circle one)      No      Yes

**STEP 4: Heart and Lung Exam. Loud Murmur or Basilar Crackles?** (Circle one)      No      Yes

**\*\* If YES to Step 4, Order STAT MFM Consult**  (MFM will handle ECHO, ECG, Cardiology referral)

**STEP 5: If YES to Step 2 OR 3, Order:**      **BNP**       **ECG**       **ECHO**

If patient endorses palpitations, order:      **TSH**       **CBC**       **ECG**  (if not planned)

**STEP 6: In the chart sticky note, write "CVS Tool completed <date>"**

**Return form to MA scanning box**

**Follow up results:** *Still your responsibility to your patient, but don't worry about filling out this part of the form.*

If BNP or ECHO or ECG is abnormal, order:       MFM Consult (if not already done)

If ECG showed arrhythmia, order:       Holter Monitor

# TIPQC Cardiac Conditions in Obstetric Care (CCOC)



## MONTHLY CAPTURE OF OUTCOME & PROCESS MEASURES

**IMPORTANT:** Please see the project “EMR Data Guide” for more detail on any of the following measures.

### OUTCOME MEASURES

#### #1: NTSV Cesarean Birth Rate Among Women with Cardiac Conditions

Denominator = Among women with cardiac conditions, those with live births who have their first birth  $\geq 37$  completed weeks gestation and have a singleton in vertex (cephalic) position

Numerator = Among the denominator, those with a cesarean birth

Month		Numerator	Denominator	%	Annotations
	All				
	Medicaid				
	Other Public				
	Private				
	Uninsured				
	African American				
	Hispanic				
	Other				
	White				

#### #2: Preterm Birth Rate Among Women with Cardiac Conditions

Denominator = Singleton live births among women with cardiac conditions

Numerator = Among the denominator, # of preterm live births ( $\leq 37$  completed weeks gestation)

Month		Numerator	Denominator	%	Annotations
	All				
	Medicaid				
	Other Public				
	Private				
	Uninsured				
	African American				
	Hispanic				
	Other				
	White				

**PROCESS MEASURES**

**#2: Cardiovascular Disease (CVD) Assessment Among Pregnant and Postpartum Women**

- Utilize a CVD assessment tool for all birthing admissions.

Denominator = All Birthing admissions (entire population)

Numerator = Among the denominator, those with documentation of a cardiovascular disease assessment using a standardized tool

Month		Numerator	Denominator	%	Annotations
	All				
	Medicaid				
	Other Public				
	Private				
	Uninsured				
	African American				
	Hispanic				
	Other				
	White				

**#3 NEW: Percent of Women with a positive Cardiovascular Disease (CVD) Screening**

Percentage of women with a completed CVD screening that was positive

Denominator = Those with documentation of a cardiovascular disease assessment using the screening tool

Numerator =Among the denominator, those with documentation of a positive cardiovascular disease assessment

Month	Numerator	Denominator	%

# TIPQC Cardiac Conditions in Obstetric Care (CCOC)



## QUARTERLY CAPTURE OF PROCESS & STRUCTURE MEASURES

**IMPORTANT:** Please see the project “EMR Data Guide” for more detail on any of the following measures.

### PROCESS MEASURES

#### **#4: OB Provider and Nursing Education - Cardiac Conditions**

Cumulative proportion of delivering physicians midwives who have completed an education program on signs and symptoms of potential cardiac conditions in pregnant and postpartum women within the last two years.

Each Quarter, report the total, cumulative percent of providers that has received education. Report in 10% increments: 0%, 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, 100%.

Q3 2024	Q4 2024	Q1 2025	Q2 2025	Q3 2025	Q4 2025	Q1 2026	Q2 2026
/100	/100	/100	/100	/100	/100	/100	/100

#### **#5: OB Provider and Nursing Education – Respectful Care**

Cumulative proportion of delivering physicians and midwives who have completed an education program on respectful care within the last 2 years.

Each Quarter, report the total, cumulative percent of providers completing education. Report in 10% increments: 0%, 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, 100%.

Q3 2024	Q4 2024	Q1 2025	Q2 2025	Q3 2025	Q4 2025	Q1 2026	Q2 2026
/100	/100	/100	/100	/100	/100	/100	/100

#### **#6: ED Provider and Nursing Education – Cardiac Conditions**

Cumulative proportion of ED providers and ED mid-level providers who have completed an education program within the last two years on cardiac conditions in pregnant and postpartum women.

Each Quarter, report the total, cumulative percent of providers completing education. Report in 10% increments: 0%, 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, 100%.

Q3 2024	Q4 2024	Q1 2025	Q2 2025	Q3 2025	Q4 2025	Q1 2026	Q2 2026
/100	/100	/100	/100	/100	/100	/100	/100

## Structure Measures

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### #1: Multidisciplinary Pregnancy Heart Team (PHT)

Has your hospital/facility has established a multidisciplinary pregnancy heart team, which may be comprised of a team of consultants appropriate to your hospital's level of maternal care, to respond to known or potential cardio-obstetric emergencies?

Each Quarter, report what the level of "completion" is for each structure measure on a 3-point Likert Scale. (1=Not Started, 3= Started, 5= Fully in Place)

Q3 2024 (Jul – Sep)	<input type="radio"/> 1 (Not Started)	<input type="radio"/> 3 (Started)	<input type="radio"/> 5 (Fully In Place)
Q4 2024 (Oct – Dec)	<input type="radio"/> 1 (Not Started)	<input type="radio"/> 3 (Started)	<input type="radio"/> 5 (Fully In Place)
Q1 2025 (Jan – Mar)	<input type="radio"/> 1 (Not Started)	<input type="radio"/> 3 (Started)	<input type="radio"/> 5 (Fully In Place)
Q2 2025 (Apr - Jun)	<input type="radio"/> 1 (Not Started)	<input type="radio"/> 3 (Started)	<input type="radio"/> 5 (Fully In Place)
Q3 2025 (Jul – Sep)	<input type="radio"/> 1 (Not Started)	<input type="radio"/> 3 (Started)	<input type="radio"/> 5 (Fully In Place)
Q4 2025 (Oct – Dec)	<input type="radio"/> 1 (Not Started)	<input type="radio"/> 3 (Started)	<input type="radio"/> 5 (Fully In Place)
Q1 2026 (Jan – Mar)	<input type="radio"/> 1 (Not Started)	<input type="radio"/> 3 (Started)	<input type="radio"/> 5 (Fully In Place)
Q2 2025 (Apr - Jun)	<input type="radio"/> 1 (Not Started)	<input type="radio"/> 3 (Started)	<input type="radio"/> 5 (Fully In Place)

### #2: ED Screening for Current or Recent Pregnancy

Has your Emergency department established or continued **standardized verbal screening for current pregnancy and pregnancy in the past year** as part of its triage process.

Each Quarter, report what the level of "completion" is for each structure measure on a 3-point Likert Scale. (1=Not Started, 3= Started, 5= Fully in Place)

Q3 2024 (Jul – Sep)	<input type="radio"/> 1 (Not Started)	<input type="radio"/> 3 (Started)	<input type="radio"/> 5 (Fully In Place)
Q4 2024 (Oct – Dec)	<input type="radio"/> 1 (Not Started)	<input type="radio"/> 3 (Started)	<input type="radio"/> 5 (Fully In Place)
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Q1 2026 (Jan – Mar)	<input type="radio"/> 1 (Not Started)	<input type="radio"/> 3 (Started)	<input type="radio"/> 5 (Fully In Place)
Q2 2025 (Apr - Jun)	<input type="radio"/> 1 (Not Started)	<input type="radio"/> 3 (Started)	<input type="radio"/> 5 (Fully In Place)

**#3: Patient Education Materials on Urgent Postpartum Warning Signs**

Has your hospital developed/curated patient education materials on urgent postpartum warning signs that align with culturally and linguistically appropriate standards.

Each Quarter, report what the level of “completion” is for each structure measure on a 3-point Likert Scale. (1=Not Started, 3= Started, 5= Fully in Place)

Q3 2024 (Jul – Sep)	<input type="radio"/> 1 (Not Started)	<input type="radio"/> 3 (Started)	<input type="radio"/> 5 (Fully In Place)
Q4 2024 (Oct – Dec)	<input type="radio"/> 1 (Not Started)	<input type="radio"/> 3 (Started)	<input type="radio"/> 5 (Fully In Place)
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Q2 2025 (Apr - Jun)	<input type="radio"/> 1 (Not Started)	<input type="radio"/> 3 (Started)	<input type="radio"/> 5 (Fully In Place)
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Q4 2025 (Oct – Dec)	<input type="radio"/> 1 (Not Started)	<input type="radio"/> 3 (Started)	<input type="radio"/> 5 (Fully In Place)
Q1 2026 (Jan – Mar)	<input type="radio"/> 1 (Not Started)	<input type="radio"/> 3 (Started)	<input type="radio"/> 5 (Fully In Place)
Q2 2025 (Apr - Jun)	<input type="radio"/> 1 (Not Started)	<input type="radio"/> 3 (Started)	<input type="radio"/> 5 (Fully In Place)

**#4: Multidisciplinary Case Reviews for CCOC Bundle**

Has your hospital established a process to conduct multidisciplinary systems-level reviews of serious complications experienced by pregnant and postpartum people with cardiac conditions? Including critical care/ICU admissions for other than observation, and those at the highest levels of risk, such as mWHO risk levels III and IV.

Each Quarter, report what the level of “completion” is for each structure measure on a 3-point Likert Scale. (1=Not Started, 3= Started, 5= Fully in Place)

Q3 2024 (Jul – Sep)	<input type="radio"/> 1 (Not Started)	<input type="radio"/> 3 (Started)	<input type="radio"/> 5 (Fully In Place)
Q4 2024 (Oct – Dec)	<input type="radio"/> 1 (Not Started)	<input type="radio"/> 3 (Started)	<input type="radio"/> 5 (Fully In Place)
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Q3 2025 (Jul – Sep)	<input type="radio"/> 1 (Not Started)	<input type="radio"/> 3 (Started)	<input type="radio"/> 5 (Fully In Place)
Q4 2025 (Oct – Dec)	<input type="radio"/> 1 (Not Started)	<input type="radio"/> 3 (Started)	<input type="radio"/> 5 (Fully In Place)
Q1 2026 (Jan – Mar)	<input type="radio"/> 1 (Not Started)	<input type="radio"/> 3 (Started)	<input type="radio"/> 5 (Fully In Place)
Q2 2025 (Apr - Jun)	<input type="radio"/> 1 (Not Started)	<input type="radio"/> 3 (Started)	<input type="radio"/> 5 (Fully In Place)

**#5: Patient Event Debriefs**

Has your Hospital/facility developed and implemented a standardized process to conduct debriefs with patients after a severe event? (including patient support networks during patient event debriefs, as requested; severe events may include the TJC sentinel event definition, severe maternal morbidity, or fetal death).

Each Quarter, report what the level of “completion” is for each structure measure on a 3-point Likert Scale. (1=Not Started, 3= Started, 5= Fully in Place)

Q3 2024 (Jul – Sep)	<input type="radio"/> 1 ( <i>Not Started</i> )	<input type="radio"/> 3 ( <i>Started</i> )	<input type="radio"/> 5 ( <i>Fully In Place</i> )
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Q1 2026 (Jan – Mar)	<input type="radio"/> 1 ( <i>Not Started</i> )	<input type="radio"/> 3 ( <i>Started</i> )	<input type="radio"/> 5 ( <i>Fully In Place</i> )
Q2 2025 (Apr - Jun)	<input type="radio"/> 1 ( <i>Not Started</i> )	<input type="radio"/> 3 ( <i>Started</i> )	<input type="radio"/> 5 ( <i>Fully In Place</i> )

**#6: Patient/Family Partner**

Hospital has a patient/family partner who engaged in appropriate education, e.g., Momma’s Voices’ Training, and is actively participating on the improvement team.

Each Quarter, report what the level of “completion” is for each structure measure on a 3-point Likert Scale. (1=Not Started, 3= Started, 5= Fully in Place)

Q3 2024 (Jul – Sep)	<input type="radio"/> 1 ( <i>Not Started</i> )	<input type="radio"/> 3 ( <i>Started</i> )	<input type="radio"/> 5 ( <i>Fully In Place</i> )
Q4 2024 (Oct – Dec)	<input type="radio"/> 1 ( <i>Not Started</i> )	<input type="radio"/> 3 ( <i>Started</i> )	<input type="radio"/> 5 ( <i>Fully In Place</i> )
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