OBJECTIVES: Management of antenatal hydronephrosis (ANH) may vary owing to lack of evidence-based algorithms. We characterize contemporary resource utilization and medical outcomes for infants with ANH and their mothers from a national claims dataset. We hypothesize that management of isolated hydronephrosis (IHN), defined as hydronephrosis without underlying diagnosed pathology, varies widely, with decreased imaging following a 2010 Society for Fetal Urology (SFU) Consensus Statement recommending judicious imaging use for postnatal evaluation.

METHODS: Using MarketScan claims from 2007-2013, we identified infants 0-12 months of age with HN diagnoses and linked mothers. Those with urologic diagnoses more specific than HN, additional urologic comorbidities or postnatal surgeries were excluded. In order to assess resource utilization, prenatal and postnatal imaging, laboratory studies, circumcision, hospital admissions, and medical outcomes within the first year were captured. Demographics, maternal characteristics, utilization measures and outcomes were bivariately assessed across imaging intensity groups based on number of postnatal ultrasounds (US’s) received.

RESULTS: Among 801,919 mother-child pairs, 8,647 infants (1.1%) had hydronephrosis or a related diagnosis. 5,876 (68.0%) met inclusion criteria for IHN. Patients underwent a mean of 5.3±3.5 prenatal and 2.1±1.3 postnatal US’s before age 1. HMO-covered infants had fewer postnatal US than non-HMO counterparts. UTIs occurred in 11.6% of patients; 5.5% had UTI-related admissions. Imaging practices were unchanged following the SFU Consensus Statement.

CONCLUSIONS: ANH prevalence in an insured population is consistent with published ranges. Resource utilization in IHN is variable and excessive prenatally. Excess utilization in the management of ANH can potentially be reduced using evidence-based pathways.