KESSEL-PAMS
Kent, East Sussex and South East London
Paediatric Antimicrobial Stewardship

Evelina London
Children's Healthcare

KESSEL-PAMS

Point Prevalence Survey (1): Antimicrobial Prescribing Quality Audit

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This **point prevalence survey** serves as a regional antibiotic prescribing quality audit and feedback system.

It aims to monitor the **quality of antimicrobial use** and feed back to prescribers, for ongoing service evaluation and quality improvement purposes.

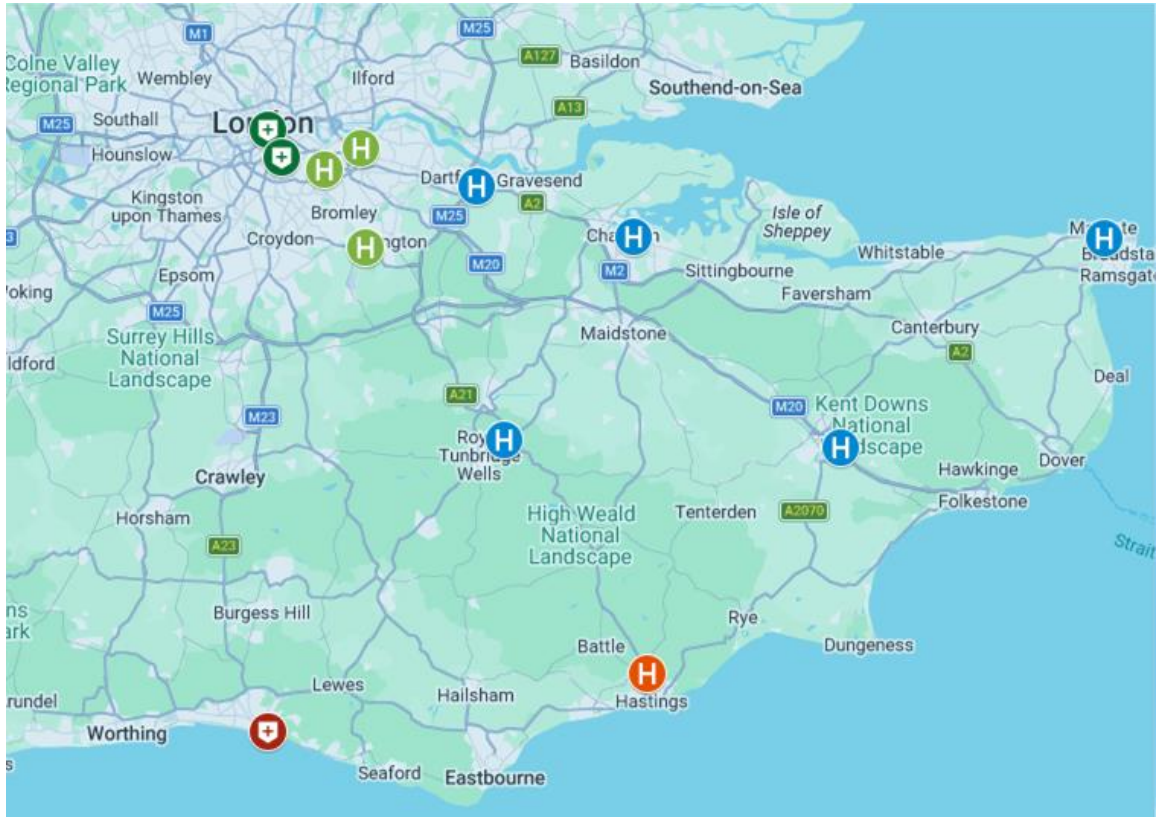
Responses

South Thames Paediatric Network

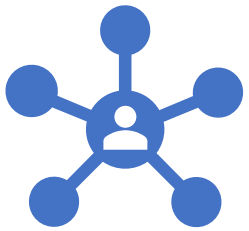
Transforming Healthcare for Children and Young People

Responses received from **11 hospitals** in South Thames Paediatric Network:

- Conquest Hospital
- Darrent Valley Hospital
- Evelina London Children's Hospital
- Kings College Hospital
- Medway Maritime Hospital
- Princess Royal University Hospital
- Queen Elizabeth Hospital (Woolwich)
- Royal Alexandra Children's Hospital
- Tunbridge Wells Hospital (Pembury)
- University Hospital Lewisham
- William Harvey Hospital

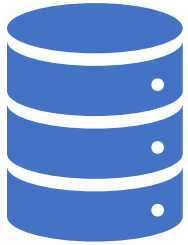


Excluded data



Worthing and St Richard's – outside network

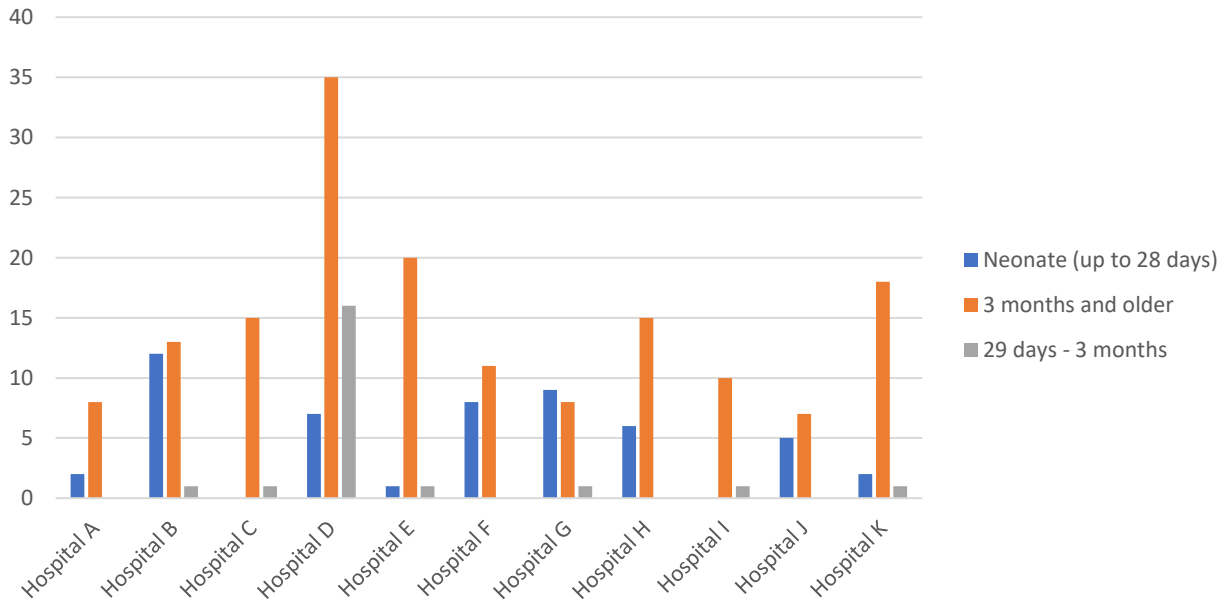
Subspecialties (e.g. liver) for purpose of analysis – raw data returned complete



Incomplete data sets e.g. no antimicrobial stated

Demographics

- **234 submissions** on inpatients on antimicrobials across 2 days.
- Total number of antimicrobials prescribed was **355**.



	Total
1 Antimicrobial	133
2 Antimicrobials	81
3 Antimicrobials	20
Total	234

Total	Age (no.)
Neonate (up to 28 days)	52
29 days - 3 months	22
3 months and older	160
Total	234

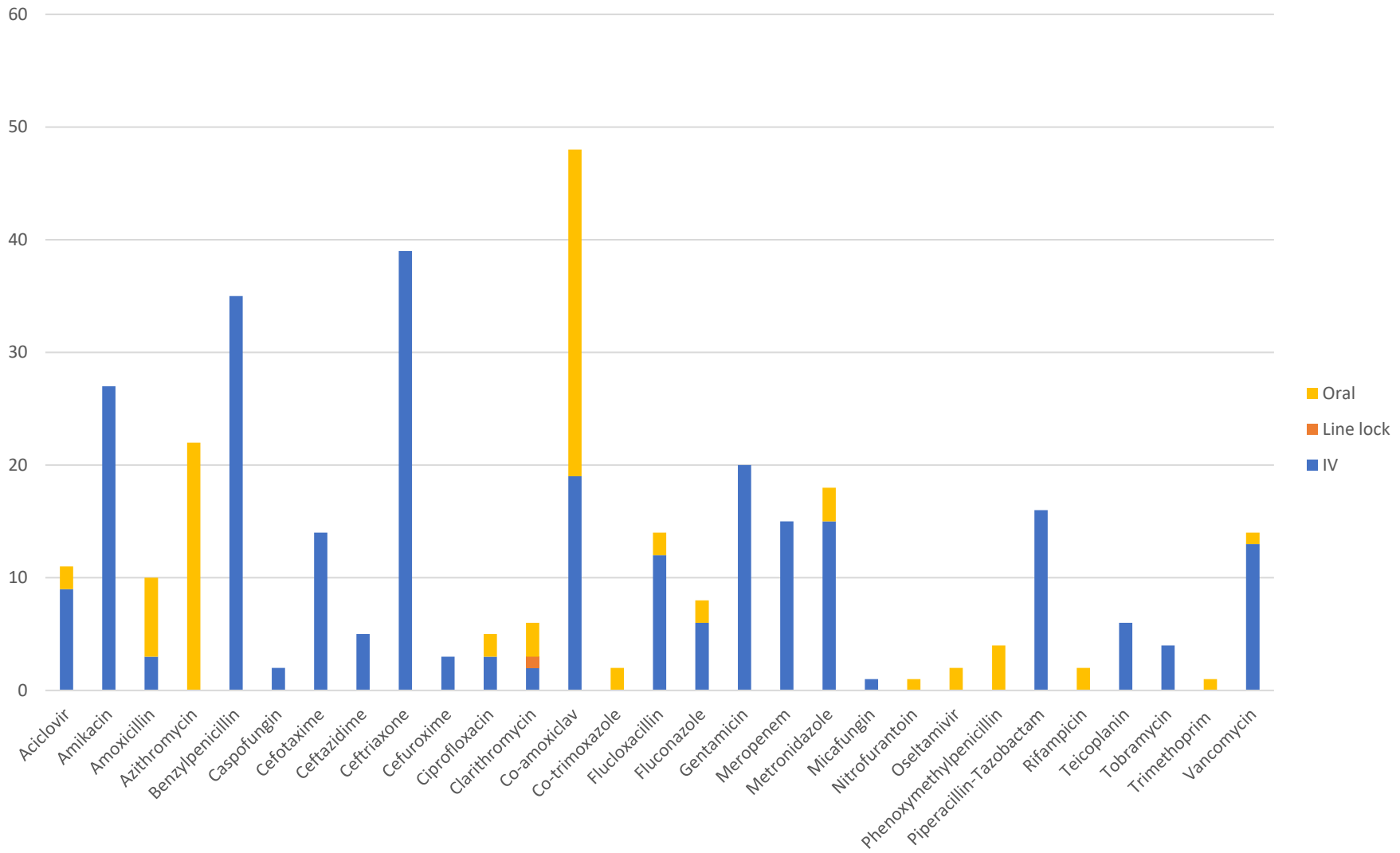
Specialties

Specialty	
General Paediatrics	56%
Neonatal/postnatal (i.e. born in hospital, not yet discharged)	28%
Surgical including General Surgery, Orthopaedics, ENT	16%
Total	234

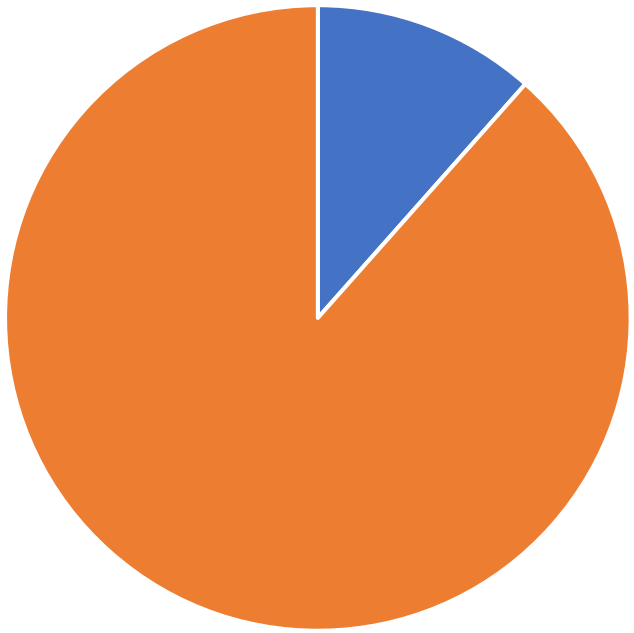
Hospital A	
General Paediatrics	80%
Neonatal/postnatal (i.e. born in hospital, not yet discharged)	20%
Hospital B	
General Paediatrics	54%
Neonatal/postnatal (i.e. born in hospital, not yet discharged)	46%
Hospital C	
General Paediatrics	75%
Surgical including General Surgery, Orthopaedics, ENT	25%
Hospital D	
General Paediatrics	21%
Neonatal/postnatal (i.e. born in hospital, not yet discharged)	34%
Surgical including General Surgery, Orthopaedics, ENT	45%
Hospital E	
General Paediatrics	91%
Neonatal/postnatal (i.e. born in hospital, not yet discharged)	5%
Surgical including General Surgery, Orthopaedics, ENT	5%
Hospital F	
General Paediatrics	42%
Neonatal/postnatal (i.e. born in hospital, not yet discharged)	42%
Surgical including General Surgery, Orthopaedics, ENT	16%
Hospital G	
General Paediatrics	50%
Neonatal/postnatal (i.e. born in hospital, not yet discharged)	50%
Hospital H	
General Paediatrics	62%
Neonatal/postnatal (i.e. born in hospital, not yet discharged)	29%
Surgical including General Surgery, Orthopaedics, ENT	10%
Hospital I	
General Paediatrics	91%
Surgical including General Surgery, Orthopaedics, ENT	9%
Hospital J	
General Paediatrics	58%
Neonatal/postnatal (i.e. born in hospital, not yet discharged)	42%
Hospital K	
General Paediatrics	86%
Neonatal/postnatal (i.e. born in hospital, not yet discharged)	10%
Surgical including General Surgery, Orthopaedics, ENT	5%

Antimicrobials

Antimicrobial		
Aciclovir	11	3%
Amikacin	**27**	**8%**
Amoxicillin	10	3%
Azithromycin	22	6%
Benzylpenicillin	**35**	**10%**
Caspofungin	2	1%
Cefotaxime	14	4%
Ceftazidime	5	1%
Ceftriaxone	**39**	**11%**
Cefuroxime	3	1%
Ciprofloxacin	5	1%
Clarithromycin	6	2%
Co-amoxiclav	**48**	**14%**
Co-trimoxazole	2	1%
Flucloxacillin	14	4%
Fluconazole	8	2%
Gentamicin	20	6%
Meropenem	15	4%
Metronidazole	18	5%
Micafungin	1	0%
Nitrofurantoin	1	0%
Oseltamivir	2	1%
Phenoxymethylpenicillin	4	1%
Piperacillin-Tazobactam	16	5%
Rifampicin	2	1%
Teicoplanin	6	2%
Tobramycin	4	1%
Trimethoprim	1	0%
Vancomycin	14	4%
Total	355	100%



Treatment vs prophylaxis



Prophylaxis	12%
Treatment	88%

Route: Treatment		Total: 314
	No.	%
IV	**249**	**79%**
Suspected sepsis or deep seated infection	199	80%
Vomiting or concerns of enteral absorption	24	10%
Known recurrent resistant organism	13	5%
Poor oral intake / refusing oral medication	11	4%
Other	2	1%
Oral	**64**	**20%**
Line lock	**1**	**0%**

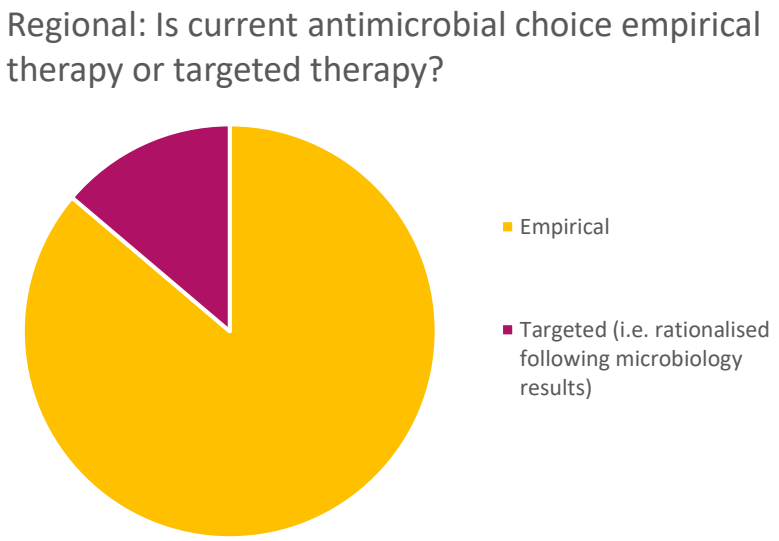
Route: Prophylaxis		Total: 41
	No.	%
IV	**20**	**49%**
Vomiting or concerns of enteral absorption	7	35%
Suspected sepsis or deep seated infection	6	30%
Surgical prophylaxis	5	25%
Other	1	5%
Poor oral intake / refusing oral medication	1	5%
Oral	**21**	**51%**

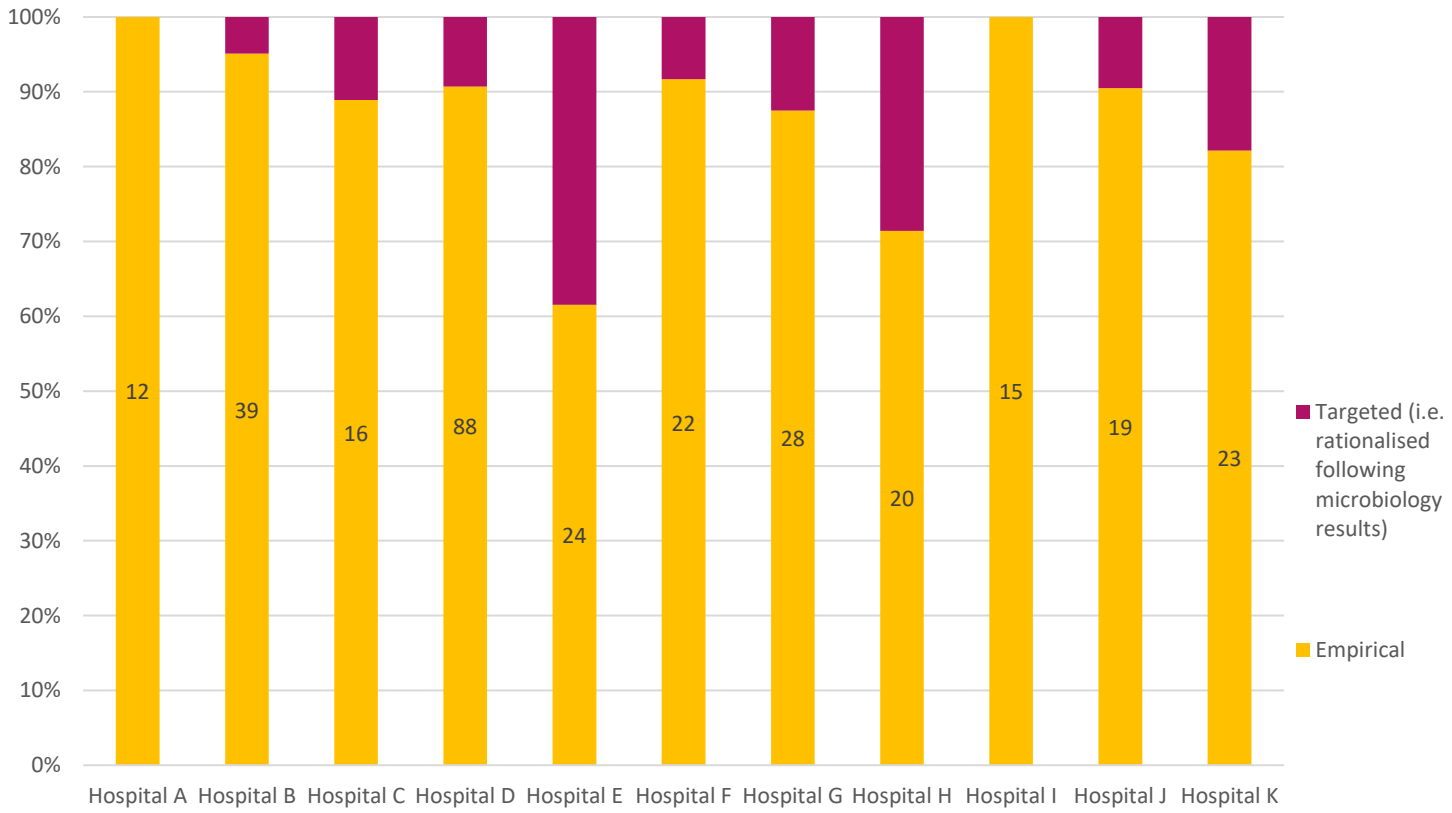
Indications

Treatment Indication	No.	%
(NEO) Early-onset neonatal sepsis (<72h of age)	64	20%
(RESP) Lower respiratory tract infection	55	18%
Sepsis	52	15%
(GAST) Other abdominal infections	30	8%
(NEO) Late-onset neonatal sepsis (>72h of age)	17	6%
(ENT) Otitis media / Other i.e Dental	13	4%
(RESP) Exacerbation of chronic lung disease (i.e. CF)	13	4%
(ENT) Tonsillitis / Pharyngitis	12	5%
(CNS) Meningitis/Encephalitis	12	4%
Other	10	4%
(SURG) Appendicitis	6	3%
(SST) Wound infection	5	1%
(UTI) Upper (i.e. pyelonephritis)	4	2%
(EYE) Peri- / Orbital Cellulitis	4	2%
Central line infection	2	0%
(SURG) Other surgical abdominal infections	2	1%
(BJ) Septic arthritis	2	1%
Endocarditis	2	1%
(CNS) Intracranial collections/brain abscess	2	0%
(SST) Cellulitis / Impetigo	2	1%
(BJ) Osteomyelitis	2	1%
(SSI) Surgical site infection	2	0%
(SST) Lymphadenitis	1	0%
Total	**314**	**100%**

Prophylaxis Indication	No.	%
Surgical	16	39%
Respiratory	10	24%
Immune compromised (i.e. Haem/onc)	4	10%
Pre-term prophylaxis	4	10%
VZV	2	5%
Urinary	2	5%
PPROM 25hrs, Chorioamnionitis	2	5%
Familial intrahepatic cholestasis	1	2%
Total	**41**	**100%**

Is current antimicrobial choice empirical therapy or targeted therapy?

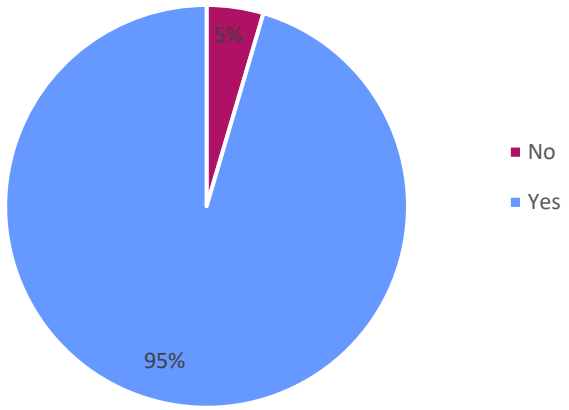




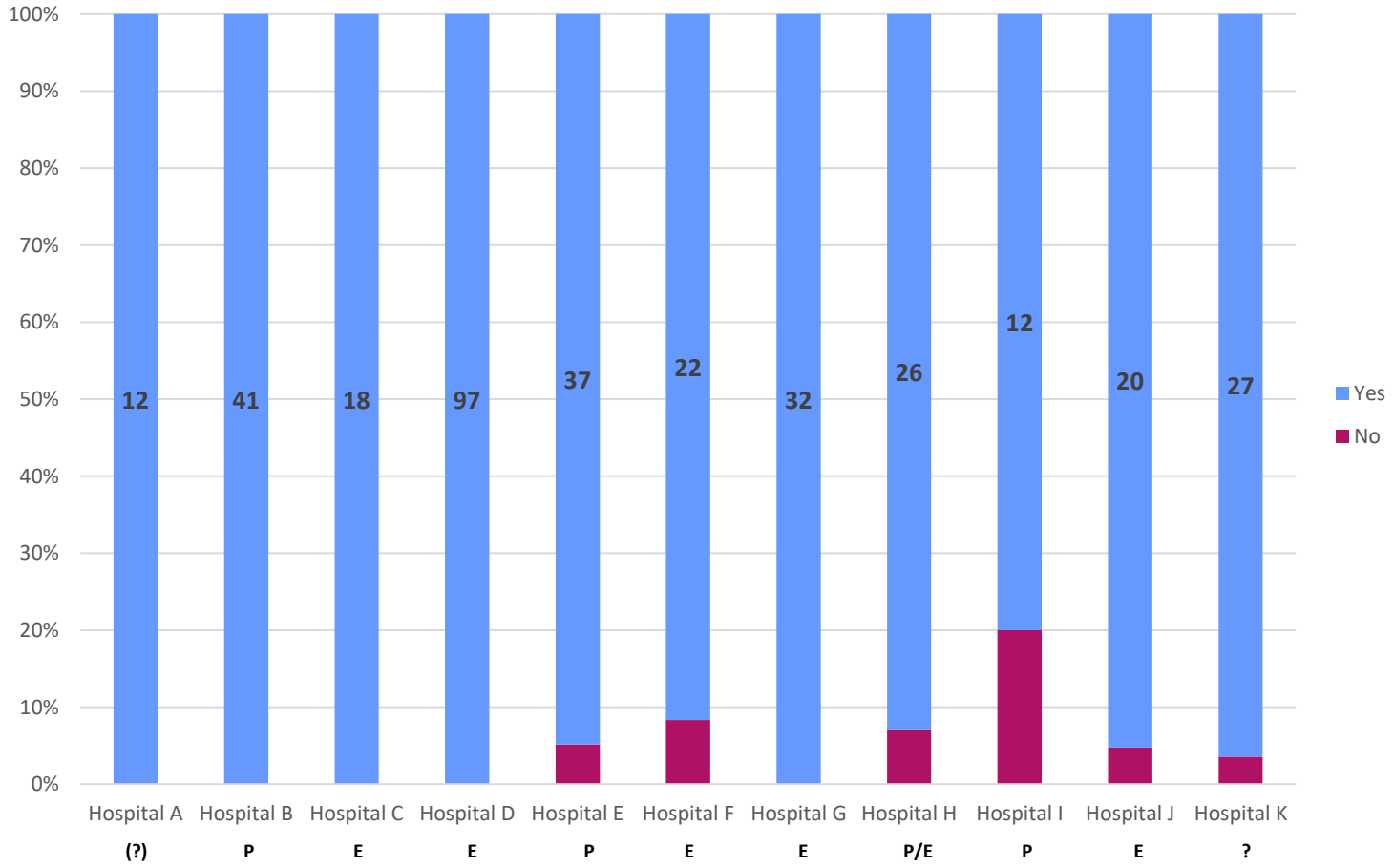
Quality Assessment

Was indication clearly documented in prescription or clinical notes?

Regional: Was indication clearly documented in prescription or clinical notes?

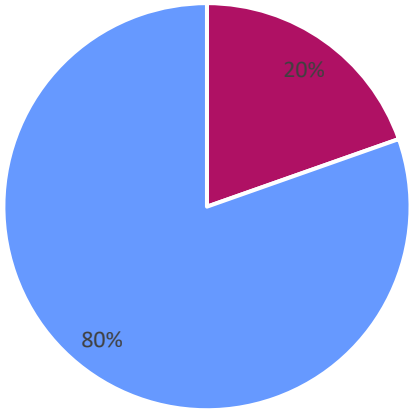


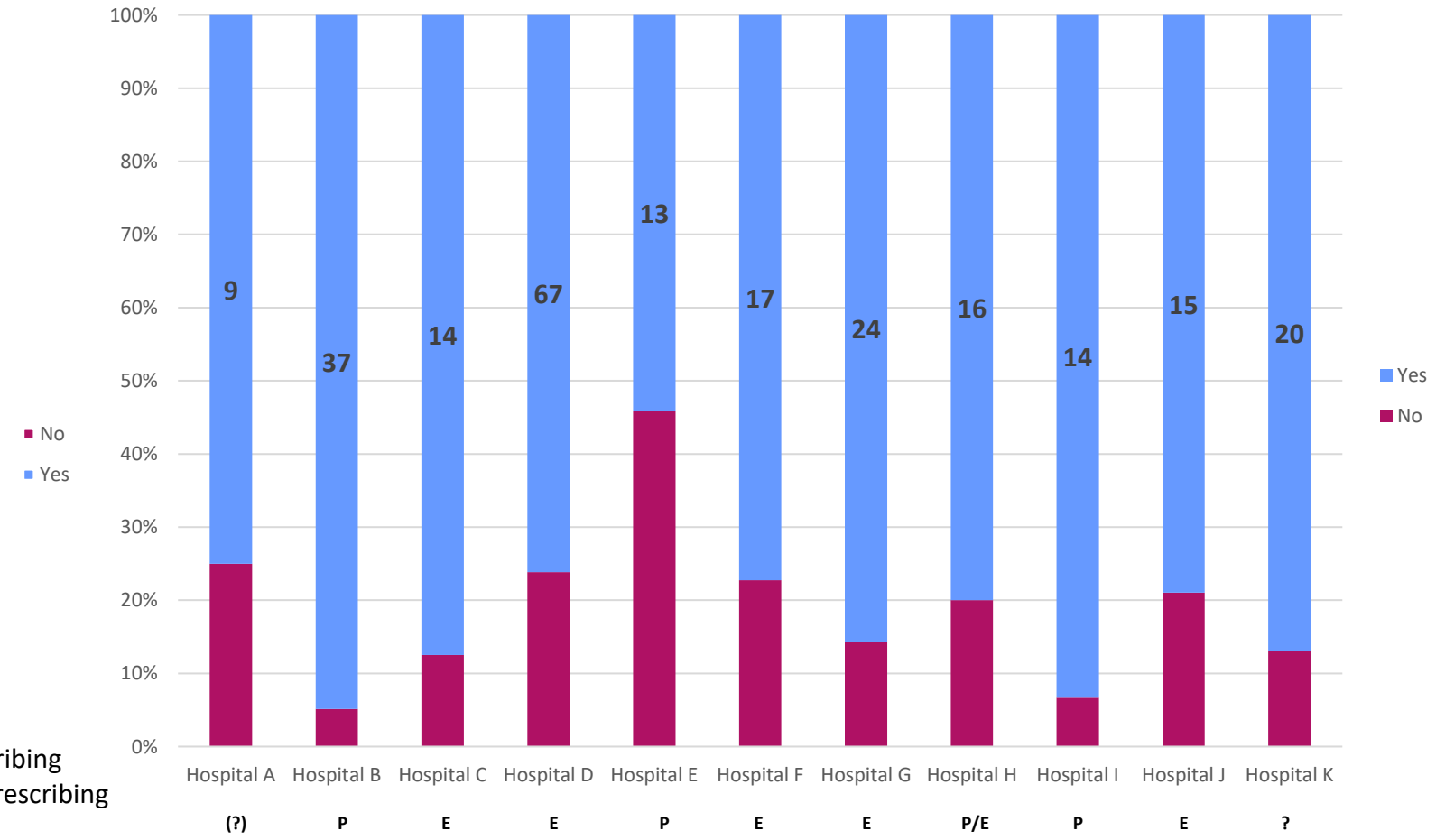
P – paper prescribing
E – electronic prescribing
? – unknown



Is the current antimicrobial prescribed in line with local empirical guidelines or UK-PAS recommendations?

Regional: Is the current antimicrobial prescribed in line with local empirical guidelines or UK-PAS recommendations?





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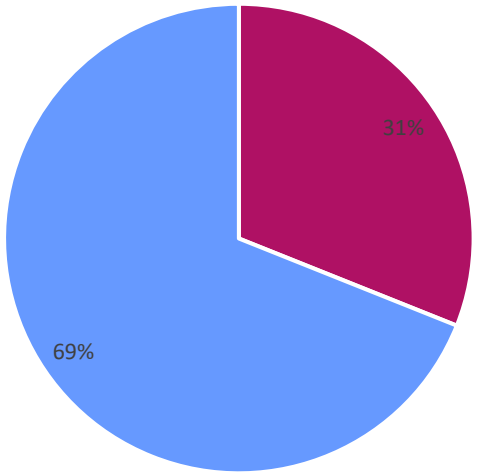
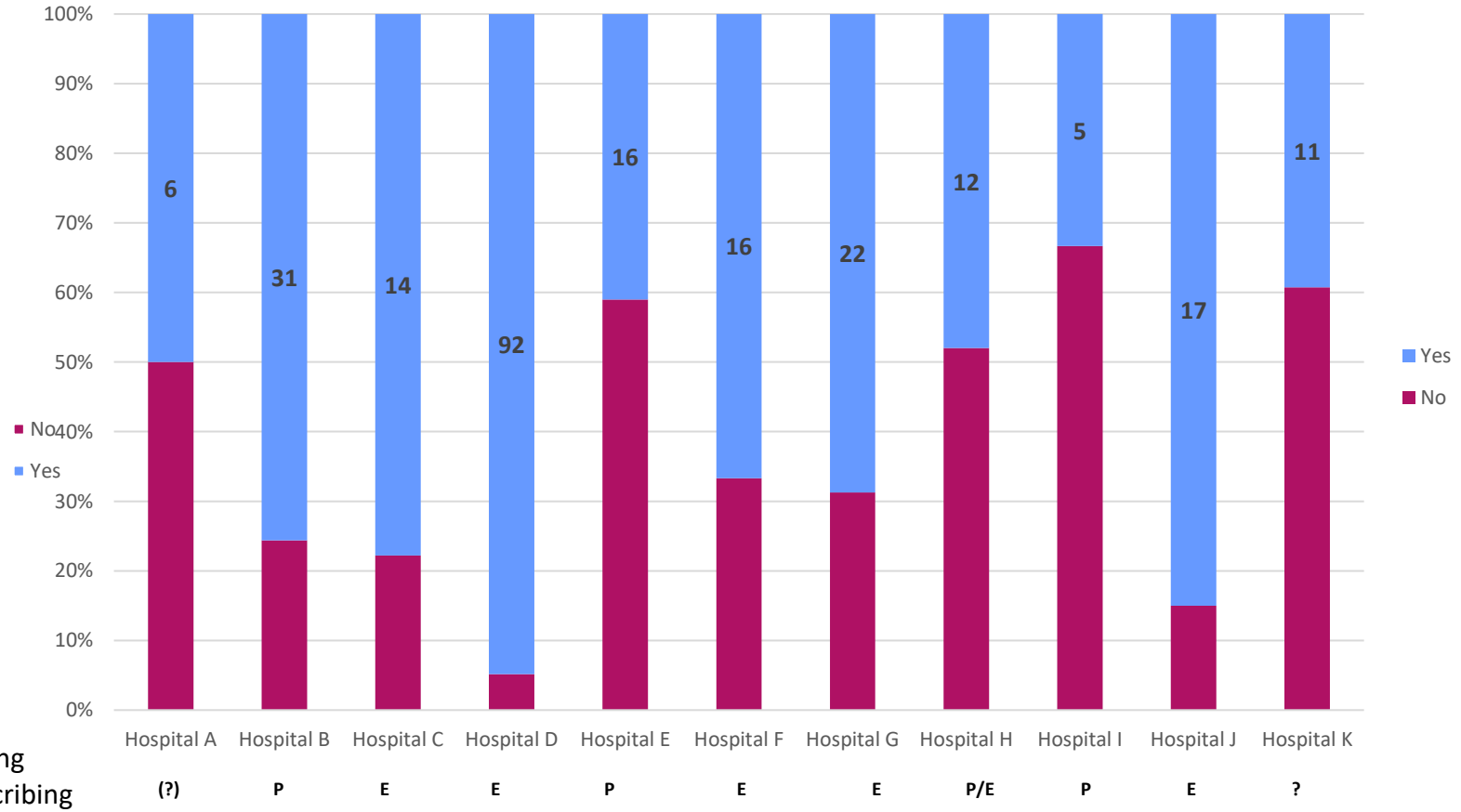
Is duration or review date documented in prescription or clinical notes?

Regional: Is duration or review date documented in prescription or clinical notes?





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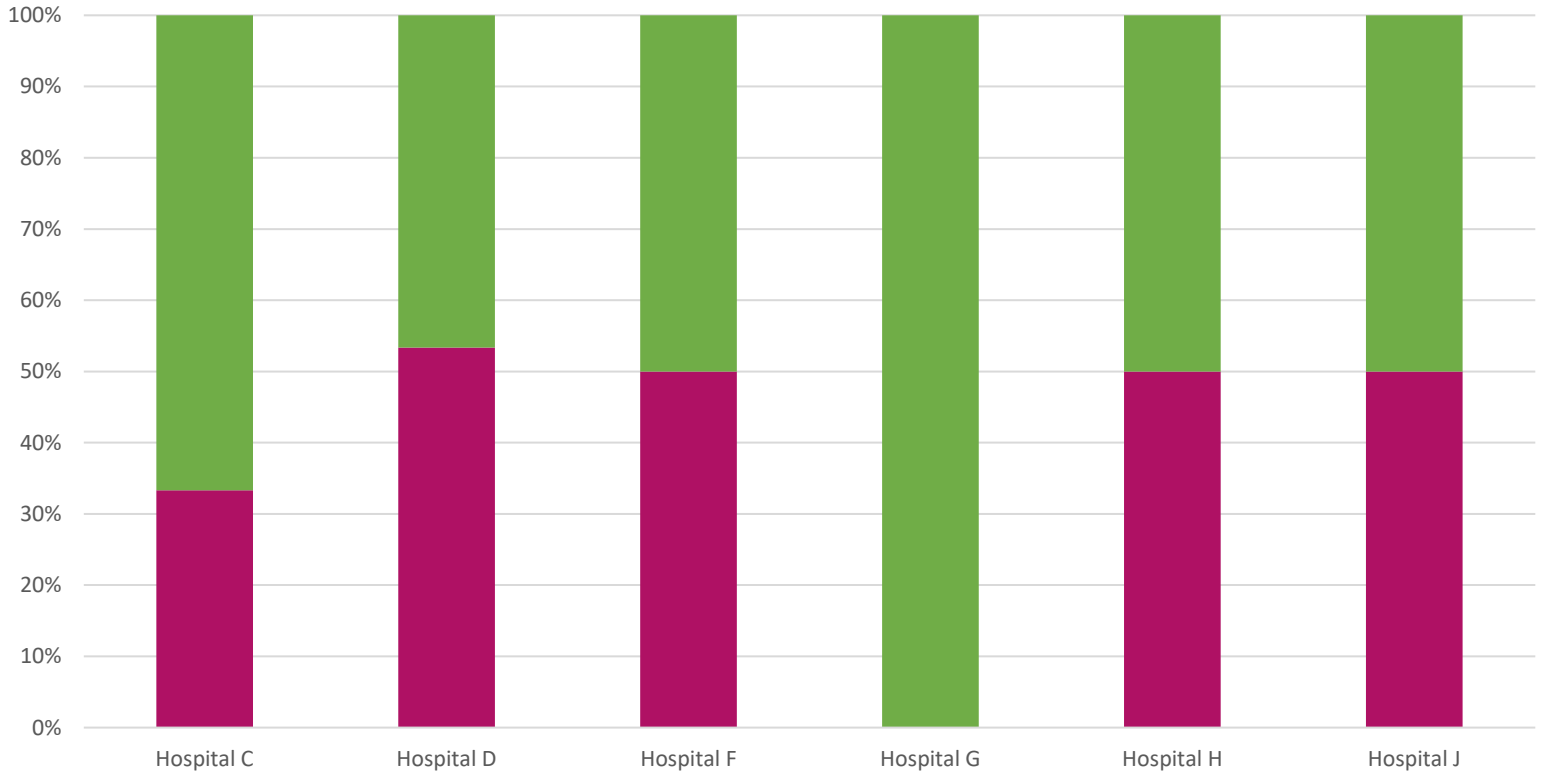
Summary

Hospital	Indication documented?	Duration documented?	Guideline concordant?
Hospital A	100%	50%	75%
Hospital B	100%	76%	95%
Hospital C	100%	78%	88%
Hospital D	100%	95%	76%
Hospital E	95%	41%	54%
Hospital F	92%	67%	77%
Hospital G	100%	69%	86%
Hospital H	93%	48%	80%
Hospital I	80%	33%	93%
Hospital J	95%	85%	79%
Hospital K	96%	39%	87%

Of those with sensitivities available, how many prescriptions were rationalised?



	Rationalised once sensitivities available		
	No	Yes	
Hospital C	1	2	67%
Hospital D	8	7	47%
Hospital F	2	2	50%
Hospital G	0	6	100%
Hospital H	2	2	50%
Hospital J	3	3	50%
Total	16	22	

Conclusions

- Large majority of prescriptions were treating **empirically** (86%).
  - 80% of these followed local / UK–PAS guidelines

- Regionally**, 95% of prescriptions had clear indication.**
- 4 hospitals had over 50% treatment without review date/duration.

- Of those with sensitivities available, 1 hospital rationalised all antimicrobials, 4 hospitals had ≤50% rationalised.

Many thanks

Please share your thoughts...