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Melting Icebergs

OPAT on Haemodialysis - a follow-up from GSTFT

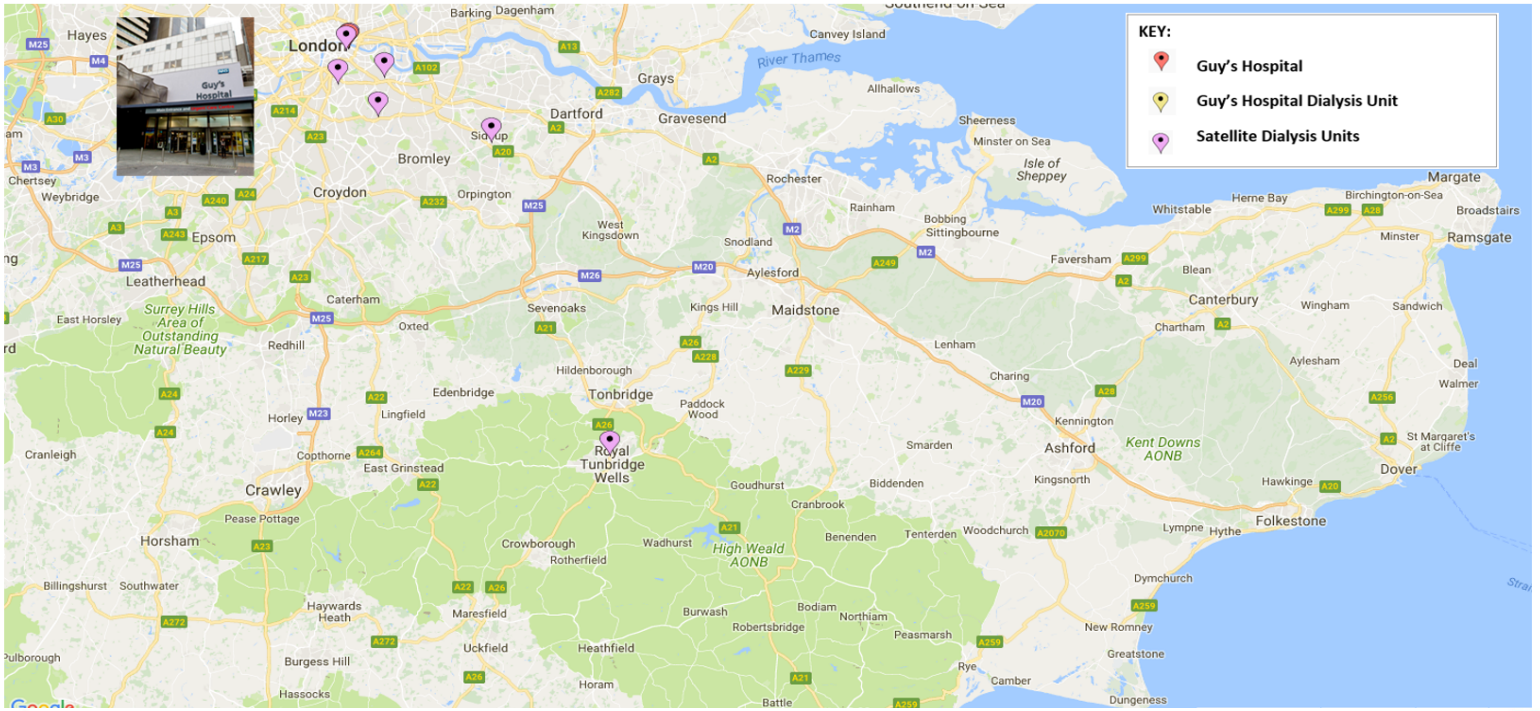
Dr. Claire van Nispen tot Pannerden
on behalf of GSTFT HD-OPAT team

Background (1)

- **2009** - Formal adult OPAT service established at GSTFT
- **2012** - Further developed in accordance with BSAC OPAT Good Practice Recommendations (GPR)
- **Service Model** - Early Discharge (+ admission avoidance)
- **Day case tariff**
- **OPAT Activity** - increasing exponentially year-on-year
  - 2017 = 187 OPAT Episodes, 3795 OPAT days

Background (2)

- Regional Centre of Excellence
- Outreach services across South East London, Kent & Guernsey
- Treat ~ 680 haemodialysis (HD) patients
- HD units - 1 on-site, 7 satellite units, via home-setting



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IV Antimicrobial Administration on HD

- This mode of delivery is not considered a traditional OPAT model; no specific OPAT guidance
- Common practice on HD
- Avoids insertion of VADs in patient population where central veins should be preserved
- HD used as an infusion service of IV antimicrobials rather than a comprehensive clinical service

Improvement Strategy 2016

REVIEW PRACTICE

- Describe HD population receiving prolonged IVAB (with OPAT team input)
- Identify areas for improvement

GAP ANALYSIS

- Assess our current HD-OPAT practice against BSAC OPAT GPRs
- Determine factors to be considered for a HD-OPAT patient cohort

ACTION PLAN

- Improve the quality of care to HD-OPAT patients
- Adapt & improve current adult OPAT service model for HD-OPAT patients

REVIEW PRACTICE

What *was* happening?

- **Retrospective evaluation 2014-16**
  - 39 pts receiving prolonged IVAB on HD
  - 34 pts with sufficient data for analysis
- **Indications**
  - BJI (47%), Bacteraemia (35%), Other (18%)
- **Antimicrobial Choice** *85% approved by ID/Micro Team*
  - Vancomycin (38%), Meropenem (26%), Cefazolin (12%), Meropenem + Vancomycin (9%), Other (15%)
- **Antimicrobial Duration**
  - Average duration of directed Rx = 35 days [Range:7-91; Median: 35]
  - Average HD-OPAT days = 23 days [Range:3-68; Median: 21]

REVIEW PRACTICE

Improvement Strategy

- **Conclusions**
  - HD population complex; additional care and monitoring should be in place if prolonged IVAB are administered
  - OPAT in the HD population may be useful strategy in some circumstances
  - Need for clear inclusion criteria, standards & pathways for clinical governance specific to the HD population receiving OPAT
  - Close collaboration between ID & Renal service is recommended

GAP ANALYSIS

Improvement Strategy

Assessment of OPAT in a HD Population

Considerations for an OPAT-HD Service

Patient Selection

- Adaptation of inclusion, exclusion & suitability criteria
- Initial assessment to be carried out by Infection Specialist *(Note: OPAT CNS not involved with this patient cohort)*
- Mode of delivery of IVAB means that patients may not be fully informed

OPAT Team & Structure

- Specialist expertise in HD & IVAB administration
- Clear & standardised communication to HD unit is essential

Outcome Monitoring & Clinical Governance

- Patient experience surveys should be offered to all OPAT-HD patients

Antimicrobial Management & Drug Delivery

- The mode of IVAB delivery should be determined following discussions with the Renal Physicians & the HD unit
- Development of a formulary of OPAT-HD IVAB with clear dosing schedules and administration details
- Determine national or international standards for the administration of IVAB through a HD setting
- Lack of electronic prescribing across all HD units does not allow for ongoing assurance that the IVAB plan as set out by the OPAT team is transcribed correctly onto paper HD drug administration charts
- Logistics of transcribing the IVAB plan onto paper HD charts for ongoing therapy on discharge (particularly as prescribers are not regularly available in off-site HD units)
- Logistics of ongoing supply of IVAB therapy to HD units

Monitoring of Patient

- Nature of HD means that patients may not be amenable to attending additional clinics, particularly if dialysing in off-site units
- Virtual review not always appropriate for this patient cohort with complex infections
- Virtual monitoring of bloods including antibiotic levels not possible as results not visible on GSTFT electronic reporting systems for some off-site units

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Poster presentation: BSAC National OPAT Conference December 2016
"OPAT in Flux – Assessment of Use in a Haemodialysis Population"
Thangarajah R, van Nispen tot Pannerden C, Brown A, Hemsley C
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ACTION PLAN

Improvement Strategy

What next?

- **Standardise management of all HD-OPAT patients**
- **Develop a clear referral pathway for HD-OPAT**
- **Expand the OPAT MDT to include a Renal Physician and HD Nurse Specialist**
- **Improve communication to dialysis units & renal teams**
- **Establish workable options for regular review of off-site dialysis patients by ID**

We got started..

- Inclusion of known HD-OPAT patients in weekly OPAT MDT and weekly renal MDT
- Regular communication with and support for dialysis units
- Group email account for referrals (July 2017)
- Integrated referral to HD-OPAT in new renal bacteraemia on HD guidelines (Dec 2017)
- EPR referral ordering document (Jan 2018)
- Specific tariff for HD-OPAT patient (April 2018)

HD OPAT Referral Notification

Patient Information:			
Patient Name:	ZZZ EPRTESTFOUR, SHIRLEY	**Current Location:**	Astley Cooper Dialysis-Guys
Patient ID:	Z105075	**Admission Date:**	1/25/2010 12:00:00 PM
Patient DOB:	1928-4-15	**Current Consultant:**	Brown, Heather J
NHS Number:		Client Visit	IP91030751

Patient Address:			
Address Line 1:	The House	**Country:**	
Address Line 2:	The Road	**Postal Code:**	SE1 7RJ
Address Line 3:	The Town	**Phone Number:**	88888
City:		**Area Code:**	

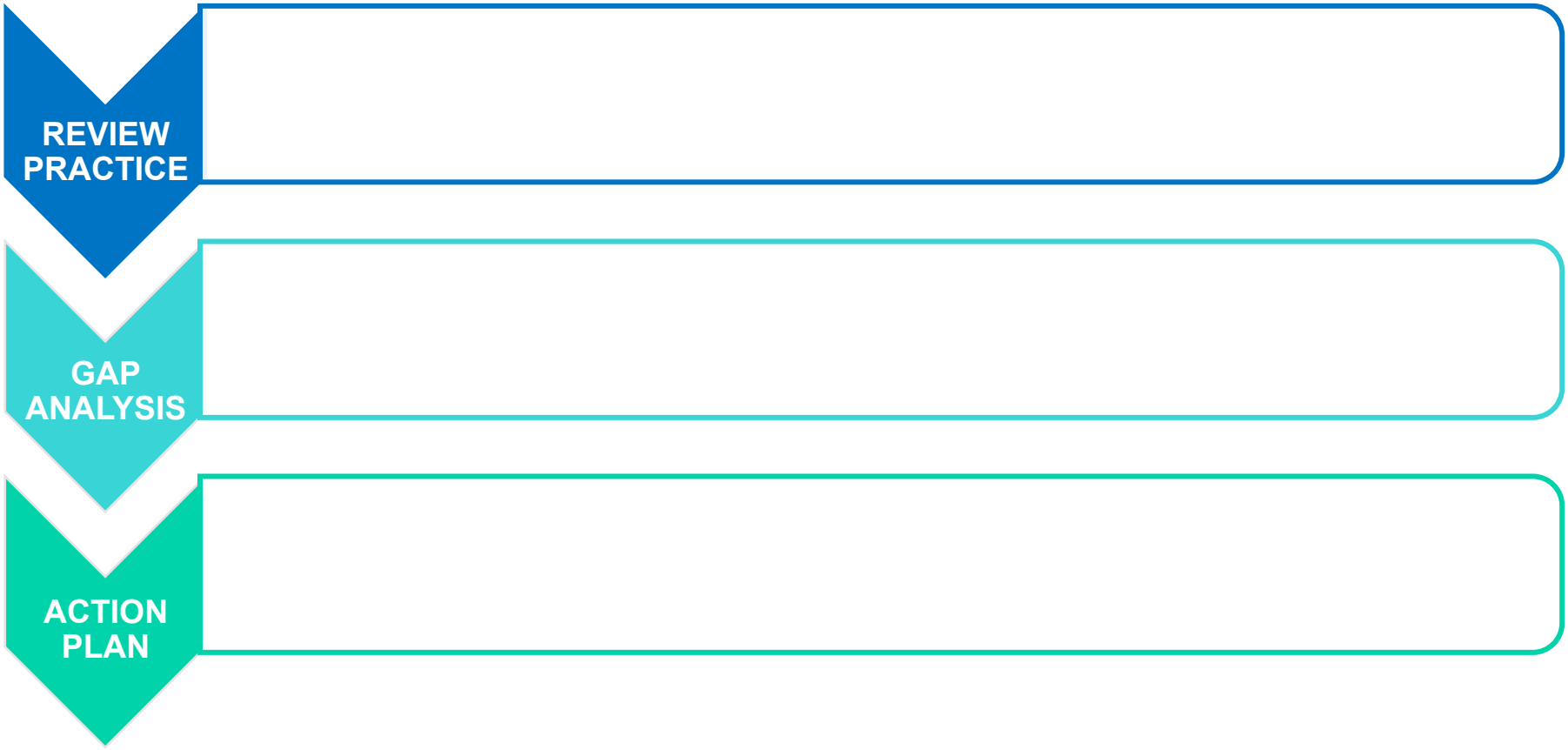
GP Details:			
GP Name:	Dr GP		
Address Line 1:	The Surgery	**City:**	London
Address Line 2:	The Road	**Post Code:**	SE1 7EN
Address Line 3:		**Phone Number:**	020 78350400

Referral Information:	
Name of ID/Micro Cons/Reg Contacted	HD - OPAT Referal is now live
Is the patient registered with a GP and do they have a fixed address?	No
Is the patient's condition stable?	No
Type of Infection	HD - OPAT Referal is now live
Significant Microbiology/Organism	HD - OPAT Referal is now live
Antibiotic Required on Discharge	HD - OPAT Referal is now live
Dialysis Access at Time of Referral	HD - OPAT Referal is now live
Dialysis Unit	HD - OPAT Referal is now live
Proposed Discharge Date	Unknown
Name and Bleep Number	HD - OPAT Referal is now live Extn 83353
Responsible Renal Consultant	HD - OPAT Referal is now live
I Agree	☑
Requester: Jones, Clare A (Clinical Analyst)	**Requested Date/Time: 11-01-18 08:37:21**

Since July 2017: 24 patients

- **OPAT days 3-111 in 21 patients [average 24; median 13]**
- **9 bone/joint, 6 endovascular infections, 4 CR-BSI, 2 complicated UTI, 3 other**
- **Started 11 meropenem, 6 cefazolin, 5 vancomycin, 2 other**
- **Failed 2: 1 x non-GSTFT dialysis unit; 1 x non-compliance with dialysis**

Improvement Strategy 2018-2020



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Kevin Evans (Matron – Renal)
Roopkishor Hurril (Matron – Renal)

Thank you

GAP ANALYSIS

Improvement Strategy - *Assessment of OPAT in a HD Population*

- **Assess current HD-OPAT practice against BSAC OPAT GPRs**
  - 30 of the 35 GPRs were deemed applicable to the HD-OPAT service model

Table 1: Compliance of current OPAT-HD service with GPRs

	COMPONENTS OF AN OPAT SERVICE *(number of GPRs)*					
	OPAT Team & Service Structure *(7)*	Patient Selection *(5)*	Antimicrobial Management & Drug Delivery *(12)*	Monitoring of Patient *(6)*	Outcome Monitoring & Clinical Governance *(5)*	Overall Compliance (%) [a]
COMPLIANT	2	2	2	-	2	8 (27%)
PARTIALLY COMPLIANT	5	3	6	5	2	21 (70%)
NON-COMPLIANT	-	-	-	-	1	1 (3%)
NOT-APPLICABLE	-	-	4 [b]	1 [c]	-	5

a = % of the 30 applicable GPRs; b = considerations relating to intravascular access device; c = superficial skin & soft tissue infection requiring daily review for IV to PO switch

- **HD-OPAT does not easily fit the existing GSTFT adult OPAT pathway**
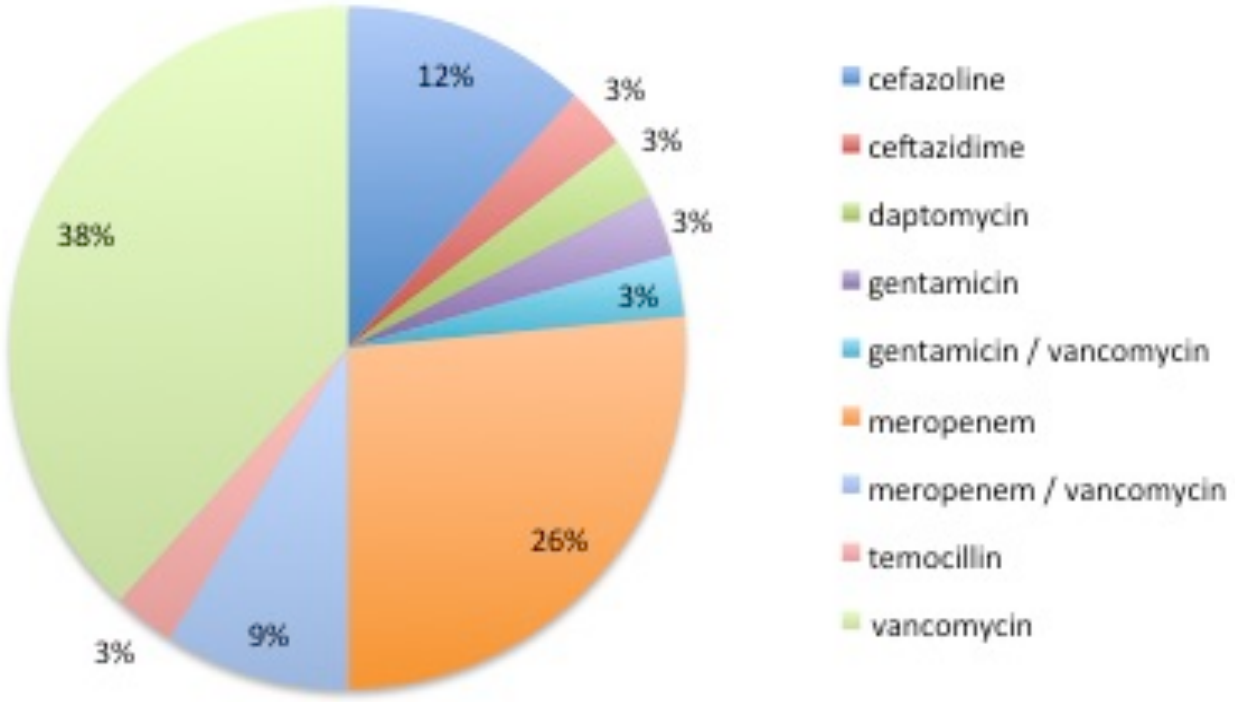
Figure 1: antimicrobial choices