

SPINE DEFORMITY SURGERY PATHWAY

HIGH RISK PRE-OPERATIVE REFERRAL RECOMMENDATIONS

Physician Owner(s): Dr. Brian Hasley



Service Line	Gastroenterology	Cardiology	Pulmonology/ Sleep Medicine	Neurology	Neurosurgery	Orthotics/Prosthetics/ Seating & Mobility/ PT/OT	Child Life/Social Work
Referral indications:	<p><u>Malnutrition or Aspiration based on any of the following:</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> BMI <5th percentile or a BMI z-score less than -1 (patient can proceed with surgery once they gain 5-10% of their body or BMI z-score improves to less than -2) <input type="checkbox"/> Unintentional weight loss in the last 3 months <input type="checkbox"/> MUAC z-score is less than -3 (<i>Accurate height, weight, and MUAC to be taken during each preoperative visit</i>) <input type="checkbox"/> Enteral tube fed Based on the following: <ul style="list-style-type: none"> <input type="checkbox"/> Observed or reported choking, gagging, or coughing during or after eating orally or via tube <input type="checkbox"/> Observed or reported shortness of breath or wheezing (not associated with asthma) present during or after eating orally or via tube <input type="checkbox"/> Hospitalized with aspiration pneumonia in the last 2 years <input type="checkbox"/> Abnormal prior deglutition study without resolution <p><u>GI referral not indicated for obesity</u></p>	<p><u>Any of the following:</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> Any patient with known history of a cardiac issue <input type="checkbox"/> Known personal history of a condition that has cardiac involvement, including connective tissue disorders or neuromuscular disease <input type="checkbox"/> Family history of aortic disease, cardiomyopathy, or sudden death before the age of 40 years <input type="checkbox"/> If on anthracycline for chemotherapy (consideration: active treatment vs post therapy; total life dose >75mg/m2) 	<p>All established pulmonology or sleep medicine patients 3 to 6 months prior to surgery by primary pulmonologist (obtain recommendations if from OSH).</p> <ul style="list-style-type: none"> <input type="checkbox"/> New referral indicated for patients with SMA or Duchenne's. If new referrals unable to be seen within 2 months Dr. Rhoads can help coordinate earlier appt. 	<p><u>For the following:</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> Controlled seizures who have not been seen by neurology within 1 year. <input type="checkbox"/> Any patients with questions or concerns regarding seizure medications <p>Uncontrolled seizures:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Neurologist should be notified for all patients with uncontrolled seizures for perioperative recommendations, especially if not seen in last 6 months <p>For patients on Depakote first obtain TEG and EPI platelet function studies:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Normal results, proceed with spinal fusion surgery <input type="checkbox"/> Abnormal results, refer to neurology to discuss risk/benefits of stopping prior to surgery <p>Do NOT need evaluation prior to surgery: DMD and other muscular dystrophies, SMA, Rett Syndrome without seizure history, Cerebral Palsy without seizure history</p>	<p><u>Any of the following:</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> Shunt not evaluated in > 1 year or not had imaging within last 12 months <input type="checkbox"/> Symptoms of shunt malfunction like, nausea, headache, seizures, or vomiting; obtain head MRI or CT at time of referral. <input type="checkbox"/> Myelomeningocele with progressive curve/ large curve to assess for detethering prior to fusion surgery <input type="checkbox"/> Fatty filum and low-lying conus <input type="checkbox"/> Small syring – consider NSGY at minimum <input type="checkbox"/> Indwelling baclofen pump – consider letting NSGY know beforehand 	<p><u>Any of the following:</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> Call for Halo Consults & Halo Fittings <input type="checkbox"/> * Notify if Post-Op TLSO is known to be needed <p><u>Seating and Mobility Clinic:</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> If needing a new custom molded back, parents to contact vendor when surgery is scheduled. <input type="checkbox"/> If adjustments needed immediately post-op, parents and/or PT to contact vendor to schedule on POD #3/4 <input type="checkbox"/> Parents to call vendor for appointment for wheelchair adjustment 2 - 3 weeks post-operatively. <p><u>PT/OT:</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> Dependent patients (GMFCS level 4 or 5, sometimes 3) with underlying neuro diagnosis that is progressive (SMA, MD): Arrange custom molded back and cushion prior to surgery, with goal being immediately when surgery is scheduled <input type="checkbox"/> Minimal to no assistance patients (GMFCS levels 1, 2, or 3) with myelomeningocele, spina bifida or other neuro disorders though not dependent on caregiver: Arrange for pre-operative PT at least 1 month prior to surgery 	<p><u>Child Life:</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> Offer family Operation Learn through Child life- give handout if interested <p>Patients are seen by Social Work and at 2-week preoperative visit- once figure out roll of social work</p>

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						with primary PT or CHMC PT to prepare for changes post-operatively and make modifications to home if needed	
Labs/Tests *Standard pre-operative labs: CBC, CMP, PTT/PT, UA	Prior to clinic appointment ONLY if labs are being obtained, results should be sent to Children's GI (402-955-5720): · Ferritin · Vitamin D (25-hydroxyvitamin D) · Prealbumin · Vitamin C · Zinc	Coordinate ordering with cardiology: <input type="checkbox"/> Echocardiogram – can use one completed in last 2 years, unless ECG changes or at provider's discretion <input type="checkbox"/> ECG – can use one completed in the last year unless changes or at provider's discretion <input type="checkbox"/> CBC <input type="checkbox"/> PTT/PT	<input type="checkbox"/> PFT's if > 5 years + can complete in last 6-12 months. When done recommend spirometry with MIP/MEP/PCF. <input type="checkbox"/> Sleep study if indicated based on pulmonary or sleep provider evaluation or positive sleep questionnaire prior to evaluation. Especially consider with FVC <50 (even if asymptomatic)	For patients on Depakote: <input type="checkbox"/> Obtain TEG and EPI platelet function studies			<u>Orthopedics:</u> Patient is to have Type & Screen pre-operatively –if don't have antibodies then type and cross on day of surgery, if have antibodies crossed prior to day of surgery to ensure blood availability - Arrange for blood products to be ready before surgery
Imaging		<u>DMD (Duchenne Muscular Dystrophy)</u> * EF > 50% (echo within last 6 months) * EF < 50% (echo within last 3 months)			Indication for rapid brain MRI/CT: <input type="checkbox"/> CP – not indicated <input type="checkbox"/> Myelomeningocele – indicated pre-op. <input type="checkbox"/> Shunted for baseline ventricle size <input type="checkbox"/> Syndromic – case by case <input type="checkbox"/> VNS – do not image <input type="checkbox"/> For the Order – designate "Pre-Op" and the date of surgery <input type="checkbox"/> Expedited need – include reason on order <input type="checkbox"/> Consider Anesthesia need for MRI's		

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<p>Admission unit & pre-op needs</p>	<p><input type="checkbox"/> Consider MiraLAX or other laxative pre-operatively before day of surgery (parent education)</p>	<p><u>Cardiac Floor Indications:</u> <input type="checkbox"/> Residual disease – cardiac stepdown <input type="checkbox"/> If Fontan, heart transplant, significant pulmonary HTN, severe ventricular dysfunction – use cardiac floor with cardiology as primary and involve Pulmonary service as needed <input type="checkbox"/> Mechanical cardiac valve – admit for heparin transition per cardiology discretion</p> <p>*Consideration: ACE inhibitor usage – hold for at least 24 hours preoperatively</p>	<p><input type="checkbox"/> Address CPAP compliance prior to surgery <input type="checkbox"/> All patients need an airway clearance plan from pulmonology prior to and after surgery <input type="checkbox"/> Pre - Operative admission if deemed necessary by pulmonology</p>			<p><input type="checkbox"/> Arrange admission with 6MS, PICU. <input type="checkbox"/> Consider long term rehabilitation (Ambassador/Madonna) if anticipated decrease in function from baseline due to anticipated lengthy hospital stay/difficulty with pain tolerance in relation to mobility <input type="checkbox"/> To qualify for Inpatient rehab, requires patient to have significant decline in baseline function and PT/OT recommendation for IPR</p>	
<p>Other consideration to surgery</p>		<p><u>Consider Cardiac Anesthesia if:</u> <input type="checkbox"/> Significant ventricular dysfunction <input type="checkbox"/> <30% EF based on most recent echocardiogram <input type="checkbox"/> Severe aortic stenosis or pre-reviewed severe valvular pathology <input type="checkbox"/> Any single ventricle physiology (includes Fontan) <input type="checkbox"/> Pulmonary hypertension >2/3 of systemic pressure <input type="checkbox"/> Heart transplant <1 year out</p> <p><input type="checkbox"/> All patients with LVEF < 35% -consult cardiology for risk vs benefit discussion and preoperative plan)</p>			<p>Combined Neurosurgery Cases <input type="checkbox"/> Spinal Stenosis - Intra Dural <input type="checkbox"/> Possibly Vertebrectomy with high risk of dural tear <input type="checkbox"/> Myelo with tether/need cord divided <input type="checkbox"/> With Myelomeningocele: consider resection of cord if placing MAGEC rods. <input type="checkbox"/> Consider notifying Plastic Surgery for closure and close monitoring. <input type="checkbox"/> Consider notifying neurosurgery if any surgery is around the Dura (such as Myelomeningocele)</p>	<p>Parental Information <input type="checkbox"/> Bring wheelchair + orthotics to hospital <input type="checkbox"/> Make post-op appointment with wheelchair vendor prior to the surgery <input type="checkbox"/> No bending/twisting after surgery – so plan for daily routine & challenges <input type="checkbox"/> Caregiver present for transfer training</p>	
<p>Pre-plan for Hospitalist</p>		<p>Patient will be admitted to orthopedics, and hospitalists will be consulted for co-management on all patients.</p>					

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ChildrensNebraska.org/clinical-pathways

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