#1:DON'T routinely use antibiotics other than amoxicillin in the treatment of children with presumed community-acquired pneumonia (in the outpatient setting).

Preschool-aged children with CAP (community acquired pneumonia) frequently do not require antibiotics, as most disease is caused by viral infections. Children with suspected CAP of bacterial origin should usually receive amoxicillin for outpatient treatment, or ampicillin or penicillin G for inpatient treatment. These agents have sufficient activity against the common bacterial pathogens causing CAP without being unnecessarily broad. Third-generation cephalosporins should be reserved for children who are unimmunized or with severe infection, or where there are high rates of penicillin-resistance among invasive pneumococcal isolates. Additional agents may be indicated in cases of suspected staphylococcal pneumonia, atypical pathogens, or influenza.

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#2: DON'T use a bag for collection of urine cultures to diagnosis urinary tract infections.

Bacterial growth in cultures of bag urine specimens are more likely to be falsely positive in young children with suspected urinary tract infection (UTI) due to contamination with perineal flora. A bag urine culture cannot therefore be used to establish the diagnosis of UTI and may lead to overtreatment. Although a negative bag culture would rule out a UTI, a positive culture requires confirmation by a more specific method, incurring substantial delay. Cultures of urine specimens obtained by catheterization or suprapubic aspiration are more specific and as such are preferred as the routine method of urine collection in non-toilet trained children. Clean-catch, the standard technique of urine collection for toilet-trained children, is a non-invasive method sometimes attempted in infants but is also associated with relatively high rates of contamination.

References:

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#3: DON'T routinely collect or process specimens for *Clostridium difficile* testing in infants less than 1-2 years of age with diarrhea.

Infants are commonly asymptomatic carriers of *C. difficile* (14-63%), but clinical illness is rarely reported before 12-24 months of age. It has been hypothesized that infants lack the cellular machinery for *Clostridium* toxin internalization. When investigating an infant with diarrhea, alternative diagnoses should be considered even with a positive test for *C. difficile*. Testing should be limited to immunosuppressed infants or those with underlying intestinal conditions (e.g. Hirschprung disease, inflammatory bowel disease) when other etiologies have been ruled out.

References:
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#4: DON'T use antibiotics to treat Group A streptococcal (GAS) pharyngitis without first doing a confirmatory diagnostic test (culture or rapid Ag detection test RADT)

There is broad overlap between the signs and symptoms of streptococcal and viral pharyngitis, and the ability to identify streptococcal pharyngitis accurately on the basis of clinical grounds alone is generally poor. Therefore, except when obvious viral clinical and epidemiological features are present, a laboratory test should be performed to determine whether GAS is present in the pharynx. Efforts have been made to incorporate the clinical and epidemiological features of acute pharyngitis into scoring systems that attempt to predict the probability that a particular illness is caused by GAS pharyngitis. These clinical scoring systems are helpful in identifying patients who are at such low risk of streptococcal infection that performance of a throat culture or an RADT is usually unnecessary. Children with all classic clinical features of GAS pharyngitis in a particular scoring system can be confirmed to have streptococcal pharyngitis only about 35%–50% of the time. The clinical diagnosis of GAS pharyngitis cannot be made with certainty even by the most experienced physicians, and bacteriologic confirmation is required.

Testing for GAS pharyngitis usually is not recommended for children or adults with acute pharyngitis with clinical and epidemiological features that strongly suggest a viral etiology (eg, cough, rhinorrhea, hoarseness, and oral ulcers; strong, high).

If on the other hand, there is a high clinical suspicion that the pharyngitis is due to Group A strep, one may considering providing a written prescription to the patient at the time of the visit, but they should be instructed only to fill the prescription once the culture is positive. If a RADT is performed, and is positive, then the prescription can be filled immediately.

References:
Clinical Practice Guideline for the Diagnosis and Management of Group A Streptococcal Pharyngitis: 2012 Update by the Infectious Diseases Society of America(IDSA). Stanford T. Shulman et al.

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#5: DON'T routinely treat uncomplicated acute hematogenous osteomyelitis with prolonged intravenous therapy.

Large retrospective cohort studies have shown no difference in treatment failure rate between children with uncomplicated acute hematogenous osteomyelitis treated with prolonged IV therapy when compared with shorter IV therapy and early transition to oral, to complete the course of therapy. 'Prolonged' IV therapy was defined as 10 days in one cohort, and others refer to the entire treatment course of 3 to 6 weeks. Of note, complications with PICC lines in the prolonged treatment arms were seen at a rate between 3-15%.

Consideration for use of prolonged IV therapy is in complicated disease (significant bone destruction; resistant or unusual pathogen; immunocompromised patient; sepsis or septic shock; venous thrombosis; metatstatic foci or important abscess formation).

Guidance as to when to consider transition to oral therapy include a good clinical response and consideration of the following: Afebrile for 24-48 hours; normalization of inflammatory markers or decrease in CRP by 50%; absence of complications or metastatic foci; and negative blood culture if culture was initially positive.

References:

Peltola H et al. Simplified treatment of acute staphylococcal osteomyelitis in children. Pediatrics 1997; 99:846-850.

Le Saux N et al. Shorter courses of parenteral antibiotic therapy do not appear to influence response rates for children with acute hematogenous osteomyelitis: a systematic review. BMC infectious diseases. 2002. 2:16.

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