
Introduction

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Programs that offer outpatient parenteral antimicrobial therapy (OPAT) have been evolving over the past 15 years [1]. Properly delivered, OPAT has now been shown to be safe, effective and practical from a clinical, pharmacologic and technologic perspective [1], and has been used successfully in a wide variety of disease states [2-9]. OPAT offers clinicians a unique opportunity to transition patients from the hospital to the community, thereby reducing costs to the health-care system [2] and offering patients the advantage of living at home while receiving parenteral antibiotic treatment [1, 4, 9].

Although economic considerations and the need for cost containment were the initial incentives for the development of OPAT programs [8, 9], many benefits accrue to OPAT patients as well. Patients can enjoy the comforts of home while they are being treated [1]. The family unit is reestablished earlier [4], or never interrupted. Patients can resume most of their normal activities and can even return to work or attend school while receiving treatment [9]. In addition, patients treated in the outpatient setting can avoid many problems

inherent in hospitalization, such as the risk of nosocomial infections [4] or the emotional stress associated with unfamiliar and sometimes frightening surroundings [1], a psychological benefit particularly important for infants and children [9]. Unfortunately, some patients for whom OPAT is indicated may be forced to incur increased out-of-pocket medical expenses because their reimbursement plans do not cover this service [4, 9]. For some patients, this may preclude participation in an OPAT program.

A number of different delivery-of-care models have been developed for administering OPAT (fig. 1) [1, 10]. While every OPAT program will be set up according to local needs and resources, three basic models are most commonly used, with OPAT administered (1) at an infusion center, (2) at home by a visiting nurse or (3) at home by the patient or a family member [1, 2, 10]. Nursing homes have also been utilized on occasion as sites for OPAT [1], serving as at least somewhat less expensive sites for parenteral therapy than hospitals.

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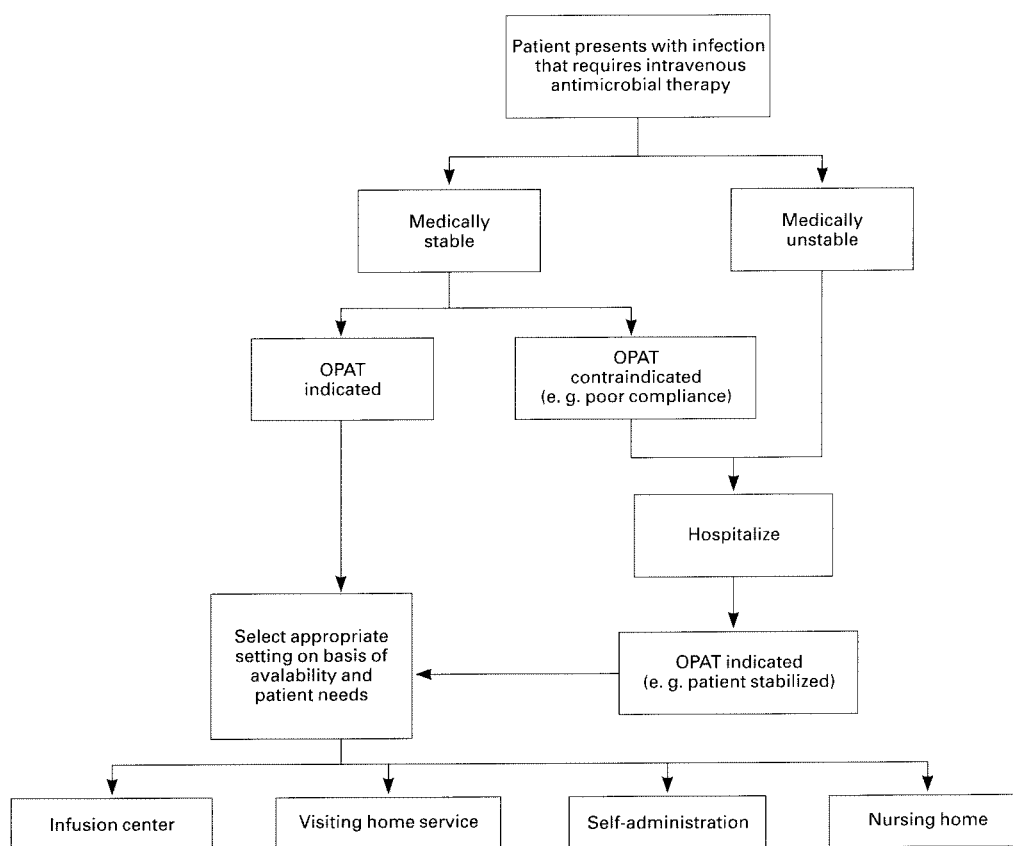


Fig. 1. Models of delivery of care for administering OPAT [adapted from 1, p. 8].

Each delivery model has its own distinct advantages and disadvantages. The infusion center model, which can be set up as part of an outpatient clinic or in a doctor's office, provides ready access to medical equipment and devices, readily available professional staff, and supervised administration. Using a physician's office makes the infusion center model more accessible for many patients, because it will often be easier and less costly for patients to visit a physician's office than a hospital clinic. However, the utility of the

infusion center model may be limited if medication must be administered more than once a day, which puts a premium on once-daily medications [1].

OPAT at home with treatment by a visiting nurse not only permits supervised administration of medication, but allows for assessment of such aspects of the home situation as environmental hazards, domestic issues, physical limitations or even signs of drug or alcohol abuse, which can only be detected by home visits. The cost of the nurse's time and

travel may be a drawback to this model, however, especially in rural or suburban areas [1].

Administration at home by the patient or a family member is the most cost-effective way of delivering OPAT and allows for the greatest degree of patient autonomy, independence and privacy. However, self-administration usually precludes medical supervision during the actual infusion itself. Thus the patient or caregiver must be carefully trained not only in the mechanics of the infusion and devices, but also to recognize signs and symptoms of adverse reactions so that the proper steps can be taken to get assistance promptly, if necessary [1].

Virtually any infection requiring parenteral antibiotic therapy can be treated in whole or in part by OPAT [2, 3]. Certain infections, such as endocarditis or osteomyelitis, lend themselves particularly well to OPAT therapy because prolonged hospitalization might otherwise be necessary [5, 11]. With osteomyelitis, outpatient therapy can generally be provided for the entire 4-week or more course of treatment; with endocarditis, OPAT is an option as soon as patients are stable, and evaluations complete [12]. However, even short-term OPAT for infections such as community-acquired pneumonia and soft tissue infections can result in significant savings of health-care costs [13] and allow patients to enjoy the advantages of outpatient treatment [4, 9].

Despite the many advantages of OPAT, outpatient therapy does put patients at greater risk should severe reactions to medications or rapid deterioration of their disease state occur at home. Therefore, all OPAT programs must provide coverage by nurses and physicians 24 h a day, 7 days a week. Patient access to a telephone and transportation to obtain prompt medical assistance are essential [1].

OPAT programs have now been established in many countries. These programs vary considerably from country to country

because of the diverse ways in which infectious diseases are managed in different parts of the world [14], as well as tremendous differences in reimbursement systems. OPAT programs established in the United Kingdom, Argentina, Italy and the United States, with emphasis on the treatment of skin and soft tissue infections, endocarditis, respiratory tract infections and osteomyelitis, respectively, were the subject of a symposium, Outpatient Parenteral Antimicrobial Therapy (OPAT): A Global Perspective, held on April 12, 2000, during the 9th International Congress on Infectious Diseases (ICID). This supplement presents the proceedings of that symposium, and will address different OPAT models employed around the world, the various antibiotic regimens used in OPAT, and the way in which international and US OPAT registries monitor the quality and safety of OPAT centers and can aid in therapeutic decision making.

In this supplement, four distinguished physicians present how OPAT has been adapted to the needs of their own countries. Dr. Dilip Nathwani, from the Infection and Immunodeficiency Unit, Tayside University Hospital Trust, Dundee, Scotland, UK, explains how an OPAT model for the short-term treatment of skin and soft-tissue infections was developed and eventually implemented in the Dundee area. He focuses particularly on the substantial cost containment that can result from even short-term use of OPAT. Dr. Gustavo Lopardo, from the Fundación Centro de Estudios Infectológicos, Buenos Aires, Argentina, details OPAT programs for endocarditis that have been developed in Argentina. He emphasizes the importance of patient selection in providing the safest as well as most effective course of OPAT therapy in this very serious infection.

Dr. Silvano Esposito, from the Clinica Malattie Infettive, Seconda Università degli Studi di Napoli, Italy, next reviews the use of

OPAT in Italy for the treatment of lower respiratory tract infections, including pneumonia. He stresses the benefits of intramuscular administration, which is in widespread use in his country. In my article, I discuss the use of OPAT in the United States over the past 15 years, with special emphasis on the treatment of osteomyelitis. I also report on recent data derived from newly formed US and International OPAT Outcomes Registries.

The information compiled in this supplement will assist practitioners in establishing OPAT programs for the overall management of infectious disease, and in developing standard-of-care guidelines for delivering the safest and most efficacious parenteral antibiotic care in the outpatient setting.

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