

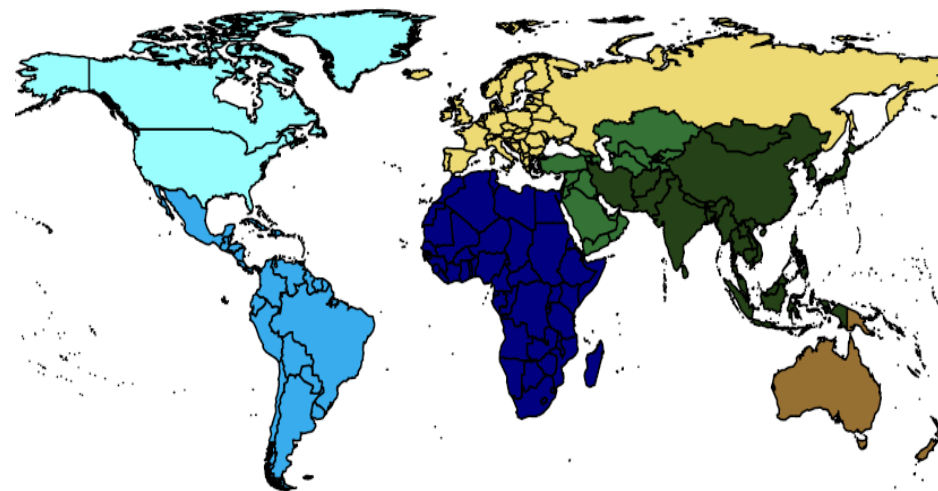
Global Point Prevalence Survey of Antimicrobial Consumption and Resistance



Hospital ID: unknown
Survey: 2020–P3

Participation to Global-PPS by UN macro-geographical regions, year 2020

	Number of countries	Number of hospitals
North America	2	6
South America	3	3
Africa	6	28
Europe	4	12
West & Central Asia	1	1
East & South Asia	7	52
Australia & New Zealand	0	0



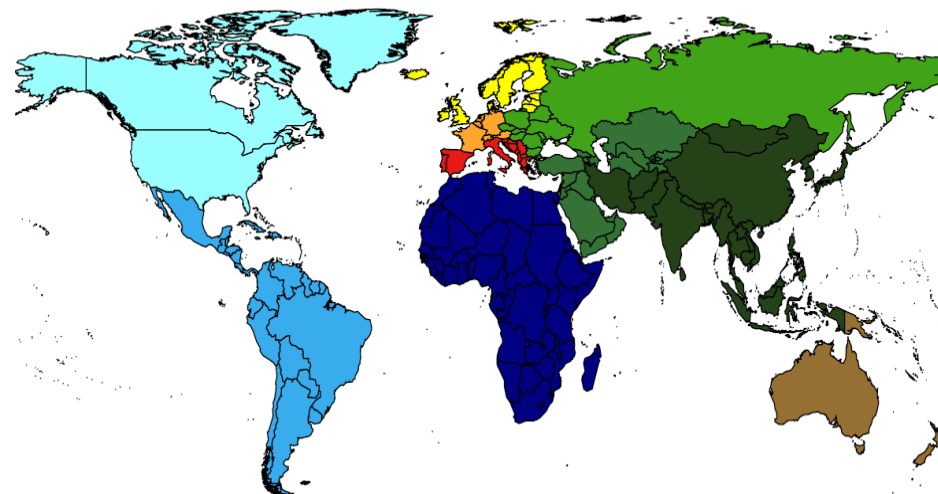
North America
Latin America
Africa

West & Central Asia
East & South Asia

Europe
Australia & New Zealand

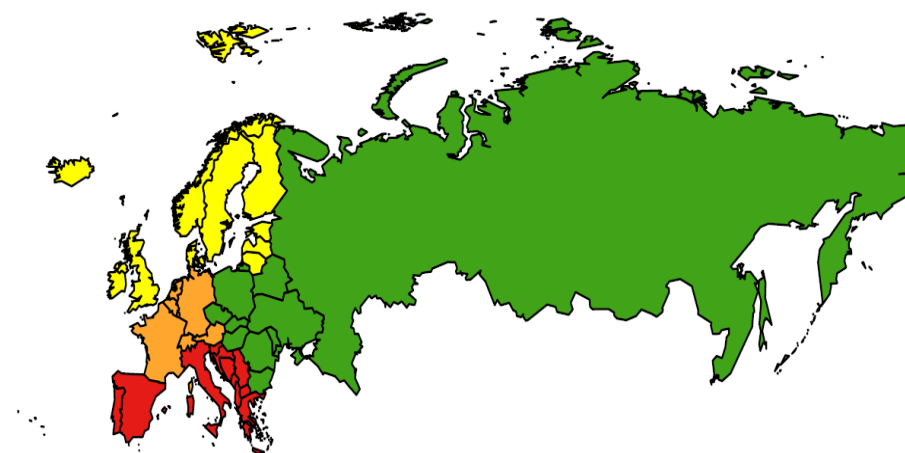
Participation to Global-PPS by UN macro-geographical subregion, year 2020

	Number of countries	Number of hospitals
North America	2	6
South America	3	3
Africa	6	28
North Europe	1	4
West Europe	2	6
South Europe	1	2
East Europe	0	0
West & Central Asia	1	1
East & South Asia	7	52
Australia & New Zealand	0	0



■ North America
■ Latin America
■ Africa
■ North Europe
■ West Europe

■ South Europe
■ East Europe
■ West & Central Asia
■ East & South Asia
■ Australia & New Zealand



Explanatory notes for this feedback report

Below each slide extra information is provided to help you to correctly interpret the results.

The slides present the results for your hospital, your country, your region according to the UN classification, merged results on the hospital type for your region and Europe.

Below each slide you find the designation of your own country, your region and hospital type displayed.

Reference data include validated data from the current or most recent year with a minimum number of 4 hospitals for country and hospital type, and at least 25 hospitals for continent.

Reference data: country – 2019 (N = 4), continent – 2020 (N = 52), hospital type – 2020 (N = 35), EU – 2019 (N = 106).

Results at country level are not displayed if there are less than 4 hospitals participating during the current or any of the previous years.

Overall antimicrobial prevalence by region and type of adult ward

	Total	AMW	HO-AMW	T-AMW	P-AMW	ASW	AICU
North America	37.4	32.9	39.1	63.6	0.0	42.9	51.6
South America	46.8	35.8	76.9	0.0	0.0	37.2	66.7
Africa	59.5	59.4	50.0	0.0	75.7	53.8	94.7
North Europe	0.0	0.0	0.0	0.0	0.0	0.0	0.0
West Europe	25.7	22.8	16.7	0.0	36.8	26.8	45.6
South Europe	50.7	53.3	0.0	0.0	0.0	28.6	0.0
East Europe	0.0	0.0	0.0	0.0	0.0	0.0	0.0
West & Central Asia	60.6	0.0	0.0	0.0	0.0	0.0	60.6
East & South Asia	47.8	43.7	45.7	94.3	39.0	52.2	71.5
Australia & New Zealand	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Our hospital 2020-P3	55.1	51.4	70.5	100.0	51.5	55.5	52.5
Country	46.7	44.3	53.7	89.5	44.2	48.6	66.9

Antimicrobial prevalence (%): $100 \times (\text{number of treated patients} / \text{number of registered patients according to UN macro-geographical subregions})$.

Total = Overall antimicrobial prevalence in adult wards; AMW = Adult Medical Ward; HO-AMW = Haematology-Oncology AMW; T-AMW = Transplant (BMT/solid) AMW; P-AMW = Pneumology AMW; ASW = Adult Surgical Ward; AICU = Adult Intensive Care Unit.

Overall antimicrobial prevalence by region and type of child or neonatal ward

	Total	PMW	HO-PMW	T-PMW	PSW	PICU	NMW	NICU
North America	6.0	10.0	0.0	0.0	0.0	4.2	0.0	0.0
South America	57.9	36.4	0.0	0.0	0.0	0.0	87.5	0.0
Africa	76.0	82.9	36.8	0.0	45.5	0.0	81.4	73.7
North Europe	31.3	32.1	53.7	0.0	4.5	42.5	14.6	25.0
West Europe	31.4	34.5	93.8	0.0	0.0	80.0	3.2	17.9
South Europe	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0
East Europe	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
West & Central Asia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
East & South Asia	56.7	56.5	66.7	100.0	79.1	70.8	31.2	63.0
Australia & New Zealand	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Our hospital 2020-P3	24.3	35.7	100.0	100.0	0.0	66.7	0.0	11.8
Country	32.6	36.9	77.8	100.0	0.0	62.5	4.4	33.3

Antimicrobial prevalence (%): $100 \times (\text{number of treated patients} / \text{number of registered patients according to UN macro-geographical subregions})$.

Total = Overall antimicrobial prevalence in wards admitting children and neonates; PMW = Paediatric Medical Ward;
 HO-PMW = Haematology-Oncology PMW; T-PMW = Transplant (BMT/solid) PMW; PSW = Paediatric Surgical Ward;
 PICU = Paediatric Intensive Care Unit; NMW = Neonatal Medical Ward; NICU = Neonatal Intensive Care Unit.

Antimicrobial prevalence in adult wards

	Total	AMW	HO-AMW	T-AMW	P-AMW	ASW	AICU
Our hospital 2020-P3							
patients (N)	809	469	88	14	33	146	59
treated patients (%)	55.1	51.4	70.5	100	51.5	55.5	52.5
Country							
patients (N)	3972	2681	123	19	104	888	157
treated patients (%)	46.7	44.3	53.7	89.5	44.2	48.6	66.9
Continent							
patients (N)	10470	6605	468	88	154	2573	582
treated patients (%)	47.8	43.7	45.7	94.3	39	52.2	71.5
Hospital type							
patients (N)	6356	3570	317	53	149	1836	431
treated patients (%)	52.9	51.4	53.9	92.5	36.9	51.4	70.8
Europe							
patients (N)	24366	14565	983	56	880	6684	1198
treated patients (%)	29.4	24.7	40.6	32.1	45.6	31	56.7

Patients (N) = number of admitted adults.

Treated patients (%) = 100*(number of adults treated with at least one antimicrobial/number of admitted adults).

Country: Country ; Continent: East & South Asia ; Hospital type: Tertiary hospital

Antimicrobial prevalence in paediatric wards

	Total	PMW	HO-PMW	T-PMW	PSW	PICU
Our hospital 2020-P3						
patients (N)	51	42	2	4	0	3
treated patients (%)	45.1	35.7	100	100	0	66.7
Country						
patients (N)	87	65	9	5	0	8
treated patients (%)	47.1	36.9	77.8	100	0	62.5
Continent						
patients (N)	806	664	30	4	43	65
treated patients (%)	59.4	56.5	66.7	100	79.1	70.8
Hospital type						
patients (N)	649	528	26	4	36	55
treated patients (%)	63.6	60.2	76.9	100	83.3	74.5
Europe						
patients (N)	2080	1654	144	10	162	110
treated patients (%)	35	31.5	60.4	30	34.6	55.5

Patients (N) = Number of admitted children in the hospital, country, UN macro-geographical region to which the hospital belongs; and the continental results for the hospital type to which the hospital belongs (possible types are primary + secondary level, tertiary level, paediatric and infectious diseases + specialized hospital).

Treated patients (%) = $100 \times (\text{number of children treated with at least one antimicrobial} / \text{number of admitted children})$.

Country: Country ; Continent: East & South Asia ; Hospital type: Tertiary hospital

Antimicrobial prevalence in neonatal wards

	Total	NMW	NICU
Our hospital 2020–P3			
patients (N)	52	35	17
treated patients (%)	3.8	0	11.8
Country			
patients (N)	57	45	12
treated patients (%)	10.5	4.4	33.3
Continent			
patients (N)	513	170	343
treated patients (%)	52.4	31.2	63
Hospital type			
patients (N)	425	152	273
treated patients (%)	49.9	27	62.6
Europe			
patients (N)	817	516	301
treated patients (%)	12.7	9.5	18.3

Patients (N) = Number of admitted neonates in the hospital, country, UN macro–geographical region to which the hospital belongs; and the continental results for the hospital type to which the hospital belongs (possible types are primary + secondary level, tertiary level, paediatric and infectious diseases + specialized hospital).

Treated patients (%) = $100 \times (\text{number of neonates treated with at least one antimicrobial} / \text{number of admitted neonates})$.

Country: Country ; Continent: East & South Asia ; Hospital type: Tertiary hospital

Antimicrobial prevalence (%) by activity

	Hospital 2020–P3	Country	Continent	Hospital type	Europe
Adults					
Medical	53.8	46.3	44.9	52.6	27.4
Surgical	58.2	44.6	50.1	50.5	29.6
ICU	52.5	68.4	67.7	65.9	55.3
Children					
Medical	43.6	42.7	56.7	61.2	34.3
Surgical	44.4	100.0	72.5	76.4	30.0
ICU	66.7	62.5	65.2	67.1	55.4
Neonates					
GNMW	0.0	4.4	31.2	27.0	9.5
NICU	11.8	33.3	63.0	62.6	18.3

Antimicrobial prevalence = 100*(number of treated patients/number of admitted patients)
 Antimicrobial prevalence by activity for adults, children and neonates separately for the hospital, country, continent to which the hospital belongs; and the continental results for the hospital type to which the hospital belongs (possible types are primary + secondary level, tertiary level, paediatric and infectious diseases + specialized hospital).

Country: Country ; Continent: East & South Asia ; Hospital type: Tertiary hospital

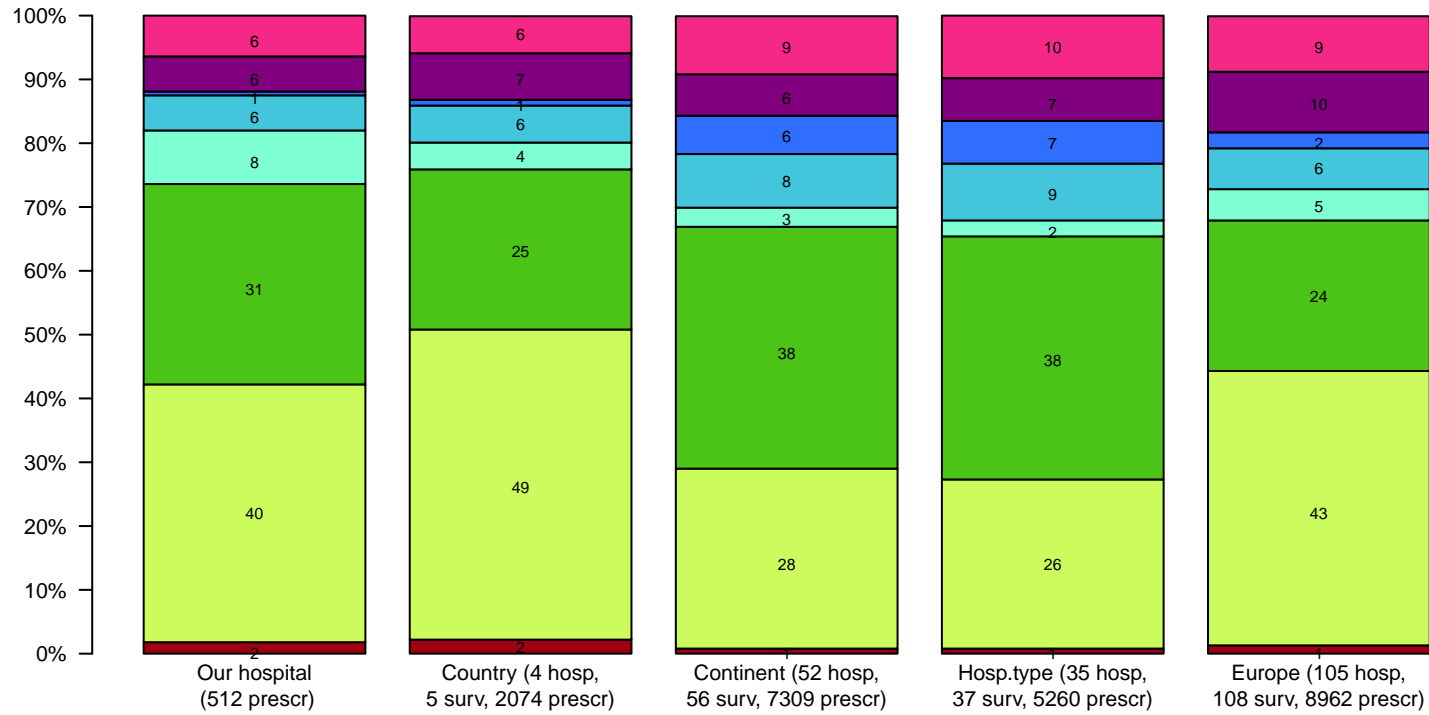
Prevalence of patients prescribed at least one antimicrobial on day of survey

	Our hospital 2020–P3		Country		Continent		Hospital type		Europe	
	N	%	N	%	N	%	N	%	N	%
N admitted patients (=denominator)	912		4116		11789		7430		27263	
N patients on antimicrobials	471	51.6	1902	46.2	5748	48.8	3985	53.6	7999	29.3
N patients with antibacterials for systemic use	434	47.6	1779	43.2	5491	46.6	3825	51.5	7633	28.0
N patients with antimycotics or antifungals for systemic use	32	3.5	66	1.6	316	2.7	257	3.5	371	1.4
N patients with drugs for treatment of tuberculosis	4	0.4	43	1.0	149	1.3	99	1.3	108	0.4
N patients with antivirals for systemic use	85	9.3	163	4.0	294	2.5	224	3.0	398	1.5
N patients with antibiotics used as intestinal anti–infectives	17	1.9	56	1.4	81	0.7	53	0.7	146	0.5
N patients with nitroimidazole derivatives	8	0.9	40	1.0	77	0.7	52	0.7	128	0.5
N patients with antimalarials	7	0.8	13	0.3	21	0.2	11	0.1	21	0.1

N = number. ATC codes used : antibacterials for systemic use = J01; antimycotics = D01BA; antifungals for systemic use = J02; drug for the treatment of tuberculosis = J04A; antivirals for systemic use = J05; antibiotics used as intestinal anti–infectives = A07A; nitroimidazole derivatives = P01AB; antimalarials = P01B.

Country: Country ; Continent: East & South Asia ; Hospital type: Tertiary hospital

Overall proportional antibiotic use



- Tetracyclines
- Penicillins
- Other beta-lactams
- Sulfonamides and Trimethoprim
- Macrolides, Lincosamides and Streptogramins
- Aminoglycosides
- Quinolones
- Other antibacterials

Percentage of antibacterials for systemic use (ATC J01) at ATC3 level (pharmacological subgroup). Proportional antibiotic use below 0.5% is not reported.

hosp = hospitals, surv = surveys, prescr = prescriptions.

Country: Country ; Continent: East & South Asia ; Hospital type: Tertiary hospital

Proportional antibiotic use (% of prescriptions)

ATC4	Antibiotics Subgroup	Our Hospital	Country	Continent	Type	Europe
J01AA	Tetracyclines	1.8	2.2	0.8	0.8	1.3
J01CA	Penicillins with extended spectrum	1.8	1.2	6.5	6.1	7.1
J01CE	Beta-lactamase sensitive penicillins	1.4	1.4	0.7	0.7	1.2
J01CF	Beta-lactamase resistant penicillins	1.4	1.1	0.7	0.7	2.9
J01CR	Penicillins incl. beta-lactam. inh.	35.9	45.0	20.3	19.0	31.7
J01DB	First-generation cephalosporins	10.0	8.3	4.6	4.0	8.2
J01DD	Third-generation cephalosporins	11.7	8.5	15.9	15.9	7.2
J01DE	Fourth-generation cephalosporins	1.0	0.8	2.0	2.0	0.7
J01DH	Carbapenems	8.4	6.8	6.9	7.6	3.7
J01EE	Comb. Sulfonamides/trimethoprim	8.4	4.2	3.0	2.5	4.7
J01FA	Macrolides	2.7	4.1	5.2	5.2	4.0
J01FF	Lincosamides	2.7	1.7	3.2	3.6	2.4
J01MA	Fluoroquinolones	5.5	7.3	6.5	6.7	9.5
J01XA	Glycopeptide antibacterials	3.7	2.9	3.2	3.4	3.5
J01XD	Imidazole derivatives	2.3	2.6	4.5	4.7	2.9

Our hospital: 512 prescriptions, 434 treated patients; Country: 2074 prescriptions, 4 hospitals, 5 surveys
 Continent: 7309 prescriptions, 52 hospitals, 56 surveys; Type: 5260 prescriptions, 35 hospitals, 37 surveys
 Europe: 8962 prescriptions, 105 hospitals, 108 surveys

Country: Country ; Continent: East & South Asia ; Hospital type: Tertiary hospital

10 most prescribed ATC4 at country level plus 5 extra ATC4 at hospital level which do not fall within top 10 at country level

Proportional antibiotic use (% of prescriptions) – Adult Medical Ward

ATC4	Antibiotics Subgroup	Our Hospital	Country	Continent	Type	Europe
J01AA	Tetracyclines	1.2	2.5	1.0	1.0	1.4
J01CA	Penicillins with extended spectrum	2.0	1.0	4.9	5.0	8.1
J01CE	Beta-lactamase sensitive penicillins	1.6	0.9	0.8	0.7	1.0
J01CF	Beta-lactamase resistant penicillins	1.6	1.3	0.4	0.2	3.0
J01CR	Penicillins incl. beta-lactam. inh.	39.3	47.8	25.0	23.8	37.6
J01DB	First-generation cephalosporins	8.9	8.3	4.6	3.3	2.1
J01DD	Third-generation cephalosporins	10.1	8.4	17.0	16.6	7.9
J01DE	Fourth-generation cephalosporins	1.2	0.9	1.6	1.6	0.2
J01DH	Carbapenems	8.9	5.4	7.1	7.8	3.1
J01EE	Comb. Sulfonamides/trimethoprim	3.6	2.7	1.9	1.3	3.6
J01FA	Macrolides	2.8	4.4	8.3	8.7	4.7
J01FF	Lincosamides	4.9	1.9	3.8	4.7	2.0
J01MA	Fluoroquinolones	6.9	8.5	6.5	6.6	11.7
J01XA	Glycopeptide antibacterials	4.9	2.7	2.7	2.7	2.1
J01XD	Imidazole derivatives	1.6	2.1	3.7	3.7	1.9

Our hospital: 247 prescriptions, 221 treated patients; Country: 1264 prescriptions, 4 hospitals, 5 surveys
 Continent: 3451 prescriptions, 50 hospitals, 54 surveys; Type: 2276 prescriptions, 35 hospitals, 37 surveys
 Europe: 3815 prescriptions, 92 hospitals, 93 surveys

Country: Country ; Continent: East & South Asia ; Hospital type: Tertiary hospital

10 most prescribed ATC4 at country level plus 5 extra ATC4 at hospital level which do not fall within top 10 at country level

Proportional antibiotic use (% of prescriptions) – Adult Surgical Ward

ATC4	Antibiotics Subgroup	Our Hospital	Country	Continent	Type	Europe
J01AA	Tetracyclines	1.1	1.5	0.4	0.4	1.4
J01CA	Penicillins with extended spectrum	2.2	1.7	4.5	3.6	3.7
J01CE	Beta-lactamase sensitive penicillins	1.1	1.5	0.3	0.3	0.8
J01CF	Beta-lactamase resistant penicillins	2.2	0.2	1.5	1.7	3.7
J01CR	Penicillins incl. beta-lactam. inh.	35.2	45.9	21.1	19.6	23.8
J01DB	First-generation cephalosporins	18.7	11.6	8.0	8.5	24.3
J01DD	Third-generation cephalosporins	11.0	8.9	14.4	15.2	5.0
J01DE	Fourth-generation cephalosporins	1.1	0.4	1.8	1.8	0.5
J01DH	Carbapenems	4.4	5.0	4.1	4.8	2.6
J01EE	Comb. Sulfonamides/trimethoprim	3.3	1.9	2.3	1.9	2.0
J01FA	Macrolides		2.3	2.6	2.7	1.1
J01FF	Lincosamides	2.2	2.3	3.3	3.3	4.4
J01MA	Fluoroquinolones	7.7	7.1	7.3	7.0	9.8
J01XA	Glycopeptide antibacterials	3.3	2.9	2.2	2.2	3.1
J01XD	Imidazole derivatives	4.4	4.6	7.8	8.5	5.1

Our hospital: 91 prescriptions, 80 treated patients; Country: 482 prescriptions, 4 hospitals, 5 surveys
 Continent: 1682 prescriptions, 36 hospitals, 39 surveys; Type: 1237 prescriptions, 26 hospitals, 28 surveys
 Europe: 2338 prescriptions, 87 hospitals, 87 surveys

Country: Country ; Continent: East & South Asia ; Hospital type: Tertiary hospital

10 most prescribed ATC4 at country level plus 5 extra ATC4 at hospital level which do not fall within top 10 at country level

Proportional antibiotic use (% of prescriptions) – [Adult] Intensive Care Unit

ATC4	Antibiotics Subgroup	Our Hospital	Country	Continent	Type	Europe
J01AA	Tetracyclines	2.2	2.3	1.7	2.2	0.6
J01CA	Penicillins with extended spectrum	2.2	0.8	5.1	4.4	2.1
J01CE	Beta-lactamase sensitive penicillins		3.1			0.4
J01CF	Beta-lactamase resistant penicillins	2.2		0.5	0.4	1.5
J01CR	Penicillins incl. beta-lactam. inh.	22.2	38.9	16.0	17.7	40.1
J01DB	First-generation cephalosporins	13.3	4.6	4.3	2.4	7.5
J01DD	Third-generation cephalosporins	17.8	8.4	17.0	15.9	6.8
J01DH	Carbapenems	17.8	20.6	15.8	17.0	8.8
J01EE	Comb. Sulfonamides/trimethoprim		3.1	1.0	0.2	3.0
J01FA	Macrolides	4.4	6.1	5.1	5.5	3.9
J01MA	Fluoroquinolones	4.4	2.3	6.5	6.8	4.9
J01XA	Glycopeptide antibacterials	8.9	6.1	4.4	4.9	6.9
J01XD	Imidazole derivatives	4.4	1.5	3.9	3.1	3.5

Our hospital: 45 prescriptions, 31 treated patients; Country: 131 prescriptions, 4 hospitals, 5 surveys
 Continent: 587 prescriptions, 36 hospitals, 38 surveys; Type: 453 prescriptions, 26 hospitals, 27 surveys
 Europe: 840 prescriptions, 77 hospitals, 77 surveys

Country: Country ; Continent: East & South Asia ; Hospital type: Tertiary hospital

10 most prescribed ATC4 at country level plus 5 extra ATC4 at hospital level which do not fall within top 10 at country level

Proportional antibiotic use (% of prescriptions) – Paediatric Medical Ward

ATC4	Antibiotics Subgroup	Our Hospital	Country	Continent	Type	Europe
J01AA	Tetracyclines	5.3		0.2	0.2	0.5
J01CA	Penicillins with extended spectrum			8.5	7.6	20.0
J01CF	Beta-lactamase resistant penicillins			1.1	1.3	4.6
J01CR	Penicillins incl. beta-lactam. inh.	26.3		6.7	7.0	22.8
J01DB	First-generation cephalosporins	5.3		0.9	1.1	1.6
J01DC	Second-generation cephalosporins	5.3		10.0	9.3	5.1
J01DD	Third-generation cephalosporins	26.3		21.6	20.9	14.6
J01DH	Carbapenems	5.3		7.6	8.2	2.6
J01EE	Comb. Sulfonamides/trimethoprim	5.3		2.2	1.9	5.9
J01FA	Macrolides			1.6	1.3	5.4
J01GB	Other aminoglycosides	5.3		17.3	17.5	3.7
J01MA	Fluoroquinolones	5.3		3.3	3.6	1.6
J01XD	Imidazole derivatives	5.3		4.7	4.4	2.1
J01XX	Other antibacterials	5.3		0.7	0.8	0.2

Our hospital: 19 prescriptions, 15 treated patients; Country: 29 prescriptions, 1 hospitals, 1 surveys
 Continent: 550 prescriptions, 34 hospitals, 36 surveys; Type: 473 prescriptions, 25 hospitals, 27 surveys
 Europe: 624 prescriptions, 67 hospitals, 69 surveys

Country: Country ; Continent: East & South Asia ; Hospital type: Tertiary hospital

10 most prescribed ATC4 at country level plus 5 extra ATC4 at hospital level which do not fall within top 10 at country level

Proportional antibiotic use (% of prescriptions) – Community Acquired Infections

ATC4	Antibiotics Subgroup	Our Hospital	Country	Continent	Type	Europe
J01AA	Tetracyclines	2.2	2.4	0.9	1.0	1.2
J01CA	Penicillins with extended spectrum	1.3	1.4	6.4	5.8	9.6
J01CE	Beta-lactamase sensitive penicillins	2.2	1.4	1.0	0.9	1.4
J01CF	Beta-lactamase resistant penicillins	2.2	1.3	0.6	0.4	3.2
J01CR	Penicillins incl. beta-lactam. inh.	41.7	48.2	22.7	21.7	39.6
J01DB	First-generation cephalosporins	4.0	8.0	2.4	2.2	0.4
J01DD	Third-generation cephalosporins	17.0	10.3	19.6	19.5	8.5
J01DE	Fourth-generation cephalosporins	1.3	0.4	1.9	2.0	0.6
J01DH	Carbapenems	5.4	4.1	6.6	7.7	2.9
J01EE	Comb. Sulfonamides/trimethoprim	0.9	1.2	1.0	0.7	1.4
J01FA	Macrolides	4.5	5.7	8.5	8.5	4.0
J01FF	Lincosamides	3.6	2.4	3.9	4.6	2.5
J01MA	Fluoroquinolones	5.8	7.3	5.3	5.4	10.3
J01XA	Glycopeptide antibacterials	3.1	1.6	3.0	3.1	2.4
J01XD	Imidazole derivatives	3.6	3.1	4.6	4.5	3.1

Our hospital: 223 prescriptions, 186 treated patients; Country: 1271 prescriptions, 4 hospitals, 5 surveys
 Continent: 3779 prescriptions, 48 hospitals, 52 surveys; Type: 2671 prescriptions, 33 hospitals, 35 surveys
 Europe: 4647 prescriptions, 101 hospitals, 104 surveys

Country: Country ; Continent: East & South Asia ; Hospital type: Tertiary hospital

10 most prescribed ATC4 at country level plus 5 extra ATC4 at hospital level which do not fall within top 10 at country level

Proportional antibiotic use (% of prescriptions) – Healthcare Associated Infections

ATC4	Antibiotics Subgroup	Our Hospital	Country	Continent	Type	Europe
J01AA	Tetracyclines	0.6	0.6	0.5	0.6	1.6
J01CA	Penicillins with extended spectrum	0.6	0.9	3.5	3.6	6.0
J01CE	Beta-lactamase sensitive penicillins	0.6	0.9	0.2	0.2	0.5
J01CF	Beta-lactamase resistant penicillins		1.3	0.3	0.2	3.4
J01CR	Penicillins incl. beta-lactam. inh.	44.0	47.5	27.2	23.0	33.1
J01DB	First-generation cephalosporins	5.0	2.8	1.9	1.7	0.8
J01DC	Second-generation cephalosporins	0.6	0.2	2.1	1.4	2.8
J01DD	Third-generation cephalosporins	6.9	4.9	10.3	9.8	7.9
J01DE	Fourth-generation cephalosporins	1.3	2.3	4.0	3.5	1.1
J01DH	Carbapenems	19.5	16.2	14.6	15.7	8.2
J01EE	Comb. Sulfonamides/trimethoprim	0.6	2.1	0.9	0.8	2.8
J01FF	Lincosamides	3.1	0.6	2.0	2.1	2.1
J01GB	Other aminoglycosides	1.3	1.1	7.4	9.6	2.5
J01MA	Fluoroquinolones	7.5	9.6	10.1	10.3	10.7
J01XA	Glycopeptide antibacterials	6.9	6.2	7.0	7.8	8.0

Our hospital: 159 prescriptions, 145 treated patients; Country: 531 prescriptions, 4 hospitals, 5 surveys
 Continent: 1551 prescriptions, 44 hospitals, 47 surveys; Type: 1103 prescriptions, 31 hospitals, 32 surveys
 Europe: 2317 prescriptions, 105 hospitals, 107 surveys

Country: Country ; Continent: East & South Asia ; Hospital type: Tertiary hospital

10 most prescribed ATC4 at country level plus 5 extra ATC4 at hospital level which do not fall within top 10 at country level

Proportional antibiotic use (% of prescriptions) – Surgical Prophylaxis

ATC4	Antibiotics Subgroup	Our Hospital	Country	Continent	Type	Europe
J01CA	Penicillins with extended spectrum	1.5		7.5	8.2	1.4
J01CF	Beta-lactamase resistant penicillins	1.5		1.4	1.6	2.4
J01CR	Penicillins incl. beta-lactam. inh.	27.7	22.0	10.3	11.6	11.0
J01DB	First-generation cephalosporins	52.3	45.5	16.5	14.7	59.4
J01DC	Second-generation cephalosporins		1.6	28.5	27.8	3.7
J01DD	Third-generation cephalosporins	9.2	11.4	14.0	13.7	3.4
J01DH	Carbapenems		1.6	1.2	1.1	0.3
J01FF	Lincosamides	1.5	2.4	2.5	2.7	3.2
J01GB	Other aminoglycosides		1.6	3.2	3.8	2.7
J01MA	Fluoroquinolones		1.6	3.4	3.5	4.6
J01XA	Glycopeptide antibacterials	1.5	4.9	0.4	0.2	0.3
J01XD	Imidazole derivatives	4.6	6.5	8.2	7.9	4.0

Our hospital: 65 prescriptions, 62 treated patients; Country: 123 prescriptions, 4 hospitals, 5 surveys
 Continent: 1065 prescriptions, 48 hospitals, 50 surveys; Type: 852 prescriptions, 35 hospitals, 36 surveys
 Europe: 1146 prescriptions, 87 hospitals, 88 surveys

Country: Country ; Continent: East & South Asia ; Hospital type: Tertiary hospital

10 most prescribed ATC4 at country level plus 5 extra ATC4 at hospital level which do not fall within top 10 at country level

Therapeutic antimicrobial use for community acquired and healthcare associated infections by type of treatment

	CAI Empiric		CAI Targeted		CAI Total	
	N	%	N	%	N	%
Our hospital 2020–P3	176	66.9	87	33.1	263	58.7
Country	1083	71.6	430	28.4	1513	71.2
Continent	3595	84.6	653	15.4	4248	71.7
Hospital type	2559	84.3	478	15.7	3037	71.6

	HAI Empiric		HAI Targeted		HAI Total	
	N	%	N	%	N	%
Our hospital 2020–P3	106	57.3	79	42.7	185	41.3
Country	392	64.1	220	35.9	612	28.8
Continent	1204	71.8	473	28.2	1677	28.3
Hospital type	839	69.5	368	30.5	1207	28.4

CAI= Community Acquired Infections; HAI=Healthcare Associated Infections

Type of treatment= empiric versus targeted treatment.

For each subgroup of therapeutic use (CAI or HAI) the number of antimicrobials and proportion (%) for empiric versus targeted prescribing is reported.

Country: Country ; Continent: East & South Asia ; Hospital type: Tertiary hospital

Prophylactic antimicrobial use by indication

	Medical		Surgical	
	N	%	N	%
Our hospital 2020–P3	167	72.0	65	28.0
Country	197	61.2	125	38.8
Continent	1093	50.4	1077	49.6
Hospital type	792	47.9	863	52.1

Percentage of antimicrobials prescribed for medical or surgical prophylaxis. Antimicrobials include the antibacterials, antifungals and antivirals for systemic use as well as antibiotics used as intestinal anti-infectives and drugs to treat tuberculosis.

Country: Country ; Continent: East & South Asia ; Hospital type: Tertiary hospital

Ten most common diagnoses treated with therapeutic antimicrobials

Diagnosis	Our hospital 2020–P3		Country		Continent		Hospital type		Europe	
	N	%	N	%	N	%	N	%	N	%
Pneu	85	22.6	470	26.9	1378	32.6	958	33.1	1745	27.3
SST	64	17.0	278	15.9	485	11.5	337	11.6	600	9.4
IA	33	8.8	172	9.8	428	10.1	277	9.6	587	9.2
Cys	28	7.4	125	7.1	225	5.3	137	4.7	442	6.9
Pye	24	6.4	119	6.8	253	6.0	140	4.8	513	8.0
BJ	23	6.1	78	4.5	116	2.7	56	1.9	295	4.6
PUO	16	4.3	28	1.6	40	0.9	32	1.1	110	1.7
BAC	15	4.0	24	1.4	67	1.6	56	1.9	105	1.6
ENT	10	2.7	26	1.5	65	1.5	42	1.5	181	2.8
FN	10	2.7	17	1.0	68	1.6	51	1.8	106	1.7

Top ten diagnoses in our hospital. Count on the number of diagnoses treated with at least one antimicrobial. This implies that a patient with multiple diagnoses can be counted several times. Prophylactic prescribing and patients admitted on NICU or NMW are excluded from this analysis.

Country: Country Continent: East & South Asia Hospital type: Tertiary hospital

CNS=infection of central nervous system; Eye=eye infections; ENT=ear, nose and throat infections; URTI=upper respiratory tract infection; Bron=bronchitis; Pneu=Pneumonia or lower respiratory tract infection; TB=tuberculosis; CVS=cardiovascular system infections; GI=gastro-intestinal infections; IA=intra-abdominal sepsis; SST=skin and soft tissue; BJ=bone/joint infections; Cys=lower urinary tract infection; Pye=Upper urinary tract infection; OBGY=obstetric/gynaecological infections; GUM=genito-urinary males; BAC=bacteraemia; PUO=pyrexia of unknown origin; PUO-HO=fever syndrome in non-neutropaenic haematology-oncology patient; FN=fever neutropaenic patient; LYMPH=infection lymphatics

Summary of quality indicators for antibiotic use

	Our hospital 2020–P3		Country		Continent		Hospital type		Europe	
	N	%	N	%	N	%	N	%	N	%
Medical										
Reason in notes	222	75.8	1353	94.7	3423	80.8	2426	82.2	5031	89.2
Guidelines missing	56	19.1	239	16.7	245	5.8	102	3.5	277	4.9
Guideline compliant	171	83.4	782	74.9	2615	85.6	1806	85.6	3809	83.1
Stop/review date documented	166	56.7	832	58.3	1949	46.0	1395	47.3	2496	44.2
Surgical										
Reason in notes	113	66.9	416	83.2	1365	68.3	971	66.5	1879	80.8
Guidelines missing	29	17.2	83	16.6	189	9.5	101	6.9	111	4.8
Guideline compliant	98	81.0	255	72.6	991	69.6	698	66.9	1460	78.0
Stop/review date documented	109	64.5	261	52.2	781	39.1	582	39.9	1261	54.2
ICU										
Reason in notes	33	66.0	138	94.5	868	80.7	700	82.5	863	86.6
Guidelines missing	7	14.0	18	12.3	28	2.6	16	1.9	70	7.0
Guideline compliant	30	96.8	89	84.0	593	87.7	454	85.5	610	87.5
Stop/review date	36	72.0	78	53.4	544	50.6	470	55.4	419	42.1

Antibiotic quality indicators by activity (medical, surgery, ICU) for all patients receiving antibacterials for systemic use (ATC J01).

– For reason in notes and stop/review date documented: Count at antibacterial level.

– For guidelines missing: Count on NA (= no guideline for an indication) at patient level and diagnosis over total scores for this indicator.

– For guideline compliance: Count at patient level and diagnosis for compliance= yes or no only. For combination therapy with >1 antibiotic: if 1 antibiotic by diagnosis is not compliant, this combination therapy as a whole for this diagnosis will be counted as non-compliant.

Antibiotic quality indicators – adult wards

	Our hospital 2020–P3		Country		Continent		Hospital type		Europe	
	N	%	N	%	N	%	N	%	N	%
Medical										
Reason in notes	209	76.3	1317	94.8	2899	79.8	1967	80.9	4273	88.6
Guidelines missing	50	18.2	239	17.2	232	6.4	92	3.8	206	4.3
Guideline compliant	163	83.6	750	74.3	2281	85.5	1521	85.5	3288	82.3
Stop/review date documented	158	57.7	818	58.9	1614	44.4	1087	44.7	2181	45.2
Surgical										
Reason in notes	112	68.3	410	83.0	1300	68.0	915	66.0	1819	80.7
Guidelines missing	25	15.2	83	16.8	185	9.7	97	7.0	95	4.2
Guideline compliant	97	80.8	251	72.5	954	70.0	665	66.9	1427	78.1
Stop/review date documented	106	64.6	261	52.8	743	38.9	549	39.6	1220	54.1
ICU										
Reason in notes	30	66.7	123	94.6	465	82.0	385	85.9	713	85.9
Guidelines missing	2	4.4	18	13.8	20	3.5	10	2.2	40	4.8
Guideline compliant	30	96.8	77	81.9	347	85.5	261	83.1	526	86.7
Stop/review date documented	32	71.1	65	50.0	291	51.3	251	56.0	358	43.1

Antibiotic quality indicators by activity (medical, surgical, ICU) for patients admitted on adult wards receiving antibacterials for systemic use (ATC J01).

– For reason in notes and stop/review date documented: Count at antibacterial level.

– For guidelines missing: Count on NA (= no guideline for an indication) at patient level and diagnosis over total scores for this indicator.

– For guideline compliance: Count at patient level and diagnosis for compliance = yes or no only. For combination therapy with >1 antibiotic: if 1 antibiotic by diagnosis is not compliant, this combination therapy as a whole for this diagnosis will be counted as non-compliant.

Antibiotic quality indicators – paediatric and neonatal wards

	Our hospital 2020–P3		Country		Continent		Hospital type		Europe		
	N	%	N	%	N	%	N	%	N	%	
Medical											
Reason in notes	13	68.4			524	86.8	459	88.3	758	92.9	
Guidelines missing	6	31.6			13	2.2	10	1.9	71	8.7	
Guideline compliant	8	80.0			334	86.1	285	86.4	521	88.3	
Stop/review date documented	8	42.1			335	55.5	308	59.2	315	38.6	
Surgical											
Reason in notes	1	20.0			65	75.6	56	76.7	60	84.5	
Guidelines missing	4	80.0			4	4.7	4	5.5	16	22.5	
Guideline compliant	1	100.0			37	61.7	33	67.3	33	73.3	
Stop/review date documented	3	60.0			38	44.2	33	45.2	41	57.7	
ICU											
Reason in notes	3	60.0			403	79.3	315	78.8	150	90.4	
Guidelines missing	5	100.0			8	1.6	6	1.5	30	18.1	
Guideline compliant	0	0.0			246	91.1	193	88.9	84	93.3	
Stop/review date documented	4	80.0			253	49.8	219	54.8	61	36.7	

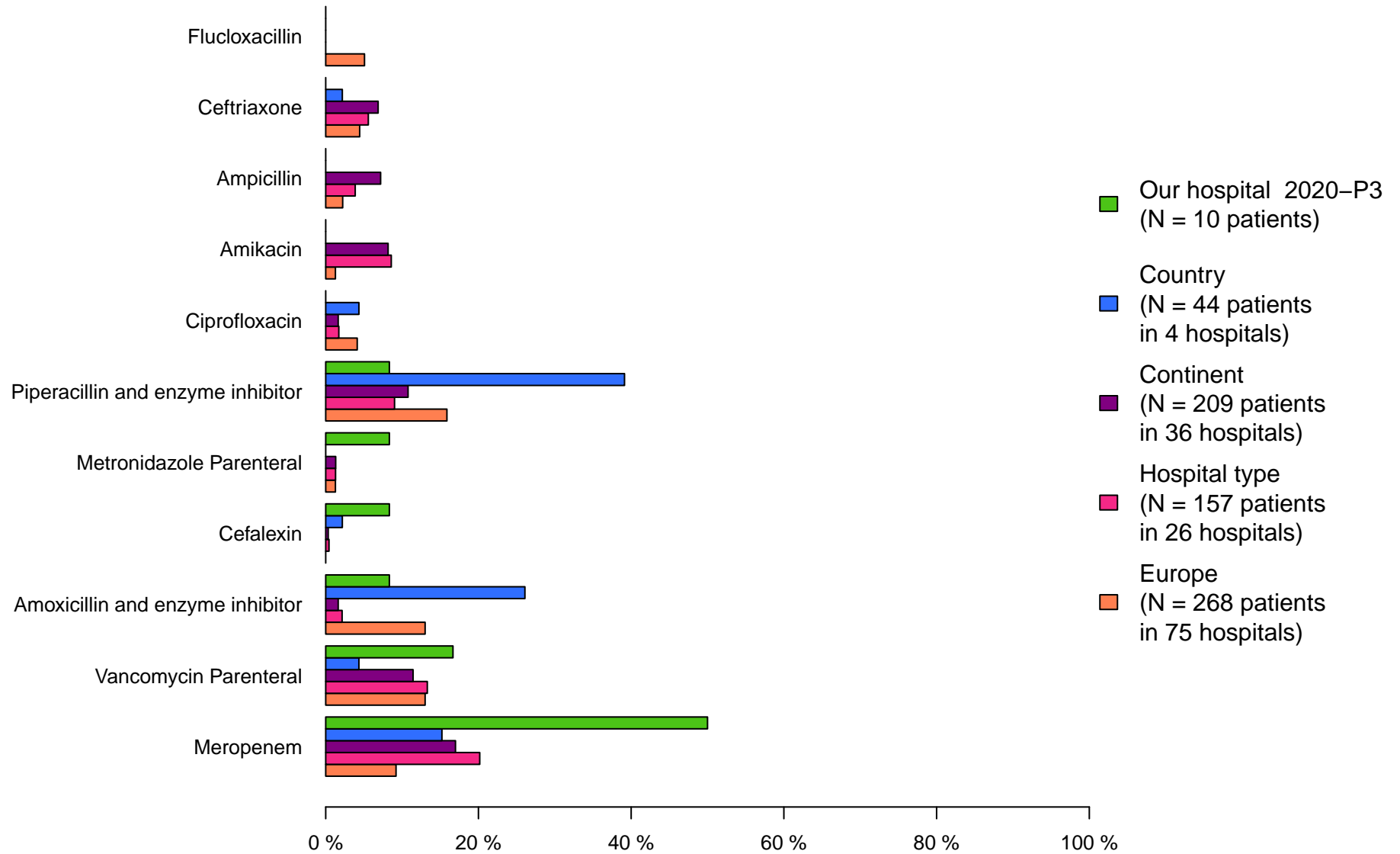
Antibiotic quality indicators by activity (medical, surgical, ICU) for patients admitted on paediatric and neonatal wards receiving antibacterials for systemic use (ATC J01).

– For reason in notes and stop/review date documented: Count at antibacterial level.

– For guidelines missing: Count on NA (= no guideline for an indication) at patient level and diagnosis over total scores for this indicator.

– For guideline compliance: Count at patient level and diagnosis for compliance = yes or no only. For combination therapy with >1 antibiotic: if 1 antibiotic by diagnosis is not compliant, this combination therapy as a whole for this diagnosis will be counted as non-compliant.

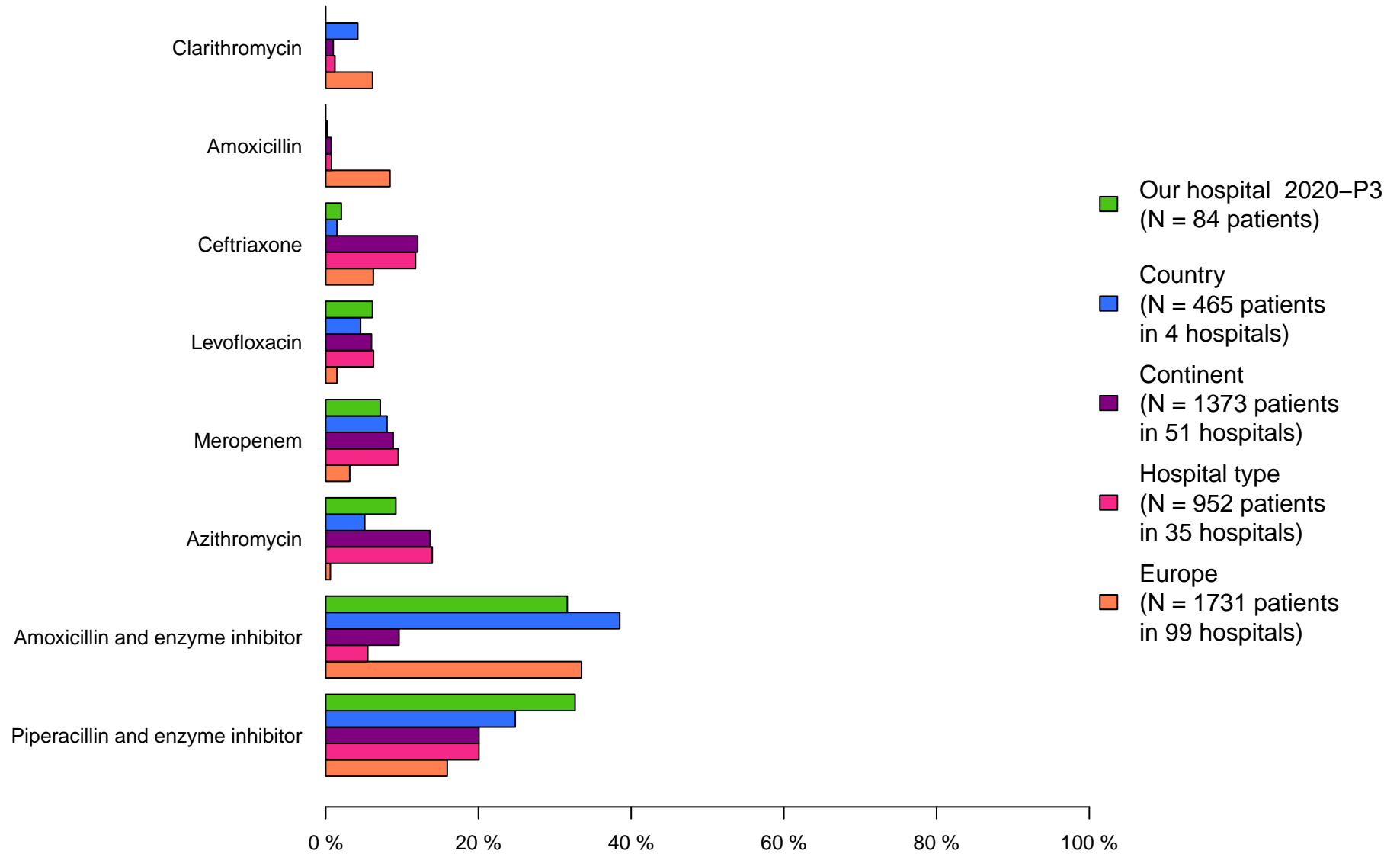
Top 5 most frequently used antibiotics for sepsis in adults and children



Selection on antibacterials for systemic use (J01). Top 5 most prescribed antibiotics (ATC5, substance level) for sepsis at hospital level, supplemented with the most prescribed antibiotics at country, continental and hospital type level if they do not fall within top 5 of the hospital. Selection on diagnostic code = sepsis; All patients are included with exception of patients admitted on NMW and NICU.

Country: Country ; Continent: East & South Asia ; Hospital type: Tertiary hospital

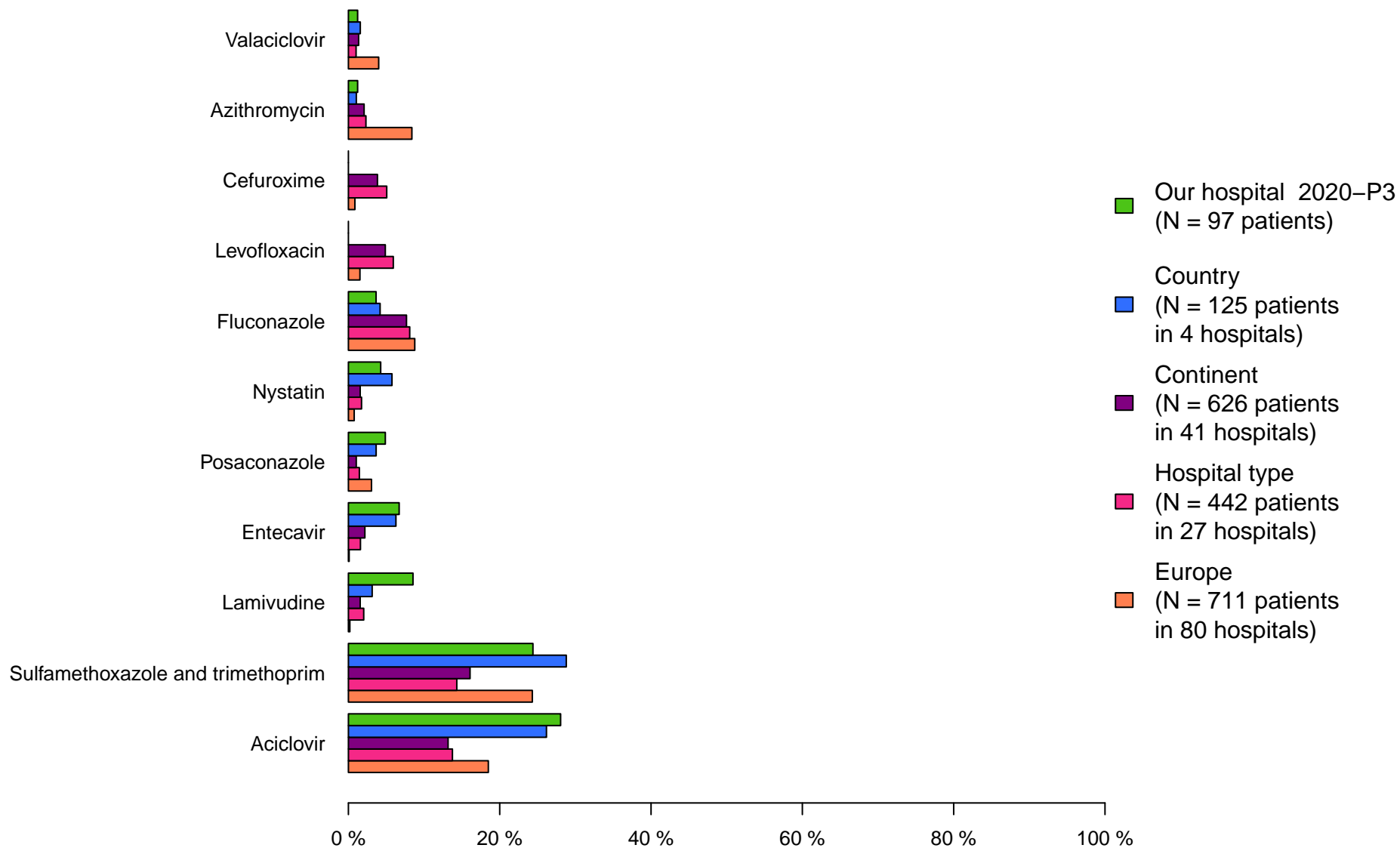
Top 5 most frequently used antibiotics for pneumonia in adults and children



Selection on antibacterials for systemic use (J01). Top 5 most prescribed antibiotics (ATC5, substance level) for pneumonia at hospital level, supplemented with the most prescribed antibiotics at country, continent and hospital type level if they do not fall within top 5 of the hospital. Selection on diagnostic code = pneu; All patients are included with exception of patients admitted on NMW and NICU.

Country: Country ; Continent: East & South Asia ; Hospital type: Tertiary hospital

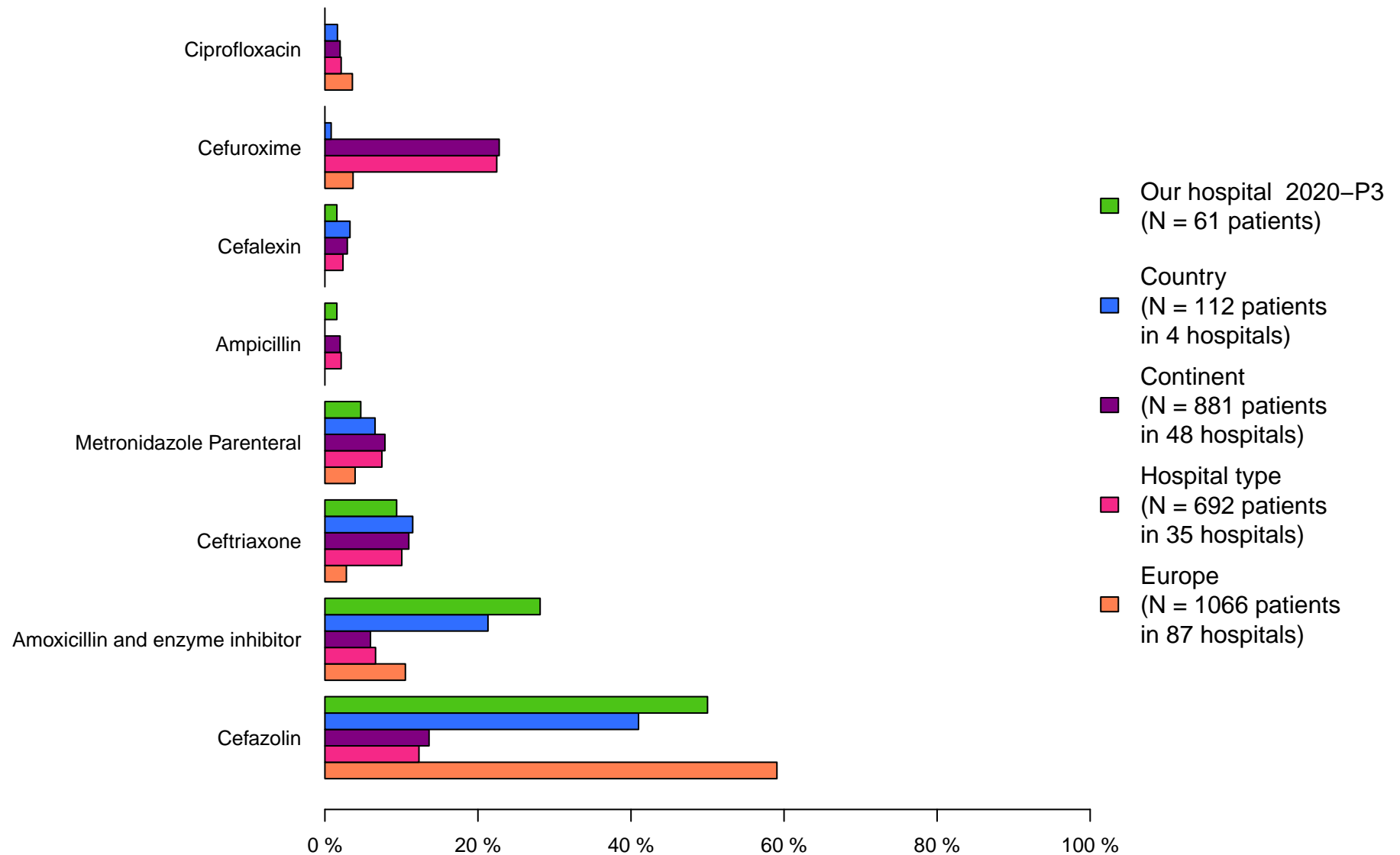
Top 5 most frequently used antimicrobials for medical prophylaxis in adults and children



Top 5 most prescribed antimicrobials (ATC5, substance level) for medical prophylaxis at hospital level, supplemented with the most prescribed antimicrobials at country, continent and hospital type level if they do not fall within top 5 of the hospital. Selection on indication = MP; All patients are included with exception of patients admitted on NMW and NICU.

Country: Country ; Continent: East & South Asia ; Hospital type: Tertiary hospital

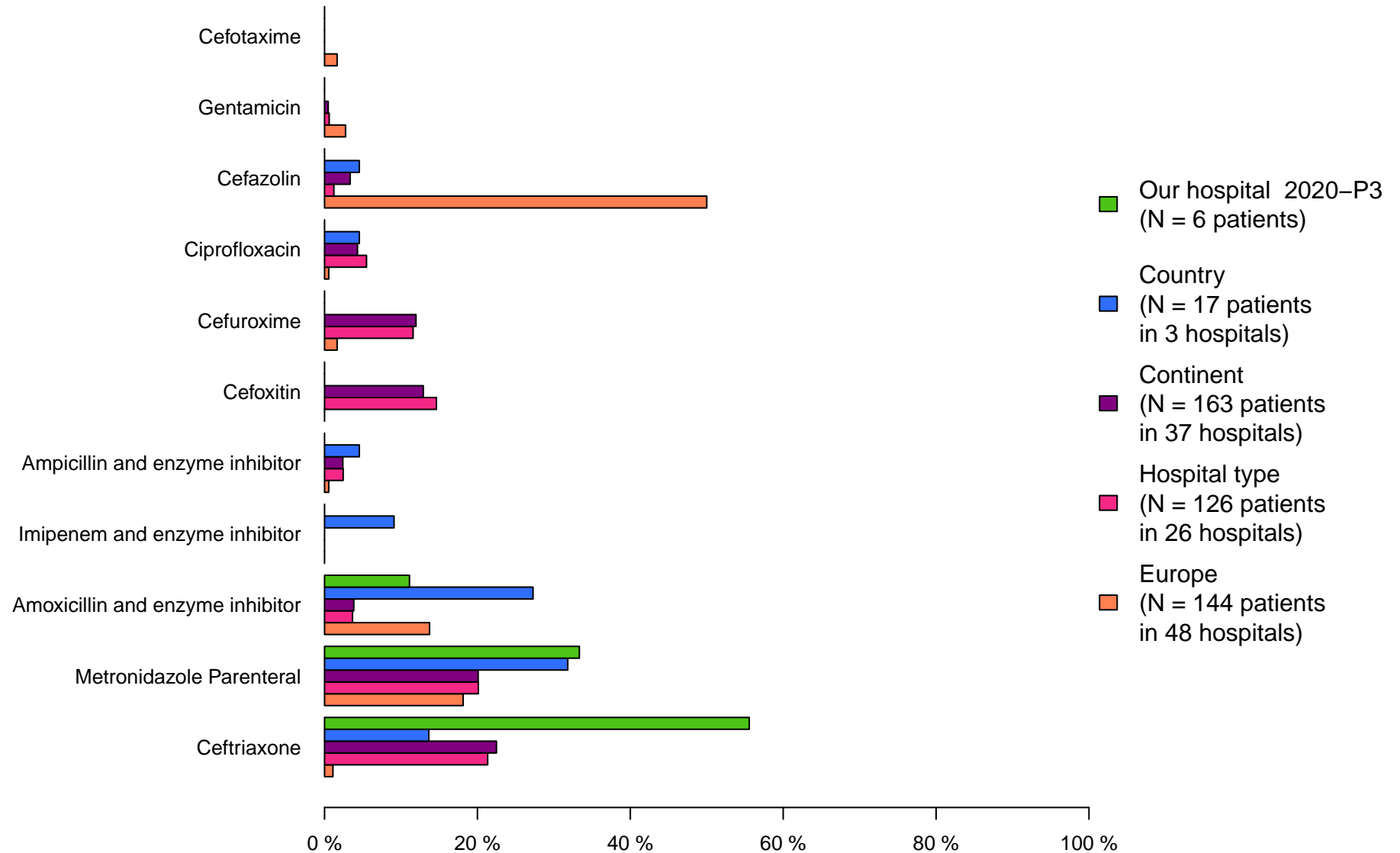
Top 5 most frequently used antibiotics for surgical prophylaxis in adults and children



Top 5 most prescribed antibacterials for systemic use (ATC code J01) for surgical prophylaxis use at hospital level, supplemented with the most prescribed antibiotics at country, continent and hospital type level if they do not fall within the top 5 of the hospital. Selection on indication = SP; All patients are included with exception of patients admitted on NMW and NICU.

Country: Country ; Continent: East & South Asia ; Hospital type: Tertiary hospital

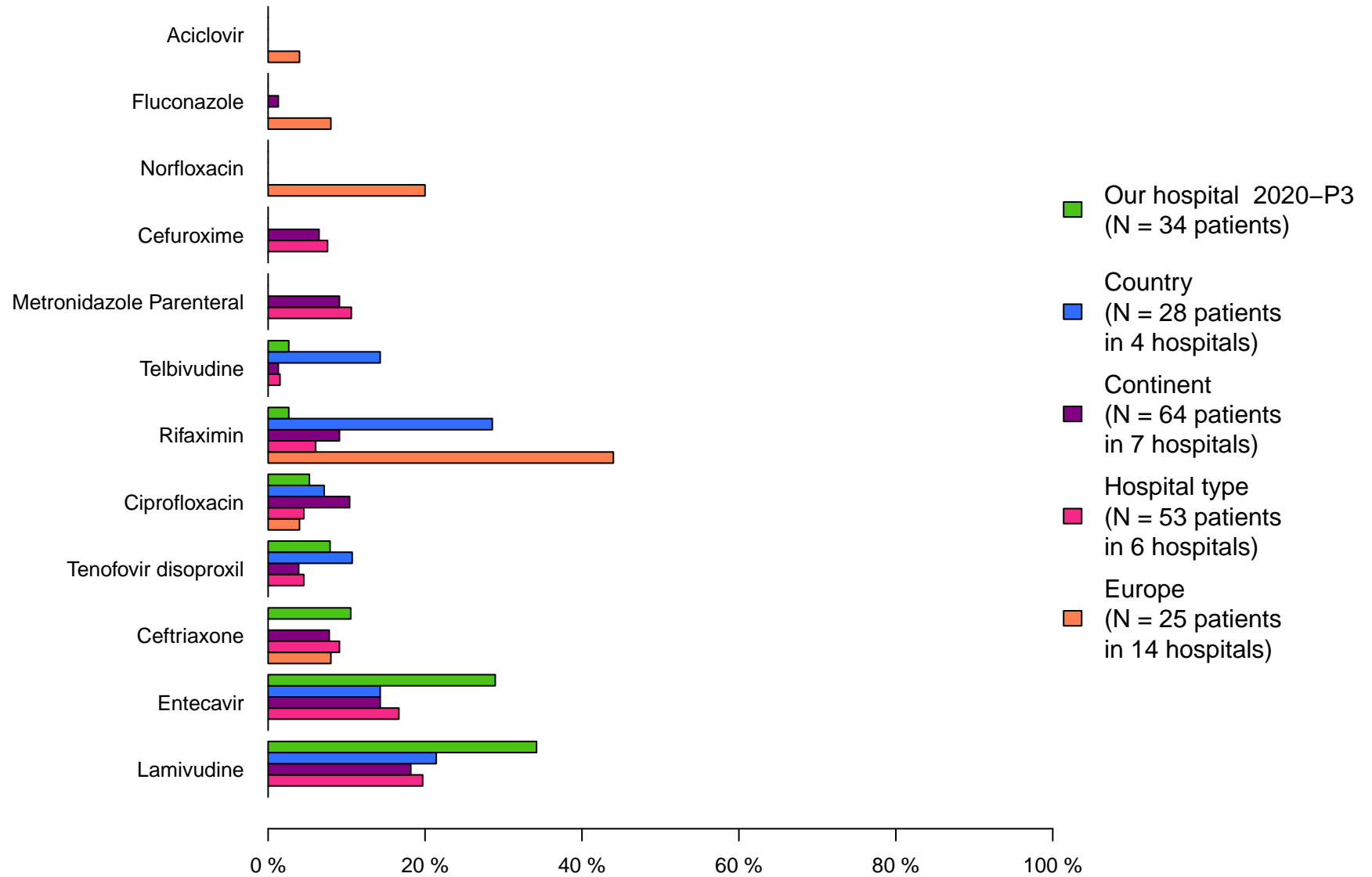
Top 5 most frequently used antibiotics for surgical prophylaxis of the gastro-intestinal tract in adults and children



Selection on antibacterials for systemic use (J01). Top 5 antibiotics (ATC5, substance level) prescribed for surgical prophylaxis of the gastro-intestinal tract at hospital level, supplemented with the most prescribed antibiotics at country, continent and hospital type level if they do not fall within top 5 of the hospital. Selection on diagnostic code = Proph GI and indication = SP; All patients are included with exception of patients admitted on NMW and NICU.

Country: Country ; Continent: East & South Asia ; Hospital type: Tertiary hospital

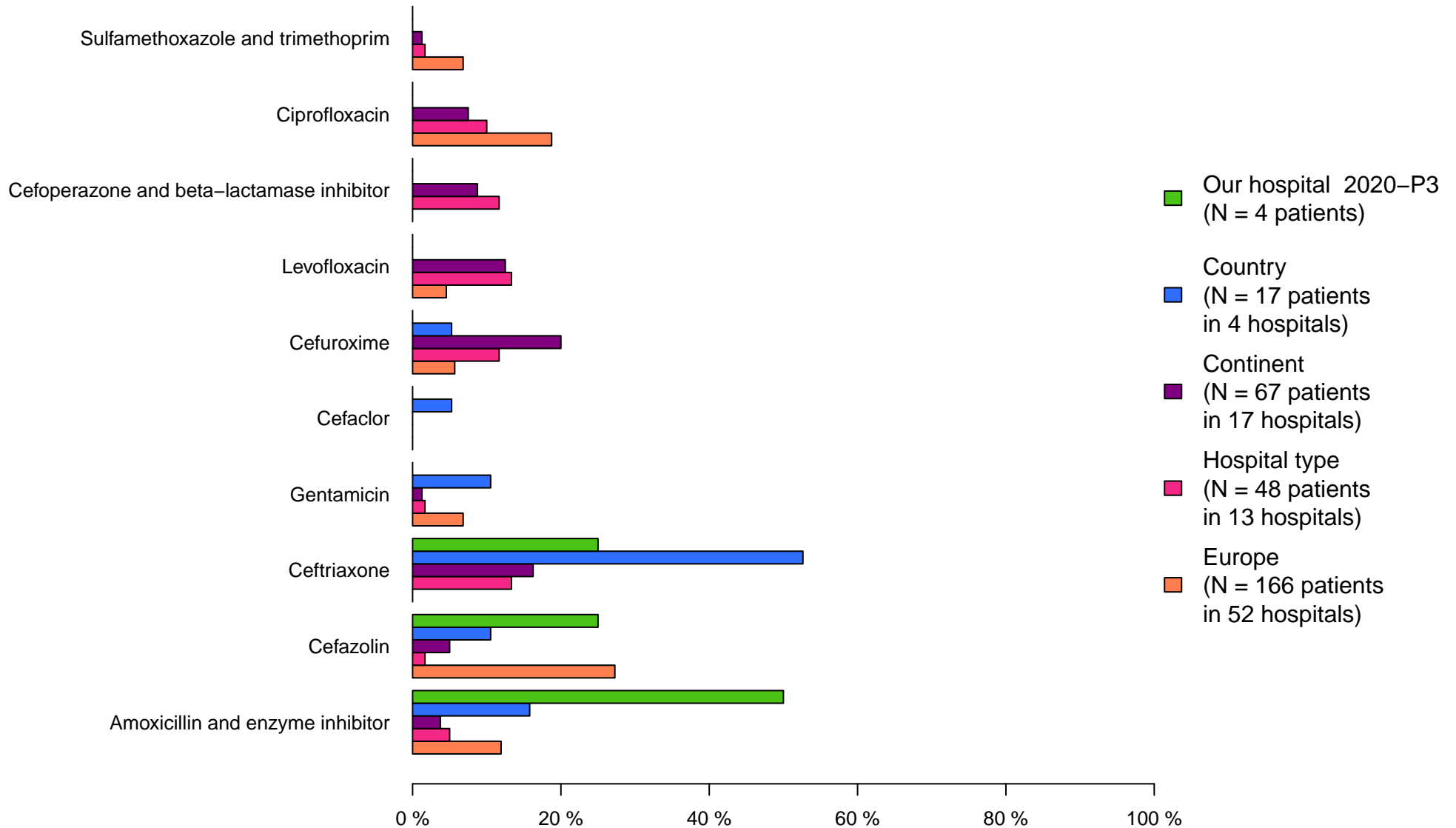
Top 5 most frequently used antimicrobials for medical prophylaxis of the gastro–intestinal tract



Top 5 antimicrobials (ATC5, substance level) prescribed for medical prophylaxis of the gastro–intestinal tract at hospital level, supplemented with the most prescribed antimicrobials at country, continent and hospital type level if they do not fall within top 5 of the hospital. Selection on diagnostic code = Proph GI and indication = MP; All patients are included with exception of patients admitted on NMW and NICU.

Country: Country ; Continent: East & South Asia ; Hospital type: Tertiary hospital

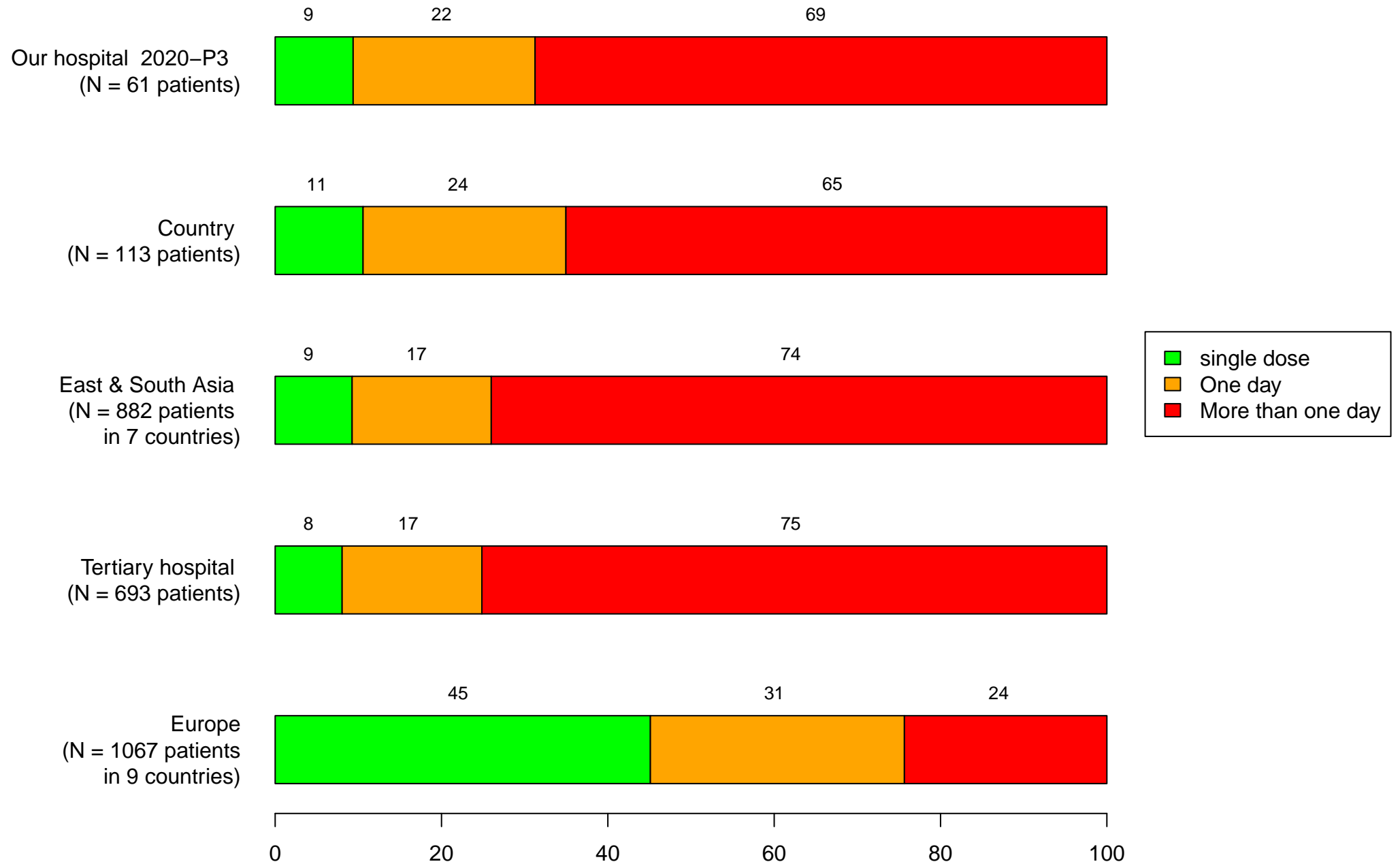
Top 5 most frequently used antibiotics for surgical UTI prophylaxis



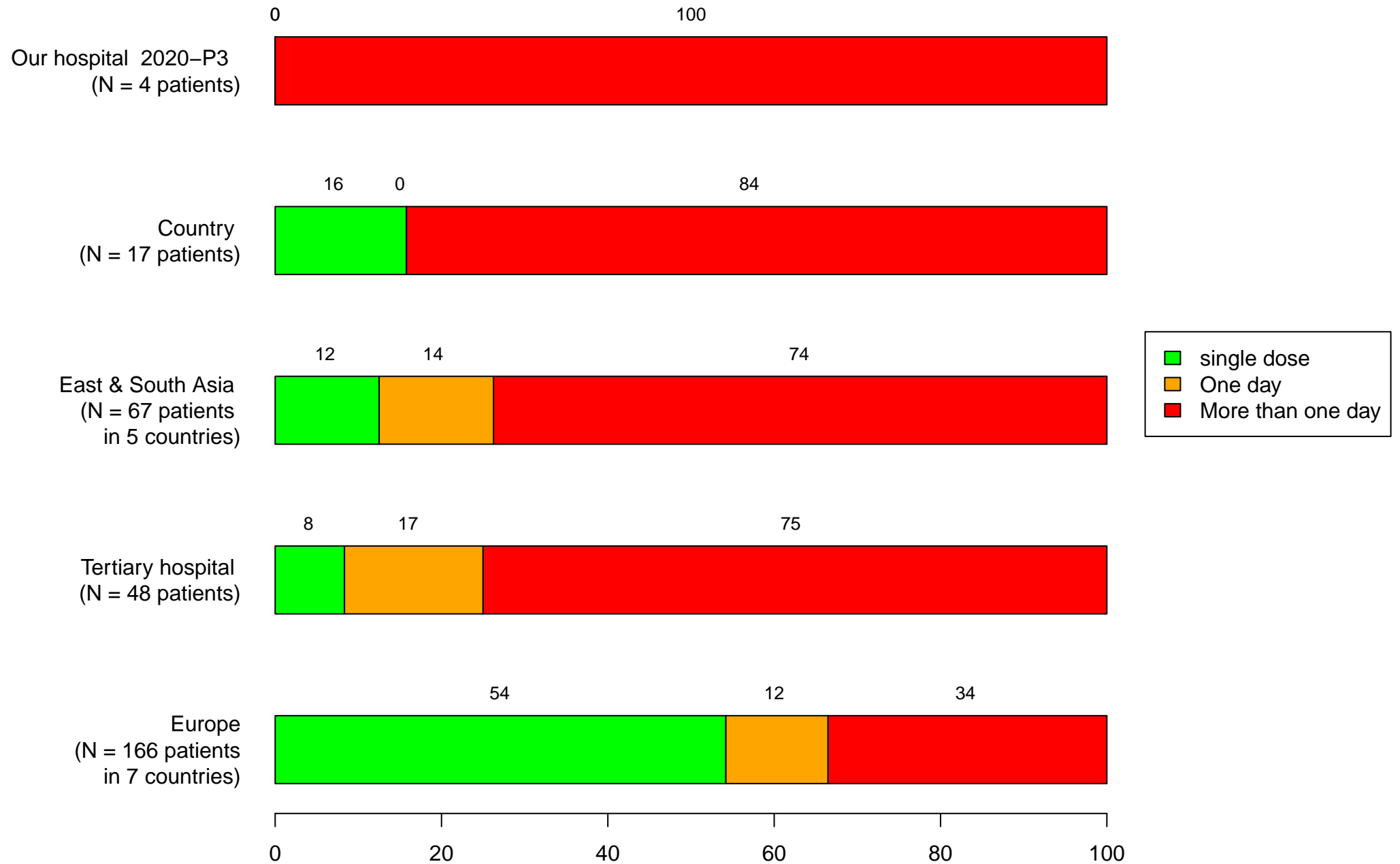
Selection on antibacterials for systemic use (J01). Top 5 antibiotics (ATC5, substance level) prescribed for surgical prophylaxis of the urinary tract at hospital level, supplemented with the most prescribed antibiotics at country, continent and hospital type level if they do not fall within top 5 of the hospital. Selection on diagnostic code = Proph UTI and indication = SP; All patients are included with exception of patients admitted on NMW and NICU.

Country: Country ; Continent: East & South Asia ; Hospital type: Tertiary hospital

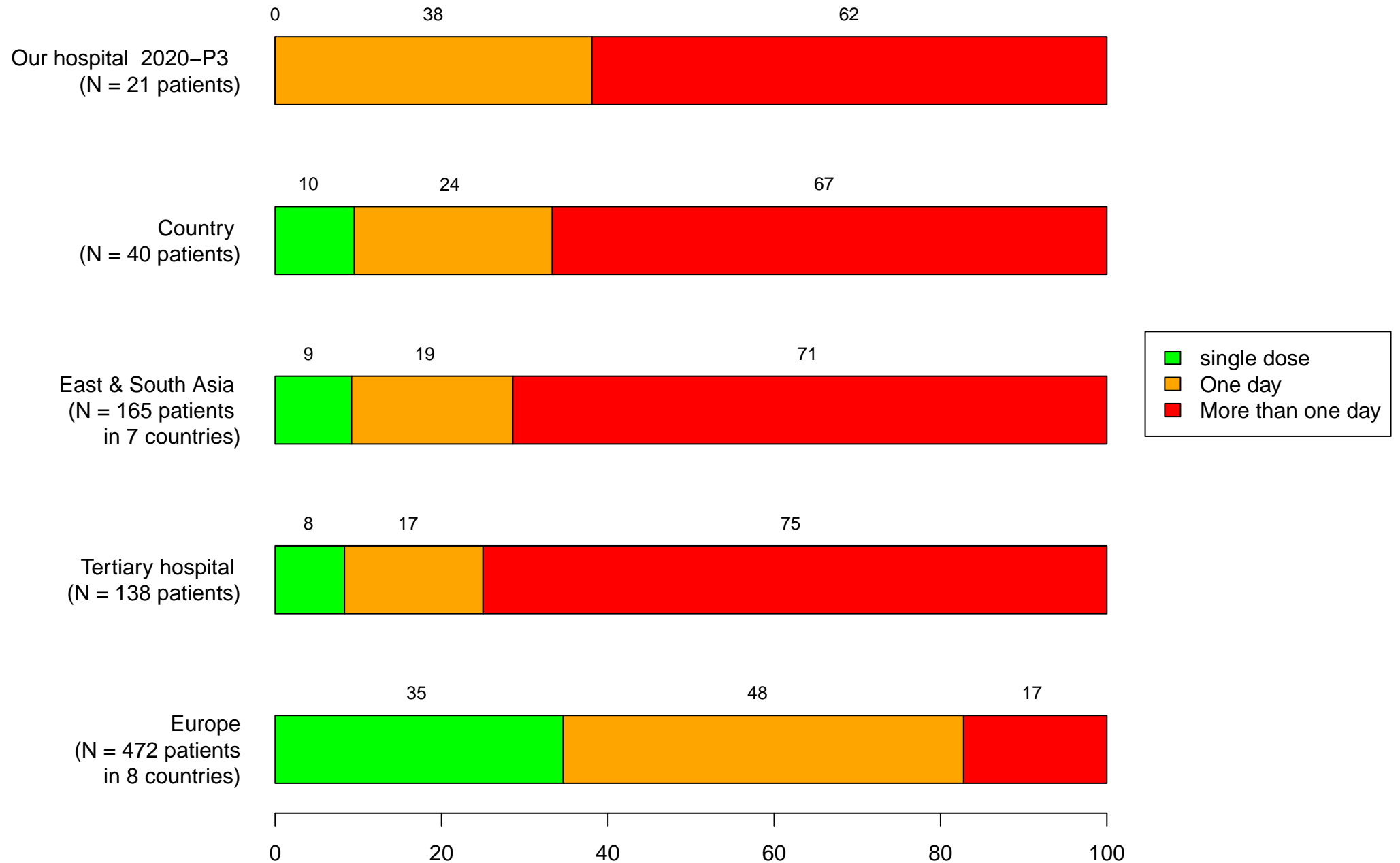
Duration of surgical prophylaxis in adults and children



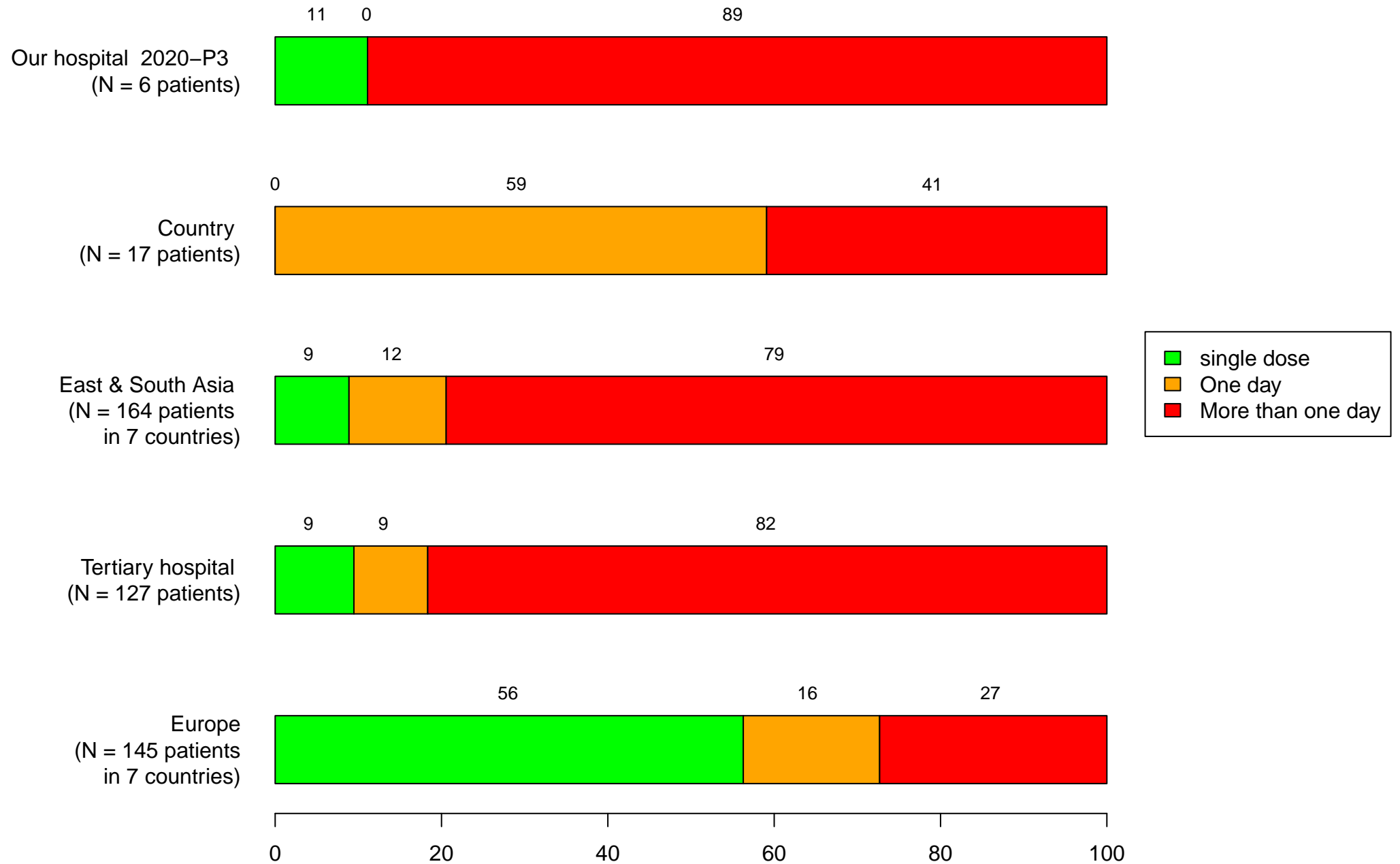
Duration of UTI prophylaxis in adults and children



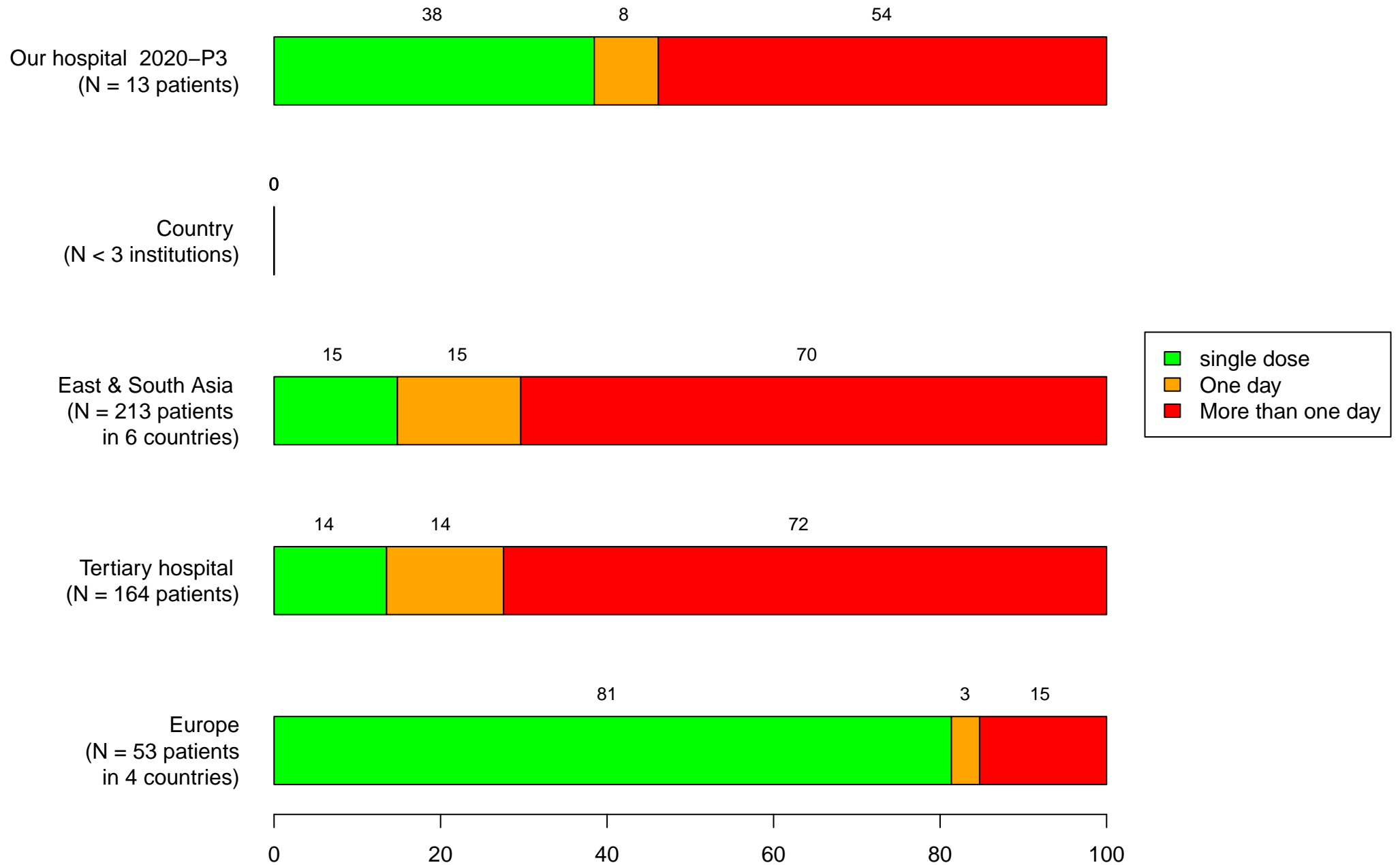
Duration of prophylaxis for plastic and orthopedic surgery in adults and children



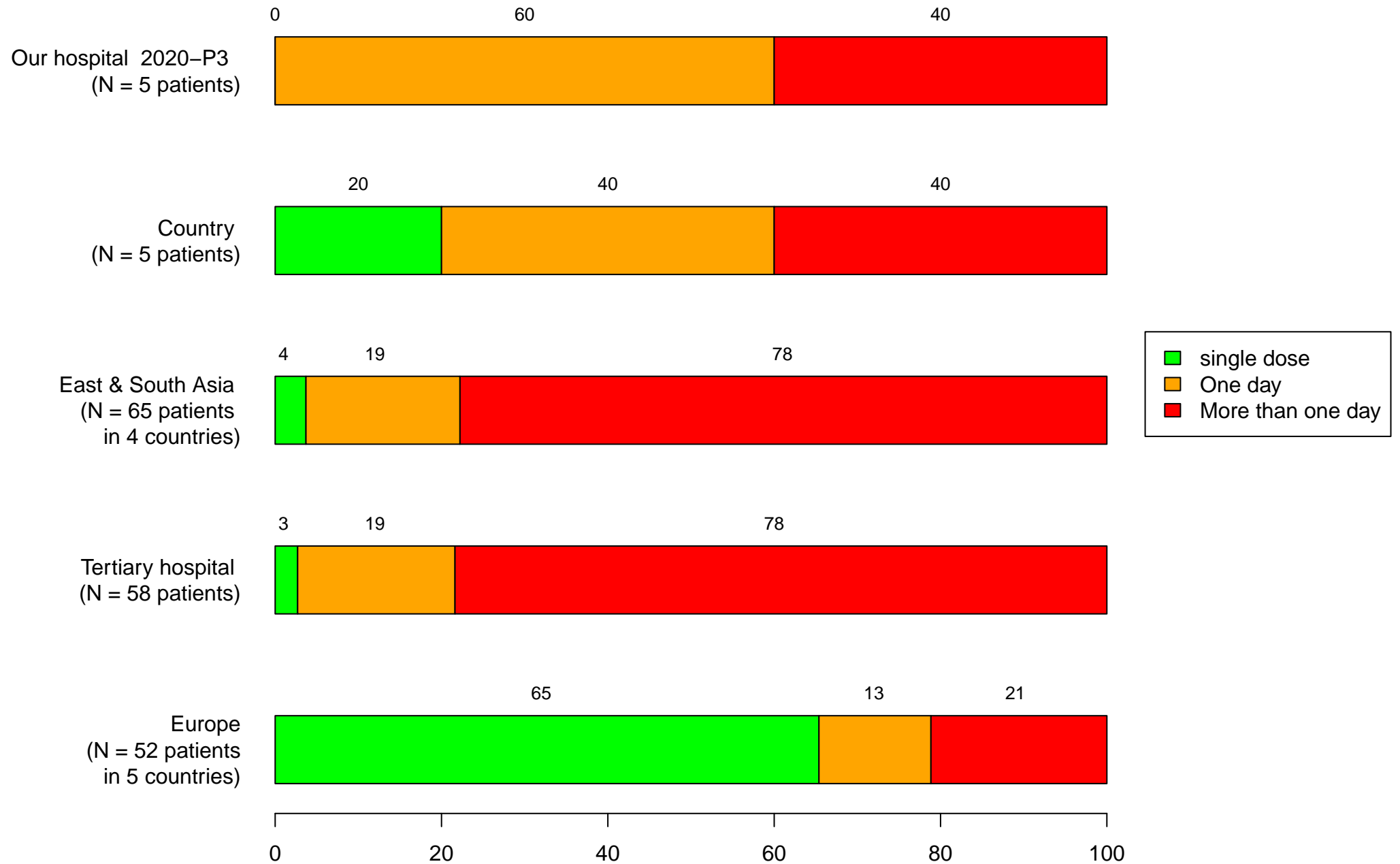
Duration of GI prophylaxis in adults and children



Duration of obstetric or gynaecological prophylaxis in adult wards



Duration of CNS prophylaxis in adults and children



Key prescription patterns (adults and children)

	Our hospital 2020–P3		Country		Continent		Hospital type		Europe	
	N	%	N	%	N	%	N	%	N	%
All patients										
IV therapy	304	70.4	1160	65.4	4023	76.8	2865	79.0	5299	70.3
Multiple ATB diagnosis	41	8.9	223	12.2	1242	22.7	989	26.0	954	12.2
Multiple ATB patient	69	16.0	271	15.3	1423	27.2	1128	31.1	1167	15.5
Medical										
IV therapy	167	61.2	730	56.4	2384	66.9	1659	68.5	3057	60.5
Multiple ATB diagnosis	21	7.8	149	11.7	744	22.2	576	25.4	555	11.1
Multiple ATB patient	44	18.0	183	14.9	871	27.2	674	31.4	688	14.3
Surgical										
IV therapy	104	65.4	335	73.8	1217	74.0	879	74.7	1584	76.6
Multiple ATB diagnosis	13	8.3	54	12.2	345	21.3	276	23.8	251	12.2
Multiple ATB patient	15	9.7	63	14.5	375	23.6	295	26.0	289	14.3
ICU										
IV therapy	33	91.7	95	82.6	422	85.6	327	85.6	658	91.3
Multiple ATB diagnosis	7	19.4	20	17.4	153	31.4	137	36.2	148	19.7
Multiple ATB patient	10	30.3	25	23.4	177	39.2	159	45.8	190	27.0

Analyses at patient level. Patients admitted on a NMW and NICU are excluded.

Multiple ATB diagnosis is defined as receiving > 1 antibiotic (J01) for a single identified reason to treat (=diagnose code) at patient level.

Multiple ATB patient is defined as receiving > 1 antibiotic (J01) at patient level.

Country: Country ; Continent: East & South Asia ; Hospital type: Tertiary hospital

Type of antibiotic treatment – Summary

	Our hospital 2020–P3		Country		Continent		Hospital type		Europe	
	N	%	N	%	N	%	N	%	N	%
All patients										
Empiric	364	73.8	1599	78.0	6280	86.8	4502	86.5	6218	72.1
Targetted	129	26.2	452	22.0	954	13.2	700	13.5	2411	27.9
Adults (>= 18 years)										
Empiric	341	73.5	1541	77.4	5099	85.9	3553	85.9	5375	71.0
Targetted	123	26.5	449	22.6	836	14.1	584	14.1	2197	29.0
Children (< 18 years)										
Empiric	20	76.9	53	98.1	800	89.6	660	87.9	784	80.6
Targetted	6	23.1	1	1.9	93	10.4	91	12.1	189	19.4
Neonates (NICU)										
Empiric	3	100.0	5	71.4	381	93.8	289	92.0	59	70.2
Targetted	0	0.0	2	28.6	25	6.2	25	8.0	25	29.8

Selection on antibiotic treatments.

N = number of antibiotics (J01) included per type of treatment and subgroup (all patients, adults, children and neonates).

Country: Country ; Continent: East & South Asia ; Hospital type: Tertiary hospital

Type of antibiotic treatment by activity

	Our hospital 2020–P3		Country		Continent		Hospital type		Europe	
	N	%	N	%	N	%	N	%	N	%
All patients										
Empiric	254	66.5	1353	75.1	4408	82.8	3107	82.3	4588	66.3
Targetted	128	33.5	449	24.9	917	17.2	667	17.7	2335	33.7
Medical										
Empiric	160	67.8	997	76.9	2872	83.7	1987	83.4	3272	67.4
Targetted	76	32.2	300	23.1	559	16.3	395	16.6	1581	32.6
Surgical										
Empiric	61	57.0	270	70.3	855	79.7	575	79.4	817	64.3
Targetted	46	43.0	114	29.7	218	20.3	149	20.6	453	35.7
ICU										
Empiric	33	84.6	86	71.1	681	82.9	545	81.6	499	62.4
Targetted	6	15.4	35	28.9	140	17.1	123	18.4	301	37.6

Selection on antibiotic treatments (prophylactic and unknown prescribing are excluded) by activity.
 N = number of antibiotics (J01) included per type of treatment and activity (medical, surgical, ICU).

Country: Country ; Continent: East & South Asia ; Hospital type: Tertiary hospital

Treatment based on microbiology data

	Our hospital 2020–P3		Country		Continent		Hospital type		Europe	
	N	%	N	%	N	%	N	%	N	%
MRSA	6	1.8	11	0.7	31	0.8	26	1.0	66	1.1
MRCoNS	7	2.1	3	0.2	43	1.1	35	1.3	53	0.9
VRE	1	0.3	2	0.1	8	0.2	8	0.3	6	0.1
ESBL	1	0.3	6	0.4	56	1.4	46	1.7	132	2.2
3GCREB	23	7.0	19	1.2	47	1.2	38	1.4	45	0.8
CRE	0	0.0	2	0.1	30	0.8	28	1.0	7	0.1
ESBL–NF	1	0.3	6	0.4	19	0.5	19	0.7	22	0.4
CR–NF	3	0.9	13	0.8	49	1.2	46	1.7	30	0.5
Other MDR	0	0.0	21	1.3	0	0.0	0	0.0	16	0.3
PNSP	0	0.0	0	0.0	0	0.0	0	0.0	3	0.1
MLS	3	0.9	0	0.0	5	0.1	5	0.2	18	0.3
Any of the above	42	12.8	74	4.7	265	6.7	233	8.6	363	6.1

N = the number of patients reported to have received a microbiology–based treatment.

% = 100*(the number of patients reported to have received a microbiology–based treatment/total number of patients receiving a therapeutic treatment (CAI or HAI) with at least one antibacterial for systemic use (J01)).

Country: Country ; Continent: East & South Asia ; Hospital type: Tertiary hospital

Prevalence (%) of Healthcare Associated Infections: Hospital-wide

	Hospital 2020–P3	Country	Continent	Hospital type	Europe
Numerator (N patients)	153	504	1241	836	2105
Denominator (N admitted patients)	912	4116	11789	7430	27263
HAI rate (%)	16.8	12.2	10.5	11.3	7.7
Post-operative surgical site infection (%)	1.1	1.2	1.1	1.3	1.5
Intervention related infection (%)	3.0	2.2	1.6	2.1	1.3
CDAD (%)	0.5	0.2	0.2	0.2	0.2
Other HAI (%)	10.9	6.4	6.9	7.3	4.0
HAI from another hospital (%)	0.8	0.5	0.4	0.3	0.4
HAI from LTCF or nursing home (%)	1.2	2.1	0.7	0.4	0.7

Country: Country ; Continent: East & South Asia ; Hospital type: Tertiary hospital

Prevalence (%) of Intervention–related versus Other Hospital–Associated Infections Hospital–wide

	Hospital 2020–P3	Country	Continent	Hospital type	Europe
Numerator (N patients)	153	504	1241	836	2105
Denominator (N admitted patients)	912	4116	11789	7430	27263
HAI rate (%)	16.8	12.2	10.5	11.3	7.7
Intervention–related infections (%)					
Mixed origin	0.3	2.1	0.4	0.6	0.5
CVC–BSI	0.9	0.0	0.3	0.4	0.2
PVC–BSI	0.0	0.0	0.0	0.0	0.0
Ventilator–Associated Pneumonia (VAP)	0.4	0.0	0.5	0.7	0.2
CAUTI	1.3	0.1	0.4	0.5	0.3
Other Hospital–Associated Infections (%)					
HAI of mixed or undefined origin	4.8	4.8	3.4	3.6	2.3
Blood Stream Infection (BSI)	1.0	0.1	0.7	1.0	0.2
Hospital–Acquired Pneumonia (not VAP)	4.1	1.2	2.4	2.4	0.9
Urinary Tract Infection (UTI)	1.4	0.2	0.6	0.5	0.6

CVC–BSI = Central Venous Catheter–related Blood Stream Infection

PVC–BSI = Peripheral Vascular Catheter–related Blood Stream Infection

CAUTI = Catheter–Associated Urinary Tract Infection

Intervention–related infections are scored by code HAI2 and Other Hospital–Associated Infections by HAI4 of the variable Indication

Prevalence (%) of Healthcare Associated Infections: Adult wards

	Hospital 2020–P3	Country	Continent	Hospital type	Europe
Numerator (N patients)	148	499	1078	678	2001
Denominator (N admitted patients)	809	3972	10470	6356	24366
HAI rate (%)	18.3	12.6	10.3	10.7	8.2
Post-operative surgical site infection (%)	1.2	1.3	1.1	1.4	1.6
Intervention related infection (%)	3.2	2.3	1.6	2.0	1.3
CDAD (%)	0.6	0.2	0.2	0.2	0.2
Other HAI (%)	11.6	6.5	6.5	6.5	4.2
HAI from another hospital (%)	0.9	0.5	0.4	0.3	0.4
HAI from LTCF or nursing home (%)	1.4	2.1	0.8	0.5	0.8

Country: Country ; Continent: East & South Asia ; Hospital type: Tertiary hospital

Prevalence (%) of Intervention–related versus Other Hospital–Associated Infections Adult Wards

	Hospital 2020–P3	Country	Continent	Hospital type	Europe
Numerator (N patients)	148	499	1078	678	2001
Denominator (N admitted patients)	809	3972	10470	6356	24366
HAI rate (%)	18.3	12.6	10.3	10.7	8.2
Intervention–related infections (%)					
Mixed origin	0.4	2.1	0.4	0.5	0.5
CVC–BSI	0.9	0.1	0.4	0.5	0.1
PVC–BSI	0.0	0.0	0.0	0.0	0.0
Ventilator–Associated Pneumonia (VAP)	0.5	0.0	0.5	0.7	0.2
CAUTI	1.5	0.1	0.4	0.5	0.4
Other Hospital–Associated Infections (%)					
HAI of mixed or undefined origin	4.9	4.9	3.2	3.3	2.4
Blood Stream Infection (BSI)	1.1	0.1	0.3	0.4	0.2
Hospital–Acquired Pneumonia (not VAP)	4.4	1.3	2.4	2.4	1.0
Urinary Tract Infection (UTI)	1.6	0.3	0.7	0.6	0.6

CVC–BSI = Central Venous Catheter–related Blood Stream Infection

PVC–BSI = Peripheral Vascular Catheter–related Blood Stream Infection

CAUTI = Catheter–Associated Urinary Tract Infection

Intervention–related infections are scored by code HAI2 and Other Hospital–Associated Infections by HAI4 of the variable Indication

Prevalence (%) of Healthcare Associated Infections: Child and Neonatal Wards

	Hospital 2020–P3	Country	Continent	Hospital type	Europe
Numerator (N patients)	5		163	158	104
Denominator (N admitted patients)	103		1319	1074	2897
HAI rate (%)	4.9		12.4	14.7	3.6
Post-operative surgical site infection (%)	0.0		0.8	1.0	0.4
Intervention related infection (%)	1.0		2.0	2.4	1.1
CDAD (%)	0.0		0.0	0.0	0.0
Other HAI (%)	4.9		9.8	11.6	1.9
HAI from another hospital (%)	0.0		0.2	0.3	0.2
HAI from LTCF or nursing home (%)	0.0		0.1	0.1	0.0

Country: Country ; Continent: East & South Asia ; Hospital type: Tertiary hospital

Prevalence (%) of Intervention–related versus Other Hospital–Associated Infections Child and Neonatal Wards

	Hospital 2020–P3	Country	Continent	Hospital type	Europe
Numerator (N patients)	5		163	158	104
Denominator (N admitted patients)	103		1319	1074	2897
HAI rate (%)	4.9		12.4	14.7	3.6
Intervention–related infections (%)					
Mixed origin	0.0		0.9	1.0	0.5
CVC–BSI	1.0		0.2	0.2	0.4
PVC–BSI	0.0		0.1	0.1	0.0
Ventilator–Associated Pneumonia (VAP)	0.0		0.7	0.8	0.1
CAUTI	0.0		0.3	0.4	0.1
Other Hospital–Associated Infections (%)					
HAI of mixed or undefined origin	3.9		4.6	5.4	1.6
Blood Stream Infection (BSI)	0.0		3.3	4.1	0.3
Hospital–Acquired Pneumonia (not VAP)	1.0		2.3	2.7	0.0
Urinary Tract Infection (UTI)	0.0		0.1	0.1	0.0

CVC–BSI = Central Venous Catheter–related Blood Stream Infection

PVC–BSI = Peripheral Vascular Catheter–related Blood Stream Infection

CAUTI = Catheter–Associated Urinary Tract Infection

Intervention–related infections are scored by code HAI2 and Other Hospital–Associated Infections by HAI4 of the variable Indication

Prevalence (%) of Healthcare Associated Infections: Adult – ICU

	Hospital 2020–P3	Country	Continent	Hospital type	Europe
Numerator (N patients)	14	40	112	83	309
Denominator (N admitted patients)	59	157	582	431	1198
HAI rate (%)	23.7	25.5	19.2	19.3	25.8
Post-operative surgical site infection (%)	0.0	1.3	0.5	0.5	3.7
Intervention related infection (%)	6.8	7.0	7.9	8.4	8.3
CDAD (%)	1.7	0.6	0.3	0.5	0.1
Other HAI (%)	18.6	16.6	11.2	11.8	11.9
HAI from another hospital (%)	0.0	1.3	0.5	0.0	1.8
HAI from LTCF or nursing home (%)	0.0	0.0	0.7	0.5	0.8

Country: Country ; Continent: East & South Asia ; Hospital type: Tertiary hospital

Prevalence (%) of Intervention–related versus Other Hospital–Associated Infections Adult – ICU

	Hospital 2020–P3	Country	Continent	Hospital type	Europe
Numerator (N patients)	14	40	112	83	309
Denominator (N admitted patients)	59	157	582	431	1198
HAI rate (%)	23.7	25.5	19.2	19.3	25.8
Intervention–related infections (%)					
Mixed origin	0.0	7.0	0.5	0.7	3.0
CVC–BSI	1.7	0.0	0.7	0.7	0.5
PVC–BSI	0.0	0.0	0.0	0.0	0.1
Ventilator–Associated Pneumonia (VAP)	5.1	0.0	6.0	6.7	4.2
CAUTI	0.0	0.0	1.2	0.9	0.8
Other Hospital–Associated Infections (%)					
HAI of mixed or undefined origin	10.2	15.9	4.6	4.9	6.8
Blood Stream Infection (BSI)	1.7	0.0	1.5	1.9	0.5
Hospital–Acquired Pneumonia (not VAP)	8.5	0.6	5.2	5.6	4.4
Urinary Tract Infection (UTI)	0.0	0.0	0.3	0.2	0.3

CVC–BSI = Central Venous Catheter–related Blood Stream Infection

PVC–BSI = Peripheral Vascular Catheter–related Blood Stream Infection

CAUTI = Catheter–Associated Urinary Tract Infection

Intervention–related infections are scored by code HAI2 and Other Hospital–Associated Infections by HAI4 of the variable Indication

Prevalence (%) of Healthcare Associated Infections: Adult Medical Wards

	Hospital 2020–P3	Country	Continent	Hospital type	Europe
Numerator (N patients)	116	364	705	413	1221
Denominator (N admitted patients)	604	2927	7315	4089	16484
HAI rate (%)	19.2	12.4	9.6	10.1	7.4
Post-operative surgical site infection (%)	1.2	0.8	0.6	0.8	0.6
Intervention related infection (%)	3.1	2.4	1.2	1.7	0.9
CDAD (%)	0.7	0.3	0.2	0.2	0.2
Other HAI (%)	11.9	6.3	6.5	6.5	4.5
HAI from another hospital (%)	1.2	0.4	0.4	0.4	0.3
HAI from LTCF or nursing home (%)	1.7	2.7	0.9	0.7	1.0

Country: Country ; Continent: East & South Asia ; Hospital type: Tertiary hospital

Prevalence (%) of Intervention–related versus Other Hospital–Associated Infections Adult Medical Wards

	Hospital 2020–P3	Country	Continent	Hospital type	Europe
Numerator (N patients)	116	364	705	413	1221
Denominator (N admitted patients)	604	2927	7315	4089	16484
HAI rate (%)	19.2	12.4	9.6	10.1	7.4
Intervention–related infections (%)					
Mixed origin	0.5	2.2	0.3	0.5	0.4
CVC–BSI	0.8	0.0	0.4	0.6	0.2
PVC–BSI	0.0	0.0	0.0	0.0	0.0
Ventilator–Associated Pneumonia (VAP)	0.2	0.0	0.1	0.2	0.0
CAUTI	1.7	0.1	0.3	0.5	0.4
Other Hospital–Associated Infections (%)					
HAI of mixed or undefined origin	4.8	4.4	3.3	3.3	2.5
Blood Stream Infection (BSI)	1.2	0.1	0.2	0.3	0.2
Hospital–Acquired Pneumonia (not VAP)	4.6	1.5	2.4	2.4	1.0
Urinary Tract Infection (UTI)	1.8	0.3	0.7	0.6	0.8

CVC–BSI = Central Venous Catheter–related Blood Stream Infection

PVC–BSI = Peripheral Vascular Catheter–related Blood Stream Infection

CAUTI = Catheter–Associated Urinary Tract Infection

Intervention–related infections are scored by code HAI2 and Other Hospital–Associated Infections by HAI4 of the variable Indication

Prevalence (%) of Healthcare Associated Infections: Adult Surgical Ward

	Hospital 2020–P3	Country	Continent	Hospital type	Europe
Numerator (N patients)	18	95	261	182	471
Denominator (N admitted patients)	146	888	2573	1836	6684
HAI rate (%)	12.3	10.7	10.1	9.9	7.0
Post-operative surgical site infection (%)	2.1	2.9	2.9	2.9	3.5
Intervention related infection (%)	2.1	1.1	1.2	1.3	1.0
CDAD (%)	0.0	0.0	0.1	0.1	0.1
Other HAI (%)	7.5	5.7	5.3	5.3	2.2
HAI from another hospital (%)	0.0	0.6	0.5	0.4	0.3
HAI from LTCF or nursing home (%)	0.7	0.6	0.3	0.1	0.2

Country: Country ; Continent: East & South Asia ; Hospital type: Tertiary hospital

Prevalence (%) of Intervention–related versus Other Hospital–Associated Infections Adult Surgical Ward

	Hospital 2020–P3	Country	Continent	Hospital type	Europe
Numerator (N patients)	18	95	261	182	471
Denominator (N admitted patients)	146	888	2573	1836	6684
HAI rate (%)	12.3	10.7	10.1	9.9	7.0
Intervention–related infections (%)					
Mixed origin	0.0	0.9	0.4	0.5	0.5
CVC–BSI	0.7	0.1	0.2	0.2	0.1
PVC–BSI	0.0	0.0	0.0	0.0	0.1
Ventilator–Associated Pneumonia (VAP)	0.0	0.0	0.2	0.3	0.0
CAUTI	1.4	0.1	0.3	0.4	0.3
Other Hospital–Associated Infections (%)					
HAI of mixed or undefined origin	3.4	4.8	2.8	2.9	1.4
Blood Stream Infection (BSI)	0.7	0.1	0.3	0.3	0.1
Hospital–Acquired Pneumonia (not VAP)	2.1	0.7	1.8	1.6	0.4
Urinary Tract Infection (UTI)	1.4	0.2	0.5	0.6	0.3

CVC–BSI = Central Venous Catheter–related Blood Stream Infection

PVC–BSI = Peripheral Vascular Catheter–related Blood Stream Infection

CAUTI = Catheter–Associated Urinary Tract Infection

Intervention–related infections are scored by code HAI2 and Other Hospital–Associated Infections by HAI4 of the variable Indication

Invasive device use hospital-wide

	Our hospital		Country		Continent		Hospital type		Europe	
	2020-P3									
	N	%	N	%	N	%	N	%	N	%
N total admitted patients	912				3642		2891		12237	
N admitted patients with:										
PVC	483	53.0			1920	52.7	1858	64.3	4493	36.7
CVC	121	13.3			295	8.1	284	9.8	804	6.6
Indwelling UC	116	12.7			480	13.2	451	15.6	1480	12.1
Tubes/Drains	83	9.1			316	8.7	306	10.6	775	6.3
IRI	41	4.5			168	4.6	154	5.3	187	1.5
CiPAP-BiPAP	0	0.0			37	1.0	30	1.0	16	0.1

CVC = Central Venous Catheter; PVC = Peripheral Vascular Catheter;
 UC = Urinary Catheter; IRI = Invasive endotracheal Respiratory Intubation;
 CiPAP, BiPAP = Non-invasive mechanical ventilation

Country: Country ; Continent: East & South Asia ; Hospital type: Tertiary hospital

Invasive device use – Adult wards

	Our hospital		Country		Continent		Hospital type		Europe			
	2020–P3		N	%	N	%	N	%	N	%		
	N	%										
N total admitted patients	809				3270				2541		11373	
N admitted patients with:												
PVC	450	55.6			1737	53.1			1675	65.9	4201	36.9
CVC	106	13.1			264	8.1			253	10.0	785	6.9
Indwelling UC	112	13.8			464	14.2			435	17.1	1473	13.0
Tubes/Drains	79	9.8			282	8.6			272	10.7	723	6.4
IRI	37	4.6			132	4.0			123	4.8	178	1.6
CiPAP–BiPAP	0	0.0			27	0.8			20	0.8	16	0.1

CVC = Central Venous Catheter; PVC = Peripheral Vascular Catheter;
 UC = Urinary Catheter; IRI = Invasive endotracheal Respiratory Intubation;
 CiPAP, BiPAP = Non–invasive mechanical ventilation

Country: Country ; Continent: East & South Asia ; Hospital type: Tertiary hospital

Invasive device use – Adult ICU

	Our hospital		Country		Continent		Hospital type		Europe			
	2020–P3		N	%	N	%	N	%	N	%		
	N	%										
N total admitted patients	59				166				154		484	
N admitted patients with:												
PVC	40	67.8			104	62.7			104	67.5	287	59.3
CVC	30	50.8			81	48.8			80	51.9	281	58.1
Indwelling UC	25	42.4			98	59.0			87	56.5	349	72.1
Tubes/Drains	7	11.9			50	30.1			50	32.5	139	28.7
IRI	22	37.3			74	44.6			72	46.8	124	25.6
CiPAP–BiPAP	0	0.0			13	7.8			7	4.5	4	0.8

CVC = Central Venous Catheter; PVC = Peripheral Vascular Catheter;
 UC = Urinary Catheter; IRI = Invasive endotracheal Respiratory Intubation;
 CiPAP, BiPAP = Non–invasive mechanical ventilation

Country: Country ; Continent: East & South Asia ; Hospital type: Tertiary hospital

Invasive device use – Adult medical wards

	Our hospital		Country		Continent		Hospital type		Europe	
	2020–P3		N	%	N	%	N	%	N	%
N total admitted patients	604				2384		1668		8237	
N admitted patients with:										
PVC	312	51.7			1095	45.9	1033	61.9	2697	32.7
CVC	67	11.1			145	6.1	135	8.1	355	4.3
Indwelling UC	57	9.4			219	9.2	201	12.1	744	9.0
Tubes/Drains	40	6.6			143	6.0	133	8.0	177	2.1
IRI	6	1.0			40	1.7	33	2.0	27	0.3
CiPAP–BiPAP	0	0.0			12	0.5	11	0.7	12	0.1

CVC = Central Venous Catheter; PVC = Peripheral Vascular Catheter;
 UC = Urinary Catheter; IRI = Invasive endotracheal Respiratory Intubation;
 CiPAP, BiPAP = Non–invasive mechanical ventilation

Country: Country ; Continent: East & South Asia ; Hospital type: Tertiary hospital

Invasive device use – Adult surgical ward

	Our hospital		Country		Continent		Hospital type		Europe	
	2020–P3		N	%	N	%	N	%	N	%
N total admitted patients	146				720		719		2652	
N admitted patients with:										
PVC	98	67.1			538	74.7	538	74.8	1217	45.9
CVC	9	6.2			38	5.3	38	5.3	149	5.6
Indwelling UC	30	20.5			147	20.4	147	20.4	380	14.3
Tubes/Drains	32	21.9			89	12.4	89	12.4	407	15.3
IRI	9	6.2			18	2.5	18	2.5	27	1.0
CiPAP–BiPAP	0	0.0			2	0.3	2	0.3	0	0.0

CVC = Central Venous Catheter; PVC = Peripheral Vascular Catheter;
 UC = Urinary Catheter; IRI = Invasive endotracheal Respiratory Intubation;
 CiPAP, BiPAP = Non–invasive mechanical ventilation

Country: Country ; Continent: East & South Asia ; Hospital type: Tertiary hospital

Explanatory notes for the slides on AWaRe antibiotic use

The following slides present antibiotic prescribing patterns according to the WHO Access, Watch, Reserve (AWaRe) classification. Antibiotic prescriptions for systemic use (ATC J01) are classified into 4 categories:

Access

1st or 2nd choice for empiric treatment of the most common infections
Lower risk of resistance selection
Amoxicillin, cefazolin, cloxacillin, clindamycin...

Watch

1st or 2nd choice for limited indications only
Higher risk of resistance selection
Quinolones, carbapenems, cephalosporins 2nd / 3rd gen...

Reserve

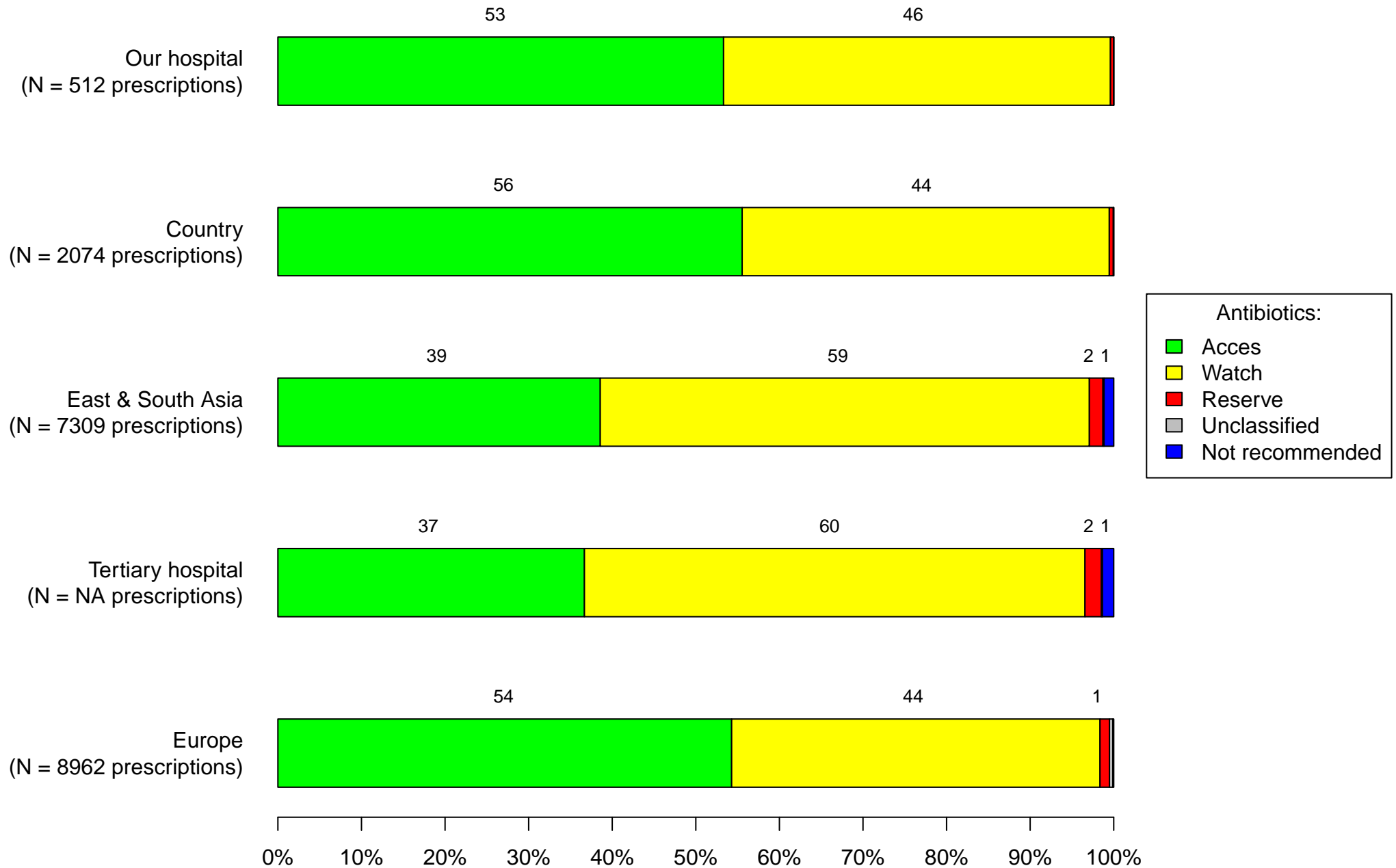
To be used only as a last resort, when no other alternatives are available
Colistin, linezolid, tigecyclin...

Not recommended (new category 2019)

Mainly fixed-dose combinations of broad-spectrum antibiotics

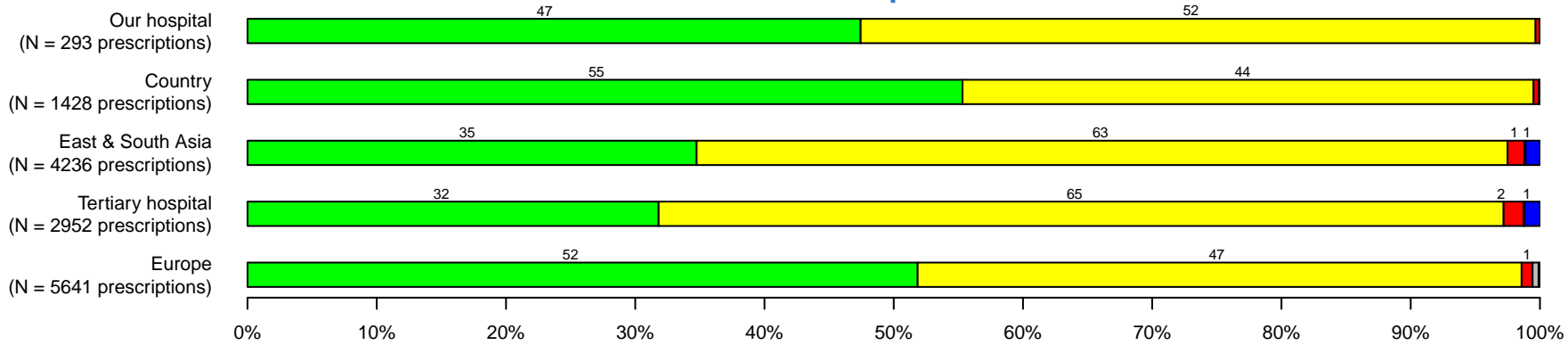
More info on the WHO AWaRe classification:
<https://adoptaware.org/>

Overall antibiotic use (ATC J01) according to the WHO AWaRe classification

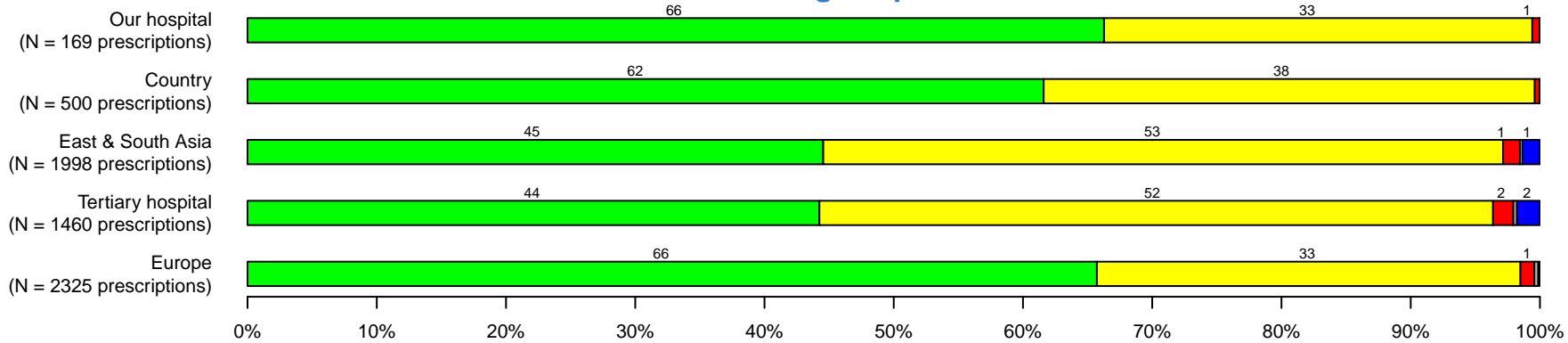


Antibiotic use (ATC J01) by activity according to the WHO AWaRe classification

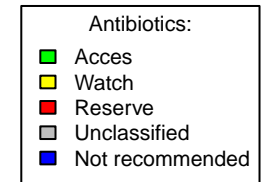
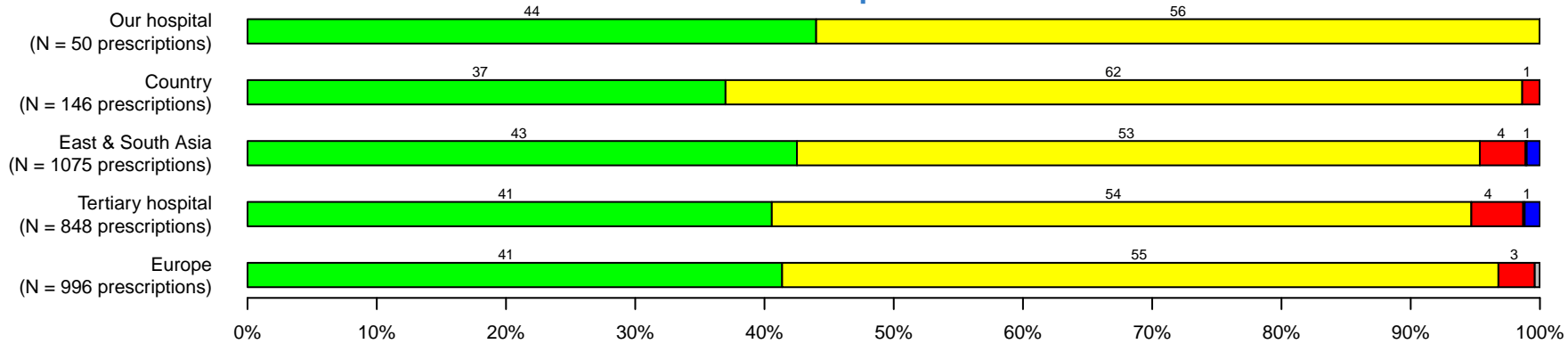
Medical patients



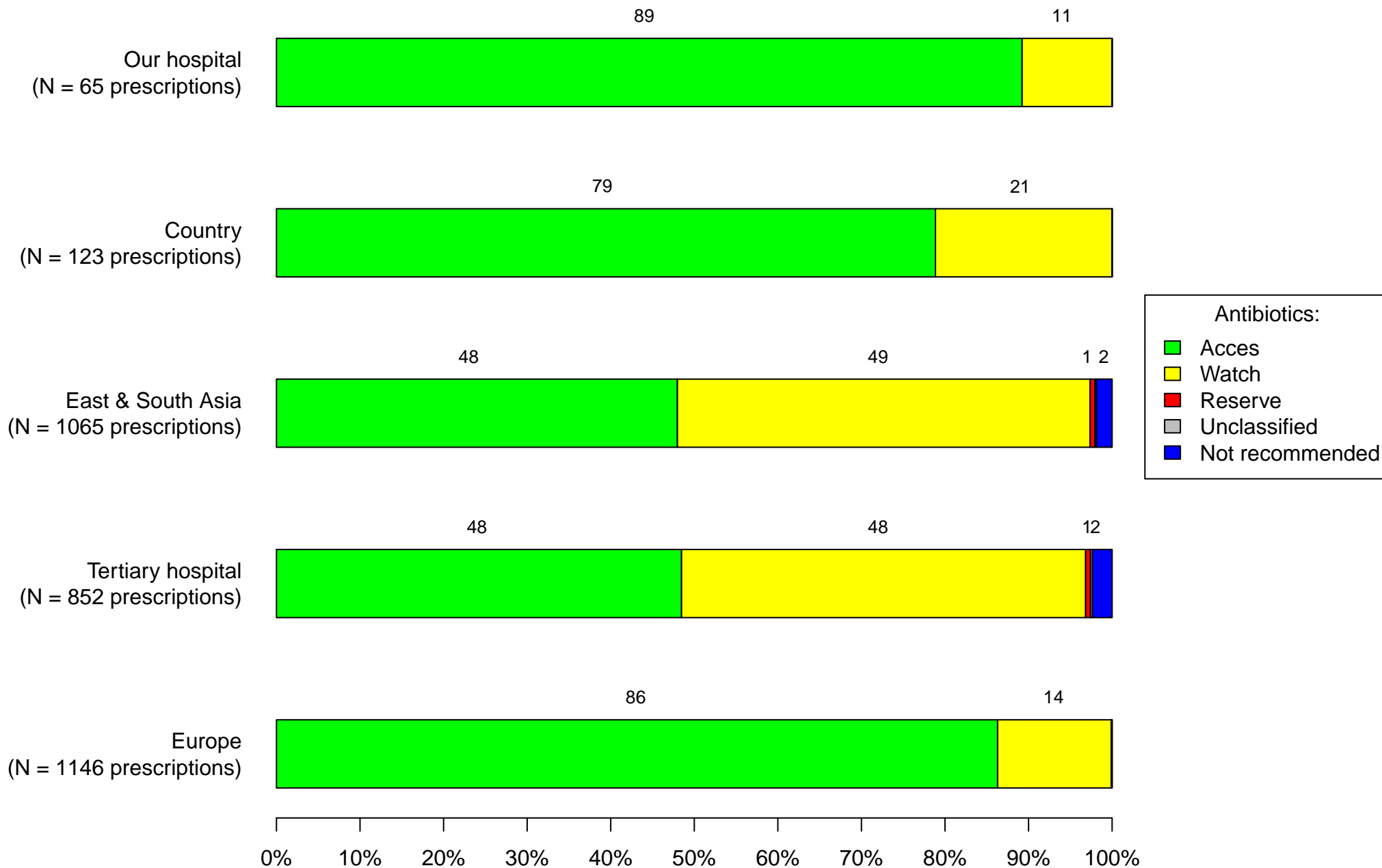
Surgical patients



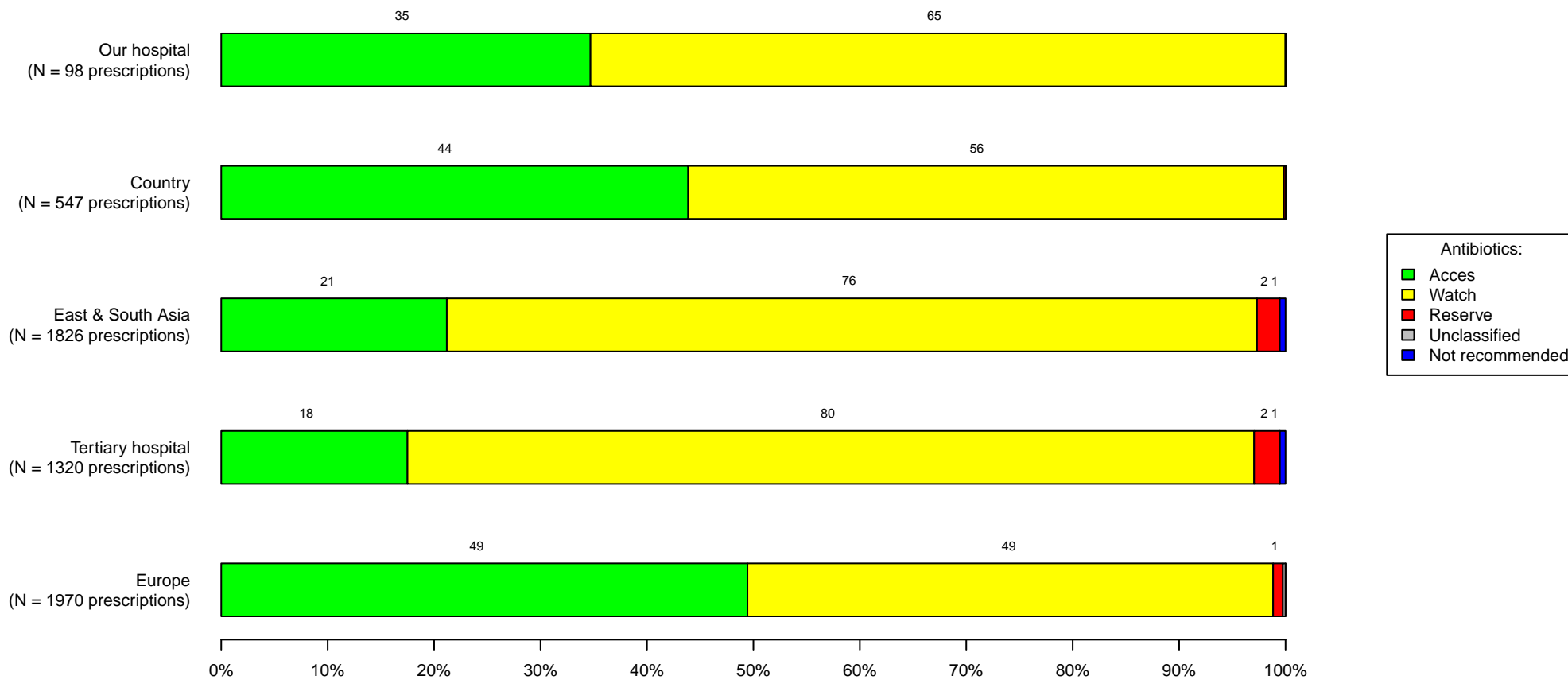
ICU patients



Overall antibiotic use (ATC J01) according to the WHO AWaRe classification – Patients receiving surgical prophylaxis

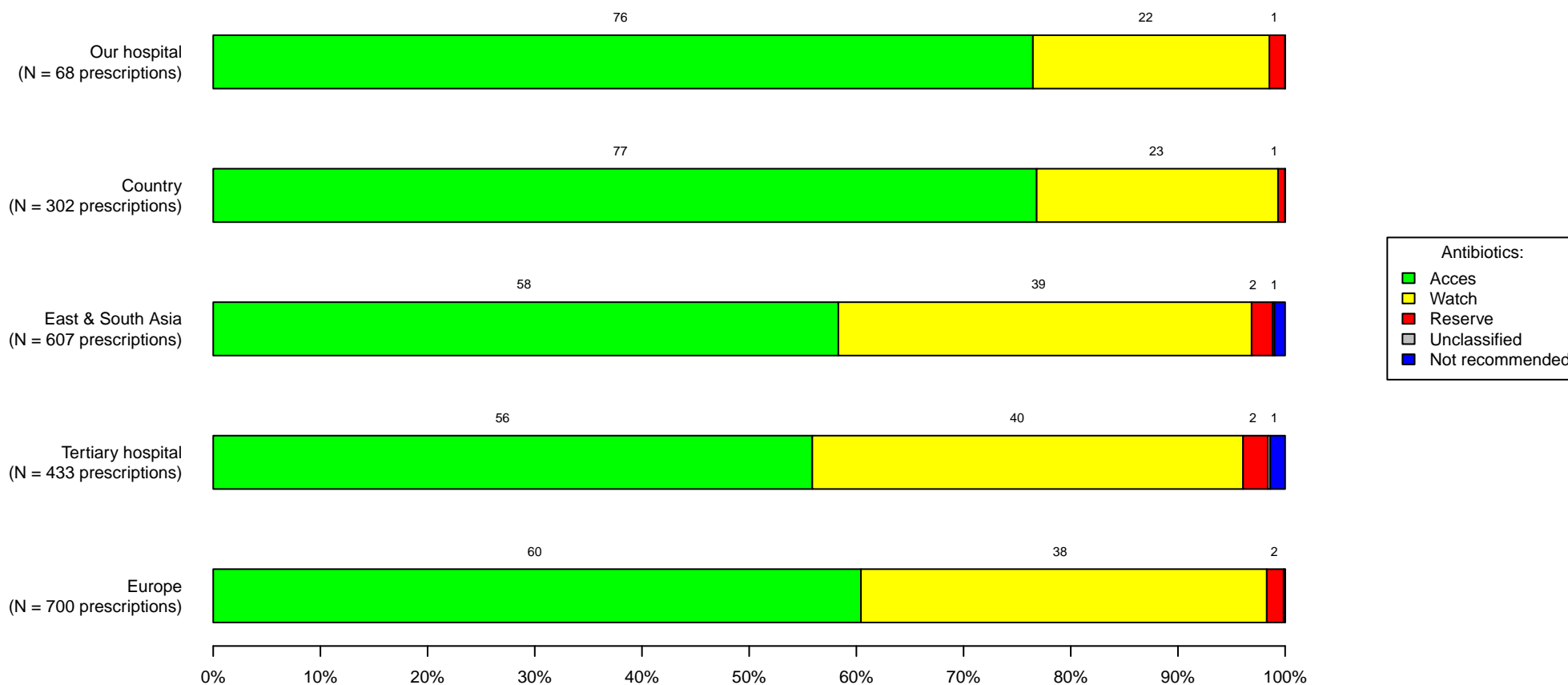


Overall antibiotic use (ATC J01) according to the WHO AWaRe classification – pneumonia



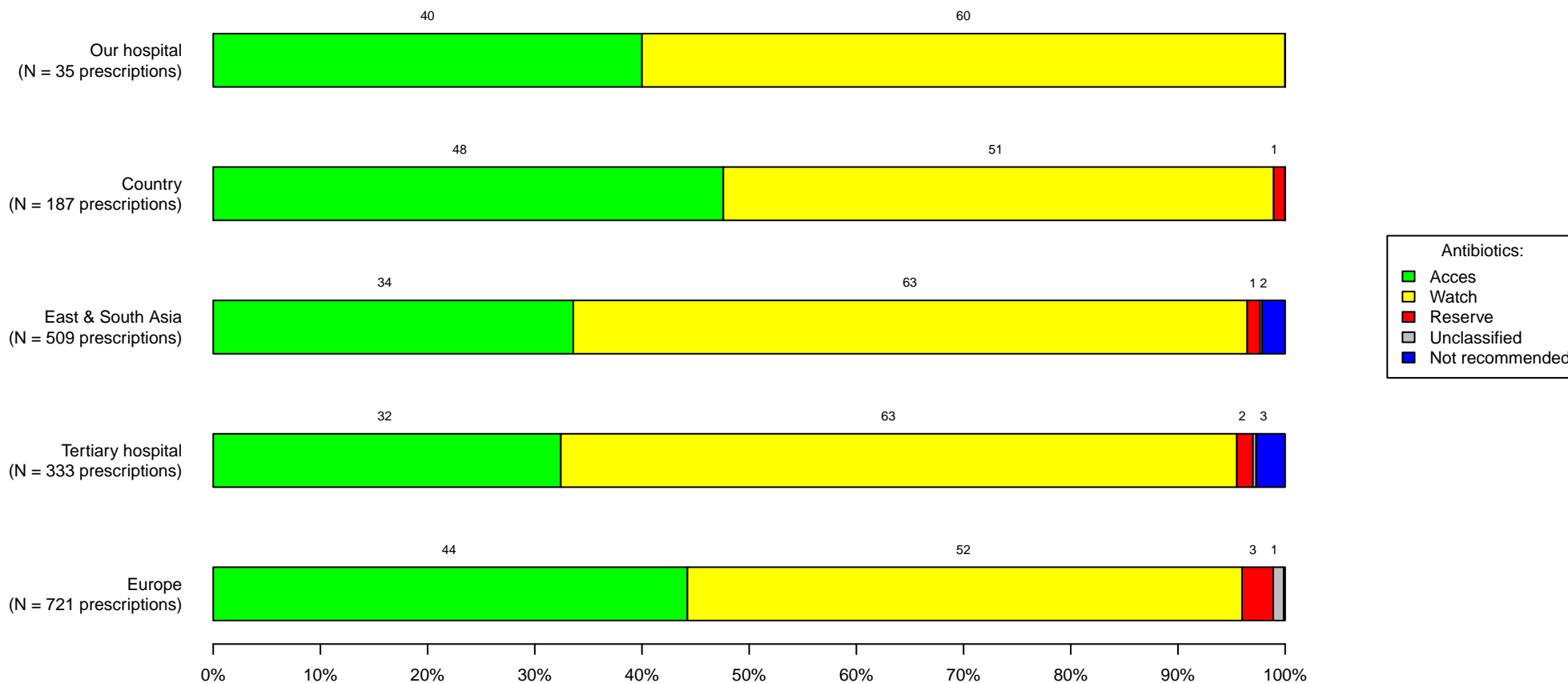
Prophylactic prescribing and patients admitted on NICU or NMW are excluded from this analysis

Overall antibiotic use (ATC J01) according to the WHO AWaRe classification – skin and soft tissue infections



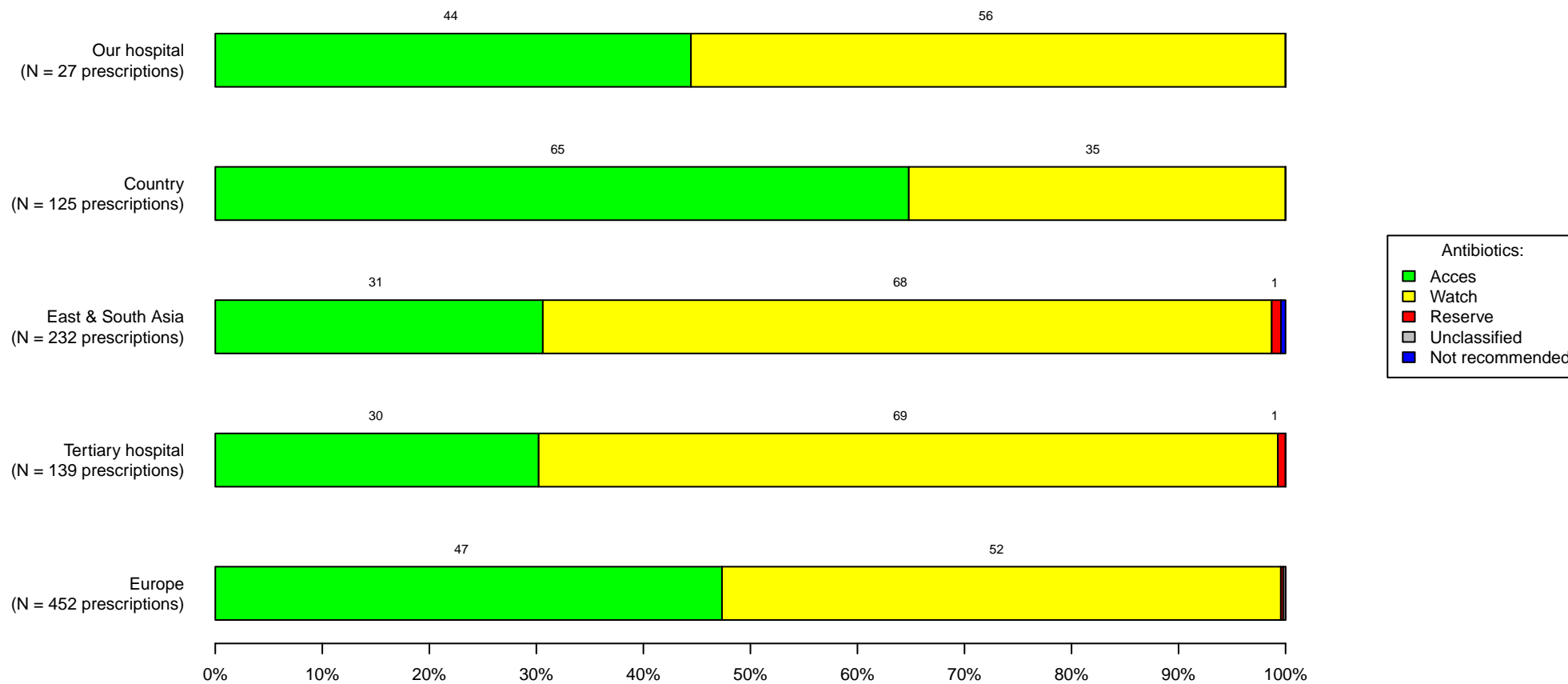
Prophylactic prescribing and patients admitted on NICU or NMW are excluded from this analysis

Overall antibiotic use (ATC J01) according to the WHO AWaRe classification – intra-abdominal sepsis



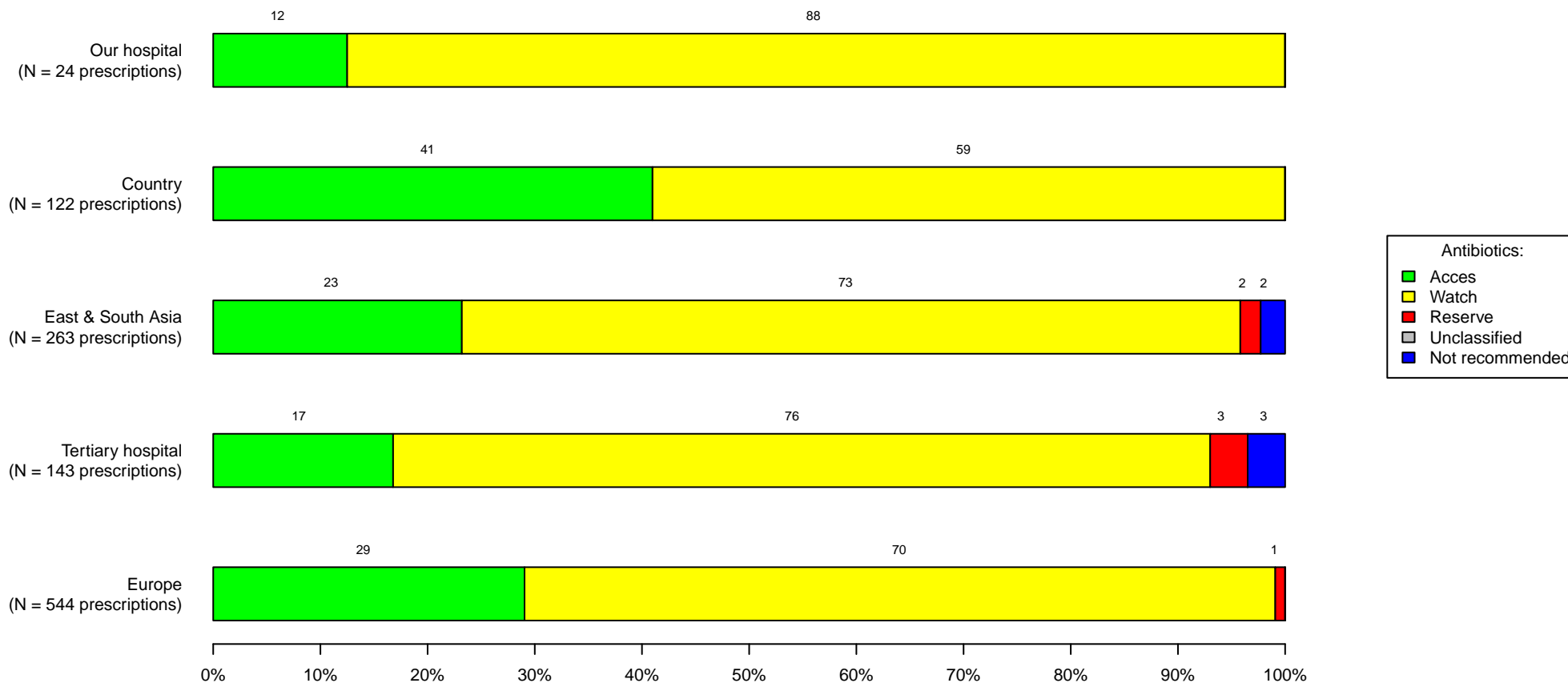
Prophylactic prescribing and patients admitted on NICU or NMW are excluded from this analysis

Overall antibiotic use (ATC J01) according to the WHO AWaRe classification – lower urinary tract infections



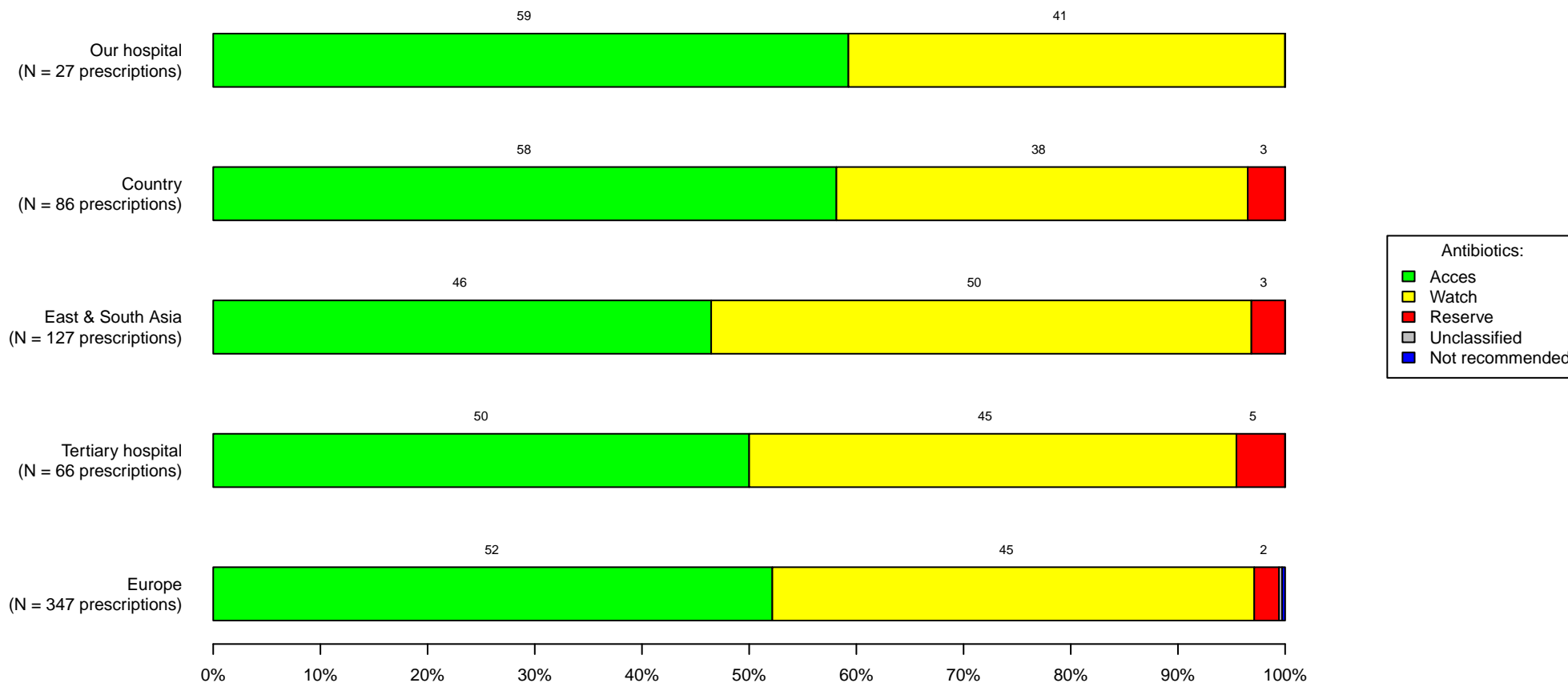
Prophylactic prescribing and patients admitted on NICU or NMW are excluded from this analysis

Overall antibiotic use (ATC J01) according to the WHO AWaRe classification – upper urinary tract infections



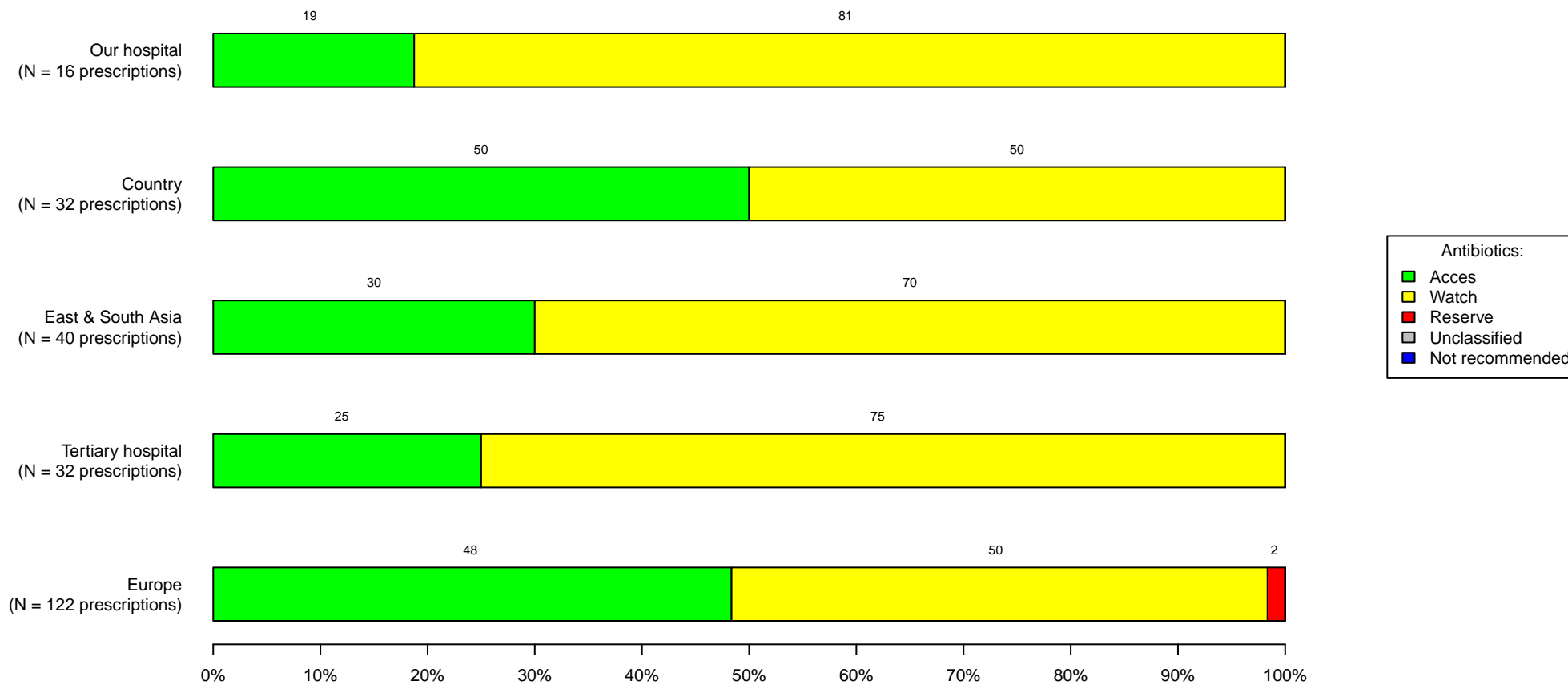
Prophylactic prescribing and patients admitted on NICU or NMW are excluded from this analysis

Overall antibiotic use (ATC J01) according to the WHO AWaRe classification – bone and joint infections



Prophylactic prescribing and patients admitted on NICU or NMW are excluded from this analysis

Overall antibiotic use (ATC J01) according to the WHO AWaRe classification – PUO



Prophylactic prescribing and patients admitted on NICU or NMW are excluded from this analysis

Overall antibiotic use (ATC J01) according to the WHO AWaRe classification

Access		Watch		Reserve	
Our Hospital	Country	Our Hospital	Country	Our Hospital	Country
AMC 22.9%	AMC 32%	TZP 12.7%	TZP 12.8%	Linezolid 0.2%	Polymyxin b 0.2%
SXT 8.4%	Cefazolin 7.2%	Ceftriaxone 9.2%	Ceftriaxone 7%	Tedizolid 0.2%	Aztreonam 0.1%
Cefazolin 8.2%	SXT 4.1%	Meropenem 8.4%	Meropenem 5.8%		Daptomycin 0.1%
Clindamycin 2.7%	Metronidazole P 2.6%	Ciprofloxacin 3.9%	Ciprofloxacin 5.2%		
Metronidazole P 2.3%	Doxycycline 1.9%	Vancomycin P 3.7%	Vancomycin P 2.8%		

Top 5 antibiotics by AWaRe classification and percentage of all prescriptions. Only antibacterials for systemic use (ATC J01) are included.

P=Parenteral, O=Oral, I=Inhalation, R=Rectal.

TZP=Piperacillin and enzyme inhibitor, AMC=Amoxicillin and enzyme inhibitor, SXT=Sulfamethoxazole and trimethoprim, SAM=Ampicillin and enzyme inhibitor, I-R=Imipenem and enzyme inhibitor, Cefo-Sul=Cefoperazone and beta-lactamase inhibitor, TMP/SDZ=Sulfadiazine and trimethoprim, Pen-G=Benzathine benzylpenicillin, AMP-Com=Ampicillin, combinations, Pen-Com=Penicillins, combinations with other antibacterials, Chl=Chloramphenicol, Pen V=Phenoxymethylpenicillin, Ceftr-com=Ceftriaxone, combinations, Ceftr-BLI=Ceftriaxone and beta-lactamase inhibitor, Cefu-Com=Cefuroxime, combinations with other antibacterials, Sulfam-TMP=Sulfamoxole and trimethoprim, Sulfad-TMP=Sulfadimidine and trimethoprim, Ben-Pen-V=Benzathine phenoxymethylpenicillin, CIP-Met=Ciprofloxacin and metronidazol, CZA=ceftazidime and beta-lactamase inhibitor, TIM=Ticarcillin and enzyme inhibitor, Pani-Bet=Panipenem and betamipron.