




## Letter to the Editor

# Off-site facilities: Friend or foe of outpatient parenteral antimicrobial therapy (OPAT)?

Kelsey L. Jensen PharmD<sup>1</sup> , Amy Van Abel PharmD<sup>2</sup> , Paul Frykman PharmD<sup>3</sup>  and Christina G. Rivera PharmD<sup>2</sup> 

<sup>1</sup>Department of Pharmacy, Mayo Clinic Health System, Austin, Minnesota, <sup>2</sup>Department of Pharmacy, Mayo Clinic, Rochester, Minnesota and <sup>3</sup>Department of Pharmacy, Mayo Clinic Health System, Cannon Falls, Minnesota

*To the Editor*—In a recent publication by Kaul et al.<sup>1</sup> outpatient parenteral antimicrobial therapy (OPAT) patient characteristics associated with increased risk of loss to follow-up with infectious diseases (ID) staff were described. In this retrospective cohort study, loss to follow-up with ID in patients receiving OPAT was strongly associated with discharge to an off-site facility, including subacute rehabilitation center (OR, 3.24; 95% CI, 2.35–4.47;  $P < .001$ ) or a long-term care facility (LTCF) (OR, 5.91; 95% CI, 2.89–12.03;  $P < .001$ ). A similar association was not observed for patients discharged to a hospital-based acute rehabilitation center.<sup>1</sup>

We applaud these researchers for highlighting the opportunity for optimizing healthcare delivery at transitions of care, specifically the need to improve ID follow-up in patients receiving OPAT. Multiple studies have outlined worse outcomes or increased risk of complications or readmission in patients lost to ID follow-up.<sup>1,2</sup> Although these researchers hypothesized that communication challenges and possible staffing issues were contributory to loss to follow-up, external validity of the findings could be improved if further characteristics of the acute rehabilitation center, subacute rehabilitation center, and LTCF were shared and existing methods of communication with these facilities described. Herein, we describe our institutional experience with off-site facilities.

Our institution has a well-established central OPAT program for patients discharged on IV antibiotics following ID consultation. For patients discharged to a health-system acute rehabilitation center, closed-loop communication is utilized, whereby the local health-system pharmacist(s) (ie, staff who are operationally distinct from the discharging facility despite being “internal”) are leveraged to assume responsibility for OPAT monitoring at healthcare transition.

On the day of transfer to an acute rehabilitation center, a “handoff” is completed between the central OPAT team and the regional pharmacist confirming antimicrobial orders as well as laboratory monitoring orders. This process is completed via an electronic health record (EHR) message but could also be completed with outside facilities via phone. Following this handoff, the local pharmacist assumes responsibility for antimicrobial monitoring. Abnormal laboratory results, potential adverse drug events (ADRs), and other concerns regarding antimicrobial therapy are triaged to the regional OPAT pharmacist for review during the stay in the acute rehabilitation center, as applicable.

Upon discharge from an acute rehabilitation center, communication is sent to the central OPAT team. If the antibiotics are continued, OPAT monitoring is reassumed by the central OPAT team at the next level of care (typically home infusion or outpatient infusion center). If the antibiotic course has been completed, the local pharmacist ensures PICC line removal and notifies the central OPAT team of antibiotic completion.

For OPAT patients discharged to external facilities (subacute rehabilitation center or LTCF), a similar albeit less structured approach occurs, with OPAT outreach to the nonaffiliated facility care team for care coordination including ensuring laboratory orders are received and followed, comanagement of emergent adverse events, follow-up appointment coordination, finalizing therapy completion, etc. External outreach level of structure can be tailored to facility type and relationship.

Follow-up for patients discharged from hospital to an acute rehabilitation center within our health system is enhanced by a shared EHR; however, opportunities exist to improve communications with partner agencies (including subacute rehabilitation centers and LTCFs), which could be achieved via replication of applicable internal elements. Even in the absence of a shared EHR, it may be possible to grant these facilities “read-only” access to the health system. This access can improve visibility of future appointment dates, OPAT clinical notes, and other key information pertaining to the patient’s OPAT care plan. Prioritization of relationship development with the pharmacist(s) providing consulting or home infusion services to these facilities may additionally serve as an effective means of enhancing communication. Although these strategies may not be possible for every single subacute rehabilitation center or LTCF, OPAT programs almost certainly benefit from pursuing these relationships with their most frequently encountered facilities.

The study by Kaul et al.<sup>1</sup> provided data that highlights the difficulty of care coordination for OPAT patients in off-site facilities. Significant healthcare practice changes that may alter the trajectory of this challenging environment are (1) OPAT provided via telemedicine (ie, “tele-OPAT”) and (2) utilization of oral antimicrobials for the treatment of serious infections.

Telemedicine may be a welcome friend to the OPAT–facility partnership. Video visits by ID specialists to LTCFs or subacute rehabilitation centers, supplemented by local laboratory testing and imaging, removes transportation barrier, and simplifies follow-up. Furthermore, a systematic review demonstrated that tele-OPAT was cost-effective and was associated with high patient satisfaction and lower rehospitalization risk compared with

**Corresponding author:** Kelsey L. Jensen; Email: [Jensen.kelsey@mayo.edu](mailto:Jensen.kelsey@mayo.edu)

**Cite this article:** Jensen K. L., Van Abel A., Frykman P., Rivera C. G. Off-site facilities: Friend or foe of outpatient parenteral antimicrobial therapy (OPAT)?. *Infect Control Hosp Epidemiol* 2024. doi: [10.1017/ice.2024.20](https://doi.org/10.1017/ice.2024.20)

traditional OPAT.<sup>3</sup> Tele-OPAT has been suggested for remote and geographically isolated OPAT patients, and facility residing patients should be considered an additional focus group.

Oral antimicrobials, on the other hand, could be a friend or a foe. The relative simplicity of outpatient oral antimicrobial(s) prescribing, generally less rigorous monitoring, and lack of central venous access requirement is favorable. However, there is heightened potential for progressive adverse effects or infection worsening going undetected in the absence of support by a dedicated OPAT team.<sup>4</sup> Several studies have demonstrated more symptomatic intolerances to long term oral antimicrobials than intravenous.<sup>5</sup> Furthermore, suboptimal oral antimicrobial prescribing at transitions of care is well documented.<sup>6</sup>

OPAT programs are poised to manage serious, complex infections with oral and intravenous antimicrobials in facility-based care settings, acknowledging the challenges. Contemporary publications on quality initiatives to improve the OPAT care in off-site facilities would be valuable additions to the literature.

Are off-site facilities the OPAT clinician's friend or foe? It may be that we follow OPAT patients closely, with extra efforts to keep those in off-site facilities even closer.

#### **Acknowledgments.**

**Financial support.** No financial support was provided relevant to this article.

**Competing interests.** All authors report no conflicts of interest relevant to this article.

#### **References**

1. Kaul CM, Haller M, Yang J, *et al*. Factors associated with loss to follow-up in outpatient parenteral antimicrobial therapy: a retrospective cohort study. *Infect Control Hosp Epidemiol* 2023. doi: 10.1017/ice.2023.216.
2. Kaul CM, Haller M, Yang J, *et al*. Assessment of risk factors associated with outpatient parenteral antimicrobial therapy (OPAT) complications: a retrospective cohort study. *Antimicrob Steward Healthc Epidemiol* 2022; 2:e183.
3. Durojaiye OC, Jibril I, Kritsotakis EI. Effectiveness of telemedicine in outpatient parenteral antimicrobial therapy (Tele-OPAT): a systematic review. *J Telemed Telecare* 2022. doi: 10.1177/1357633X221131842.
4. Li HK, Rombach I, Zambellas R, *et al*. Oral versus intravenous antibiotics for bone and joint infection. *N Engl J Med* 2019;380:425–436.
5. Azamgarhi T, Shah A, Warren S. Clinical experience of implementing oral versus intravenous antibiotics (OVIVA) in a specialist orthopedic hospital. *Clin Infect Dis* 2021;73:e2582–e2588.
6. Mercurio N, Medler C, MacDonald N, *et al*. Improving prescribing practices at hospital discharge with pharmacist-led antimicrobial stewardship at transitions of care. *Infect Control Hosp Epidemiol* 2020;41:s289–s290.