Pediatric Referral Guidelines

Spectrum Health Helen DeVos children's hospital

Pediatric Specialties

Consult and Referral Guidelines

HDVCH direct phone: 616.391.2345

Helen DeVos Children's Hospital wants to make referrals to easy, fast and efficient for our primary care providers. We've developed these guidelines to help maximize productive office visits for you and your patient.

Each guideline includes appointment priority guide, common conditions treated, information about each service offered and how to refer. For most specialties, we've included three sections for referral considerations: suggested work-up and initial management, when to refer and information needed for referral. Please note, suggested work-ups may not apply to all patients, but these are studies we generally consider during office visits and may help us when initially evaluating your patient.

In some cases, we will contact you by phone to discuss your patient prior to scheduling a consultation. We do this to gather additional information, triage/assess the urgency of referral and facilitate additional work-up prior to consultation. There are times when a telephone discussion is all that is needed, saving time and resources for your patient and his/her family.

These referral guidelines were developed as a general reference to assist referring providers. Pediatric medical needs are complex and these guidelines may not apply in every case. HDVCH relies on its referring providers to exercise their own professional judgment with regard to the appropriate treatment and management of their patients. Referring providers are solely responsible for confirming accuracy, timeliness, completeness, appropriateness and helpfulness of this material and making all medical, diagnostic and prescription decisions.

We view this as a "living" document and welcome your feedback to further refine the guidelines.

Contents

Pediatric Allergy and Clinical Immunology

Consult and Referral Guidelines

Helen DeVos Children's Hospital
Outpatient Center
35 Michigan Street NE

About Pediatric Allergy and Clinical Immunology

We care for patients from birth to age 18.

Most common referrals

- Food allergy
- Anaphylaxis
- Asthma
- Recurrent viral wheeze
- Allergic rhinosinusitis
- Allergic conjunctivitis
- Chronic sinusitis
- Nasal polyps
- Primary immunodeficiency (frequent/recurrent, unusual infection, periodic fever)
- Positive newborn TREC screen
- Chronic and acute urticarial/angioedema
- Hereditary angioedema
- Bee sting allergy
- Atopic dermatitis/eczema
- Drug or vaccine allergy
- Eosinophilic disorders (especially hypereosinophilia and eosinophilic esophagitis)
- Mast cell disorders

Notes

With the exception of some drug and bee allergy testing, we do not use needles for any skin testing.

Allergy and Clinical Immunology Appointment Priority Guide

Immediate (e.g., a positive TREC newborn screen for severe combined immunodeficiency)	Call HDVCH Direct at 616.391.2345 and ask to speak with on-call allergist/ immunologist or send to the closest emergency department.
Urgent (e.g., severe eczema or history of food allergy <1 year of age; allergic reaction to medication that is needed/critical for continued care)	Likely to receive an appointment 48 hours. Call our department at 616.267.8150.
Routine	Will receive first available appointment. Fax completed referral form and records to 616.267.2851 or send through Holon.

Diagnosis/Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
Food Allergy & Food Oral Immunotherapy	No testing needed prior to visit Prescribe/instruct on use of epinephrine autoinjector for patient to carry with them at all times *Note: we do not recommend IgE food allergy "panels" that test a broad range of food allergens in one test. These have a high false positive rate and can lead to false diagnosis and potential harm to the patient. If testing is pursued, specific IgE to single food groups based on history is preferred. IgG to food has been shown to be of no clinical value in food allergy and should not be ordered.	• Any question of food allergy • History of anaphylaxis • We recommend all patients with food allergy have care established with an allergist • Urgent referral: For patient <1 year of age and history of severe eczema/ food allergy as literature shows we may have the opportunity to prevent food allergy in these patients	• Request for consult • Summary of all previous reactions • Summary from any ER visits • Summary of any previous allergy testing
Anaphylaxis	Could consider baseline tryptase	Any cases of anaphylaxis, especially unexplained, should be referred to an allergist	• Request for consult and brief history of anaphylactic event • Any labs obtained, especially tryptase if this is obtained during ER visit for anaphylaxis
Asthma	None	• Has been hospitalized • Intubated/ICU admission • Frequent ER visits • Frequent need for oral steroid bursts • Unresponsive to usual therapy with increasing medication use • Complicating conditions such as allergic rhinitis, sinusitis, GERD and/ or pneumonia • Abnormal spirometry or needs frequent monitoring with spirometry	• Request for consult • Chief concern • Summary of previous treatments and response • Respiratory history since birth • All lab results • All chest films (must have chest X-ray)* • If sweat chloride test was obtained, must be from CF Center accredited lab**

Diagnosis/Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
Recurrent Cough or Wheeze **Recurrent Bronchiolitis or Bronchitis**	Chest X-ray: PA and lateral* Sweat chloride at an accredited CF Center** Trial of bronchodilators at any age Trial of oral and/or inhaled corticosteroids or Singular® (if age appropriate) if bronchodilators non- responsive. Oral prednisone is typically dosed ~2 mg/kg/day x 5 days minimum.	• Has been hospitalized • Intubated/ICU admission • Frequent ER visits • Frequent need for oral steroid bursts • Unresponsive to usual therapy with increasing medication use • Complicating conditions such as allergic rhinitis, sinusitis, GERD and/ or pneumonia • Abnormal spirometry or needs frequent monitoring with spirometry	• Request for consult • Chief concern • Summary of previous treatments and response • Respiratory history since birth • All lab results • All chest films (must have chest X-ray)* • If sweat chloride test was obtained, must be from CF Center accredited lab**
Allergic Rhinitis **Chronic Rhinitis** **Allergic Conjunctivitis** **Chronic Sinusitis** **Nasal Polyps**	Trial of second generation H-1 antihistamines (i.e., Zyrtec [cetirizine] or Allegra [fexofenadine]) at any age Trial nasal steroid if tolerated	• Symptoms refractory to antihistamine and nasal steroid • Need to clarify diagnosis of allergy vs. nonallergic • Need to identify specific allergens for environmental management • Need for evaluation for allergy shots	• Request for consult • History of symptoms • Therapies to this point

Diagnosis/Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
Immunodeficiency/ Concern for Frequent Infections	CBC with differential IgG, IgA, IgM HIV	• 4 or more ear infections in 1 year; 2 or more serious sinus infections in 1 year • Two or more months on antibiotics with little effect • Two or more CXR proven pneumonias in 1 year • Failure of an infant to gain weight or grow normally • Recurrent, deep skin or organ abscesses • Persistent thrush in mouth or fungal infection of skin • Need for IV antibiotics to clear infections • Two or more deep seated infections including septicemia Family history of primary immunodeficiency • Infection with rare or low virulent organisms • Unexplained bronchiectasis • Urgent referral: For concern for serious immunodeficiency	• Request for consult • Brief summary of infections and hospitalizations • All previous radiology results (including CD of film if not done in our system) • All culture results • All lab results
Atopic Dermatitis/ Eczema **Allergic Contact Dermatitis**	Topical corticosteroids (cream/ointment not lotion) to effected area Frequent emollients Oral H-1 antihistamine at night	• Continued flares of atopic dermatitis despite current treatment Urgent referral for all patients <1 year of age with severe eczema to evaluate for early introduction/ prevention of food allergy in accordance with LEAP study, EAT study and 2016 food allergy practice parameters	• Request for consult • Brief history of treatments to this point

Diagnosis/Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
Urticaria/ Angioedema	**Acute urticaria (<6 weeks)** Investigate viral or allergic causes of urticaria Oral second generation H1 antihistamine for acute control **Chronic Urticaria (present most days >6 weeks)** Empiric trial of Zyrtec (cetirizine) or Allergra (fexofenadine) twice daily and Pepcid (famotidine) twice daily Consider trial of daily Singulair (montelukast), if age appropriate In general laboratory testing is not needed/ indicated. If there are concerning systemic symptoms (fever, weight loss, night sweats, joint pain, etc.), you can consider limited laboratory testing (CBC with differential, ESR and/or CRP, LFTs and TSH) Angioedema/swelling without urticaria or family history of hereditary angioedema C4	• Unexplained acute urticaria • Symptoms that are refractory and continues despite BID H-1 and H-2 antihistamine • Angioedema without urticaria accompanied by low C4 (concern for hereditary angioedema) • Family history of hereditary angioedema	• Request for consult • History of previous treatment • Any labs that were obtained

Diagnosis/Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
Drug or Vaccine Allergy	Due to high rate of false negatives, unless needed for urgent/ emergent reasons (i.e., chemotherapy) we cannot test to drugs until 6 weeks after reaction	• History of allergy/reaction to a medication that is medically indicated for the patient to take in the future • History of allergy/reaction to multiple medications that make prescribing future medications difficult • Any history of penicillin allergy in children >10 years old	• Request for consult • History of reaction to all medications
Hypereosinophilia	CBC with diff Toxocara canis antibody and strongyloides Note: There is risk of death if prednisone is given to patient with strongyloides Test for scabies	• Absolute eosinophil count >1000 with negative toxocara canis antibody and strongyloides antibody	• Request for consult • All laboratory results (including all CBCs that have been obtained)
Venom Allergy	Prescribe injectable epinephrine	• All patients with history of reaction to stinging insect that is more than a large reaction at the site of the sting/bite.	• Request for consult • Brief history of reaction

Notes

*We prefer to look at all X-rays/CT scans ourselves during the visit. If your patient has not obtained their X-rays/CT scans at Spectrum Health, we ask that the patient obtain a CD that includes all their X-rays/CT scans and bring it to our office visit.

****Accredited CF care centers include: Helen DeVos Children's Hospital (Grand Rapids), Sparrow Hospital (Lansing), Bronson Hospital (Kalamazoo), Children's Hospital of Michigan (Detroit) and University of Michigan (Ann Arbor).

Pediatric Behavioral Health

Consult and referral guidelines

Helen DeVos Children's Hospital
Outpatient Center
35 Michigan Street NE

About Pediatric Behavioral Health

We accept referrals for children and teens from birth to age 18 who also have medical comorbidity.

We strive to care for the whole child which includes attending to their mental health, physical health, personal, family, school and community needs. Our experts utilize a multidisciplinary and comprehensive approach to diagnose and determine the root of the child's problem using a biological, psychological and social approach to create a personalized treatment plan for each child.

Most common referrals

- Autism spectrum disorders
- Developmental disabilities
- Neuropsychology
- Pediatric pain
- Palliative medicine
- Child psychiatry
- Pediatric psychology
- Hospital-based consultation

Pediatric Behavioral Health Appointment Priority Guide

Immediate/ Urgent	If patient is experiencing a psychiatric crisis, contact: • Medically clear patient, with private insurance coverage – Pine Rest or Forest View • Medically clear patient, with Medicaid – Network180 (Kent County) or regional community mental health • Not medically clear, with private insurance coverage – Emergency Department
Routine	Send referral via Epic Care Link, fax completed referral form to 616.267.2850, or send referral through Holon. Detailed clinical information with referrals helps to place the child with the best behavioral health specialist. If making the referral in EPIC, within the system enter ref 81. Then indicate if the child is referred for psychiatry, psychology (therapy), testing (general educational testing), neuropsychological testing (psychological testing in a patient who has a medical history that affects brain development) or autism testing. For consultation on mild-to-moderate mental health concerns, consider: MC3 (mc3.depressioncenter.org) or HDVCH Direct (616.391.2345)

Clinic	About the clinic	Other information
Autism Spectrum Disorders/ Developmental Disabilities (Certified BCBS Center of Excellence)	We currently provide comprehensive evaluation services and recommendations for educational and treatment planning. We do not see patients for autism testing who have are covered under Medicaid, (other than McLaren) or United Healthcare insurance plans. Once assessment is complete, we assist with providing a resource list of clinical care organization for treatment.	Symptoms of ASD include: • Deficits in social-emotional reciprocity • Deficits in nonverbal communicative behaviors used for social interaction • Deficits in developing and maintaining relationships, appropriate to developmental level (beyond those with caregivers) • Stereotyped or repetitive speech, motor movements or use of objects • Excessive adherence to routines, ritualized patterns of verbal or nonverbal behavior, or excessive resistance to change • Highly restricted, fixated interests that are abnormal in intensity or focus • Hyper- or hypo-reactivity to sensory input or unusual interest in sensory aspects of environment
Neuropsychology	We help place a patient for psychological and neuropsych testing. Detailed background information regarding the child assists with differentiation in testing: • Neuropsych – medical illness which may be impacting brain development or learning • Psychological – concerns regarding development or dyslexia, without medical illness	We provide evaluation and treatment for: • Prenatal alcohol or drug exposure • Prematurity and/or neonatal complications • Developmental delay and intellectual disability, transition to adulthood • Genetic disorders and other rare illnesses • Hypoxic/anoxic events (i.e., low or lack of oxygen) • Cerebral palsy • Neuro-immunology and neuro-infectious diseases (e.g., meningitis, HIV, etc.) • Concussion and traumatic brain injury • Epilepsy • Pre-surgical and post-surgical evaluations • Neurovascular disorders • Neurodegenerative and demyelinating disorders • Leukemia, brain tumor and treatment with chemotherapy and/or radiation • Bone marrow transplant • Solid organ transplant • Congenital heart disease • Chronic kidney disease

Clinic	About the clinic	Other information
Comprehensive Pain	We provide multidisciplinary, comprehensive biopsychosocial pain evaluation to determine the best treatment for our patients.	We provide evaluation and treatment for: • Outpatient pain medicine management • Individual and family pain psychology intervention (cognitive behavioral and bio behavioral treatments, including biofeedback) • Physical therapy • Social work services • Care coordination with other medical specialties.
Child Psychology	We provide short-term consultative care for stabilization and treatment	We see patients with medical illness that affects mental illness or mental illness which affects physical illness (e.g., patients with diabetes and depression that are not adherent to treatment, have conversion disorder or somatic symptom disorder. We will also see patients <6 years who are failing first line treatments for behavioral health concerns.
Pediatric Psychology	We specialize in the evaluation, diagnosis and treatment of mental health disorders in children and teens. Our diagnostic consultations generally consist of one to three visits and are designed to provide comprehensive diagnostic services as well as identify the best avenue of care for each child and family. As part of the evaluation, we may conduct cognitive, academic, social, emotional and/or personality testing.	We provide evaluation and treatment for: • Adjustment to chronic illness • Adherence to medical treatment regimens • Anxiety and depression in the context of physical illness • Autism Spectrum Disorders • Behavioral and school problems in children <6 years • Chronic pain • Enuresis and encopresis • Gender care • Neurodevelopmental disorders • Somatoform disorders including conversion disorder • Parenting behavioral advice • Dyslexia and other learning disabilities
Hospital-Based Services	The Pediatric Behavioral Health Consultation Liaison Team provides psychiatric and psychological consultation, evaluation and treatment for children and families with acute illnesses. Our psychiatrists and psychologists work closely with social work, psychiatric nurses, child life specialists and behavioral health technicians during a medical hospitalization to provide well-rounded and holistic care.	

Pediatric Dermatology

Consult and referral guidelines

Helen DeVos Children's Hospital
Outpatient Center
35 Michigan Street NE

About Pediatric Dermatology

We care for children and teens from birth to age 21, when referred by PCP, or who have special needs.

Most common referrals

- Acne
- Warts
- Molluscum contagiosum
- Atopic dermatitis/eczema
- Infantile hemangioma
- Capillary malformations/ port wine stains
- Venous malformations
- Pyogenic granulomas
- Spider angioma
- Psoriasis
- Scabies
- Tinea capitis, tinea corporis, tinea faciei, ringworm, onychomycosis
- Impetigo, staph infections
- HSV infections
- Keratosis pilaris
- Café-au-lait macules
- Moles, spitz nevi
- Congenital nevi
- Nevus sebaceous
- Vitiligo
- Rash/dermatitis, skin lesions, cysts

Notes

- Please take a photo in Epic or send photos of affected areas with referral, this will help to triage for telemedicine visits.
- Most acne patients and some birthmarks/hemangiomas can be seen via telemedicine visits (especially if photos are sent at time of referral).

Pediatric Dermatology Appointment Priority Guide

Immediate	Contact HDVCH Direct at 616.391.2345 and ask to speak to the on-call dermatologist and/ or send to closest emergency department.
Urgent	Likely to receive an appointment within 7 days. Call HDVCH Direct, the practice, or use Perfect Serve to request an urgent appointment. Urgent diagnoses include: any referral for an infant <1 month, atopic dermatitis in children <6 months of age, infantile hemangioma in children <6 months of age and untreated skin infections
Routine	Some diagnoses may have a 6+ month scheduling timeline. Send referral via Epic Care Link, fax completed referral form to (616) 267-2401, or send referral through Holon.

Diagnosis/Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
Atopic dermatitis/ Seborrheic dermatitis	Prior to visit, educate about emollients, sensitive skin care, and use of class 6 or 7 topical steroid, or class 4 or 5 topical steroid in older children	Infants <6 months, usually scheduled within 2 weeks **If severe, or actively infected, please call for urgent appointment.**	• Send growth chart with patient referral, if possible
Psoriasis	Prior to visit, trial of topical steroid of appropriate class If acute onset, check for concurrent strep infection (pharynx or perianal)	**If >30% BSA involvement, consider urgent referral**	
Acne Refer to American Academy of Pediatrics journal article on acne.	**Mild** Use BPO +/- topical antibiotic, +/- topical adapalene 0.1% gel **Moderate** Add oral antibiotic (Doxycycline or Minocycline, 100mg), po BID **Severe** Oral antibiotics + retinoid + BPO Do not promise isotretinoin if no treatment has been tried; most health plans require 3-6 months of oral antibiotics + retinoid for coverage of isotretinoin	Care is provided by nurse practitioners, typically within 3-5 weeks. Most can be seen via telemed if photos sent with referral	• All previous prescriptions for acne • Photos enable a telemedicine visit if sent with referral
Warts	Prior to visit, use OTC salicylic acid and in-office cryotherapy		
Molluscum	Prior to visit, can treat with cantharone, Differin gel or tretinoin cream, if this is available within your practice		
Infantile hemangioma	For small superficial focal infantile hemangiomas, consider topical timolol gel forming solution BID. Reassess in 3-5 weeks, if not improved, refer for oral propranolol For 5 or more, schedule a liver ultrasound if under 2 months of age	• No improvement following timolol gel treatment for small superficial focal hemangiomas • Refer early if in cosmetically sensitive area, or ulcerated; better response to propranolol if started at 2 months of age • For large segmental lesions on face, refer immediately to the Vascular Clinic for PHACE syndrome evaluation	

Diagnosis/Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
Capillary malformations on face **in V1, V2 distribution, high risk for Sturge-Weber**	Recommend MRI brain and ophthalmology consult Capillary malformations elsewhere: monitoring is recommended, usually delay pulsed dye laser treatment unless desired by family	• Patients will be seen urgently if no work-up has been completed • Pulsed dye laser treatments begin at 2-4 months of age to maximize results without repeated anesthesia	
Venous & lymphatic malformations	Ultrasound if unclear diagnosis	• Patient may be referred to hematology and oncology as well	
Pyogenic granuloma	Please note if bleeding excessively, or not Can start topical timolol gel forming solution and cold Vaseline BID – this treatment has been shown to shrink pyogenic granulomas. Treatment can take 2-4 months, re-check patients at 1 month.	• Patients are usually seen within 1-2 weeks	
Moles (nevi)			• Note if changing, or bleeding, or if a family history of melanoma in a 1st degree relative
Congenital nevi		• Size >10-12 cm will be seen more urgently	• Note size in referral
Cysts			• Note location in referral • Facial lesions will be deferred to Plastic Surgery
Vitiligo	Can check TSH prior to referral for extensive disease Review sun protection/ sunscreen uses and importance with family		
Alopecia areata	Can check TSH prior to referral for extensive disease/hair loss		
Infections	Prior to visit, culture for bacterial, viral or fungal, if able Treat, if appropriate, with oral agents		

Diagnosis/Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
Scabies	Treat with permethrin 5% cream; leave on 8-14 hours, then rinse off Repeat treatment in 1 week for anyone with active lesions All family members need to be treated at least once, even if no active disease		
Rashes	Trial of topical therapy based on working diagnosis	• If worsening or not improving with 1-2 weeks of trial of topical therapy, then refer	• Please include a differential diagnosis • Description of skin findings or photos with referral as this will help to triage more appropriately
Urticaria	**Will typically change referral to Allergy**		

Pediatric Endocrinology

Consult and referral guidelines

Helen DeVos Children's Hospital
Outpatient Center
35 Michigan Street NE

Outreach locations:
Lansing, Muskegon, St. Joseph, Traverse City

Healthy Weight Center at HDVCH
616.391.7999 Phone
616.391.8750 Fax
devoschildrens.org/healthyweightcenter

About Pediatric Endocrinology

We care for children and teens from birth to age 18.

Most common referrals

- Diabetes
- Short stature or failure to thrive
- Tall stature
- Obesity
- Precocious puberty
- Early childhood breast development in girls
- Delayed puberty
- Premature menses
- Congenital hypothyroidism
- Acquired hypothyroidism
- Acquired hyperthyroidism (Grave's Disease)
- Goiter/thyromegaly
- Calcium disorders
- Hypoglycemia
- Adrenal insufficiency

Resources

Fit Kids 360 | fitkids360.org
A comprehensive, healthy lifestyle program developed to fight childhood obesity, combining basic education about nutrition, behavior and exercise with a wide range of physical activities.

Nutrition counseling | Spectrum Health: 616.391.1875
Saint Mary's Health Services: 800.639.6366 | University of Michigan Metro Health: 616.252.4461

Services are offered in locations throughout West Michigan. A physician referral is required.
Insurance coverage varies.

Nutrition websites: eatright.org | kidshealth.org | nutrition.gov | choosemyplate.gov

Pediatric Endocrinology Appointment Priority Guide

Immediate	Contact HDVCH Direct at 616.391.2345 and ask to speak to the on-call endocrinologist and/or send to closest emergency department.
Urgent	Likely to receive an appointment within 2 days. Call HDVCH Direct and ask to speak to the on-call endocrinologist regarding an urgent referral.
Routine	Likely to receive an appointment within 14 days. Send referral via Epic Care Link, fax completed referral form to (616) 267-2401, or send referral through Holon.

Diagnosis/Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
Diabetes: New Onset Referral Immediate referral recommended New diagnosis education is offered 7 days a week Not all patients are admitted; we will assist with inpatient or outpatient management	History and exam: • Height, weight, BMI • Symptoms: history of excessive thirst or urination, weight loss, vomiting, abdominal pain, fatigue or other significant history HbA1c, urine and/or serum ketones, blood glucose (fasting, random)	• HbA1c ≥6.5% • Positive urine or blood ketones • In this case will often need lab work (HC03) • Fasting blood sugar ≥126 • Random blood sugar ≥200 with symptoms of diabetes	• Growth chart • Relevant lab studies • Previous physician notes
Diabetes: Transfer Referral Patients transferring diabetes care to HDVCH	History and exam: • Height, weight, BMI • Last known insulin regimen HbA1c, ketones, blood sugar (fasting, random)	• Signs of insulin resistance or conditions associated with insulin resistance (acanthosis nigricans, hypertension, dyslipidemia, polycystic ovarian syndrome) • Previous DX T1/T2DM	• Growth chart • Relevant lab studies • Previous physician notes
Short Stature or Failure to Thrive Please consider a referral to Nutritional Services or Intensive Feeding Program in a child with poor weight gain in the face of normal linear growth (exceptions are infants with midline abnormalities or males with hypospandias or cryptorchidism)	History and exam Note: Linear growth is better evaluated after age 2 TSH, Free T4, CMP, CBC, ESR, IGF-1, IGFBP3, Karyotype for Turners, 30 cell count (in all girls, Transglutaminase IgA, IgA level Radiology: bone age	• Strongly recommend referral if child is >2 years and growth velocity <4 cm a year for more than a year • If after age 3, crossing centile downward • Child is growing more than 2 centile lines below mid-parental height*, with a delayed bone age • Child is less than 3rd percentile in height *Boy mid-parental height in inches = (mother's height + father's height)/2 + 2.5 Girl mid-parental height in inches = (mother's height + father's height)/2 – 2.5	• Prior growth data/ charts • Relevant lab studies • Ask patient's family to bring bone age X-ray to clinic, if completed • Pertinent medical records • Results of any additional tests

Diagnosis/Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
Tall Stature	History and exam TSH, Free T4, CMP, CBC, IGF-1, Karyotype Radiology: bone age	• Child is >2 years and is greater than 97th percentile for height and greater than 2 centile lines above mid-parental height* • Child is >2 years and progressively crossing centiles for height *See previous entry for mid-parental height calculations	• Prior growth data/ charts • Relevant lab studies • Ask patient's family to bring bone age X-ray to clinic, if completed • Pertinent medical records • Results of any additional tests
Obesity We recommend a referral to endocrinology for children with BMI greater than 99th percentile and <3 years For children 3-17 years, consider a referral to HDVCH Health Optimization Center (616.391.7999) Before referral, please follow American Academy of Pediatrics guidelines for stage I and stage II obesity treatment.	History and physical Fasting CMP, HbA1c, UA, fasting lipid panel or non-fasting total and HDL cholesterol, • See co-management guidelines for lipids, screening of T2DM and PCOS • Not recommended: fasting insulin Formal nutritional consultation: • 3-5 day diet diary evaluation and calorie count • Ongoing continuity of care and follow-up with a nutritionist Establishment of a regular exercise regimen	• Highly suspected endocrine disorder • Secondary complications of endocrine disorder • Clear evidence of insulin resistance: HbA1c, acanthosis nigricans • Secondary causes of obesity (genetic syndromes such as Prader-Willi) are evident or strongly suspected • Poor linear growth or short stature in comparison with excessive weight gain • Short history (<12 months) of marked weight gain • History of brain injury, brain tumor, CNS disease • Suggestive phenotypic features: developmental delay, significant obesity beginning before 3 years • When an obesity-related complication is confirmed	• Prior growth data/ chart • Relevant lab studies • Pertinent medical records • Results of any additional tests

Diagnosis/Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
Precocious Puberty	History and exam (please include Tanner staging) FSH, testosterone (males and virilized females), estradiol, TSH, Free T4, DHEAS, 17 OH progesterone Radiology: bone age	• Breast development or pubic hair in girls <8 years • Testicular enlargement (3 cc or >2.5 cm), increased penile size or pubic hair in boys <9 years • Linear growth increasing, with advanced bone age	• Prior growth data/ charts • Relevant lab studies • Ask patient's family to bring bone age X-ray to clinic, if completed • Pertinent medical records • Results of any additional tests
Early Childhood Breast Development in Girls Palpable breast buds in girls less than 24 months is not uncommon and usually not of concern.	History and exam FSH, estradiol, TSH, Free T4, LH	• Progressing over time • Accelerated growth, linear velocity • Vaginal bleeding • Café au lait spots on physical exam (possible McCune-Albright syndrome)	• Prior growth data/ charts • Relevant lab studies • Pertinent medical records • Results of any additional tests
Delayed Puberty Chronic illness should be considered	History and physical exam CBC, ESR, CMP, TSH, Free T4 or T4 total, prolactin, LH, FSH, estradiol, testosterone: morning read (male), celiac screen Radiology: bone age	• For boys: no testicular enlargement by 14 years (4 ccs, 2.5 cms) • For girls: no breast development by 13 years, or no menses by 16 years, or no menses ≥4 years after onset of breast development • More than 6 months without a menstrual cycle	• Prior growth data/ charts • Relevant lab studies • Ask patient's family to bring bone age X-ray to clinic, if completed • Pertinent medical records • Results of any additional tests
Premature Menses Consider vaginal foreign body or trauma	History and exam FSH, prolactin, estradiol, TSH, Free T4 Radiology: pelvic ultrasound, bone age	• Vaginal bleeding in girls <10 years • Vaginal bleeding in any girls without signs of puberty	• Prior growth data/ charts • Relevant lab studies • Ask patient's family to bring bone age X-ray to clinic, if completed • Pertinent medical records • Results of any additional tests

Diagnosis/Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
Congenital Hypothyroidism Urgent referrals recommended Appointments within 24 hours	History and exam Thyroid function (TSH and Free T4)	• Abnormal newborn screen • Please follow instructions of the State of Michigan newborn screening program For questions, please call HDVCH Direct (616.391.2345) to be connected to on-call endocrinologist	• Thyroid function tests, including results from State of Michigan newborn screening program and any other labs obtained • Birth history, gestational age, weight and height
Acquired Hypothyroidism If thyromegaly, please see referral guidelines for goiter	History and exam TSH, if elevated TSH, TPO will provide autoimmune study, Free T4 Please see co-management guidelines for details regarding lab level decision-making	• If TSH is elevated and free T4 is normal, please see co-management guidelines • Refer if Free T4 is low No referral is necessary: • If TSH and Free T4 are normal – even if thyroid antibodies are positive – but, consider repeating labs in 3-6 months • If normal TSH and elevated TPO	• Prior growth data/ charts • Pertinent medical records • Relevant lab studies, including thyroid peroxidase antibody, if obtained • Thyroid scan and ultrasound is not needed, but please provide if obtained • Results of any additional tests
Acquired Hyperthyroidism (Grave's Disease) Goiter is not always present Appointments available within 24 hours	History and exam TSH, Free T4, Total T3, thyroid stimulating immunoglobulin, thyroid binding inhibitory Radiology: thyroid scan, ultrasound	• Suppressed TSH • Elevated T4: Total or Free • Elevated T3: Total or Free	• Prior growth data/ charts • Pertinent medical records • Relevant lab studies • Results of any additional tests
Goiter/ Thyromegaly	History and exam Thyroid function (include TSH and Free T4; Total T3 may be helpful if TSH is suppressed and Free T4 is normal), thyroid peroxidase antibody	• Abnormal thyroid function tests • Palpable nodules or asymmetry • Increasing in size • Causing discomfort	• Prior growth data/ charts • Pertinent medical records • Relevant lab studies • Results of any additional tests

Diagnosis/Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
Calcium Disorders Consider urgent referral for symptomatic hypocalcemia, hypercalcemia, total calcium <7mg/dl or >12 mg/dl, ionized calcium <0.9 mmo/L or >1.6 mmo/L	History and exam CMP, ionized calcium, phosphorus, magnesium, PTH, 25-OH Vitamin D, 1,25 OH Vitamin D, urine Ca/Cr, skeletal survey for Rickets	• Low or elevated calcium • Elevated phosphorus • Evidence of Rickets with a normal or elevated 25 OH Vitamin D Note: Nutritional Rickets is a common disorder that can be managed by the primary care provider. No referral or DEXA scan is required. We are available to assist with questions or concerns.	• Prior growth data/ charts • Relevant lab studies • Ask patient's family to bring bone age X-ray to clinic, if completed • Pertinent medical records • Results of any additional tests
Hypoglycemia Note: The definition of hypoglycemia in infants and children continues to be controversial	History and exam Serum glucose; if possible, obtain the following critical sample at the time of hypoglycemia: venous serum glucose (not POC), insulin level, c-peptide, beta hydroxybutyrate, cortisol, growth hormone, free fatty acids, lactate, urine ketones	• Documented hypoglycemia (plasma glucose <50 mg/dl)	• Prior growth data/ charts • Relevant lab studies • Pertinent medical records • Results of any additional tests
Adrenal Insufficiency Urgent appointments available for new diagnosis and positive newborn screen	History and exam CMP, glucose, morning cortisol and ACTH (before 9am); if primary adrenal disease is suspected, consider also obtaining renin and aldosterone	• Low morning cortisol level	• Prior growth data/ charts • Relevant lab studies • Pertinent medical records • Results of any additional tests

Pediatric Gastroenterology

Consult and referral guidelines

Helen DeVos Children's Hospital
Outpatient Center
35 Michigan Street NE

Outreach locations:
Lansing, St. Joseph, Traverse City

About Pediatric Gastroenterology

We accept referrals for children up to age 18.

Most common referrals

- Abdominal pain
- Constipation/encopresis
- Diarrhea
- Vomiting
- GERD
- Suspected inflammatory bowel disease, celiac disease or eosinophilic esophagitis
- Elevated liver enzymes or cholestasis
- Failure to thrive
- Dysphagia/feeding problems
- Short bowel syndrome/intestinal failure

Pediatric Gastroenterology Appointment Priority Guide

Immediate	Contact HDVCH Direct at 616.391.2345 and ask to speak to the on-call gastroenterologist and/or send to the closest emergency department.
Urgent	Likely to receive an appointment within 2 days. Send referral via Epic Care Link, fax completed referral form to 616.267.2401, or send referral through Holon
Routine	Likely to receive an appointment within 10 days. Send referral via Epic Care Link, fax completed referral form to 616. 267.2401, or send referral through Holon

Diagnosis/ Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
Abdominal Pain	Diet modification: eliminate carbonated beverages, caffeine, gum chewing, and decrease intake of greasy or gas-producing foods, consider trial of dairy-free diet Consider: • Counseling to address potential stress/anxiety issues and to learn relaxation techniques • Trial of a probiotic • Trial of an antispasmodic (hyoscyamine or dicyclomine) • Trial of a stool softener (PEG 3350) If not improving with the above recommendations, consider CBC/differential, CRP, ESR, CMP, lipase, total IgA, transglutaminase antibody, include deamidated gliadin antibody if patient <3 years of age, urinalysis, fecal hemoccult x3. Would not recommend imaging unless lab abnormalities or symptoms suggest a more specific diagnosis.	For patients 0 to 4 years: • If persistent for more than two weeks, or if accompanied by persistent fever, diarrhea, vomiting, weight loss/growth failure or GI bleeding For patients >5 years: • If pain is persistent for more than 6 weeks and no improvement with conservative IBS management techniques, or if accompanied by persistent fever, diarrhea, vomiting, weight loss/growth failure or GI bleeding	• Growth chart • All lab and radiology reports • List of treatments tried

Diagnosis/ Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
Constipation/ Encopresis	Diet modification: decrease intake of dairy, increase intake of water/high fiber foods Colonic clean out*, if indicated, and then daily use of stool softener Behavioral techniques (regular toilet time/sticker chart system) If not improving with the above recommendations: • Consider KUB if needed to assess fecal load or if obstruction suspected. • Consider barium enema if Hirschsprung's Disease or neurogenic bowel suspected – MRI if concerned about tethered cord • Consider CBC/differential, CMP, TSH, total IgA, transglutaminase antibody, deamidated gliadin antibody if patient <3 years of age • Consider sweat chloride	• If not responding to standard bowel regimen, or accompanied by obstructive symptoms or urinary incontinence	• Growth chart • All lab and radiology reports • List of treatments tried
	Constipation Regimen Guidelines Colonic clean out*: • PEG 3350 one capful (17 gms) per year of age daily (maximum dose 14 capfuls/day) • Mix in Gatorade or other clear liquid, can mix 17 gms per 4 ounces of liquid for the duration of the clean out • Give daily for three consecutive days • Can stop clean out early if passing clear stools • Maintain a primarily clear liquid diet during clean out to obtain best results Maintenance: • PEG 3350 one capful (17 gms) daily mixed in 8 ounces clear liquid • Dose can be titrated by ½ capfuls as needed to achieve soft daily stools *Use caution to avoid dehydration during clean out in patients <2 years of age, with fixed fluid intake, or with renal disease.		

Diagnosis/ Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
Diarrhea	Trial of two-week dairy free diet and/or decrease clear liquids, caffeinated beverages and simple sugars If blood in stool, or if patient fails to respond to dietary management: • Fecal hemoccult x3, fecal lactoferrin or calprotectin, bacterial culture or enteric pathogen PCR, O&P (complete if patient is immunocompromised or has history of recent foreign travel), C. diff screen if patient >2 years of age, CBC/differential, CMP, CRP, ESR, total IgA, transglutaminase antibody, deamidated gliadin antibody if patient <3 years of age • Consider sweat chloride. • Consider fecal pancreatic elastase if there are growth concerns (weight or height)	• After infectious etiologies have been ruled out and appropriate dietary management has been initiated • And, if persistent for more than 2 weeks, or accompanied by blood in stool or associated weight loss/growth failure	• Growth chart • All lab and radiology reports • List of treatments tried
Vomiting	Consider trial H2 antagonist or proton pump inhibitor Consider CBC/differential, CRP or ESR, CMP, lipase, total IgA, transglutaminase antibody, deamidated, gliadin antibody if patient <3 years of age, urinalysis Although not routinely recommended, if you feel helicobacter pylori testing is necessary, obtain fecal h. pylori antigen or urease breath test not h. pylori serology Would **NOT** recommend helicobacter pylori testing in patients <1 year of age Consider KUB or UGI if anatomic etiology suspected	• If persistent for more than 2 weeks • If experiencing recurrent episodes more than four times per year • If accompanied by bilious emesis or hematemesis may need immediate referral to emergency department.	• Growth chart • All lab and radiology reports • List of treatments tried

Diagnosis/ Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
GERD	Conservative GERD measures (see NASPGHAN guidelines) Consider trial H2 antagonist or proton pump inhibitor if H2 antagonist not effective Consider UGI if dysphagia present or anatomic etiology suspected. https://naspghan.org/professional-resources/medical-professional-resources/reflux-gerd/	• If accompanied by weight loss or failure to thrive, respiratory symptoms, severe irritability in an infant or nonverbal patient, dysphagia, or pain despite observing conservative anti-reflux measures and using appropriate acid suppressive therapy. • If dependent on acid suppression for control of symptoms (has failed 2 or more attempts to wean acid suppression). • If accompanied by bilious emesis or hematemesis may need immediate referral to emergency department.	• Growth chart • All lab and radiology reports • List of treatments tried
Inflammatory Bowel Disease	Fecal hemoccult x 3, lactoferrin or calprotectin (calprotectin preferred, if a covered benefit), bacterial culture or enteric pathogen PCR (bacterial culture preferred if a covered benefit), O&P (complete if patient is immunocompromised or has history of recent foreign travel), C. diff screen if patient >2 years of age), CBC/differential, CMP, CRP, ESR, total IgA, transglutaminase antibody, deamidated gliadin antibody if patient <3 years of age Please do not initiate corticosteroid therapy for IBD before consulting with Pediatric Gastroenterology.	• Immediate referral: If inflammatory bowel disease is strongly suspected	• Growth chart • All lab and radiology reports • List of treatments tried
Elevated Liver Enzymes	Provided on a case-by-case basis In patients with BMI ≥95% or acute significant weight gain with mild elevation of transaminases (less than twice the upper limit of normal), initiate lifestyle modification strategies (most importantly elimination of sugar-sweetened beverages) and re-check in 1-6 months.	• Elevated liver enzymes (ALT greater than 44 for girls, 52 for boys) for over 1 month	• Growth chart • All lab and radiology reports • List of treatments tried

Diagnosis/ Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
Cholestasis	Provided on a case-by-case basis Initial ultrasound of the liver with doppler may be helpful if it can be performed promptly. Initial lab tests include: CMP **with direct bilirubin,** GGT, CBC, PT/INR	• Urgent referral: Any infant or child with cholestasis (elevated direct bilirubin, >20% of total bilirubin). Do not delay referral if labs are unable to be obtained. • Contact HDVCH Direct (616.391.2345) and ask for on-call gastroenterologist regarding any cholestatic infant.	• All prior lab testing including imaging studies • Growth chart • Previously obtained laboratory studies
Failure to Thrive	For infants, fortify calories in formula or supplement breast feeding with bottle feeding For toddlers and older children, supplement with Pediasure or equivalent formula Consult with a dietician Consider CBC/differential, CMP, CRP, ESR, TSH, total IgA, transglutaminase antibody, deamidated gliadin antibody if patient <3 years of age, sweat chloride, fecal pancreatic elastase, urinalysis	• If patient fails to respond to dietary modification Consider Pediatric Endocrinology referral	• Growth chart • All lab and radiology reports • List of treatments tried
Celiac Disease	Consider CBC/differential, CMP, CRP, ESR, total IgA, transglutaminase IgA antibody, include deamidated gliadin antibody if patient <3 years of age First degree relatives: Screen asymptomatic patients >3 years of age, or symptomatic patients <3 years of age. total IgA, transglutaminase IgA antibody, include deamidated gliadin antibody if patient <3 years of age Please do not initiate gluten free diet before consulting with Pediatric Gastroenterology	• If celiac antibody testing is positive	• Growth chart • All lab and radiology reports • List of treatments tried
Feeding Problems or Dysphagia	Obtain outpatient feeding evaluation and swallow study Consider esophagram Consider trial of H2 antagonist or PPI	• If patient fails to improve with feeding therapy and/or acid suppression • If esophagram demonstrates stricture or other abnormality	• Growth chart • All lab and radiology reports • List of treatments tried

Pediatric Hematology Oncology and Vascular Anomalies/ Malformations

Consult and referral guidelines

Pediatric Hematology Oncology Clinic referring provider line: 616.267.1908 (business hours)

Helen DeVos Children's Hospital
100 Michigan Street NE

Traverse City
217 South Madison Street

About Pediatric Hematology Oncology

We care for children and teens from birth to age 21.

Most common referrals

- Abnormal CBC results such as neutropenia, thrombocytopenia or anemia
- Abnormal WBC differential
- Refractory iron deficiency
- Hemolytic anemia, such as congenital spherocytosis
- Hemoglobinopathies including sickle cell disease and thalassemia
- Bone marrow failure conditions
- Cancers of all types
- Conditions predisposing to cancer including Fanconi anemia, von Hippel Lindau, hemihypertrophy, Li-Fraumeni, neurofibromatosis and others
- Lymphadenopathy
- Abnormal coagulation tests
- Bleeding disorders including hemophilia, other factor deficiencies, von Willebrand disease
- Hereditary thrombophilia including factor V Leiden mutation
- Hemangiomas: infantile and congenital
- Vascular anomalies and malformations
- Lymphedema

Pediatric Hematology Oncology Appointment Priority Guide

Immediate	During business hours, call referring provider line at 616.267.1908. After hours and on weekends, contact HDVCH Direct at 616.391.2345 and ask to speak to the on-call pediatric hematology oncologist. We will help decide if your patient should go to the emergency department or be seen immediately in our clinic.
Urgent	Likely to receive an appointment within 2 days. During business hours, call referring provider line at 616.267.1908. After hours and on weekends, call HDVCH Direct (616.391.2345) and ask to speak to the on-call pediatric hematology oncologist regarding an urgent referral.
Routine	Likely to receive an appointment within 10 days to 6 weeks. Send referral via Epic Care Link, fax completed referral form to 616.267.1005, or send referral through Holon.

Diagnosis/Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
Enlarged Lymph Node	**DO NOT, for any reason, give systemic steroids.** Detailed history paying attention to constitutional symptoms, weight loss/failure to thrive, musculoskeletal pain and exposure to cats Physical exam paying attention to weight/growth curve, all lymph node regions of neck, axilla and inguinal areas, abdominal exam for hepatosplenomegaly and bruising on skin exam If suspicion for malignancy is high, send to a hospital laboratory (not satellite lab): CBC with manual differential, CMP, LDH, phosphorus, uric acid. Obtain chest X-ray	• Urgent referral: Patient with large lymph nodes (>2 cm) without known infectious etiology, or firm, non-tender or matted lymph nodes. Those with abnormal labs may need to be seen immediately.	• Office notes • Any prior work-up including all laboratory studies and chest X-ray (if performed)
Concern for Acute Leukemia	**DO NOT, for any reason, give systemic steroids.** Detailed history paying attention to constitutional symptoms, weight loss/failure to thrive, musculoskeletal pain and complaints of enlarged lymph nodes. Physical exam paying attention to weight/growth curve, all lymph node regions of neck, axilla and inguinal areas, abdominal exam for hepatosplenomegaly, and bruising or pallor on skin exam. If suspicion is high, send to a hospital laboratory (not satellite lab): CBC with manual differential, CMP, LDH, phosphorus, uric acid. Consider chest X-ray	• Immediate referral: If there is concern for acute leukemia based on physical exam or laboratory findings. We will be glad to provide consultation and interpretation of tests and management guidance.	• Office notes • Any prior work-up, including all laboratory studies and chest X-ray (if performed)

Diagnosis/Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
Abdominal Mass	Detailed history paying attention to constitutional symptoms, weight loss/failure to thrive, abdominal pain and chronic constipation Physical exam paying attention to blood pressure, weight/growth curve, all lymph node regions of neck, axilla and inguinal areas, abdominal exam for hepatosplenomegaly and abdominal mass Abdominal ultrasound, CBC and CMP are good screening tests	• We will be glad to provide guidance about the most efficient and safest way to work up your patient (prior to referral) • If your index of suspicion is high for an abdominal mass, and your patient is being worked up as an outpatient, notify us prior to scheduling diagnostic imaging or triaging to the ER so we are prepared to act upon the results or ER notification. These patients are seen on an immediate or urgent referral basis.	• Office notes • Any prior work-up, including all laboratory studies
Extremity Mass	Detailed history paying attention to constitutional symptoms, weight loss/failure to thrive, pain and inability to bear weight Physical exam paying attention to weight/growth curve, all lymph node regions and extremity exam Plain X-ray films of limbs above and below the area of pain are a good initial step. This should be followed up with MRI of the extremity with and without contrast when index of suspicion is high. If sedation is required, consider chest X-ray PA/lateral to evaluate airway and look for lung disease prior to MRI.	• We will be glad to provide guidance about the most efficient and safest way to work up your patient (prior to referral) • Pediatric patients with an extremity mass are often referred to Spectrum Health Orthopedic Oncology at Lemmen-Holton Cancer Pavilion. We can help facilitate that referral. These patients are seen on an urgent referral basis.	• Office notes • Any prior work-up including all laboratory studies

Diagnosis/Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
New Cranial Nerve Palsy, Onset of Weakness, Lethargy (concern for hydrocephalus)	Detailed history paying attention to constitutional symptoms, weight loss/failure to thrive, headache, seizures, decline in school performance and history of NF-1. Physical exam paying attention to weight/growth curve, complete neurologic exam and vision	• We will be glad to provide guidance about the most efficient and safest way to work up your patient (prior to referral). In many cases, referral to the emergency department is most appropriate. • If your index of suspicion is high for an intracranial mass, and your patient is being worked up as an outpatient, we would be grateful for advance notification prior to scheduled radiology imaging or triage to the ER. This helps us to make quick schedule changes in those challenging situations where we are asked to meet a patient in the ER or radiology waiting room. These patients are seen on an immediate or urgent referral basis.	• Office notes • Any prior work-up including all laboratory studies
Overgrowth Syndromes including hemihypertrophy (hemihyperplasia), Beckwith Weidemann, Sotos syndrome, Megalencephaly Capillary Malformation syndrome, others	These children have a small increased risk for embryonal tumors of childhood such as Wilms tumor, neuroblastoma, hepatoblastoma and adrenal corticocarcinoma Consider ordering abdominal ultrasound prior to consultation visit	• Routine referral: We will generally follow these children until 8 years of age	• Office notes • Any prior work-up
Familial Cancer Syndromes including Li-Fraumeni, von Hippel Lindau, Lynch syndrome, Familial Adenomatous Polyposis syndrome	Referral to Medical Genetics for appropriate counseling and screening test	• Routine referral: After confirmed diagnosis of familial cancer syndrome (even if the child has no personal history of cancer) we will discuss and provide a cancer screening regimen specific to the familial cancer syndrome.	• Office notes • Any prior work-up

Diagnosis/Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
Conditions Associated with Bone Marrow Failure	Detailed history Physical exam paying particular attention to microcephaly, features of VACTERL association, thumb anomalies and short stature Obtain CBC with manual differential, reticulocyte count	• Immediate or urgent referral: Those with significant pancytopenia as leukemia is also in the differential diagnosis.	• Office notes including growth charts • Any prior work-up
Normocytic Anemia (low hemoglobin with normal MCV)	Detailed history Peripheral smear (manual differential acceptable too), reticulocyte count, direct Coombs, CMP Note: retic count, and direct Coombs can be added to specimen in lab when CBC results show normocytic anemia.	• We will be glad to provide consultation and interpretation of tests and management guidance • Immediate referral: Patients with positive Coombs test	• Office notes • Any prior work-up including all laboratory studies
Macrocytic Anemia (low hemoglobin with high MCV)	Detailed history including diet Peripheral smear (manual differential acceptable too), reticulocyte count, TSH with reflexive T4, RBC folate, B12 level, CMP	• We will be glad to provide consultation and interpretation of tests and management guidance • All patients should be referred for routine consultation. Some patients may require bone marrow aspiration and biopsy to evaluate for marrow failure or myelodysplastic syndromes.	• Office notes including growth charts • Any prior work-up including all laboratory studies

Diagnosis/Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
Microcytic Anemia (low hemoglobin with low MCV)	Detailed history, especially diet history (quantitation of cow's milk), menstrual history and any GI symptoms Labs: Ferritin, TIBC and serum iron. Consider stool for hemoccult if appropriate. Trial of oral iron replacement 3 mg/kg of elemental iron given once daily; discontinue cow's milk	• We will be glad to provide consultation and interpretation of tests and management guidance • Immediate or urgent referral: Patients with hemoglobin less than 7g/dL, depending on patient factors • Routine referral: Patients with lack of response to oral iron supplementation after 2 weeks, ensuring medication adherence • Males and non-menstruating females above 2 years with iron deficiency anemia without excessive milk intake but with normal iron absorption will likely need referral to Pediatric Gastroenterology for possible inflammatory bowel disease	• Office notes • Any prior work-up including all laboratory studies
Sickle Cell Disease (Hemoglobin SS, hemoglobin SC or sickle beta thalassemia)	Send confirmatory hemoglobin fractionation (not electrophoresis) Immediately start penicillin VK: • 125 mg twice daily for child <3 years • 250 mg twice daily for child >3 years	• All patients should be referred and will be seen for routine consultation	• Office notes • Newborn screening results
Hemoglobinopathy Trait including Sickle Cell Trait; Isolated Hemoglobin C Trait or hemoglobin E Trait (without concomitant thalassemia or sickle cell)	Patients with hemoglobinopathy trait do not need ongoing care from a hematologist	• One-time routine consultation to discuss inheritance, etc., is offered	• Office notes • Newborn screening results and/or hemoglobin fractionation
Alpha Thalassemia Trait or Beta Thalassemia Trait	Patients with thalassemia trait do not need ongoing care from a hematologist	• One-time routine consultation to discuss laboratory findings, inheritance and potential confusion with iron deficiency anemia is offered	• Office notes • Newborn screening results and/or hemoglobin fractionation

Diagnosis/Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
Newborn with Rh Sensitization	No additional work up needed beyond usual CBC/retic and bilirubin	• We like to see these patients prior to hospital discharge; inpatient consult should be requested. • Urgent referral: If born outside of HDVCH, refer so that monitoring plan can be put in place	• Office notes • Birth records, including laboratory studies
Newborn with ABO Incompatibility	No additional work up needed beyond usual CBC/retic and bilirubin	• At birth: Hemoglobin less than 12 g/dL • After discharge: Hemoglobin less than 10 g/dL	• Office notes • Birth records, including laboratory studies
Newborn with Family History of Hereditary Spherocytosis (HS)	CBC with manual differential, reticulocyte count. Consider bilirubin if jaundiced Osmotic fragility should not be sent in newborn period.	• We will be glad to provide consultation and interpretation of tests. • Newborn with anemia and hyperbilirubinemia and family history of HS should be referred within 2 weeks of hospital discharge. Patient will be seen for urgent or routine consultation depending on patient factors.	
Isolated Thrombocytopenia	Detailed history including maternal/gestational history if patient is a newborn, recent medication changes or immunizations. Physical exam paying attention to weight/growth curve, oral exam for petechiae, all lymph node regions of neck, axilla and inguinal areas, abdominal exam for hepatosplenomegaly and bruising/petechiae on skin exam. If no bruising and incidentally found, consider repeating CBC in case platelets were clumped. If patient has any associated symptoms, obtain CBC with manual differential, CMP, uric acid, LDH, Coombs test, blood type	• Platelets <20,000 will require immediate referral/probable hospitalization • Platelets >20,000 but <50,000 without other cytopenias will be seen on an urgent or routine basis depending on patient factors • Platelets >50,000 will be seen on a routine basis	• Office notes • Any prior work-up

Diagnosis/Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
Isolated Neutropenia	Detailed history including recent illness, history of infections/recurrent fevers, mouth sores, diarrhea, autoimmune disease, race/ethnicity Physical exam paying attention to weight/growth curve, any signs of infection, all lymph node regions of neck, axilla and inguinal areas, abdominal exam for hepatosplenomegaly CBC with manual differential. Consider repeating 1-2 weeks later to see if low absolute neutrophil count persists.	• Patients with neutrophils <500/uL (severe neutropenia) with fever **should be sent immediately to the ER, and will be hospitalized.** Contact us to assist with fast-tracking these patients in the ER. • Patients with neutrophils >500/uL but < 1000/uL with fever **should be sent immediately to the ER for treatment of fever and neutropenia, but will not necessarily be hospitalized.** Contact us to assist with fast-tracking these patients in the ER. • Routine referral: Patients with persistent neutropenia with ANC <1000/uL over at least 3-6 weeks may need referral. Phone consultation should be first step. • Patients with persistent neutropenia with ANC >1000/uL but <1500/uL may not necessarily require referral. Phone consultation should be first step.	• Office notes including growth charts • Any prior work-up
Excessive Bruising or Bleeding	Detailed bleeding history (bleeding with surgery including circumcision, epistaxis, bleeding gums, prolonged bleeding with tooth loss, excessive bruising, heavy menses); family history of bleeding Must assess for non-accidental trauma/need for CPS referral as appropriate Obtain PT/INR, PTT, fibrinogen, CBC with manual differential, von Willebrand antigen, von Willebrand ristocetin cofactor activity, factor 8 activity level	• Routine referral: child with bleeding history and prolonged PT, PTT; low fibrinogen, von Willebrand antigen, or von Willebrand ristocetin cofactor activity	• Office notes • Any prior work up

Diagnosis/Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
Isolated Prolonged PTT in non-hospitalized patient	Detailed bleeding history (bleeding with surgery including circumcision, epistaxis, bleeding gums, prolonged bleeding with tooth loss, excessive bruising, heavy menses); family history of bleeding Obtain repeat PTT as result could be spurious. If abnormal, and no bleeding history, consider repeating in 3-4 weeks as transient anti-phospholipid antibodies are common in children.	• Note that normal ranges differ for newborns and infants. We will be glad to provide consultation and interpretation of tests and management guidance. • Routine referral: Child with bleeding history and prolonged PTT confirmed on repeat measurement.	• Office notes • Any prior work-up
Isolated Prolonged PT or Combined Prolonged PT & PTT in non-hospitalized patient	Detailed bleeding history (bleeding with surgery including circumcision, epistaxis, bleeding gums, prolonged bleeding with tooth loss, excessive bruising, heavy menses); family history of bleeding Obtain repeat PT and aPTT as result could be spurious.	• Note that normal ranges differ for newborns and infants. We will be glad to provide consultation and interpretation of tests and management guidance • Routine referral: Child with bleeding history and prolonged PT or PT and aPTT confirmed on repeat measurement	• Office notes • Any prior work-up
Acute Thrombosis	Detailed family history of thrombosis, risk factors for thrombosis (modifiable and unmodifiable). If you are considering initiating anticoagulation prior to referral, please obtain the following labs: PT, aPTT, protein C activity, protein S activity and an antithrombin III activity level	• Immediate referral: Child with acute thrombosis should be directed to emergency department for further management. We will either consult (on a critically ill child) or admit the patient to our service	• Office notes • Any prior work-up

Diagnosis/Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
History of Familial Thrombophilia WITHOUT Active Thrombosis (factor V Leiden mutation, prothrombin G20210A mutation, antithrombin III deficiency, protein S deficiency, protein C deficiency)	Detailed family history of thrombosis, risk factors for thrombosis (modifiable and unmodifiable). Testing for thrombophilia is controversial but could be considered in high-risk patients (obesity, tobacco use, immobilization due to surgery) and those in whom oral contraceptives are being considered Avoidance of oral contraceptive pills is strongly recommended in patients with family history of thrombosis. Non-estrogen alternative should be considered.	• Routine referral: Child with familial risk factor for thrombosis can be seen for one time consultation to discuss laboratory findings, inheritance and risk reduction	• Office notes • Any prior work-up
Hemangioma	Birth history, time course in terms of initial appearance and growth pattern Physical exam paying particular attention to size (documenting dimensions), location, potential for organ compromise, ulceration and presence of petechiae or bruising If concern exists for bruises or petechiae, or non-traumatic bleeding from the vascular tumor, immediate evaluation for Kasabach-Merritt Syndrome should occur (CBC with manual differential, fibrinogen, PT, PTT) as KMS can be life threatening If electing to perform ultrasound of area prior to visit, please order ultrasound with doppler to assess blood flow For small, flat (<1 cm), non-ulcerated, superficial hemangiomas that are not near mucus membranes, topical Timolol may be an option. Please call to discuss.	• Urgent referral: child with vascular tumor in organ-threatening location (e.g., on face near eye, nose, mouth) or with significant risk or presence of ulceration. Note: infants with “port-wine stain” of face may have other associated anomalies that will require additional work-up. • Routine referral: child with vascular tumor in non-threatening location and without presence of ulceration. Note: infants with segmental hemangioma involving lower body may have other associated anomalies that will require additional work-up. • Not all children with infantile hemangiomas need to be referred. We will be glad to provide phone guidance to determine if consultation is warranted.	• Office notes • Any prior work-up

Diagnosis/Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
Capillary Malformation on Face in V1, V2 Distribution, High Risk for Sturge-Webber Syndrome	MRI brain should be ordered	• We do not generally care for these patients unless they have a capillary malformation in the context of an overgrowth syndrome. In the case of an overgrowth syndrome, routine referral should be made. • Otherwise, these patients should be referred to Pediatric Dermatology, Pediatric Ophthalmology and potentially Pediatric Neurology. If there is uncertainty in terms of diagnosis, we are happy to see the patient and make recommendations for referral.	
Vascular Anomaly, Vascular Malformation, **Lymphedema**	Birth history, time course in terms of initial appearance and growth pattern Physical exam paying particular attention to size (documenting dimensions), location, potential for organ or airway compromise, pain or acute swelling. Presence of petechiae, bruising, bleeding. Presence of limb length or girth discrepancy. Ultrasound with doppler of lesion prior to referral is helpful.	• Urgent referral: Infant or child with vascular malformation or lymphedema causing pain, with acute swelling or with signs/symptoms of cellulitis. • Routine referral: Infant or child with vascular malformation of limb without pain or acute growth.	• Office notes • Any prior work-up

Pediatric Infectious Diseases

Consult and referral guidelines

Helen DeVos Children's Hospital
Outpatient Center
35 Michigan Street NE

Lansing
3960 Patient Care Drive, Suite 113

About Pediatric Infectious Diseases

We care for children and teens from birth to age 18.

Most common referrals

- Chronic or recurrent infections
- Chronic or recurrent fevers
- Recurrent sinopulmonary or otitis infections
- Immunodeficiency evaluation and care
- Chronic Hepatitis B management
- Hepatitis C (chronic infection management and evaluation of infants born to Hepatitis C-positive mothers)
- HIV management and care (including care for infected children, perinatal evaluation and non-occupational postexposure prophylaxis [nPEP])
- Histoplasmosis
- Lyme Disease
- Recurrent MRSA infections
- Travel Medicine Clinic
- Adoption counseling for adoptees with HIV, Hepatitis B or Hepatitis C

Pediatric Infectious Diseases Appointment Priority Guide

Immediate	Contact HDVCH Direct at 616.391.2345 and ask to speak to the on-call infectious diseases physician and/or send to the closest emergency department.
Urgent	Likely to receive an appointment within 2 days. Call HDVCH Direct and ask to speak to the on-call infectious diseases physician regarding an urgent referral.
Routine	Likely to receive an appointment within 7 days. Send referral via Epic Care Link, fax completed referral form to 616.267.2301, or send referral through Holon.

Diagnosis/Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
General Referrals			• Records including growth chart, immunizations, previous cultures with sensitivities, CBC and radiographic studies
Chronic or Recurrent Infections	Detailed history of infectious history, IgG (subclasses note recommended), IgA, IgM levels, CBC, culture results		See General Referrals • Antibiotic courses given • Any positive family history for immune deficiencies
Chronic or Recurrent Fevers	Detailed history of fever episodes with associated symptoms/signs, fever log, CRP, ESR and culture results (while febrile and afebrile)	• Ongoing fevers for more than 3 episodes, or concerning associated symptoms	See General Referrals • Antibiotic courses given • Any positive family history for periodic fevers
Recurrent Sinopulmonary or Otitis Infections	Evaluation for atopy, cultures and sensitivities IgG, IgA and IgM levels	• Consider ENT evaluation before referral or concurrently	See General Referrals • Antibiotic courses given • ENT, Pulmonology and/or Allergy notes
Immunodeficiency, evaluation and care	IgG, IgM and IgA levels, CBC with differentials Documentation of infections with unusual or opportunistic organisms (pneumocystis jiroveci pneumonia, mycobacterium, candida infections in older children)	• If there is recurrent or persistent infections, an unusual organism causing infection, severe course of a typically mild infection, or family history of immunodeficiency. • If the newborn screen for SCIDS is positive, immediately call HDVCH Direct (616.391.2345) and ask for the on-call allergist/immunologist. If they cannot be reached, ask for the on-call infectious diseases physician.	• See General Referrals • Immunoglobulin levels • FISH 22q11 if DiGeorge • Any flow cytometry results (if performed)

Diagnosis/Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
Chronic Hepatitis B Management	Hepatitis B viral load, Hepatitis B antigen/antibody, complete metabolic profile, alpha fetoprotein level, CBC, Hepatitis C testing, HIV testing	• When a pediatric patient is identified as having positive Hepatitis B	See General Referrals • Previous or current antiviral therapy • Adoption or refugee papers (if an international immigrant) • Any liver ultrasound studies
Mom with Diagnosis of Hepatitis C	Hepatitis C viral load and HIV testing of mother		
Chronic Hepatitis C Management	After the child has been identified as having Hepatitis C: Hepatitis C viral load, Hepatitis C antibody, complete metabolic profile, alpha fetoprotein level, CBC, hepatitis B testing, HIV testing Nucleic acid viral load if child is <18 months	• When a pediatric patient is identified as having positive Hepatitis C, or was born to a Hepatitis C-positive mother	See General Referrals • Any liver ultrasound studies
HIV Management **Care for infected children**	Labs: HIV antibody, HIV viral load, CD4 count, CBC with differential, complete metabolic profile	• When a pediatric patient is identified as having HIV, including international adoptees and refugees	• Initial management labs • Previous and current antivirals • Prior or current opportunistic infections • Developmental status • Psychiatric comorbidities • Nutritional status
Perinatal evaluation	Labs: HIV DNA or RNA, PCR, CBC with differential, complete metabolic profile	• When an infant is born to a mother with known or suspected HIV infection	• Maternal HIV testing results • Maternal treatment history • History of maternal comorbidities

Diagnosis/Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
Non-occupational post-exposure prophylaxis (nPEP)	Labs: HIV antibody, CBC with differential, complete metabolic profile, Hepatitis C antibody, Hepatitis B surface antibody, Hepatitis B surface antigen	• When a child is exposed to blood or body fluids (including sexual assault) that is potentially contagious for HIV, as well as Hepatitis B and/or C	• Prior testing results for HIV, Hepatitis B, Hepatitis C, Hepatitis B vaccine receipt • Time of exposure
Pre-exposure prophylaxis (PrEP)	Labs: HIV antibody, CBC with differential, complete metabolic profile	• When an HIV-negative adolescent or teenage has increased risk of HIV infection, and desires preventative medication	• Prior testing results for HIV and sexually transmitted infections
Histoplasmosis	Histoplasma serologies, Histoplasma urine antigen, complete metabolic profile, chest X-ray and/or thoracic CT scan	• If symptomatic for more than 1 month or has pulmonary nodules	See General Referrals • Chest radiographic studies • Histoplasma labs
Lyme Disease	First, Lyme Disease Serology screen Second, confirmatory IgG and IgM Western Blot results (HDVCH currently sends to Mayo Clinic) If patient has Erythema migrans bullseye rash, and reasonable exposure history, testing does not need to be performed and treatment should be given immediately	• Treated patients without symptoms do not need to be referred • Refer to AAP Redbook for recommended antibiotic treatment • Patients with ongoing or recurrent symptoms after initial treatment should be referred	See General Referrals • Lyme testing results from a laboratory that uses FDA-approved assays • Previous treatment courses
Recurrent MRSA infections	Culture of abscess material with sensitivities, treatment with Bactrim or clindamycin Refer to AAP website for bleach bath protocol	• When patient has multiple infections in a short period of time or if multiple family members are having infections	See General Referrals • Culture results with sensitivities

Diagnosis/Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
Travel Medicine Clinic	None	• When children, adolescents, teens and even parents will be traveling abroad • We care for the whole family and can accommodate travelers with special needs and chronic health conditions	• List of prior vaccinations, including routine and travel vaccines • Anticipated travel destinations and dates of travel; it is preferable to be seen 6 to 8 weeks before arrival in country for travel immunizations to be effective • The cost of visits is not covered by insurance and will need to be paid out of pocket. Many vaccines will need to be paid out of pocket.
Adoption Counseling for adoptees with HIV, Hepatitis B or Hepatitis C	Parents considering adoption of a child with one of these infections can have a meeting with a Pediatric Infectious Diseases physician to review available medical records We will also discuss treatment options, prognosis and long-term care issues	• When a potential adoptee with one of these conditions is being considered	• Any medical records that were provided by the adoption agency • The cost of these visits is not covered by insurance and will need to be paid out of pocket.

Pediatric Medical Genetics

Consult and Referral Guidelines

25 Michigan Street NE

About Pediatric Medical Genetics

We see both pediatric and adult patients. In many cases, our initial evaluation of the patient will result in testing/evaluation of multiple family members, as genetic testing results often have a wide-reaching impact.

Most common referrals

- Known/suspected genetic conditions such as Down syndrome, Noonan syndrome, Turner syndrome, etc.
- Single/multiple congenital anomalies and dysmorphic features
- Counseling for previous genetic testing results
- Family history of a genetic condition
- Neurodevelopmental disorders, such as autism spectrum disorders, intellectual disabilities/cognitive disabilities and developmental delays
- Neurologic conditions, including cerebral palsy, hyper/hypertonia, muscular dystrophies, ataxias and seizure disorders where individuals appear syndromic or have additional health/developmental concerns
- Cardiovascular disease, including congenital heart defects, cardiomyopathy, long QT syndrome, arrhythmias
- Abnormal growth, including short stature/growth restriction, overgrowth and hemihypertrophy/hemihyperplasia
- Fetal alcohol spectrum disorders
- Preconception counseling

Pediatric Medical Genetics Appointment Priority Guide

Immediate **Urgent** **Routine**	A genetics physician is on call 24/7 and can be reached by PerfectServe, Epic in basket, email or by calling our main medical genetics clinic phone number (616.391.2700) during business hours or by calling HDVCH Direct (616.391.2345) after hours or weekends. A genetic counselor is on call during business hours and can be reached by calling our main medical genetics clinic phone number.

Diagnosis/Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
General	We typically do not recommend ordering genetic or other testing prior to referral. We will order or recommend studies pre- or post-evaluation if appropriate. If referring providers wish to begin studies or discuss this prior to the initial appointment, please contact our team for assistance.	• Family member with confirmed genetic disorder • Suspicion of a genetic disorder in patient without previously diagnosed family member	• All previous genetic testing results (for patient, or for family member if referral is for family history of genetic condition) • Family history, including specific name of the condition of concern and which family member(s) is affected • Specific condition of concern • Clinic notes from other subspecialty evaluations not viewable in Epic. • Relevant lab and/or imaging results. • Relevant neuropsychological evaluation reports. • Growth charts

Indications we do not routinely see in our office

- Personal or family history of cancer
- Testing for an asymptomatic pediatric patient for adult-onset conditions or carrier status
  Examples of this include certain types of muscular dystrophy, Huntington's disease, etc. Find details here (will have LINK).
- Ehlers-Danlos Syndrome (EDS), hypermobile type. Find details here (will have LINK).
- Personal or family history of Alzheimer's disease, when age of onset is greater than 50 years of age. Find details here (will have LINK).
- MTHFR testing or counseling of previous abnormal results with the exception of homocystinuria caused by MTHFR mutations (typically presenting in infancy). Find details here (will have LINK).
- Testing for personal or family history of autoimmune conditions, such as multiple sclerosis, HLA-B27 testing, lupus, arthritis, etc. Find details here (will have LINK).

Spectrum Health and Helen DeVos Children's Hospital have other specialty clinics for some genetic disorders and certain patient types and indications. If there is any uncertainty about where to refer a patient, please contact our main medical genetics clinic for assistance at 616.391.2700.

For pregnancy-related genetic concerns (e.g., family history of genetic disorder, abnormal prenatal screening) refer to Spectrum Health Maternal Fetal Medicine clinic: 616.391.3681.

For pediatric patients **affected** with cancer or other features of a potential hereditary cancer condition (e.g., familial adenomatous polyposis, Cowden syndrome, Gorlin syndrome, Li-Fraumeni syndrome, juvenile polyposis syndrome, retinoblastoma, Peutz-Jeghers syndrome, MEN1, MEN2, hereditary paraganglioma-pheochromocytoma syndrome), refer to Spectrum Health Cancer Genetics clinic: 616-486-6218.

For **unaffected** pediatric patients with a known family history of an adult-onset hereditary cancer condition (e.g., BRCA-related hereditary breast and ovarian cancer syndrome, Lynch syndrome), genetic testing is often deferred until the patient is 18 or older, as cancer screenings would not begin during childhood. However, if there are uncharacteristically young cancers in the family (diagnosed at age 28 or younger), referral to Spectrum Health Cancer Genetics clinic and consideration of genetic testing for these (usually) adult-onset conditions is appropriate.

For **unaffected** pediatric patients with a family history of cancer, referral of parent(s) to Spectrum Health Cancer Genetics clinic is recommended to identify or rule out hereditary cancer risk to their child.

For metabolic, biochemical and mitochondrial genetic conditions or inborn errors of metabolism refer to Helen DeVos Children's Hospital Biochemical Genetics clinic: 616.486.9830

For abnormal newborn screen results, the patient's results report will indicate the appropriate contact specific to the abnormality. For questions pertaining to newborn screening, please contact the Helen DeVos Children's Hospital Biochemical Genetics clinic: 616.486.9830

Other specialty clinics

- For adult patients with hypertrophic cardiomyopathy (HCM) to consider genetic testing or for first degree relatives of someone with HCM for cardiac surveillance and/or genetic testing recommendations, refer to Spectrum Health Cardiovascular Medicine HCM Clinic: 616.885.5192
- For patients with suspected or confirmed in utero alcohol exposure or suspected Fetal alcohol spectrum disorder (FASD), refer to HDVCH Medical Genetics FASD Clinic: 616.391.2700
- For patients with suspected or confirmed spinal muscular atrophy, Charcot Marie Tooth Disease or Duchenne muscular dystrophy, refer to the HDVCH Neuromuscular Clinic: 616.267.2500
- For patients with suspected or confirmed genetic epilepsy not requiring a dysmorphology exam, refer to HDVCH Epilepsy Genetics Clinic: 616.267.2500
- For patients with suspected or confirmed cystic fibrosis, refer to HDVCH pulmonology clinic and cystic fibrosis care center: 616.267.2200
- For pediatric patients with suspected or confirmed cardiomyopathy or arrhythmia or a family history of cardiomyopathy or arrhythmia, refer to HDVCH cardiogenetics clinic: 616.267.9150
- For patients with oral clefts, refer to the HDVCH oral cleft clinic coordinated by Pediatric Plastic Surgery: 616.486.5885
- For patients with suspected or confirmed Huntington's disease, refer to Medical Genetics clinic: 616.391.9007
- For adult patients with suspected or confirmed Neurofibromatosis type 1, refer to HDVCH Neurofibromatosis Clinic: 616.391.2414
- For pediatric patients with suspected or confirmed Neurofibromatosis type 1, refer to HDVCH Pediatric Neurology clinic: 616.267.2500
- For patients with suspected or confirmed Tuberous Sclerosis, refer to HDVCH Pediatric Neurology clinic: 616.267.2500

Pediatric Nephrology

Consult and referral guidelines

Helen DeVos Children's Hospital
Outpatient Center
35 Michigan Street NE

Outreach locations:
Kalamazoo, Lansing, Reed City, St. Joseph, Traverse City

About Pediatric Nephrology

We care for children and teens from birth to age 21.

Most common referrals

- End-stage renal disease/dialysis/transplant care
- Congenital renal disease (i.e., dysplasia, obstructive uropathy, hydronephrosis, including abnormal prenatal imaging/prenatal consult)
- Glomerular Disorders (glomerulonephritis, proteinuria)
- Nephrotic syndrome
- Recurrent UTIs/reflux nephropathy
- Enuresis/voiding dysfunction
- Polyuria/polydipsia
- Electrolyte Imbalance/metabolic acidosis/RTA
- Hypertension
- Nephrolithiasis
- Genetic renal disease (i.e., cystinosis, Lowe syndrome, etc.)

Pediatric Nephrology Appointment Priority Guide

Immediate	Contact HDVCH Direct at 616.391.2345 and ask to speak to the on-call nephrologist and/or send to the closest emergency department.
Urgent	Likely to receive an appointment within 2 days. Call HDVCH Direct and ask to speak to the on-call nephrologist regarding an urgent referral.
Routine	Likely to receive an appointment within 10 days. Send referral via Epic Care Link, fax completed referral form to (616) 267-2401, or send referral through Holon.

Diagnosis/Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
ESRD/Dialysis/ Transplant		• Immediate referral: Call HDVCH Direct (616.391.2345) and ask to speak to on-call nephrologist	• Comprehensive records
Electrolyte Imbalance or Abnormalities		• Any abnormalities, call HDVCH Direct (616.391.2345) with questions or concerns • We will be glad to provide consultations and interpretation of tests and management guidance	• Imaging and laboratory data, growth charts
Enuresis	R/o constipation, consider polyuria or OSA UA, behavioral modifications, consider bedwetting alarm or DDAVP trial	• After 6 months of failed behavioral modifications • Patients with non-psychogenic polydipsia and polyuria, especially if water deprivation test may need to be considered • Immediate referral: Any secondary without a psychosocial trigger	• Laboratory data including all urine results • Any prior ultrasound images – please send CD if not in PACS
Glomerular Disorders Microscopic hematuria – UA with 5RBC/HPF AND/OR protein/ creatinine >0.2 mg/mg on random (ideally first AM) analysis	(Ideally first morning) void for protein/creatinine ratio – no need to order 24-hour urine collection. Renal panel, C3, C4, CBC, random urinary calcium/ creatinine ratio	• Would encourage referral with any signs of glomerulonephritis and urgent with concurrent hypertension/edema and or renal dysfunction	• All laboratory data
Henoch Schonlein Purpura	See co-management guidelines		• All laboratory data
Hydronephrosis Congenital by prenatal ultrasound or found on any postnatal renal ultrasound	See co-management guidelines		• Any prior work-up including renal ultrasounds and maternal prenatal imaging
Hypertension	See co-management guidelines	• Immediate referral: If symptomatic, call HDVCH Direct (616.391.2345) and ask to speak to on-call nephrologist	• Any imaging and laboratory data
Kidney Stones and Hypercalciuria As defined by renal ultrasound or CT/ suggestive history	Renal ultrasound Strongly discourage use of CT scan as follow-up If stone is retrieved, pursue analysis	• Immediate referral: If symptomatic, strongly consider Urology evaluation initially and Nephrology follow up for metabolic workup and chronic management	• Any prior work-up including renal ultrasounds if done (please send CD) and urine studies

Diagnosis/Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
Gross Hematuria	Renal ultrasound, UA, urine protein/creatinine and calcium/creatinine ratios CMP, complete blood count, phosphorus, C3, C4, strep screen if appropriate	• Immediate referral: Call HDVCH Direct (616.391.2345) and ask to speak to on-call nephrologist	• Any prior work-up including renal ultrasounds if done (please send CD) and urine studies
Recurrent UTIs	Renal ultrasound	• Any time with recurrent urinary tract infections	• Any prior work-up including renal ultrasounds if done (please send CD) • Any prior culture results with sensitivities; urinalysis with method in which urine was obtained

Pediatric Neurodevelopmental

Consult and referral guidelines

About Pediatric Neurodevelopmental

We care for children and teens from birth to age 18.

Most common referrals

- Dysphagia gia, feeding problems
- Syndromic children with developmental delays
- High-Risk NICU follow-up
- Infant and early childhood development
- Cerebral palsy
- Gastrostomy or other tube feeding management
- Feeding (calories, tips for formula changes, etc.)
- Sleep and other day-to-day care issues in children with delays or disabilities

Pediatric Neurodevelopmental Appointment Priority Guide

Immediate	Contact HDVCH Direct at 616.391.2345 and ask to speak to the on-call neurodevelopmental provider and/or send to the closest emergency department.
Urgent	Likely to receive an appointment within 2 days. Send referral via Epic Care Link, fax completed referral form to (616) 267-2401, or send referral through Holon.
Routine	Likely to receive an appointment within 1-4 weeks. Send referral via Epic Care Link, fax completed referral form to (616) 267-2401, or send referral through Holon.

Diagnosis/Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
Dysphagia, Feeding Problems including need for tube feeding	Refer for oromotor assessment (speech or occupational therapy; varies in different centers) Consider videofluoroscopic swallowing study	• Concerns not address by prior assessment • Coordinated management with other HDVCH specialists	• Therapy and swallow study reports
Syndromic Children with Developmental Delays	Genetic testing Metabolic labs Refer to Early On		
High Risk NICU Follow-up Babies born at less than 31 weeks gestational age Hypoxic ischemic encephalopathy or other brain abnormality Feeding problems	Refer to Early On	• First visit at 3 months adjusted age	• NICU discharge summary for babies outside of HDVCH
Infant and Early Childhood Developmental Delays	Early On/Intermediate School District referral No other pre-evaluation is recommended	• For consultation	
Language Delay	Refer to Early On Refer to Speech Therapy	• If no improvement with therapy If has associated problems (dysmorphic features, delay in other areas)	
Cerebral Palsy	As appropriate to child's picture	• Assistance with diagnosis, counseling, early therapy management or later management • Early and later management to include feeds, therapies and associated conditions	

Other Referral Recommendations

- **Autism**
  Good first referral sources:
  - Community Mental Health if covered by Medicaid
  - Autism Assessment Clinic if covered by commercial insurance

  Insurance often requires a diagnosis of autism for coverage of related care. CMH and the Autism Assessment Clinic can provide a diagnosis. These centers also assist with coordinating referrals. Our team can serve as a resource after the initial visit to CMH or the Autism Assessment Clinic.
- **Significant Behavioral Concerns**
  Refer to Pediatric Behavioral Health, depending on nature and severity of the concern
- **ADHD and/or Learning Disabilities**
  Refer to Pediatric Behavioral Health if unresolved with school testing
- **Tics** - Refer to Pediatric Neurology if consultation desired
- **Advanced Spastic Cerebral Palsy**
  Consider Cerebral Palsy Clinic

Pediatic Neurology

Consult and Referral Guidelines

Helen DeVos Children's Hospital
Outpatient Center
35 Michigan Street NE

Outreach locations:
Marquette
580 West College Avenue

Traverse City
550 Munson Avenue, Suite 202

About Pediatric Neurology

We see children and teenagers from birth to age 18s.

Most common referrals

- Seizures (first-time seizures, epilepsy and further evaluation of undiagnosed "spells")
- Migraine and tension headaches
- Nerve and muscle disorders such as muscular dystrophies, inherited neuropathies, myasthenia gravis, hyperCKemia.
- Movement disorders (tics, Tourette syndrome, tremors and chorea)

Notes

- Please ensure the patient has been seen in your office for the complaint in question prior to referring to neurology so that an accurate description and confirmation of the concern is available.
- We prefer to look at all EEGs ourselves during the visit. If your patient has an EEG from a non-Spectrum Health facility, we ask that the patient obtain a CD that includes all their EEGs and bring them to our office visit. If no EEG has been conducted, we can often schedule an EEG on the same day as an appointment.

Pediatric Neurology Appointment Priority Guide

Immediate	Contact HDVCH Direct at 616.391.2345 and ask to speak to the on-call neurologist and/or send to the nearest emergency department.
Urgent	Likely to receive an appointment within 7 days. Call HDVCH Direct, the practice, or use Perfect Serve to request an urgent appointment.
Routine	Some diagnoses may have a XX scheduling timeline. Send referral via Epic Care Link, fax completed referral form to (616) 267-2401, or send referral through Holon.

Diagnosis/Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
Spells/Seizure	Detailed history of event EEG Consider MRI brain without contrast if developmentally delayed (preferably at HDVCH) Have parents video events	• Unprovoked seizures • Recurrent events or parental education needed	• Detailed description of event or reason for referral • Any prior work-up • Head circumference • Growth charts
Breath Holding Spells Episodes of crying followed by color change, loss of tone/ consciousness and occasionally seizure-like movements	Consider EKG if atypical BHS CBC and ferritin	• If episodes do not follow typical sequence – 3 months to 3 years - and no antecedent crying	• Detailed history of spells • Head circumference • Growth charts
Febrile Generalized tonic-clonic convulsion associated with fever (>101° F) in an otherwise neurologically normal child (6mo – 6yrs) with no prior afebrile seizures.	If Simple Febrile, no focal features, <15 mins, then no additional workup required Parental reassurance Education regarding diagnosis	• Complex Febrile, focal features, recurrent, >15 mins • Developmental delay, neurological abnormalities or development of non-febrile seizures, positive family medical history for epilepsy	• All previous workup results • Head circumference • Growth charts
Tics/Tourette Spectrum Movement is repetitive, quick, brief and typically worsens with stress, anxiety or excitement Vocal component is similarly repetitive and may include cough, snort, bark, sniff, throat clearing (among others) Tourettes: Tics are common, with motor and vocal components appearing for a year or more	None required Parental education regarding diagnosis and reassurance ASO titer is not indicated Monitor for common co-morbidities: anxiety, OCD and depression As a general rule, stimulants may be used in epilepsy and tics and do not exacerbate these diagnoses	• Characteristics of seizure, refractory, symptoms interfere with ADLs	• Description of tics • Evaluation of psychiatric to morbidities and prior/ current treatments • Head circumference • Growth charts

Diagnosis/Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
Neuro Muscular Disorders Chronic muscular weakness, slowly progressive muscular weakness, distal limb atrophy, cramping with exercise, identification of muscle hypertrophy	CK, repeat if abnormal Physical therapy	• Elevated CK, loss or regression of motor skills, +Gowers sign, multisystem involvement (cardiopulmonary)	• Description of progression of symptoms • All prior labs and imaging (on disk) • Muscle biopsy (if done) • EMG (if done) • +FMHx • Head circumference • Growth charts
Headache	Evaluation and appropriate fundoscopic exam for papilledema. Imaging is optional, usually not necessary. However, if there are any red flags in the history or exam then MRI is the preferred study. Educate about failure of headache hygiene Avoidance of rebound headache by judicious use of preventative medicine (Tylenol or Motrin 2-3 times per week), journal of symptoms to review potential triggers, review of psychiatric comorbidities and management by appropriate personnel	• Failure of prophylactic medications. Options to try include: Periactin/ cyproheptadine (if under 8-years old), Elavil/amitriptyline, Pamelor/nortriptyline, or Topamax/topiramate. • Worrisome, focal new onset are urgent or inpatient evaluation	• Description of headache(s) • Evaluation of psychiatric co-morbidities and treatments • Current and previous headache treatments • Imaging (if completed), labs • BP records • Head circumference • Growth charts
Hypotonia/ Developmental Delay Floppy infant	Appropriate developmental surveillance according to AAP guidelines with early detection and monitoring of those at risk MRI brain without contrast Newborn Screen Chromosomal Microarray Refer to Early On	• Global developmental delay • Loss or regression of skills or developmental milestones • Isolated language delay, learning disorders/ school difficulty or apraxia should be referred to speech pathology • Urgent referral: Infants with severe weakness (will try for appt. within 48 hours)	• Description of progression • All prior labs and imaging (on disk) • Muscle biopsy (if done) • +FMHx • Brief description of pre- and post-natal course • Head circumference • Growth charts

Diagnosis/Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
Numbness/ Tingling	Examination focused on: reflexes strength, delineation of areas of abnormal sensation CBC, TSH, folate, lead level Consider screening for anxiety	• Areflexia or demyelination on MRI • Abnormal neurologic exam, areflexia, or focal abnormalities on exam • If associated with hyperventilation or anxiety, consider Pediatric Behavioral Health referral.	• Description of onset and progression • MRI/LP results (if available) • All prior labs and imaging (on disk) • Current and prior treatment • Head circumference • Growth charts
Syncope History should include classic symptoms of light headedness, tunnel vision, nausea, feeling flushed, occurs most frequently with position change/ standing	Consider EKG and EEG if atypical Try conservative measures such as salt and fluid intake If persistent following conservative treatment, refer to Pediatric Cardiology or Neurology based on history of symptoms	• If classic history, refer to Pediatric Cardiology • If non-classical history, focal seizure or fall preceding spells refer to Pediatric Neurology • Note: Post syncopal seizure is a reactive seizure, not a sign of underlying epilepsy and therefore does not require ongoing treatment.	• Description of spell • EEG • EKG • Imaging (if completed) • Labs (CMP) • Head circumference • Growth charts

EEG Only Request Guidelines

- You can order a routine EEG to be performed at the Pediatric Neurology Clinic (35 Michigan, Suite 3003); call 616.267.2500 and ask to schedule an EEG.
- EEGs will be read by one of our pediatric neurologists. You will receive a result note within 1-2 weeks (patients and families should contact your office for EEG results).

Pediatric Neurosurgery

Consult and referral guidelines

Helen DeVos Children's Hospital
Outpatient Center
35 Michigan Street NE

Outreach locations:
Lansing, St. Joseph, Traverse City

About Pediatric Neurosurgery

All referrals are reviewed and triaged by a pediatric neurosurgeon. Based on the review, referrals determined to be urgent may be seen by an advanced practice provider in consultation with the pediatric neurosurgeon to facilitate neurosurgical care. All referrals regarding head shape and or size must have all growth charts, particularly head circumference, included with the referral information.

Most common referrals

- Benign extra-axial spaces
- Chiari
- Low back pain
- Sacral dimples
- Tethered cord
- Plagiocephaly

Pediatric Neurosurgery Appointment Priority Guide

Immediate	Contact HDVCH Direct at 616.391.2345 and ask to speak to the on-call neurosurgeon and/or send to the closest emergency department.
Urgent	Call HDVCH Direct and ask to speak to the on-call neurosurgeon regarding an urgent referral.
Routine	Send referral via Epic Care Link, fax completed referral form to (616) 267-2401, or send referral through Holon.

Diagnosis/Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
Benign extra-axial spaces/ macrocephaly **Benign extra-cerebral spaces** **Benign extra-hydrocephalus** **Benign extra-axial fluid** **Extra-ventricular hydrocephalus** **Benign subdural effusion**	If performed, MRI for ventricular size or quick brains study Ultrasound is not recommended	• If concerning to PCP or parent • Crossing growth percentiles on a month-to-month basis • Orbitofrontal head circumference greater than 1cm over 2 weeks • Head circumference crosses second percentile after 6 months of age • Neuroimaging reveals increased extra-axial subarachnoid spaces Note: Increasing orbitofrontal head circumference in children up to approximately 24 months of age, secondary to immature arachnoid granulation preventing the adequate drainage of CSF into the venous system, typically resolves and does not involve neurosurgery intervention	• Growth chart, including head circumference with notation about large head size
Chiari	Okay to refer without MRI MRI, if performed, should be of cervical spine with, or without, brain. The neurosurgery team only requests addition of brain imaging with an MRI if hydrocephalus may be is present.	• If not caused by trauma, headache located in the back of the head • Valsalva induced (cough, laugh) headache • Unless headache dominates life, treatment is not recommended	

Definitions

- Chiari I: Characterized by abnormally shaped cerebellar tonsils that are displaced below the level of the foramen magnum
- Chiari II: Also known as Arnold-Chiari malformation – characterized by downward displacement of the cerebellar vermis and tonsils, a brainstem malformation with beaked midbrain on neuroimaging, and a spinal myelomeningocele
- Chiari III: Rare malformation that combines a small posterior fossa with a high cervical or occipital encephalocele, usually with displacement of the brainstem in a spinal canal
- Chiari IV: Now considered to be an obsolete term that describes cerebellar hypoplasia unrelated to the other Chiari malformations
- Chiari O (sub-type that is not widely used): Characterized by anatomic aberration of the brainstem (posterior pontine tile, downward displacement of the medulla, low lying obex) but with normally located cerebellar tonsils
- Chiari 1.5 (sub-type that is not widely used): Chiari II like malformation, but without spina bifida. Both of these sub-types show crowding at the foramen magnum.

Diagnosis/Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
Low Back Pain Please also refer to Pediatric Orthopedics guidelines	MRI imaging is not recommended	• Mechanical back pain (pain that is completely relieved when a patient lies down and is brought-on when the patient stands up) • Radicular pain (reproducible pain that radiates down the leg in the same place every time and down the same leg every time) • To obtain a second opinion • Surgery is often not the right treatment option; we will work with patients and families to find alternate care options.	

Important information about low back pain

- In nearly all cases, surgery will not be able to help a patient with back pain only
- Spine surgery is effective for leg pain (radiculopathy). Differentiating radicular leg pain from non-dermatomal leg pain is a key part of a neurosurgery visit
- Imaging prior to consultation is discouraged as it will not change management of the condition. Even with radicular pain, conservative management is recommended to most patients.
- We recognize the disabling nature of pain and will always support pediatricians in cases where families are seeking answers. Pediatricians do not think that a patient is a candidate for surgery to send a referral. In addition to helping patients who can benefit from surgery, the neurosurgery team will help families and patients learn why surgery could be harmful.
- Opioids are never recommended, especially for patients with chronic pain. Our office will not prescribe opioids or any other sensorium-altering medications.

Sacral Dimples A pit located within the gluteal cleft, often diagnosed in the first year of life	An ultrasound of the spine may be considered for patients <2 months of age MRI not recommended	• Only in rare cases do sacral dimples require intervention • An episode of meningitis requires an expedited work-up to determine if the dimple communicates with the intrathecal space • Refer if with other congenital abnormalities	• No special information is required

Diagnosis/Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
Tethered Cord	MRI of lumbar spine Note: Some insurance companies only approve this study if the order is written with contrast.	• Progressive or worsening condition • Progressive orthopedic deformation in a child with other congenital anomalies • Weakness • Back pain/radiculopathy • Leg pain (paresthesia/sensation changes, weakness, reflex changes/spasticity, progressive scoliosis, limb, gait changes) • Bowel/bladder (urinary tract infections, changes in catheterization frequency, loss or change in incontinence, constipation, frequency, loss of bladder function in children who had been potty-trained) • Also consider referrals to primary care, Urology, Orthopedics, physical therapy	

Tethered cord definition

- Tethered cord: Conus of the spinal cord is at, or lower than, the superior endplate of L3. This is found through imaging.
- Tethered cord syndrome: Clinical signs and symptoms secondary to the stretch of the spinal cord and/or the nerve roots
- Simple tethered cord: Fatty filum is greater than 2 mm
- Complex tethered cord: A tethered cord secondary to etiology of open spina bifida (myelomeningocele) or closed spina bifida which would include lipomyelomeningocele

Plagiocephaly	Clinical exam including ipsilateral advancement of the occiput, ear and forehead from a “bird’s eye” view X-rays, CTs and MRI are not recommended and rarely indicated Parental report with clinical exam is best criteria to diagnose; anthropometric measure and pictures aren’t needed Consider referral to physical therapy Also consider referral to Plastic Surgery Alter sleep positions	• Feel a palpable ridge • Concerns for significant skull malformation. • Surgical correction of this disorder is almost never indicated • Special care to be given if associated with torticollis	

Pediatric Ophthalmology

Consult and referral guidelines

Helen DeVos Children's Hospital
Outpatient Center
35 Michigan Street NE

About Pediatric Ophthalmology

We care for children and teens from birth to age 18 and adults with strabismus or diplopia.

Pediatric Ophthalmology Appointment Priority Guide

Immediate	Contact HDVCH Direct at 616.391.2345 and ask to speak to the on-call ophthalmologist.
Urgent	Likely to receive an appointment within 2 days. Contact the Welcome Center at 616.267.2605 to schedule same-day or next-day appointment. Or contact HDVCH Direct. Please see list below for conditions that are considered urgent.
Routine	Send referral via Epic Care Link, fax completed referral form to (616) 267-1408, or send referral through Holon.

All referrals are placed through a triage process. The following qualify as urgent referrals:

- New diagnosis of concern for cataract
- Corneal opacity or corneal ulcer
- Infantile or congenital glaucoma
- Leukocoria/abnormal or no red reflex
- Acute or acquired nystagmus
- Ocular trauma
- Papilledema
- Acute or sudden onset ptosis
- Red eye not responding to treatment or of concern to the PCP
- Conjunctivitis in infant less than 30-days old
- Acute or acquired strabismus
- Sudden vision loss
- Physician request for emergent or urgent consultation/referral

All other referrals are triaged based on patient age and diagnosis.

Infants, children and young adults

American Academy of Pediatrics

Visual System Assessment in Infants, Children, and Young Adults by Pediatricians; Committee on Practice and Ambulatory Medicine; Section on Ophthalmology, American Association of Certified Orthoptists, American Association for Pediatric Ophthalmology and Strabismus and American Academy of Ophthalmology; Pediatrics 2016; 137; Published December 7, 2015

Schedule for Visual System Assessment					
Assessment	**Newborn to 6 months**	**6-12 months**	**1-3 years**	**4-5 years**	**6 years and older**
Ocular history	✓	✓	✓	✓	✓
External inspection of lids and eyes	✓	✓	✓	✓	✓
Red reflex testing	✓	✓	✓	✓	✓
Pupil examination	✓	✓	✓	✓	✓
Ocular motility assessment		✓	✓	✓	✓
Instrument based screening, when available (CPT 99174)		*	✓	✓	✓ Suggested if unable to test visual acuity monocularly with age appropriate optotypes
Visual acuity fixate and follow response	✓ **	✓	✓		
Visual acuity age-appropriate optotype assessment (CPT 99173)			✓	✓	✓

*The American Academy of Ophthalmology has recommended instrument-based screening at age 6 months. However, the rate of false-positive results is high for this age group, and the likelihood of ophthalmic intervention is low.

**Development of fixating on and following a target should occur by 6 months of age, children who do not meet this milestone should be referred.

Screening Examination of Premature Infants for Retinopathy of Prematurity (ROP)

American Academy of Pediatrics

Screening Examination of Premature Infants for Retinopathy of Prematurity; American Academy of Pediatrics Section on Ophthalmology, American Academy of Ophthalmology, American Association for Pediatric Ophthalmology and Strabismus, and American Association of Certified Orthoptists; Pediatrics 2013; 131, 189; Published December 31, 2012

Recommendation for a retinal eye exam with an ophthalmologist at intervals based on gestational age at birth and subsequent disease severity.

Timing of First Eye Examination Based on Gestational Age at Birth		
Gestational age at birth, in weeks	**Age at initial examination, in weeks: postmenstrual**	**Age at initial examination, in weeks: chronologic**
22*	31	9
23*	31	8
24	31	7
25	31	6
26	31	5
27	31	4
28	32	4
29	33	4
30	34	4
Older gestational age with high risk factors: consider timing based on severity of comorbidities		4

*This guideline should be considered tentative rather than evidence-based for infants with a gestational age of 22 or 23 weeks because of the small number of survivors

Learning Disability, Dyslexia and Vision

American Academy of Pediatrics

Joint Technical Report – Learning Disabilities, Dyslexia, and Vision; Section on Ophthalmology and Council on Children with Disabilities, American Academy of Ophthalmology, American Association for Pediatric Ophthalmology and Strabismus, and American Association of Certified Orthoptists; Pediatrics 2011; 127; e818

Recommend vision screening and referral to ophthalmology.

Pediatric Orthopedics

Consult and referral guidelines

Helen DeVos Children's Hospital
Outpatient Center
35 Michigan Street NE

Outreach locations:
Lansing, St. Joseph, Traverse City

About Pediatric Orthopedics

We treat all orthopedic ailments in children and teens from birth to age 18.

Most common referrals

- Ankle injury: chronic and acute
- Back pain: chronic and acute
- Knee pain
- Knee injury
- Shoulder pain
- Shoulder injury
- Developmental dysplasia of the hip (DDH)
- Idiopathic toewalking
- Genu varum/valgum
- In-toeing
- Limping child
- Scoliosis
- Fractures and acute injuries
- Metatarsus adductus
- Flatfoot
- Clubfoot

Pediatric Orthopedics Appointment Priority Guide

Immediate	Contact HDVCH Direct at 616.391.2345 and ask to speak to the on-call orthopedic surgeon and/or send to the closest emergency department.
Urgent	Likely to receive an appointment within 2 days. Call HDVCH Direct and ask to speak to the on-call orthopedic surgeon regarding an urgent referral.
Routine	Likely to receive an appointment within 10 days. Send referral via Epic Care Link, fax completed referral form to (616) 267-2601, or send referral through Holon.

Diagnosis/ Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
Chronic Ankle Injury	History and exam: assess for joint effusion, areas of tenderness and mechanical symptoms Obtain standing AP, lateral, Mortise views Physical therapy evaluation and treatment Lace-up ankle brace for activities Rest, ice, compression, elevation, NSAIDs for acute symptoms/ exacerbation	• No improvement in symptoms after completion of physical therapy • Abnormal imaging findings	• History of injury • Therapies attempted • Imaging and reports if outside of Spectrum Health
Acute Ankle Injury	History and exam: assess for joint effusion and areas of tenderness including foot Order AP, lateral and Mortise view if: • Bony tenderness OR • Inability to bear weight If skeletally mature with no abnormality on X-ray or skeletally immature with no tenderness over growth plate, begin physical therapy and offer ankle stirrup brace Physical therapy evaluation and treatment Rest, ice, compression, elevation, NSAIDs	• Tenderness over growth plate in skeletally immature patient (non-displaced physeal fracture) • Bony injury on X-ray • No improvement in symptoms and/or continued pain after physical therapy	• History of injury • Therapies attempted • Imaging and reports if outside of Spectrum Health
Chronic Back Pain	PA and lateral spine radiographs Weight loss for obese patients Physical therapy evaluation and treatment CBC with differential, if associated with constitutional symptoms concerning for malignancy	• Abnormal radiographs • Children less than 10 years with chronic back pain • If symptoms persist despite physical therapy • With associated radiculopathy or other lower extremity symptoms. • Consider referral to Physical Medicine and Rehabilitation if normal imaging and no neurologic symptoms.	• History of injury • Therapies attempted • Imaging and reports if outside of Spectrum Health

Diagnosis/ Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
Acute Back Pain	Neurological exam: assess for radicular symptoms Days of rest, if necessary Gradual increase in activities over 1-2 weeks AP and lateral spine radiographs, if symptoms persist beyond 2 weeks or if severe pain after trauma Physical therapy for residual symptoms	• Abnormal X-rays • Neurological deficits • Bowel/bladder dysfunction: refer directly to ER • If symptoms persist, despite physical therapy. • Consider referral to Physical Medicine and Rehabilitation if normal imaging and no neurologic symptoms.	• History of injury • Therapies attempted • Imaging and reports if outside of Spectrum Health
Chronic Knee Pain	History and exam: assess for joint effusion, areas of tenderness, mechanical symptoms, leg rotation profile X-rays of knee, include AP, lateral, sunrise patella Physical therapy evaluation and treatment Neoprene knee sleeve with activities Consider MRI if mechanical symptoms, or if continued pain after physical therapy is completed. Consider evaluation for inflammatory condition in patients with recurrent effusions. Hip X-rays, especially in obese adolescents (evaluation for slipped capital femoral epiphysis [SCFE])	• Mechanical symptoms of knee • Continued pain after physical therapy completed • Abnormal findings on X-rays or MRI • For atraumatic recurrent effusions and pain in young children with normal X-rays, consider referral to Pediatric Rheumatology	• History of injury • Therapies attempted • Imaging and reports if outside of Spectrum Health

Diagnosis/ Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
Acute Knee Injury	History and exam: assess hip and knee range of motion and stability Three views of knee-standing PA/ AP, lateral and sunrise patellar view If knee effusion within first 1-2 hours after injury, obtain MRI to rule out ACL/osteochondral injury If knee effusion develops overnight – and patient has no mechanical symptoms – begin with physical therapy Use crutches only as needed Physical therapy may focus on joint motion, gait training, wean from crutches (if needed) and modalities as needed if adolescent Rest, ice, compression, elevation, NSAIDs	• Large knee effusion after injury • Intra-articular injury on MRI • No improvement after completion of physical therapy • Mechanical symptoms • Persistent effusion, beyond 2-3 weeks	• History of injury • Therapies attempted • Imaging and reports if outside of Spectrum Health
Chronic Shoulder Pain	History and exam: assess major joints for effusion and generalized joint laxity, focused shoulder examination to localize primary areas of tenderness: anterior shoulder (biceps and acromio-clavicular joint), posterior shoulder and scapula, and/or lateral shoulder (rotator cuff), assess for instability of the bilateral shoulder joints, assess for voluntary shoulder subluxation/ dislocation MRI (with athrogram) if older than 12 years and history of unilateral dislocation(s) requiring formal reduction and/or unilateral shoulder instability noted on examination	• Significant instability or history of dislocation • Intra-articular abnormalities on MRI (labral tear, large rotator cuff tear, chondral lesions)	• History of injury • Therapies attempted • Imaging and reports if outside of Spectrum Health

Diagnosis/ Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
Acute Shoulder Injury	History and exam: asses for shoulder or elbow joint effusion, localized areas of tenderness (clavicle, shoulder and elbow), instability of the shoulder joint X-ray AP of the humerus and axillary view of the shoulder if concern for fracture or dislocation MRI (with arthrogram) if >12 years if history of unilateral dislocation requiring formal reduction and/or unilateral shoulder instability noted on exam Rest, ice, NSAIDs as needed If no acute injury or abnormality on imaging studies and symptoms persist for >3 weeks, may begin physical therapy Physical therapy evaluation and treatment	• Fracture • Dislocation or history of instability • Intra-articular abnormalities on MRI (labral tear, large rotator cuff tear, chondral lesions) • No improvement in symptoms after completion of physical therapy	• History of injury • Therapies attempted • Imaging and reports if outside of Spectrum Health
Developmental Dysplasia of the Hip (DDH)	History and exam: assess for asymmetric hip range of motion, hip abduction, leg length, instability of hips Indications for imaging include abnormal exam, breech delivery, family history of DDH (obtain ultrasound at 6 weeks if exam normal) Ultrasound if less than 6 months old, X-ray after 6 months.	• Abnormal imaging • Abnormal exam	• History of injury • Therapies attempted • Imaging and reports if outside of Spectrum Health Note: We may order an ultrasound to be scheduled at HDVCH prior to the patient's appointment
Idiopathic Toe Walking	History and exam: assess for abnormal muscle tone or spasticity, hip/knee/ankle range of motion Family education; most will resolve spontaneously Assess for decreasing range of motion or contracture Assess Gower's sign	• Achilles tendon contracture • Consider a Pediatric Neurology evaluation if abnormal neuro exam including abnormal muscle tone, spasticity, proximal muscle weakness or decreasing functional level	• History of injury • Therapies attempted • Imaging and reports if outside of Spectrum Health

Diagnosis/ Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
Genu Varum/ Valgum	History and exam: observe genu varum if patient <24 months Observe if genu valgum <7-8 years If genu varum persists past 24 months of age, obtain standing limb alignment X-ray with patellae pointed forward If severe genu valgum persists past 7-8 years of age, obtain standing limb alignment X-ray with patellae pointed forward	• Unilateral or asymmetric genu varum or valgum • Pain affiliated with genu varum or valgum • Genu varum persistent after age 24 months • Severe genu valgum persistent after >7-8 years • Progressive severe genu varum or genu valgum	• History of injury • Therapies attempted • Imaging and reports if outside of Spectrum Health
In-Toeing	History and exam: assess alignment of legs for increased femoral anteversion, tibial torsion, genu valgum, and forefoot abduction, leg length discrepancy, increased muscle tone or spasticity Family reassurance Observation Activity as tolerated	• Unilateral in-toeing or significant asymmetry on exam • Progressive malrotation • Spasticity or increased muscle tone (consider Pediatric Neurology evaluation) • Increased tibial torsion persisting >5 years • Increased femoral anteversion persisting after age 10 • Leg length discrepancy >1 cm in a skeletally immature patient	• History of injury • Therapies attempted • Imaging and reports if outside of Spectrum Health
Limping Child	History and exam: obtain information regarding any preceding illness or trauma, assess chronicity of symptoms, examine spine, abdomen, hips and knees to help localize symptoms X-rays of site of localized pain If recent history of fever, CBC with manual differential, CRP, ESR If hip or other joint is irritable, suspected joint infection or inflammatory labs are acutely elevated, refer to emergency department for evaluation	• Abnormal findings on imaging studies • Fever, or atraumatic limp persistent for more than 48 hours	• History of injury • Therapies attempted • Imaging and reports if outside of Spectrum Health

Diagnosis/ Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
Scoliosis	History and exam: neurological exam Scoliometer measurement PA and lateral scoliosis films for scoliometer reading over 7 degrees Request evaluation of Risser scoring with X-ray order	• Abnormal neurologic findings • Unusual pain or symptoms • Curves >10 degrees in children younger than 10 years • Skeletally immature children (Risser 0-3): – Scoliometer reading ≥7 degrees in skeletally immature children – Curves >20 degrees on X-ray • Skeletally mature children (Risser 4-5): – Curves 0-20 degrees on X-ray – no referral or monitoring necessary – Curves greater than 20 degrees may require periodic monitoring, suggest referral.	• History of injury • Therapies attempted • Imaging and reports if outside of Spectrum Health
Fractures and Acute Injuries	Assess for focal tenderness or deformity, neurovascular function of the injured extremity X-rays if bony tenderness or deformity Consider removable brace or splint for comfort if X-rays normal. Rest, ice, elevation, OTC pain meds	• Abnormal X-rays • Consider referral to the emergency department if deformity present • Large joint effusion on exam • Failure of symptoms to improve with conservative treatment	
Metatarsus Adductus	Assess flexibility of foot If flexible, family stretching and observation	• Rigid deformity • Severe deformity after age 2	
Flatfoot	Assess flexibility of foot: when standing on toes, does the patient create an arch and the heel invert? Assess ankle and foot range of motion Pain or focal tenderness No treatment needed if painless OTC arch support if painful	• Rigid flatfoot (does not create an arch when on toes) • Rigid heel valgus • Activity limiting pain after OTC arch supports	
Clubfoot	Assess flexibility of foot Clubfoot: • Cavus (high arch) • Adductus of the forefoot • Varus of the heel • Equinus of the ankle	• Any clubfoot	

Pediatric Pulmonology and Sleep

Consult and referral guidelines

Helen DeVos Children's Hospital
Outpatient Center
35 Michigan Street NE

Outreach locations:
Lansing, Ludington, Traverse City

About Pediatric Pulmonary and Sleep

We care for children and teens from birth to age 18.

Most common referrals

- Recurrent cough or wheeze
- Recurrent bronchiolitis or bronchitis
- Asthma
- Bronchopulmonary dysplasia
- Recurrent pneumonia
- Noisy breathing or tachypnea
- Cystic fibrosis (CF) and CF newborn screening
- Sleep apnea/sleep disorders

Notes

- We offer Multidisciplinary Clinics for Cystic Fibrosis, Home Ventilation, Neuromuscular Diseases and Aerodigestive Disorders. (For these clinics, patients are seen by a specialist at HDVCH and followed in these clinics). For the Aerodigestive Disorders clinic, a Spectrum Health ENT, Pulmonologist or Gastroenterologist can refer patients at one visit for all three services or if the primary care provider feels that their patient has combined lung, GI along with ear, nose and throat concerns, please send the referral to our Pediatric Pulmonary group and label "For Aerodigestive Disorders Clinic."
- CF Newborn Screening started in October of 2007 so any respiratory condition for patients born before that date should also undergo a sweat test at a Cystic Fibrosis Foundation Accredited Lab. If there are any significant concerns for a CF diagnosis for those born after October 2007, it is prudent to order a sweat test. Although very rare, there have been a handful of false-negative newborn screens statewide.

Pediatric Pulmonary and Sleep Appointment Priority Guide

Immediate	Contact HDVCH Direct at 616.391.2345 and ask to speak to the on-call pulmonologist and/or send to the closest emergency department.
Urgent	Likely to receive an appointment within 2-5 business days. Mark the referral as "urgent."
Routine	Likely to receive an appointment within 7-21 days. Send referral via Epic Care Link, fax completed referral form to (616) 267-2201, or send referral through Holon.

Diagnosis/Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
Recurrent Cough or Wheeze **Recurrent Bronchiolitis or Bronchitis**	Chest X-ray: PA and lateral Consider trial of bronchodilators at any age If non-responsive to bronchodilators, consider trial of oral and/or inhaled corticosteroids Oral prednisone is typically dosed ~2mg/kg/day x 5 days	• Hospitalization • Intubated/ICU admission • ER visits • Frequent need for oral steroid bursts • Age <2 years • Unresponsive to usual therapy with increasing medication use • Complicating conditions such as rhinitis, sinusitis, GE reflux and/or pneumonia • Abnormal spirometry or needs frequent monitoring with spirometry • History of chronic lung disease, prematurity	• Chief concern • Summary of previous treatments and response • Respiratory history since birth • All lab results • All chest films •
Asthma	Chest X-ray: PA and lateral Consider upper GI and/or video fluoroscopic swallow study Consider allergy evaluation if signs of atopy especially for older childhood and adolescent patients.	• Has been hospitalized • Intubated/ICU admission • ER visits • Frequent need for oral steroid bursts • Age <2 years • Unresponsive to usual therapy with increasing medication use • Complicating conditions such as rhinitis, sinusitis, GE reflux and/or pneumonia • Abnormal spirometry or needs frequent monitoring with spirometry • History of chronic lung disease, prematurity	• Chief concern • Summary of previous treatments and response • Respiratory history since birth • All lab results • All chest films • Any allergy testing and evaluations

Diagnosis/Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
Bronchopulmonary Dysplasia, Chronic Lung Disease of Infancy	If patient is having recurrent respiratory illnesses or increasing oxygen need, consider: • Chest X-ray: PA, lateral • UGI • Videofluoro swallow study • Cardiology evaluation • Referral to our office	• Unstable respiratory status or is slow to improve • Oxygen requirement • Difficulty growing or feeding • Problem feeding or G-tube • Re-hospitalization after discharge • Inability to wean medications and/or oxygen	• If obtained outside of Spectrum Health: SaO2, echocardiograms, growth and development evaluations, all lab results post-discharge, chest films • Current treatments and response • Current oxygen requirements • NICU discharge summary (if outside NICU is not in Care Everywhere)
Recurrent Pneumonia	Chest X-ray: PA and lateral, if ruling out cystic fibrosis Sweat chloride at an accredited CF Center* Consider upper GI and/or Pediatric Cardiology consult	• Recurrent illness despite treatment • Increasing respiratory symptoms • Symptoms that interfere with daily activities • Respiratory symptoms/ infections and problems with growth and/or development	• Brief pre/postnatal history • Growth history • List of treatments and response • Current treatments
Noisy Breathing and Tachypnea	Babies <1 year, with stridor should see an ENT first For non-stridorous noisy breathing and tachypnea, consider a chest radiograph and upper GI	• If ENT feels a pulmonary consultation is necessary to add to the patient's care • If the patient is not improving after reflux therapy has been tried.	• Brief pre/postnatal history • Growth history • List of treatments and response • Current treatments and other consultant evaluations
Positive Cystic Fibrosis Newborn Screen From the State of Michigan: Elevated IRT plus 1 or more identified CF mutations	None needed In the rare circumstance of a suspected bowel obstruction or respiratory	• As soon as the PCP receives a positive screen from the State of Michigan, please fax referral and newborn screen results to 616.267.2201. Sweat test order not needed. Pulmonary clinic will call family to schedule appointment and sweat test.	• Referral to include request for consultation, pertinent history and physical.

Diagnosis/Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
Sleep Apnea/ Sleep Disorders Including snoring, insomnia and hypersomnia	Consider treatment for allergic rhinitis Consider ENT referral Sleep diary	• Any symptom of sleep difficulties including sleep disordered breathing, daytime or nighttime symptoms • Growth delay • Nocturnal enuresis (only if associated with sleep disordered breathing)	• Chief complaint • Pertinent history and physical, growth grid • Treatments pursued and responses • Any lab results • Prior ENT evaluations • Sleep evaluations/ studies
Non-Invasive Ventilation with CPAP or BiPAP		• Most primary care providers refer to our sleep clinic for CPAP or BiPAP (PAP) management	• Previous sleep studies • Pertinent history and physical • Previous PAP downloads • Growth chart • Any pertinent labs
Technology Dependent with a Tracheotomy Ventilator/CPAP		• Please call HDVCH Direct for provider referral	

*Accredited CF care centers include: Helen DeVos Children's Hospital (Grand Rapids), Sparrow Hospital (Lansing), Bronson Hospital (Kalamazoo), Children's Hospital of Michigan (Detroit) and University of Michigan (Ann Arbor).

Pulmonary Function Tests (PFTs)

Our services are available for outpatient lung function interpretation at our Pediatric Pulmonary Function Laboratory at 35 Michigan in Grand Rapids, plus the Spectrum Health Pulmonary Function Laboratories in Big Rapids, Ludington and Greenville.

To request PFTs, please consider the following within your request:

- Baseline spirometry – minimum age 5 years
- Spirometry with pre and post bronchodilator – administer bronchodilator only if baseline can be performed
- Spirometry with lung volumes and airway resistance – minimum age 7 years
- Spirometry with pre- and post-lung volumes and airway resistance – minimum age 7 years

Note: For Methacholine Challenges and Exercise studies, we recommend a pulmonary clinic referral first. For the Methacholine Challenge tests, we must order drug prior to the appointment so if the patient cannot do lung function testing at baseline, the drug is unusable. For exercise testing, there are several types and the visit takes approximately 2 hours. In addition, we must make sure the patient can do lung function testing and that it is safe to perform the test based on potential underlying diagnoses.

Pediatric Rheumatology

Consult and referral guidelines

Helen DeVos Children's Hospital
Outpatient Center
35 Michigan Street NE

Outreach locations:
Lansing, Traverse City\

About Pediatric Rheumatology

We care for children and teens from birth to age 18.

Most common referrals

- Arthralgias
- Joint swelling, joint contracture, limp joint
- Weakness
- Back pain
- Malar rash
- Unexplained fevers or weight loss
- Skin tightening or extremity color changes
- Iritis
- Positive (+) ANA

Pediatric Rheumatology Appointment Priority Guide

Immediate	Contact HDVCH Direct at 616.391.2345 and ask to speak to the on-call rheumatologist.
Urgent	NEED
Routine	NEED

Diagnosis/Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
Arthralgias Possible diagnosis: Juvenile idiopathic arthritis (JIA)	X-ray, if appropriate	• If patient has persistent joint swelling, limp or joint contracture (4 or more weeks)	• Any lab or imaging reports outside of Spectrum Health
Joint Swelling, Joint Contracture, Limp Child and Fever Possible diagnoses: JIA, systemic JIA	Rule out infection, septic joint If suspicious, refer urgently to Orthopedics or emergency department With fever, CBC, CRP and suggest ferritin within the order	• If patient has persistent joint swelling, limp or joint contracture that is not attributable to an orthopedic problem • Urgent referral: With fever and Orthopedics ruled out	• Any lab or imaging reports outside of Spectrum Health
Proximal Muscle Weakness Possible diagnosis: Juvenile dermatomyositis (JDM)	Check for presence of typical JDM rash (heliotrope rash) Check for proximal muscle weakness If ordering labs, check muscle enzymes: CK, AST, ALT, LDH, aldolase	• If weakness persists, and is not attributable to a neurologic condition • If there is a typical JDM rash	• Any lab or imaging reports outside of Spectrum Health
Chronic Back Pain Possible diagnosis: JIA	Check for sacroiliac joint tenderness, ask about morning stiffness that lasts for more than 30 minutes Check for ability to flex and extend back Consider X-ray or MRI (with/without) contrast for LS spine and SI joints	• If patient shows signs of SI joint tenderness, or X-ray or MRI findings of inflammatory arthritis • If there is a significant decrease in ROM in the back	• Any lab or imaging reports outside of Spectrum Health • No need to order HLA B27
Malar Rash Possible diagnoses: Systemic Lupus, Mixed Connected Tissue Disease, JDM	Other symptoms are present If persistent (for a few weeks), consider screening for ANA (IFA)	• If rash persists or become purpuric or eroded • If patient has other systemic signs of lupus (joint swelling, oral ulcers, serositis, cytopenias) • If ANA is positive	• Any lab or imaging reports outside Spectrum Health
Unexplained Fevers Possible diagnoses: Systemic JIA, periodic fever syndrome	Rule out infection (first): Consider a Pediatric Infectious Diseases consult Rule out malignancy: Consider a Pediatric Oncology consult Examine for signs of arthritis	• If there is no evidence of infection or malignancy • If there is family history of periodic fever syndrome	• Any lab or imaging reports outside Spectrum Health

Diagnosis/Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
Skin Tightening or Extremity Color Changes Possible diagnoses: Raynaud's phenomenon, scleroderma, MCTD	Examine for signs of sclerodactily or skin tightening, esophageal dysmotility, calcinosis, fingertip ulceration and nailfold capillary changes	• Concern for nail fold capillary changes • Worsening Raynaud's or concerned about secondary Raynaud's • If there are signs of systemic disease	• Any lab or imaging reports outside Spectrum Health
Iritis/Uveitis Possible diagnoses: Juvenile idiopathic arthritis, sarcoid, other	Refer urgently to Pediatric Ophthalmology Examine for signs of systemic disease, especially arthritis	• If ophthalmologist confirms uveitis, systemic symptoms are present and there is not an infectious cause found	• Any lab or imaging reports outside Spectrum Health
Positive (+) ANA Possible diagnoses: JIA, SLE, Hashimotos (asymptomatic)	Examine for specific autoimmune disease (joint swelling, rash, etc.) Consider C3, C4, CBC, UA, CMP and SED rate Examine labs for autoimmune, if labs are normal, a referral may not be necessary	• If patients have specific signs of autoimmune disease, not just a positive ANA	• Any lab or imaging reports outside Spectrum Health