

CT Children's CLASP Guideline

Hydronephrosis

INTRODUCTION

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 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:***
Obtain 1st postnatal kidney and bladder ultrasound **within 24 hours of life** and call OneCall (1-833-PEDS-NOW) for **urology consultation** for **possible surgical intervention** if:
 - Concern for PUV:
 - Male fetus AND
 - Bilateral moderate to severe hydronephrosis OR
 - Unilateral moderate to severe hydronephrosis AND Distended bladder OR
 - Dilated posterior urethra OR
 - Oligohydramnios and any renal and urinary anomaly
 - Prenatal renal or urinary anomaly and no void > 24 hours**Otherwise, see referral guidelines below.**

OPTIONS FOR ONGOING MANAGEMENT FOR MILD HYDRONEPHROSIS

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

WHEN TO REFER

EMERGENT REFERRAL to Connecticut Children's Urology for possible surgical intervention

- Concern for PUV (see above)
- Moderate to severe hydronephrosis in a solitary kidney
- Any genital urinary anomalies with oligohydramnios or no void > 24 hours

REFERRAL (within 2-10 days) to Connecticut Children's Urology AND Nephrology

- Presence of mild prenatal hydronephrosis in solitary kidney
- Moderate to severe isolated prenatal hydronephrosis

(continued...)

	REFERRAL (within 2-10 days) to Connecticut Children's Urology OR Nephrology <ul style="list-style-type: none"> Mild unilateral or bilateral prenatal hydronephrosis <i>(See Appendix C: Optional Mgmt for Mild Prenatal Hydronephrosis)</i>
HOW TO REFER	Referral via CT Children's One Call Access Center Phone: 833.733.7669 Fax: 833.226.2329 Information to be included with the referral: <ul style="list-style-type: none"> Report of imaging studies obtained Pertinent prenatal history Any relevant laboratory studies completed
WHAT TO EXPECT	What to expect from CT Children's Visit: <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

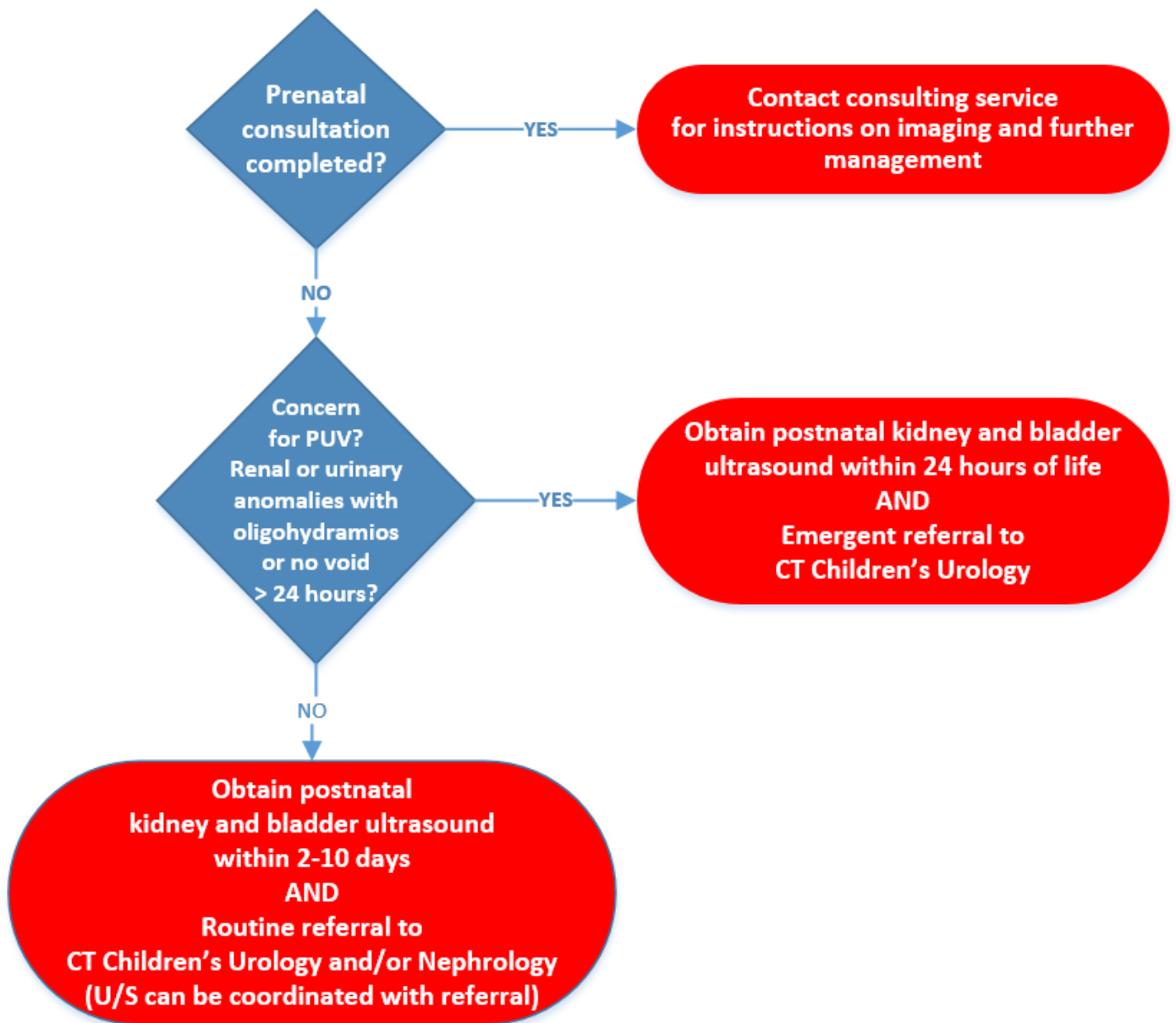
SFU: Society for Fetal Urology grading system:

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.jpuro.2014.10.002. Epub 2014 Nov 15. Review. PubMed PMID: 25435247.

APPENDIX B: Algorithm for Recommended Initial Management



APPENDIX C: Optional Management for Mild Prenatal Hydronephrosis

- **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.
 - Annual blood pressure check
 - Catheterized specimen for 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, low stature, HTN or any other concerns