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To speak with a CHOC Children's Specialist in Cardiology, please call: 714-509-3939

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A. Heart Murmur [ICD-9 Code: 785.2] [ICD-10 Code: R01.1, R01.0]

<u>Refer to Cardiology</u>	<u>Timeframe</u>	<u>Pre-Referral Workup</u>	<u>Pre-Authorization</u>	<u>Further Testing May Include:</u>
<ul style="list-style-type: none"> < 1 month or any age with symptoms: (Failure to thrive/poor feeding, cyanosis, decreased pulses, respiratory distress) 	<ul style="list-style-type: none"> Please call Cardiology for immediate consultation 714-509-3939 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> Consult; Pulse oximetry; ECG; Echocardiogram; Chest X-ray 	<ul style="list-style-type: none"> Cardiac catheterization; Chest CT with angiogram; Cardiac MRI
<ul style="list-style-type: none"> 1 to 6 months AND asymptomatic 	<ul style="list-style-type: none"> Within two weeks 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> Consult; Pulse oximetry; ECG; Echocardiogram; Chest X-ray 	<ul style="list-style-type: none"> Cardiac catheterization; Chest CT with angiogram; Cardiac MRI
<ul style="list-style-type: none"> > 6 months AND asymptomatic 	<ul style="list-style-type: none"> First Available 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> Consult; Pulse oximetry; ECG; Echocardiogram 	<ul style="list-style-type: none"> Cardiac catheterization; Chest CT with angiogram; Cardiac MRI

B. Palpitations [ICD-9 Code: 785.1] [ICD-10 Code: R00.2]

C. Arrhythmia [ICD-9 Code: 427.9] [ICD-10 Code: I49.9]

D. Abnormal ECG [ICD-9 Code: 794.31] [ICD-10 Code: R94.31]

<u>Refer to Cardiology</u>	<u>Timeframe</u>	<u>Pre-Referral Workup</u>	<u>Pre-Authorization</u>	<u>Further Testing May Include:</u>
<ul style="list-style-type: none"> Asymptomatic 	<ul style="list-style-type: none"> First available 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> Consult; ECG; Echocardiogram; 24-hour Holter monitor 	<ul style="list-style-type: none"> 30-day event monitor; Exercise stress test; Electrophysiology study

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E. Chest Pain [ICD-9 Code: 786.5*] [ICD-10 Code: R07.*]

F. Syncope [ICD-9 Code: 780.2] [ICD-10 Code: R55]

Refer to Cardiology

- Exertional

Timeframe

- ▶ Within one week or call Cardiology for immediate consultation
714-509-3939

Pre-Referral Workup

- ▶ None-Recommend activity restriction until cardiology visit

Pre-Authorization

- ▶ Consult; ECG; Echocardiogram; Exercise stress test w/ pulmonary function test

Further Testing May Include:

- ▶ 30-day event monitor; Exercise stress test; Cardiac catheterization with electrophysiology study; Cardiac MRI

- Nonexertional

- ▶ First available

- ▶ None

- ▶ Consult; ECG; Echocardiogram

- ▶ 30-day event monitor; Exercise stress test; Cardiac catheterization with electrophysiology study; Cardiac MRI

G. Hypertension [ICD-9 Code: 401.9] [ICD-10 Code: I10]

Refer to Cardiology

- Average SBP/DBP $\geq 90^{\text{th}}$ % with comorbid factors over 3 visits or $\geq 95^{\text{th}}$ % for age/sex/height

Timeframe

- ▶ First available

Pre-Referral Workup

- ▶ Basic metabolic panel, CBC, Thyroid function tests based on history: +/- HgbA1C, Cholesterol panel, Renal workup

Pre-Authorization

- ▶ Consult; ECG; Echocardiogram

Further Testing May Include:

- ▶ Cardiac catheterization; Chest CT with angiogram

Reference:

Diagnosis, management and treatment of high blood pressure in children and adolescents (2004)

http://www.nhlbi.nih.gov/health/prof/heart/hbp/hbp_ped.pdf

Tables 3 and 4-Blood pressure levels for boys and girls by age and height percentile

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H. Attention Deficit Hyperactivity Disorder (ADHD) [ICD-9 Code: 314.01] [ICD-10 Code: F90.*]

Refer to Cardiology

- Abnormal ECG

Timeframe

- ▶ First available

Pre-Referral Workup

- ▶ None

Pre-Authorization

- ▶ Consult; ECG; Echocardiogram; 24-hour Holter monitor

Further Testing May Include:

- ▶ Exercise stress test

Reference:

AHA scientific statement for cardiovascular monitoring of children receiving medications for ADHD (2008)

<http://circ.ahajournals.org/content/117/18/2407.full.pdf>

Table 3-Cardiac effects of medications used to treat ADHD

Table 4-ECG findings and referral recommendations

I. Kawasaki Disease [ICD-9 Code: 446.1] [ICD-10 Code: M30.3]

Refer to Cardiology

- Uncomplicated (No or transient coronary artery ectasia/minimal cardiac involvement)
- Complicated

Timeframe

- ▶ 2 weeks and 6-8 weeks post onset of illness
- ▶ To be determined based on inpatient cardiology consult

Pre-Referral Workup

- ▶ None
- ▶ None

Pre-Authorization

- ▶ Follow up visit; ECG; Echocardiogram
- ▶ Follow up visit; ECG; Echocardiogram

Further Testing May Include:

- ▶ None
- ▶ Chest CT with angiogram; Cardiac catheterization

Reference:

Diagnosis, treatment, and long term management of Kawasaki Disease (2004)

<http://circ.ahajournals.org/content/110/17/2747.full.pdf>

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Genetic Disorders:

J. Marfan	[ICD-9 Code: 759.82] [ICD-10 Code: Q87.4*]
K. Turner	[ICD-9 Code: 758.6] [ICD-10 Code: Q96.*]
L. Downs	[ICD-9 Code: 758.0] [ICD-10 Code: Q90.*]
M. DiGeorge	[ICD-9 Code: 279.11] [ICD-10 Code: D82.1]
N. Noonan	[ICD-9 Code: 759.89] [ICD-10 Code: Q87.89]
O. Muscular Dystrophy	[ICD-9 Code: 359.*] [ICD-10 Code: G71.*]

Refer to Cardiology

- When suspected

Timeframe

- ▶ First available

Pre-Referral Workup

- ▶ None

Pre-Authorization

- ▶ Consult; Pulse oximetry; ECG; Echocardiogram; Chest X-ray

Further Testing May Include:

- ▶ Chest CT with angiogram; Cardiac catheterization

P. Premature [ICD-9 Code: V21.3*] [ICD-10 Code: P07.0*, P07.1*, P07.3*]

Or Term Infants with:

Q. Patent Ductus Arteriosus(PDA)	[ICD-9 Code: 747.0] [ICD-10 Code: Q25.0]
R. Atrial Septal Defect (ASD)	[ICD-9 Code: 745.5] [ICD-10 Code: Q21.1]
S. Small Ventricular Septal Defect (VSD)	[ICD-9 Code: 745.4] [ICD-10 Code: Q21.0]

Refer to Cardiology

- Asymptomatic
- Symptomatic

Timeframe

- ▶ 1 - 2 months post discharge
- ▶ To be determined based on inpatient cardiology consult

Pre-Referral Workup

- ▶ None
- ▶ None

Pre-Authorization

- ▶ Consult; Pulse oximetry; ECG; Echocardiogram; Chest X-ray
- ▶ Follow up visit; Pulse oximetry; ECG; Echocardiogram; Chest X-ray

Further Testing May Include:

- ▶ None
- ▶ None

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T. Hyperlipidemia [ICD-9 Code: 272.4] [ICD-10 Code: E78.4, E78.5]

Screen Patients

- Age 2 - 10 yrs. if family history of dyslipidemia or early cardiovascular disease (< 55 yrs. for men/ < 65 yrs. for women)
- Patient overweight (body mass index 85 - 95th %) or obese (BMI > 95th %)
- Systemic hypertension (SBP/DBP ≥ 95th %)
- Diabetes mellitus

Workup

- ▶ Fasting lipid profile

Refer to Cardiology

- Triglyceride level >300
- Patients with BMI ≥ 90th % and elevated triglycerides (<500mg/dl) refer patient to a weight management program and demonstrate participation for 6 months without affect on triglyceride levels before referring to the lipid disorders clinic
- LDL > 160 and no family history of CVD
- LDL > 130 with family history of premature CVD or cerebrovascular disease.

Timeframe

- ▶ First available
- ▶ Priority scheduling for TG ≥ 500
- ▶ Please call Dr. Muhonen for consult on TG ≥ 1000
714-509-3939

Pre-Referral Workup

- ▶ Hepatic and thyroid function panel; fasting insulin and glucose levels; Urinalysis
- ▶ Consider Referral to:
 - PODER (Prevention of Obesity and Diabetes through Education and Resources) for all ages
714-509-7323
 - N.E.W. You Nutrition Class for adolescents
714-509-8455

Pre-Authorization

- ▶ Consult; ECG; Echocardiogram

Further Testing:

- ▶ None

Reference:

Lipid screening and cardiovascular health in childhood (2008)
<http://pediatrics.aappublications.org/content/122/1/198.full.pdf>

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