

LRI Children's Hospital

Paediatric Outpatient Parenteral Antibiotic Therapy (p-OPAT) Standard Operating Procedure

Staff relevant to:	Medical, Nursing, Microbiology working within UHL Hospitals and community settings.
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1. Introduction and who this standard operating procedure applies to

In its most basic form, Paediatric outpatient parental antibiotic therapy simply refers to the administration of IV antimicrobials for at least two consecutive days without an intervening hospitalisation. There is compelling evidence to support the rationale for managing children on IV antimicrobial therapy at home whenever possible, including parent and patient satisfaction, psychological well-being, return to school / employment and reductions in healthcare-associated infection and cost savings.

There are naturally some elements of consideration and limitation which must be poised concerning the utilisation of p-OPAT in an acute setting. To ensure coherence to this the following criteria must be met before a patient can be considered for p-OPAT:

- (i) The patient has currently no further predictable need for hospital-based care apart from the administration of antimicrobial therapy.
- (ii) The infection and any associated comorbidity should have a stable or predictable course suitable for non-inpatient management.
- (iii) There is no equally safe and effective oral antimicrobial that can be given. This component should be overseen as part of a formal antibiotic stewardship programme.

This SOP outlines the process and management of the UHL Paediatric outpatient antimicrobial therapy (p-OPAT) pathway and patients being treated via this pathway.

This SOP has been developed to provide a framework for consistent and safe management of patients being treated within the p-OPAT pathway.

The SOP must be used in conjunction with the [Vascular Access UHL Policy \(B13/2010\)](#).

2. p-OPAT team: Roles and responsibilities

2.1 Named p-OPAT clinical leads

- I. Overall responsibility for the governance of the p-OPAT service including development of policies and procedures, audit and benchmarking.
- II. Leading the virtual p-OPAT ward round/MDT twice a week to discuss all patients.
- III. Overseeing the individual patient's management plan in terms of the confirming of the diagnosis, evaluating clinical suitability for discharge, deciding on the choice of antimicrobials and choosing the most appropriate device for delivery (in conjunction with clinical pharmacist).
- IV. Advice on antimicrobials in conjunction with the Consultant Microbiologist.
- V. Deciding upon the timing of an IV to oral switch if applicable and the total duration of antimicrobial therapy (in conjunction with p-OPAT lead and clinical pharmacist).
- VI. Monitoring for side effects or clinical deterioration (in conjunction with Diana nursing staff and parents/carers). This information is referenced in the 'Your child's home intravenous Antibiotic treatment plan' document.
- VII. Taking overall clinical responsibility for p-OPAT patients.

2.2 Nursing Staff involved in discharging children on iv antibiotics

- I. Offering clear verbal and written communication of the p-OPAT plan to the child, family and Diana nurses, including the pathway for accessing emergency care in the event of complications.
- II. Ensure all equipment, drugs, charts and paperwork are given to parents

2.3 Clinical Microbiologist

- I. offering advice on choice of antimicrobial, timing of iv to oral switch and total duration of antibiotics (in conjunction with paediatrician managing the child.
- II. Taking part in virtual ward rounds.
- III. Laboratory liaison for additional testing and 'advice on additional laboratory monitoring requirements i.e. FBC, CRP, U+Es, CK etc.

2.4 Clinical Antimicrobial Pharmacist

- I. Providing clinical advice on antimicrobial options in terms of selection, pharmacokinetics, tissue penetration, IV to oral switch, dosing, tolerability, allergies, potential drug interactions and side effects, stability and compounding.
- II. Providing information on iv antibiotic reconstitution and administration.
- III. Providing antimicrobials, devices and other consumables.
- IV. Providing information on therapeutic drug monitoring'.

2.5 Administration

- I. Admitting and discharging patients
- II. Responsible for maintaining the p-OPAT database.
- III. Arranging MDT/taking notes on virtual ward round.
- IV. Communicating with Diana community nursing team.

2.6 Ward team

- I. The patient will be discharged from the ward onto the p-OPAT team by the ward team.
- II. Drug chart need to be completed with the required antimicrobial
- III. Those CYP needing outpatient follow up will remain under the respective Lead Consultant Paediatrician (not the p-OPAT consultant).

3. Evaluation of p-OPAT suitability

Assessing the eligibility of a patient for p-OPAT should be a joint decision between the treating clinician and the p-OPAT clinician.

3.1 Clinical

- I. Is the patient clinically stable? Any evidence of haemodynamic instability?
- II. Is the infection well defined and is the prognosis predictable?
- III. Is the pathology amenable to p-OPAT management and are the risks of complications from the underlying infection minimal.
- IV. Are there any other reasons for inpatient management apart from the administration of iv antimicrobials?
- V. Can an oral switch be considered?
- VI. Is there a suitable p-OPAT antibiotic?

- vii. Persisting fever is not an absolute contraindication for discharge but a deep-seated collection requiring drainage must be excluded.

3.2 Social

The following conditions are formulated within the p-OPAT ground rules document and signed by the parent/carer of the patient. Diana community nurses will make a secondary assessment of the below conditions during the home visits and if the below conditions are not met the patient may require admittance into a paediatric ward.

- I. Home circumstance allow for safe storage of antimicrobials, inc refrigerator if applicable, any concerns identified by the Diana team need to be escalated to the p-OPAT consultant
- II. Ability to contact pOPAT team and travel back to hospital for medical review
- III. Special consideration should be given to adolescents who are more likely to engage in risk-taking activities.
- IV. Are there any child protection concerns?
- V. Has the parent/carer signed consent? (Appendix 3)

3.3 Parent/Carer

- I. Special consideration should be given to adolescents who are more likely to engage in risk-taking activities.
- II. Demonstrates competence in line care (including administration of antibiotics if applicable) and is aware of potential complications.

4. Service Structure

Antimicrobials will be administered at home by appropriately trained paediatric nurse (Diana nursing team).

5. Pathologies suitable for p-OPAT management

In the current format, almost all CYP under p-OPAT will be on once a day Ceftriaxone. However other once daily antimicrobials can be considered on a case by case basis. As the service expands in the future, consideration will be given to twice a day antimicrobials.

5.1 Febrile infants (1-3 months)

- I. Normal CSF
- II. Haemodynamically stable
- III. Adequate feeding
- IV. iV. No other indication to stay in hospital
- V. Parents happy for home IVs

5.2 Osteomyelitis and Septic Arthritis

Following a discussion with the treating orthopaedic team in conjunction with Microbiologist oversight.

5.3 Meningitis

- i. Consider p-OPAT if patients are seizure free and apyrexial for > 24 hours.

6. Vascular access

It is essential that a secure venous access is in place prior to p-OPAT discharge. Children needing short course of antimicrobials can have a peripheral venous cannula.

Peripherally inserted central catheters (PICC) are ideal for those needing antimicrobials for longer periods (weeks or months). PICC can be inserted either under local or general anaesthetic and have a relatively low incidence of complications.

7. Antimicrobial selection, drug delivery and patient monitoring

The choice of antimicrobial agent should depend on the site of infection, microbiological susceptibilities (if known) and should be chosen after discussion with the p-OPAT MDT (p-OPAT consultant, Microbiologist and Pharmacist). The first dose of antibiotic should be given in the hospital to ensure that there is no drug reaction.

7.1 Choice of antimicrobial agent

- I. The choice of antimicrobial agent will be an informed decision shared between the antimicrobial Pharmacist and Microbiologist at the time the patient is an inpatient. The standardised antimicrobial agent for p-OPAT will be once a day antimicrobials.

7.2 Drug delivery

- I. The method of delivery for the antimicrobial agent will be intravenously via cannulation.
- II. In some rare circumstance there may be a requirement for the use of oral anti-microbial agents, this will be discussed via MDT and decided upon in this clinical setting.

7.3 Devices

- I. Cannula
- II. Infusion pump
- III. These devices will be supplied at the time of discharge as part of the patients discharge pack.
- IV. Post discharge the devices will be returned back to the ward by the Diana team

7.4 Drug delivery and storage

- I. Antimicrobial agents will be dispensed by the Paediatric satellite pharmacy to the respective wards.
- II. Upon clinical and parental acceptance of a board onto p-OPAT services the parent/patient will be provided with the appropriate antimicrobial agent to take home.

7.5 Patient monitoring

- I. Clinical monitoring – Daily community nursing review when visiting to administer IV antibiotic.(seven day a week service).
- II. Laboratory monitoring – Children on long term antibiotics may need weekly FBC, CRP etc.; these will be reviewed by the p-OPAT team in weekly MDTs.

8. Clinical governance and outcome monitoring

8.1 Clinical responsibility

- I. Clinical responsibility should lie equally between the referring and p-OPAT teams. A lead Consultant should be identified at the time of discharge to p-OPAT team.

8.2 Effective communication

- I. Effective communication - Weekly virtual rounds/MDT; contact points provided for parents/carers; Out of hours service – how to contact the on-call team.

8.3 Documentation

Electronic/paper, patient leaflet, p-OPAT info on InSite.

Re-siting of cannulas should be documented. The IV cannula insertion documentation located in appendix 2 of the [Vascular Access UHL Policy](#) must be completed and filed in the patients notes.

8.4 Pathway for urgent review and readmission

The Diana Community Nursing team will liaise with the p-OPAT administrator for any child who needs a clinical review during Monday to Friday 08:00 – 16:00. On weekends contact should be made with the On-call Paediatric Consultant/Registrar.

CYP needing a cannula change would be done on one of the paediatric wards after discussion with the p-OPAT Administrator during working hours and through the on-call paediatric Registrar outside of working hours inclusive of weekends.

CYP coming to the wards for reviews/cannula re-siting should be classed as ward attenders and ensure antimicrobial is given if arrived late in the afternoon.

Families would be advised to contact the Paediatric Registrar for any urgent queries between 17:00 – 09:00 hours and reviews arranged in SFD as appropriate.

9. Referral Pathway

(Only during working hours, Monday to Friday 08:00 -16:00)

- I. COW identifies a patient for p-OPAT and an ICE referral is completed
- II. P-OPAT administrator receives the referral and updates the p-OPAT database
- III. P-OPAT Consultant reviews the referral and assesses the suitability of stated referral.
- IV. Clear management (Documented in patient notes) and follow up plan given after liaising with Pharmacy and Microbiology as appropriate.
- V. p-OPAT Administrator sends patient details and management to Pharmacy team and Diana Community nursing team.
- VI. On-going management: We anticipate that most patients will be on shorter courses of antibiotics (<5 days) and won't need a clinical review before discharge. CYP on long term antibiotics may require a clinical/telephone review.
- VII. p-OPAT team (p-OPAT Consultant, Consultant Microbiologist and Pharmacist) would discuss patients under their care on weekly virtual rounds/MDTs. The discussion and plans will be documented on paper template and uploaded onto Cito.

10. Education and Training

None

11. Monitoring Compliance

What will be measured to monitor compliance	How will compliance be monitored	Monitoring Lead	Frequency	Reporting arrangements
Clinical outcomes	Audit	p-OPAT lead	Prior to SOP review date	Clinical governance
Microbiological outcome	Audit		Prior to SOP review date	
Adverse drug reactions	Datix review		As occurs	
Adverse line events	Datix review		As occurs	
Antibiotics used	Audit		Prior to SOP review date	
Patient/carer satisfaction surveys	Audit		Prior to SOP review date	

12. Supporting documents

[Vascular Access UHL Policy](#)

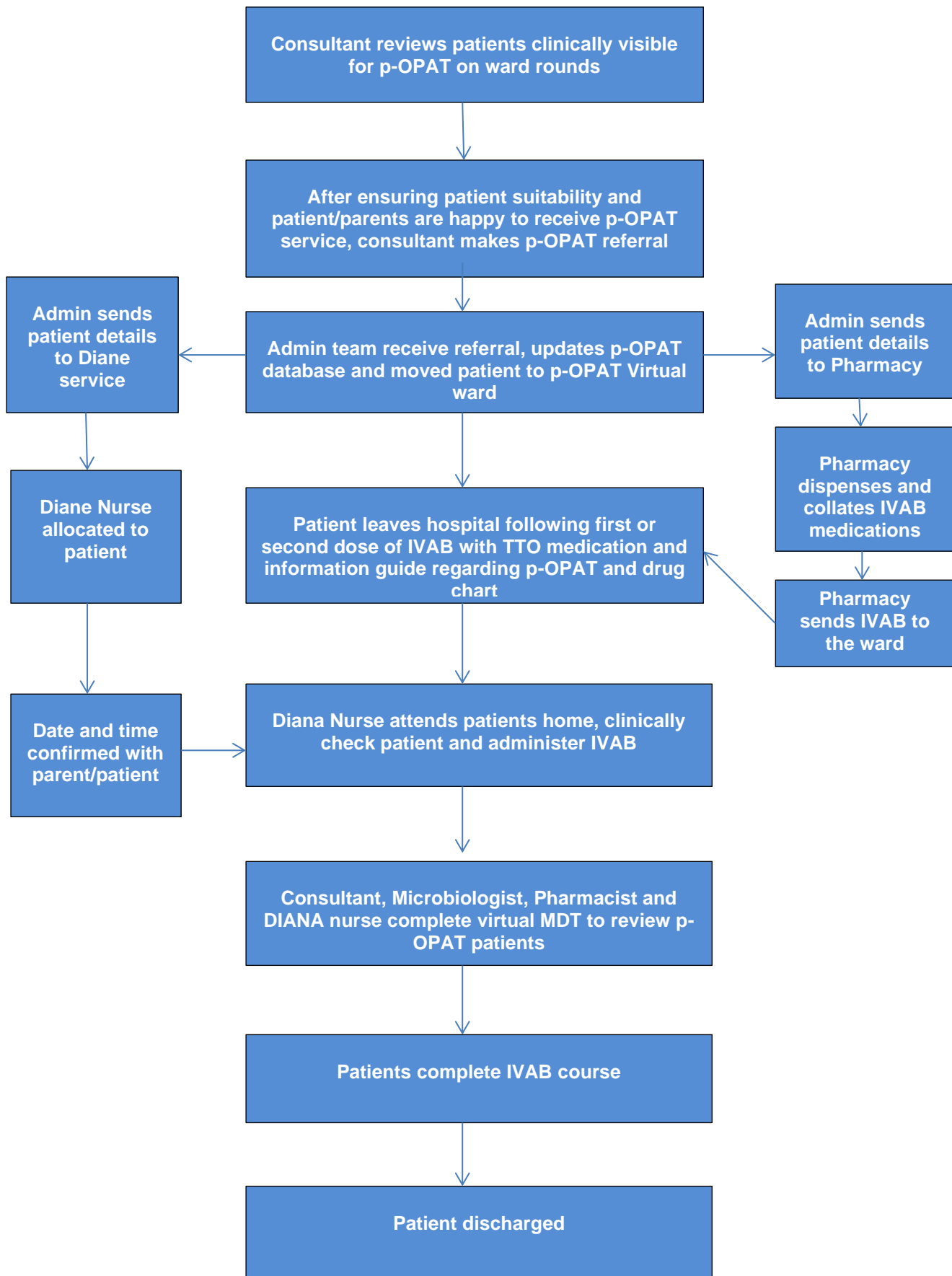
13. Keywords

Antibiotics, Children, Diana community nursing team, Intravenous, Young people

The Trust recognises the diversity of the local community it serves. Our aim therefore is to provide a safe environment free from discrimination and treat all individuals fairly with dignity and appropriately according to their needs. As part of its development, this policy and its impact on equality have been reviewed and no detriment was identified.

Contact and review details	
Guideline Lead (Name and Title) S Bandi – Consultant HoS	Executive Lead Chief Nurse
Details of Changes made during review: New document	

Appendix 1 – p-OPAT Pathway flow chart.



Appendix 2: p-OPAT ICE Referral form

The following criteria must be met before a patient can be considered for p-OPAT (please tick those that apply):

- *The patient currently has no further predictable need for hospital-based care apart from the administration of antimicrobial therapy.*
- *The infection and any associated comorbidity should have a stable or predictable course suitable for home IV management.*
- *There is no equally safe and effective oral antimicrobial that can be given.*
- *No safeguarding concerns*
- *Suitable home circumstance inc. working fridge*
- *Patient able to maintain IV access (inc no risk taking behaviours)*
- *Parents/Carers demonstrates competence in line care and aware of potential complications and able to contact team for advice +/- return to hospital for medical attention*

(The referring team has to tick all the boxes before they can proceed to the next page with the referral)

Name of referring consultant	
Date/time of referral	
Patient's name	
Patient's S number	
Patient's address	
Date of current admission	
Current ward	
Allergies (and reaction)	
Past medical history/other comorbidities	
Diagnosis of infection, including site if relevant	
Relevant positive microbiology results	
Relevant radiology result	
Any other treatment given for this infection ie. drainage/surgery	Yes/no If yes, please enter details:
All antimicrobials including dates given for this indication	

Appendix 3 – p-OPAT Ground Rules document

Ground rules for the administration of Intravenous Antibiotics at home under the Paediatric OPAT Service (p-OPAT)

Paediatric out-patient Parenteral Antibiotic Therapy (p-OPAT) is an effective way of treating your child's infection in the comfort of their own home. However, it is essential for us to ensure that they receive the same quality of care as they would in hospital, and for that reason, there are certain conditions that must be fulfilled by both the p-OPAT team and the family to ensure that your child is managed safely at home.

The family must have a LLR registered GP and a fixed address where the Diana Childrens community nurses can visit each day. Pre-prepared intravenous antibiotics will be given to the family on discharge and these must be kept refrigerated unless otherwise stated. All clinical waste will be placed in the sharps bin as appropriate. The community nurses will schedule a convenient time to visit you each day. If you are not at home when the community nurses visit, your child will be unable to receive their antibiotics, this will therefore be fed back to the p-OPAT team. A decision will then be made whether to readmit your child to hospital for completion of their treatment.

If the community nurse feel at any stage that the home environment is inappropriate or unsafe for treatment to be administered, this will also be fed back to the p-OPAT team and may result in readmission to hospital for completion of treatment.

It is essential that you report any concerns you have about your child's PICC/CVC/cannula to the community nurses or p-OPAT admin member. In addition, if you have any concerns that your child's clinical condition is deteriorating; you must inform the p-OPAT team immediately. Your child will be reviewed weekly at a virtual MDT to ensure continued p-OPAT compatibility.

By signing below, I agree to comply with the terms and conditions above:-

Patient name.....

NHS number.....DOB.....

Parent / guardian name..... Signature.....

OPAT consultant name.....Signature.....

Appendix 4: Discharge check list

- | | | |
|----|--|---|
| 1. | ICE referral done | Y |
| 2. | Drug chart completed | Y |
| 3. | Parents/carers consent taken | Y |
| 4. | Discharge pack containing medications given to parents/ carers | Y |
| 5. | Information leaflet given | Y |
| 6. | Parental education provided | Y |
| 7. | Contact numbers given (Admin and for out of hours) | Y |

Appendix 5: Diana referral form

DIANA CHILDREN'S COMMUNITY NURSING SERVICE REFERRAL FORM

Referrer Information

Referrer Name	Hospital/Ward
Consultant	GP Surgery
Telephone Number	Fax Number
Signed	Date

Patient Information

Title	Forename(s)	Surname	NHS Number
Date Of Birth	Gender	Ethnicity	Religion
Address (including postcode)			
Home Telephone Number	Mobile Telephone Number	Preferred Contact Number	
Parent Names	GP	Consultant	
Languages Spoken	Languages Read	Is interpreter needed? Yes <input type="checkbox"/> No <input type="checkbox"/>	
Please record if the patient has given consent to access information recorded via the SystemOne Electronic Record System. <i>(please note referrals cannot be processed without consent obtained)</i>			
Consent given <input type="checkbox"/> Dissent given <input type="checkbox"/> Consent obtained on patient's behalf <input type="checkbox"/>			

Referral Information

Reason for admission\diagnosis	Planned date of discharge
Date first visit required	Allergies
Reason for referral/frequency of interventions required <i>(please note 10 day supply of all equipment/medication/dressings required to be sent home with family for visit to take place)</i>	
Additional information of relevance <i>(special instructions for medication/interventions/diagrams of wound stomas etc)</i>	
Any Safeguarding concerns? Yes <input type="checkbox"/> No <input type="checkbox"/> Not known <input type="checkbox"/> <i>(If yes please specify with details of Social Worker if Known)</i>	

Once completed please return form to us by:

Email: fypc.referrals@nhs.net

Where possible please complete the form electronically, if completing by hand please use additional sheets if needed.
For more information view www.leicspart.nhs.uk/Our_Services_A-Z/FYPC (Families, young children & children) referrals