Infective endocarditis & OPAT : an overview

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Disclaimer #1

Do you see IE patients in your service ?

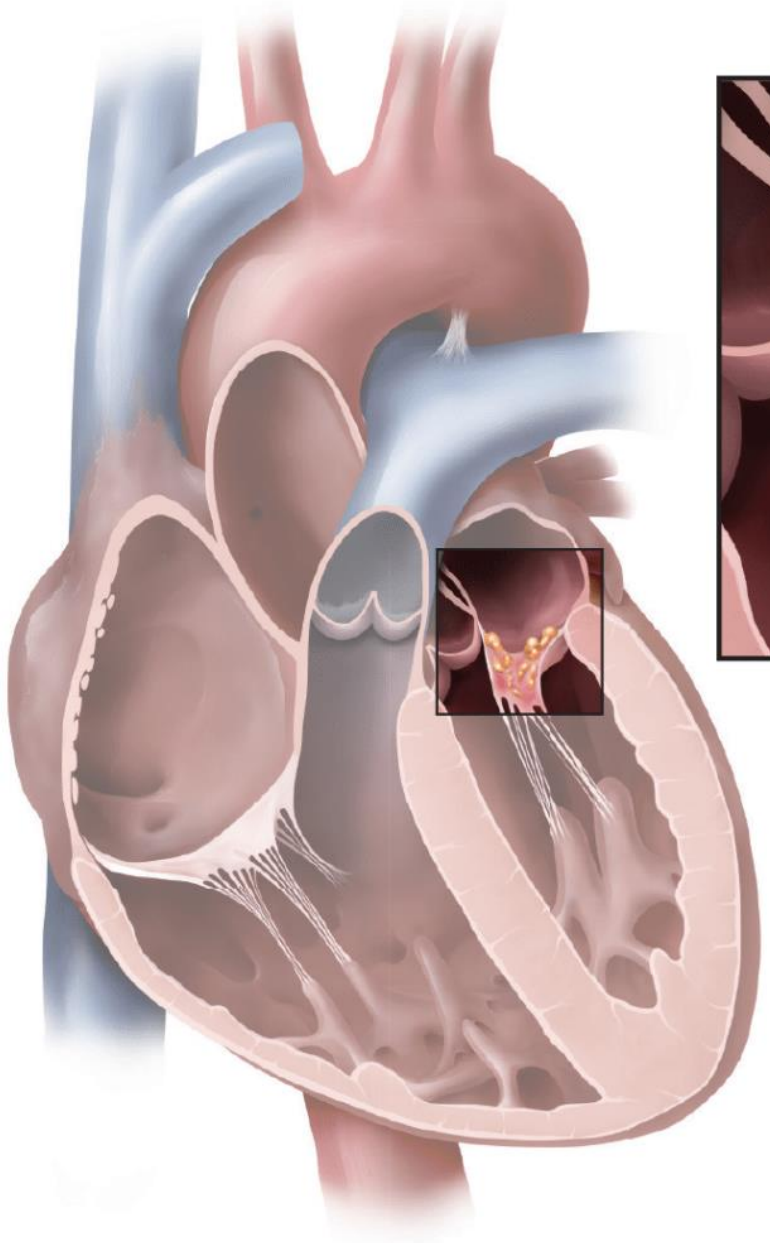
Is my OPAT service set up to deal with IE patients?

Introduction

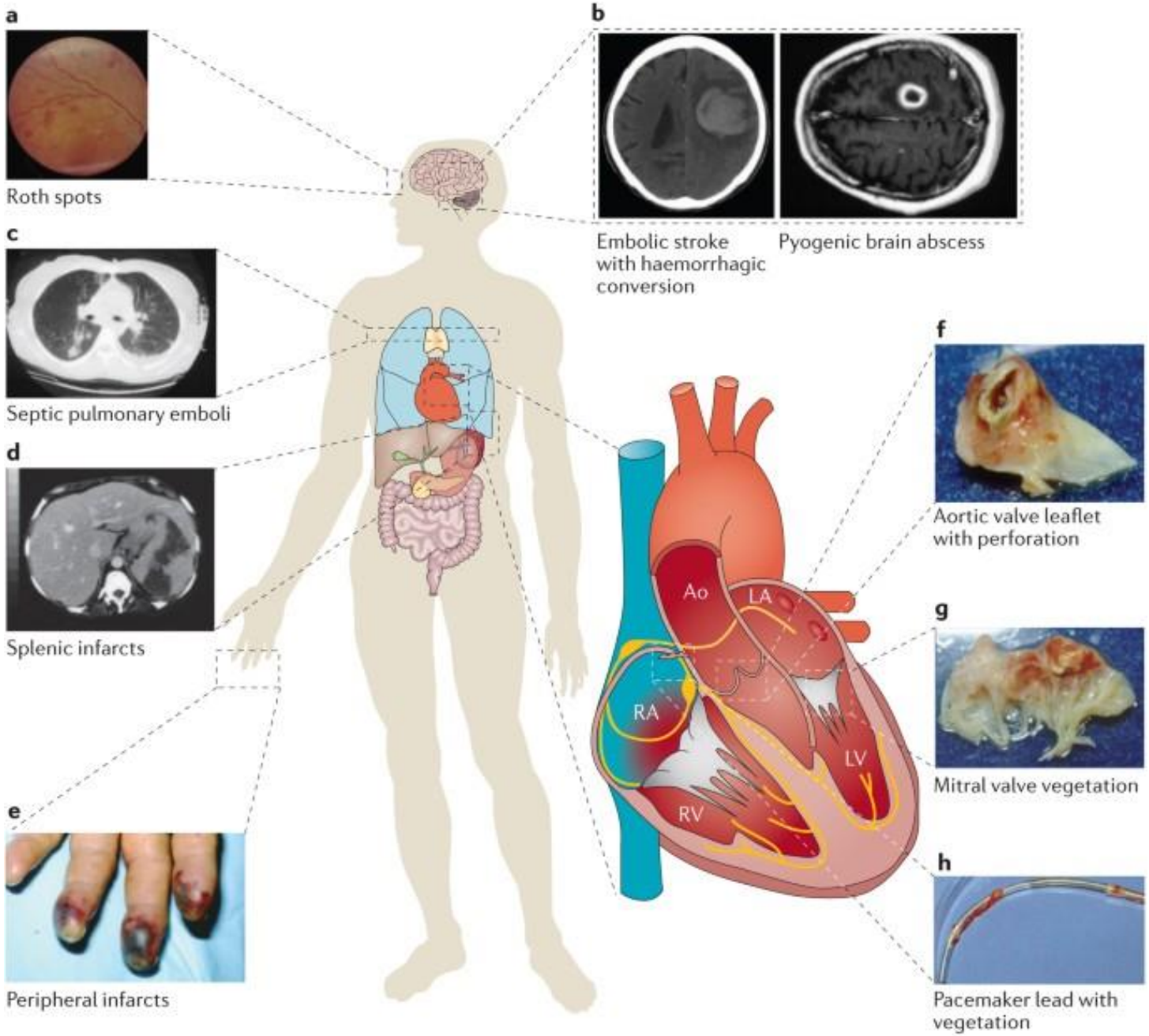
Case

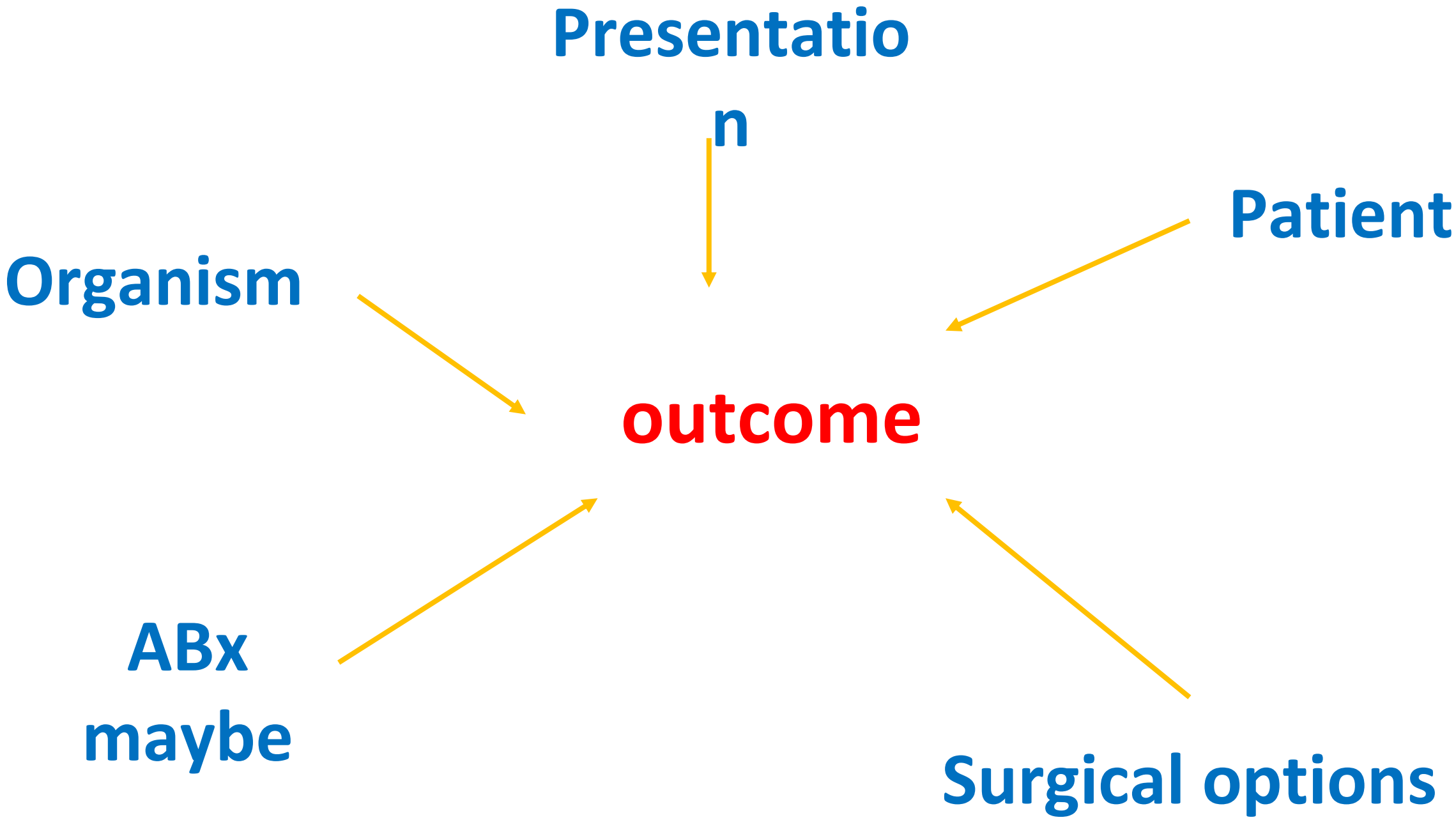
The OPAT - IE cohort at SBH 2022 - 2025

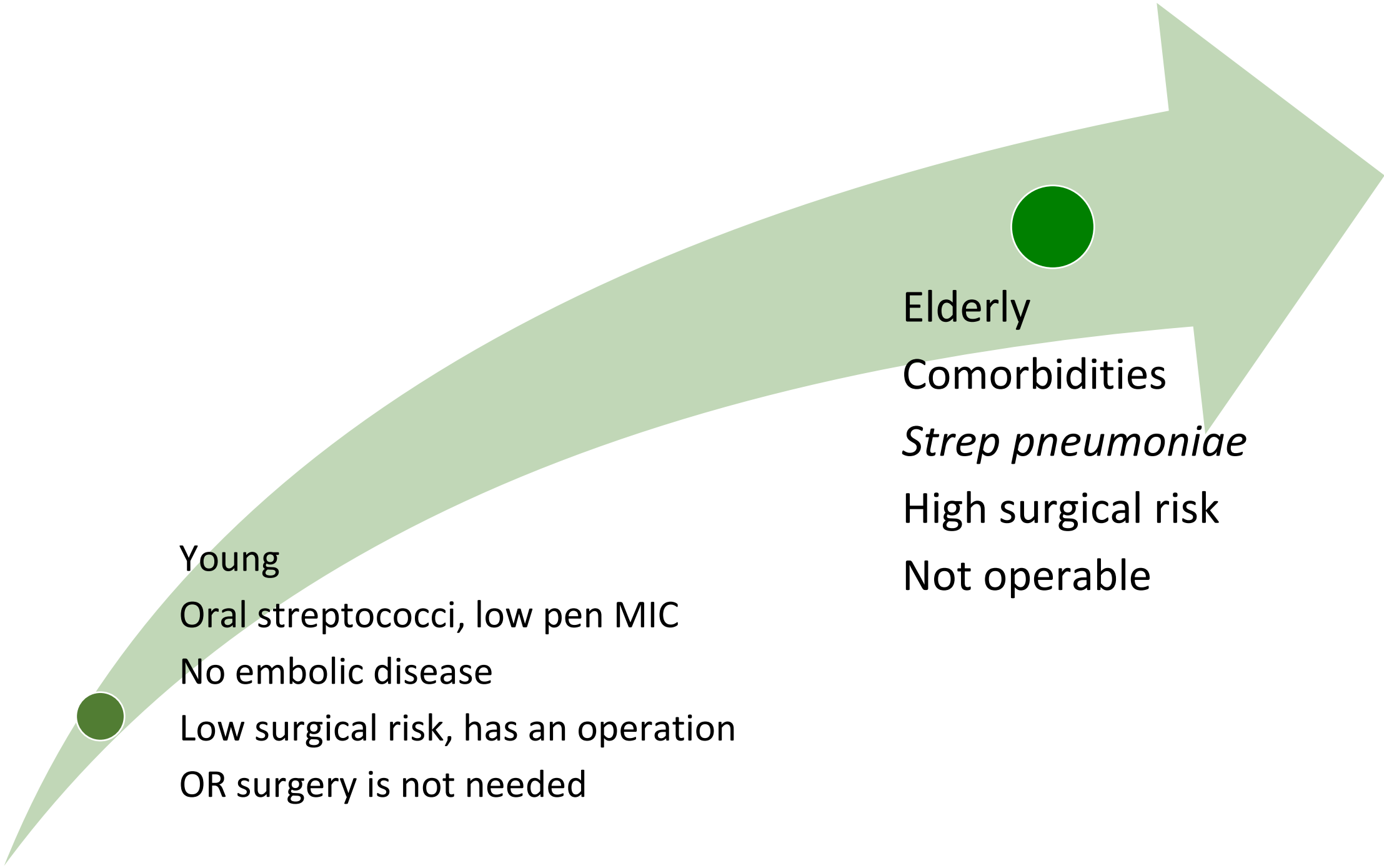
Perspectives



Damaged valve with bacteria growths


a
Roth spots
b
Embolic stroke with haemorrhagic conversion
Pyogenic brain abscess
c
Septic pulmonary emboli
d
Splenic infarcts
e
Peripheral infarcts
Ao
LA
RA
LV
RV
f
Aortic valve leaflet with perforation
g
Mitral valve vegetation
h
Pacemaker lead with vegetation


Presentation
Patient
Organism
outcome
ABx maybe
Surgical options


Young
Oral streptococci, low pen MIC
No embolic disease
Low surgical risk, has an operation
OR surgery is not needed
Elderly
Comorbidities
Strep pneumoniae
High surgical risk
Not operable

INFECTIVE ENDOCARDITIS at SBH

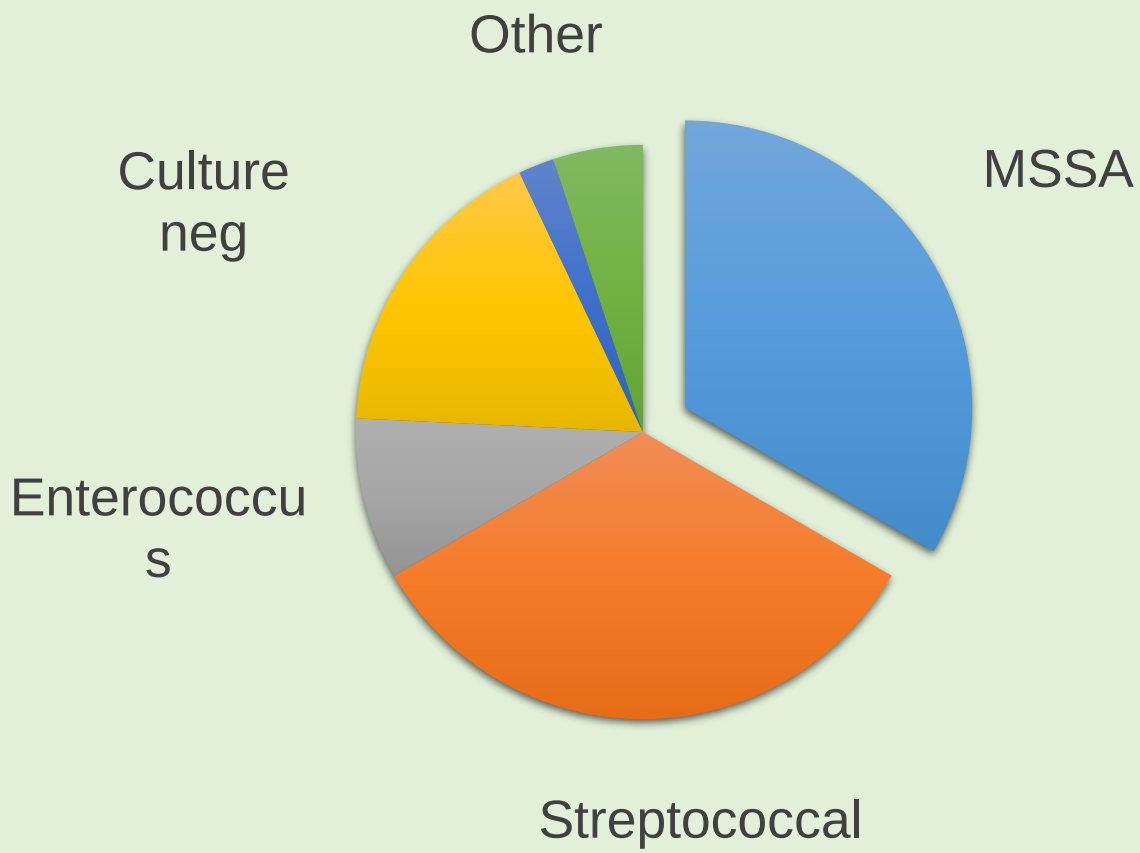
150 episodes / year

LOS 27 days (17 – 43)

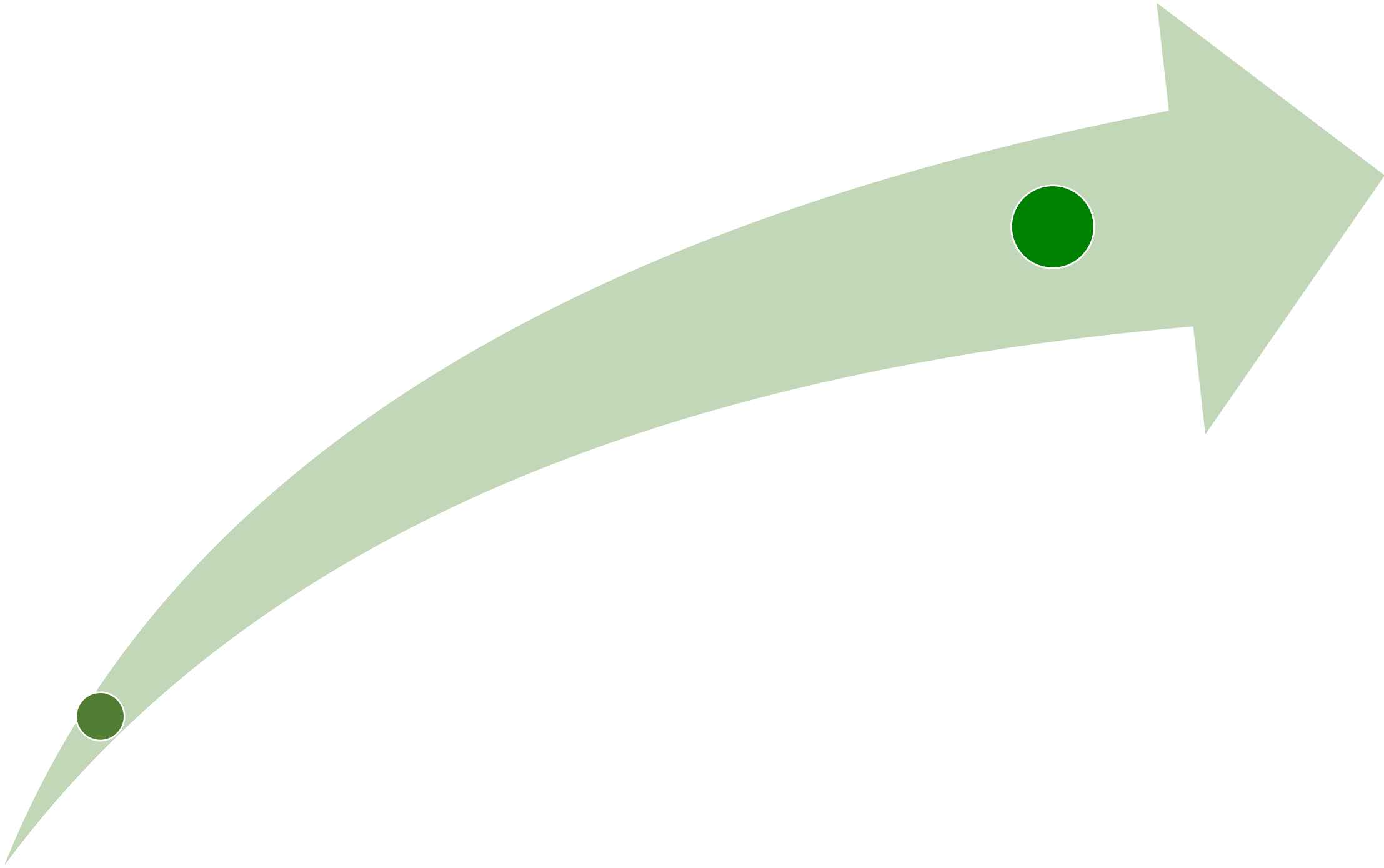
1 – 2 OPAT / week

OPAT since 2022

Native Valve IE: organisms



Data : courtesy of Maria Cue and Christopher Primus IE MDT at SBH




Alex
Cristina
NHS
Eric

71 yo male

Jan 2024 Aortic root replacement

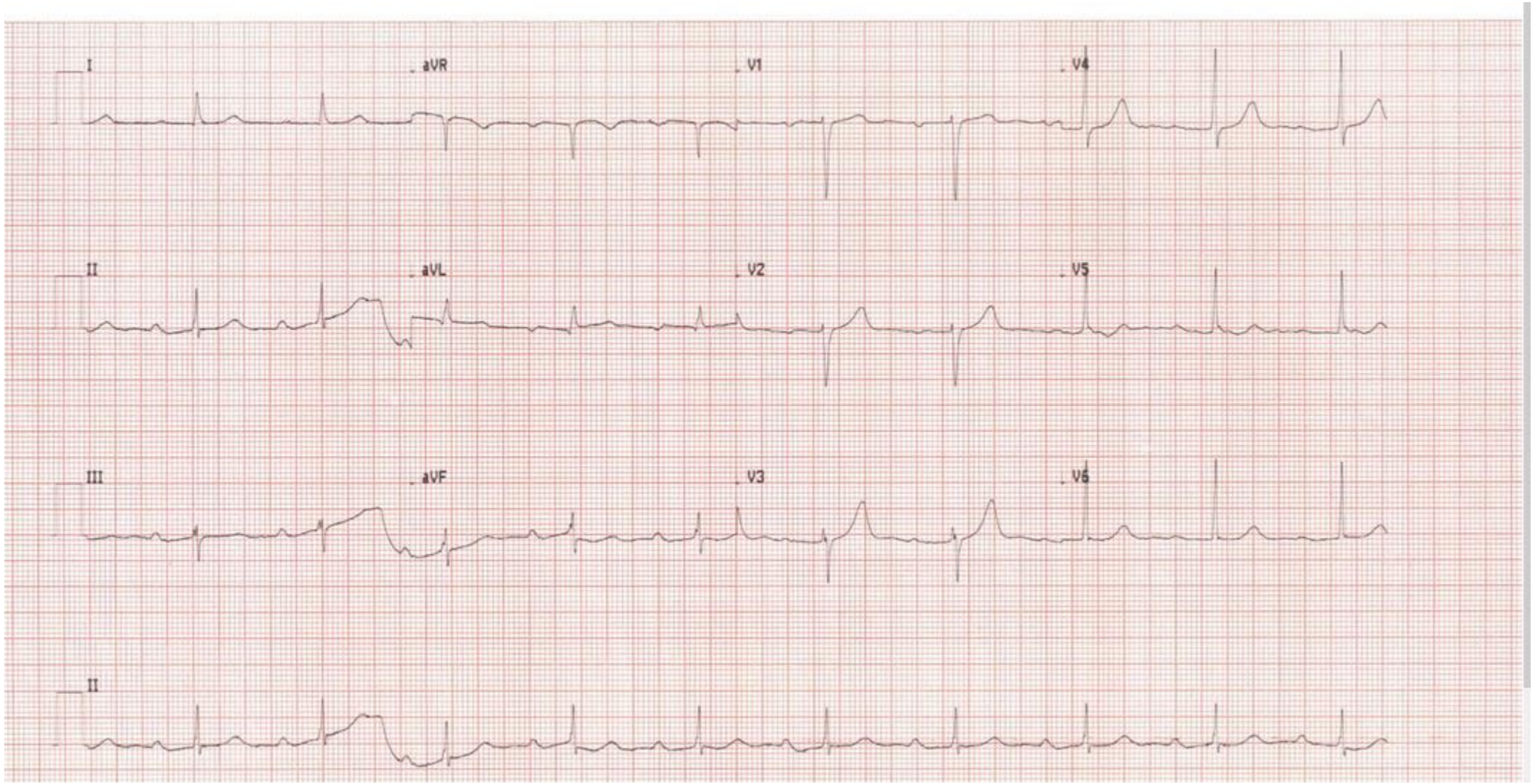
Feb 2024 VRE bacteraemia – short treatment (7 days)
Dapto – eosinophilia

Dec 2024 Prosthetic aortic valve IE by E. faecium (vanc S)
Large vegetation, aortic root involvement
BC = E faecium 20 and 21/12

High risk surgery but potentially operable
Patient not keen in surgery

Referred to OPAT

ABx	Vancomycin – 5 days to therapeutic levels
	Vanc 30/12 – 13/1 – good levels
	gent x 3 weeks in total
OPAT	renal adjusted teicoplanin * 3 loading doses, 12 mg/kg (800 mg) then half dose daily (400 mg)
	intermittent face-to-face review *
17/1	day1 OPAT
17/1	teic level – low
21/1	teic level – low *
24/1	teicoplanin increased to 500 mg
29/1	new level, teic up to 800 mg awaiting levels
29/1	teic level back – still low
30/1	OPAT review



New QT prolongation 170 to 316 ms

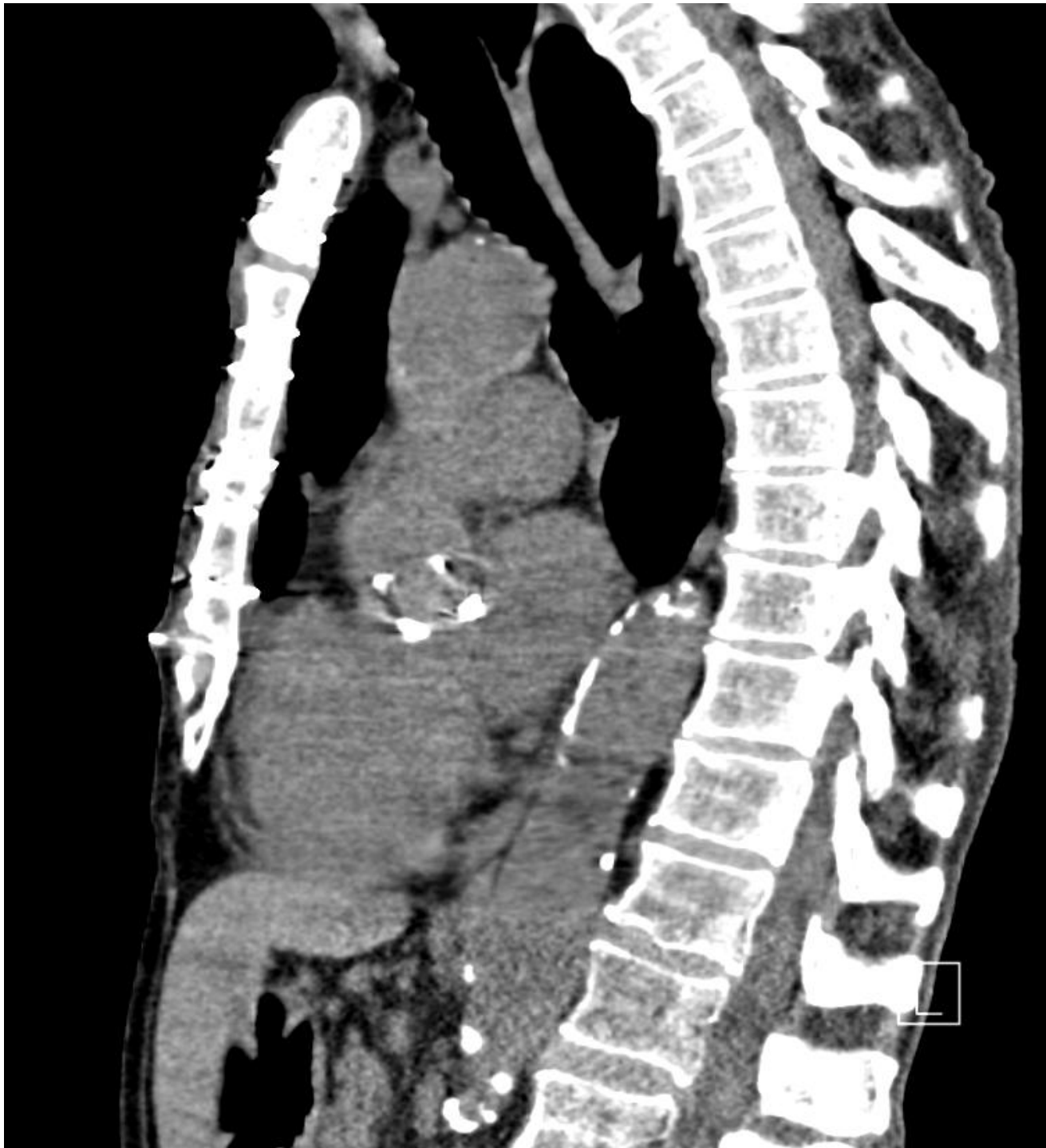
Known possible aortic abscess
Subtherapeutic teic
Not surgery
Prolonging QT

↓

? Evolving aortic abscess

↓

Admission (same day)
Vanc
CT + echo

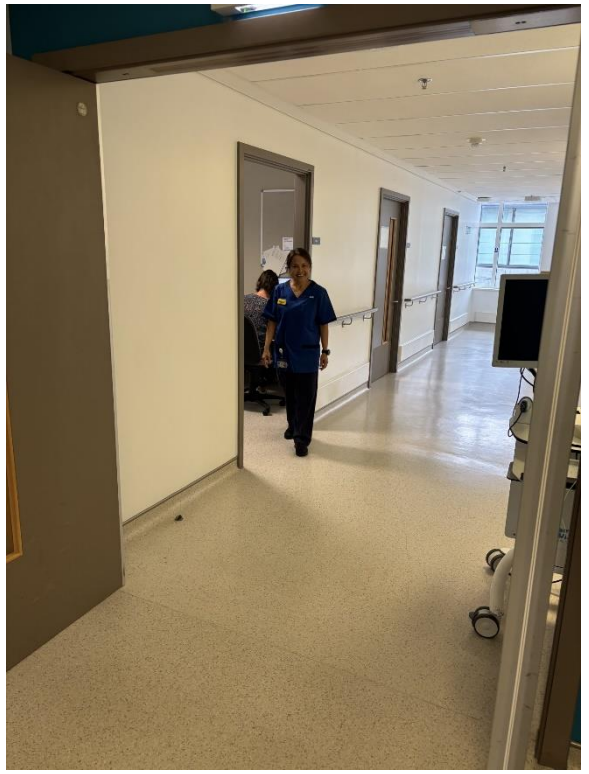


#1

Complications

Potentially severe

May need to act on URGENTLY



IE MDT

Readily available

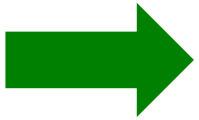
Responsive

Integrated

#2

Face-to-face review

Frequency?



Clinical review

Post-op/wound/HF…

MDT review if needed

Hospital-based

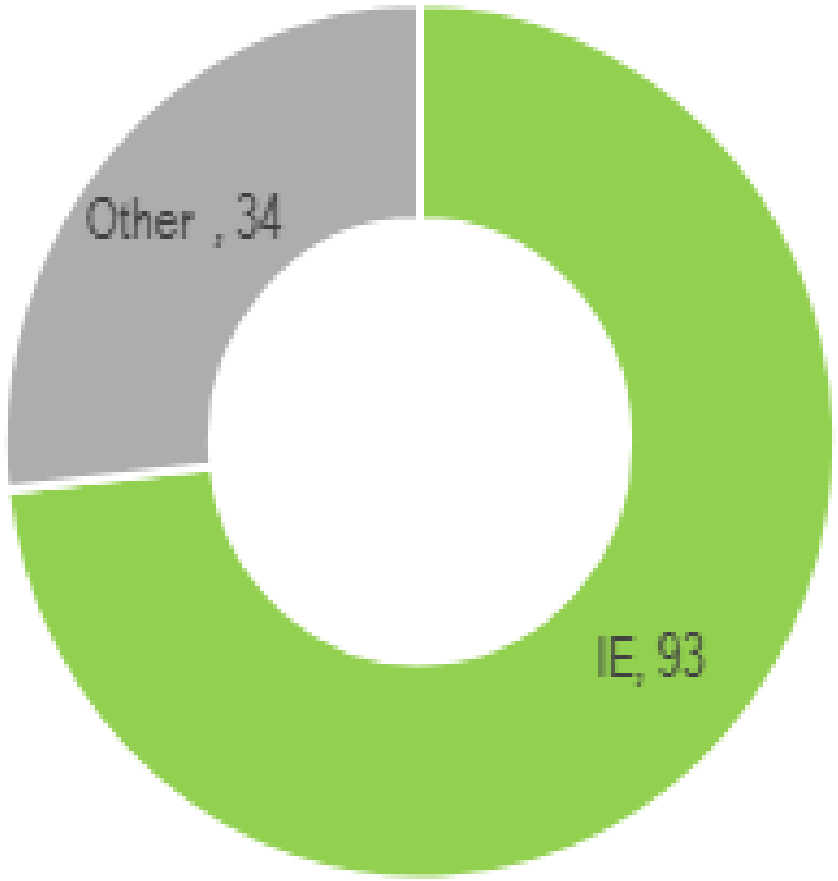
Introduction

Case

The OPAT - IE cohort at SBH 2022 - 2025

Perspectives

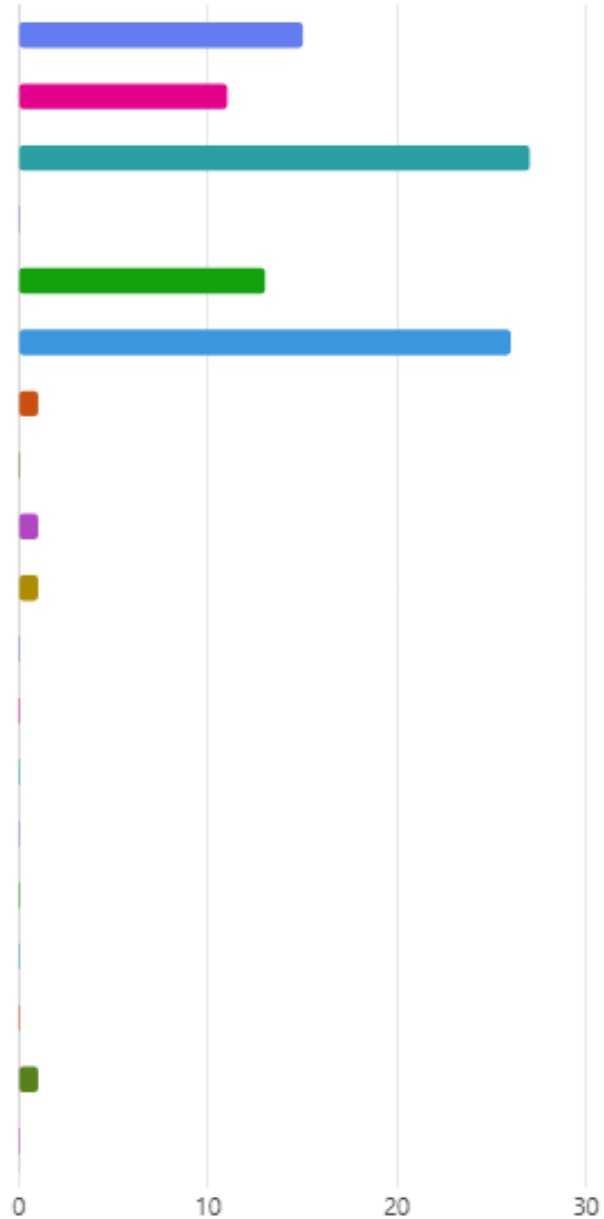
OPAT diagnoses (2022 - 2025)



Total = 127

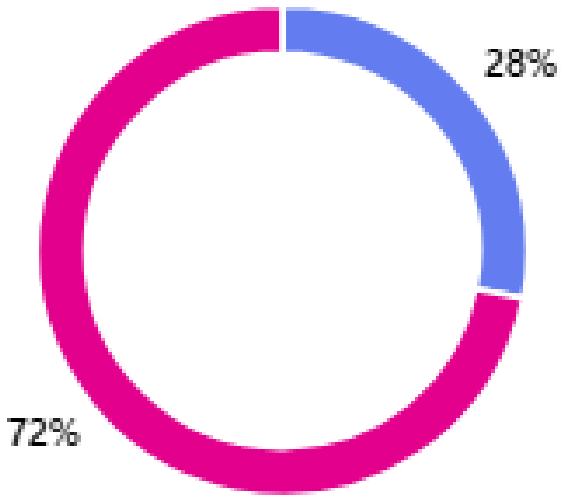
9. Antibiotic to be used for OPAT

Benzylpenicillin	15
Flucloxacillin	11
Teicoplanin	27
Vancomycin	0
Daptomycin	13
Ceftriaxone	26
Ceftazidime	1
Piperacillin-tazobactam	0
Meropenem	1
Ertapenem	1
Amikacin	0
Gentamicin	0
Tigecyclin	0
Ambisome	0
Micafungin	0
Ganciclovir	0
Dalbavancin	0
Other	1
I don't know	0



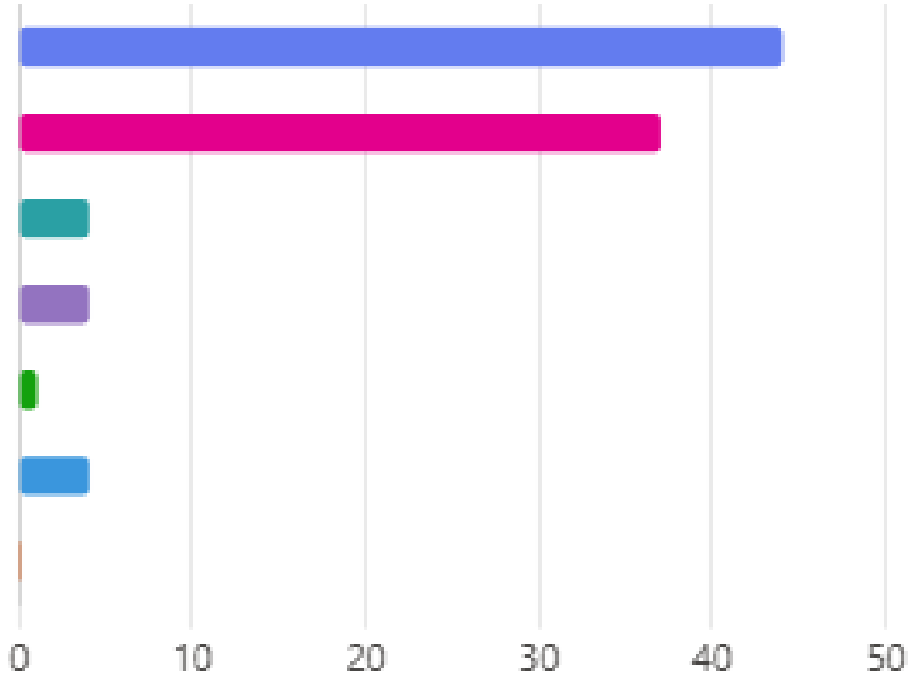
12. Elastomeric device

Yes	25
No	64

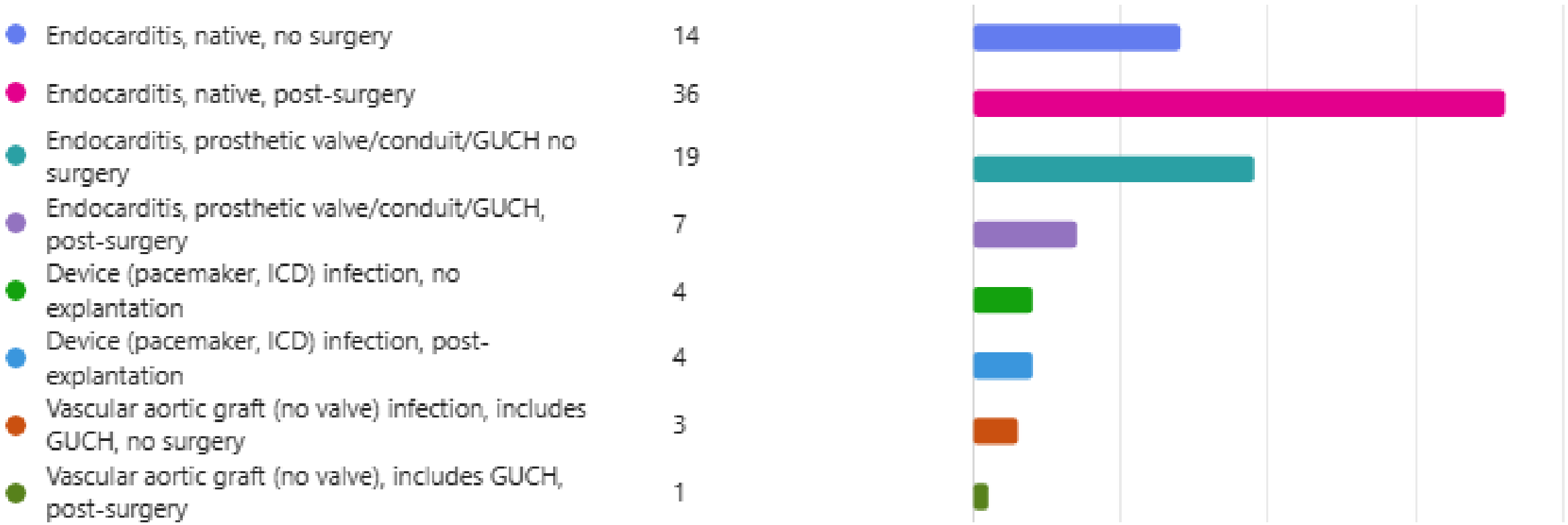


15. Method of administration

Self-admin	44
DN-admin	37
Third party (Baxter subcontract) - admin	4
Ambulatory care/ antibiotic centre	4
Dialysis	1
Virtual ward	4
Other	0



16. Indication for OPAT at SBH

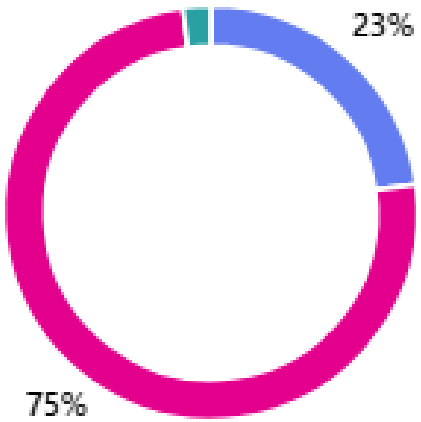


Median time on IVs (OPAT)	9 days
Median follow up (OPAT)	26 days
Q75	**35 days**
Max	**177 days**

22. Switch to orals at the end of IVs

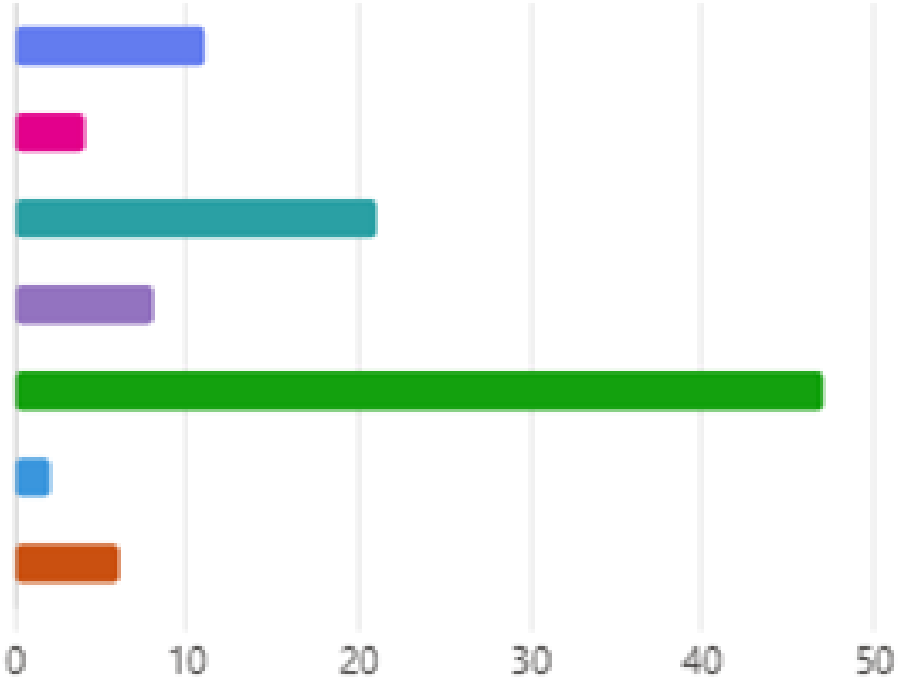
More details

Yes	21
No	69
Lost	2



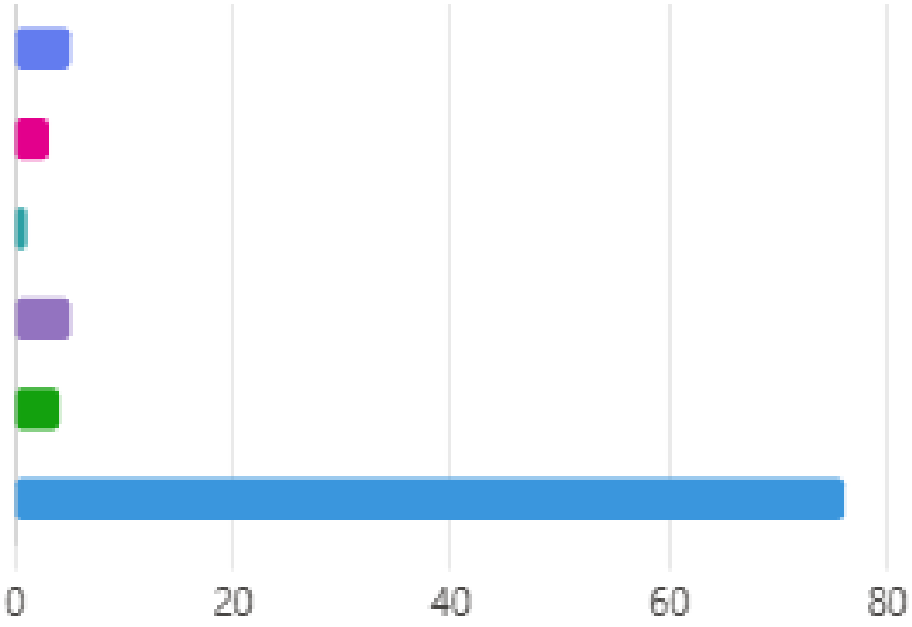
24. Complications during OPAT episode, any

Yes, cardiac/ endovascular/ surgery related	11
Yes, extra-cardiac/ distant infection (consequence of IE)	4
Yes, other typically OPAT related (antibiotic/line infection thrombosis /administration etc)	21
Yes, other not typically OPAT - related (UTI, fracture, fall, non line DVT), includes other NEW...	8
No	47
Lost	2
Other	6



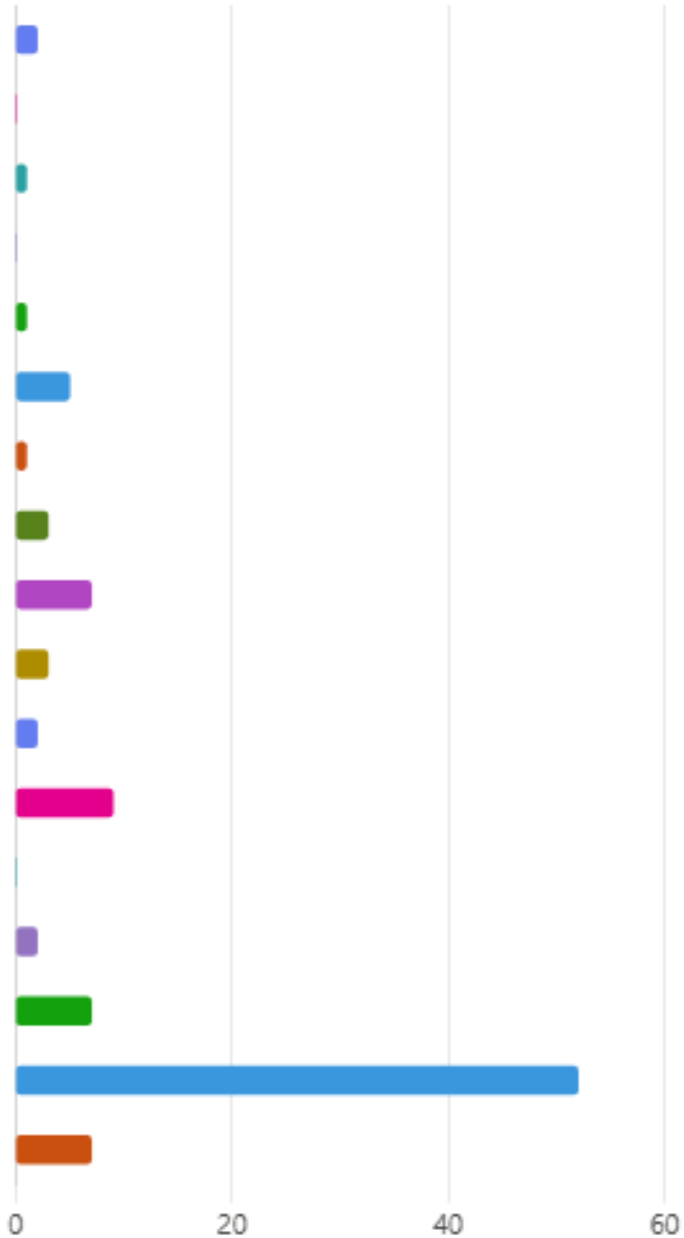
25. If new/unexpected cardiac /endovascular complications, select

ECG / rhythm	5
Valve - related (HF/ abscess)	3
Surgical site - related (abscess /seroma)	1
Uncontrolled endovascular infection	5
Other	4
No complications	76



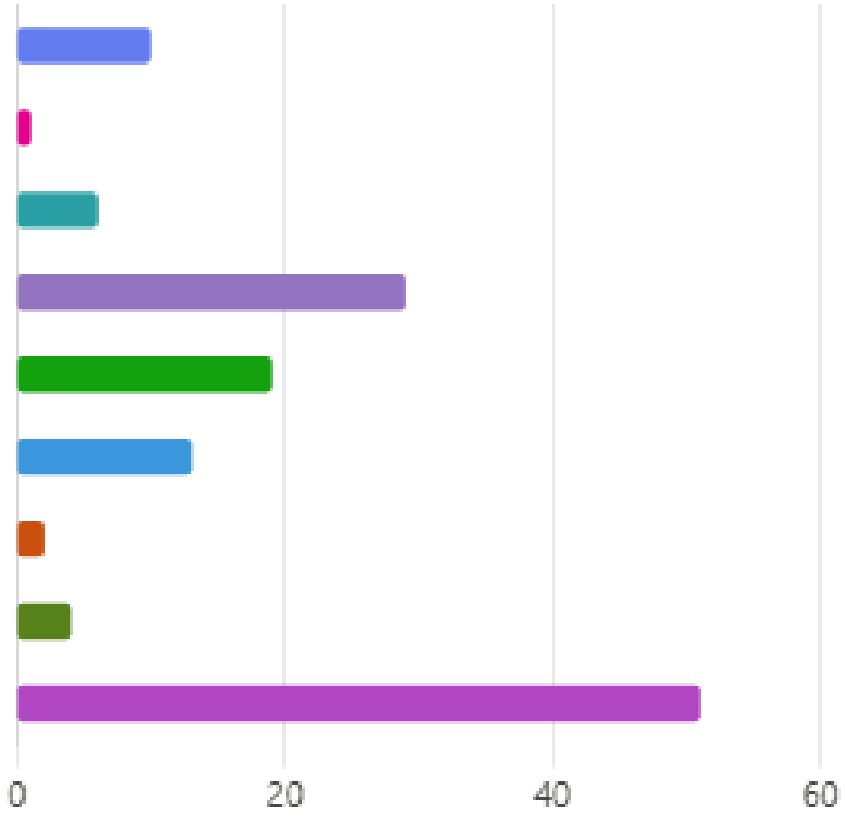
26. Non-cardiac complications, select

Extra cardiac / distant infection (IE - related)	2
Line - misplaced	0
Line - infection	1
Line- thrombosis	0
Line - blockage	1
Line, other	5
Antibiotic - infusion related	1
Antibiotic - cytopenia	3
Antibiotic - renal	7
Antibiotic - liver / cholecystitis	3
Antibiotic - rash or other HS	2
Antibiotic - other	9
Claudication of OPAT system in place	0
Other New infection (no IE-related)	2
Other	7
No complications	52
Other	7

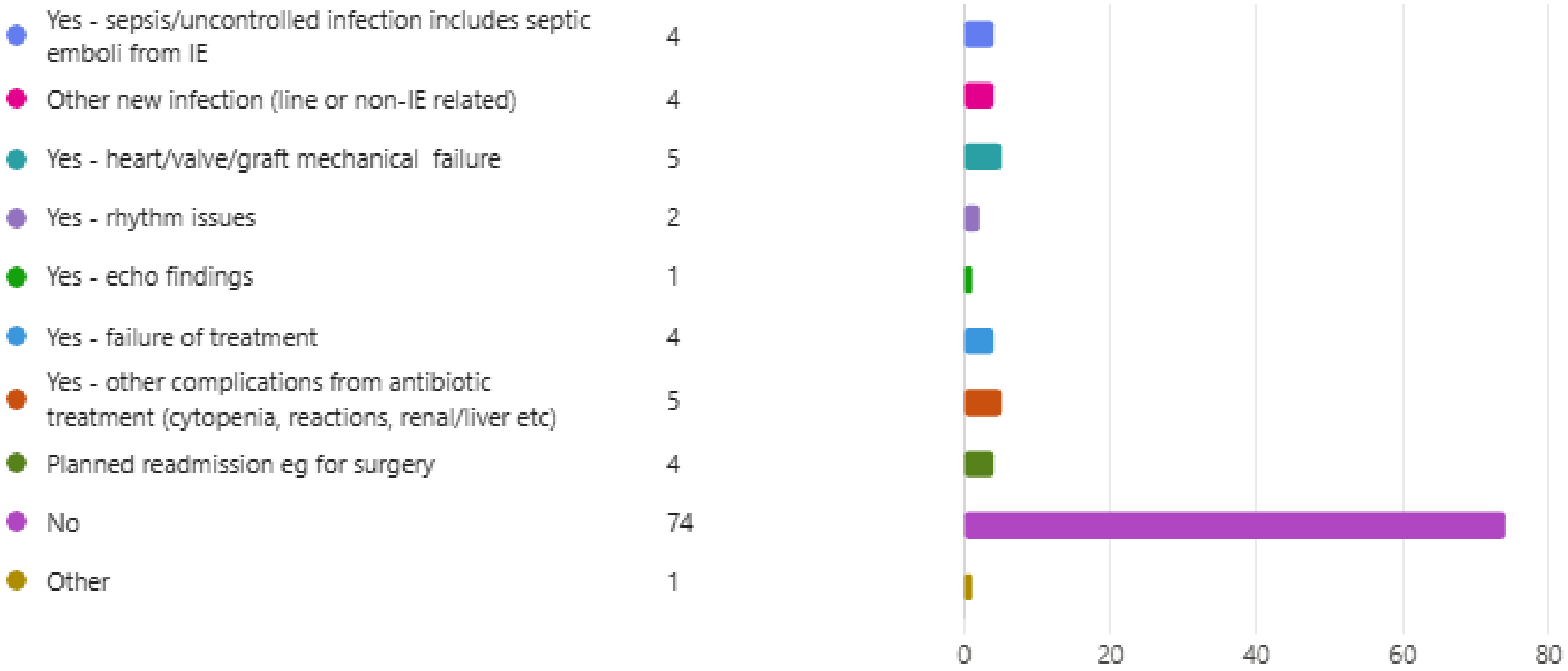


32. Cardiac/Endovascular- related procedures (during OPAT and within 3 months after OPAT completion)

Surgery (planned/unplanned)	10
Washout/ non-surgical debridement	1
Pacemaker	6
Re-imaging	29
Re-discussion at MDT (other than opat)	19
Change of antibiotic duration / strategy	13
Death	2
Other	4
No	51

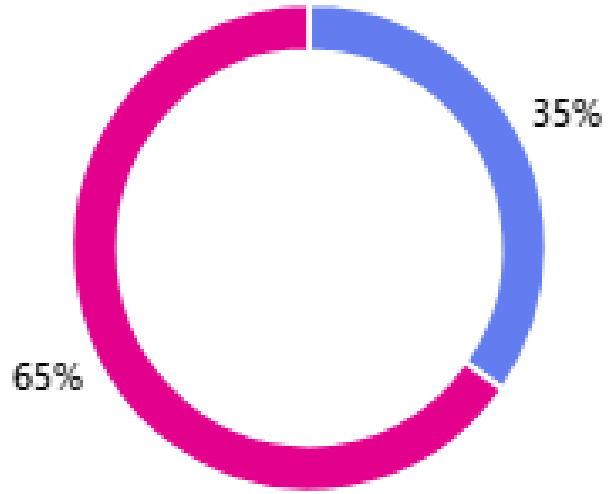


31. Readmission during planned opat episode



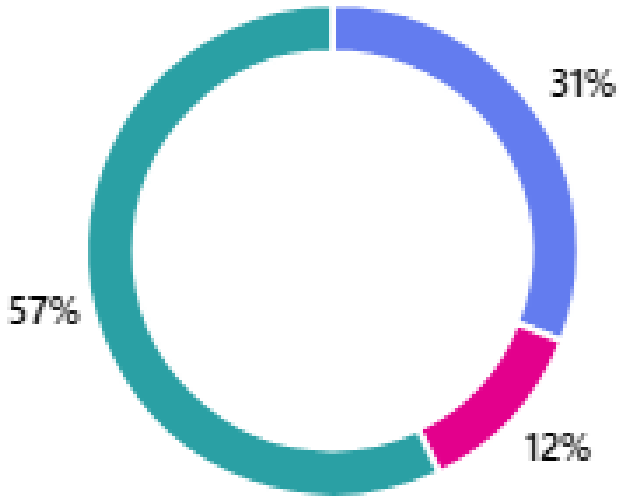
27. Was the parent/ IE team opinion/intervention required during OPAT episode (subjective opinion as per OPAT consultant)

Yes	31
No	58
Not sure / maybe	0



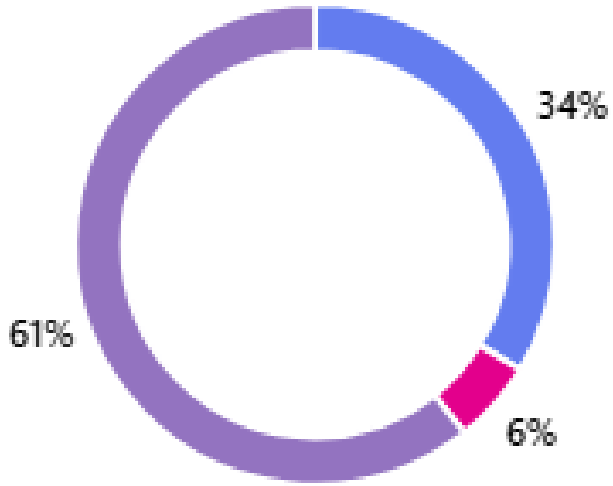
28. Did the patient actually receive any parent / IE team input during OPAT episode

Yes	26
No	10
Not required	48



29. If there were complications that required IE/parent team input. Did the OPAT team get involved in managing the complications - to any extent (full management, delegation of tasks, hand over to team etc)

Yes	30
No	5
A bit unclear	0
There were no complications	54



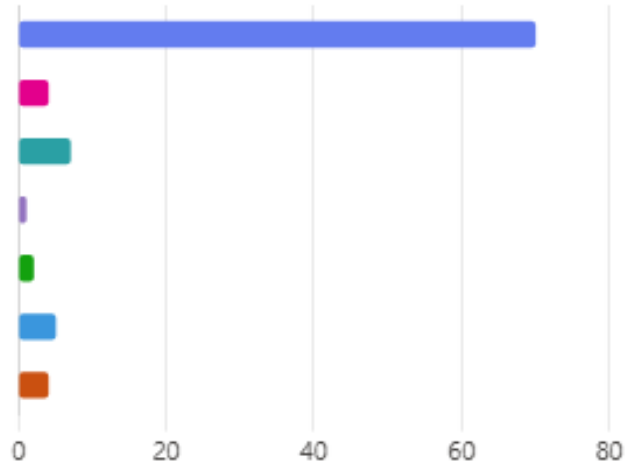
30. Try to score the degree of involvement of the OPAT team in managing/escalating complications during the episode

0	1	2	3	4	5	6	7	8	9	10
Not so much, parent team picked the complications up										OPAT team identified complications, warned the parent team and intervened making arrangements for readmission, rediscussion

Median “involvement” (1 to 10 scale) **7**

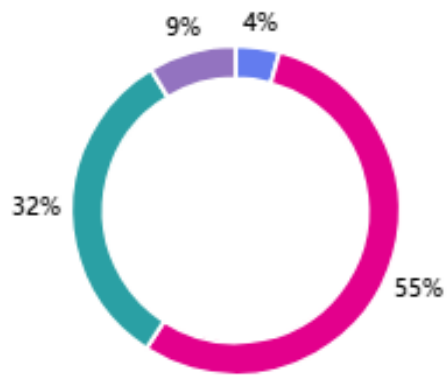
33. Outcome 3 months after end of OPAT follow up

Alive, cured	70
Alive, relapse within 3 months	4
Alive, chronic infection on suppression	7
Alive, chronic infection not on suppression	1
Death	2
Not 3 months follow up yet	5
Lost	4



34. Outcome 1 year after end of OPAT follow up

Dead	4
Alive	51
Not 1 year follow up yet	30
Unknown/lost	8



#3

There will be complications

Who will identify them and deal with them?

OPAT team?

Vs

Very close follow-up by the parent team

Int J Infect Dis. 2023 Sep:134:172-176. doi: 10.1016/j.ijid.2023.06.008. Epub 2023 Jun 16.

Safety and clinical outcomes of outpatient parenteral antibiotic therapy for infective endocarditis in Christchurch, New Zealand: A retrospective cohort study

Patrick O Campbell [1], Kate Gallagher [2], Simon C Dalton [2], Sarah C L Metcalf [2], Nicholas M Douglas [3], Stephen T Chambers [4]

Affiliations + expand

PMID: 37331565 DOI: 10.1016/j.ijid.2023.06.008

Free article

Abstract

Objectives: We examined the safety and clinical outcomes of outpatient parenteral antibiotic therapy (OPAT) for patients with infective endocarditis (IE) in Christchurch, New Zealand.

Methods: Demographic and clinical data were collected from all adult patients treated for IE over 5 years. Outcomes were stratified by receipt of at least partial OPAT vs entirely hospital-based parenteral therapy.

Results: There were 172 episodes of IE between 2014 and 2018. OPAT was administered in 115 cases (67%) for a median of 27 days after a median of 12 days of inpatient treatment. In the OPAT cohort, viridans group streptococci were the commonest causative pathogens (35%) followed by Staphylococcus aureus (25%) and Enterococcus faecalis (11%). There were six (5%) antibiotic-related adverse events and 26 (23%) readmissions in the OPAT treatment group. Mortality in OPAT patients was 6% (7/115) at 6 months and 10% (11/114) at 1 year and for patients receiving wholly inpatient parenteral therapy was 56% (31/56) and 58% (33/56), respectively. Three patients (3%) in the OPAT group had a relapse of IE during the 1-year follow-up period.

Conclusion: OPAT can be used safely in patients with IE, even in selected cases with complicated or difficult-to-treat infections.

Keywords: Christchurch; Home intravenous antibiotic treatment; Infective endocarditis; New Zealand; Outpatient parenteral antibiotic treatment.

Clinical predictors of outcome in patients with infective endocarditis receiving outpatient parenteral antibiotic therapy (OPAT)

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Show Outline

Highlights

- Outpatient parenteral antimicrobial therapy (OPAT) is increasingly used to treat infective endocarditis (IE).
- Pre-existing renal failure and multimorbidity were associated with OPAT failure.
- Previous IE and cardiac complication were associated with poor long-term outcomes; cardiac surgery was a protective factor.
- OPAT is safe and effective for treating IE, including cases deemed to be at increased risk of complications.
- We examined risk factors for treatment failure and poor outcomes in patients with IE managed with OPAT.

Higher rate of complications

than general OPAT patient

Introduction

Case

The OPAT - IE cohort at SBH 2022 - 2025

Perspectives

Our cardiologists say….

The OPAT service has revolutionised the way we treat patients

Clearly important to be **hospital-based or have very closed links** with cardiology

The **team should be united**, with the patient being assessed by both teams or preferably, a team working together

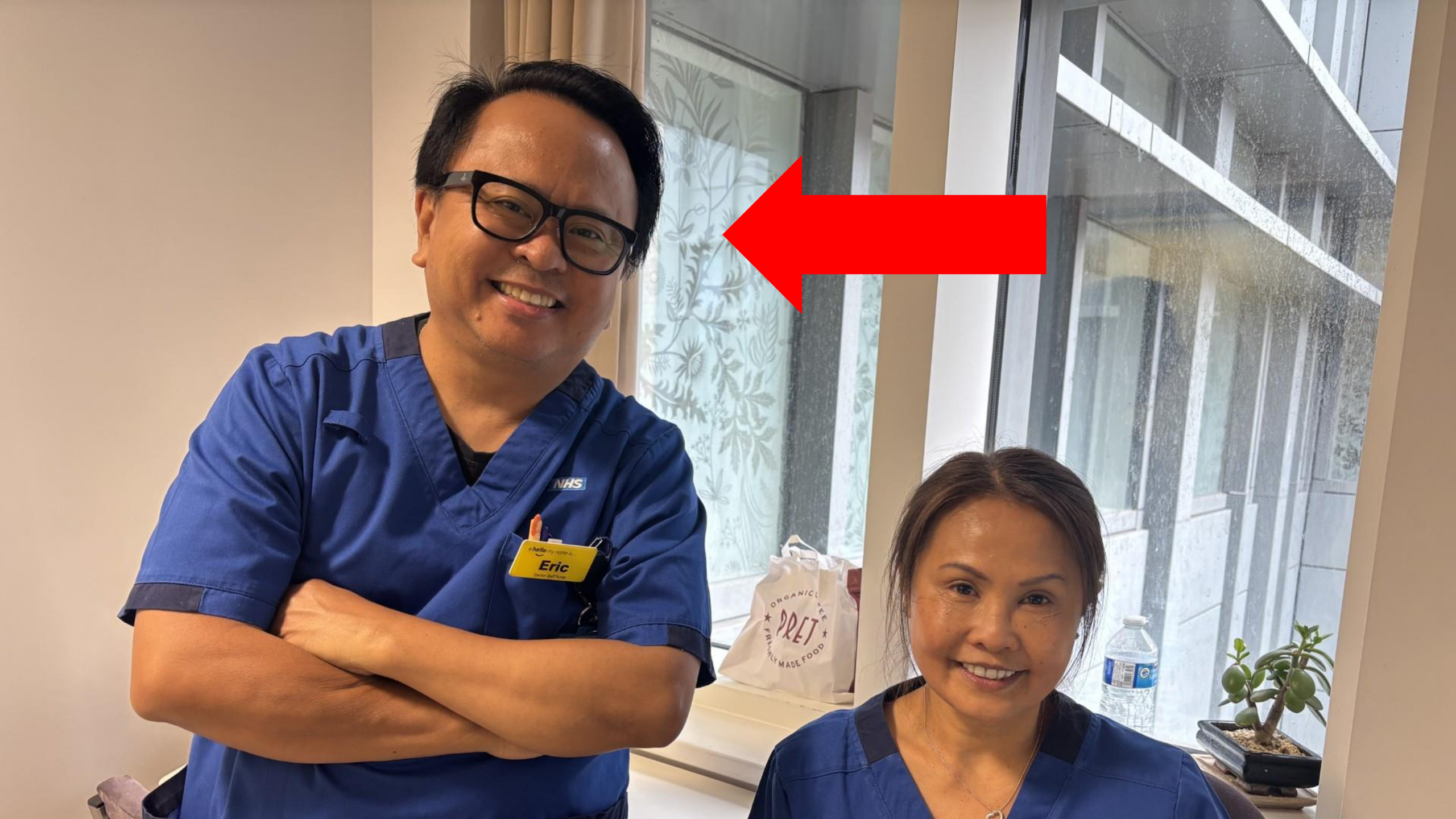
Once the risk of late emboli / complications has fallen (2 weeks)

Our patient Peter valued ….

Feeling **safe and under close supervision** and control – despite not being in a hospital bed

Having **easy access to the information** one needs at different points in the journey

*


NHS
hello my name is...
Eric
PRET
ORGANIC
FRIENDLY MADE FOOD

Our CNS says: consider the following…

Complex and long journeys for patients -> closer relationship
Physical and **psychological** impact

- Advocacy
- Navigating the system
- Counselling

Middle person

- Importance of multidisciplinary approach
- Parent team accountability

Pharmacy point of view

Complex patients, polypharmacy, comorbidities

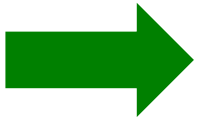
More likely toxicity

Levels, interactions

Logistics - longer treatments than usual

#4

More demanding for ALL the members of the team



Do you have the capacity?

Is your service well resourced for this?

Complex

Demanding

MDT

Training &
knowledge

Increased nursing time

Know your cohort

Work in teams

Adapt your OPAT service

Is your service ready?