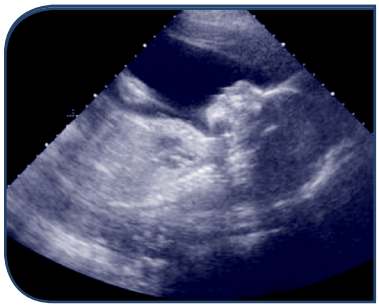

PERINATAL ASSESSMENT AND REFERRAL FOR

Urinary Tract Dilation (UTD)

2020 Update (Reaffirmed 2023)

Intermountain Canyons and Desert Regions

This care process model (CPM) was developed by Intermountain Healthcare's Women and Newborn Clinical Program's Obstetrics and Well Newborn Development Teams based on expert consensus and recent publications summarizing evidence-based treatment for urinary tract dilation (UTD). This CPM supports best practices for both antenatal and postnatal assessment and referral, promoting communication and collaboration between primary care and pediatric urology. **Guidelines in this CPM assume that UTD identified in prenatal ultrasound studies has not warranted in utero treatment to correct associated oligohydramnios.**

Why Focus ON URINARY TRACT DILATION?

- **It's a common finding on prenatal ultrasound examination.** UTD affects approximately 1 in 300 pregnancies and is the most common genitourinary tract anomaly identified on prenatal ultrasound studies.[COP] Most obstetricians, family practice physicians, and pediatricians will encounter this condition and will need to support expectant parents facing this diagnosis.
- **The wide range of postnatal outcomes demands a systematic approach.** In most cases, fetal UTD resolves spontaneously; however, some cases signal obstructions that may cause renal dysfunction. A systematic approach will help:
  - Prevent unnecessary testing and anxiety
  - Effectively diagnose and treat the disorders associated with fetal UTD
  - Make appropriate prenatal referrals to pediatric urology and nephrology
  - Deliver care in a consistent, integrated way across the Intermountain system
- **Published standards of care are few.** There are no national guidelines for treating UTD. This CPM draws from the experience of pediatric specialists and the medical literature listed in the references section.
- **A finding of prenatal UTD is often distressing for a pregnant woman and her family.** By providing a clear plan for assessment and possible treatment, this model and associated patient education can help clinicians support mothers and families facing this diagnosis.

Measurements & Goals

Indicates an Intermountain measure

Goals (increasing):

- Percentage of antenatal UTD cases in which the pediatrician is properly notified in iCentra
- Number of appropriate follow up and referral based on UTD classification system guidelines

Measurements (number of):

- Pediatrician referrals for UTD A2-3
- Repeat antenatal ultrasounds (at 32 weeks)
- Antenatal referrals to a pediatric urologist or nephrologist as appropriate (see page 2)
- Initial postnatal ultrasounds
- Follow-up ultrasounds at 4 and 12 months by UTD classification
- Postnatal referrals to pediatric urology (and timing)

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KEY POINTS

- Fetal UTD can be detected as early as the 12th week of gestation.[BLY, ROB]
- UTD occurs approximately twice as often in males than in females and is bilateral in 20 % to 40 % of cases.[GON]
- Although usually transient or clinically insignificant, UTD is sometimes caused by urinary tract obstruction and vesicoureteral reflux. These conditions should be diagnosed soon after birth to ensure normal renal development and prevent renal injury.
- In general, the likelihood of having a significant renal anomaly correlates with the severity of UTD. This CPM recommends a consensus classification system to diagnose and grade prenatal UTD.[NGU]
- Repeat ultrasound examination guides management decisions with timing based on findings of previous physical and ultrasound examinations.

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ALGORITHM: PERINATAL ASSESSMENT, FOLLOW UP, AND REFERRAL

Antenatal

Antenatal UTD diagnosed from ultrasound and classified (a)

FOLLOW UP (based on level of risk)

- **UTD A1: REPEAT ultrasound at about 32 weeks**
  - If resolved at 32-week scan: Additional follow-up unnecessary
  - If persistent as UTD A1 at 32-week scan, follow up postnatally (no further prenatal ultrasound)
- **UTD A2-3: FOLLOW UP in 4 to 6 weeks; NOTIFY pediatrician**

REFER ONLY when suspected:

- Lower urinary tract obstruction (or patient is very concerned and requests referral): **REFER to a pediatric urologist**
- Parenchymal disease resulting from the obstruction (e.g., if there is oligohydramnios): **REFER to a pediatric nephrologist**

Postnatal

PERFORM initial postnatal ultrasound (based on UTD prenatal classification)

- **UTD A1:** Initial ultrasound at 4 weeks of age
- **UTD A2–3:** Initial ultrasound at ≥48 hours of age or just prior to discharge **(b)**

Initial postnatal ultrasound: Recommended actions based on results

Ultrasound result:	If A1 classification:	If A2 or A3 classification:
UTD resolved (or improved)	No further action required	• CLASSIFY as UTD P1 (c) • ORDER follow-up ultrasound at 4 months of age
UTD stable	• CLASSIFY as UTD P1 (c) • ORDER follow-up ultrasound at 4 months of age	• CLASSIFY as UTD P2 or P3 (c) • REFER to Pediatric Urology
UTD worsened	• CLASSIFY as UTD P2 or P3 (c) • REFER to Pediatric Urology	• CLASSIFY as UTD P2 or P3 (c) • REFER to Pediatric Urology

4-month follow-up ultrasound: Recommended actions based on results

Ultrasound result:	All postnatal classifications
UTD resolved (or improved)	No further action required
UTD stable	• CLASSIFY as UTD P1 (c) • ORDER follow-up ultrasound at 12 months of age
UTD worsened	• CLASSIFY as UTD P2 or P3 (c) • REFER to Pediatric Urology

12-month follow-up ultrasound: Recommended actions based on results

Ultrasound result:	All postnatal classifications
UTD resolved (or improved)	No further action required
UTD stable	No further action required
UTD worsened	• CLASSIFY as UTD P2 or P3 (c) • REFER to Pediatric Urology

ALGORITHM NOTES

(a) Prenatal ultrasound interpretation and classification [NGU]

	GA 16–28 weeks	GA > 28 weeks
Risk of postnatal nephropathy	Normal AP diameter = <4 mm	Normal AP diameter = < 7 mm
Low	4–7 mm = UTD A1	7–10 mm = UTD A1
Increased	> 7 mm = UTD A2–3	> 10 mm = UTD A2–3

Notes:

- **Elevate to UTD A2–3 (IF ANY):**
  - Calyceal involvement (central is okay, but peripheral is not)
  - Renal echogenicity including cystic changes
  - Thin renal parenchyma (subjective)
  - Visible ureters
  - Abnormal bladder (thick wall, ureterocele)
  - Unexplained oligohydramnios (MVP < 2 cm)
- **Use the worst side for classification if bilateral.**
- **Gender is irrelevant** (except if possible lower urinary tract obstruction or posterior urethral valves).

(b) Antenatal UTD classification based on prenatal ultrasound (after 32 weeks) [NGU]

UTD A1 — defined as both:

- Anterior-posterior renal pelvic diameter (AP RPD) ≥ **7 mm and** ≤ **10 mm**
- None of the other urinary tract abnormalities listed below (Note: central calyceal dilation is normal)

UTD A2–A3 — if ANY present:

- Anterior-posterior renal pelvic diameter (AP RPD) ≥ **10 mm**
- Peripheral calyceal dilation
- Abnormal parenchymal thickness, ureters, and/or bladder
- Unexplained oligohydramnios

(c) Postnatal UTD classification [NGU]

UTD P1 — defined as anterior-posterior renal pelvic diameter (AP RPD) 10 mm to < 15 mm

UTD P2 — defined as (ANY apply):

- Anterior-posterior renal pelvic diameter (AP RPD) ≥ **15 mm**
- Peripheral calyceal dilation
- Abnormal ureters

UTD P3 — defined as (ANY apply):

- Abnormal parenchymal thickness or appearance
- Abnormal bladder

CPM DEVELOPMENT TEAM

Ware Branch, MD
Annette Crowley, MSN
Dave Dansie, MD
Erick Henry, MPH
Glen Huff, MD
David Jackson, MPH (Medical Writer)
Peter Lindgren, MD
Flint Porter, MD
Con Yee Ling, MD
Jean Millar, MBA, RN
Doug Richards, MD
M. Chad Wallis, MD
Women's Health Clinical Program

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This CPM presents a model of best care based on the best available scientific evidence at the time of publication. It is not a prescription for every physician or every patient, nor does it replace clinical judgment. All statements, protocols, and recommendations herein are viewed as transitory and iterative. Although physicians are encouraged to follow the CPM to help focus on and measure quality, deviations are a means for discovering improvements in patient care and expanding the knowledge base. Send feedback to Annette Crowley, Intermountain Healthcare, Women's Health Clinical Program Manager, Annette.Crowley@imail.org

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