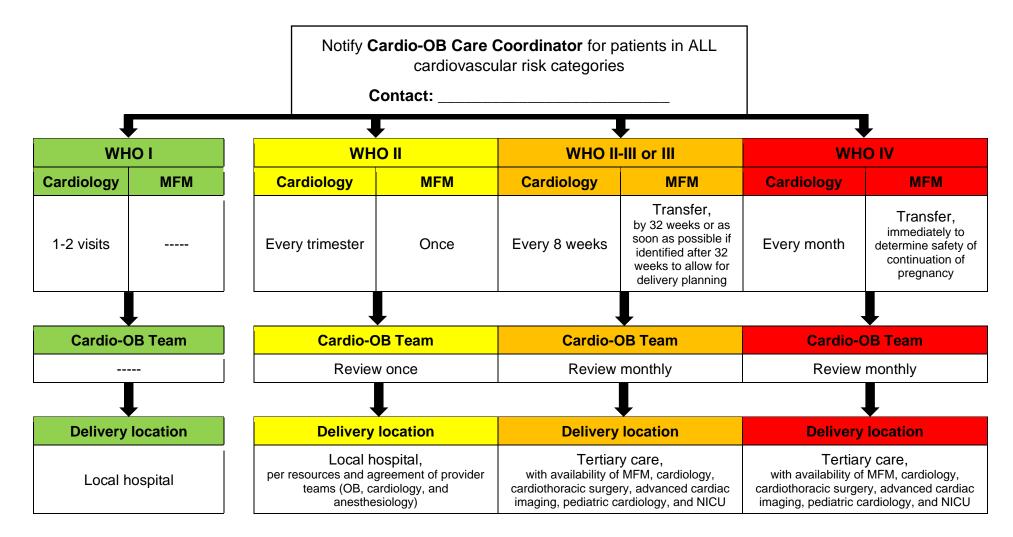


## **Cardiac Conditions in Obstetric Care**

## **Referral Protocol for Patients with Known Cardiovascular Diagnoses**



**Cardio-OB Team** should include the 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, neonatology, etc.



## Modified World Health Organization (WHO) Classification of Maternal Cardiovascular Risk<sup>1</sup>

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

<sup>&</sup>lt;sup>1</sup> 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