

COMMON CLINICAL DIAGNOSES AND CONDITIONS**URINARY TRACT INFECTIONS****INTRODUCTION**

Infections of the urinary tract can involve any structure from the kidney to the urethra. Pyelonephritis exists when the infection involves the kidney. Urinary tract infections (UTI) occur in up to 2.8% of all children and 5% of febrile children. They result in 1.1 million office visits (0.7% of total visits) and 13,000 hospitalizations annually. Costs related to only the acute inpatient care of UTI are estimated at \$180 million per year alone. The financial impact of subsequent follow-up imaging, treatment, long-term sequelae, and family/caregiver work loss is not well quantitated but is substantial. UTIs may be associated with urologic abnormalities in a significant percentage of young children with pyelonephritis. Pediatric hospitalists frequently encounter children with UTI and must remain current on strategies for diagnosis, treatment and follow-up care for patients with UTIs.

KNOWLEDGE

Pediatric hospitalists should be able to:

- Describe the abnormal anatomic and physiologic aspects of the urogenital system that may predispose children to UTIs at varying ages, such as posterior urethral valves, duplicated system, voiding dysfunction, chronic constipation, and others.
- Describe the range of clinical presentations attending to differences by age.
- Compare and contrast the short and long term risks of lower versus upper urinary tract infection.
- Define a positive urine culture and discuss how the method for obtaining and efficiency of processing urine influences results of cultures.
- Identify pathogens that cause UTI in both the previously healthy host and those with underlying disease.
- Describe appropriate antibiotic coverage for pathogens of concern with awareness of antibiotic resistance patterns within the local community.
- Discuss the utility of commonly obtained laboratory tests such as urinalysis, urine gram stain, urine culture, blood culture, serum chemistries, and others.
- Review the typical response to therapy, and list common complications of ineffective treatment.
- Summarize current literature regarding treatment and evaluation for underlying abnormalities, including radiography.
- List factors warranting subspecialty consultation or referral.
- Discuss the potential acute and long-term sequelae of treated and untreated UTI.
- Summarize the discharge plan attending to indications for short and long term parenteral and total antimicrobial therapy, repeat evaluations, and subspecialty referral by age.

SKILLS

Pediatric hospitalists should be able to:

- Correctly diagnose UTI by efficiently performing an accurate history and physical examination, determining if key features of the disease are present.
- Identify patients at risk for UTI.
- Order appropriate diagnostic studies for the evaluation of suspected UTI.
- Prescribe appropriate initial antimicrobial and supportive therapy based on history and physical examination.
- Correctly interpret results of diagnostic testing and use results to guide diagnosis and management.
- Correctly identify the need for and efficiently access appropriate consultants and support services needed to provide comprehensive care.
- Identify when discharge criteria are met, and initiate efficient discharge orders and plans.
- Communicate effectively with patients, the family/caregiver and the primary care provider to ensure appropriate post-discharge testing and follow-up.

ATTITUDES

Pediatric hospitalists should be able to:

- Educate the family/caregiver on the expected course of illness, treatment options, and potential sequelae.

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- Recognize the importance of communicating with the primary care provider to ensure a safe, efficient, and effective discharge and post-discharge care.
- Collaborate with the healthcare team to ensure coordinated hospital care for children with UTI.

SYSTEMS ORGANIZATION AND IMPROVEMENT

In order to improve efficiency and quality within their organizations, pediatric hospitalists should:

- Collaborate with referring physicians (primary care, emergency medicine, and referring hospital physicians) to develop and sustain appropriate referral networks for evaluation, admission, or transfer of children with UTI.
- Collaborate with subspecialists to ensure consistent, timely, and up-to-date evaluation and care in the inpatient setting.
- Lead, coordinate or participate in the development and implementation of cost-effective, safe, evidence-based care pathways to standardize the evaluation and management of hospitalized children with UTI.

Not for Distribution