

Clinical Impact and Sustainability of a Standardized Neonatal Nephrology Consult Program

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Background/Objective: Acute kidney injury (AKI) is common in high-risk neonates and is associated with increased morbidity and mortality. Standardized programs to identify AKI exist only in a few institutions. The sustainability and clinical impact of such programs have not been described. We characterized changes in AKI incidence, neonatal nephrology consultation, and outpatient neonatal nephrology visits after implementation of a Neonatal Nephrology program. We hypothesized that neonatal AKI incidence would decrease in the post-implementation era.

Methods: We instituted a standardized Neonatal Nephrology program in early 2020 to identify AKI in infants admitted to the NICU. Elements included (1) a shared neonatology and nephrology clinical practice guideline including creatinine monitoring, (2) electronic health record alert to identify infants with AKI, and (3) standardized nephrology consultation. All neonates with AKI were seen by nephrology and infants with severe AKI (stage 2 or 3) were referred for outpatient follow-up.

Results: There was a sustained and significant decrease in AKI incidence since initiation of the program. AKI incidence decreased from 40% in 2019 before the program began to 19% in 2023. This decrease in AKI incidence correlates temporally to increased AKI identification and inpatient Neonatal Nephrology consults. While the initial burden of neonatal nephrology consults increased, with the decline in AKI incidence there has been a subsequent decrease in consultations.

Conclusions: We report a reduction in AKI incidence after implementation of a standardized Neonatal Nephrology program. While reasons are likely multifactorial, it is likely that increased AKI awareness and monitoring contributed to this decline. We believe our single center experience emphasizes the importance of multi-disciplinary work in neonatal nephrology. Future work will focus on risk stratification of outpatient management of high-risk infants, interventions focused on further reduction in AKI incidence, and development of standardized approaches for identification and risk-stratification of infants.