



Prevalence and Complications of Renal and Urologic Anomalies in Down Syndrome

Kayleigh Avery, MD; Marilyn Bull, MD; Celanie Christensen, MD; Amy Wilson, MD
Indiana University School of Medicine

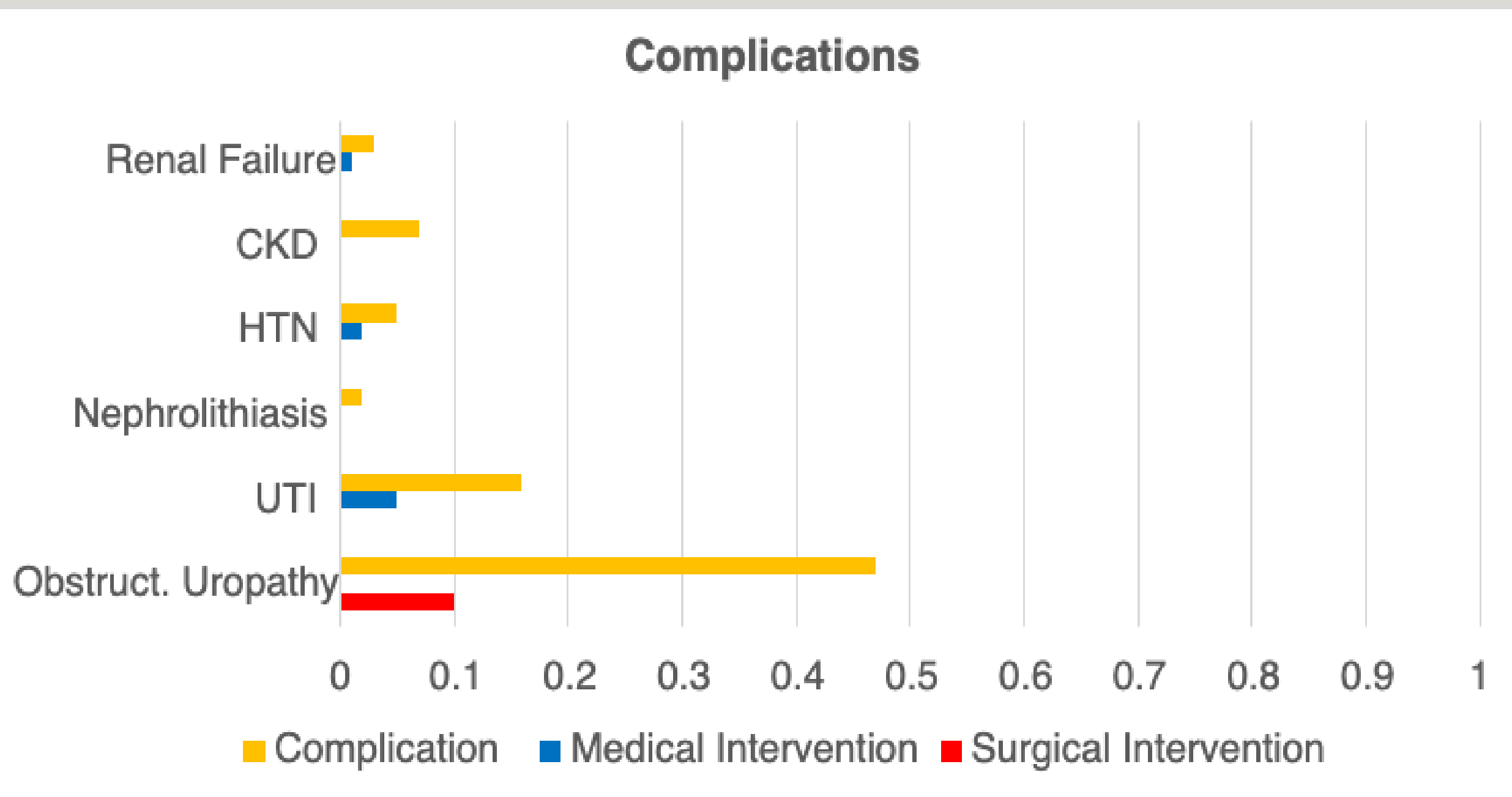
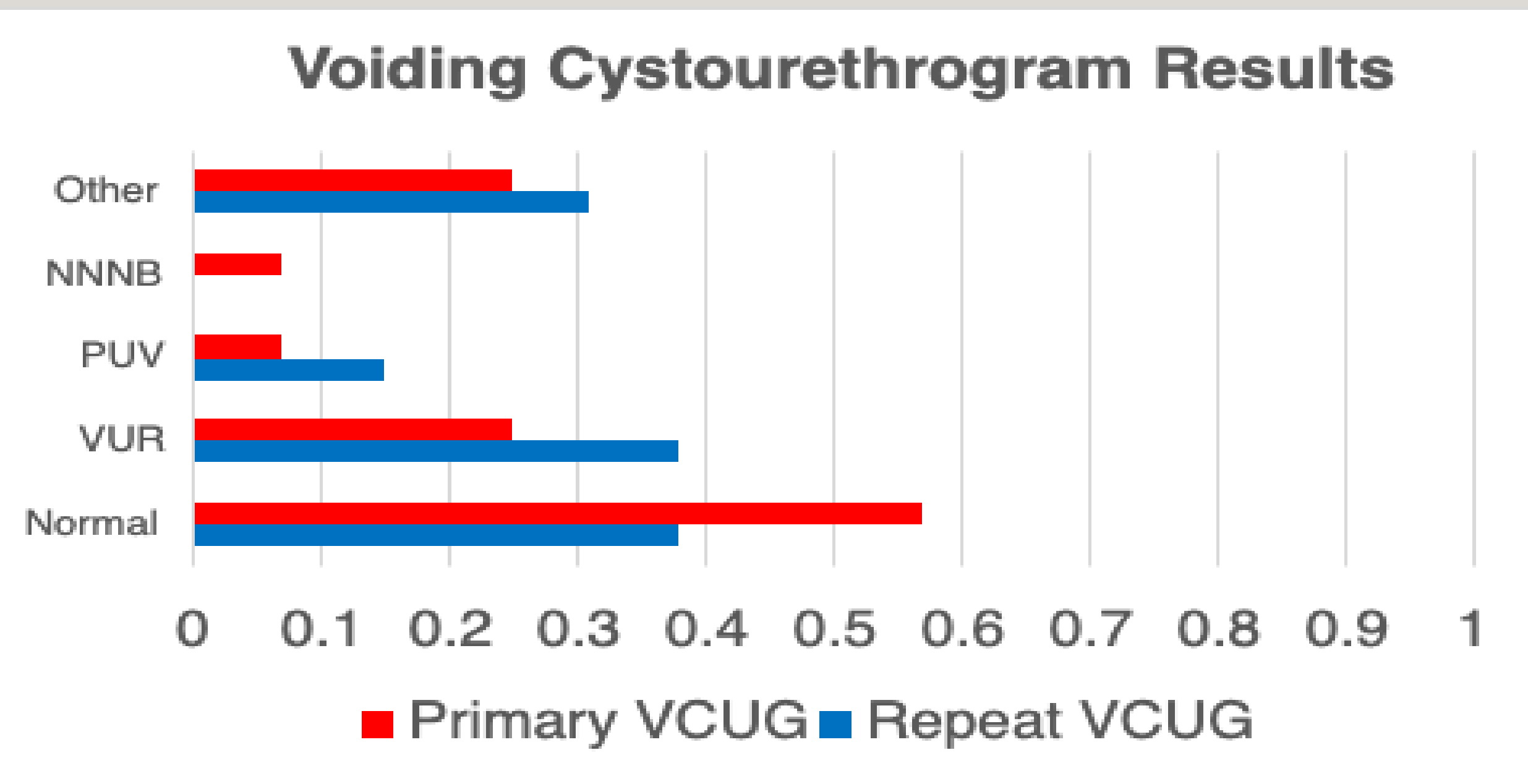
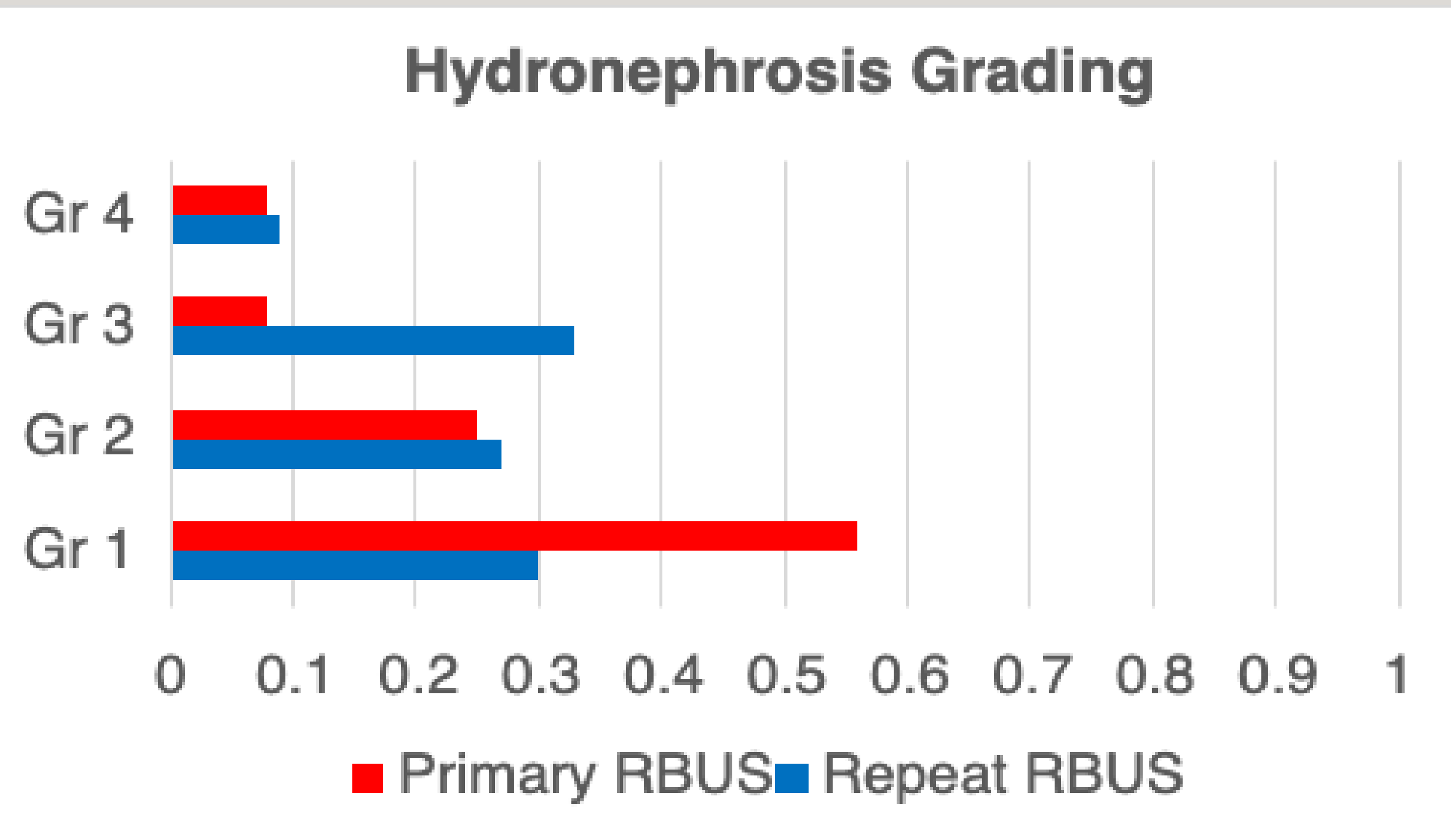
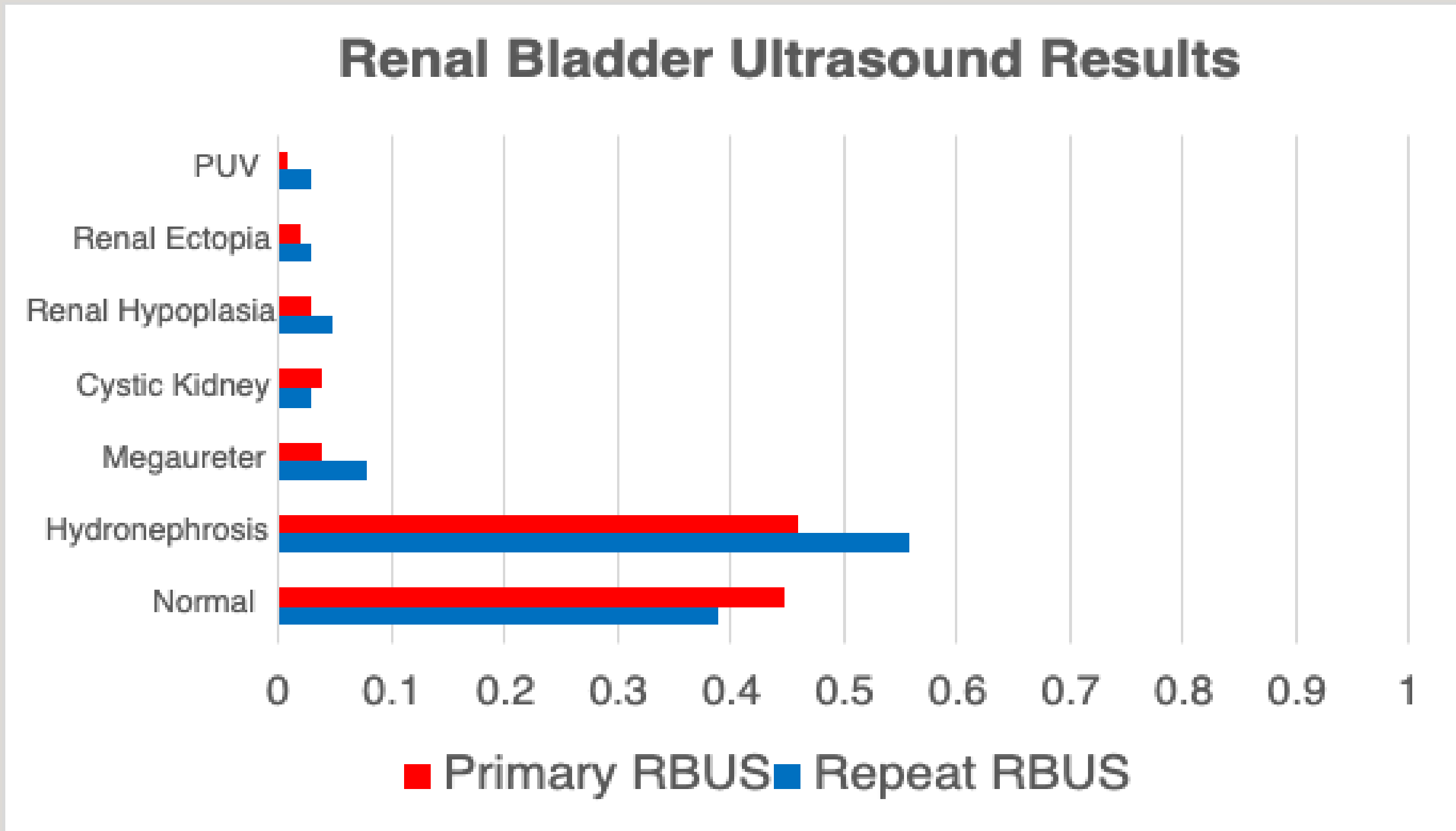


INTRODUCTION

Patients with Down syndrome (DS) have known increased risk of renal and urologic anomalies. Several prior population-based studies identify anomalies in patients with DS. However, many of these studies do not include patients or data outside of the first one to two years of life¹. Current health maintenance guidelines do not provide a recommendation for postnatal screening for renal or urologic anomalies². The objective of this study is to investigate the prevalence and complications of renal and urologic anomalies in pediatric patients ages birth to 22 years with DS.

METHODS

A retrospective chart review of 319 patients with DS seen between 2021 and 2023 was conducted. 35% of reviewed records had available imaging studies including renal bladder ultrasounds (RBUS) and/ or voiding cystourethrograms (VCUG). These studies were reviewed for renal and urologic anomalies.



SUMMARY

The most common abnormal renal finding in patients with an available RBUS is pyelectasis or hydronephrosis (46%). The most common abnormal urologic finding on VCUG is vesicoureteral reflux (25%). Complications including obstructive uropathy, urinary tract infection, nephrolithiasis, hypertension, chronic kidney disease (CKD), and renal failure are noted in 29% of all patients with or without available imaging studies. 20% of patients with obstructive uropathy require surgical intervention.

CONCLUSIONS

Timely identification of renal and urologic anomalies across childhood allows these conditions to be addressed before complications arise. These findings support consideration of adding postnatal screening for renal and urologic anomalies in future healthcare guidance for children and adolescents with DS.

REFERENCES

1. Leskur M, et al. Congenital Anomalies of the Kidney and Urinary Tract in Down Syndrome: Prevalence, Phenotypes, Genetics and Clinical Management. Genes (Basel). 2025 Feb 20.
2. Bull MJ, et al. Health Supervision for Children and Adolescents With Down Syndrome. Pediatrics. 2022 May 1.

KEY ABBREVIATIONS

CKD = chronic kidney disease
HTN = hypertension
NNNB = non-neurogenic neurogenic bladder
PUV = posterior urethral valves
UTI = urinary tract infection
VUR = vesico urethral reflux