

To Discharge or Not to Discharge on Outpatient Parenteral Antimicrobial Therapy: That Is the Question

Jessica L. Markham, MD, MS, Jennifer L. Goldman, MD, MS

Outpatient parenteral antimicrobial therapy (OPAT) has gained traction since the 1970s as a means of delivering intravenous (IV) antibiotic therapy in home or ambulatory settings. OPAT is relatively safe and more cost-effective than hospital administration of IV antibiotics.^{1–4} Yet the initiation of OPAT requires thoughtful consideration of individual patient and caregiver factors. Additionally, administration of OPAT requires careful coordination of multiple health care resources to ensure safe administration, monitoring, and follow-up during the course of therapy. Thus, prescribing OPAT requires clinicians to be adept at identifying appropriate OPAT candidates and efficiently organizing resources.

Despite the complexity of factors required to establish OPAT, recent studies suggest that OPAT is widely used and may in fact be overused. According to estimates, up to 39% of patients receiving OPAT could safely be managed with an oral antibiotic, and up to 10% may not even need an antibiotic.^{5–9} Overuse of OPAT exposes patients and families to excess cost as well as potentially avoidable complications (eg, medication adverse events) and hospital readmissions.^{10–12} For example, peripherally inserted central catheters, which are frequently used to deliver OPAT, are associated with complications such as central line–associated bloodstream infection, thrombosis, phlebitis, and fracture of catheter in up to 30% of children.¹³

In this issue of *Hospital Pediatrics*, Krah et al¹⁴ describe the economic and psychosocial burdens of pediatric OPAT, including increased out-of-pocket expenditures for caregivers and increased average daily medical costs. Additionally, Krah et al¹⁴ describe increased caregiver discomfort with the OPAT treatment plan at the time of hospital discharge, lower quality of life during the OPAT course, higher caregiver administration burden, and more missed days of work. Although previous studies suggest that OPAT improves quality of life secondary to earlier return to the home environment, this study highlights the burden and challenges of pediatric OPAT for caregivers. Although results are limited to a single-center study with a relatively small OPAT sample size, the

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Address correspondence to Jennifer L. Goldman, MD, MS, Divisions of Pediatric Infectious Diseases and Clinical Pharmacology, Department of Pediatrics, Children's Mercy Kansas City, 2401 Gillham Rd, Kansas City, MO 64108. E-mail: jlgoldman@cmh.edu

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*Department of Pediatrics,
Children's Mercy Kansas
City, Kansas City, Missouri*

findings reported by Krah et al¹⁴ are an important reminder to OPAT prescribers that the direct and indirect costs of the outpatient administration of IV therapy must be considered at the point of prescribing.

Although some infections may not be amenable to oral therapy (eg, brain abscess), transitioning to an oral alternative whenever possible eliminates the risks inherent to IV administration. Recent studies of infections that have conventionally required prolonged parenteral therapy suggest that in some cases, oral antibiotic therapy may be equivalent to OPAT. For example, published guidelines recommend prolonged IV antibiotics for the treatment of methicillin-resistant *Staphylococcus aureus* bacteremia and infective endocarditis; however, studies suggest that patients receiving oral therapy may have equivalent or noninferior clinical outcomes to those of patients receiving OPAT.^{15,16} Other infections, such as osteomyelitis, that have also traditionally been managed with prolonged courses of IV antibiotics can be treated effectively with early transition to oral therapy.^{17–21}

Recently published guidelines from the Infectious Diseases Society of America recommend that OPAT should be used in collaboration with an infectious disease (ID) specialist.¹ For hospitalists, particularly in resource-limited settings, this may mean collaborating with a pediatric ID-trained specialist at the nearest tertiary-care center. Ideally, these collaborations result in the reduction of inappropriate OPAT use when an oral alternative exists and may assist with establishing monitoring guidelines and medication transitions for children experiencing medication adverse events. For example, Hersh et al²² previously reported that engagement of ID specialists led to a reduction in 24% of OPAT orders at a tertiary-care children's hospital without an increase in adverse events, including readmissions.

The overuse of OPAT demonstrates a clear need for further health outcomes research in children. Although previous studies have established the safety and cost-effectiveness of OPAT, the current study by Krah et al¹⁴

highlights the potentially negative patient and caregiver experiences associated with pediatric OPAT. While we await additional health outcomes research studies, hospitalists should continue to collaborate with ID-trained physicians to minimize unnecessary OPAT and optimize oral antibiotics when appropriate.

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