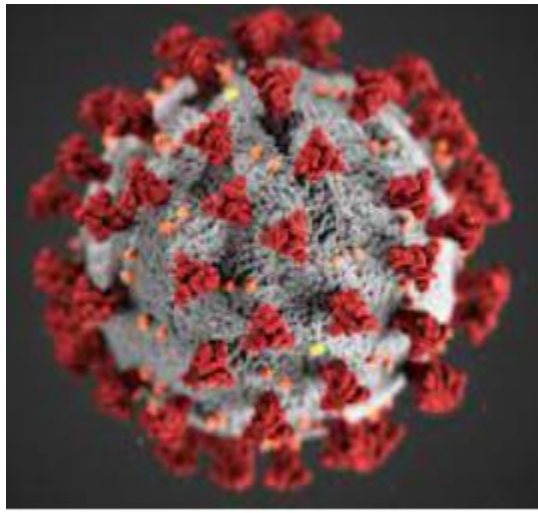


When everything goes topsy turvy

Sue Snape

OPAT lead consultant

Consultant in Microbiology and Infectious Diseases

The OPAT Triumvirate:
Nursing, Pharmacist and Medical Components

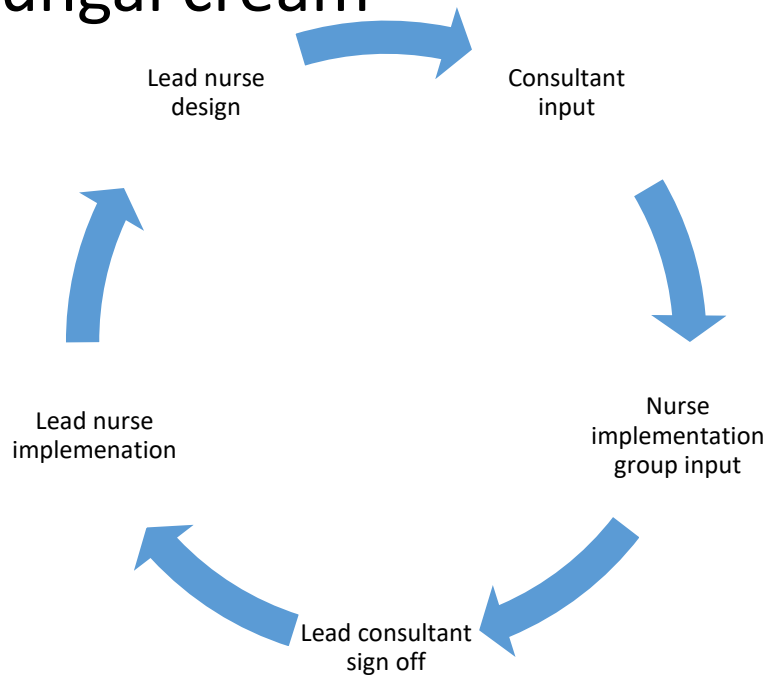
- Nursing innovation – nurse-led cellulitis pathway
- Pharmacist innovation – COPAT drug monographs and 24h infusion prescriptions
- Medical survival

Innovation 1 – The Nurse –led lower limb cellulitis pathway

- Why do this? – inability to take patients on a Friday or Saturday who present to ED with cellulitis – constant source of frustration within the Trust despite actual numbers being low
- Barriers to development – main issues in the development of traditional role – address concerns; nurse developed; nursing engagement
- Identification of individuals with accountability
  - Nurse led development– individual identified as person to take things forward and given the time to do so
  - Specific consultant identified as medical lead to mentor and act as sounding board

How was it done?

- Literature review
- Ask for help from other centres – what do you do?
- Lead development nurse spent time in all the NUH cellulitis entry points
- PGD developed for iv antibiotics and antifungal cream
- Development of a simple proforma



The essential page

Patient Assessment – Daily Checklist

Assess Patient	Date: Day 1	Date: Day 2	Date: Day 3	**Day 4 – Dr Review Required**
Patient Observations BP Pulse O2 Sats Temp Resp Rate				
Systemically worse? (Day 1 ask patient)	Yes No	Yes No	Yes No	
Bloods taken, inc HBA1C?	Yes		Yes	
Tolerating antibiotics?	Yes No	Yes No	Yes No	
Assess Affected Area: Heat? Swelling improved? Erythema spreading? Cap refill ok/foot pulses palpated? Pain (scale 1-10)? Wound swabbed?	 Yes No Yes No Yes No Yes No Yes No	 Yes No Yes No Yes No Yes No Yes No	 Yes No Yes No Yes No Yes No Yes No	
Is this likely cellulitis? (If no, refer to Dr)				
Suitable to switch to orals? (If yes, discuss with Dr)				
Photo taken and uploaded?				
GP Letter dictated?				
Dr review required?				
Person completing (sign and print)				

Implementation by Lead nurse

- Criteria to become a nurse who can assess a patient for treatment of cellulitis
- Developed a teaching pack - on line youtube videos and written guideline by ID medics
- Met up with the nurses individually to sign them off on the educational aspects
- Observed as nurses implementing the teaching and signed off one by one – competency framework documentation

Where are we now?

- August 2020 to May 2021 34 patients referred for admission avoidance
- August 2021 to May 2022 40 patients referred for admission avoidance
- Confidence grown within team
- Team now asking to increase their role
- Where it fails- the 3 day rule; lack of flexibility for early po switch at the weekend
- Next step iv to po switch without a Dr review first
- What it needed – a ‘box ticker’ with dedicated time

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Innovation 2 – Pharmacy team

- Implementation of the OVIVA trial – the development of COPAT
- The increase in po abx – increase in side effects and interactions
- Caveat – the BNF and drug information leaflet are essential
- The development of the COPAT monographs:

Amoxicillin

Ciprofloxacin

Clarithromycin

Clindamycin

Co-amoxiclav

Co-trimoxazole

Doxycycline

Flucloxacillin

Linezolid - click **here** for list of drugs with the potential to cause serotonin syndrome

Pristinamycin

Rifampicin

Sodium Fusidate

Trimethoprim

Drug	Available formulations	Bloods	ECG	Drug-drug interactions	Drug food interactions/counselling points
Ciprofloxacin 	Tablets (250mg, 500mg, 750mg) and suspension (250mg/5ml)	U&E, FBC, LFTs Baseline, then at 2 weeks then monthly if normal.	✓	• Severe interactions listed in the BNF: ○ **NSAIDs/COXIBs** – Theoretical increase in the risk of seizure. Aim to stop the NSAID if at all possible. ○ **Warfarin/Acenocoumarol** => increased effects and INR but this can be usually be managed by increased frequency of INR monitoring ○ Oral cations such as **Aluminium, Iron, Zinc, Calcium, Magnesium** all bind ciprofloxacin – ciprofloxacin should be administered either 1-2 hours before or at least 4 hours after the mineral. ○ **Phenytoin/fosphenytoin** => Cipro increases the concentration of phenytoin/fosphenytoin – monitor levels and adjust dose. ○ **Methotrexate**, increase risk of toxicity- avoid concurrent use. ○ Also interacts with **Eligustat, Ibrutinib.**	• Tablets are to be swallowed whole with fluid. • Absorbed more rapidly on an empty stomach.  DO NOT take with dairy products (e.g. milk, yoghurt) or mineral-fortified fruit-juice (e.g. calcium-fortified orange juice  Photosensitivity can occur- exposure to excessive sunlight should be avoided. Stop if photosensitivity occurs **Common side effects:** Nausea and vomiting Diarrhoea Dyspepsia, abdo pain Rash Rare: nightmares and tendon damage  Tendonitis and rupture is a rare but serious side effect, more common in the elderly, patients with kidney disease and who have had organ transplantation. Use of a corticosteroid also increases this risk, combined use of these medicines should be avoided.  Small increased risk of aortic aneurysm and dissection is associated with fluoroquinolone antibiotic. Conditions predisposing to aortic aneurysm and dissection include:

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24Hr Infusion Drug charts tweeked from Pontyprid

NUH05384N

NHS Nottingham University Hospitals NHS Trust

Adult OPAT 24 hour infusion Prescription and Administration Record

DRUG ALLERGY or ADVERSE EFFECT ☐
If none known tick box

Medicine/ other	Nature of reaction	Source

Signature **Date**
This box must be completed & signed by a prescriber or pharmacist

Please affix a patient label

Patient Name

D.O.B

NHS/ K Number

Weight ....Kg
Date

Weight ....Kg
Date

Infusion bloods (INR, vitamin D, calcium) ordered?
Date:

ONCE ONLY bolus prescription section

Date	Medicine	Dose	Route	Administration instructions	Time required	Prescriber' Sig & Print Name & bleep	Time given	Given by	Checked by
	Flucloxacillin	2g	IV	In 50mL water for injection over at least 8 minutes					
	Piperacillin/tazobactam	4.5g	IV	In 20mL water for injection over 5 minutes					
	Benzylpenicillin	1.2g	IV	In 20mL water for injection over 5 minutes					
	Benzylpenicillin	2.4g	IV	In 40mL water for injection over 10 minutes					

24 hour Accufuser prescription

Start date	Medicine	Dose	Route	Administration instructions	Infusion rate	Stop date	Prescriber' Sig & Print Name & bleep
	Flucloxacillin	8g	IV	In 230ml buffered sodium chloride 0.9%	Over 24 hours		
	Flucloxacillin	12g	IV	In 230ml buffered sodium chloride 0.9%	Over 24 hours		
	Piperacillin/tazobactam	13.5g	IV	In 230ml buffered sodium chloride 0.9%	Over 24 hours		
	Piperacillin/tazobactam	18g	IV	In 230ml buffered sodium chloride 0.9%	Over 24 hours		
	Benzylpenicillin	7.2g	IV	In 230ml buffered sodium chloride 0.9%	Over 24 hours		
	Benzylpenicillin	14.4g (given as 2 x 7.2g)	IV	Each 7.2g In 230ml buffered sodium chloride 0.9%	Over 24 hours		

Adult OPAT 24 hour Infusion Administration Record

Date connected	Batch number/ Expiry date	Time started	Connected by (sign)	Date disconnected	Time disconnected	Disconnected by (sign)	Infusion volume remaining (mL)

The medical team…

Pre COVID

- History – Dec 2018 capped the service at 75 active patients the service is proactively engaged with at any one time – aka on the virtual ward. Why cap? Extraordinary governance meeting
- Reduction in PAs by colleague

Peri/post COVID

- Post April 2021 – increase in case load and complexity – often discussing 90 patients per week – kept going…
- August capped at 75. Performance meeting - asked for help from the divisional team for help with the business case for more medical and pharmacy time
- Medical colleague off work on and off April to July then off completely from August to January

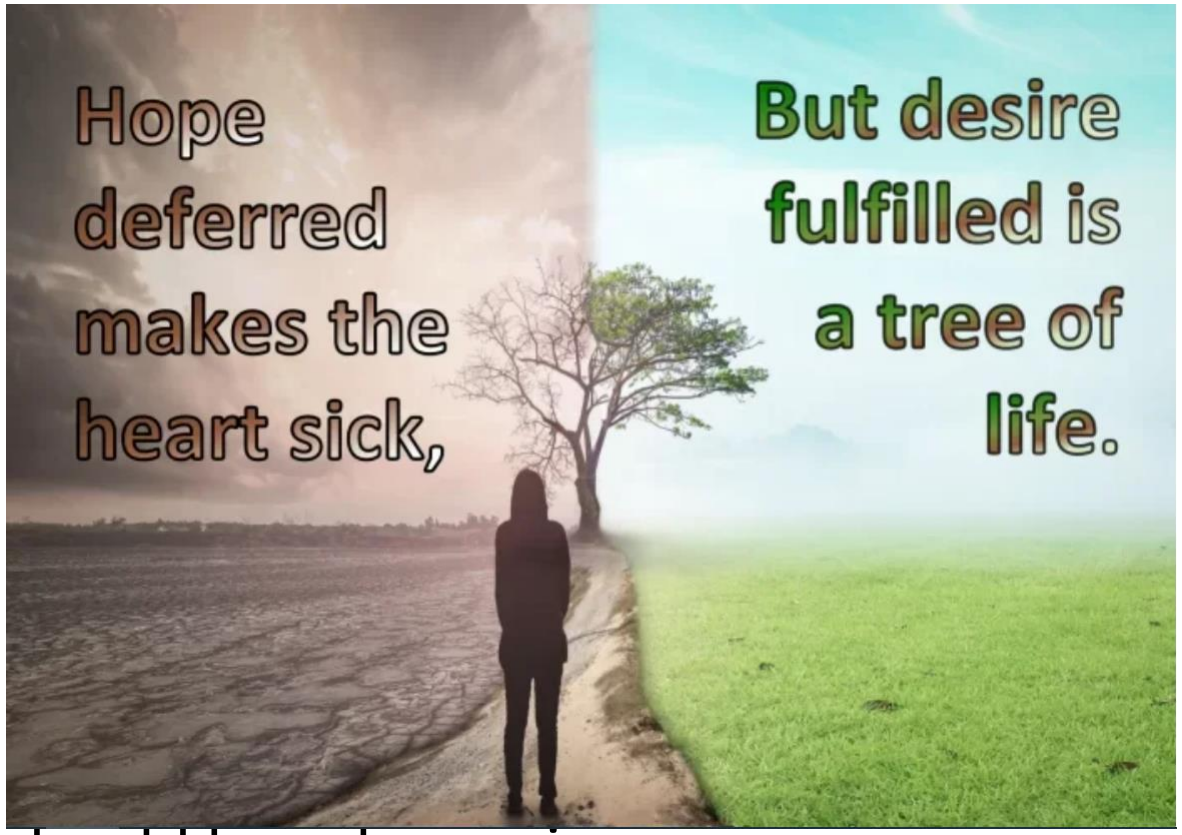
The line in the sand… End of October

- Asking my fellow colleague to work extra days to stay afloat so I could have annual leave and do my microbiology weeks of duty
- End of October still no hint of business case being started
- Asked for help from another deputy DD – advised an articulate email!
- Decision: Capped the service at 50 patients – patients waiting for OPAT
- Result: Came back from 1 week annual leave – business case written
- Kept a record of all referrals and the reason for the delay in discharge – fed into performance meetings
- Still overwhelmed – MDTs stopped mid November – informed MDTs face to face and signposted advice via the ‘Microad’ system inc on email correspondence
- Lowest point - December - Day prior to presenting at decision-making meeting regarding business case I was uninvited

Where are we now?

- Business case approved for increased pharmacist and medical time
  - Recruited to pharmacy post – starting mid-July 2022
  - OPAT consultant post advertised – no applicants – will re-advertise shortly – anyone interested???
- Colleague - now fully back at work
- Back to 75 active patients on OPAT
- 3 out of 4 MDTs restarted 4th in the next OPAT consultant post

Learning points from the medical staffing issues



- Asked for help – should have been given
- Be prepared to stand up for yourself and the service
- In retrospect I should have capped numbers sooner – when you are in the thick of it you just keep going – not always the wisest strategy…
- Never forget - the loss of bed days saved is very powerful!