



# The impact of the Antimicrobial Stewardship Team on facilitating discharge via referral to the Outpatient Parenteral Antimicrobial Therapy (OPAT) service

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## Background

The antimicrobial stewardship (AMS) team play a significant role in the promotion of safe and effective use of antimicrobial therapies in secondary care.<sup>(1)</sup> The AMS team also play an active role in identifying and reviewing patients that can be managed in the ambulatory care setting via the outpatient parenteral antimicrobial therapies (OPAT) pathway to facilitate early discharge and reduce length of stay (LOS).<sup>(2)</sup> Traditional OPAT referral pathways include Accident & Emergency (A&E) to avoid admissions to inpatient wards.

OPAT treatments are limited to once daily regimens, administered by intravenous infusions or continuous elastomeric infusion pumps. Commonly used agents within the OPAT setting include ceftriaxone, ertapenem, teicoplanin, and tazocin or flucloxacillin via a continuous infusion pump.

## Aims

The aim of this single centre study was to focus on the impact of the AMS team on the OPAT service in facilitating early discharge, reducing LOS and bed-day savings for the trust.

## Method

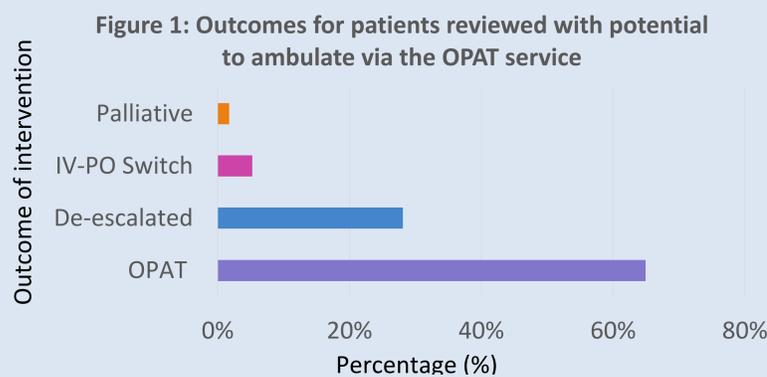
Intervention data for interventions made by the AMS team was collected at the single centre site, West Middlesex University Hospital (WMUH) from April 2017, when AMS ward rounds were instated, up to July 2018. Prospective OPAT-related intervention data was collected using an electronic intervention data collection tool on AMS ward rounds. Information collected included patient age, gender, ward, responsible team, antimicrobial(s) prescribed and route of administration, indication for therapy, microbiological cultures and clinical advice provided by the AMS team. Patients were followed up in the weekly OPAT multi-disciplinary meeting following discharge, to review and monitor response to therapy. Patients that were not discharged following OPAT review were followed up retrospectively to identify reasons for non-ambulation as well as to de-escalate therapy regimens to narrow spectrum antimicrobials where possible.

## Results

During the timeframe for audit, a total of 1098 AMS interventions were made, of which 57 were OPAT reviews (5%).

### Patient outcomes following OPAT review:

- Of the 57 patients considered for OPAT, 37 patients (65%) were successfully ambulated in the OPAT setting. The remaining 20 patients (35%) completed their full treatment course on the ward as inpatients, where 80% were de-escalated to narrower agents, 15% were switched to oral therapies and 5% were palliated due to alternative diagnosis



### Patient demographics:

- The average age of referred patients was 60 years old (range 23 – 89 years)
- 70% of patients referred to the OPAT service were male.

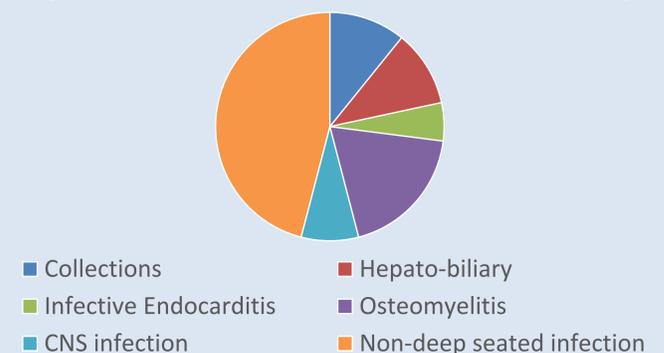
### Outcomes for the Trust:

- Referral to the OPAT service by the AMS team facilitated discharge for 37 patients, resulting in 608 beds days saved via treatment in an outpatient setting.
- An additional 245 bed days could have been saved based on anticipated treatment durations, if the remaining 16 patients that were suitable for intravenous therapy had been discharged via OPAT

### Infections treated in the OPAT setting:

- 20 of the 37 patients ambulated had deep-seated infections requiring prolonged intravenous antimicrobial therapy, including collections (n=4), hepato-biliary (n=4), infective endocarditis (n=2), osteomyelitis (n=7) and CNS infections (n=3). One patient failed therapy for a liver abscess and was re-admitted for drainage, prior to re-ambulation.

Figure 2: Types of infections treated in the OPAT setting



### Microbiology:

- 30 of the 37 patients ambulated via OPAT had positive microbiology cultures to target intravenous antimicrobial therapy
- There was a high incidence of resistant organisms grown in cultures, including MRSA (n=3) and ESBL E.coli (n=6), necessitating intravenous therapy options only

### Non-conventional therapies in OPAT:

- 38% of patients were ambulated in OPAT using a continuous infusion pump to deliver conventional multiple daily dosing regimens over 24 hours. Antibiotics administered via this method included flucloxacillin and tazocin.

## Conclusions

The impact of this single centre review demonstrates the important role of the AMS team in identifying and preparing patients for OPAT via the ambulatory care setting. Patient discharge was facilitated using non-conventional administration methods such as continuous infusion elastomeric pumps in place of multiple daily dosing regimens where targeted therapy was warranted in infections requiring prolonged therapy.

The AMS team contributed to the treatment of infections requiring prolonged treatment durations in an outpatient setting, leading to a reduced LOS and the expected risks of acquiring healthcare associated infections (HAIs) and ultimately improving patient experience and quality of life.

## References

- Antimicrobial stewardship: systems and processes for effective antimicrobial medicine use. (2015). UK: NICE, pp.9-25.
- Gilchrist, M. and Seaton, R. (2015). *Outpatient parenteral antimicrobial therapy and antimicrobial stewardship: challenges and checklists*. UK: Journal of Antimicrobial Chemotherapy, pp.965-968.