Pediatric Primary Care for Patients with Congenital Heart Defects

Point-of-Care Tool

OVERVIEW

Perform and assess results of a basic cardiac exam

- Perform a physical exam
  - General appearance
  - Vital signs - Pulses (upper vs. lower body), blood pressure, respiratory rate, O2 saturation (pre-post ductal, right hand vs. other extremities)
  - Palpation (chest)
  - Auscultation (heart)
- Note miscellaneous findings
  - Edema, hepatomegaly
  - Color (pallor/cyanosis), capillary refill
  - Lung exam (crackles)
  - Growth chart
  - EKG
- Develop and share a management plan based on recommendations of the pediatric cardiologist
  - Palivizumab
  - Routine vaccines and PCV23 vaccine
  - Regular cardiology follow-ups
  - Cardiac medications
  - Nutrition goals
  - Activity recommendations
  - Antibiotic and thrombosis prophylaxis
  - O_2 saturation goals
- Perform Newborn Critical Congenital Heart Disease Screening: (https://www.cdc.gov/ncbddd/heartdefects/hcp.html)

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RECOGNIZE SYMPTOMS THAT MAY INDICATE A CHD

Listen for and identify heart murmurs: include auscultation in supine, sitting, and standing positions

- Benign murmurs
  - Always systolic
  - Low pitched, "vibratory" or "musical" (not "harsh")
  - Heard only over a small area of the precordium
  - Louder in the supine position
  - Severity is less than 3 out of 6 (not associated with a thrill)
- Pathological murmurs (require cardiology referral)
  - Associated with cardiac symptoms such as cyanosis
  - Associated with bounding or weak peripheral pulses
  - Presence of abnormal heart sounds
  - Diastolic murmurs are always pathological
  - Loud systolic murmurs that have an intensity >3 out of 6 (ie., with thrill), long duration, and radiate
  - Abnormal cardiac silhouette or abnormal pulmonary markings on chest x-ray
  - Abnormal EKG findings
- Physical exam findings suggestive of a CHD in neonates
  - Cyanosis, particularly if it does not improve with O2 administration
  - Weak or absent peripheral pulses in the lower extremities
  - Irregular cardiac rhythm or abnormal heart rate
  - Tachypnea 60 or more breaths per minute with/without retractions
  - Hepatomegaly
  - Heart murmur (benign heart murmurs are more common)

Ask about chest pain

- Cardiac causes make up only 1% of chest pain in children.
- A thorough history and physical exam are warranted in all cases.
- Referral to a pediatric cardiologist is required when:
  - Patient presents with exertional chest pain
  - Pain is associated with palpitations, dizziness, or syncope
  - There are abnormal findings on physical exam, chest x-ray, and/or EKG
  - There is a family history of:
    - Sudden unexpected death
    - Hypertrophic cardiomyopathy
    - Long QT syndrome
    - Hereditary diseases with associated cardiac defects
  - Pain is chronic and/or recurrent and is a cause of significant worry for the patient and their family

MONITOR THROUGHOUT CHILDHOOD AND ADOLESCENCE

Look for parent/caregiver strain

- Underemployment
- Financial difficulties
- Lack of access to healthcare, reliable health insurance
- Lack of appropriate and safe childcare, respite care
- Relationship strain (within the family as well as outside the family) and social isolation

Check for developmental delays and learning disabilities

- Developmental screenings at all well visits
- Cognitive delays
- Fine motor and gross motor delays
- Social skills challenges
- Learning disabilities
- Difficulty with adaptive function/functional problems

Identify behavioral issues. Screen for mental health conditions and developmental disability throughout childhood and early adulthood.

- ADHD
- Mood disorders
- Anxiety
- Autism

ENSURE PARTNERSHIPS AND PATIENT SUPPORT ARE IN PLACE

Identify community partners

- Early Childhood Intervention programs
- Educational supports (ie., IEPs, 504 plans)
- National and local support networks for children with CHDs, special needs/disabilities

Identify subspecialty providers and therapists

- Congenital cardiology care physicians, even if patient is stable
- Consider additional subspecialty care as appropriate: genetics, neurology, pulmonology, gastroenterology, endocrinology, orthopedics, psychiatry, behavioral health, developmental pediatrics, physical medicine, and rehabilitation (PMR).

Identify ancillary therapists

- Physical therapy (PT) / occupational therapy (OT) / speech-language therapy (ST)
- Feeding teams
- Nutritional teams

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