Paediatrics – a special population?

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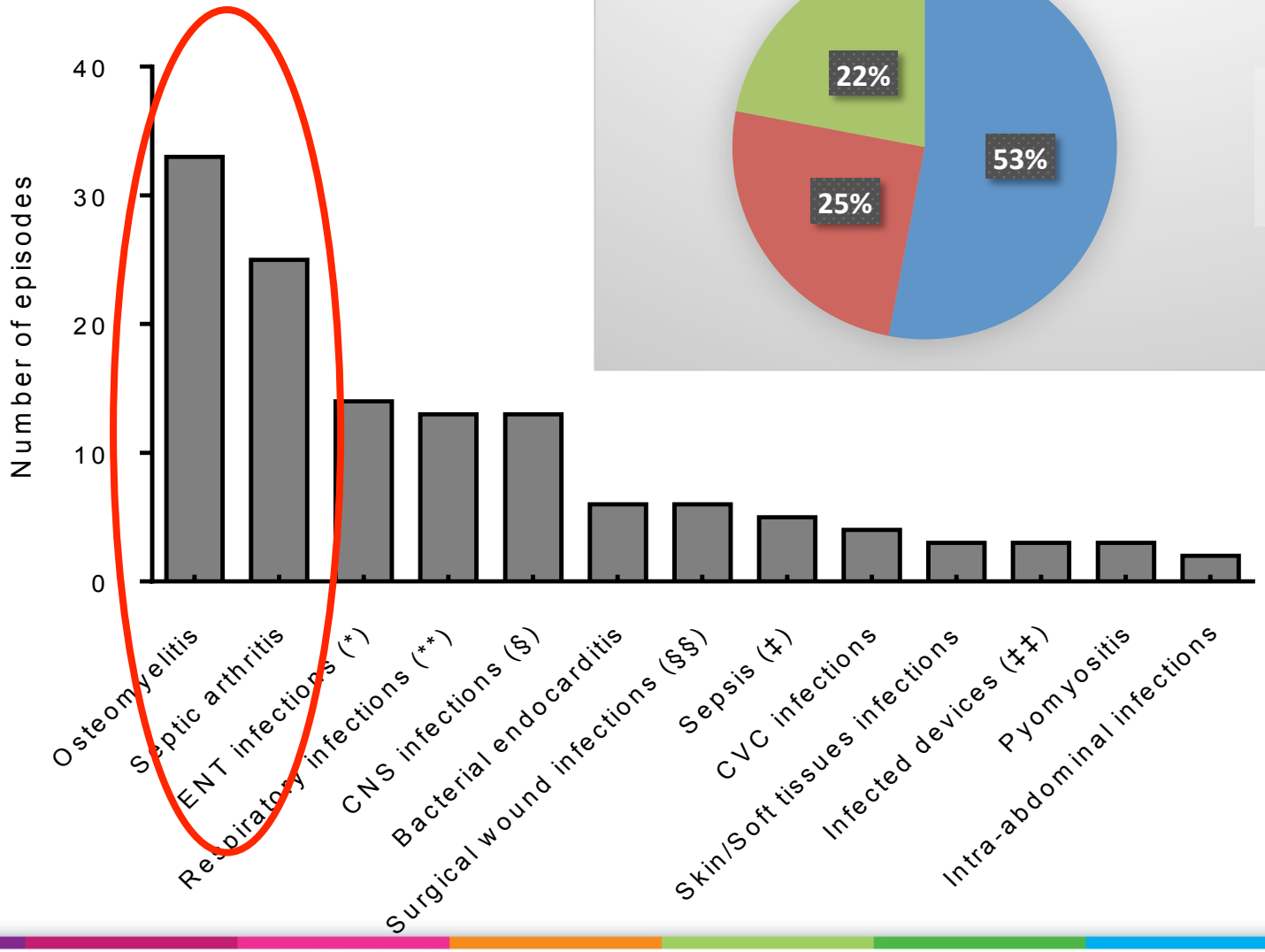
Aren’t children just little adults?!

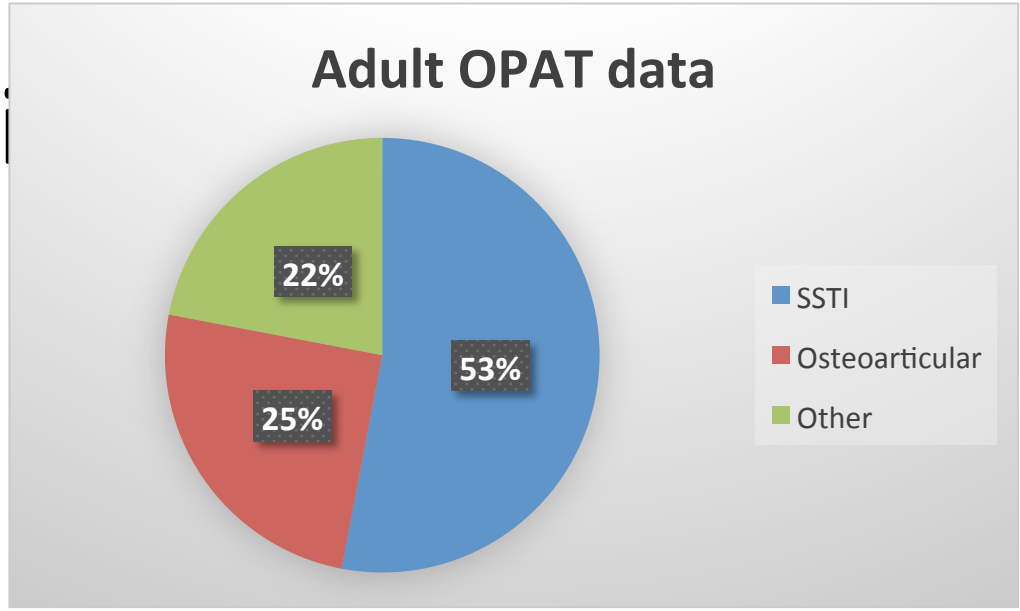
versus

The fundamental principles

- p-OPAT team—roles and responsibilities
- Service structure
- Patient suitability for p-OPAT
- Pathologies suitable for p-OPAT management
- Vascular access
- Antimicrobial selection, drug delivery and monitoring of the patient
- Clinical governance and outcome monitoring
- Developing a business case and obtaining funding to set up a p-OPAT service

Pathologi





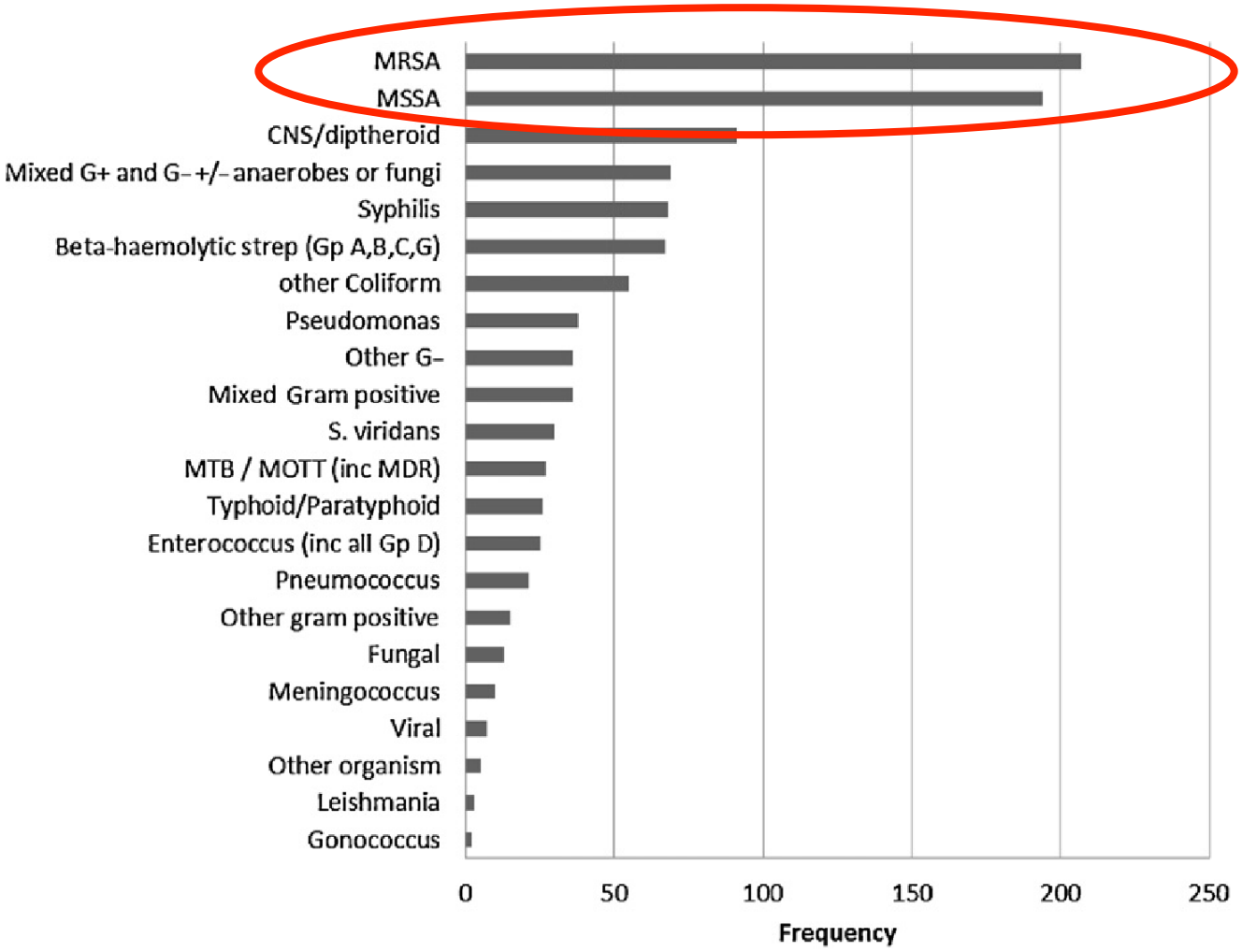
Barr DA et al. Int J Antimicrobial Agents. 2012

Organisms

No organism identified	18 (34%)
Staph Aureus (MSSA)	11
Group A Strep	5
Strep Pneumoniae	5
Staph Aureus (PVL)	3
Pseudomonas	2
Strep Intermedius	2
Kingella Kingae	2
Mixed sample	2
Proprionibacterium	1
Varicella	1
Myobacterium	1
Total Number	**53**

69%

Organisms – adult data



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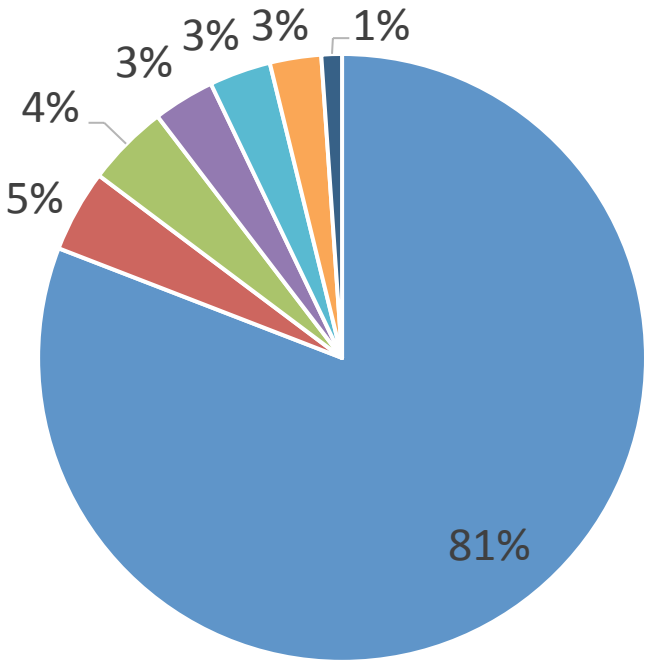
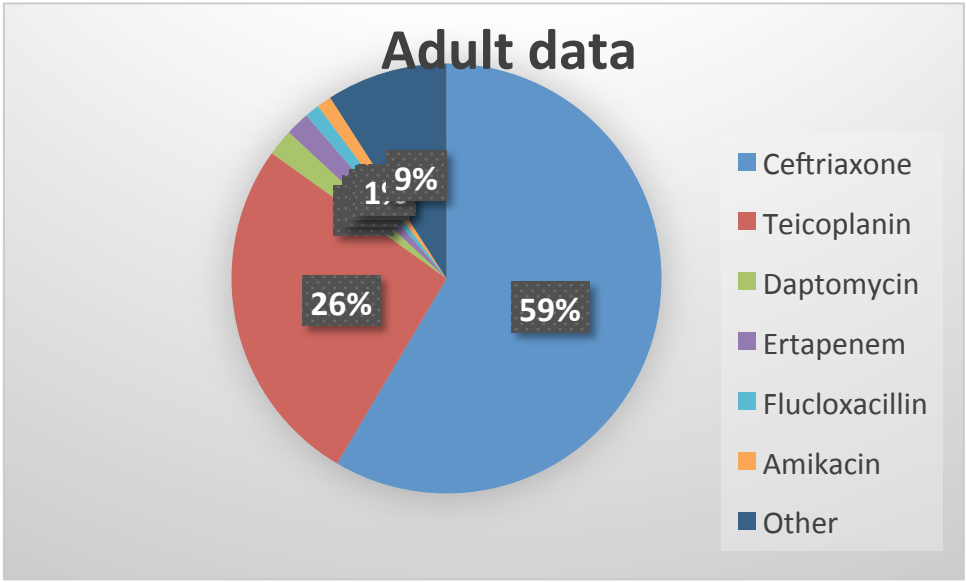
Antibiotics used



N=183

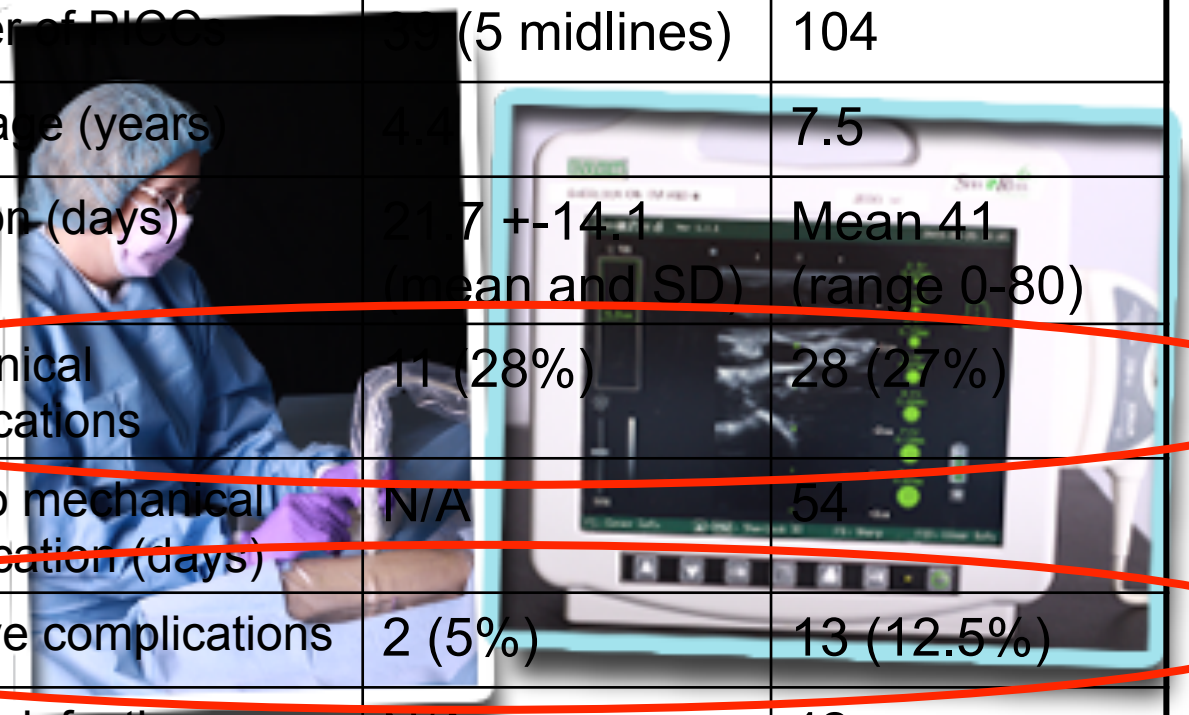


- Ceftriaxone
- Flucloxacillin
- Tazocin
- Daptomycin
- Teicoplanin
- Ceftazidime and tobramycin
- Others

Barr DA et al. Int J Antimicrobial Agents. 2012

Central IV access

	Van Winkle (2003-06)	Hussain (1995-99)
Number of PICCs	36 (5 midlines)	104
Mean age (years)	4.4	7.5
Duration (days)	21.7 +-14.1 (mean and SD)	Mean 41 (range 0-80)
Mechanical complications	11 (28%)	28 (27%)
Time to mechanical complication (days)	N/A	54
Infective complications	2 (5%)	13 (12.5%)
Time to infective complication (days)	N/A	42
Total complication rate	33%	39.5%



1. Van Winkle P et al. PIDJ 2008;12,1069-1072
2. Hussain S et al. Clinical Pediatrics. 2007;46:247-251

Central access – UHS data

- Of 105 PICC line inserted over a 36 month period:-
  - 12 catheter related complications (11.4%)
    - line migration / dislodgement (n=5; 4.8%)
    - line blockage (n=3; 2.9%)
    - exit site infection (n=2, 1.9%)
    - suspected central line-associated bloodstream infection (n=1; 1.0 %)
    - line fracture (n=1; 1.0%)

But surely there are some more fundamental differences?

versus

Economy of scale

920 ADULT BEDS

2000-4000 bed days saved/year

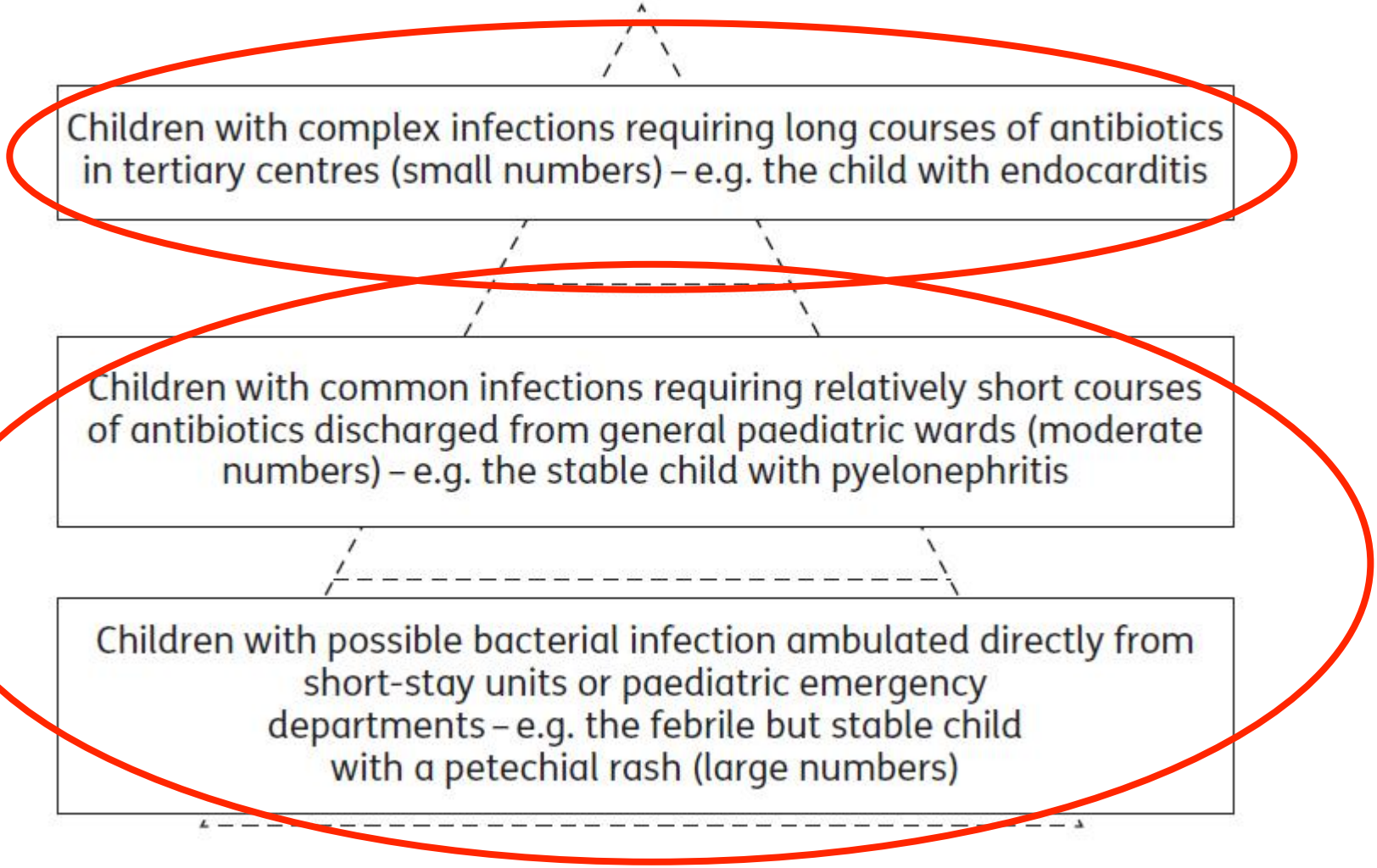
124 PAEDS BEDS

500-1000 bed days saved/year

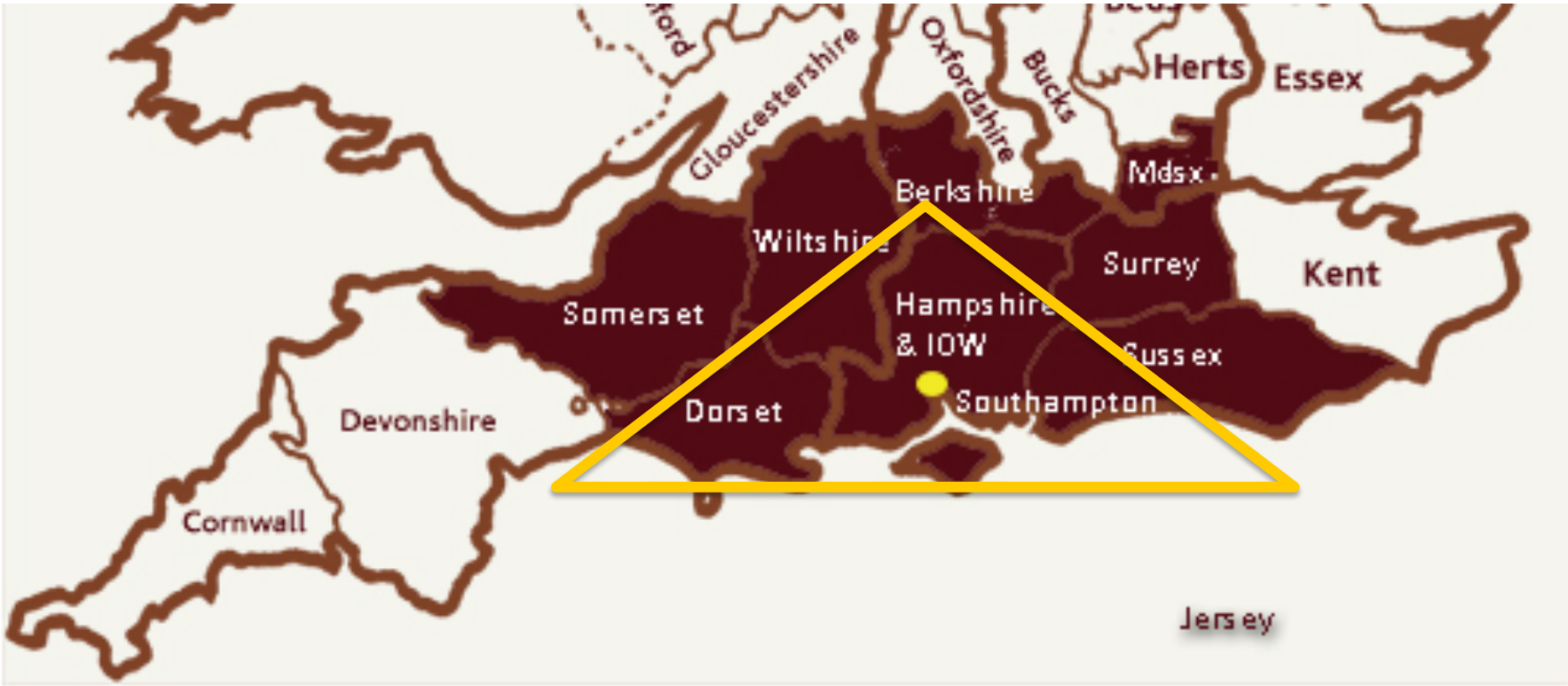
Configuration of adults services

Configuration of paediatric services

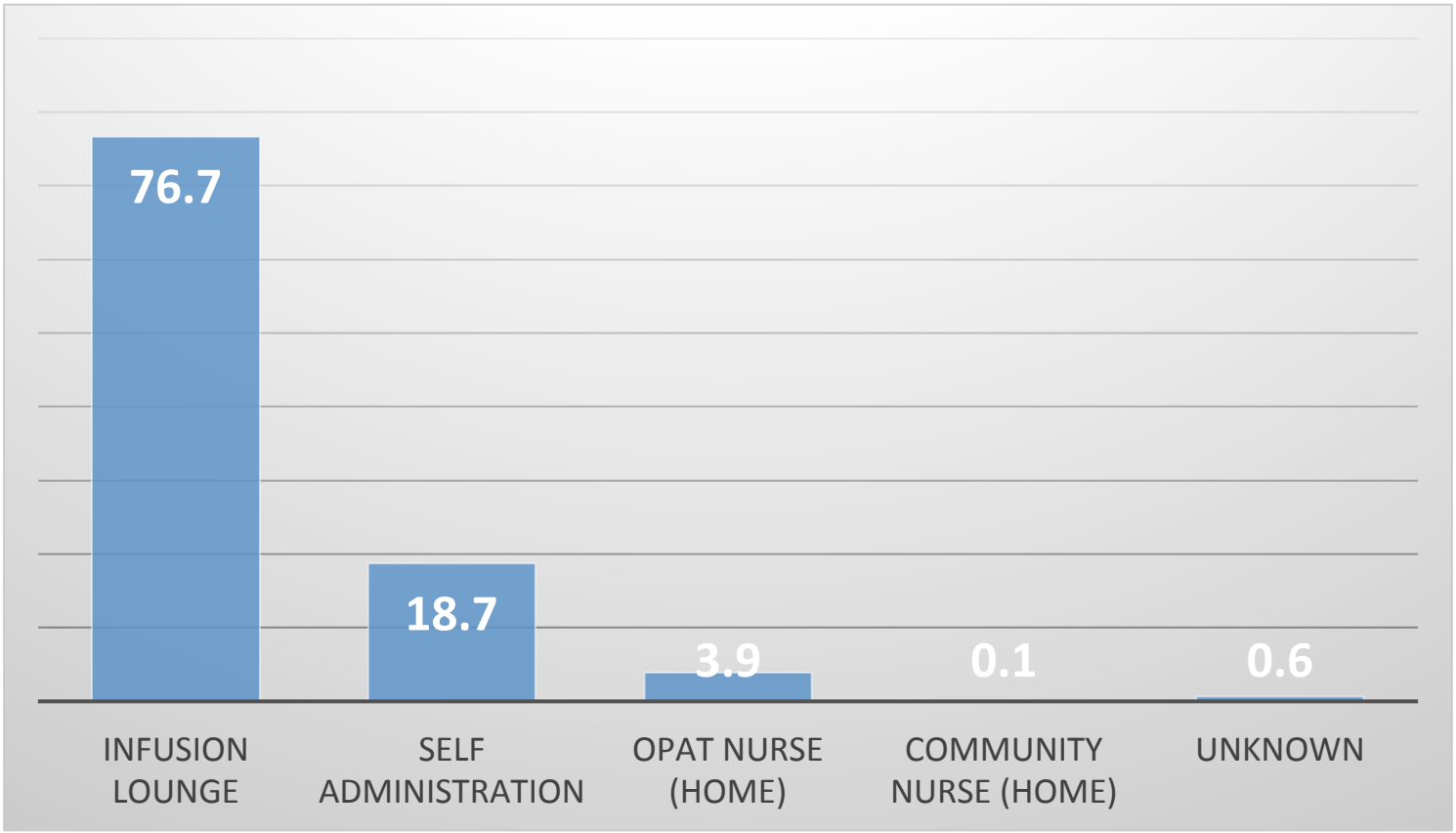
Ambulatory OPAT versus tertiary OPAT



Geographic area covered

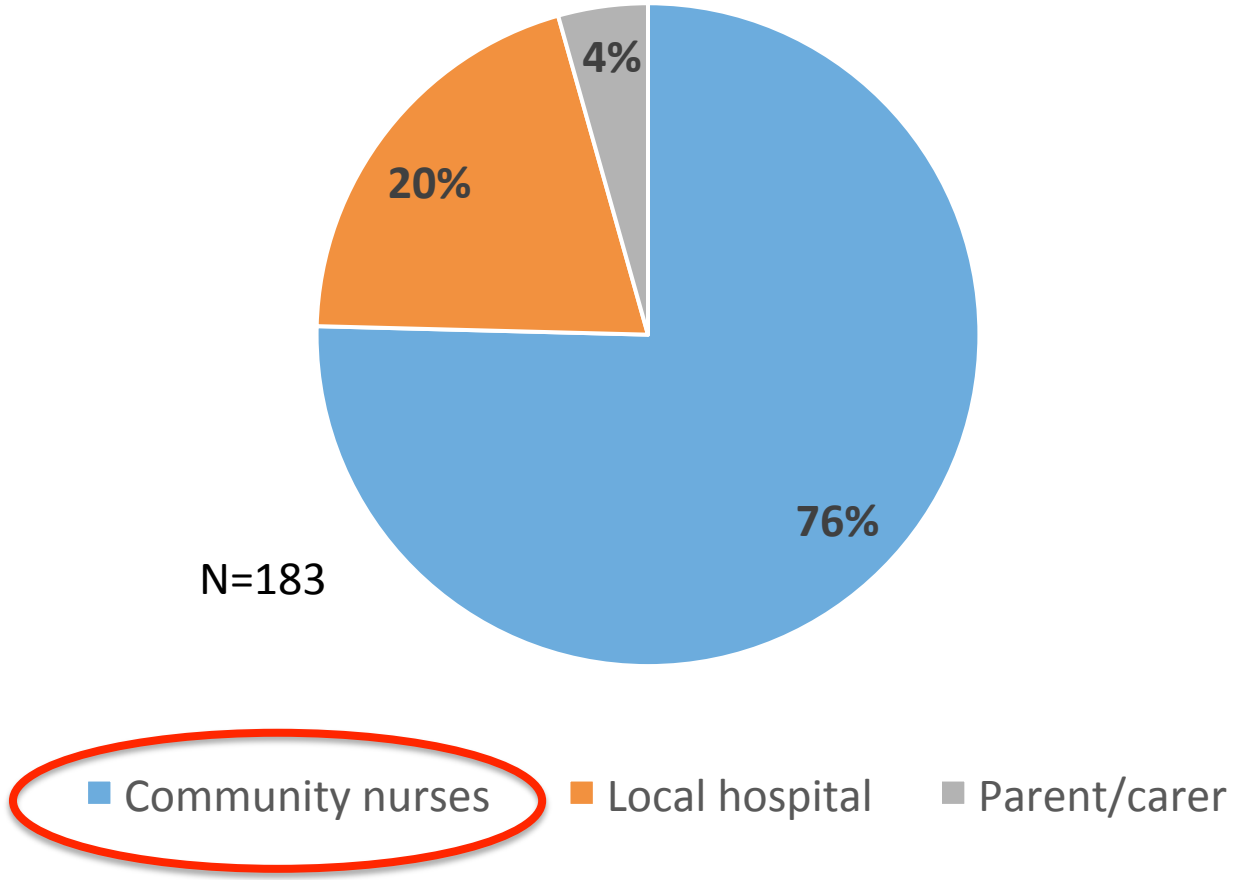


Mode of administration - adults



Barr DA et al. Int J Antimicrobial Agents. 2012

Mode of administration - pOPAT



Community nursing services – weekday hours

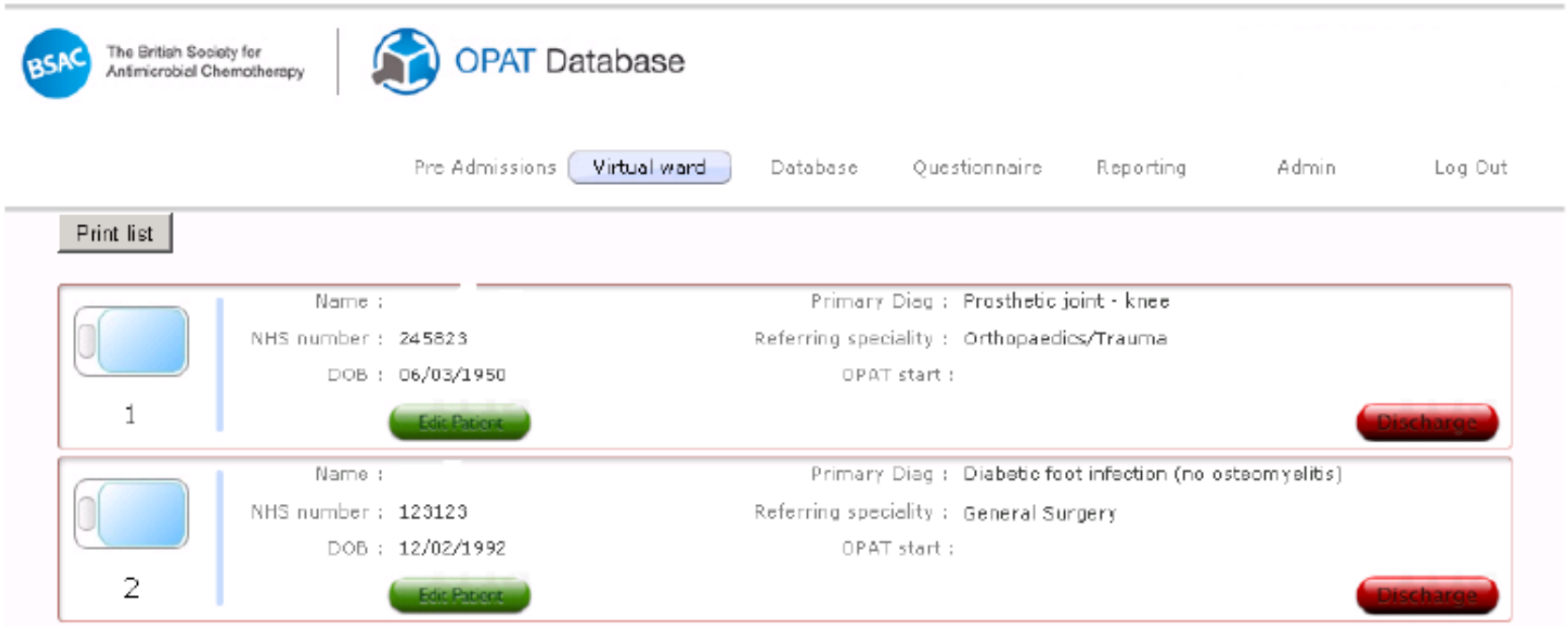
Weekdays Mon - Friday										
Southampton Community Team		08.30 -16.30								
COAST Portsmouth	08.00 -22.00									
COAST Southampton			10.00 -20.00							
Portsmouth Community Team		08.30 -17.00								
Poole		09.00 -17.00								
Dorchester	08.00 -18.00									
Hants North	08.00 -18.00									
Hants CHAT	08.00 -18.00									
Hants West	08.00 -18.00									
Isle of Wight	08.00 -17.00									
Salisbury		09.00 -16.00								
	8.00	9.00	10.00	12.00	14.00	16.00	17.00	18.00	20.00	22.00
	AM				PM					

Community nursing services – weekend hours

Weekends - Saturday & Sunday										
Southampton Community Team										
COAST Portsmouth		09.00 -18.00								
COAST Southampton		09.00 -17.30								
Portsmouth Community Team										
Poole										
Dorchester										
Hants North										
Hants CHAT	08.00 -18.00									
Hants West										
Isle of Wight										
Salisbury										
	8.00	9.00	10.00	12.00	14.00	16.00	17.00	18.00	20.00	22.00
	AM				PM					

But it's not all doom and gloom being a paediatrician!

Collaboration



Learning through collaboration

- Benchmarking
  - Clinical outcomes
    - OPAT outcome
    - Infection outcome
  - Patient/parent satisfaction
- Improving services by looking at variation
  - Mode of Ab delivery
  - IV access
  - Timing of IV to oral switches/ total duration of Abs

Improving services by looking at variation

Alder Hey
1686 bed days/year
Tertiary and ambulatory OPAT

Sheffield
1560 bed days/year (estimated)
Tertiary and ambulatory OPAT

Evelina
708 bed days/year
Tertiary OPAT

Bristol
953 bed days/year
Tertiary and ambulatory OPAT

Southampton
1000 bed days/year
Tertiary OPAT

Improving services by looking at variation – mode of delivery

Sheffield
Infusion lounge model
7 days per week (8am-8pm)

Southampton
Parent administration 9%
Elastomeric use 9%

Improving services by looking at variation – IV access

Alder Hey

- Midline 43%
- Cannula 38%
- Portacath 8%
- Hickman 6%
- PICC 5%

Improving services by looking at variation – pathologies managed

Alder Hey
Bronchiectasis 27%
Septicaemia 16%
Periorbital cellulitis 8%

Sheffield
OA 14%
Meningitis 14%
UTI 12%
Bronchiectasis 12%

Evelina
OA 20%
Post-op infection 8%
Mastoiditis 8%

Bristol
Septicaemia 39%
OA 18%
UTI 14.5%

Southampton
OA 49%
Post-op infection 11%
Resp infection 9%

Summary

- Some predictable differences between adult and paediatric OPAT services
  - Pathologies managed
  - IV access
- Some fundamental differences
  - Economy of scale and service configuration
- Opportunities for paediatric services
  - Collaboration and improvement of p-OPAT delivery by shared learning
  - Expansion of ambulatory OPAT to DGHs

Acknowledgements

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Thank-you

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