

CT Children's CLASP Guideline

Antenatal Urinary Tract Dilation (UTD)/Congenital Hydronephrosis

INTRODUCTION

Antenatal Urinary Tract Dilation (UTD)/Congenital Hydronephrosis in the Newborn is a commonly detected renal abnormality found on in utero imaging in up to 5% of pregnancies. The most common etiology for isolated hydronephrosis (i.e. not associated with other urinary tract abnormalities) is transient or physiologic (50-70%) and is likely to resolve within the first 2 years of life. The degree of dilation, however, may indicate presence of genitourinary pathology such as ureteropelvic junction obstruction, vesicoureteral reflux, ureterocele, ectopic ureter, or posterior urethral valve (*See Appendix A: Definition of Hydronephrosis Severity*).

INITIAL EVALUATION AND MANAGEMENT

INITIAL EVALUATION:

- Obtain targeted history:
 - Supplemental information from maternal obstetric records regarding timing of observed hydronephrosis and stability of findings throughout pregnancy
 - Supplemental information on any alterations in amniotic fluid level during pregnancy
 - Determine if prenatal consultation by Pediatric Urology or Nephrology specialists has been provided
- Perform targeted physical exam:
 - Assess for cloacal abnormality, bladder exstrophy, genital anomaly, abnormal abdominal wall musculature, or any syndromic appearance

INITIAL MANAGEMENT: (*See Appendix B: Algorithm for Initial Management*)

- ***If prenatal consultation was completed:***
Contact consulting service for instructions on imaging and further management
- ***If prenatal consultation was not completed:***
 - Evaluate for any of the following with physical exam or on antenatal or postnatal ultrasound:
 - Renal or urinary anomalies PLUS oligohydramnios or anhydramnios
 - Renal or urinary anomalies PLUS no void > 24 hours
 - Moderate to severe hydronephrosis in a solitary kidney
 - Concern for posterior urethral valves (PUV):
 - Male fetus AND
 - Bilateral moderate to severe hydronephrosis OR
 - Unilateral moderate to severe hydronephrosis AND distended bladder OR
 - Dilated posterior urethra
- **If concerned or any of the above findings identified please contact one call at 1-833-PEDS-NOW AND obtain postnatal renal bladder ultrasound ASAP**
- **If NO concern for the above:**
 - Obtain 1st postnatal kidney and bladder ultrasound within 2-10 days of birth AND
 - Make *routine* referral to appropriate service (Nephrology or Urology) within 2-10 days of birth (*See Appendix B: Algorithm for Initial Management* and/or "When to Refer" section below)

OPTIONS FOR ONGOING MANAGEMENT FOR MILD HYDRONEPHROSIS

(*See Appendix C: Optional Management for Mild Prenatal Hydronephrosis*)

WHEN TO REFER	<p>EMERGENT REFERRAL to Connecticut Children’s <u>Urology</u> for possible surgical intervention</p> <ul style="list-style-type: none"> ▪ Concern for posterior urethral valves (see above) ▪ Moderate to severe hydronephrosis in a solitary kidney ▪ Renal or urinary anomalies PLUS oligohydramnios or no void > 24 hours <p>REFERRAL (within 2-10 days of birth) to Connecticut Children’s <u>Urology AND Nephrology</u></p> <ul style="list-style-type: none"> ▪ Presence of mild prenatal hydronephrosis in solitary kidney ▪ Moderate to severe isolated prenatal hydronephrosis <p>REFERRAL (within 2-10 days of birth) to Connecticut Children’s <u>Urology OR Nephrology</u></p> <ul style="list-style-type: none"> ▪ Mild unilateral or bilateral prenatal hydronephrosis (<i>See Appendix A: Definition of Hydronephrosis Severity</i>) OR <i>See Appendix C: Optional Management for Mild Prenatal Hydronephrosis</i>
HOW TO REFER	<p>Referral via CT Children’s One Call Access Center Make a Referral - Connecticut Children's (connecticutchildrens.org) Phone: 833.733.7669 Fax: 833.226.2329</p> <p><i>Information to be included with the referral:</i></p> <ul style="list-style-type: none"> ▪ Report of imaging studies obtained ▪ Pertinent prenatal history ▪ Any relevant laboratory studies completed
WHAT TO EXPECT	<p>What to expect from CT Children’s Visit:</p> <ul style="list-style-type: none"> ▪ Physical exam (blood pressure measurement) and history ▪ Review of imaging and possible ordering of additional imaging if indicated ▪ For emergently referred patients, possible admission and/or surgery

APPENDIX A: Definition of UTD Severity

	SFU	UTD
Resolved	G0	P0
Mild	G1	P1
Moderate	G2-3	P2
Severe	G4	P3

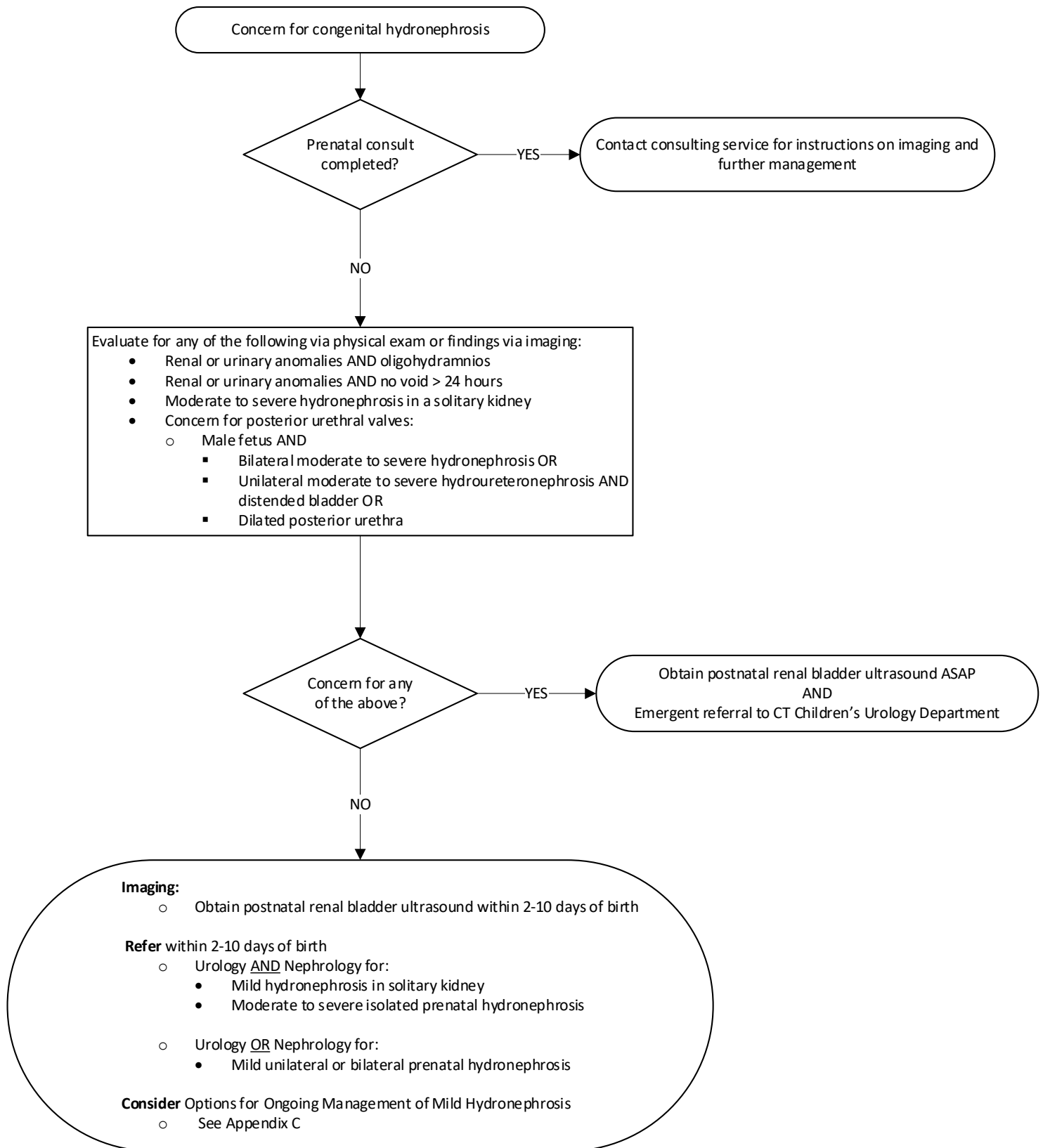
SFU: Society for Fetal Urology grading system:

Fernbach SK, Maizels M, Conway JJ. Ultrasound grading of hydronephrosis: introduction to the system used by the Society for Fetal Urology. Pediatr Radiol. 1993;23(6):478-80. PubMed PMID: 8255658.

UTD: Urinary tract dilation classification system:

Nguyen HT, Benson CB, Bromley B, Campbell JB, Chow J, Coleman B, Cooper C, Crino J, Darge K, Herndon CD, Odibo AO, Somers MJ, Stein DR. Multidisciplinary consensus on the classification of prenatal and postnatal urinary tract dilation (UTD classification system). J Pediatr Urol. 2014 Dec;10(6):982-98. doi:10.1016/j.jpurol.2014.10.002. Epub 2014 Nov 15. Review. PubMed PMID: 25435247.

APPENDIX B: Algorithm for Initial Management



APPENDIX C: Optional Management for Mild Prenatal Hydronephrosis (SFU P1, UTD G1)

- **Option 1:** Continued management by Urology OR Nephrology
- **Option 2:** Continued management by PCP
 - Follow ultrasound every 6 months for 2 years, then annually until 6 years old
 - Check blood pressure annually
 - Refer to Urology AND Nephrology if:
 - Increasing hydronephrosis (moderate or severe)
 - Cortical changes or poor renal growth
 - Urinary tract infection
 - Flank pain
 - Stop ultrasounds if two normal ultrasounds, but continue to follow clinically with:
 - Annual blood pressure check
 - Urine specimen (catheterized if not toilet trained) for symptoms/signs of urinary tract infection or unexplained prolonged fever
 - Renal / bladder ultrasound for flank pain
 - Refer to Urology OR Nephrology as appropriate for urinary tract infection, hydronephrosis, unexplained flank pain, poor weight gain, failure to thrive, HTN or any other concerns