KidneyWell Risk Assessment

Research shows that one out of every six extremely low birth weight infants (born <28 weeks' gestation age) has evidence of CKD by 2 years of age [1, 2]. Other babies are also at risk, including babies born <34 weeks' gestation, babies with HIE, and babies with NEC.

We founded KidneyWell to make sure every at-risk baby is screened for chronic kidney disease per Consensus Guidelines recently published [3]. We've also continued our mission to assess every baby who had an acute kidney injury (AKI) in our AKI clinic with Dr. Tennille Webb, Pediatric Nephrologist, at Children's of Alabama.

We ask you to screen your babies for chronic kidney disease prior to discharge and to refer your babies with AKI to us! If your baby has a persistent AKI, we recommend you touch base with our on-call nephrologist for guidance.

<u>Helpful information</u>

Does your baby have an AKI?

1. Identify AKI
   For any babies >7 days old (babies present with maternal creatinine within the first week of life) that have a serum creatinine >0.5mg/dL or oliguria/anuria

Stage	Serum creatinine	Urine output
0	No change in SCr level or rise <0.3 mg/dL	≥0.5 mL/kg/hr
1	≥0.3 mg/dL increase within 48hr or Increase ≥1.5-1.9 x baseline within 7 days	<0.5 mL/kg/hr for 6-12hr
2	≥2.0-2.9 x baseline within 7 days	<0.5 mL/kg/hr for ≥12hr
3	≥2.5 mg/dL increase, or ≥3 x baseline, or receive renal replacement therapy	<0.3 mL/kg/hr for ≥24hr or anuria for ≥12hr

2. Document AKI
   a. ICD-10 code
      i. S37.009D "Unspecified injury of unspecified kidney, subsequent encounter"
      ii. S37.0 "Injury of Kidney" (non-billable, non-specific code)
      iii. N17.9 "Acute kidney failure, unspecified" (billable)
      iv. N18 "Chronic kidney disease" (non-billable, non-specific code)
   b. Use "smart phrase"
   c. Identify in note that patient needs AKI follow-up

3. Is your AKI improving?
    a. Yes – go to 4
    b. No – Call 205 638 9100 and ask for the on-call nephrologist
4. Discharge Risk Assessment
    a. Obtain serum creatinine
    b. Obtain properly measured blood pressure
    c. Create referral
    d. Complete referral forms and email them to kidneywell@childrensal.org
    e. Document referral
    f. Give parents/guardians education sheet
    g. Give parents appointment time

Is your baby at risk for chronic kidney disease?

1. Does your baby have any of the following?
    a. <34 weeks' gestation
    b. <1500g at birth
    c. History of Hypoxic Ischemic Encephalopathy (HIE)
    d. History of Necrotizing Enterocolitis (NEC)
2. Document in your baby's chart
    a. Document risk for CKD because of any of the above risk factors
    b. N18 "Chronic kidney disease" (non-billable, non-specific code)
    c. Make a note to screen your baby prior to discharge
    d. This documentation will also help your baby's pediatrician know that this patient is at risk for CKD and to provide screening throughout life
3. Screen your baby for signs of chronic kidney disease before discharge
    a. We recommend this screening no more than 2 weeks prior to discharge
    b. We recommend obtaining the following
        i. Serum creatinine
        ii. Properly obtained blood pressure in an upper extremity
4. Educate your family
    a. Give your baby's parents/guardians the KidneyWell education sheet
    b. Answer any questions they may have

References

1. Chaturvedi S, Ng KH, Mammen C. The path to chronic kidney disease following acute kidney injury: a neonatal perspective. Pediatr Nephrol. 2017 Feb;32(2):227-241. doi: 10.1007/s00467-015-3298-9. Epub 2016 Jan 25. PMID: 26809804.
2. Akkoc G, Duzova A, Korkmaz A, Oguz B, Yigit S, Yurdakok M. Long-term follow-up of patients after acute kidney injury in the neonatal period: abnormal ambulatory blood pressure findings. BMC Nephrol. 2022 Mar 23;23(1):116. doi: 10.1186/s12882-022-02735-5. PMID: 35321692; PMCID: PMC8941738.

3. Starr MC, Harer MW, Steflik HJ, et al. Kidney Health Monitoring in Neonatal Intensive Care Unit Graduates: A Modified Delphi Consensus Statement. *JAMA Netw Open.* 2024;7(9):e2435043. doi:10.1001/jamanetworkopen.2024.35043