BSAC OPAT Initiative Workshop Series 2025

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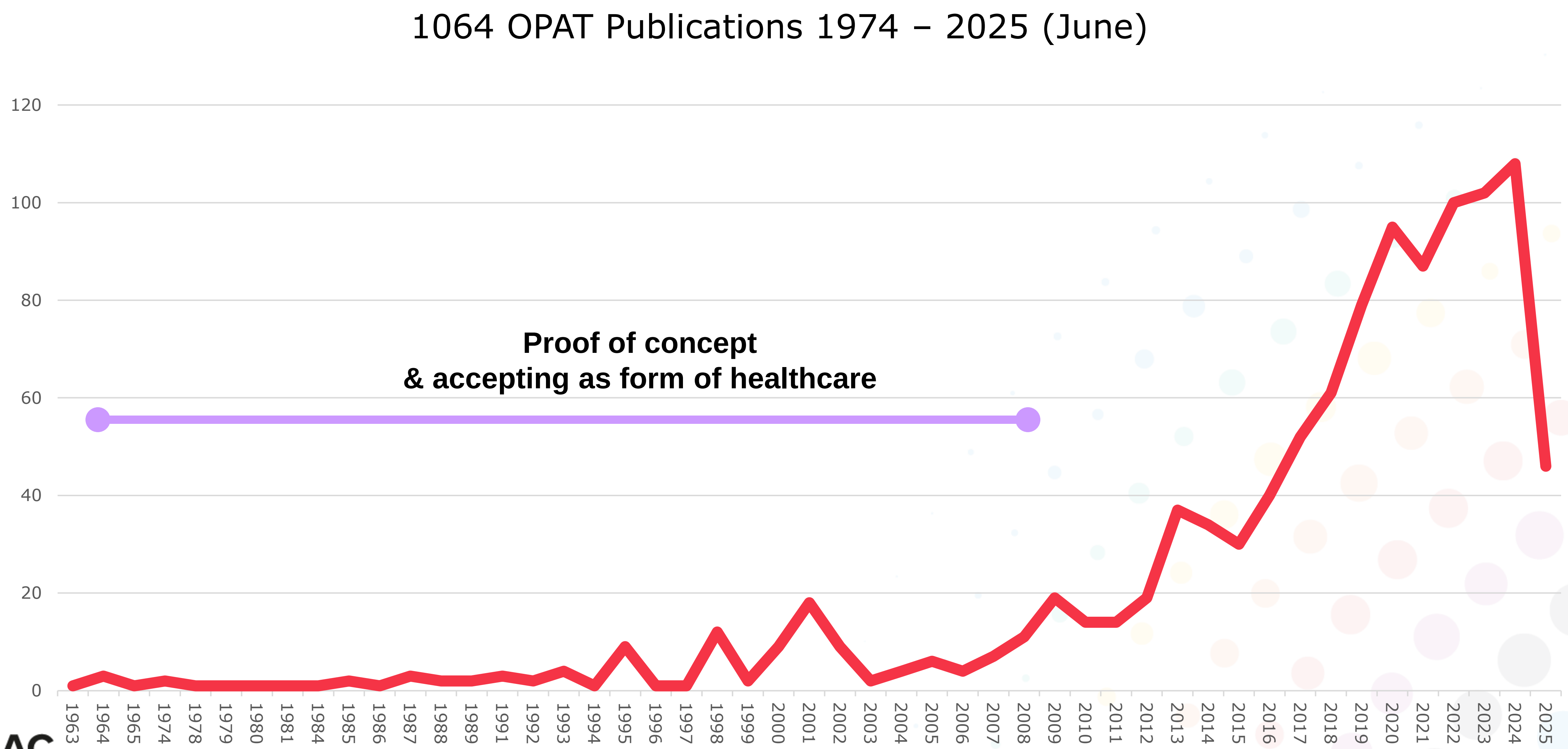
OPAT Workshops 2025

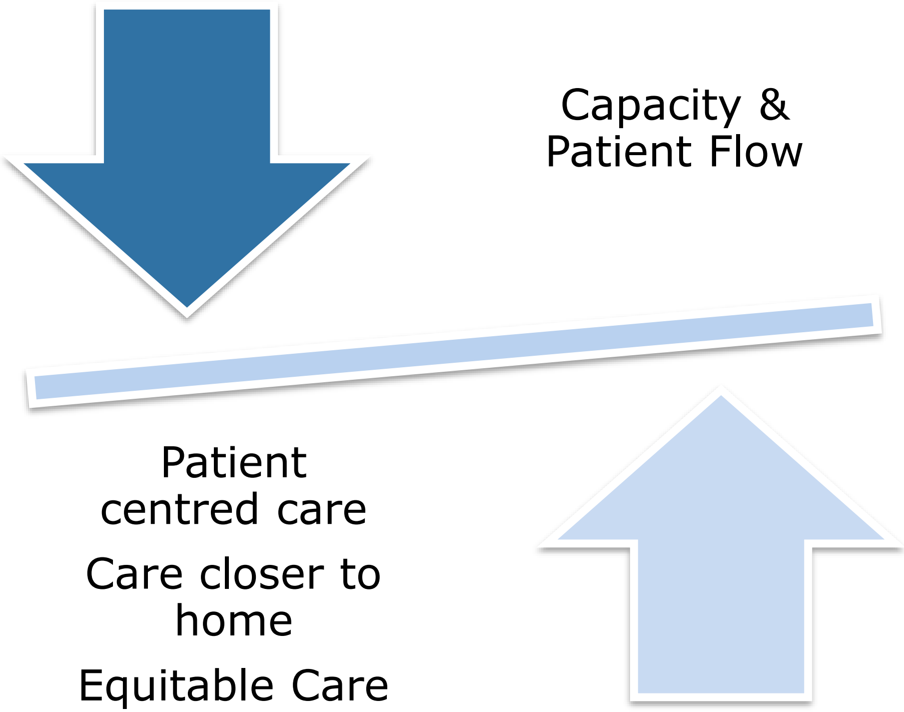
Last year:
Workshops - 400
Conference - 242

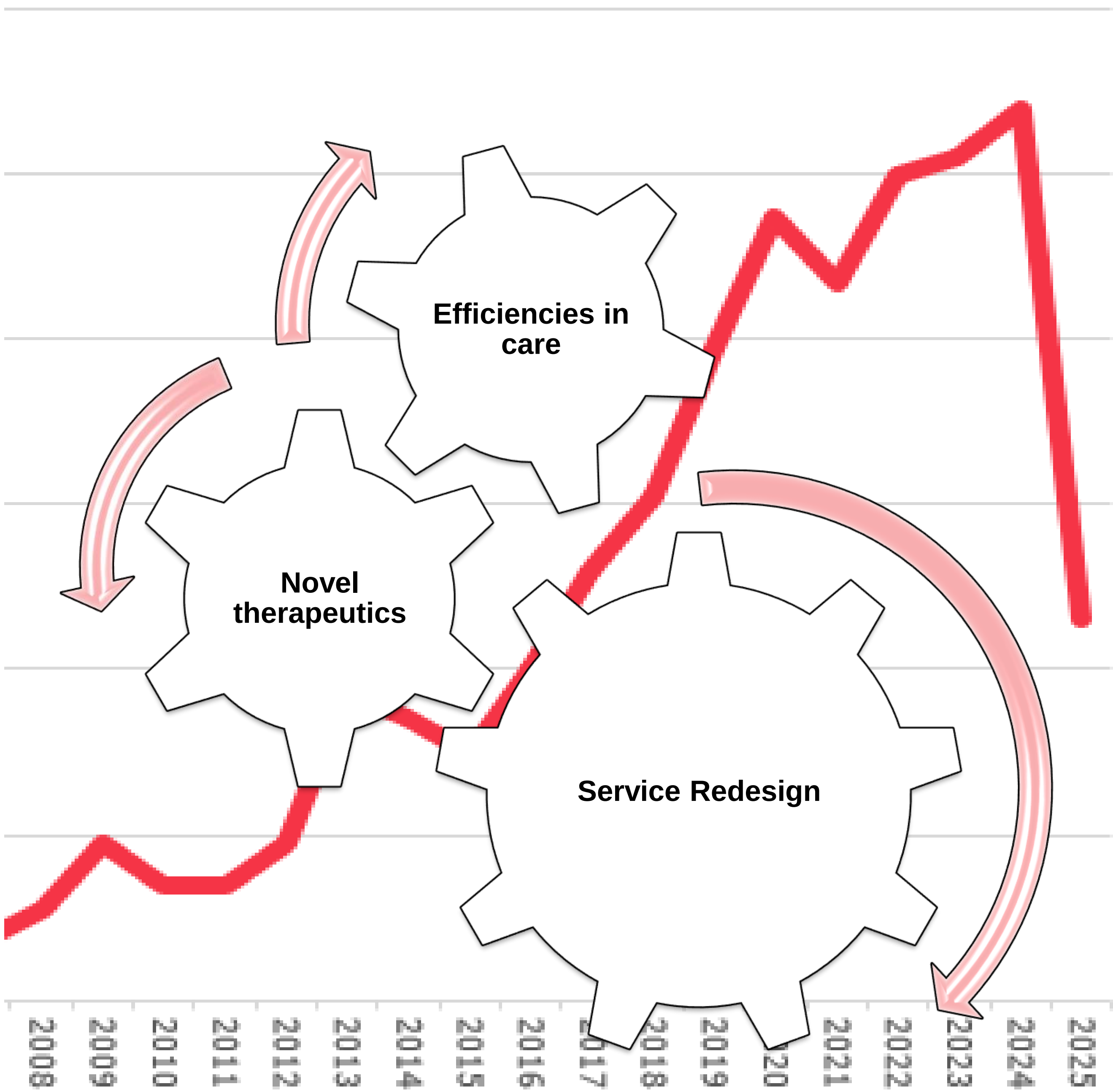
2025
Adults & Paediatrics

Demand for OPAT continues UK & Globally



2009 onwards – drive to optimise OPAT within AMS frameworks





BSAC

Examples of Global OPAT


JAC Antimicrob Resist
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JAC-Antimicrobial Resistance

Current practices in outpatient parenteral antimicrobial therapy programmes: an international multi-centre survey

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Table 1. The general characteristics of OPAT delivery facilities across the study countries (N = 146)

Study parameters		Spain	UK	Australia	Malaysia
Number of participating centres in each country		77 (53%)	33 (23%)	19 (13%)	17 (12%)
Years of OPAT service establishment	1–5	17 (22%)	5 (15%)	—	16 (94%)
	6–10	7 (9%)	10 (30%)	4 (21%)	1 (6%)
	>10	53 (69%)	18 (55%)	15 (79%)	—
OPAT team composition	ID physician[a]	71 (92%)	19 (58%)	12 (63%)	15 (88%)
	ID/clinical microbiologist	17 (22%)	25 (76%)	1 (5%)	4 (24%)
	ID specialist pharmacist[b]	40 (52%)	29 (88%)	6 (32%)	15 (88%)
	OPAT nurse	68 (88%)	32 (97%)	15 (79%)	15 (88%)
	Other OPAT team members[c]	11 (14%)	20 (61%)	16 (84%)	9 (53%)
Catchment population size for the OPAT programme	1 million–4 million	1 (1%)	8 (24%)	4 (21%)	1 (6%)
	100,000–<1 million	31 (40%)	22 (67%)	8 (42%)	4 (24%)
	50,000–<100 000	4 (5%)	—	2 (11%)	—
	1000–<50 000	1 (1%)	—	—	4 (24%)
	1–<1000	31 (40%)	—	—	3 (18%)
Average number of patients treated annually	≥10 000	—	—	—	
	5000–<10 000	—	—	2 (11%)	—
	1000–<5000	12 (16%)	3 (9%)	9 (47%)	—
	100–<1000	54 (70%)	28 (85%)	7 (37%)	
	1–<100	6 (8%)	—	—	17 (100%)

[a]In some enrolled centres, ID physicians may refer to doctors receiving training in ID, but who are not specialists in ID.

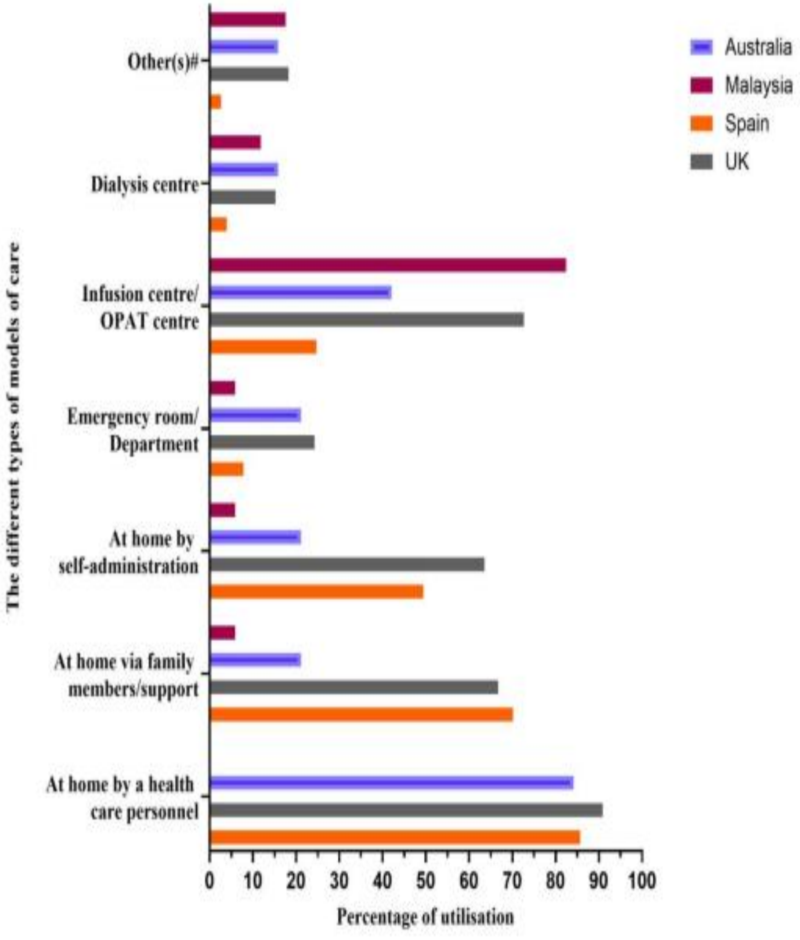

Figure 1. OPAT models of care and the percentage of centres reporting the use of these models (other(s)# = listed out in Table S3).

antibiotics

Article

High-Dose Ceftriaxone in Elderly Patients with Enterococcal Infective Endocarditis: Population Pharmacokinetics of Free Ceftriaxone and Dose Optimization

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Abstract: Background: Ampicillin plus ceftriaxone (AC) is a first-line treatment for *Enterococcus faecalis* infective endocarditis (IE). Its administration in outpatient parenteral antibiotic treatment (OPAT) programs is challenging. The design of a ceftriaxone regimen suitable for OPAT requires deep knowledge of ceftriaxone pharmacokinetics (PK). **Objective:** We aim to explore ceftriaxone PK in elderly patients and propose dose regimens adapted to OPAT to maintain synergistic concentrations (Cs) with ampicillin against *E. faecalis*. **Methods:** We conducted a prospective observational pharmacokinetic study on patients (>55 years old) affected by *E. faecalis* IE. Ceftriaxone free concentration was measured at three time-points: before the administration (C_{min}) and two and four hours after ceftriaxone administration (C_2 and C_4). Both structural and covariate population pharmacokinetic models were built. Monte Carlo simulations of six ceftriaxone dosages were performed and the probability of target attainment (PTA) of an optimal Cs range was analyzed. The pharmacokinetic/pharmacodynamic index (PK/PD) to predict efficacy was defined as maintaining free ceftriaxone concentrations superior to the Cs at 50–100% of the dosing interval ($fT \geq Cs \geq$ 50–100% of the dosing interval). Ceftriaxone dosing regimens were considered optimal if at least 90% of the simulated population was able to achieve the defined PK/PD targets. **Results:** Twenty-four episodes from 16 patients were included. Mean free ceftriaxone concentration pre-dose, +2 h, and +4 h were $C_{min} = 7.8 \pm 6.5$ mg/L, $C_2 = 34 \pm 26.5$ mg/L, and $C_4 = 22.7 \pm 19.7$ mg/L, respectively. A two-compartment model with first-order absorption and elimination best described the data. Ceftriaxone one-hour

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Early use of the novel antifungal rezafungin: a case series and literature review

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Objectives: Rezafungin is a novel echinocandin with a unique structural configuration enabling weekly IV dosing. We report on early use of rezafungin in our outpatient parenteral antibiotic therapy (OPAT) service, reviewing indications, treatment regimens, outcomes and adverse events in adult patients receiving rezafungin at a tertiary infectious disease centre. We also review published cases of rezafungin use, licensing trials, spectrum and pharmacokinetics/pharmacodynamics and how that might relate to its propensity to generate resistance (in comparison with daily echinocandins).

Methods: All adult patients who received rezafungin therapy via the OPAT service in 2024–25 were included. Patient demographics, infections, treatment regimens and outcomes were recorded.

Results: Six patients (age range 30–84 years) received rezafungin therapy between July 2024 and February 2025. Indications included invasive and mucocutaneous candidiasis, predominantly caused by azole-resistant *Candida* species. We also report the first case of using rezafungin in combination with voriconazole to treat azole-refractory pulmonary aspergillosis. Rezafungin courses were a median length of 4 doses (range: 2–5) and were generally well tolerated with no laboratory adverse events. Reasons for choosing rezafungin over daily echinocandins were patient preference/convenience ($n = 5$), concern regarding azole resistance ($n = 4$) and facilitation of earlier discharge ($n = 2$). One hundred and fifty-seven days with an IV catheter were saved through once-weekly dosing. Outcomes were positive, with all patients showing mycological clearance.

Conclusions: Early use of rezafungin at our centre and in the international literature suggests it is a well-tolerated, convenient and useful addition to the antifungal armamentarium, particularly in the outpatient setting.

Introduction

Invasive candidiasis is the leading cause of invasive fungal infection in hospitalized patients globally and associated with a high crude mortality (40%–55%) despite treatment.[1] Echinocandins are the most recent class added to the antifungal armamentarium for invasive candidiasis, with caspofungin first being licensed for use in the USA and Europe in 2001, followed by micafungin (2005 FDA; 2008 EMA) and anidulafungin (2006 FDA; 2007 EMA). The mechanism of action of this class involves non-competitive inhibition of the β-1,3-glucan synthase enzyme complex, causing disruption of cell wall synthesis,[2] leading to fungicidal activity in *Candida* spp.[3]

Invasive candidiasis treatment guidelines recommend initial therapy with an echinocandin, with de-escalation to oral fluconazole in stable patients infected with azole-susceptible species.[4] This is not always appropriate—particularly in cases of infections with *Candida* species with intrinsic or acquired resistance to fluconazole, which are increasingly prevalent globally,[5–10] necessitating prolonged IV courses of therapy, particularly at difficult-to treat foci such as heart valves, abdominal cavity, bone and joint, and infections involving prosthetic material. All currently licensed echinocandins are only administrable via the parenteral route, with no in-class oral stepdown option, although an oral inhibitor of β-glucan synthase (triterpenoids) has been developed and is in clinical trials for invasive candidiasis[11] (although complicated at present by a potential contamination issue).

Rezafungin is a novel echinocandin with a unique structural configuration enabling weekly dosing. This weekly dosing schedule has the potential to facilitate earlier discharge from hospital,

antibiotics

Review

Delivery of Outpatient Parenteral Antimicrobial Therapy (OPAT) in an Ever-Changing National Health Service (UK): Benefits, Barriers, and Opportunities

Oyewole Christopher Durojaiye [1,2,*], Charlotte Fiori [2] and Katharine Cartwright [1]

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Abstract: Outpatient parenteral antimicrobial therapy (OPAT) is increasingly used to manage a broad range of infections, enabling patients to receive intravenous antibiotics safely outside inpatient settings. In this review, we examine the current landscape of OPAT practice across the United Kingdom (UK), assessing its clinical, economic, and operational impact. The benefits of OPAT for patients and the National Health Service (NHS), as well as its associated risks, are discussed. Additionally, we explore the challenges hindering its broader implementation within the UK. Finally, we highlight recent innovations and emerging applications of OPAT relevant to the NHS, underscoring key considerations for its future expansion and emphasising the need for a nationally coordinated strategy to realise its full potential.

Keywords: benefits; National Health Service; OPAT; outpatient parenteral antimicrobial therapy; risks; UK

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1. Introduction

The practice of administering intravenous (IV) antimicrobials outside inpatient settings, known as outpatient parenteral antimicrobial therapy (OPAT), was first described in the United States (US) in 1974 for the treatment of infectious exacerbation of cystic fibrosis in a paediatric population [1]. Since then, it has become a standard of care in many parts of the world for managing a wide range of infections that require prolonged courses of IV antibiotics [2,3].

In the UK, OPAT has evolved relatively slowly but is now increasingly adopted across both the National Health Service (NHS) and the private sector, as the benefits of improving patient outcomes while simultaneously reducing the burden on local healthcare systems are being recognised [4,5]. OPAT offers considerable opportunities to improve efficiency within the NHS [6]. For example, a London-based NHS trust reported estimated annual savings of £1–2 million due to reduced hospital stays through OPAT implementation [7].

Currently, the NHS faces significant challenges, including financial constraints and

Infection
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RESEARCH

Clinical and patient-reported outcomes of self-administered outpatient parenteral antimicrobial treatment (S-OPAT): a scoping review

Jolanda M. Maaskant[1,2,7] · Tessa de Vries[3] · Laura Volle[4] · Faridi S. Jamaludin[5] · Suzanne E. Geerlings[2,3,6] · Kim C. E. Sigaloff[3,6]

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Abstract

Purpose This study aimed to provide a comprehensive overview of the existing literature on Self-administered Outpatient Parenteral Antimicrobial Therapy (S-OPAT), focusing on safety and clinical outcomes, factors influencing these outcomes, and the experiences of patients and caregivers.

Methods We searched the databases MEDLINE, CINAHL, Embase and Cochrane library. Publications were included if they reported on the clinical outcomes, safety, and/or experiences of patients and caregivers with S-OPAT. Study selection and data extraction were performed independently by two reviewers. Quantitative and qualitative data were summarized in data charting forms.

Results Forty-four studies were included: 41 primary studies, 2 systematic reviews and 1 clinical guideline. Clinical outcomes were reported in 17 and safety in 23 primary studies. Eleven studies compared S-OPAT to other OPAT delivery models. These studies showed that all models were generally comparable regarding clinical outcomes, but two studies reported an increased number of adverse events with S-OPAT. Nine studies, exploring a total of 7 potential risk factors, identified older age, comorbidities and *Staphylococcus aureus* infections as contributors to adverse events. The results of 14 studies on patient-centred outcomes showed that patients and caregivers considered S-OPAT a suitable alternative to other OPAT delivery models.

Conclusion We conclude that S-OPAT is a viable model of care, demonstrating favourable clinical outcomes, although some safety concerns have been reported. The growing care demand now and in the future urges further development of S-OPAT care. Gaps of knowledge still exist, and we provide recommendations for future research.

Keywords S-OPAT · Self-administration · Safety · Clinical outcome · Patient-reported outcome · Scoping review

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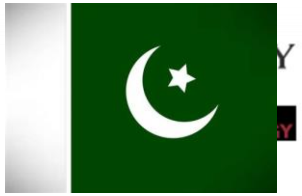
Introduction

Outpatient parenteral antimicrobial therapy (OPAT), as defined by the Infectious Diseases Society of America, is 'the administration of at least two doses of parenteral microbial therapy on different days without intervening hospitalization' [1]. This approach allows patients who require parenteral antibiotic treatment to be discharged from the hospital, provided they are stable enough to continue their care at home. Since its inception in the 1970s, OPAT has been increasingly employed to facilitate medical treatment in a familiar environment, increase patient autonomy,



Clinical Cardiology

REVIEW OPEN ACCESS

Safety and Efficacy of Outpatient Parenteral Antibiotic Therapy (OPAT) in Patients With Infective Endocarditis: A Systematic Review and Meta-Analysis

Hamza Ashraf[1] | Zain Ali Nadeem[1] | Khawaja Abdul Rehman[2] | Shanzay Akhtar[3] | Haider Ashfaq[1] | Muhammad Sohaib Khan[1] | Mahad Butt[1] | Ibrahim Nagmeldin[4] | Eeshal Fatima[5] | Muhammad Waqas[6] | Aalaa Saleh[7] | Hritvik Jain[8] | Raheel Ahmed[9]

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Keywords: antibiotics | infective endocarditis | OPAT | outpatient | parenteral therapy

ABSTRACT

Background: Infective endocarditis (IE) is a life-threatening infection requiring prolonged intravenous antimicrobial therapy. Outpatient parenteral antibiotic therapy (OPAT) has emerged as an alternative to prolonged hospitalization, but its safety and efficacy in IE remain debated.

Hypothesis: This systematic review and meta-analysis aimed to evaluate the outcomes of OPAT in IE patients.

Methods: We systematically searched MEDLINE, Cochrane CENTRAL, Google Scholar, and Scopus for studies assessing OPAT in IE. Eligible studies included randomized controlled trials and observational studies reporting at least one relevant outcome (mortality, relapse, readmission, valve surgery, and adverse events). Pooled estimates were calculated using a random-effects model, and heterogeneity was assessed using the I^2 statistic. Risk of bias was evaluated using the ROBINS-I tool.

Results: A total of 25 studies involving 2654 patients were included in the analysis. Patients treated with OPAT had a mortality rate of 0% during the treatment period and 5% during follow-up. The readmission rate was 16% during the treatment period, 4% of the patients had relapse, while 16% of patients underwent cardiac surgery. During follow-up, the readmission rate was 19%, with a relapse rate of 2%, and 14% of patients underwent cardiac surgery. Sensitivity analyses did not significantly affect the results, highlighting the robustness of the findings.

Conclusion: OPAT appears to be safe and effective for IE patients, with low mortality and relapse rates. However, increased readmission rates and IV-line complications warrant careful patient selection and monitoring. Further prospective trials are needed to refine OPAT protocols.

Abbreviations: AKI, acute kidney injury; IE, infective endocarditis; OPAT, outpatient parenteral antibiotic therapy; RCT, randomized controlled trial.

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Dalbavancin to facilitate early discharge in the treatment of complex musculoskeletal infections: a multi-centre real-life application

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Abstract. Dalbavancin is a lipoglycopeptide with a half-life of 14 d, significantly reducing the need for daily antibiotic dosing. Although dalbavancin is approved for acute bacterial skin and skin structure infections, its off-label use in complex musculoskeletal infection (MSKI) is increasing. Evidence on its effectiveness for MSKI, especially in facilitating early discharge for patients unsuitable for oral or OPAT (outpatient parenteral antimicrobial therapy) treatments, is limited.

This multi-centre observational study aims to evaluate dalbavancin's role in facilitating discharge and improving clinical outcomes in MSKI. **Method**: this study included adult patients treated with dalbavancin between January 2017 and December 2022 across five hospitals in the UK and France. Data on patient demographics, clinical characteristics, microbiology and treatment outcomes were collected using a standardised form. The study also compared treatment costs between dalbavancin and hypothetical alternatives involving either inpatient care or OPAT. Clinical success was defined as the absence of definite failure based on the OVIVA (oral versus intravenous antibiotics) trial criteria. **Results**: a total of 39 patients were included, with a median age of 51 years (interquartile range (IQR) 40–72). Prosthetic joint infections (38 %) and septic arthritis (31 %) were the most common indications for dalbavancin use. The primary pathogens identified were *Staphylococcus aureus* (51 %) and coagulase-negative staphylococci (44 %). Dalbavancin was primarily chosen due to poor adherence or lack of OPAT options in 77 % of cases and for convenience in 23 %. In the necessity group, the use of dalbavancin

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Addressing the Health Needs of People Who Inject Drugs: A Descriptive Analysis of an Inpatient Integrated Care Team Within an Acute Hospital in Scotland

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Background. People who inject drugs (PWID) experience poor health outcomes secondary to infective sequelae with lengthy hospitalizations, high rates of unplanned discharge, and frequent readmissions. Challenges arranging and engaging with outpatient services compound these issues.

Methods. An integrated team consisting of infectious diseases, drug liaison, and assertive outreach was established in January 2023 at a secondary-care hospital in Edinburgh, Scotland. We assessed the medical needs of patients hospitalized with injection-related infections and considered the impact of this service by comparing health outcomes of patients seen by the integrated team against a historic cohort. Primary descriptive analysis included type and severity of infection, and outcomes included referral to outpatient services and meeting recommended care standards such as blood-borne virus (BBV) screening.

Results. The integrated team saw 37 patients (43 hospital admissions), and 65 patients (73 admissions) were identified as historic controls. Patients seen by the integrated team experienced more severe and complex infections including 37.2% (16/43) of patients having a bacteremia compared to 11% (8/73) in the control group, and a high prevalence of cocaine injection (81% [30/37]). Under the integrated team, higher proportions of patients had a BBV screening (90.7% [39/43] vs 64.4% [47/73]) and were offered outpatient care (81% [35/43] vs 6% [4/73]) with supported attendance.

Conclusions. These results suggest a background of increasingly complicated injection behavior and subsequent infections in Scotland; however, a patient-centered, multidisciplinary care model can effectively address the health need of PWID, offering safer and more appropriate treatment pathways.

Keywords. assertive outreach; COPAT; integrated care; OPAT; people who inject drugs.

Over the past 10 years, hospitalization for the complications of injection drug use (IDU) has been increasing in Scotland [1]. An estimated 1.32% of the Scottish population is directly affected by opioid dependency, amounting to approximately 47 100 people [1]. However, injection behavior has changed in Scotland over recent years including an increased use of cocaine for injection, increased poly-substance use, new synthetic opioids, and more frequent injecting behavior [2, 3]. As well as impacting overdose and mental health–related harms, such injection behaviors also affect hospitalizations secondary to injection-related infections. Such infections may range from deep-seated and hard to manage conditions such as abscesses, infected deep vein thrombosis (DVT), and bacteremia, to blood-borne viruses (BBVs; eg, human immunodeficiency virus [HIV], hepatitis B, hepatitis C) and less complicated skin and soft tissue infections (SSTIs) [4–6]. Further challenges to managing patients with complex drug use often occur in the context of social factors associated with this patient cohort. People who inject drugs (PWID) often experience significant social and medical multimorbidities, which act synergistically to result in higher disease burden rates than the general population [3, 7, 8]. Individuals suffering with addiction and its complications often struggle with prolonged hospitalization, face stigma from healthcare workers, and experience poorly managed symptoms of addiction. This can culminate in high rates of patient-directed discharge and incomplete treatment [9, 10].

In recognition of these multifaceted challenges, the narrative around medical management during hospital admissions for PWID is shifting from disease-focused to person-centered approaches [11, 12]. Recent research has emphasized the benefits of integrated care and considered the impact of interventions

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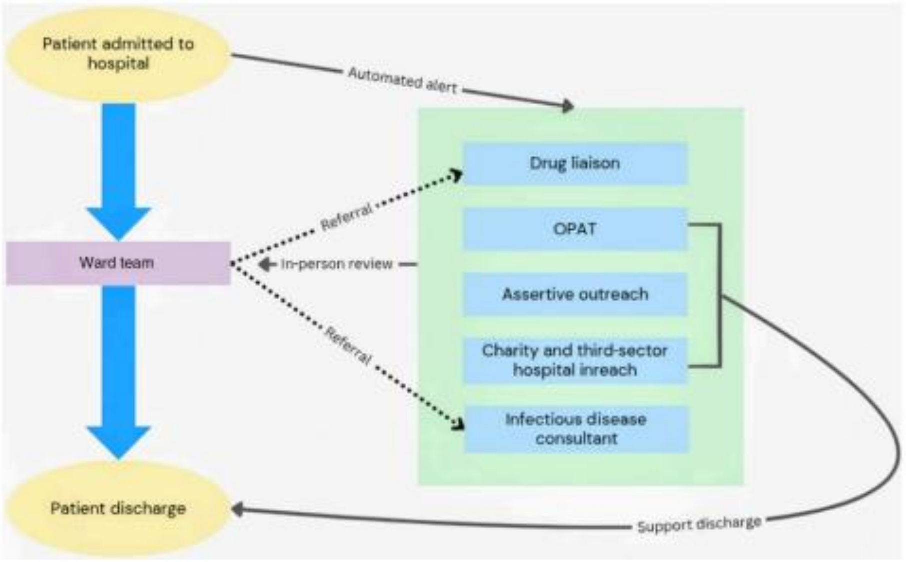

Figure 1. Flow diagram of integrated team communication structure. Image shows the communication structure and interactions of the integrated team in relation to a patient's hospital journey. Abbreviation: OPAT, outpatient antimicrobial therapy.

Driving the standard for OPAT – core principles

Safety	Governance	Efficacy
Resources	Outcomes	Financial
Monitoring	Indicators	Length of Stay
Antimicrobial Choice	Unintended consequences	Quality of care
Patient Selection	Antibiotic / D&T Committee	Quality of life

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OPAT – BSAC Initiative Strategy

Strategy 1 - Establish a modern working definition of OPAT

Strategy 2: Secure the establishment and expansion of OPAT services wherever the clinical need exists

Strategy 3: Secure a global consensus on drug stability testing, working with licencing and standard setting authorities to harmonise current standards as and where applicable, and secure an expansion in the number of agents tested

Strategy 4 - Promote and embed OPAT as a core component of antimicrobial stewardship through the provision of a continuous programme of education and training

Strategy 5 - UK accreditation scheme for OPAT services

BSAC

OPAT – BSAC Initiative Strategy

Strategy 1 - Establish a modern working definition of OPAT

- Work with peer organisations and health administrations towards a common definition of OPAT that accurately reflects changing practice including advances in antimicrobial chemotherapy, including the use of supervised complex oral antimicrobial regimens in the non-inpatient setting in order to reduce length of hospital stay.

Increase in telemedicine / practitioners (non infection specialist)

Increasing data on Linezolid use / Complex oral agents

Equity of access e.g. models of care

Other IV longer acting agents + need for TDM?

Subcutaneous OPAT

BSAC

OPAT – BSAC Initiative Strategy

Strategy 1 - Establish a modern working definition of OPAT

JAC Antimicrob Resist
doi:10.1093/jacamr/dlz026

JAC-Antimicrobial Resistance

Updated good practice recommendations for outpatient parenteral antimicrobial therapy (OPAT) in adults and children in the UK

Ann L. N. Chapman[1]*, Sanjay Patel[2], Carolyne Horner[3], Helen Green[2], Achyut Guleri[4], Sara Hedderwick[5], Susan Snape[6], Julie Statham[7], Elizabeth Wilson[8], Mark Gilchrist[9] and R. Andrew Seaton[10]

[1]*University Hospital Monklands, NHS Lanarkshire, Airdrie, UK;* [2]*Southampton Children's Hospital, University Hospital Southampton NHS Foundation Trust, Southampton, UK;* [3]*The British Society for Antimicrobial Chemotherapy, Birmingham, UK;* [4]*Blackpool Teaching Hospitals NHS Foundation Trust, Blackpool, UK;* [5]*Belfast Health and Social Care Trust, Belfast, UK;* [6]*Nottingham University Hospitals NHS Foundation Trust, Nottingham, UK;* [7]*South Warwickshire NHS Foundation Trust, Warwick, UK;* [8]*Manchester University NHS Foundation Trust, Manchester, UK;* [9]*Imperial College Healthcare NHS Trust, London, UK;* [10]*Queen Elizabeth University Hospital, NHS Greater Glasgow and Clyde, Glasgow, UK*

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OPAT team and service structure

Patient selection

Antimicrobial management & drug delivery

Monitoring of the patient during OPAT

Outcome monitoring and clinical governance

Paediatrics

Literature search ✓ Subgroup reviews ✓

BSAC

Demand to engaging UK Healthcare Administrations

Strategy 2: Secure the establishment and expansion of OPAT services wherever the clinical need exists

1	**Health and wellbeing gap**	**Radical upgrade in prevention**
2	**Care and quality gap**	**New care models**
3	**Funding gap**	**Efficiency and investment**
4	**AMS & OPAT gap**	**Governance**

Clinical engagement

Patient involvement

Local ownership

National support

Financial

Service Delivery

Gover-nance

BSAC

OPAT – BSAC Initiative Strategy

Strategy 2: Secure the establishment and expansion of OPAT services wherever the clinical need exists

NHS England

Date published: 3 April, 2025
Date last updated: 4 April, 2025

Guidance to integrated care boards and providers on developing outpatient parenteral antimicrobial therapy (OPAT) services

Publication (/publication)

Content

The benefits of establishing or expanding outpatient parenteral antimicrobial therapy (OPAT) services

Outpatient parenteral antimicrobial therapy (OPAT) services treat patients with intravenous antimicrobials in out-of-hospital settings. They can be provided by healthcare professionals or administered by patients or carers themselves.

They can increase productivity by:

- supporting the recovery and restoration of NHS services
- providing opportunities to streamline and integrate with new service changes, including same day emergency care expansion, virtual wards and hospital@home services
- addressing the increasing length of stay of non-elective admissions seen post-pandemic
- improving patient flow through hospitals and reducing discharge delays due to the need for intravenous treatment
- addressing the increasing burden of antimicrobial resistance seen in England, which can limit the use of simple oral treatment options and necessitate a hospital admission and inpatient stay
- addressing the burden of antimicrobial resistance, which falls more heavily on deprived areas than more affluent areas, and therefore reducing health inequalities
- providing treatment options for patients who are accessing primary and community services in higher volumes and who need more complex physical healthcare
- shifting care to less intensive settings such as the patient's home
- supporting partnership working to support the right capacity being in the right place to care for patients effectively.

OPAT services can deliver high quality, convenient patient care that achieves similar outcomes to inpatient treatment. They can help appropriate patients with infections to return to normal lives, allowing adults to return to work, children to return to school and older patients to maintain their independence. This benefits them, wider society and the economy. Avoidable healthcare-associated infections and the resulting morbidity and costs can be minimised.

OPAT represents a more efficient use of resources. Infection management via an OPAT service can be between 23-56% cheaper than the equivalent inpatient treatment (Dimitrova et al, 2021 (https://bmjopen.bmj.com/content/11/9/e049733.long)).

BSAC Commissioned to prepare OPAT Guidance for ICBs

Ultimately, both the ICB and provider(s) will need to be involved in discussions. Any agreed arrangements for providing new or different OPAT services will need to be referenced in the NHS Standard Contracts between them. The ICB will need to ensure that contracts are awarded (or varied, as applicable) in accordance with the requirements of the NHS Provider Selection Regime (PSR).

Whether the initiative comes from the ICB or a provider, a sensible starting point will be to undertake a stocktake of what OPAT services are already in place locally, what future needs for them exist and how they should best be configured. This could include consideration of:

- the workforce currently delivering, or available to deliver, OPAT services and future requirements for expanding existing services
- what groups of patients or types of infections are currently being included?
- what groups of patients or types of infections are currently being excluded?
- equity of service provision to adults and children, including neonates, hard-to-reach groups, groups subject to health inequalities
- what treatment options are available to support current OPAT service models and what might be required to deliver an expansion of an OPAT service or introduction of a new service model (for example, access to ready-to-administer antimicrobials in elastomeric devices)?
- benchmarking of existing OPAT services against the Good Practice Recommendations for OPAT services
- the governance, infection management expertise and antimicrobial stewardship oversight in place for the provision of intravenous antimicrobial therapy in out of hospital settings within the ICB (for example, virtual wards).

Depending on the findings of the stocktake, a local business case may need to be developed to set out the clinical and financial arguments for establishing or further expanding a service and seek approval to proceed from the ICB or trust boards as appropriate. See Appendix 1 for a business case toolkit for OPAT services that can support this.

The procurement and contracting implications will depend on the proposed approach.

OPAT – BSAC Initiative Strategy

Strategy 2: Secure the establishment and expansion of OPAT services wherever the clinical need exists

Simple

Targeted

Effective

Adults

Paediatrics

BSAC

CONCEPT DEVELOPMENT

OPAT – BSAC Initiative Strategy

Strategy 3: Secure a global consensus on drug stability testing, working with licencing and standard setting authorities to harmonise current standards as and where applicable, and secure an expansion in the number of agents tested

Bacterials*

Flucloxacillin - 2018

Meropenem – 2018

Ceftazidime - 2019

Piperacillin/ Tazobactam - 2020

Ceftolozane/ Tazobactam – 2021 & 2023

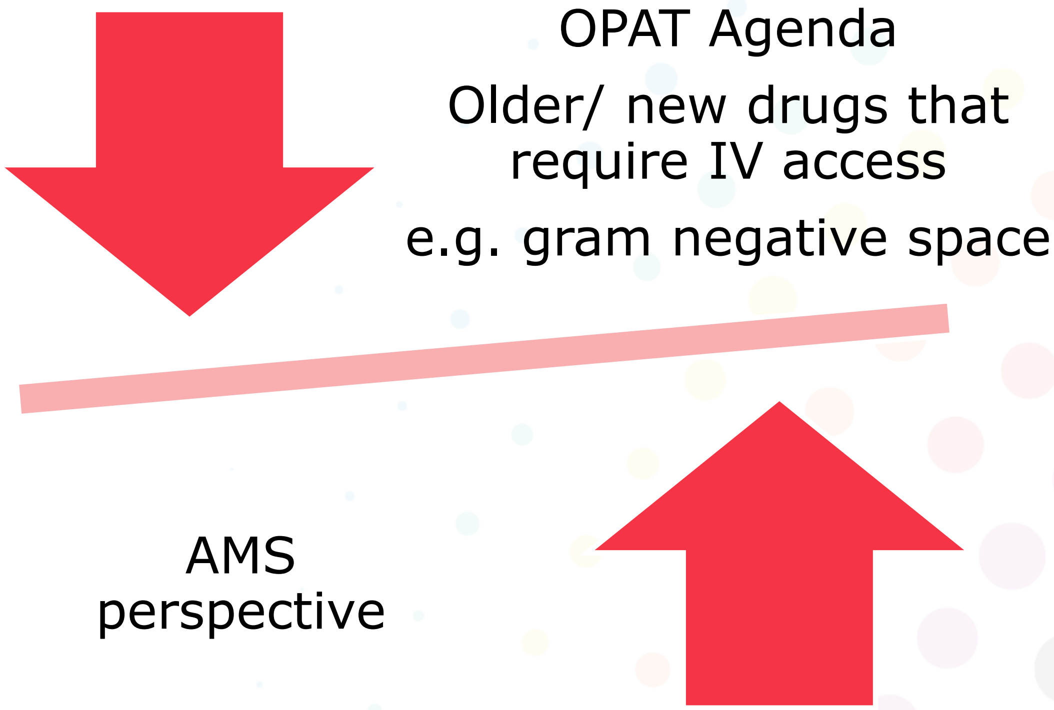
Temocillin - 2022

Amoxicillin – 2022

Ceftazidime/ Avibatam – 2024

Virals*

Aciclovir - 2023



Gram Negative Threat – New for 2025

JAC Antimicrob Resist
https://doi.org/10.1093/jacamr/dlaf074

JAC-Antimicrobial Resistance

Evaluation of the stability of tigecycline in elastomeric infusion devices used for outpatient parenteral antimicrobial therapy

Zenaw T. Wolie[1,2], Sean Unwin[3], Andrew Burke[1,4], Hayoung Won[1], Steven C. Wallis[1], R. Andrew Seaton[5,6], Mark Gilchrist[6,7,8], Jason A. Roberts[1,9,10,11]† and Fekade B. Sime[1]*†

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Background: Tigecycline is increasingly being considered in outpatient parenteral antimicrobial therapy (OPAT) programmes given its spectrum of activity; however, stability data are lacking, necessitating further study.

Objective: To assess tigecycline stability in elastomeric infusers under OPAT conditions, following the UK Yellow Cover Document (YCD) stability testing guidelines.

Methods: Tigecycline was reconstituted with normal saline in Leventon Dosi-Fuser and Baxter-LV10 infusers at doses of 50, 100 and 200 mg in 240 mL. Additionally, a tigecycline intermittent infusion dose (50 mg/100 mL) was reconstituted in Baxter-SV100 infusers. The infusers were stored under refrigerated storage (2°C–8°C) for 7 days, followed by exposure at an in-use temperature of 32°C for 24 h, or at 25°C for 2 hours for the intermittent infusion. Stability was evaluated using a stability-indicating assay, pH measurement, subvisible particle count and visual inspection as per the YCD.

Results: After 7 days of refrigeration followed by 24 h exposure to 32°C, the mean ± SD percentage of tigecycline remaining was 97.9 ± 0.6, 97.3 ± 0.6 and 95.4 ± 0.8 for the Baxter LV10 devices, and 97.2 ± 0.3, 96.9 ± 0.5 and 95.8 ± 0.8 for Dosi-Fuser devices at the low, intermediate, and high dose levels, respectively. For intermittent infusion in Baxter-SV100 devices, the mean ± SD percentage remaining after 7 days of refrigerated storage followed by 2 h at 25°C was 99.7 ± 0.2.

Conclusions: Tigecycline meets the UK YCD criteria of ≤5% degradation limit, indicating its suitability for both intermittent and continuous 24-h infusion in OPAT programs.

Introduction

Tigecycline, the first glycylcycline antibiotic within the tetracycline class, is a broad-spectrum antibiotic that works by inhibiting bacterial protein synthesis.[1,2] Its spectrum activity covers a wide range of Gram-positive and Gram-negative organisms, including MRSA, ESBL-producing Enterobacterales, and certain carbapenem-resistant organisms.[3–6] The US FDA and European Medicines Agency have approved tigecycline for the treatment of complicated skin and soft tissues infections (cSSTIs), complicated intra-abdominal infections (cIAIs), and community-acquired pneumonia.[3,7,8] Additionally, it has been used off-label to treat various infections, including hospital-acquired pneumonia, ventilator-associated pneumonia, and febrile neutropenia.[8,9]

Tigecycline has been increasingly used in outpatient parenteral antibiotic therapy (OPAT) for treating complex infections caused by multi-resistant organisms, including bone and joint infections, intra-abdominal infections, non-tuberculous mycobacterial

BRITISH SOCIETY FOR ANTIMICROBIAL CHEMOTHERAPY

THE UNIVERSITY OF QUEENSLAND AUSTRALIA
CREATE CHANGE

CRE RESPOND
CENTRE OF RESEARCH EXCELLENCE
Optimising and personalising antimicrobial dosing to reduce resistance

474 **Table 7**. Percentage of tigecycline remaining during fridge storage (2 to 8°C) for 7 days (0 to 168 h) followed by in-use temperature (32°C) for 24 hours.

Storage condition		Baxter LV10 devices Tigecycline % remaining (mean ± SD)			Leventon Dosi-Fuser devices Tigecycline % remaining (mean ± SD)		
	Time (hours)	Low dose (50 mg/240 mL)	Intermediate dose (100 mg/240 mL)	High dose (200 mg/240 mL)	Low dose (50 mg/240 mL)	Intermediate dose (100 mg/240 mL)	High dose (200 mg/240 mL)
Refrigeration (2 to 8°C)	0	100.0±0.0	100.0±0.0	100.0±0.0	100.0±0.0	100.0±0.0	100.0±0.0
	24	99.8±0.3	100.0±0.3	99.9±0.4	99.8±0.2	100.2±0.2	99.9±0.3
	48	99.9±0.5	100.0±0.3	99.7±0.5	99.3±0.2	99.8±0.4	99.9±0.1
	96	99.9±0.8	99.7±0.5	99.4±0.5	99.1±0.3	99.9±0.3	99.8±0.6
	120	99.7±0.6	99.7±0.3	99.2±0.8	99.2±0.1	99.7±0.3	99.7±0.4
	168	99.7±0.1	99.5±0.3	99.2±0.7	99.3±0.2	99.4±0.4	99.5±0.5
In-use temperature(32°C)	172	99.8±0.4	99.4±0.4	98.8±1.0	99.0±0.3	99.2±0.6	98.9±0.6
	176	99.5±0.5	99.1±0.4	98.3±0.8	98.8±0.2	98.9±0.4	98.7±0.3
	180	98.9±0.3	98.4±0.5	97.6±0.9	98.8±0.2	98.5±0.7	98.0±0.4
	188	98.2±0.4	97.7±1.0	96.0±0.6	97.8±0.1	97.4±0.4	96.8±0.6
	192	97.9±0.6	97.3±0.6	95.4±0.8	97.2±0.3	96.9±0.5	95.8±0.8

SD, standard deviation

BSAC

Gram Negative Threat – New for 2025

Evaluation of the stability of aztreonam / avibactam in elastomeric infusion devices used for outpatient parenteral antimicrobial therapy

Table 1. Recommended intravenous dose by type of infection in adult patients with CrCL[a] > 50 mL/min

Type of infection	Dose of aztreonam-avibactam		Infusion time	Dosing interval	Duration of treatment
	Loading	Maintenance			
cIAI[b]	2 g/0.67 g	1.5 g/0.5 g	3 hours	Every 6 hours	5-10 days
HAP, including VAP	2 g/0.67 g	1.5 g/0.5 g	3 hours	Every 6 hours	7-14 days
cUTI, including pyelonephritis	2 g/0.67 g	1.5 g/0.5 g	3 hours	Every 6 hours	5-10 days
Infections due to aerobic Gram-negative organisms in patients with limited treatment options	2 g/0.67 g	1.5 g/0.5 g	3 hours	Every 6 hours	Duration in accordance with the site of infection and may continue for up to 14 days

a Calculated using the Cockcroft-Gault formula.

b To be used in combination with metronidazole when anaerobic pathogens are known or suspected to be contributing to the infectious process.

24 hour infusion

Regulatory requirements for stability studies

Set by authorities to gain market authorisation / approval for use.
Focus inpatient settings not accounting for OPAT programme use


US FDA


EMA


TGA


YCD

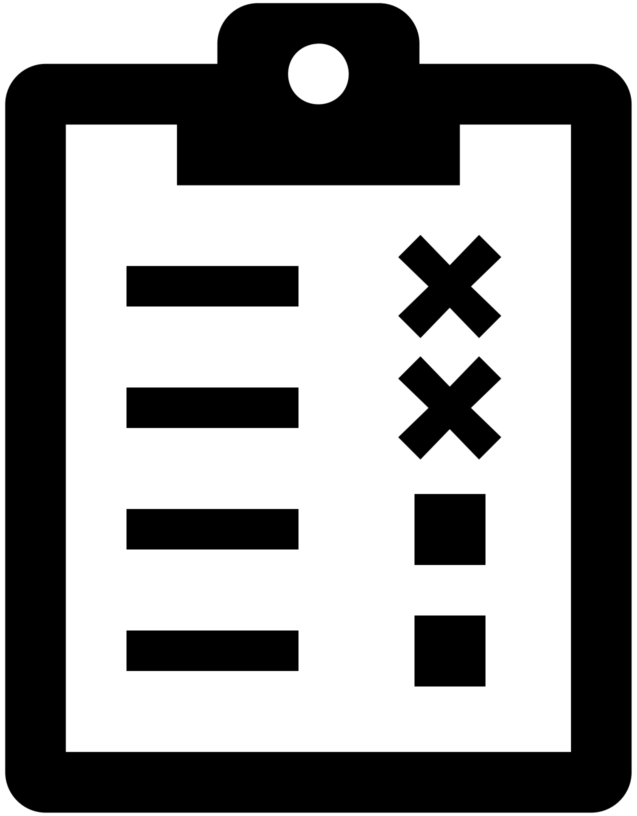
ASEAN


WHO

These guidance documents are directly derived from or informed by the International Council for Harmonisation (ICH) of Technical Requirements for Pharmaceuticals for Human Use

Naicker S, Roberts JA, Cheng V, Parker SL, Seaton RA, Gilchrist M, Sime FB
JAC Antimicrob Resist. 2024 Nov 28;6(6):dlae186.

Is there consensus on the assessment of degradation products on OPAT



Major differences between the documents lies in the acceptance criteria that the degradation products are measured against.

This poses a regulatory anomaly and challenge for clinical practice.

Pharmacopoeias each may provide a different criterion to evaluate stability

Harmonization of the pharmacopoeias would need to occur for there to be useful global guidance on stability testing procedures and acceptance criteria for degradation products.

Naicker S, Roberts JA, Cheng V, Parker SL, Seaton RA, Gilchrist M, Sime FB
JAC Antimicrob Resist. 2024 Nov 28;6(6):dlae186.

Can we move forward? - Assessment of degradation products on OPAT

Difference in geographical climates

Adoption of local governance

Too restrictive & centres less stringent criteria

UK's NHS YCD OPAT guidelines are regarded as the most explicit

Uncertainty

AMS Dilemma

AMR Concerns

Naicker S, Roberts JA, Cheng V, Parker SL, Seaton RA, Gilchrist M, Sime FB
JAC Antimicrob Resist. 2024 Nov 28;6(6):dlae186.

OPAT – BSAC Strategy

Strategy 4 - Promote and embed OPAT as a core component of antimicrobial stewardship through the provision of a continuous programme of education and training

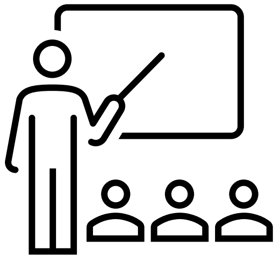
WORKSHOPS/ CONFERENCE CONTINUE

OPAT – BSAC Strategy

Strategy 4 - Promote and embed OPAT as a core component of antimicrobial stewardship through the provision of a continuous programme of education and training

OPAT – BSAC Strategy

Strategy 4 - Promote and embed OPAT as a core component of antimicrobial stewardship through the provision of a continuous programme of education and training



OPAT Masterclass in 2026

CPE accredited online masterclass that will support the optimisation and development of OPAT

Module / Webinar based
Autumn 2026 (soonest)

Global OPAT Summit 2027

Global leaders OPAT coming together to share, advance and strengthen next steps within OPAT

March 2027
QEII Conference Centre, London

MORE INFORMATION SOON

Global AMS Accreditation Scheme

BSAC has established a global AMS accreditation scheme (GAMSAS)

Objective: To provide a sustainable, points-based accreditation scheme to drive improvements in AMS across all health economies

Outcomes:

- Identify local areas of practice needing improvements and support
- Develop regional networks to support spread of good practice in AMS
- Create awareness in healthcare payers and users of variation, and how this can be addressed
- Support practice and policy research aimed at improving AMS
- Develop and supply educational resources to support AMS practice (via Global Antimicrobial Stewardship Partnership Hub https://global-asp-hub.com/)

GAMSAS

applied directly to the environment. According to the UNEP 2023 report, Bracing for superbugs: strengthening environmental action in the One Health response to antimicrobial resistance, fungicide and bactericides use in agriculture has been increasing globally.

There are close links between humans, animals and the environment but reducing the consumption of antibiotics in animals alone will not be sufficient to reduce the burden of AMR in humans. The significant reductions in antimicrobial use in animals provides some benefit to the risk of AMR in people, primarily by reducing foodborne disease but mostly mitigates the AMR threat to animal health. According to the third UK One Health report, most antibiotics in the UK are consumed by people (two-thirds) not animals, and human use drives AMR in bacteria in humans. Stewardship interventions within other settings have a proportionally smaller impact on AMR compared than those made within healthcare settings.

Case study: GAMSAS

Developed by the British Society for Antimicrobial Chemotherapy (BSAC) and led by experts in antimicrobial stewardship (AMS), the Global Antimicrobial Stewardship Accreditation Scheme (GAMSAS) initiative reviews, mentors and accredits hospital AMS programmes through a robust assessment process. GAMSAS aims to establish centres of excellence in the UK and around the world to tackle AMR by supporting the use of effective AMS.

GAMSAS is a quality-improvement focused, points-based accreditation scheme based on standards for AMS and the supporting IPC and microbiology laboratory services. AMS standards have been developed utilising published standards from around the world and reflect what is feasible across both high-income countries and LMICs. GAMSAS strives for a collaborative approach to stewardship globally, raising standards, sharing best practice, and facilitating mentorship between communities.

GAMSAS aims to:

- identify local areas of practice needing improvements and support
- develop regional networks to support the spread of good practice in AMS
- create awareness in healthcare payers and users of variation, and how this can be addressed
- support practice and policy research aimed at improving AMS
- develop and supply educational resources to support AMS practice (via the Global Antimicrobial Stewardship Partnership Hub)

Established in 2022, GAMSAS has now accredited the AMS programmes of 10 hospitals, 5 in the UK and 5 overseas. BSAC has worked with AMS experts and teams in these hospitals to assess their AMS systems, processes and practice via desktop reviews and hospital visits. BSAC is currently working with hospitals in a further 10 countries and plans to accredit a minimum of 20 hospitals in 2024 both in the UK and overseas. GAMSAS provides a sustainable approach to AMS via 3-yearly re-accreditation, utilisation of a pool of AMS experts across the world to support the assessment process and collaboration with partner organisations to support access to accreditation across all healthcare economies.

Improving patient outcomes by addressing access disparities to develop quality antimicrobial stewardship programmes

British Society for Antimicrobial Chemotherapy
Pfizer

Jacqueline Sneddon[1], Felicity Drummond[1], David Jenkins[1], Mark Gilchrist[1], Tracey Guise[1], Andrew Townsend[2], Jessica Romano[2], Elizabeth D Hermensend[2].
[1]British Society for Antimicrobial Chemotherapy, [2] Pfizer Inc.

INTRODUCTION

A BSAC and Pfizer collaborative international project, 'Establishing Antimicrobial Stewardship (AMS) Centres of Excellence to Improve Patient Outcomes by Addressing Access Disparities'(1), invited healthcare facilities to submit proposals detailing their specific AMS resource limitations and plans for quality improvement projects to address these limitations.

The focus was to support improvement projects concerning optimal use of antibiotics in facilities with limited resources and/or underserved populations.

METHODS

- Quality improvement projects selected via a competitive grant program utilising an expert review panel during April-June 2022.
- Invitations issued, grant arrangements established, and projects commenced during October 2022.
- Projects duration limited to 24 months with each team benefiting from expert mentoring and access to newly created networks to share best practices. Projects would culminate with accreditation of the AMS programme at each facility.
- Aspiration of creating regional centres of excellence within countries to inspire and sustain AMS development.
- Project teams supported via regular one-to-one virtual meetings, provision of expert advice, on site visits (as needed) and bespoke curation of education resources.
- Teams also came together bi-annually to share progress and learn from each other.

CONCLUSIONS

This collaborative global initiative is supporting development of AMS across several countries, many of them low and middle-income countries, to address the global problem of AMR and reduce disparities in access to high quality AMS.

ACKNOWLEDGEMENTS

Thanks to the project teams for their engagement with the project.

ENQUIRIES

Scan the QR code with your phone camera to find out more
Or email us: GAMSAS@bsac.org.uk

REFERENCES

1. BSAC Pfizer Request for Proposals Establishing Antimicrobial Stewardship (AMS) Centres of Excellence
2. BSAC Global Antimicrobial Stewardship Accreditation Scheme Home - GAMSAS (ams-accredit.com)

RESULTS

- 10 teams from different countries were selected from over 40 applications (Figure 1).
- Projects focussed on a variety of interventions (Figure 2).
- As of March 2024, teams were progressing with their projects with 1 site being accredited via the BSAC GAMSAS (2) as a centre of excellence and 2 teams in process of accreditation.
- Key themes of success identified are strong leadership and multi-professional working.
- Improvement areas seen around resilience of AMS programmes, level of staffing and engagement of senior leaders.
- Data from bi-annual reports indicated good progress with project objectives from most teams (80%).
- Outputs collated and shared via BSAC website to promote and share team projects for World Antimicrobial Resistance Awareness Week 2023. https://ams-accredit.com/collaborations/

Figure 1: Country teams engaged in AMS project

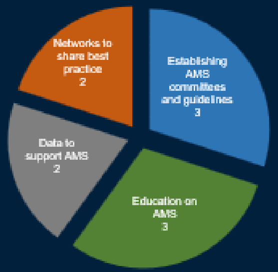


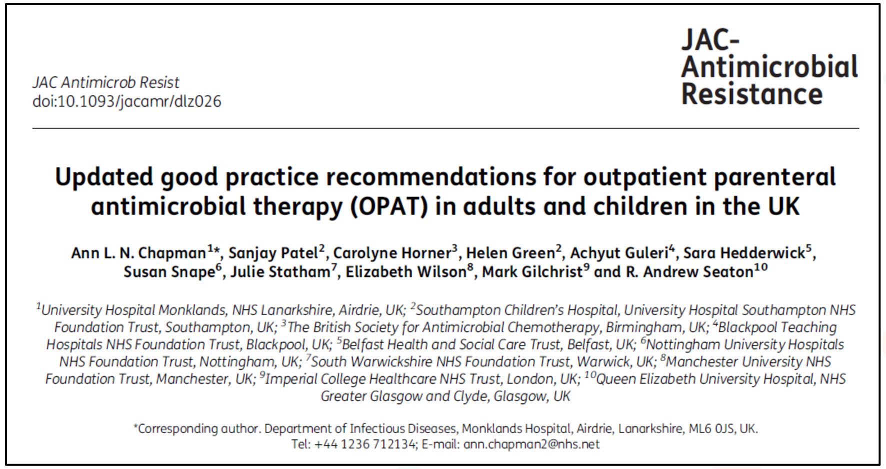
Figure 2: Key focus of interventions undertaken by teams (numbers represent number of teams undertaking each, total = 10)

BSAC

OPAT – BSAC Initiative Strategy

- **Strategy 5 -** UK accreditation scheme for OPAT services

Adaptation of existing good practice recommendations into online protocols for service assessment and key performance indicators



JAC Antimicrob Resist
doi:10.1093/jacamr/dlz026

JAC-Antimicrobial Resistance

Updated good practice recommendations for outpatient parenteral antimicrobial therapy (OPAT) in adults and children in the UK

Ann L. N. Chapman[1*], Sanjay Patel[2], Carolyne Horner[3], Helen Green[2], Achyut Guleri[4], Sara Hedderwick[5], Susan Snape[6], Julie Statham[7], Elizabeth Wilson[8], Mark Gilchrist[9] and R. Andrew Seaton[10]

[1]University Hospital Monklands, NHS Lanarkshire, Airdrie, UK; [2]Southampton Children's Hospital, University Hospital Southampton NHS Foundation Trust, Southampton, UK; [3]The British Society for Antimicrobial Chemotherapy, Birmingham, UK; [4]Blackpool Teaching Hospitals NHS Foundation Trust, Blackpool, UK; [5]Belfast Health and Social Care Trust, Belfast, UK; [6]Nottingham University Hospitals NHS Foundation Trust, Nottingham, UK; [7]South Warwickshire NHS Foundation Trust, Warwick, UK; [8]Manchester University NHS Foundation Trust, Manchester, UK; [9]Imperial College Healthcare NHS Trust, London, UK; [10]Queen Elizabeth University Hospital, NHS Greater Glasgow and Clyde, Glasgow, UK

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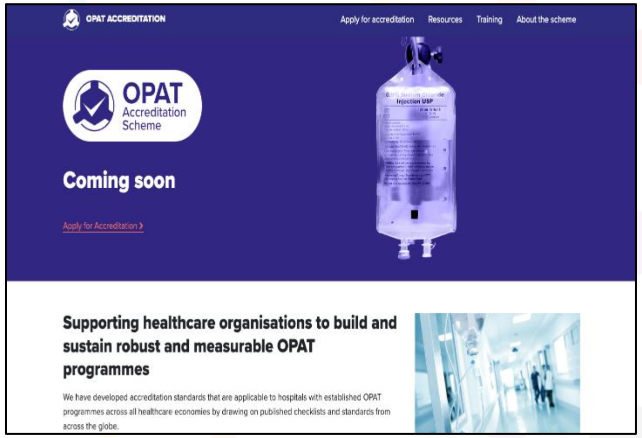
Development of OPAT Accredit website (subsuming all resources offered within current e-OPAT site)



Securement of internal governance group and accreditation assessment group

Launch, promote and secure centres

FINAL DISCUSSIONS

Making the case for OPAT in 2025 never been so important

- The Strategic Case
- The Economic Case
- The Financial Case
- The Management Case

Conclusions

Maximizing opportunities for admission avoidance and early supported discharge for patients and improving patient flow to ensure those with the greatest care needs can access the right services at the right time has never been more important.

Inpatient resources need to be optimally and efficiently deployed for acute care and safe and cost effective alternatives to hospitalisation should be expanded with creation of capacity for both acute, elective and cancer care

- NHS England. Tackling the COVID-19 backlog of elective care (2023) https://www.england.nhs. uk/coronavirus/publication/delivery-plan-for- tackling-the-covid-19-backlog-of-elective- care/
- NHS England. Elective actions for the 78 week cohort (2023) https://www.england. nhs.uk/coronavirus/wp-content/uploads/sites/52/2023/01/PRN00122-elective-actions- for-the-78-week-cohort.pdf

Conclusions

Good practice recommendations coming to continue to strengthen OPAT with effective AMS drivers

Global drug stability harmonisation is key to moving forward together with continuing to test old/ new agents

As healthcare advances and the complex needs population grows, infections in hospital are likely to increase. OPAT/ C-OPAT/ P-OPAT need to be ready and BSAC is aiding that endeavour

BSAC

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Imperial College Healthcare
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THANK YOU

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