Cardiac Conditions in Obstetric Care

Welcome to our Kickoff Day – we're so glad you're here!
We will use this binder in the afternoon. These materials are also available digitally on the initiative page of our website under "Cardiac Conditions in Obstetric Care Team Resources" on the lower right side of the page (https://www.pqcnc.org/node/14157).

Table of Contents

Cardiac Conditions in Obstetric Care

Timeline

2025

January

- Kickoff/Learning Session 1, January 16, Raleigh, NC
- Initial snapshot survey
- Monthly team calls and data collection begin

February

- Virtual Life QI Data Training Session, February 12, 11 am- 12:30 pm (data entry team members)

March

- Virtual Learning Session 2, March 19, 12 - 1 pm (all team members)

September

- Virtual Learning Session 3, date TBD

December

- Monthly team calls and data collection end
- Final snapshot survey

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Cardiac Conditions in Obstetric Care

Prework Checklist

Before January 10, 2025:	
	Enroll in the initiative by responding to the PQCNC email (also on the PQCNC Cardiac Conditions in Obstetric Care webpage).
	Explore the Cardiac Care **Resources** (on webpage).
	Review the **Participation Agreement** (on webpage).
	Assemble your team and submit a **Team Roster** (on webpage). Establish your team's meeting time, frequency, location, and communication channels.
	Register for January 16, 2025, **Kickoff** at the McKimmon Center in Raleigh, NC.
	Review the Cardiac Conditions in OB Care **Charter** and **Action Plan** (on webpage and in binder).
	Review the Cardiac Conditions in OB Care **Screening Tool** and **Referral Protocol** (on webpage and in binder).
	Determine your data collection team and review the **Data Collection Tool** and **Data Dictionary** (on webpage and in binder). Collect baseline data for each measure to determine how this data can be extracted from your medical records.
	Watch the **Life QI orientation video**, our new platform replacing DELPHI for data reporting (on webpage).
	Explore your site's status around cardiac care in pregnancy to start thinking about what you will implement. Examples to consider include: • Do you have a policy on cardiac conditions in pregnancy? • How many cardiac patients did your unit care for in the past year? • Does your unit and/or emergency department screen for cardiac conditions?
	Fill out the **Snapshot Survey** with additional information about your site's status regarding cardiac conditions in pregnancy (on webpage).
	Engage with your care areas to introduce the initiative, share the screening tools, and address initial questions or concerns.

Questions or comments? Contact Caroline Hays (MPH, RN/BSN), Clinical Initiative Manager, caroline_hays@med.unc.edu

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Cardiac Conditions in Obstetric Care

Charter

Problem Statement:

Maternal heart disease has emerged as a major threat to safe motherhood and women's long-term cardiovascular health. In the United States, disease and dysfunction of the heart and vascular system is now the leading cause of death in pregnant women and women in the postpartum period accounting for 4.23 deaths per 100,000 live births. The most recent data indicate that cardiovascular diseases constitute 26.5% of U.S. pregnancy-related deaths. Of further concern are the disparities in cardiovascular disease outcomes, with higher rates of morbidity and mortality among nonwhite and lower-income women. Contributing factors include barriers to pre-pregnancy cardiovascular disease assessment, missed opportunities to identify cardiovascular disease risk factors during prenatal care, gaps in high-risk intrapartum care, and delays in recognition of cardiovascular disease symptoms during the puerperium.[1]

Maternal cardiac conditions refer to disorders of the cardiovascular system which may impact maternal health. Such disorders may include congenital heart disease or acquired heart disease, including but not limited to cardiac valve disorders, cardiomyopathies, arrhythmias, coronary artery disease, pulmonary hypertension, and aortic dissection.[2]

Maternal cardiac disease occurs in ~ 1-3% of pregnancies and is a leading contributor to maternal mortality in North Carolina:

- NC rate is 27.6 per 100,000 births in 2019.
- NC ranked 30th out of 50 states in maternal death in 2019.
- Black moms 2.9 times more likely to die than white moms.

Mission:

Development of a toolkit that supports the implementation of evidence-based measures to improve recognition and treatment of maternal cardiac conditions, and systems to appropriately escalate care for patients experiencing maternal cardiac conditions that can be disseminated to, and implemented at, all hospitals providing OB delivery care in North Carolina.

Aim:

Development of a specific, actionable, stepwise toolkit to improve the care of obstetric patients with or at risk for cardiac morbidities during pregnancy by implementing a system that ensures:

- Complete a cardiac risk assessment on 100% of obstetric patients.
- Order cardiology consult on 100% of obstetric patients at high risk for cardiac morbidities.

Scope:

We will work with perinatal quality improvement teams in participating sites, both outpatient and inpatient, caring for mothers in the antepartum, peripartum and postpartum period.

Method:

Invite teams from labor and delivery centers to participate in the collaborative to both implement and refine the toolkit. PQCNC will facilitate the collaborative structure to include learning sessions, web conferencing, coaching to support perinatal quality improvement teams (PQIT's), education regarding quality improvement strategies and development of data systems to support most effective implementation of the Maternal Cardiac Care Toolkit.

Measurement Strategy includes:

- Cardiac risk assessment on 100% of obstetric patients.
- Cardiology consults on 100% of obstetric patients at high risk for cardiac morbidities.

[1] ACOG Pregnancy and Heart Disease Practice Bulletin 212 May 2019; [2] https://saferbirth.org/wp-content/uploads/U4-FINAL_AIM_Bundle_CCOC.pdf

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Cardiac Conditions in Obstetric Care

Action Plan

Primary Aim: Provide the facilitation, support, and education necessary to implement evidence-based measures to guide health care teams in developing coordinated, multidisciplinary care for pregnant and postpartum people with cardiac conditions and to respond to cardio–obstetric emergencies.

Secondary Aims:

1. Preparation			
Primary Drivers:		**Secondary Drivers:**	
1.1	Train all obstetric (OB) providers to perform a basic cardiac conditions screening	1.1.1	Determine which screening tool will be used and any training needed
1.2	Develop a patient education plan based on a pregnant and postpartum person's risk of cardiac conditions	1.2.1	Emphasize occurrence of adverse obstetrical events based on the modified World Health Organization (mWHO) Risk Criteria in Pregnancy, including patients with known cardiovascular disease (CVD) given that the normal cardiovascular changes of pregnancy can result in decompensation of CVD
		1.2.2	Emphasize shortness of breath, tachycardia, and other chief complaints as key issues and know when to prompt immediate consultation
		1.2.3	Inform and educate providers and nurses not to presume that patients with adult congenital heart disease know the signs and symptoms of worsening cardiac conditions during pregnancy or postpartum
1.3	Establish a multidisciplinary "Pregnancy Heart Team" (PHT) or consultants appropriate to a facilities' designated Maternal Level of Care to design coordinated clinical pathways for pregnant or postpartum people experiencing cardiac conditions	1.3.1	Identify team members with specified roles and responsibilities
		1.3.2	Run team drills with scenarios in different hospital settings including in-situ, clinical settings, and operating room
		1.3.3	Run team simulations with basic and high-risk perinatal and postpartum scenarios
		1.3.4	Educate nurses about when PHT should be consulted and how to contact them
		1.3.5	Establish a known code phrase (appearing on overhead page or in digital alerts) for cardiac emergencies so all disciplines develop situational awareness
1.4	Establish coordination of appropriate consultation, co-management, and/or transfer to appropriate level of maternal or newborn care	1.4.1	Develop and maintain a set of referral resources and communications pathways between obstetric providers, community-based organizations, and state and public health agencies to enhance quality of care
		1.4.2	Embed referrals in electronic health records (EHR)

2. Recognition, Early Treatment, and Timely Escalation of Care	
Primary Drivers:	**Secondary Drivers:**
2.1 Obtain a focused pregnancy and cardiac history in all care settings, including emergency department (ED), urgent care, and primary care	2.1.1 Staff OB and ED triage with skilled nurses trained in identification of cardiac issues 2.1.2 Ensure that elements of cardiac history are understood beyond just pregnancy-related assessment 2.1.3 Educate providers about the definitions of maternal mortality, severe maternal morbidity, and associated health disparities
2.2 Assess and document if a patient presenting is pregnant or has been pregnant within the past year in all care settings	2.2.1 Build inquiry into all entrance portals for care
2.3 Assess if escalating warning signs for a potential imminent cardiac event are present	
2.4 Utilize standardized cardiac risk assessment tools to identify and stratify a patient's risk	
2.5 Conduct a risk-appropriate workup for cardiac conditions to establish diagnosis and implement an initial management plan	
2.6 Screen each patient for cardiac condition-associated risk factors and provide linkages to community services and resources	
2.7 Establish facility-wide standard protocols with checklists and escalation policies for management of cardiac symptoms	2.7.1 Develop protocols and escalation policies in accordance with maternal level of care with defined roles, triggers, treatment algorithms, and referral/follow-up plans 2.7.2 Create system-wide protocols as needed for patient transfer 2.7.3 Embed protocols in EHR 2.7.4 Involve patients with lived experience in development of protocols 2.7.5 Create individualized plans for discharge from ED or postpartum using specific criteria and with follow-up plans
2.8 Establish facility-wide standard protocols with checklists and escalation policies for management of known or suspected cardiac conditions	2.8.1 Create system-wide protocols as needed for patient transfer 2.8.2 Embed protocols in EHR 2.8.3 Involve patients with lived experience in development of protocols 2.8.4 Designate a provider to take the lead on patient and family communication during a crisis and ensure use of interpreter when needed

2.9 Coordinate transitions of care, including discharge from birthing facilities to home and from postpartum care to primary and specialty care	2.9.1 Provide access to shared EHR across settings 2.9.2 Maintain lists of cardiologists willing to focus on pregnant and postpartum patients, and OB and primary care providers (PCPs) comfortable with cardiac conditions 2.9.3 Create treatment plans readily accessible in EHR 2.9.4 Standardize hand-off tools and communications for transitions of care
3. Multidisciplinary Care Team Processes	
Primary Drivers:	**Secondary Drivers:**
3.1 For pregnant and postpartum people at high risk for cardiac events, establish a culture of multidisciplinary planning, admission huddles, and post- event reviews	3.1.1 Have formal review following serious cardiac events to assess alignment with standard policies and procedures (with appropriate updates) and to identify opportunities for improvement (including identification of discriminatory practices) 3.1.2 Archive debriefing documentation for OB cardiac conditions events and review systematically with unit-specific and quality improvement (QI) leadership teams 3.1.3 Conduct huddles in conjunction with stage-based algorithms to be responsive to evolving clinical scenarios 3.1.4 Have immediate post-event debriefs (with an equity lens) for support and learning 3.1.5 Have more formal after-action reviews with designated leaders and standardized content 3.1.6 Include in after-action reviews an assessment of transfers to higher levels of care and multidisciplinary planning and treatment
3.2 Perform multidisciplinary reviews of serious complications (e.g., intensive care unit (ICU) admissions for reasons other than observation) to identify systems issues	3.2.1 Have formal review following care of patients at highest risk (e.g., mWHO III or IV) and patients who experienced complications to assess alignment with standard policies and procedures (with appropriate updates) and to identify opportunities for improvement (including identification of discriminatory practices) 3.2.2 Include involved providers (specialists and generalists) in review processes with focus on ways to improve care 3.2.3 Include near-misses and establish systems for reporting near-misses and unexpected outcomes
3.3 Include pregnant or postpartum people and identified support networks as respected members of and contributors to the multidisciplinary team	

4. Communication to Ensure Equitable Care	
Primary Drivers:	**Secondary Drivers:**
4.1 Engage in open, transparent, and empathetic communication with pregnant and postpartum people and their identified support networks to understand diagnoses, options, and treatment plans	4.1.1 Clarify goals and values for pregnancy that are essential to include in a patient's treatment plan 4.1.2 All education provided should: ○ Be in appropriate lay terminology ○ Align with the pregnant or postpartum person's health literacy, culture, language, and accessibility needs ○ Include a designated support person for all teaching with patient permission (or as desired) 4.1.3 Refer patients who have experienced significant cardiac events for trauma follow-up care and consider referral to a support group (such as SCAD Alliance) 4.1.4 Include patient's support network contact information in EHR

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Cardiac Conditions in Obstetric Care

Patient Screening Tool

Patients with a known history of heart disease or certain risk factors may be at higher risk of complications during pregnancy and after delivery. Please answer the following questions. Your answers may lead to additional questions or testing after discussion with your care provider.

Do you have any of the following:

Yes	No	
☐	☐	Do you see a heart doctor now or did you as a child?
☐	☐	Is it hard to breathe when you lay flat or on your side?
☐	☐	Do you have trouble breathing when resting?
☐	☐	Have you passed out/fainted in the past year?

Have you ever had a:

Yes	No	
☐	☐	Heart attack
☐	☐	Stroke
☐	☐	Surgery
☐	☐	Chemotherapy

Provider Follow-Up

This tool is intended as clinical guidance and is not prescriptive. Provider assessment is imperative.

Additional questions to consider:

- If the patient has a cardiologist, who is it, and has the patient seen them recently?

  _____

- If the patient has shortness of breath or orthopnea, has the patient always had these symptoms or is this new?

  _____

- If the patient had syncope in the past year, were there any precipitating events?

  _____

If the patient says "yes" to any screening questions, reports a significant cardiac history, and/or cardiology records are not available, consider ordering:

- ☐ Echocardiogram
- ☐ EKG
- ☐ Cardiac event monitor
- ☐ BNP or NT-proBNP
- ☐ Cardiology referral
- ☐ Maternal-fetal medicine referral

If the patient has a known cardiac history and records are available, see also the **"Referral Protocol for Patients with Known Cardiovascular Diagnoses."**

If ordering any cardiac testing or referral to cardiology, **notify your Cardio-OB Care Coordinator**.

Yes	**No**	
☐	☐	Cardio-OB Care Coordinator notified

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Cardiac Conditions in Obstetric Care

Referral Protocol for Patients with Cardiac Diagnoses

Determine patient's WHO Classification of Maternal Cardiovascular Risk[1] (see table on next page)

Notify **Cardio-OB Care Coordinator** for patients in ALL cardiovascular risk categories

Contact: _____

WHO I		WHO II		WHO II-III or III		WHO IV	
Cardiology	**MFM**	**Cardiology**	**MFM**	**Cardiology**	**MFM**	**Cardiology**	**MFM**
1-2 visits	-----	Every trimester	Once	Every 8 weeks	Transfer, by 32 weeks or as soon as possible if identified after 32 weeks to allow for delivery planning	Every month	Transfer, immediately to determine safety of continuation of pregnancy
Cardio-OB Team		**Cardio-OB Team[2]**		**Cardio-OB Team**		**Cardio-OB Team**	
-----		Review once		Review monthly		Review monthly	
Delivery location		**Delivery location**		**Delivery location**		**Delivery location**	
Local hospital		Local hospital, per resources and agreement of provider teams (OB, cardiology, and anesthesiology)		Tertiary care, with availability of MFM, cardiology, cardiothoracic surgery, advanced cardiac imaging, pediatric cardiology, and NICU		Tertiary care, with availability of MFM, cardiology, cardiothoracic surgery, advanced cardiac imaging, pediatric cardiology, and NICU	

Modified World Health Organization (WHO) Classification of Maternal Cardiovascular Risk[1]

WHO I	WHO II	WHO II-III	WHO III	WHO IV

• Small or mild:
  ○ Pulmonary stenosis
  ○ Patent ductus arteriosus
  ○ Mitral valve prolapse
• Successfully repaired simple lesions (atrial or ventricular septal defect, patent ductus arteriosus, anomalous pulmonary venous drainage)
• Atrial or ventricular ectopic beats, isolated
	• Unoperated atrial or ventricular septal defect
	• Repaired tetralogy of Fallot
	• Most arrhythmias (supraventricular arrhythmias)
	• Turner syndrome without aortic dilatation
		• Mild left ventricular impairment (EF >45%)
		• Hypertrophic cardiomyopathy
		• Native or tissue valve disease not considered WHO I or IV (mild mitral stenosis, moderate aortic stenosis)
		• Marfan or other HTAD syndrome without aortic dilatation
		• Aorta <45 mm in bicuspid aortic valve pathology
		• Repaired coarctation
		• Atrioventricular septal defect
			• Moderate left ventricular impairment (EF 30–45%)
			• Previous peripartum cardiomyopathy without residual left ventricular impairment
			• Mechanical valve
			• Systemic right ventricle with good or mildly decreased ventricular function
			• Fontan circulation, if otherwise well and cardiac condition uncomplicated
			• Unrepaired cyanotic heart disease
			• Other complex heart disease
			• Moderate mitral stenosis
			• Severe asymptomatic aortic stenosis
			• Moderate aortic dilatation (40–45 mm in Marfan syndrome or other HTAD; 45–50 mm in bicuspid aortic valve, Turner syndrome ASI 20–25 mm/m, tetralogy of Fallot <50 mm)
			• Ventricular tachycardia
				• Pulmonary arterial hypertension
				• Severe systemic ventricular dysfunction (EF <30%)
				• Previous peripartum cardiomyopathy with residual left ventricular impairment
				• Severe mitral stenosis
				• Severe symptomatic aortic stenosis
				• Systemic right ventricle with moderate or severely decreased ventricular function
				• Severe aortic dilatation (>45 mm in Marfan syndrome or other HTAD, >50 mm in bicuspid aortic valve, Turner syndrome ASI >25 mm/m, tetralogy of Fallot >50 mm)
				• Vascular Ehlers–Danlos
				• Severe (re)coarctation
				• Fontan with any complication

[1] Adapted from: Regitz-Zagrosek V, Blomstrom Lundqvist C, Borghi C, et al. ESC Guidelines on the management of cardiovascular diseases during pregnancy: the Task Force on the Management of Cardiovascular Diseases during Pregnancy of the European Society of Cardiology (ESC). *Eur Heart J*. 2011;32(24):3147-3197. doi:10.1093/EURHEARTJ/EHR218

[2] **Cardio-OB Team** should include your Cardio-OB Care Coordinator and representatives from cardiology, MFM, obstetrics, anesthesiology, nursing, and pharmacy. Additional team members may include social work, case managers, primary care providers, CT, surgery, or neonatology.

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Cardiac Conditions in Obstetric Care

EXAMPLE Quality Improvement Plan

Project: *Lowering Depression Scores*	**Team/Facility:**

Driver – What will you be working on?	**Process Measure** – How will you evaluate the result of your changes?	**Goal** – What are the specific results you want from your changes?
1. Patient education	*% of patients in depressed population receiving education materials before leaving office will have documented use of education materials*	*90% of patients in depressed population will have documented use of educational materials before leaving office*
2. Follow-up assessment	*% of patients in depressed population that have a follow-up assessment within the first eight weeks of their initial diagnosis*	*75% of patients in depressed population have a follow-up assessment within the first eight weeks of their initial diagnosis*

Driver	**Change Idea** – What idea for improvement will you test?	**Tasks to Prepare** – What do you need to do to set up to test that change?	**PDSA (Plan-Do-Study-Act) –** What are the details of your test of change?	**Person Responsible**	**Timeline (month/week)** T = Test, I = Implement, S = Spread			
					Month 1			
					Week 1	Week 2	Week 3	Week 4
1	*Provide pamphlet and link to short video at time of patient discharge*	*Need to make sure we have enough pamphlets on site; need to ensure link to video works*	*Nurse will hand materials to patient before leaving the exam room with all patients scoring high on the PHQ-9*	*Beth and Mark*	*T*	*T*		*I*
2	*Patients will come back to the office for a follow-up assessment within eight weeks of depression diagnosis*	*Need to schedule appointments within timeframe and get patients to attend follow-up appointment; need to make sure secretaries are aware of this test*	*Have secretaries write down the date and time of the follow-up appointment on the back of the clinic's business card*	*Laura*	*T*	*T*	*T*	

Adapted from the Institute for Healthcare Improvement (IHI) Quality Improvement Essentials Toolkit Project Planning Form, https://www.ihi.org/sites/default/files/QIToolkit_ProjectPlanningForm.pdf

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Cardiac Conditions in Obstetric Care

Quality Improvement Plan

Project: Cardiac Conditions in Obstetric Care	**Team/Facility:**

Driver – What will you be working on? (see Action Plan for ideas)	**Process Measure** – How will you evaluate the result of your changes?	**Goal** – What are the specific results you want from your changes?
1.		
2.		
3.		
4.		

Driver	**Change Idea** – What idea for improvement will you test?	**Tasks to Prepare** – What do you need to do to set up to test that change?	**PDSA (Plan-Do-Study-Act) –** What are the details of your test of change?	**Person Responsible**	**Timeline (month/week)** T = Test, I = Implement, S = Spread											
					Jan				Feb				Mar			
					1	2	3	4	1	2	3	4	1	2	3	4
1																
2																
3																
4																

Adapted from the Institute for Healthcare Improvement (IHI) Quality Improvement Essentials Toolkit Project Planning Form, https://www.ihi.org/sites/default/files/QIToolkit_ProjectPlanningForm.pdf

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Cardiac Conditions in Obstetric Care

Data Collection Tool

PQCNC has provided a spreadsheet to help teams collect data each month. The data you collect in the spreadsheet can then be copied and pasted into Life QI, the new data platform replacing Delphi for this initiative. The tool is best accessed digitally and is available on our webpage.

The data you report to PQCNC should be a monthly summary and should not include any identifiable information. We recommend that you work with your facility to determine how your team will extract summary patient data and diagnosis codes from your medical record system each month. The lists of ICD-10 codes for data extraction are included in the Data Collection Tool.

There are seven measures to track this year. All measures need to be broken down (stratified) by race/ethnicity and payor. **Measures 1-4** ask for monthly summary data about all perinatal patients at your facility. **Measures 5-7** ask for data specifically from Cardio-OB Care Coordinators about patient referrals. If your coordinator is not within your facility but rather is at a site with a higher level of care, you will only need to report on measures 1-4, as the coordinator will report on measures 5-7 for any referred patients.

Measures for all teams:

1. **Percent of OB patients referred to Cardio-OB Care Coordinator** = Count of OB patients referred to the Cardio-OB Care Coordinator / Total count of OB patients
2. **Percent of OB patients with documented cardiovascular disease** = Count of OB patients with documented cardiovascular disease (see WHO Diagnosis Codes) / Total count of OB patients
3. **Percent of OB patients with severe maternal morbidity secondary to cardiac disease** = Count of OB patients with severe maternal morbidity secondary to cardiac disease (see AIM Diagnosis Codes) / Total count of OB patients
4. **Percent of OB patients with maternal mortality secondary to cardiac disease** = Count of OB patients with maternal mortality secondary to cardiac disease (see AIM Diagnosis Codes) / Total count of OB patients

Measures for Cardio-OB Care Coordinators:

5. **Percent of patients referred to Cardio-OB Care Coordinator at less than 20 weeks** = Count of OB patients referred to the Cardio-OB Care Coordinator at less than 20 weeks gestation / Total count of OB patients referred to the Cardio-OB Care Coordinator
6. **Patients on Cardio-OB care coordination list** = Count of patients on the Cardio-OB care coordination list / Total count of OB patients referred to the Cardio-OB Care Coordinator
7. **Patients delivered from Cardio-OB care coordination list** = Count of patients delivered from the Cardio-OB care coordination list / Total count of OB patients referred to the Cardio-OB Care Coordinator

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Cardiac Conditions in Obstetric Care

Data Dictionary

This document accompanies the ***Data Collection Tool***, a spreadsheet to gather data each month before reporting in Life QI, the new platform replacing Delphi. The tables below define key terms for each data collection measure.

Measures 1-4 ask for monthly summary data about all perinatal patients at your facility.

Measures 5-7 ask for data specifically from Cardio-OB Care Coordinators about patient referrals. If your coordinator is not within your facility but rather is at a site with a higher level of care, you will only need to report on measures 1-4, as the coordinator will report on measures 5-7 for any referred patients.

General Terms and Definitions:

Term	Definition
Time Period	Month and year that patients were seen (ex. "Jan 2025") • Group patients by discharge date
Count of OB patients	Number of obstetric patients at your site each month that met a measure's criteria • Include patients admitted antepartum, for delivery, and/or postpartum • Also called the "numerator" of the measure
Total count of OB patients	Total number of obstetric patients at your site each month • Include patients admitted antepartum, for delivery, and/or postpartum • Also called the "denominator" of the measure
Stratified by Race/ Ethnicity	Number of patients that met a measure's criteria, broken down into each listed category of race and ethnicity • Listed categories may not match your site's categorization of race and ethnicity; please choose the closest match • Choose "Multiracial" for patients that fit into more than one category • We recognize that "Other" is an insufficient term that in this case may include Asian, American Indian, Alaska Native, Native Hawaiian, Other Pacific Islander, and other specific groups
Stratified by Payor	Number of patients that met a measure's criteria, broken down into each listed category of entities listed to pay for medical services
Cardio-OB Care Coordinator	The Cardio-OB Care Coordinator is an individual designated to organize delivery care planning for patients with cardiac risk factors • This coordinator may be specific to your facility or may be at a site with a higher level of care within your health system • Part of your quality improvement planning will be determining who will act as this coordinator for your facility • Coordinators will keep a count of all patients referred for their services (including patients who screened "positive" on the Cardiac Screening Tool, had additional cardiac testing ordered by their provider, or were referred to cardiology by their provider)

Definitions for Each Measure:

Measure	Numerator	Denominator
For all teams:		
1. Percent of OB patients referred to Cardio-OB Care Coordinator	**Count of OB patients referred to the Cardio-OB Care Coordinator** • All patients should be screened for cardiac risk factors; PQCNC has provided a recommended *Cardiac Screening Tool* • Referral to the Cardio-OB Care Coordinator is recommended for patients who screen "positive," have additional cardiac testing ordered, and/or are also referred to cardiology	**Total count of OB patients**
2. Percent of OB patients with documented cardiovascular disease	**Count of OB patients with documented cardiovascular disease (see *WHO Diagnosis Codes*)** • Include all patients with a cardiovascular diagnosis according to the World Health Organization's cardiac risk classification list of ICD codes (see list in the *Data Collection Tool)* • These codes may be in a patient's medical history or may be added after additional testing and/or referral to cardiology	
3. Percent of OB patients with severe maternal morbidity secondary to cardiac disease	**Count of OB patients with severe maternal morbidity secondary to cardiac disease (see *AIM Diagnosis Codes*)** • Include all patients with a cardiac diagnosis AND a severe maternal morbidity diagnosis according to AIM's list of severe maternal morbidity ICD codes (see list in the *Data Collection Tool)* • Severe maternal morbidity is any unexpected outcome during the delivery hospitalization that results in significant short- and long-term consequences to health	
4. Percent of OB patients with maternal mortality secondary to cardiac disease	**Count of OB patients with maternal mortality secondary to cardiac disease (see *AIM Diagnosis Codes*)** • Include all deceased patients with a cardiac diagnosis AND a severe maternal morbidity diagnosis according to AIM's list of severe maternal morbidity ICD codes (see list in the *Data Collection Tool)* • Maternal mortality is death while pregnant or within 42 days of pregnancy from any cause related to or aggravated by pregnancy or its management	

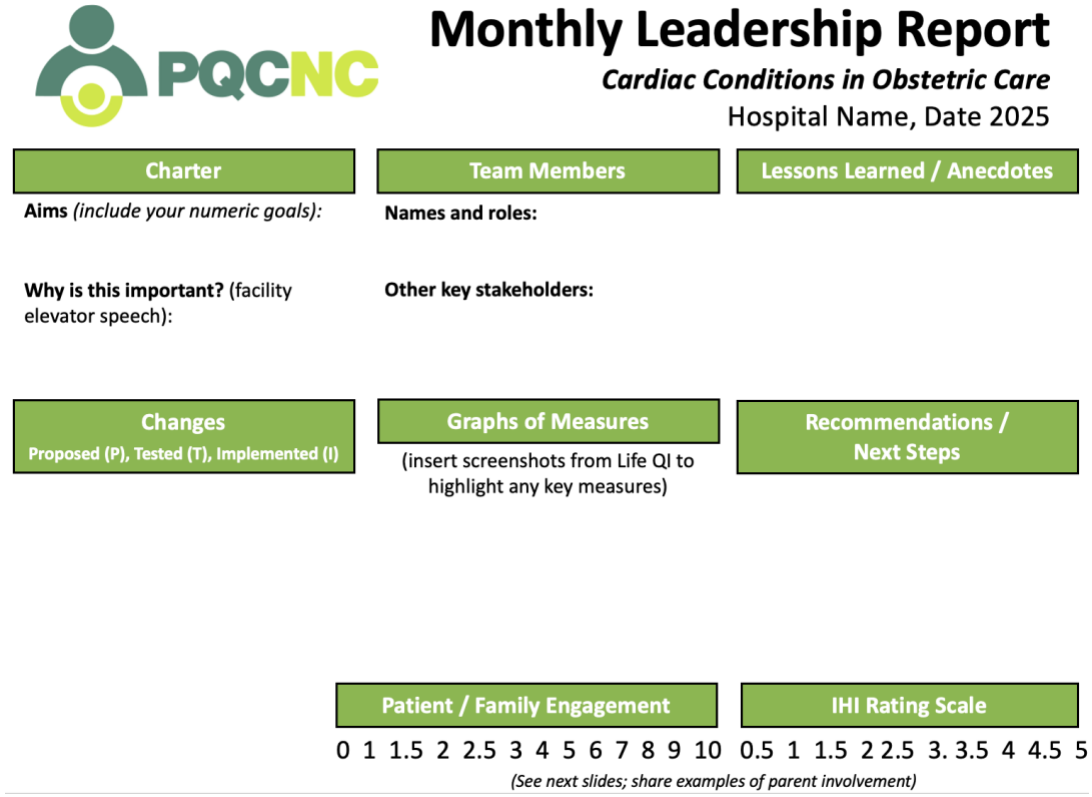
For Cardio-OB Care Coordinators:		
5. Percent of patients referred to Cardio-OB Care Coordinator at less than 20 weeks	**Count of OB patients referred to the Cardio-OB Care Coordinator at less than 20 weeks gestation** • Early referral to the Cardio-OB Care Coordinator is recommended to allow time for delivery care planning	**Total count of OB patients referred to Cardio-OB Care Coordinator**
6. Patients on Cardio-OB care coordination list	**Count of patients on the Cardio-OB care coordination list** • Coordinators will keep a list of patients who require delivery care planning from the Cardio-OB Team/Pregnancy Heart Team • Patients who were referred to the coordinator but determined not to need delivery care planning will not remain on the list • See the *Referral Protocol* for more information on care planning needs	
7. Patients delivered from Cardio-OB care coordination list	**Count of patients delivered from the Cardio-OB care coordination list** • See definitions above for Measure 6 • Include all patient from the care coordination list who delivered within that month	

Cardiac Conditions in Obstetric Care

Monthly Leadership Report

In addition to collection and reporting monthly data on the measures in Life QI, each team will meet with a PQCNC manager at least monthly to share their Monthly Leadership Report. This report is a high-level summary of what your individual team has been working on that month, including the changes you are testing, lessons learned, key data from your monthly Life QI reporting, and your team's engagement with patients, family members, and your quality improvement process as a whole.

A template for the monthly report is available on our webpage under "PQCNC OB Cardiac Care Team Resources" (https://www.pqcnc.org/node/14157).



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Monthly Leadership Report

Cardiac Conditions in Obstetric Care

Hospital Name, Date 2025

Charter	Team Members	Lessons Learned / Anecdotes
Aims *(include your numeric goals):*	**Names and roles:**	
Why is this important? (facility elevator speech):	**Other key stakeholders:**	
Changes Proposed (P), Tested (T), Implemented (I)	**Graphs of Measures** (insert screenshots from Life QI to highlight any key measures)	**Recommendations / Next Steps**

Patient / Family Engagement	IHI Rating Scale
0 1 1.5 2 2.5 3 4 5 6 7 8 9 10	0.5 1 1.5 2 2.5 3. 3.5 4 4.5 5

(See next slides; share examples of parent involvement)

Acknowledgments and Resources

The documents in this binder are available in digital form on our webpage under “PQCNC OB Cardiac Care Team Resources” (https://www.pqcnc.org/node/14157). There are also background resources to review and share with your teams under “PQCNC OB Cardiac Care Resources.”

The Charter, Action Plan, Screening Tool, and Referral Protocol were developed through the extensive work of our Expert Team (including many of you!) throughout 2024. We truly could not do this work without you and look forward to continuing to collaborate.

Many tools in this initiative were adapted from the Alliance for Innovation on Maternal Health (AIM) Cardiac Conditions in Obstetric Care Patient Safety Bundle (https://saferbirth.org/psbs/cardiac-conditions-in-obstetric-care/) and the Institute for Healthcare Improvement (IHI) quality improvement tools (https://www.ihi.org/resources/tools).

Please contact Caroline Hays, MPH, RN/BSN, Clinical Initiative Manager, with any questions or concerns throughout the year (caroline_hays@med.unc.edu).