



Comparison of 30-day emergency department bouncebacks after pediatric versus adult urologic surgery

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Summary

Introduction

More pediatric patients seem to present to the emergency department (ED) for non-urgent matters after urologic procedures than adult patients. Under new and expanding healthcare reform, pediatric urologists may be penalized for these visits. We compare our 30-day postoperative bounceback rates to the ED and the acuity of the concerns in these populations.

Materials and methods

All urology consults at our institution are maintained on a prospectively tracked database. We identified all patients who presented to our adult or pediatric ED between July 2013 and June 2015 within 30 days of a urologic procedure. We investigated the patient demographics including age, race, insurance, distance from the home zip code to the ED, procedures performed, chief complaint in the ED, diagnosis, and treatment required.

Results

In our pediatric group, there were 67 visits for 56 patients (19 female, 37 male, mean age 6.8 years), which represents an overall bounceback incidence of 2.7%. Of those, 19% required admission (0.60% overall readmission rate), 10% underwent a procedure (0.32% reoperative rate, 18% required catheter

manipulation/placement, 13% were given a prescription (most commonly for constipation), 6% required local wound care, and 33% were reassured only). Most pediatric patients had private insurance (62.5%) and those with private insurance or who were uninsured tended to require only reassurance compared to those with Medicare/Medicaid ($p = 0.053$). In the adult population, there were 369 visits in 310 patients (111 female, 199 male, mean age 55.4 years) for an incidence of 4.4%. Of those, 42% were admitted (2.2% overall readmission rate), 14% underwent a procedure (0.74% reoperative rate), 11% required catheter manipulation/placement, 14% were given medication (most commonly antibiotics and narcotics), 4% were given local wound care, and 12% were reassured. Most adult patients had Medicare/Medicaid (48.7%), but insurance type was not related to treatment required ($p = 0.382$). On multivariable analysis, pediatric patients, closer proximity to the hospital, and earlier postoperative day at presentation to the ED were predictive of requiring only reassurance.

Conclusions

Compared to adults, pediatric patients are less likely to return to the ED postoperatively ($p < 0.001$), but they are significantly more likely to require only reassurance ($p < 0.001$) while adults are significantly more likely to require hospital admission ($p < 0.001$). In both groups, nearly one-third of patients required only catheter care or medication. This difference could have significant implications for new healthcare policy.

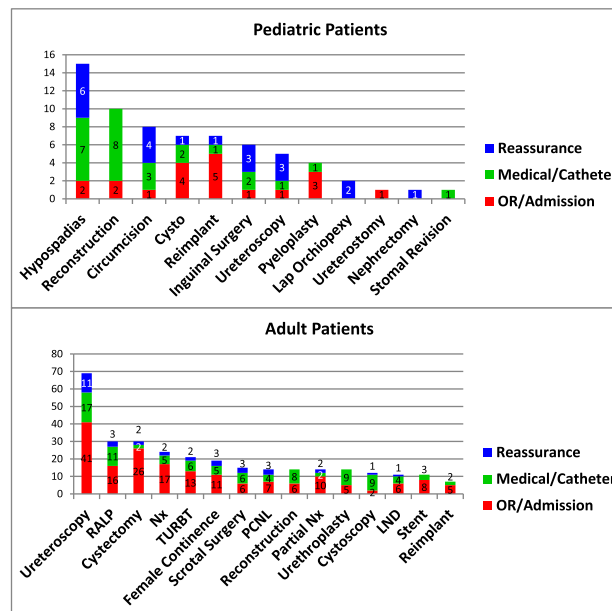


Figure Most common procedures performed and treatment required for pediatric (above) and adult (below) patients who returned to the ED after urologic surgery.

Introduction

“Children are not little adults” is a well-known saying used by pediatric providers to explain the differences in pediatric and adult physiology and disease. It may be especially relevant during the current efforts to define quality in healthcare and modify physician reimbursement based on new quality metrics. Programs for adults such as the Bundled Payments for Care Improvement Initiative (BPCI) propose that quality be defined both by the efficacy of the care delivered and the cost [1]. As such, providers are incentivized to minimize preventable expenses from events such as emergency department (ED) visits and hospital readmissions.

Prior to creating and expanding new quality metrics and healthcare policy to pediatric patients, it is imperative to fully understand of the differences between pediatric and adult healthcare utilization patterns. It is known that pediatric patients have lower readmission rates than adults [2]. However, the differences in ED utilization have not been defined. Anecdotally, it seems more pediatric patients than adult patients return to the ED for non-acute concerns requiring only caregiver reassurance and no formal intervention. This possible difference would be important to consider when defining quality metrics for pediatric patients. A comparison of pediatric and adult ED utilization in a single sub-specialty such as urology would offer insight into future work in pediatric health policy.

In this context, we conducted a retrospective review of the pediatric and adult patients who returned to our institution’s pediatric or adult ED within 30 days of urologic surgery. We hypothesized that pediatric patients had more possibly preventable ED visits that did not require any type of intervention, while adults were more likely to return to the ED for more acute concerns requiring intervention.

Materials and methods

Data sources

All consults to the urology service at our institution are recorded on an IRB-approved, prospectively collected database, which has been previously described [3]. This database specifies the location of the consult and if the patient has previously undergone a urologic surgery. Additionally, we utilized our institution’s electronic health medical record for further detailed information regarding the patient’s surgery, ED visit, diagnoses, and sociodemographic data.

Study population

After obtaining IRB approval, we performed a search of the database to identify all consults from the ED for patients who had undergone a urologic surgery at our institution within the last 30 days between July 2013 and June 2015. Patients were excluded if they had a urologic surgery performed at a different institution or if they returned to the

emergency department after the 30-day window. Patients were classified as pediatric if they had their surgery performed at our pediatric hospital by a pediatric urologist. Adults were defined as patients who had surgery at the adult hospital by an adult urologist.

Outcomes

For each patient, we identified the urologic surgery initially performed, the postoperative day at presentation to the ED, the patient’s chief complaint, the number of visits to the ED within the 30-day postoperative period, and the day and time of the consults. Each 24-h period was divided into three categories. If the consult was during usual work hours (8:00 a.m. to 5:00 p.m.), it was labeled as a day consult. If it occurred from 5:00 p.m. to 12:00 midnight it was designated an evening consult. If it occurred after 12:00 midnight to 8:00 a.m. the following day, it was called an overnight consult. Using the electronic medical record, we also identified the diagnosis given at the conclusion of the ED visit. We identified what intervention was performed, including hospital admission, unplanned procedure, medication administration in the ED, medication prescription, manipulation or placement of any urinary drainage tube, local wound care, or if they were only given education or reassurance. Additionally, we recorded patient demographic information including age, race, insurance status, and zip code. Distance from the patient’s home to hospital was estimated by zip code using a software tool (Excel Zip Code Distance Calculator, GS Software, 2015). We also obtained data regarding the total number of urologic procedures performed at our pediatric and adult hospitals during this time period.

Statistical analysis

Bivariate analysis including the Student *t* test and chi-square test was utilized to compare the differences in sociodemographic factors, intervention performed, postoperative day on presentation, the total number of ED visits, the distance from the patient’s home to the hospital, and the type of intervention performed between pediatric and adult patients. Bounceback rates were calculated as the total number of patients who returned to the ED within 30 days of a procedure divided by the total number of patients who underwent a urologic procedure. Readmission and reoperative rates were similarly calculated.

We then categorized patients into two groups: patients who did not require intervention in the ED (those who required reassurance only) and those who received any sort of intervention (local wound care, medication administration or prescription, manipulation or placement of a urinary drainage tube, unplanned procedure, or hospital admission). A logistic regression with “no intervention” and “intervention” as the dichotomous outcome and age as the primary predictor variable was run. Other variables included in this model were postoperative day, total number of visits to the ED, distance from the ED, insurance type, race, and sex.

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