Update to OPAT Good Practice Recommendations

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OPAT Good Practice Recommendations (GPRs)

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Good practice recommendations for outpatient parenteral antimicrobial therapy (OPAT) in adults in the UK: a consensus statement

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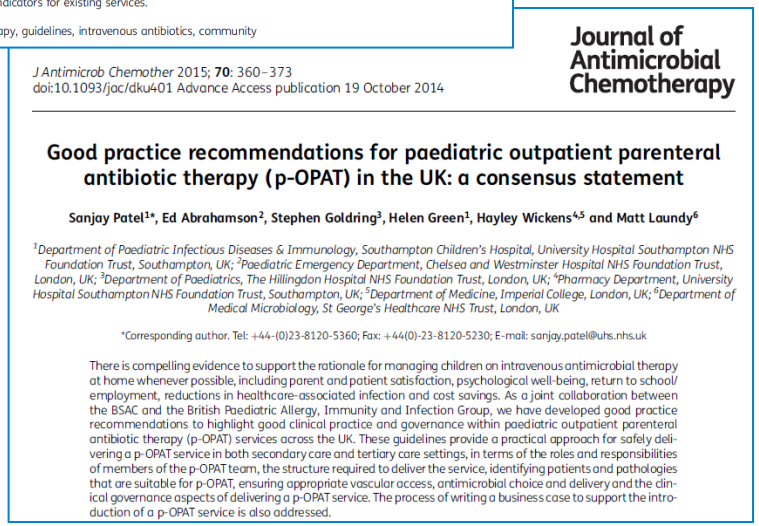
†A full list of the working group is shown in the Acknowledgements section.

These good practice recommendations for outpatient parenteral antimicrobial therapy (OPAT) are an update to a previous consensus statement on OPAT in the UK published in 1998. They are based on previous national and international guidelines, but have been further developed through an extensive consultation process, and are underpinned by evidence from published literature on OPAT. They provide pragmatic guidance on the development and delivery of OPAT services, looking at all aspects of service design, care delivery, outcome monitoring and quality assurance, with the aim of ensuring that OPAT services provide high-quality, low-risk care, whatever the healthcare setting. They will provide a useful resource for teams developing new services, as well as a practical set of quality indicators for existing services.

Keywords: home infusion therapy, guidelines, intravenous antibiotics, community



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Journal of Antimicrobial Chemotherapy

Good practice recommendations for paediatric outpatient parenteral antibiotic therapy (p-OPAT) in the UK: a consensus statement

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There is compelling evidence to support the rationale for managing children on intravenous antimicrobial therapy at home whenever possible, including parent and patient satisfaction, psychological well-being, return to school/employment, reductions in healthcare-associated infection and cost savings. As a joint collaboration between the BSAC and the British Paediatric Allergy, Immunity and Infection Group, we have developed good practice recommendations to highlight good clinical practice and governance within paediatric outpatient parenteral antibiotic therapy (p-OPAT) services across the UK. These guidelines provide a practical approach for safely delivering a p-OPAT service in both secondary care and tertiary care settings, in terms of the roles and responsibilities of members of the p-OPAT team, the structure required to deliver the service, identifying patients and pathologies that are suitable for p-OPAT, ensuring appropriate vascular access, antimicrobial choice and delivery and the clinical governance aspects of delivering a p-OPAT service. The process of writing a business case to support the introduction of a p-OPAT service is also addressed.

- Pragmatic guidance on the development and delivery of OPAT services
- To ensure that OPAT services provide high-quality, low-risk care, whatever the healthcare setting
- A useful resource for teams developing new services
- A practical set of quality indicators for existing services

Literature review

Requested searches	Adult
Adults	1 July 2010 – 31 July 2017
Paediatric	1 July 2012 – 31 July 2017
Libraries searched	CINAHL, Embase, Medline, Web of Science (science citation index expanded), Cochrane Library

Search terms

Adult		Paediatric
Outpatient/Home parenteral *antibiotic/ antimicrobial/antifungal/antiparasitic antibacterial/antiviral/antiinfective* therapy/ treatment Hospital in the home Home infusion therapy AND antibacterial/ antibiotic/antifungal/antiviral/antimicrobial/ antiinfective/antiparasitic OPAT OHPAT Adult home parenteral therapy program* Parenteral *antibiotic* therapy in the home Home intravenous/IV *antimicrobial* service Outpatient intravenous/IV *antibiotic* therapy/ treatment Outpatient parenteral *antibiotics* Outpatient parenteral drug delivery Outpatient treatment with parenteral *antibiotics* Non-inpatient Community-based Home parenteral therapy/treatment Home treatment/therapy	Treatment/therapy at home Home-initiated treatment/therapy Home *drug* infusion therapy/treatment Home intravenous/IV (+/-*antibiotic*) therapy/ treatment (HIVAS) Intravenous *antibiotic* therapy/treatment in an outpatient setting Ambulatory antibiotic infusion device Domiciliary IV antibiotic therapy/treatment Community intravenous antibiotic service (CIVAS) Self-administration Parental administration Ambulatory care Cellulitis / Skin and skin structure infection UTI OVIVA (oral versus intravenous antibiotics) Admission avoidance Early discharge IVDU Outcome Palliative	Search terms as per adult with the following terms: Child* Paediatr* Pediatr* Infant POPAT

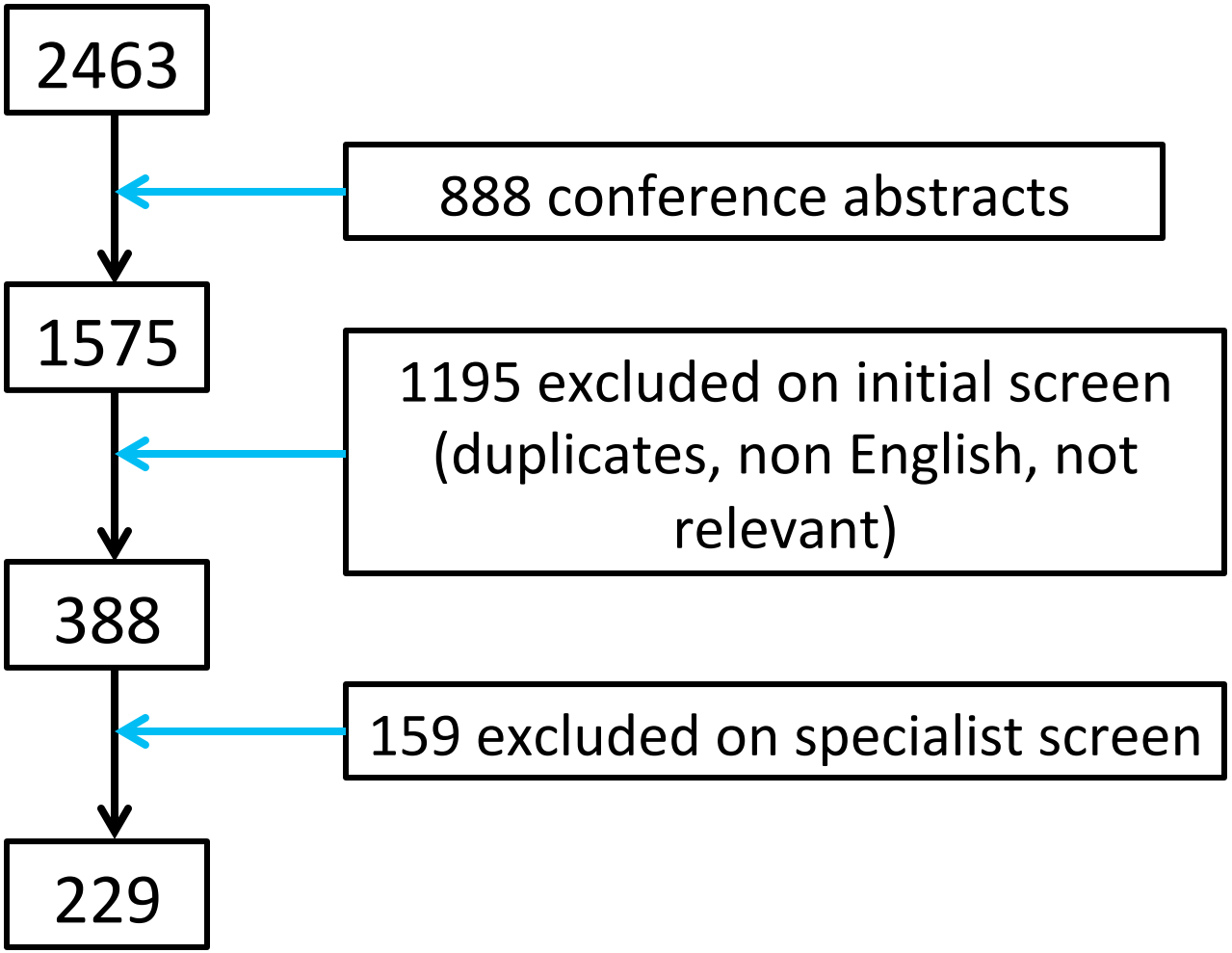
Competency search terms

Requested searches	
Dates	1 Jan 1970 – 31 July 2017
Libraries searched	CINAHL, Embase, Medline, Web of Science (science citation index expanded), Cochrane Library
Competency related search term to be combined with OPAT related search term	Competency framework Good practice Skills development Competence or competences Knowledge Skills Attitudes Behaviours Guidelines Generic

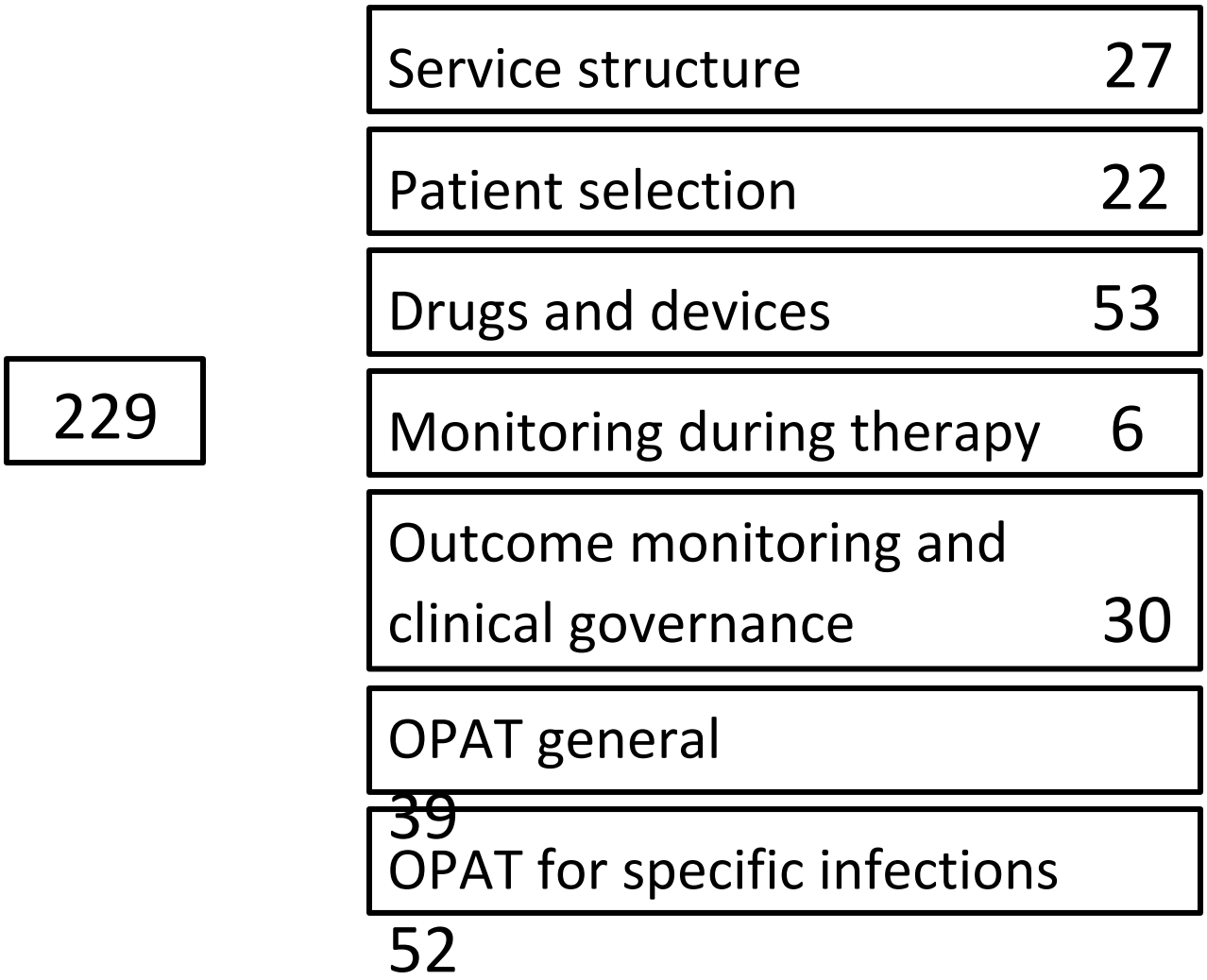
Literature search output

- OPAT Searches
  - All references = 2463
- POPAT Searches
  - All references = 544
- Competency (OPAT and POPAT)
  - All references = 661

Literature search output



Literature search output



WARNING

1. Service structure

1.1 Clear managerial and clinical governance lines of responsibility
1.2 Identifiable lead physician with time in job plan
1.3 Composition of the OPAT MDT
1.4 Management plan agreed between OPAT and referring teams
1.5 Clinical responsibility shared between referring clinician and OPAT clinician unless otherwise agreed
1.6 Communication between OPAT team, GP and referring clinician

- Importance of specialist OPAT service with ID input
- OPAT 'bundles'
- Community – based services
- Telemedicine

OPAT 'bundle'

- Muldoon et al, 2013; Madaline et al, 2017

MDT OPAT team
Patient disposition screening
Patient and family education
Inpatient ID consultation
Care transition
OP care co-ordination
OPAT program measures

Early phone communication with patient
OP appointment within 2 weeks of discharge
Electronic comprehensive treatment plan accessible to all

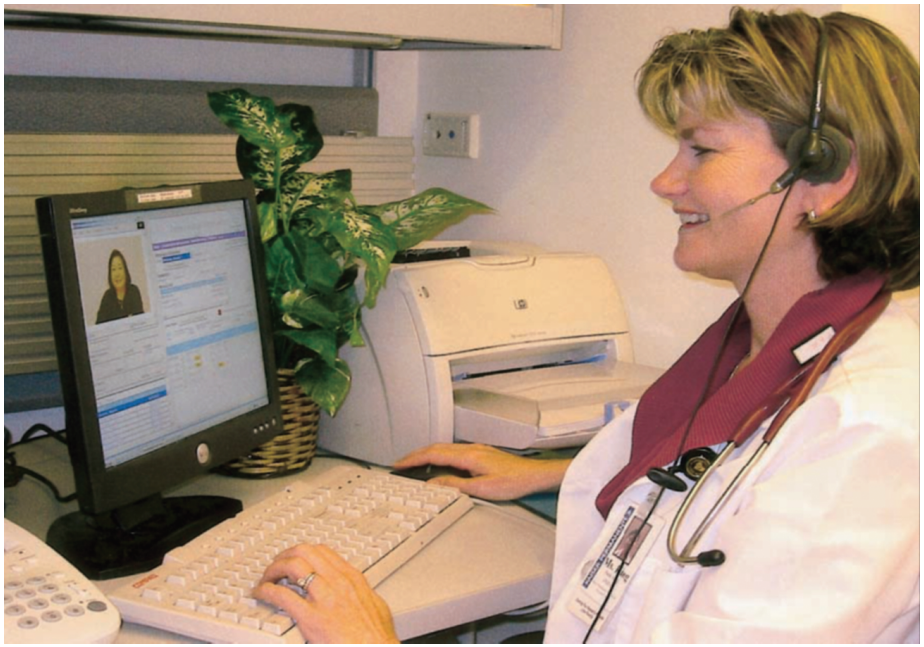
OPAT transition of care ‘bundle’

- ‘High risk’ OPAT patients
- 184 patients pre intervention vs 146 post
- 30 day readmissions before and after intervention
- 13% vs 26% overall
- Sensitivity analyses
- Hypothesised that adverse events detected earlier resulting in avoidance of readmission
- Importance of robust service structure, MDT, communication

Community-based OPAT

- Regan & Morgan, 2015; O'Hanlon et al, 2017
  - trained community nurses supported by IV therapy nurse specialists
  - Importance of collaborative working between primary and secondary care
  - Issue of medical responsibility
  - Pathways for escalation
  - Gradual development of experience and confidence
  - Data collection; review of outcomes to identify problems and develop solutions

Telemedicine



- Limited experience:
  - Patient monitoring/ consultations
  - Distant nurse to check medications pre administration
- Reduced LOS / admission avoidance
- Earlier return to ADLs
- BUT may be limited by cost; technical issues; patient, family and physician anxiety
- Possible role with use of long acting antibiotics

2. Patient selection

2.1 Responsibility of the infection specialist to agree infection-related inclusion/exclusion criteria
2.2 Agreed OPAT patient criteria
2.3 Initial assessment performed by competent member of team
2.4 Patients should be fully informed and able to consent/ decline OPAT
2.5 Patients who have been on thromboprophylaxis as inpatient should continue this

- Specific groups
  - IVDU
  - Homeless
  - Renal transplants
  - MDR infections
  - Older adults
- New indications
  - Prophylaxis
  - Palliation

IVDU

- Ho et al 2010:
  - 97% success rate in carefully selected IVDU with close supervision, special line security seals
- Beieler et al 2016:
  - homeless people in a medical respite centre, 53% current IVDU: 87% completed treatment
- Buehrle et al 2017:
  - only 26 of 67 IVDU (39%) completed OPAT successfully – combination of clinical and social factors contributing to failure

3. Drugs and devices

Treatment plan agreed between OPAT team and referring clinician
Pharmacy input minimum weekly at MDT meeting
Compliance with RCN and local standards for antimicrobial use, IV line, drug delivery device, training patients or carers
All administered doses should be documented
Administration of first dose in a supervised setting

- Oral vs IV
- New agents
- Continuous infusions

Continuous infusions

	Elastomeric devices	Portable electronic pumps
Advantages	Ease of operation Lightweight Silent Disposable No need for power supply	Adjustable flow rates Accurate flow rates Built in alarms
Disadvantages	Fixed flow rate Variable actual flow rates Absence of alarms Limited data on antibiotic stability	More difficult to use Noisy Heavier

4. Monitoring during therapy

4.1 Daily review of patients with SSTI
4.2 Weekly MDT meeting
4.3 Weekly (or bimonthly if stable) reviews by OPAT nurse/physician.
4.4 Weekly blood tests (or bimonthly if OPAT >1 month)
4.5 OPAT team responsible for monitoring clinical response, investigations and treatment plan
4.6 Pathway for 24-hour access to advice/review/ admission

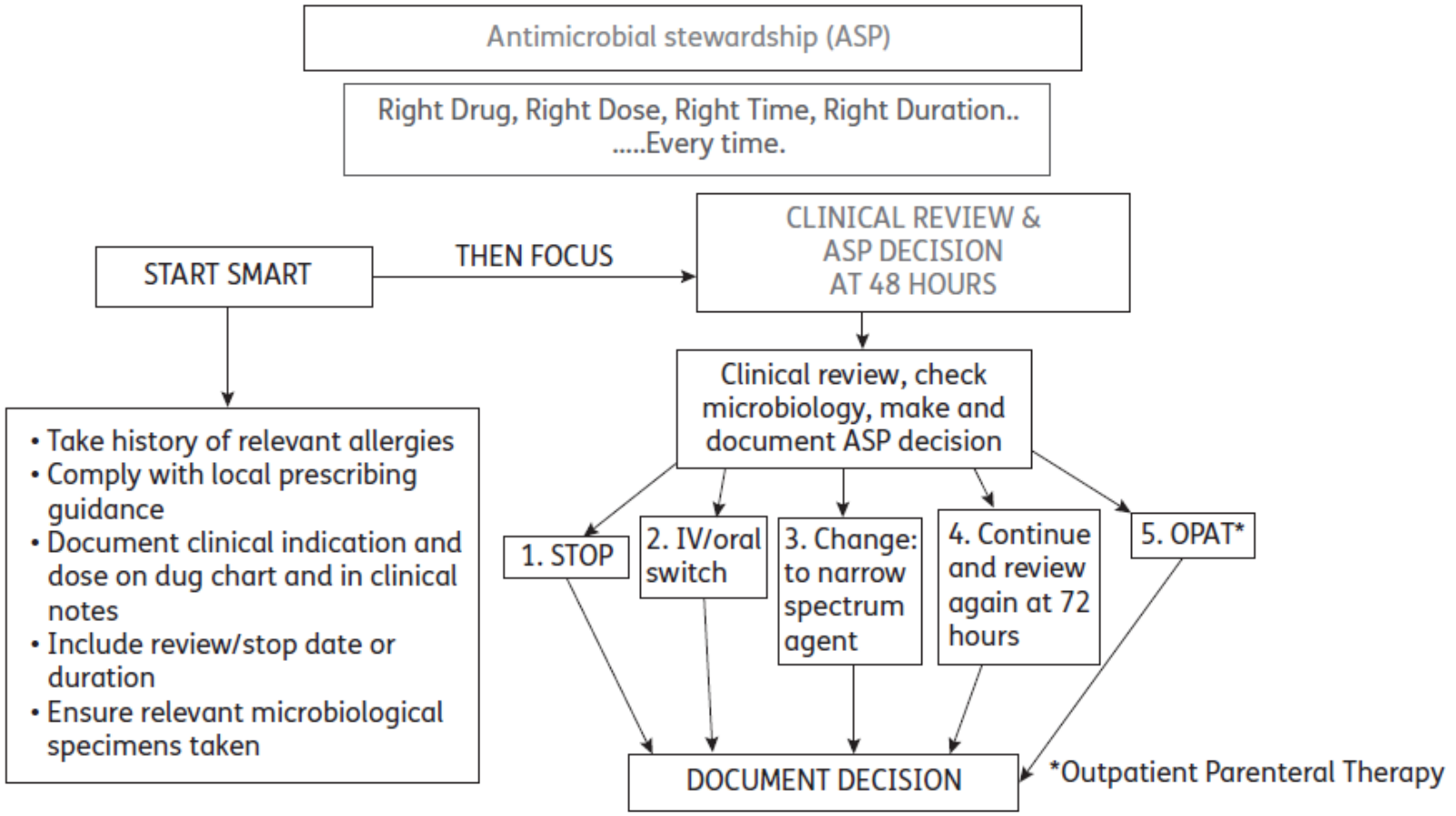
- Blood test monitoring important
- Descriptions of ADRs
- Importance of service structure

5. Outcome monitoring and clinical governance

5.1 Patient data recorded prospectively
5.2 Standard outcome criteria recorded
5.3 Risk assessment and audit of individual processes
5.4 Regular surveys of patient experience
5.5 Responsibility for personal CPD

- Antimicrobial stewardship
- Patient reported outcomes
- Standardised clinical outcomes

Antimicrobial resistance and healthcare associated infection (ARHAI)



Patient reported outcomes

Community IntraVenous Antibiotic Study, 2017:

- Qualitative study of patients' perceptions of OPAT
- 7 themes:
  - Meeting the needs of a diverse population
  - Benefits of and barriers to different models of care
  - Effectiveness of treatment
  - Communication
  - Review and aftercare
  - Staff expertise
  - Impact on family and friends

Key developments
(with massive health warning...)

- GPRs remain consistent with published literature

- Service structure:
  - Community based services
- Drugs and devices:
  - Oral vs IV
  - New agents
  - Continuous infusions
- Outcome monitoring and clinical governance:
  - OPAT and antimicrobial stewardship

Next steps

- Complete review of all papers
- Consultation process
- Publication of update – combined adult and paediatric OPAT

- OPAT competencies:
  - Literature review
  - Further development of competencies through data collection, working group, engagement of stake holders

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