

A Retrospective Review of Collaboration Between Three Organisations

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Background

OPAT services provide intravenous antibiotics to patients outside of a hospital setting. OPAT services are an alternative to inpatient care and is useful for patients who require parenteral antimicrobial therapy but are otherwise well enough to receive treatment outside an acute hospital setting.

The OPAT team in Bristol was established in November 2021. The two main hospital sites (Southmead Hospital and University Hospital Bristol and Weston) and Primary care in BNSSG and Sirona Health and Care were involved and had specific teams to manage the services across the sites.

Methodology

This review looks at collated data from two hospital sites. The OPAT teams have collected this data prospectively and it is stored centrally on NHS Future collaborations website.

How OPAT works in Bristol?

All referrals to OPAT are discussed with an Infection specialist and a management plan is made in conjunction with the clinical team and patient. The infection specialist advises teams on the choice and duration of antimicrobials. The OPAT team ensures that capacity for OPAT is available, the referral is appropriate, vascular access is obtained and the prescription of antimicrobials is completed adequately. Cases are discussed at weekly/ twice weekly multi disciplinary meetings (MDTs) and the appropriateness of antibiotics and the management of infection is reviewed. Blood monitoring is undertaken for any patient receiving more than 7 days of intravenous antimicrobials and therapeutic drug monitoring is done for selected patients. Outcomes from MDTs are recorded on an electronic database.

Review of Data

There were 228 patients over a 10 month period (November 2021-September 2022) treated via OPAT resulting in 2042 bed-days saved (see chart 1).

47% of these patients identified as female and 53% identified as male. The ages of the patients' covered ranged from 15 years to 90years. The greatest number of patients were in the 55 years to 84 years age group. 37% of the admissions to OPAT were to facilitate early discharge and 63% were to avoid admission. Respiratory infections were the biggest syndromic group covered (18.6%). Following that were skin and subcutaneous tissue infections (8%) and then infections of the gastrointestinal tract (5%). This is in-keeping with national trends.

The commonest micro-organisms isolated were *Pseudomonas aeruginosa* for respiratory infections. *Staphylococcus aureus* was most commonly implicated in soft tissue infections. *Escherichia coli* and *Klebsiella pneumoniae* were the most frequently identified pathogens in gastrointestinal infections. There was one case of disseminated *Mycobacterium chelonae* infection and a single case of *Borrelia burgdorferi* causing neuroborreliosis (see chart 2).

The most frequently used antibiotics were- Ceftriaxone 44%, Piperacillin/Tazobactam 20%, Meropenem 16% and Ertapenem 13% The average length of stay with the OPAT service is 10.4 days (see chart 3, 4)

The number of OPAT related complications were low (1 case of *C.difficile* infection, 4 cases of drug side effects and 1 case of neutropenia). 12 patients were re-admitted within 30 days of discharge (5% of the cohort).



Areas of Bristol covered by the OPAT team

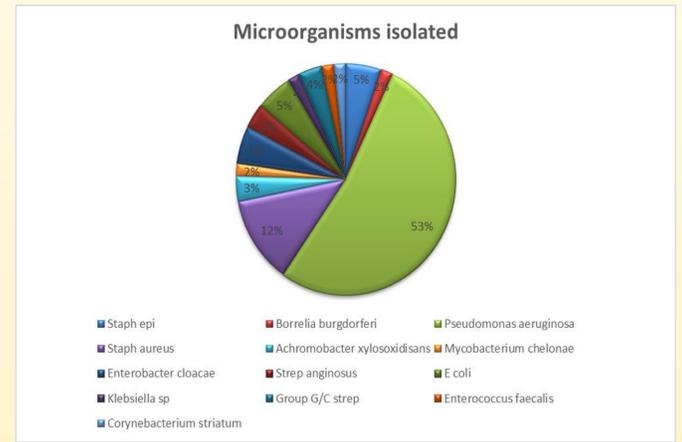


Chart 2: The most commonly isolated Microorganisms

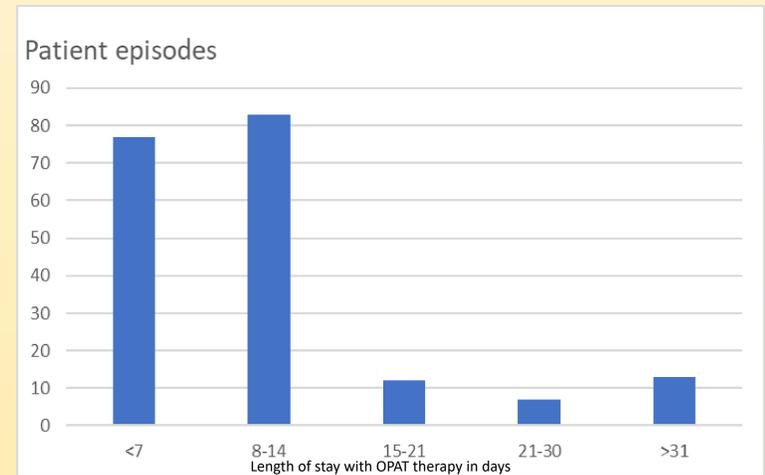


Chart 3: Length of stay per patient episode

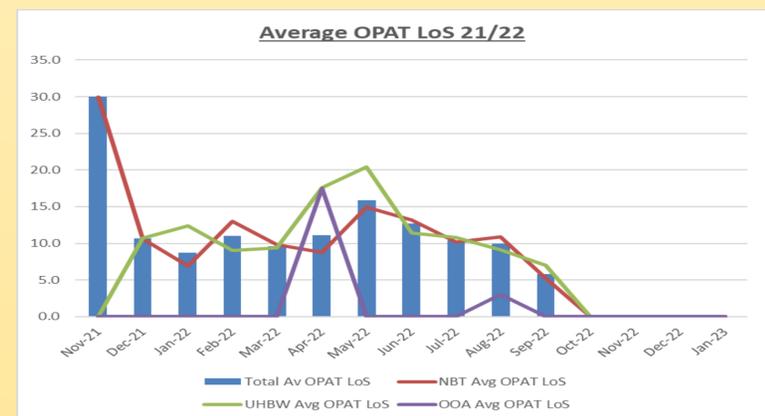


Chart 4: Average LOS in OPAT across 2021- 2022

Conclusion

Overall, the OPAT service across BNSSG was practicable and effective. This service has reduced the number of bed days required for patients needing antibiotics and has improved patient flow across two busy hospitals in Bristol. OPAT has enabled safe, early discharge of patients with infections back to the community and is an alternative to hospital for medically stable patients. Results from patient surveys has demonstrated the positive impact of OPAT on patient outcomes and high patient satisfaction. Working across three organisations has not been without challenges but important lessons have been learnt from establishing this service. Our experiences showed that it is a cost-effective use of NHS resources and has the capacity to drive quality improvement and improve antimicrobial stewardship (AMS).

Looking to the future

Although the service is in its early stages we are looking at ways to streamline OPAT services for the future. Our aim in the future is to establish an OPAT clinic where patients can be reviewed clinically in conjunction with blood tests and to be able to offer additional services such as dressing changes, line changes etc.

Given the growing body of evidence of the use of oral antibiotics as a step down from intravenous antibiotics earlier on, this may prove to be a beneficial adjunct to OPAT. The input from our clinical pharmacists have been essential to the running of the service. Further training and staff recruitment could be considered if demand exceeds the current capacity.

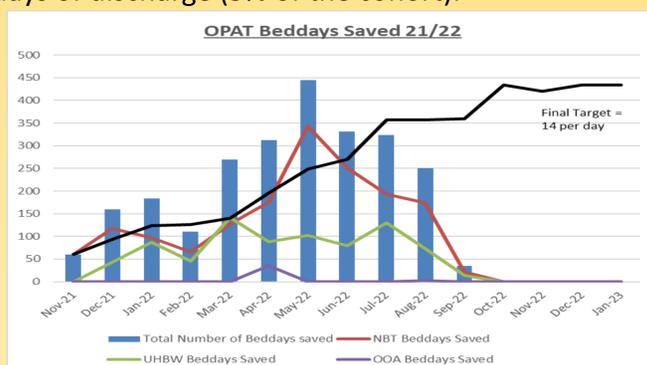


Chart 1. OPAT Bed days saved in 2021 and 2022