PAEDIATRIC OUTPATIENT ANTIMICROBIAL THERAPY (OPAT): *A ten year review of a national service*

Henderson D, Moore E, Quigley L, Gormley F, Freyne B, Gavin P, Geoghegan S, Ó Maoldomhnaigh C, McCarthy K, Kitt E

Department of Infectious Diseases, Children's Health Ireland, Dublin, Ireland

INTRODUCTION

- Paediatric outpatient parenteral antimicrobial therapy (OPAT) enables children with serious infections to receive parenteral therapy at home. [1]
- This service reduces cost and supports family centred care, but carries clinical risk. [2]
- In Ireland, the service is nationally accessed via Children's Health Ireland (CHI).

AIMS

Primary Aim
The aim of this audit was to retrospectively analyse ten years of the national Paediatric OPAT service delivered via CHI

Secondary Aim
Analyse the cost effectiveness and bed saving days of the paediatric OPAT service.

METHODS

- All paediatric OPAT patients between May 2015 and December 2025 were included.
- Demographics, length of stay, mode of delivery and treatment outcomes/complications were analysed.
- Practice was evaluated against the national guidelines on the provision of OPAT.[3]

RESULTS

Patient Demographics

- A total of 823 patients were included over the ten year period.
- 40.2% (331/823) were female
- Median age was 9 (IQR 3.6 – 12.9 years)
- Ceftriaxone (n = 580) was the most frequently used IV antibiotic, followed by flucloxacillin (n = 152).
- The majority of care was delivered through self-OPAT (n=537).

Infections Treated

- Bone and Joint Infection (BJI) accounted for 43.6% (n=357), followed by meningitis/intracerebral infection at 13.3% (n=109).
- The next most frequent were intra-abdominal infections, 7.6% (n=62) and myelitis/discitis/spinal infection, 6.7% (n=55).

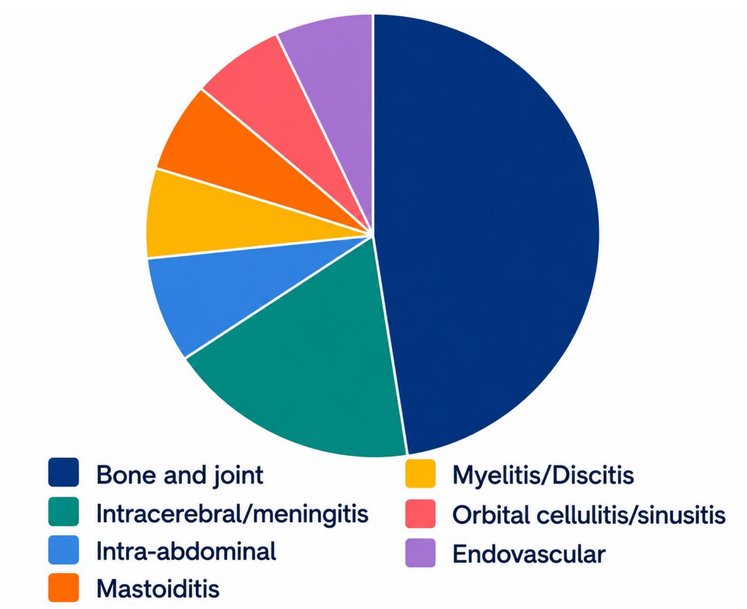

Figure 1. Types of infections treated

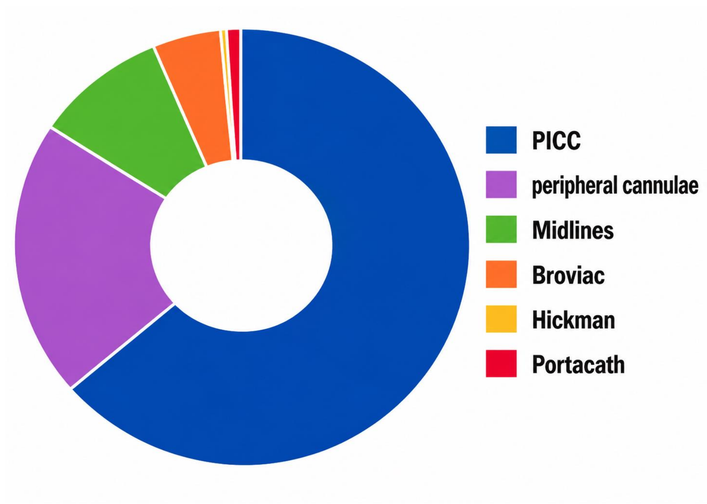

Figure 2. Line device used

- No line related complication occurred in 92% of patients.
- 43(5.2%) of patients required >1 hospital admission

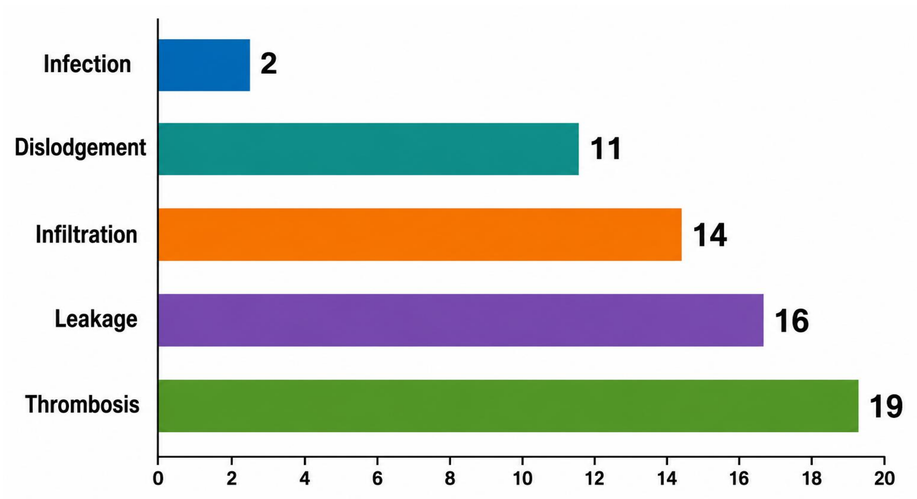

Figure 3. Line complications recorded

Patient Outcomes

- Overall outcomes were available for 811 patients, with favourable outcomes in over 96%, including uncomplicated cure in 86.3%, complicated cure in 3.9%, improvement in 5.9%.
- Treatment failure occurred in 2/811 (0.2%).

Cost Effectiveness

- Of a total of 21,906 antibiotic treatment days, 11,014 (50.3%) were delivered via OPAT.
- With estimate bed day cost of €1975, this has led to approximate cost savings in excess of 20 million euro over the 10-year period.

CONCLUSION

- Paediatric OPAT is a safe and cost effective service with favourable patient outcomes
- There was a low complication rate which adhered to the national benchmark of standard

REFERENCES

1 Carter B, Fisher-Smith D, Porter D, Lane S, Peak M, Taylor-Robinson D, et al. Paediatric Outpatient Parenteral Antimicrobial Therapy (OPAT): An e-survey of the experiences of parents and clinicians. PLoS One. 2021;16(4):e0249514.
2 Mohammed SA, Roberts JA, Mirón-Rubio M, López Cortés LE, Assefa GM, Pollard J, et al. Quantifying cost savings from outpatient parenteral antimicrobial therapy programme: a systematic review and meta-analysis. JAC Antimicrob Resist. 2025;7(2):dlaf049.
3 Sweeney E, Curtin N, de Barra E, Burns K, O'Neill E, Feeney E, et al. National Guidelines on the Provision of Outpatient Parenteral Antimicrobial Therapy (OPAT). Ir Med J. 2020;113(7):123.