




The British Society for  
Antimicrobial Chemotherapy



**OPAT**  
Outpatient Parenteral  
Antimicrobial Therapy

A vertical glass IV drip chamber with a white plastic top and bottom, containing a clear liquid and a small white float. It is connected to a clear plastic drip chamber with a blue stopcock and a clear plastic tube at the bottom. The background is a blue gradient with white light streaks.

**Device Choices for OPAT – stability data  
and patient safety**  
Tim Hills

# Structure

- Background/Nottingham OPAT approach
- Administration devices
- Drug stability
- BSAC project

# Nottingham OPAT Approach

- Clinical service started October 2011
  - Patient self-admin
  - Small infusion centre
- March 2012
  - Pre-filled devices via private healthcare company
  - HCW administered via private healthcare company

# Options for Self-administration

- Syringes, diluents and vials
- Pre-compounded syringes
- Bags, flow restrictors/pumps
- Elastomeric devices
- 24hr Syringe pumps
- N.B. Pro/Cons – Nottingham opinion

# Infusion Bags and Pumps



- Flow restrictors
  - Often poor tolerance values for accurate administration.
  - OK for standard infusions (e.g. cephalosporins, penicillins, carbapenems)
  - Not for vancomycin/ drugs where rate important.
- Electronic Pumps and giving set.
  - Can be harder to learn
  - More accurate



# Closed-admixture bags

- Simplifies number of steps.
- Still requires dexterity for attaching giving-set.
- Flow-restrictor/pump still needed.
- Option if stability short.

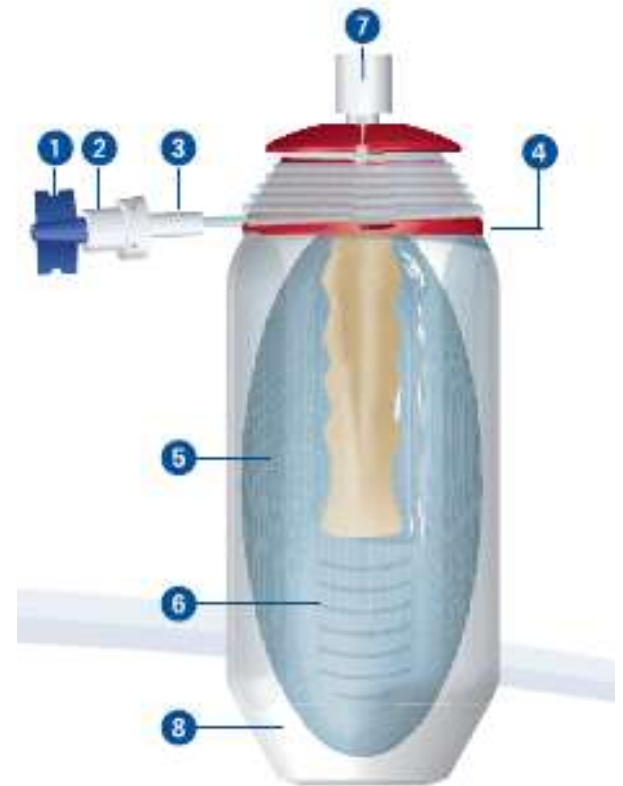


# Elastomeric Devices

- Homepump  
Easypump©/Eclipse©
- Intermate ©/Infusor©
- Reasonable options of all OPAT drugs (inc. vancomycin).
- 24hr infusion option available



Large Volume Infusor  
Small Volume Infusor



# Factors Affecting Elastomeric Flow Rates

- Built-in flow restrictor- main variable as per manufacturer
- Viscosity - Temperature 10°C change can → 20-30% viscosity change – check calibration temps.
  - 100ml 6 hours out of fridge before use (Home pump eclipse<sup>©</sup>)
  - 6 hours Intermate<sup>©</sup> large volume
  - 4 hours Intermate<sup>©</sup> small volume



# Factors Affecting Elastomeric Flow Rates

- Pressure gradient
  - Underfill/overflow
- Potential overall fluctuation of +/-40%
- Patient education on correct use essential.

# Syringe Drivers

- Potential option for 24 hour infusion via syringe.
- Generally harder to learn compared with elastomeric.
- Consider for “infusion-centre” model.



# NUH service (Oct12-Apr13)

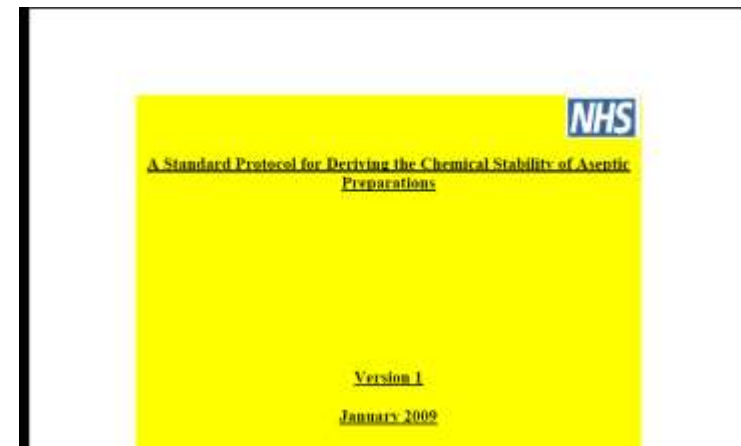
Method of administration	% of total episodes (6 months)
Taught – Self/Carer administered	76%
Taught using prefilled	10%
HCW delivered in patient home	4%
Ward based infusion centre	10%

# Obtaining prefilled devices

- Local pharmacy sterile production department
  - Under supervision of a pharmacist “special” (max 7 days)
  - Manufacturing licence (longer expiry but batch manufacturer and QC)
  - Penicillins
- Other NHS Trust production department
- Private/Homecare provider

# “Appropriate” stability data

- “Special” licenced
  - Dependent on opinion of specialist production pharmacist.
- “Batch production”
  - In agreement with local QC department (National QC standards 2009).



# BSAC OPAT Drug Stability in Devices Project - Aims

- Remove barriers to local production through:
- Review stability literature
- Identify gap → commission stability studies

# BSAC OPAT Drug Stability in Devices Project - Tasks

1. Determine which drugs/devices centres would be keen to use.
2. Review the literature around stability.
3. Undertake stability testing to national standards where gaps in the literature exist and publish in the public domain.



The screenshot shows the top of a survey page. At the top left is the BSAC logo (The British Society for Antimicrobial Chemotherapy). At the top right is the OPAT logo (Outpatient Parenteral Antimicrobial Therapy). Below the logos is a dark blue header with the text "Drug Stability & Testing in the OPAT Setting". Underneath is a light blue section titled "introduction". The main text of the introduction reads: "The BSAC OPAT Initiative has recently launched a new workstream to examine the topical area of drug stability in elastomeric devices and pre-filled syringes used in the OPAT setting. As part of this workstream, a review of the current evidence is being undertaken and will be available through the [www.e.opat.com](http://www.e.opat.com) website. To assist this particular workstream we would be grateful if you could complete this survey and provide as much information as possible regarding the drugs and devices that you currently use within the OPAT setting, as well as those you would consider using if stability information was available to you. This will direct future research undertaken by BSAC." At the bottom of the page, there is a "NEXT" button and a footer that says "Powered by SurveyMonkey" and "Check out for BSAC322289 and create your own tool!"

<https://www.surveymonkey.com/s/opatdrugstability>



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## Drug Stability & Testing in the OPAT Setting

### Drugs & Devices - Would Consider Using

Please indicate which drugs & devices you would consider using in the OPAT setting.

#### 8. Which drugs would you consider using in a prefilled syringe (produced by an SPU) in the OPAT setting (if it was available)?

	Would consider	Would not consider
Aztreonam (2g)	<input type="radio"/>	<input type="radio"/>
Benzylpenicillin (12g over 24hrs)	<input type="radio"/>	<input type="radio"/>
Benzylpenicillin (14.4g over 24 hrs)	<input type="radio"/>	<input type="radio"/>
Ceftazidime (1g)	<input type="radio"/>	<input type="radio"/>
Ceftriaxone (1g)	<input type="radio"/>	<input type="radio"/>
Colistin (2mu)	<input type="radio"/>	<input type="radio"/>
Meropenem (1g)	<input type="radio"/>	<input type="radio"/>
Meropenem (3g over 24 hrs)	<input type="radio"/>	<input type="radio"/>
Meropenem (6g over 24 hrs)	<input type="radio"/>	<input type="radio"/>
Tazocin (4.5g)	<input type="radio"/>	<input type="radio"/>
Tazocin (13.5g over 24hrs)	<input type="radio"/>	<input type="radio"/>

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# Acknowledgements

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  - Sue Snape (Nottingham)
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  - Tracey Guise (BSAC)