

# Outpatient intravenous antibiotic therapy benefits hospital and patient

## NURSE CLINIC

Where the treatment is suitable and the patient can learn the requirements and take responsibility, intravenous antibiotics can be administered outside of hospital with great success

### ◆ Beverley-Anne Hopper

Outpatient intravenous antibiotic (OPIVA) – also referred to as outpatient parenteral antibiotic therapy (OPAT) – is the administration of intravenous antimicrobials to patients in their own home or in residential care. It can be used for patients with deep-seated infections who require parenteral treatment but are, otherwise, stable and well enough not to be in hospital, or for certain infections with resistant bacteria where no oral antibiotic option exists. These patients may be discharged early under the responsibility of the OPIVA service or may avoid hospital admission altogether.

### Benefits of OPIVA

OPIVA is a widely accepted, effective, tested and safe therapeutic option for providing treatment for infections in selected patients in the community setting. OPIVA services have been shown to improve patient satisfaction and reduce hospital length of stay, which results in increased inpatient capacity, significant cost-savings compared with inpatient care, reduction in risk of healthcare-associated infections and improved patient choice and satisfaction.

This article provides a brief overview of OPIVA services offered through a multidisciplinary team at Waitemata DHB, which comprises infectious disease (ID) physicians, OPIVA clinical nurse specialists, the ID pharmacist, district nursing service and an ID registrar.

Patients suitable for OPIVA are identified through ID referrals. They are formally reviewed by the ID physician and given a comprehensive treatment plan that includes duration of antimicrobials, blood monitoring and clinical follow-up, and takes into account social circumstances that may affect the safety or practicality of this treatment modality. The common indications for OPIVA are shown in Figure 1; the patients generally require a minimum of two weeks' antimicrobial treatment (Figure 2).

### Setting a patient up on OPIVA

A peripherally inserted central catheter (PICC) is inserted in the inpatient setting. All OPIVA patients are counselled on PICC line care, including signs and symptoms of complications.



The main types of infection OPIVA is used for are bone and joint

### Key points

► Outpatient intravenous antibiotic (OPIVA) therapy coordinated by a multidisciplinary team can mean patients are discharged early or may avoid hospital admission altogether.

► There are three modes of OPIVA therapy, and particular IV antibiotic regimens (and patient willingness and suitability) determine the available option(s) for the patient.

► The OPIVA services multidisciplinary team at Waitemata DHB comprises infectious diseases (ID) physicians, OPIVA clinical nurse specialists, ID pharmacist, district nursing service and an ID registrar.

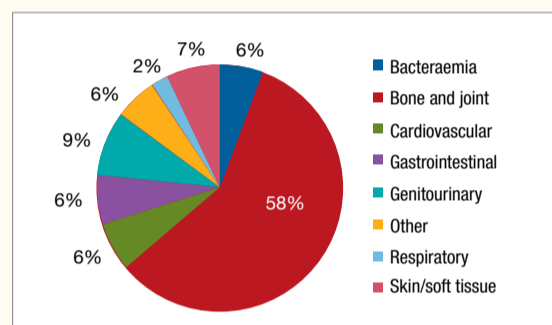


Figure 1 Types of infections treated under the Waitemata DHB OPIVA service. Orthopaedic infections are the main types (ie, osteomyelitis, septic arthritis, surgical site infections)

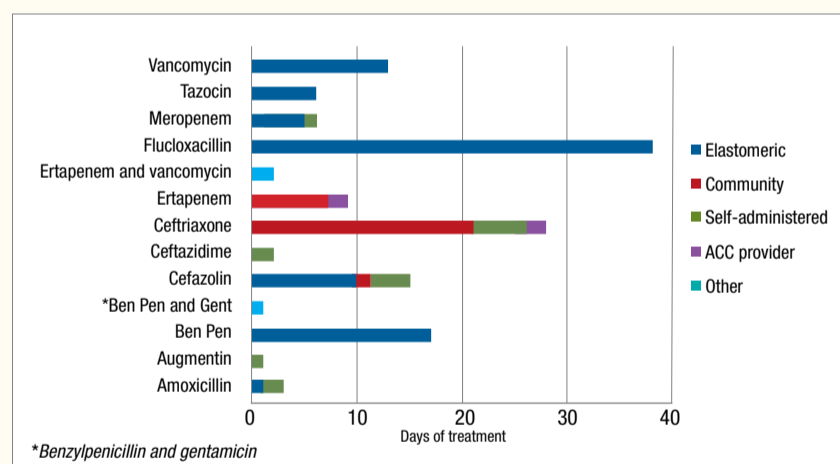


Figure 2 Antibiotics and mode of administration under OPIVA within Waitemata DHB (1 January to 30 June 2017)

There are three main modes of delivery for OPIVA:

- elastomeric infusors (24-hour slow delivery of IV antibiotic)
- community nurse administered infusion for once-daily antibiotics
- self-administration of IV antibiotic (for suitable patients).

Elastomeric infusors are a convenient mode of delivery although they are generally considered to be an expensive option. Some IV antibiotics are not suitable to be community nurse or patient administered (ie, flucloxacillin and benzyl penicillin, given four times a day, which cannot be administered by the community nursing team and are less likely to be a convenient option for a patient); therefore, these would be delivered via an elastomeric infusor.

Conversely, ceftriaxone and ertapenem are not required to be delivered via elastomeric infusor as they can be administered daily by the community nurse. Other IV antibiotics (eg, Augmentin) are not suitable for elastomeric infusor or community nurse administration, as these antibiotics are not stable as a 24-hour infusion and require administration three times a day. If this is the IV antibiotic of choice, the patient would be taught to self-administer or be required to remain in hospital for the duration of treatment.

The education provided depends on how the antibiotic is delivered. If the patient is to have an elastomeric infusor, education is directed towards how to care for and

manage the infusor (ie, wearing the infusor, storage, delivery, daily change of infusor and emergency management of complications). Self-administration is taught to patients who are assessed by the clinical nurse specialist as being suitable, and who have a treatment option suitable for this. Patients and family members taught to self-administer IV antibiotics report a sense of control over their health and, with the right support, can become quite adept.

The team pharmacist also counsels the patient on signs and symptoms of antibiotic-associated side effects to be aware of. Therapeutic drug levels are monitored as necessary (eg, for vancomycin).

Patient blood samples are requested and monitored on a weekly basis, including for C-reactive protein, liver and renal function, and complete blood count. At Waitemata DHB, any abnormal results are managed by the OPIVA team.

Prior to discharge, patients receive at least one dose of antibiotic to be used for OPIVA. If vancomycin is the antibiotic of choice, the patient needs to have stable vancomycin levels before their elastomeric infusor is ordered and then, once discharged, weekly blood tests guide the 24-hour dose within the infusor.

Patients must be willing and able to comply with the OPIVA requirements of attending weekly blood tests, being home for elastomeric infusor delivery, and attending community clinics or being home for the community nurse to attend, as needed. This degree of responsibility is vital to the quality, safety and outcome of their OPIVA treatment.

The clinical nurse specialist and community nursing team provide patients with their contact details so any

questions or concerns during their treatment can be addressed. The clinical nurse specialist also contacts patients on a regular basis to ensure any issues are managed in a timely manner.

Occasionally, PICC line issues arise, such as accidental removal or blockage. The clinical nurse specialist can facilitate a return to hospital for line replacement, if appropriate, or, if blocked, can assess the line and unblock it, if they are able to.

OPIVA patients are seen in clinic by ID physicians before the end of treatment so that any treatment extensions, if required, can be facilitated without causing a delay. At the completion of treatment, the PICC line is removed in the community nurse's clinic, outpatient clinic or patient's home.

### OPIVA service needs a multidisciplinary approach

The success of the OPIVA treatment is fundamentally dependent on the patient's willingness to participate, their ability to understand its inherent complications and potential problems, and capacity to learn the necessary skills.

The benefits of a multidisciplinary OPIVA team include: a strong management framework in the community, potentially reducing readmission rates; significant cost savings from avoiding prolonged hospital stays; reduced risks of healthcare-associated infection; and improved patient choice and satisfaction. ■

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CNA 031

## goodfellow gems #71

“acute gout: steroids as effective as NSAIDs, but fewer side effects”

A systematic review found 6 studies comparing oral corticosteroids with NSAIDs for the treatment of acute gout.<sup>1</sup> There was no difference in efficacy, but there were significant differences in adverse effects. There was no difference in the risks of gastrointestinal bleeding [relative risk (RR) 0.09, 95% confidence interval (CI) 0.01–1.67]. There was a lower risk of indigestion (RR 0.50, 95% CI 0.27–0.92), nausea (RR 0.25, 95% CI 0.11–0.54) and vomiting (RR 0.11, 95% CI 0.02–0.56) with corticosteroid therapy.

Caution is needed with short courses of corticosteroids, which may be associated with rare but statistically significant increases in fractures, sepsis and thrombosis.<sup>2</sup> In acute gout, ruling out septic arthritis is essential, and the patient's vital signs need to be normal before prescribing oral corticosteroids.

References 1. <http://bit.ly/2AoYh1c> [J Rheumatol 2017;ijrheum.170137]. 2. <http://bit.ly/2oATOSW> [BMJ 2017;357:j1415]

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