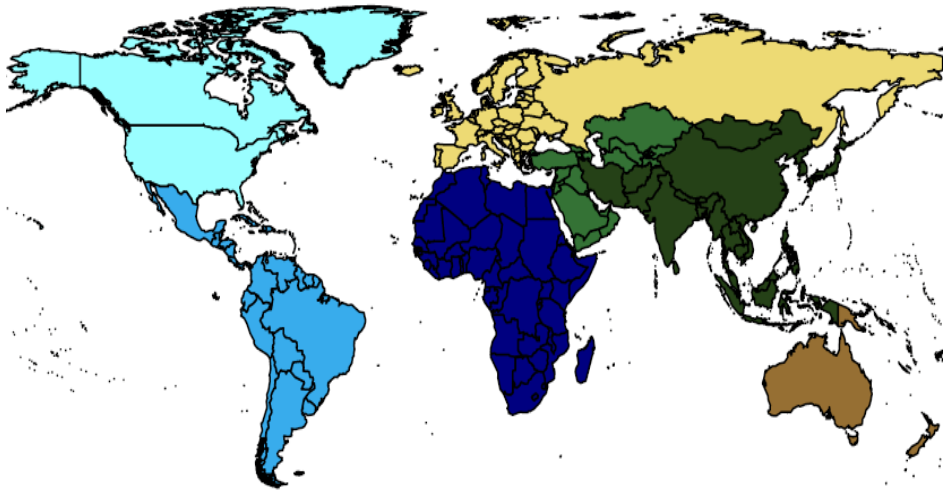
Global Point Prevalence Survey of Antimicrobial Consumption and Resistance

Hospital ID: XXX
Survey: 2021−P3

Participation to Global−PPS by UN macro−geographical regions, year 2021

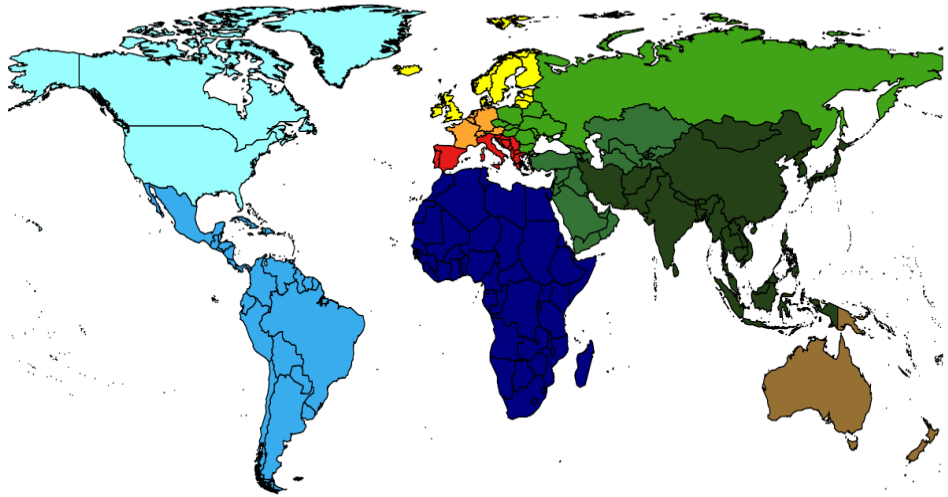
	Number of countries	Number of hospitals
North America	1	16
South America	4	9
Africa	11	49
Europe	8	66
West & Central Asia	2	5
East & South Asia	8	76
Australia & New Zealand	0	0



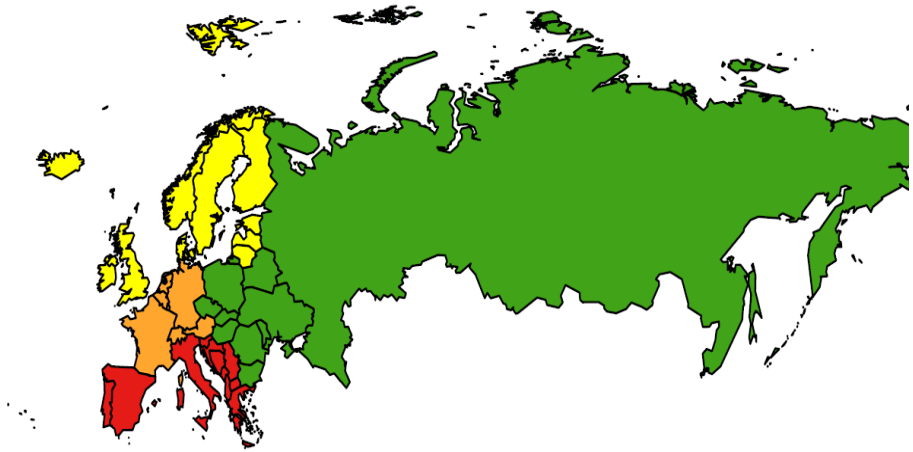
North America
Latin America
Africa
West & Central Asia
East & South Asia
Europe
Australia & New Zealand

Participation to Global−PPS by UN macro−geographical subregion, year 2021

	Number of countries	Number of hospitals
North America	1	16
South America	4	9
Africa	11	49
North Europe	2	5
West Europe	1	42
South Europe	4	15
East Europe	1	4
West & Central Asia	2	5
East & South Asia	8	76
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 − 2021 (N = 76), hospital type − 2021 (N = 51), EU − 2021 (N = 66).

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	31.8	25.2	40.8	90.6	47.7	40.7	52.4
South America	43.3	36.1	0.0	21.7	0.0	53.8	66.8
Africa	48.6	48.5	25.0	0.0	0.0	48.5	54.0
North Europe	36.9	33.3	61.5	0.0	48.0	42.8	51.7
West Europe	27.9	21.5	42.1	100.0	43.5	35.1	61.7
South Europe	45.6	40.1	31.8	0.0	74.3	48.4	66.4
East Europe	36.2	22.0	1.1	0.0	53.7	45.3	86.5
West & Central Asia	57.5	51.6	0.0	0.0	50.0	57.5	69.9
East & South Asia	53.9	51.7	50.1	86.6	41.2	52.8	70.0
Australia & New Zealand	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Our hospital 2021−P3	51.3	44.8	54.5	95.2	72.7	51.3	62.1
Country	46.7	44.3	53.7	89.5	44.2	48.6	66.9

Antimicrobial prevalence (%): 100*(number of treated patients/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	16.0	32.0	0.0	0.0	0.0	100.0	1.3	7.2
South America	60.7	40.6	64.8	0.0	50.0	74.0	43.5	77.8
Africa	66.2	73.2	0.0	0.0	56.4	70.6	45.2	84.1
North Europe	24.7	35.0	0.0	0.0	37.3	29.4	4.7	19.0
West Europe	19.3	25.3	20.0	0.0	0.0	50.0	3.7	11.6
South Europe	31.2	30.2	47.4	0.0	34.1	52.6	8.2	37.7
East Europe	48.0	66.7	0.0	0.0	34.0	100.0	0.0	0.0
West & Central Asia	43.9	58.6	0.0	0.0	16.0	60.0	0.0	28.6
East & South Asia	56.6	51.8	62.9	66.7	66.4	63.5	44.4	65.1
Australia & New Zealand	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Our hospital 2021−P3	29.5	46.9	75.0	0.0	0.0	100.0	0.0	28.6
Country	32.6	36.9	77.8	100.0	0.0	62.5	4.4	33.3

Antimicrobial prevalence (%): 100*(number of treated patients/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 2021−P3							
patients (N)	784	317	77	21	11	300	58
treated patients (%)	51.3	44.8	54.5	95.2	72.7	51.3	62.1
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)	18566	11109	407	112	240	4856	1842
treated patients (%)	53.9	51.7	50.1	86.6	41.2	52.8	70
Hospital type							
patients (N)	15173	8526	407	112	240	4187	1701
treated patients (%)	53.7	50.8	50.1	86.6	41.2	53.8	69
Europe							
patients (N)	13195	7796	443	2	436	3921	597
treated patients (%)	33.1	25.6	33.4	100	51.1	41.1	64.5

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: Continent ; Hospital type: Tertiary hospital

Antimicrobial prevalence in paediatric wards

	Total	PMW	HO−PMW	T−PMW	PSW	PICU
Our hospital 2021−P3						
patients (N)	54	49	4	0	0	1
treated patients (%)	50	46.9	75	0	0	100
Country						
patients (N)	87	65	9	5	0	8
treated patients (%)	47.1	36.9	77.8	100	0	62.5
Continent						
patients (N)	4152	2933	221	9	301	688
treated patients (%)	55.4	51.8	62.9	66.7	66.4	63.5
Hospital type						
patients (N)	2245	1515	140	7	140	443
treated patients (%)	56.8	53.4	61.4	85.7	70.7	62.1
Europe						
patients (N)	959	737	34	0	142	46
treated patients (%)	31.3	29.3	35.3	0	35.2	47.8

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*(number of children treated with at least one antimicrobial/number of admitted children).

Country: Country ; Continent: Continent ; Hospital type: Tertiary hospital

Antimicrobial prevalence in neonatal wards

	Total	NMW	NICU
Our hospital 2021−P3			
patients (N)	51	37	14
treated patients (%)	7.8	0	28.6
Country			
patients (N)	57	45	12
treated patients (%)	10.5	4.4	33.3
Continent			
patients (N)	1697	473	1224
treated patients (%)	59.3	44.4	65.1
Hospital type			
patients (N)	977	226	751
treated patients (%)	60.3	31	69.1
Europe			
patients (N)	449	295	154
treated patients (%)	11.8	4.7	25.3

Patients (N) = Number of admitted neonates in the hospital, country, UN macro−geographicl 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*(number of neonates treated with at least one antimicrobial/number of admitted neonates).

Country: Country ; Continent: Continent ; Hospital type: Tertiary hospital

Antimicrobial prevalence (%) by activity

	Hospital 2021−P3	Country	Continent	Hospital type	Europe
Adults					
Medical	49.5	46.3	51.4	50.6	27.7
Surgical	51.7	44.6	53.2	53.9	40.5
ICU	62.1	68.4	70.4	69.4	64.7
Children					
Medical	38.5	42.7	52.5	53.1	29.4
Surgical	78.6	100.0	61.3	75.1	35.5
ICU	100.0	62.5	64.7	63.0	47.8
Neonates					
GNMW	0.0	4.4	44.4	31.0	4.7
NICU	28.6	33.3	65.1	69.1	25.3

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: Continent ; Hospital type: Tertiary hospital

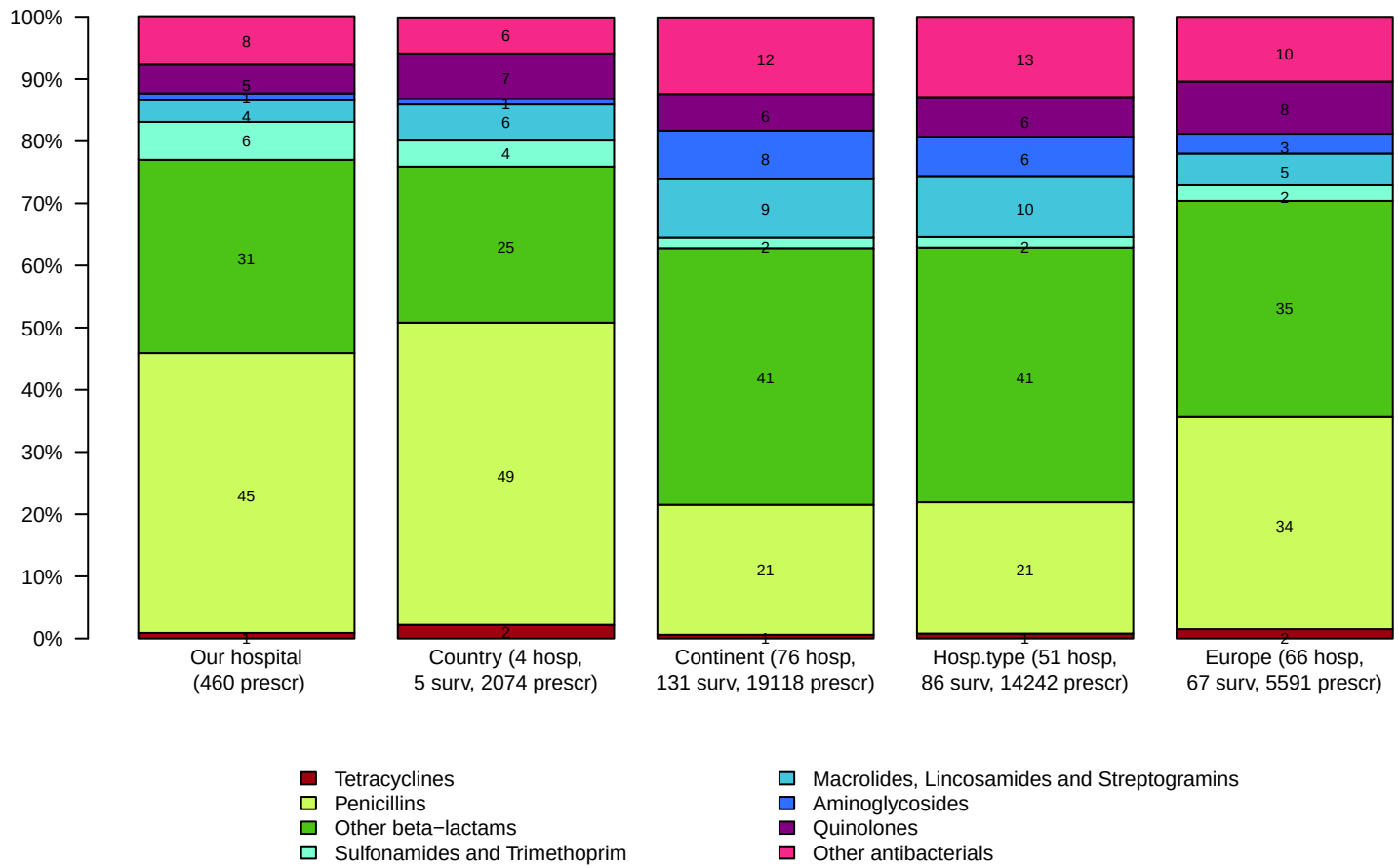
Prevalence of patients prescribed at least one antimicrobial on day of survey

	Our hospital 2021−P3		Country		Continent		Hospital type		Europe	
	N	%	N	%	N	%	N	%	N	%
N admitted patients (=denominator)	889		4116		24415		18395		14603	
N patients on antimicrobials	433	48.7	1902	46.2	13308	54.5	10018	54.5	4717	32.3
N patients with antibacterials for systemic use	396	44.5	1779	43.2	12894	52.8	9685	52.7	4550	31.2
N patients with antimycotics or antifungals for systemic use	45	5.1	66	1.6	630	2.6	516	2.8	143	1.0
N patients with drugs for treatment of tuberculosis	9	1.0	43	1.0	275	1.1	206	1.1	46	0.3
N patients with antivirals for systemic use	60	6.7	163	4.0	864	3.5	741	4.0	166	1.1
N patients with antibiotics used as intestinal anti−infectives	16	1.8	56	1.4	127	0.5	114	0.6	62	0.4
N patients with nitroimidazole derivatives	0	0.0	40	1.0	144	0.6	111	0.6	90	0.6
N patients with antimalarials	11	1.2	13	0.3	19	0.1	15	0.1	2	0.0

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: Continent ; Hospital type: Tertiary hospital

Overall proportional antibiotic use



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: Continent ; Hospital type: Tertiary hospital

Proportional antibiotic use (% of prescriptions)

ATC4	Antibiotics Subgroup	Our Hospital	Country	Continent	Type	Europe
J01AA	Tetracyclines	0.9	2.2	0.6	0.8	1.5
J01CA	Penicillins with extended spectrum	2.2	1.2	7.9	6.8	5.0
J01CE	Beta−lactamase sensitive penicillins	1.3	1.4	0.5	0.5	0.5
J01CF	Beta−lactamase resistant penicillins	1.3	1.1	0.6	0.6	1.5
J01CR	Penicillins incl. beta−lactam. inh.	40.2	45.0	11.6	12.7	27.0
J01DB	First−generation cephalosporins	7.6	8.3	4.3	4.2	7.1
J01DD	Third−generation cephalosporins	14.3	8.5	19.7	19.5	18.4
J01DE	Fourth−generation cephalosporins	2.2	0.8	1.5	1.8	1.1
J01DH	Carbapenems	7.0	6.8	8.1	8.7	5.2
J01EE	Comb. Sulfonamides/trimethoprim	6.1	4.2	1.6	1.7	2.0
J01FA	Macrolides	1.5	4.1	5.1	5.0	3.5
J01FF	Lincosamides	2.0	1.7	4.4	4.8	1.6
J01MA	Fluoroquinolones	4.6	7.3	5.9	6.4	8.4
J01XA	Glycopeptide antibacterials	2.0	2.9	6.3	6.4	3.4
J01XD	Imidazole derivatives	5.7	2.6	4.7	5.0	5.0

Our hospital: 460 prescriptions, 396 treated patients; Country: 2074 prescriptions, 4 hospitals, 5 surveys
Continent: 19118 prescriptions, 76 hospitals, 131 surveys; Type: 14242 prescriptions, 51 hospitals, 86 surveys
Europe: 5591 prescriptions, 66 hospitals, 67 surveys

Country: Country ; Continent: Continent ; 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	2.1	2.5	0.9	1.1	2.4
J01CA	Penicillins with extended spectrum	3.6	1.0	5.4	5.3	5.4
J01CE	Beta−lactamase sensitive penicillins	0.7	0.9	0.3	0.3	0.5
J01CF	Beta−lactamase resistant penicillins	2.1	1.3	0.3	0.2	2.0
J01CR	Penicillins incl. beta−lactam. inh.	47.1	47.8	17.8	18.6	34.7
J01DB	First−generation cephalosporins	6.4	8.3	3.2	2.6	2.4
J01DD	Third−generation cephalosporins	12.1	8.4	20.3	20.6	12.6
J01DE	Fourth−generation cephalosporins	1.4	0.9	1.4	1.6	0.6
J01DH	Carbapenems	6.4	5.4	7.1	7.9	4.8
J01EE	Comb. Sulfonamides/trimethoprim	5.0	2.7	1.0	1.0	2.4
J01FA	Macrolides	2.1	4.4	9.7	9.4	5.1
J01FF	Lincosamides	2.1	1.9	4.3	4.7	1.8
J01MA	Fluoroquinolones	3.6	8.5	8.2	8.1	10.3
J01XA	Glycopeptide antibacterials	2.1	2.7	3.6	4.1	2.8
J01XD	Imidazole derivatives	2.1	2.1	3.3	3.3	3.6

Our hospital: 140 prescriptions, 128 treated patients; Country: 1264 prescriptions, 4 hospitals, 5 surveys
Continent: 7524 prescriptions, 70 hospitals, 117 surveys; Type: 5625 prescriptions, 49 hospitals, 81 surveys
Europe: 2248 prescriptions, 60 hospitals, 61 surveys

Country: Country ; Continent: Continent ; 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
J01CA	Penicillins with extended spectrum	1.2	1.7	3.9	4.2	2.0
J01CE	Beta−lactamase sensitive penicillins	0.6	1.5	0.6	0.4	0.3
J01CR	Penicillins incl. beta−lactam. inh.	37.4	45.9	9.6	9.9	20.2
J01DB	First−generation cephalosporins	11.7	11.6	12.3	11.7	15.6
J01DD	Third−generation cephalosporins	21.6	8.9	20.1	21.3	26.3
J01DE	Fourth−generation cephalosporins	1.2	0.4	0.8	0.9	1.1
J01DH	Carbapenems	2.3	5.0	3.7	3.9	3.2
J01EE	Comb. Sulfonamides/trimethoprim	1.2	1.9	0.6	0.4	1.1
J01FA	Macrolides		2.3	2.4	1.9	0.9
J01FF	Lincosamides	2.9	2.3	6.5	6.8	1.8
J01MA	Fluoroquinolones	6.4	7.1	5.0	4.9	7.3
J01XA	Glycopeptide antibacterials	2.9	2.9	4.4	4.6	3.7
J01XD	Imidazole derivatives	10.5	4.6	10.6	11.2	7.4

Our hospital: 171 prescriptions, 144 treated patients; Country: 482 prescriptions, 4 hospitals, 5 surveys
Continent: 3587 prescriptions, 51 hospitals, 84 surveys; Type: 3167 prescriptions, 39 hospitals, 62 surveys
Europe: 1972 prescriptions, 55 hospitals, 56 surveys

Country: Country ; Continent: Continent ; 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	2.3	2.3	1.6	1.7	0.6
J01CA	Penicillins with extended spectrum	2.3	0.8	2.7	2.4	2.2
J01CE	Beta−lactamase sensitive penicillins	2.3	3.1	0.0	0.1	
J01CF	Beta−lactamase resistant penicillins	2.3		0.4	0.4	1.4
J01CR	Penicillins incl. beta−lactam. inh.	14.0	38.9	9.7	9.4	27.4
J01DB	First−generation cephalosporins	9.3	4.6	2.7	2.5	3.7
J01DD	Third−generation cephalosporins	16.3	8.4	15.7	15.6	15.7
J01DE	Fourth−generation cephalosporins	7.0	0.8	3.1	3.2	2.3
J01DH	Carbapenems	30.2	20.6	17.7	18.2	14.7
J01EE	Comb. Sulfonamides/trimethoprim	7.0	3.1	1.6	1.6	2.2
J01FA	Macrolides	4.7	6.1	4.2	3.8	2.5
J01FF	Lincosamides	2.3		4.8	5.0	0.8
J01MA	Fluoroquinolones		2.3	8.5	8.3	7.2
J01XA	Glycopeptide antibacterials		6.1	11.6	12.5	6.3

Our hospital: 43 prescriptions, 34 treated patients; Country: 131 prescriptions, 4 hospitals, 5 surveys
Continent: 2142 prescriptions, 61 hospitals, 101 surveys; Type: 1932 prescriptions, 45 hospitals, 74 surveys
Europe: 511 prescriptions, 46 hospitals, 47 surveys

Country: Country ; Continent: Continent ; 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
J01CA	Penicillins with extended spectrum	3.8		10.6	8.3	19.9
J01CF	Beta−lactamase resistant penicillins	7.7		1.2	1.7	2.4
J01CR	Penicillins incl. beta−lactam. inh.	34.6		5.2	7.9	16.3
J01DB	First−generation cephalosporins	3.8		1.3	1.3	4.5
J01DC	Second−generation cephalosporins			6.1	5.0	2.4
J01DD	Third−generation cephalosporins	15.4		29.3	27.8	22.4
J01DE	Fourth−generation cephalosporins	3.8		1.0	1.5	1.6
J01DH	Carbapenems	3.8		7.0	7.5	1.2
J01EE	Comb. Sulfonamides/trimethoprim	11.5		2.2	3.4	2.8
J01FA	Macrolides	3.8		1.3	1.9	8.9
J01XA	Glycopeptide antibacterials	3.8		9.5	7.9	1.6
J01XD	Imidazole derivatives	7.7		3.0	2.8	2.0

Our hospital: 26 prescriptions, 23 treated patients; Country: 29 prescriptions, 1 hospitals, 1 surveys
Continent: 2164 prescriptions, 58 hospitals, 93 surveys; Type: 1129 prescriptions, 35 hospitals, 52 surveys
Europe: 246 prescriptions, 42 hospitals, 42 surveys

Country: Country ; Continent: Continent ; 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	0.9	2.4	0.6	0.8	2.1
J01CA	Penicillins with extended spectrum	1.8	1.4	7.4	6.6	7.3
J01CE	Beta−lactamase sensitive penicillins	0.9	1.4	0.6	0.6	0.4
J01CF	Beta−lactamase resistant penicillins	1.8	1.3	0.7	0.7	1.5
J01CR	Penicillins incl. beta−lactam. inh.	47.0	48.2	13.8	16.1	32.4
J01DB	First−generation cephalosporins	2.8	8.0	1.0	1.1	0.9
J01DD	Third−generation cephalosporins	18.4	10.3	23.9	22.7	16.1
J01DE	Fourth−generation cephalosporins	2.8	0.4	1.6	1.8	0.7
J01DH	Carbapenems	3.2	4.1	7.5	8.0	4.8
J01EE	Comb. Sulfonamides/trimethoprim	0.5	1.2	0.8	0.8	0.9
J01FA	Macrolides	1.8	5.7	8.8	9.0	4.3
J01FF	Lincosamides	3.7	2.4	4.7	4.9	1.9
J01MA	Fluoroquinolones	5.1	7.3	6.8	7.2	9.2
J01XA	Glycopeptide antibacterials	0.9	1.6	5.6	5.2	2.9
J01XD	Imidazole derivatives	7.4	3.1	3.3	3.6	5.8

Our hospital: 217 prescriptions, 187 treated patients; Country: 1271 prescriptions, 4 hospitals, 5 surveys
Continent: 9239 prescriptions, 76 hospitals, 130 surveys; Type: 6774 prescriptions, 51 hospitals, 86 surveys
Europe: 2921 prescriptions, 64 hospitals, 65 surveys

Country: Country ; Continent: Continent ; 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
J01CA	Penicillins with extended spectrum	0.8	0.9	5.5	4.8	3.2
J01CF	Beta−lactamase resistant penicillins	1.5	1.3	0.5	0.6	2.6
J01CR	Penicillins incl. beta−lactam. inh.	47.3	47.5	14.9	15.7	30.8
J01DB	First−generation cephalosporins	2.3	2.8	0.9	0.9	0.8
J01DD	Third−generation cephalosporins	10.7	4.9	11.7	11.3	13.6
J01DE	Fourth−generation cephalosporins	3.1	2.3	3.1	3.4	2.0
J01DH	Carbapenems	19.1	16.2	17.5	17.2	10.1
J01EE	Comb. Sulfonamides/trimethoprim	1.5	2.1	1.3	1.5	3.1
J01FA	Macrolides	0.8	0.4	2.2	2.1	0.9
J01FF	Lincosamides	0.8	0.6	3.5	3.7	1.1
J01GB	Other aminoglycosides		1.1	8.6	7.6	2.7
J01MA	Fluoroquinolones	4.6	9.6	8.7	8.7	10.8
J01XA	Glycopeptide antibacterials	3.8	6.2	10.5	10.4	6.8
J01XD	Imidazole derivatives	3.1	0.9	2.2	2.4	3.4
J01XE	Nitrofuran derivatives	0.8		0.1	0.1	1.2

Our hospital: 131 prescriptions, 122 treated patients; Country: 531 prescriptions, 4 hospitals, 5 surveys
Continent: 3277 prescriptions, 72 hospitals, 113 surveys; Type: 2770 prescriptions, 49 hospitals, 75 surveys
Europe: 1217 prescriptions, 61 hospitals, 62 surveys

Country: Country ; Continent: Continent ; 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
J01CR	Penicillins incl. beta−lactam. inh.	27.0	22.0	8.0	6.2	10.2
J01DB	First−generation cephalosporins	41.3	45.5	15.9	16.2	36.5
J01DC	Second−generation cephalosporins		1.6	20.2	17.6	2.2
J01DD	Third−generation cephalosporins	19.0	11.4	18.4	20.7	30.6
J01DH	Carbapenems		1.6	2.9	3.1	1.0
J01FF	Lincosamides		2.4	5.8	6.7	2.0
J01GB	Other aminoglycosides		1.6	4.0	3.6	2.9
J01MA	Fluoroquinolones		1.6	2.7	3.2	3.0
J01XA	Glycopeptide antibacterials	3.2	4.9	4.1	4.7	1.0
J01XD	Imidazole derivatives	9.5	6.5	11.2	11.6	5.5

Our hospital: 63 prescriptions, 57 treated patients; Country: 123 prescriptions, 4 hospitals, 5 surveys
Continent: 3524 prescriptions, 73 hospitals, 121 surveys; Type: 2706 prescriptions, 50 hospitals, 82 surveys
Europe: 962 prescriptions, 54 hospitals, 55 surveys

Country: Country ; Continent: Continent ; 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 antimicrobial use (% of prescriptions) − Medical Prophylaxis

ATC4	Antimicrobials Subgroup	Our Hospital	Country	Continent	Type	Europe
J01	Antibacterials for systemic use					
J01CA	Penicillins−extended spectrum	3.8		15.3	13.5	5.0
J01CR	Comb penicillins incl. B−lact.Inh		2.0	3.8	3.3	27.0
J01DB	First−gen. cephalosporins			3.4	1.8	7.1
J01DC	Second−gen. cephalosporins			6.7	3.9	2.6
J01DD	Third−gen. cephalosporins			14.1	15.1	18.4
J01DH	Carbapenems			4.9	6.0	5.2
J01GB	Other aminoglycosides	2.3	1.0	12.8	9.7	3.2
J01XA	Glycopeptide antibacterials			5.0	5.7	3.4
J02	Antimycotics and antifungals for systemic use					
J02AC	Triazole derivatives	15.4	8.1	6.1	7.4	
J05	Antivirals for systemic use					
J05AB	Nucleosides/nucleotides excl RTI	26.9	27.4	4.9	6.8	

Our hospital: 130 prescriptions, 85 treated patients; Country: 197 prescriptions, 4 hospitals, 5 surveys
Continent: 2901 prescriptions, 71 hospitals, 110 surveys; Type: 1828 prescriptions, 48 hospitals, 71 surveys
Europe: 333 prescriptions, 46 hospitals, 47 surveys

Country: Country ; Continent: Continent ; Hospital type: Tertiary hospital

5 most prescribed at hospital level plus 5 extra ATC4 at continental level which do not fall within top 5 at hospital 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 2021−P3	174	69.3	77	30.7	251	60.8
Country	1083	71.6	430	28.4	1513	71.2
Continent	9445	89.1	1160	10.9	10605	74.4
Hospital type	6948	87.9	959	12.1	7907	71.9

	HAI Empiric		HAI Targeted		HAI Total	
	N	%	N	%	N	%
Our hospital 2021−P3	112	69.1	50	30.9	162	39.2
Country	392	64.1	220	35.9	612	28.8
Continent	2637	72.2	1013	27.8	3650	25.6
Hospital type	2207	71.3	889	28.7	3096	28.1

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: Continent ; Hospital type: Tertiary hospital

Prophylactic antimicrobial use by indication

	Medical		Surgical	
	N	%	N	%
Our hospital 2021−P3	130	67.4	63	32.6
Country	197	61.2	125	38.8
Continent	2901	44.9	3556	55.1
Hospital type	1828	40.1	2729	59.9

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: Continent ; Hospital type: Tertiary hospital

Ten most common diagnoses treated with therapeutic antimicrobials

	Our hospital 2021−P3		Country		Continent		Hospital type		Europe	
Diagnosis	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
Pneu	61	17.6	470	26.9	3218	35.0	2499	34.4	922	25.9
SST	51	14.7	278	15.9	739	8.0	632	8.7	323	9.1
IA	50	14.5	172	9.8	400	4.4	349	4.8	325	9.1
Cys	31	9.0	125	7.1	426	4.6	306	4.2	301	8.5
Pye	24	6.9	119	6.8	361	3.9	300	4.1	226	6.4
BJ	19	5.5	78	4.5	186	2.0	139	1.9	106	3.0
SEPSIS	13	3.8	44	2.5	510	5.6	374	5.1	165	4.6
PUO	11	3.2	28	1.6	34	0.4	31	0.4	48	1.3
FN	10	2.9	17	1.0	103	1.1	82	1.1	22	0.6
LUNG	9	2.6	13	0.7	47	0.5	43	0.6	18	0.5

Top ten diagnoses in our hospital. Count on the number of diagnoses treated with at least one antimicrobal.
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: Continent 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 2021−P3		Country		Continent		Hospital type		Europe	
	N	%	N	%	N	%	N	%	N	%
Medical										
Reason in notes	193	87.3	1353	94.7	7162	70.0	5415	74.3	2699	88.7
Guidelines missing	38	17.2	239	16.7	522	5.1	487	6.7	441	14.5
Guideline compliant	143	82.2	782	74.9	5264	76.4	3910	80.0	1622	80.6
Stop/review date documented	137	62.0	832	58.3	4558	44.5	3471	47.6	1395	45.8
Surgical										
Reason in notes	143	76.1	416	83.2	2378	53.4	1888	53.5	1647	84.7
Guidelines missing	22	11.7	83	16.6	310	7.0	288	8.2	422	21.7
Guideline compliant	101	72.7	255	72.6	1379	45.1	1128	48.0	872	78.8
Stop/review date documented	114	60.6	261	52.2	1458	32.7	1086	30.8	1048	53.9
ICU										
Reason in notes	39	76.5	138	94.5	2837	64.1	2191	64.0	550	91.1
Guidelines missing	3	5.9	18	12.3	165	3.7	149	4.4	135	22.4
Guideline compliant	33	86.8	89	84.0	1767	69.7	1400	70.8	304	83.7
Stop/review date	36	70.6	78	53.4	1745	39.4	1417	41.4	250	41.4

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 2021−P3		Country		Continent		Hospital type		Europe	
	N	%	N	%	N	%	N	%	N	%
Medical										
Reason in notes	179	88.2	1317	94.8	5455	73.1	4438	75.3	2439	88.2
Guidelines missing	29	14.3	239	17.2	430	5.8	418	7.1	408	14.8
Guideline compliant	136	82.4	750	74.3	4140	80.7	3253	81.1	1465	80.1
Stop/review date documented	128	63.1	818	58.9	3624	48.6	2896	49.2	1288	46.6
Surgical										
Reason in notes	135	77.1	410	83.0	2181	53.1	1776	52.9	1591	84.6
Guidelines missing	18	10.3	83	16.8	291	7.1	273	8.1	412	21.9
Guideline compliant	98	73.7	251	72.5	1275	45.3	1044	46.8	836	78.4
Stop/review date documented	109	62.3	261	52.8	1302	31.7	995	29.6	1024	54.4
ICU										
Reason in notes	31	72.1	123	94.6	1394	63.7	1248	63.0	475	94.1
Guidelines missing	3	7.0	18	13.8	98	4.5	97	4.9	116	23.0
Guideline compliant	28	84.8	77	81.9	933	69.8	830	68.9	259	81.7
Stop/review date documented	30	69.8	65	50.0	894	40.8	791	39.9	212	42.0

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 2021−P3		Country		Continent		Hospital type		Europe	
	N	%	N	%	N	%	N	%	N	%
Medical										
Reason in notes	14	77.8			1707	61.6	977	70.0	260	93.5
Guidelines missing	9	50.0			92	3.3	69	4.9	33	11.9
Guideline compliant	7	77.8			1124	63.9	657	74.8	157	84.9
Stop/review date documented	9	50.0			934	33.7	575	41.2	107	38.5
Surgical										
Reason in notes	8	61.5			197	56.4	112	65.1	56	88.9
Guidelines missing	4	30.8			19	5.4	15	8.7	10	15.9
Guideline compliant	3	50.0			104	41.9	84	70.6	36	87.8
Stop/review date documented	5	38.5			156	44.7	91	52.9	24	38.1
ICU										
Reason in notes	8	100.0			1443	64.5	943	65.3	75	75.8
Guidelines missing	0	0.0			67	3.0	52	3.6	19	19.2
Guideline compliant	5	100.0			834	69.5	570	73.8	45	97.8
Stop/review date documented	6	75.0			851	38.1	626	43.4	38	38.4

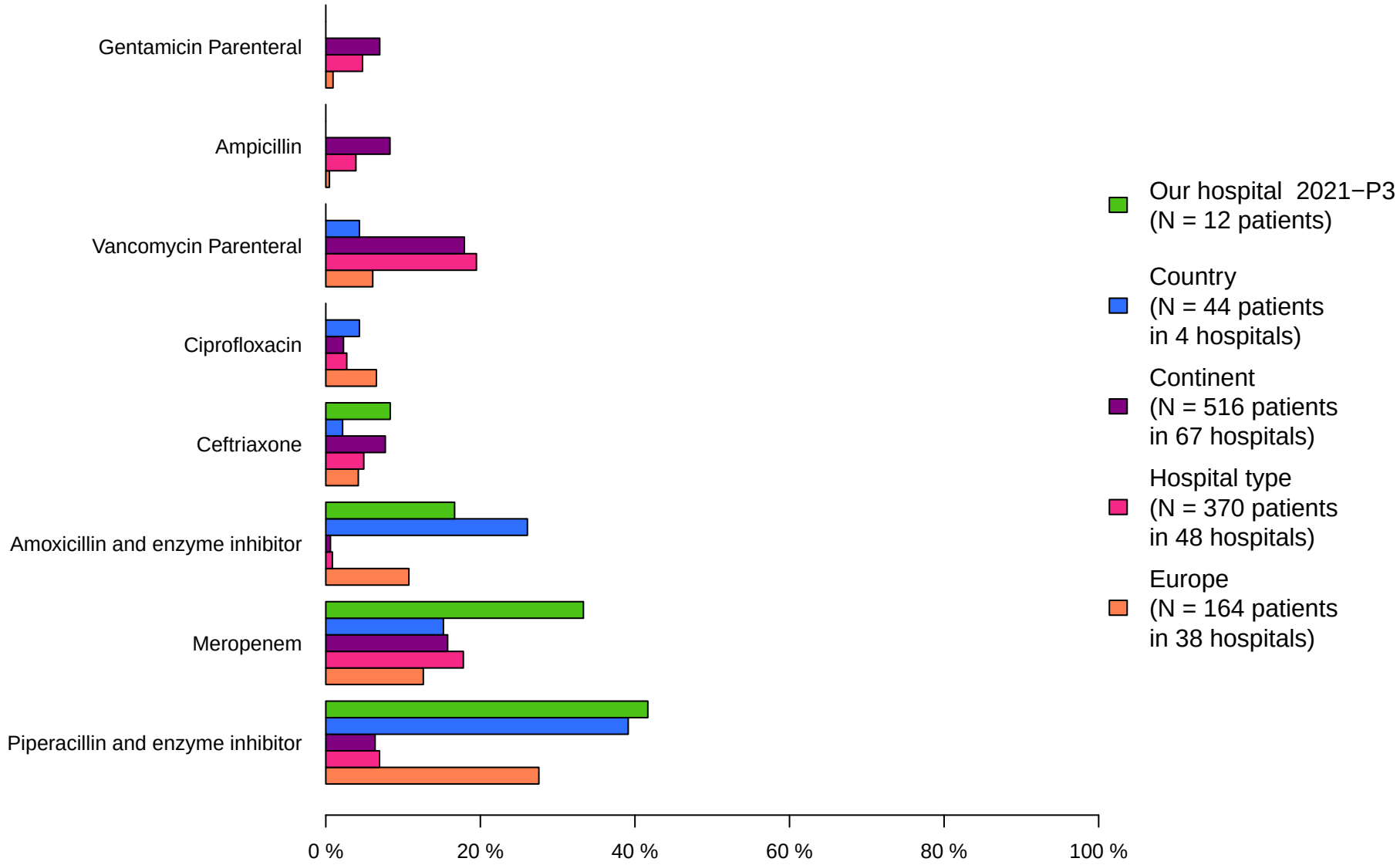
Antibiotic quality indicators by activity (medical, surgical, ICU) for patients admitted on paediatric and neonatal wards receiving antibacterials for systemic use (ATC J01).

− 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.

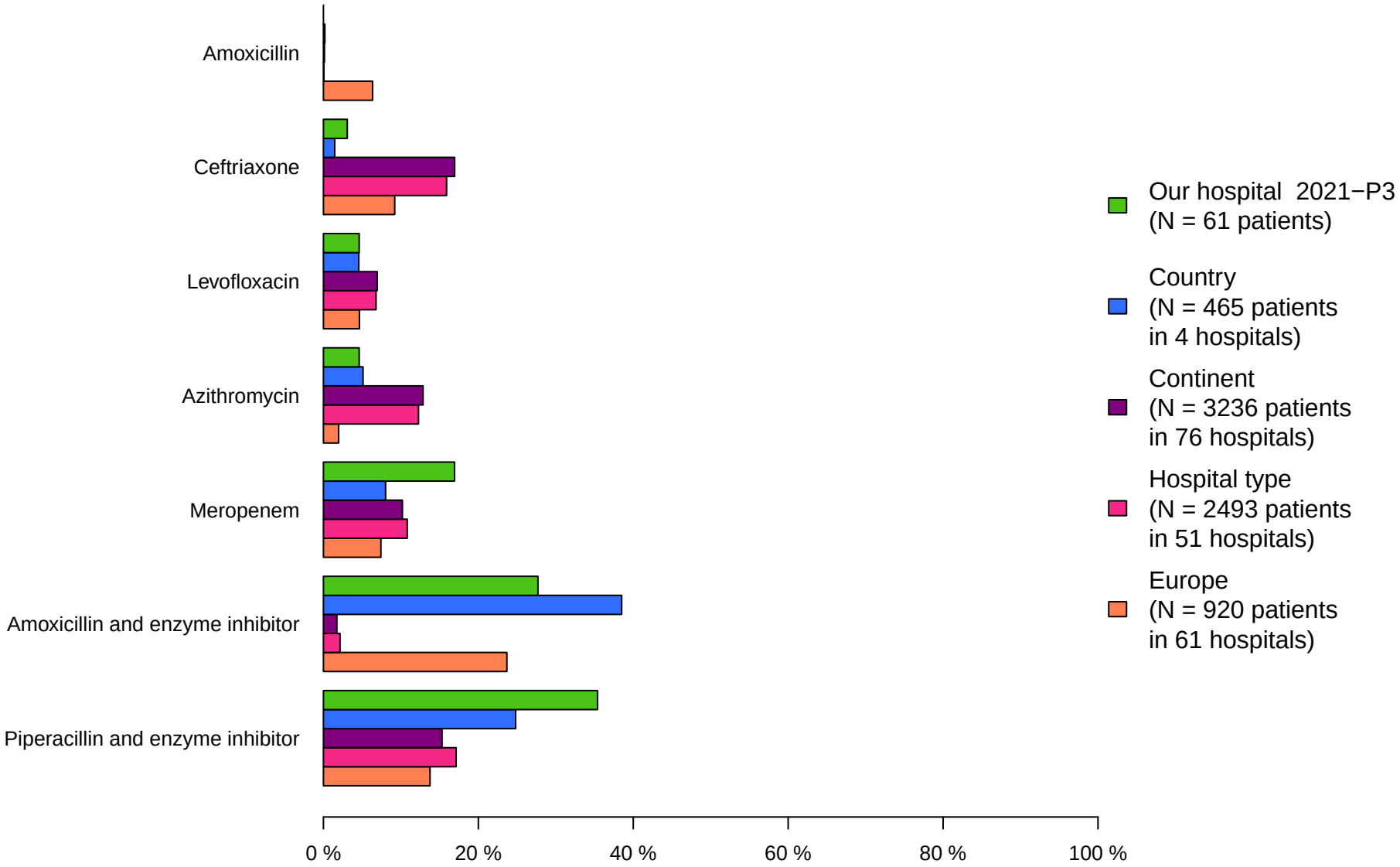
Top 5 most frequently used antibiotics for sepsis in adults and children



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: Continent ; Hospital type: Tertiary hospital

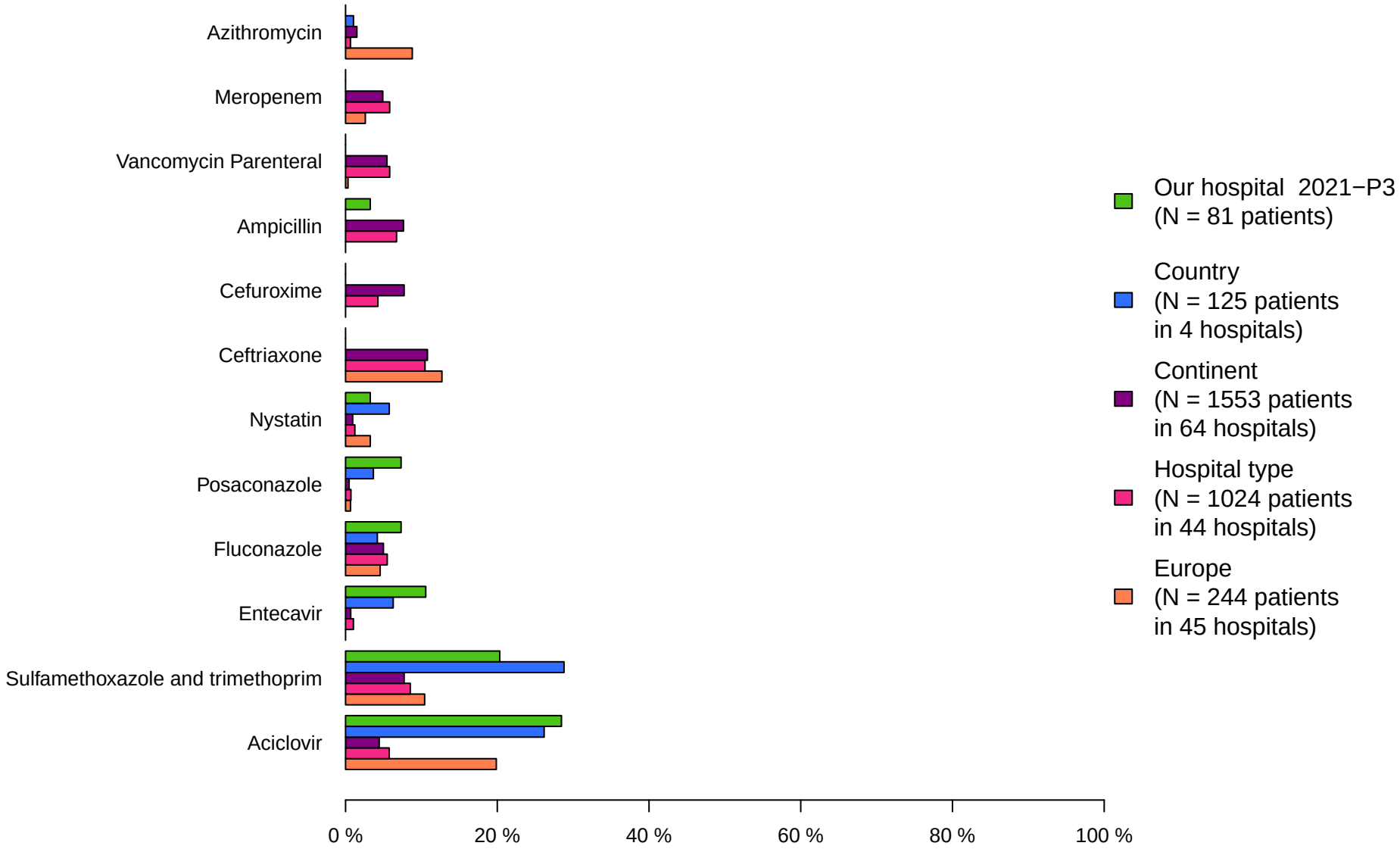
Top 5 most frequently used antibiotics for pneumonia in adults and children



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: Continent ; Hospital type: Tertiary hospital

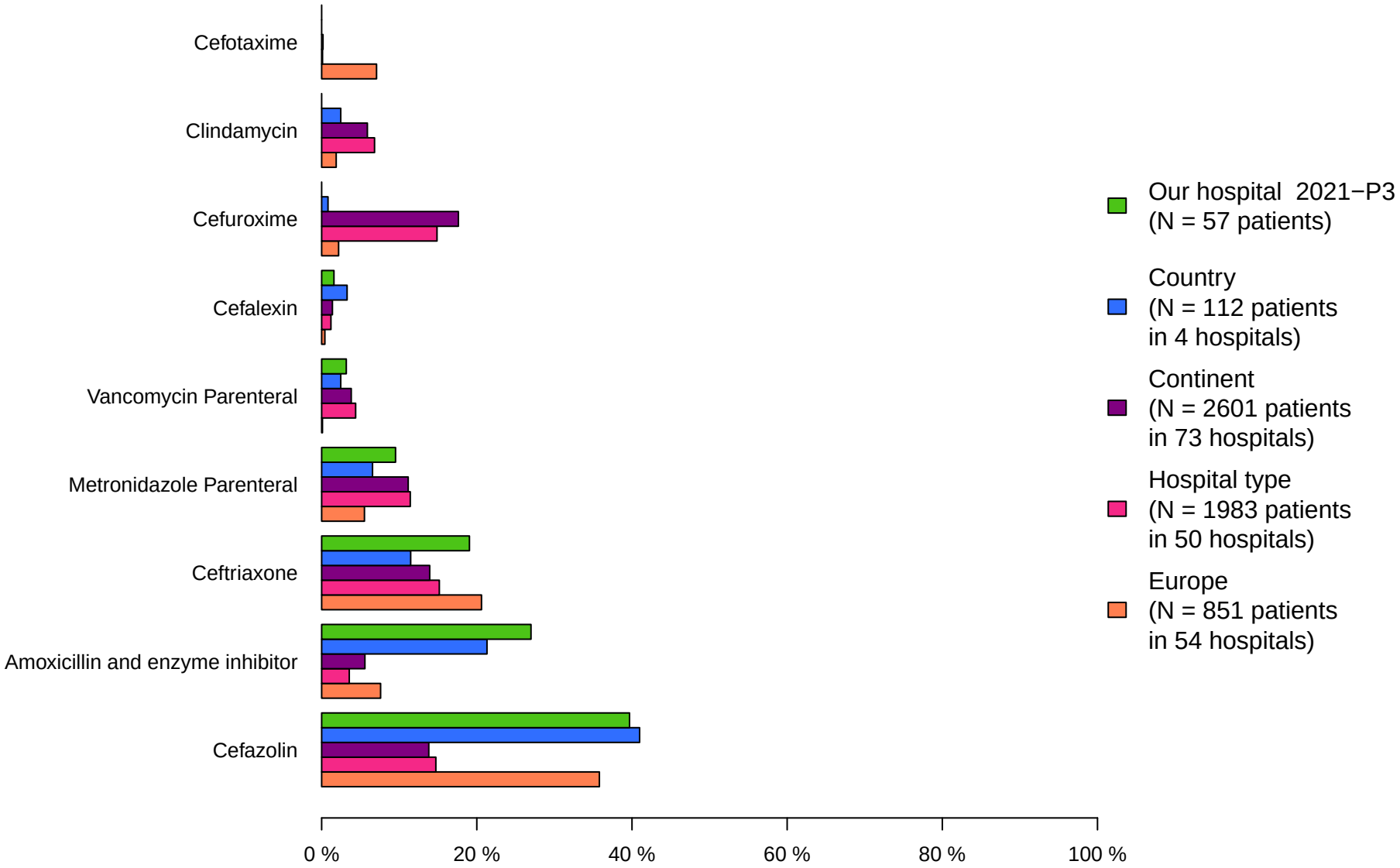
Top 5 most frequently used antimicrobials for medical prophylaxis in adults and children



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: Continent ; Hospital type: Tertiary hospital

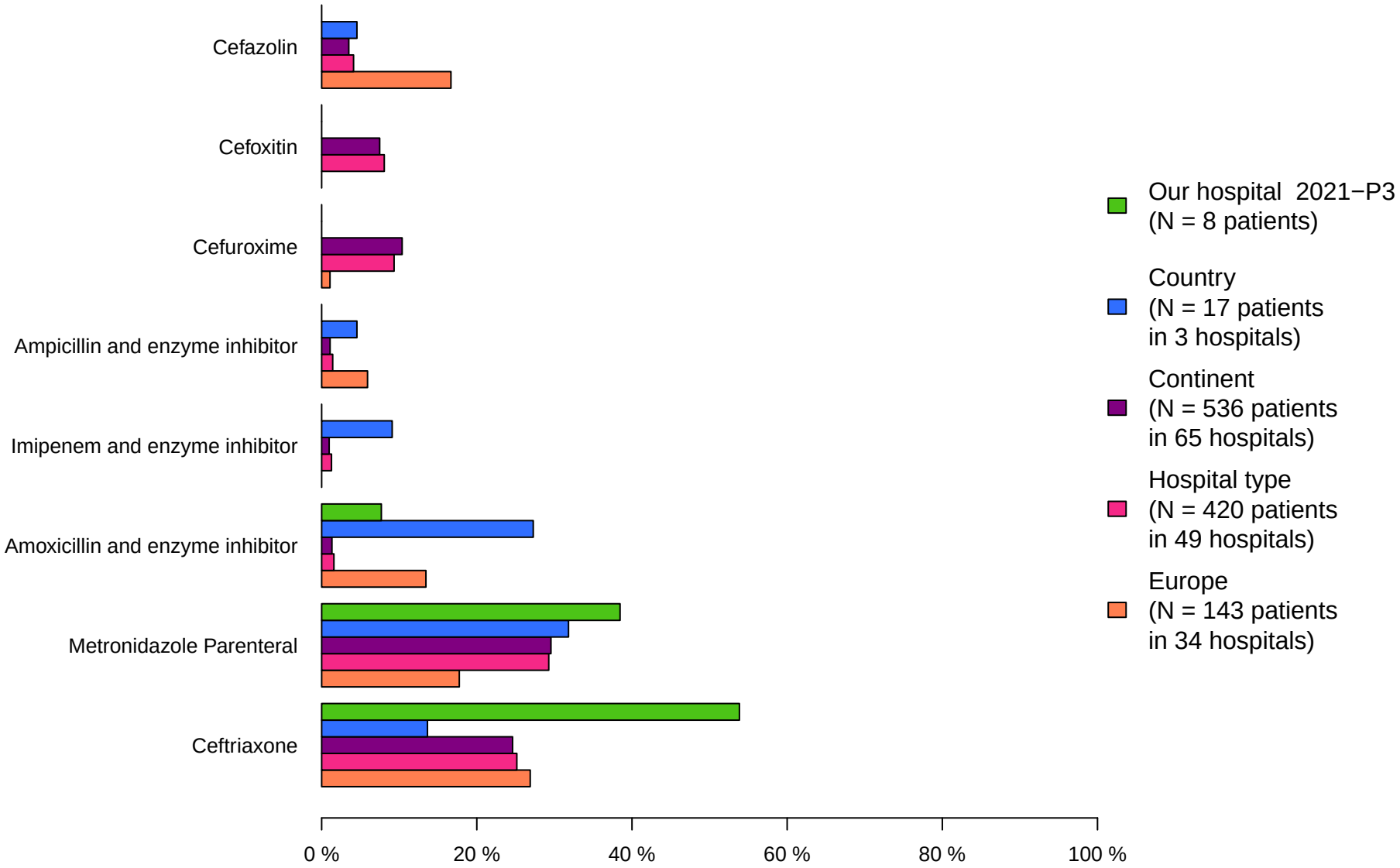
Top 5 most frequently used antibiotics for surgical prophylaxis in adults and children



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: Continent ; Hospital type: Tertiary hospital

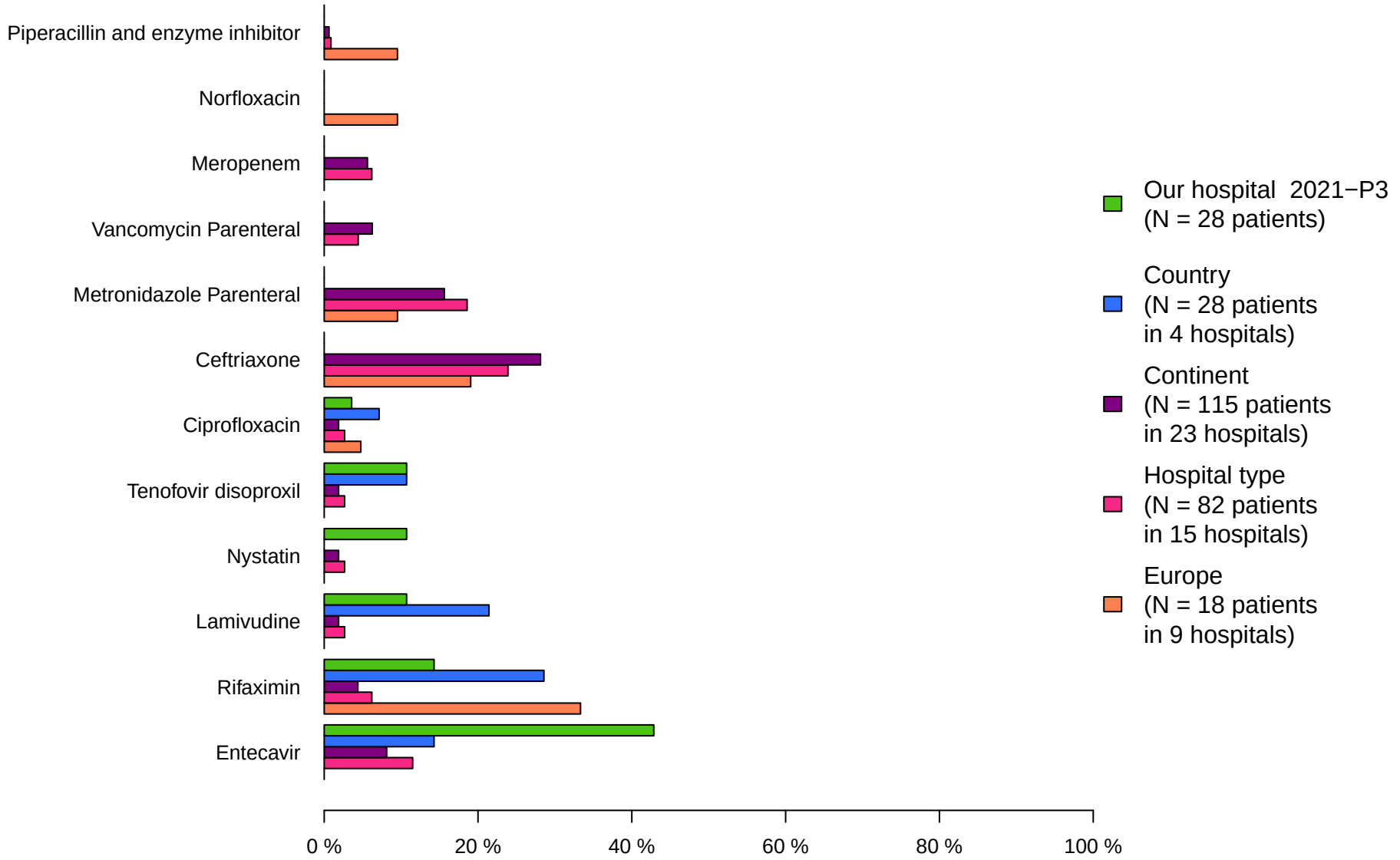
Top 5 most frequently used antibiotics for surgical prophylaxis of the gastro−intestinal tract in adults and children



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: Continent ; Hospital type: Tertiary hospital

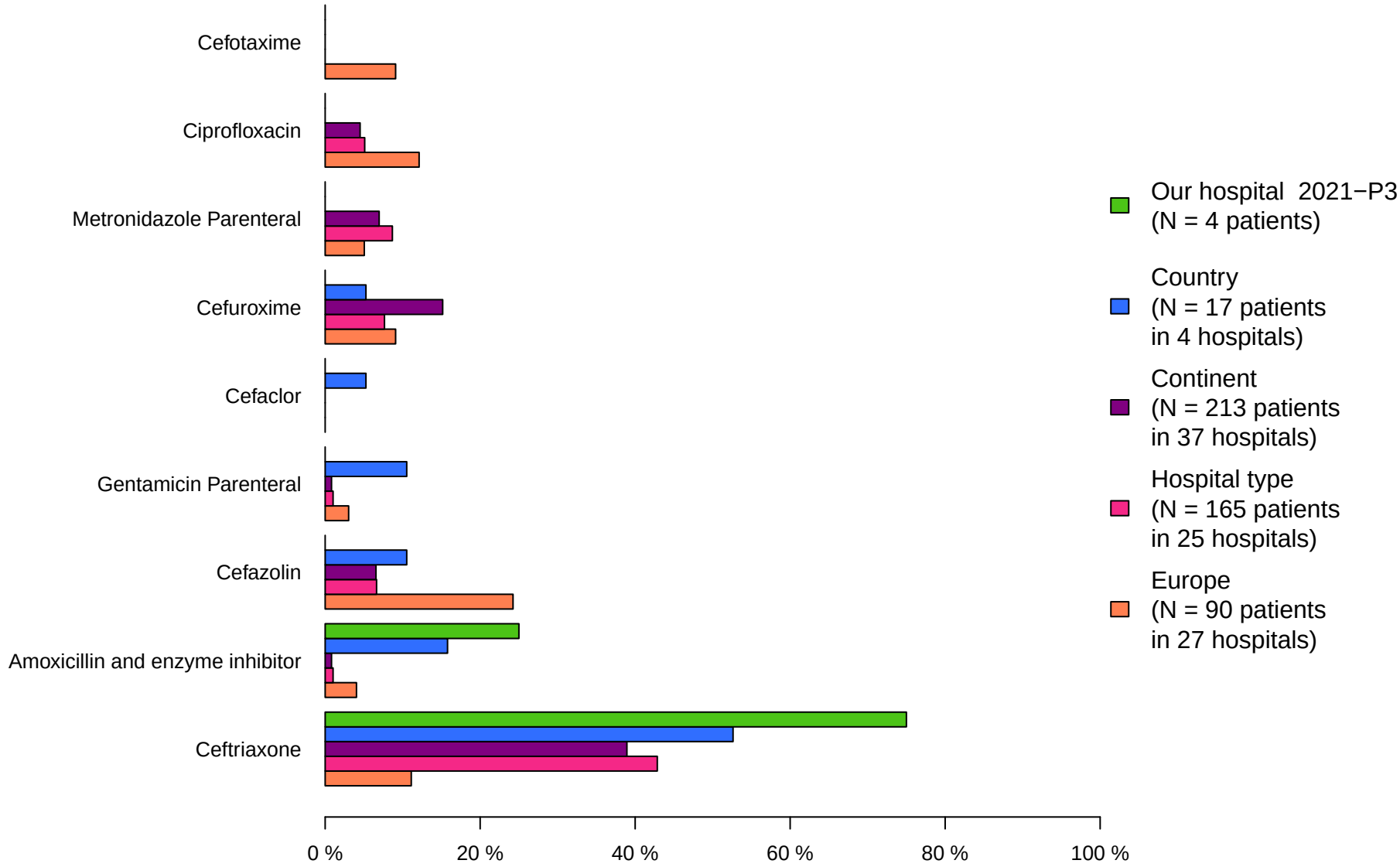
Top 5 most frequently used antimicrobials for medical prophylaxis of the gastro−intestinal tract



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: Continent ; Hospital type: Tertiary hospital

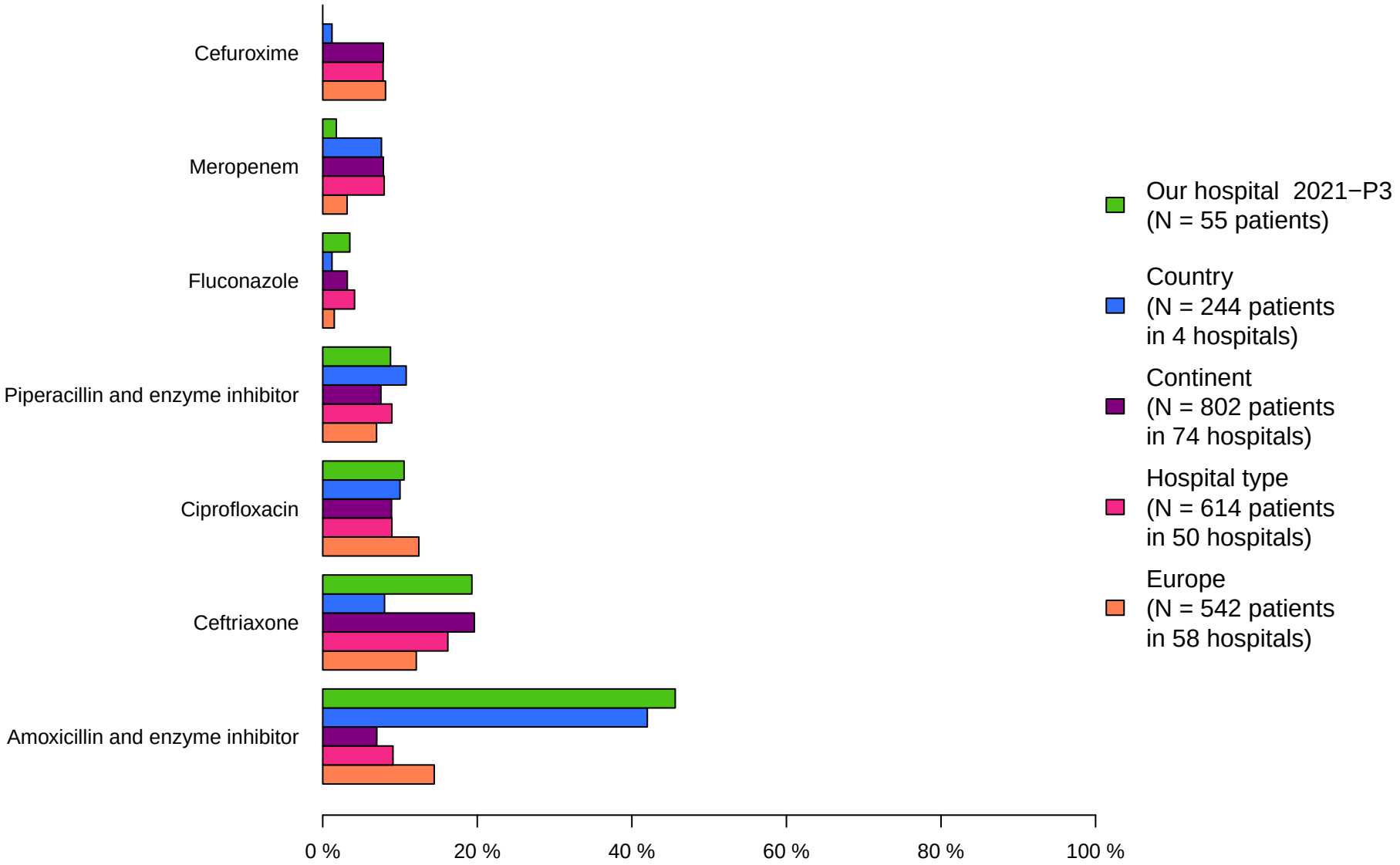
Top 5 most frequently used antibiotics for surgical UTI prophylaxis



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: Continent ; Hospital type: Tertiary hospital

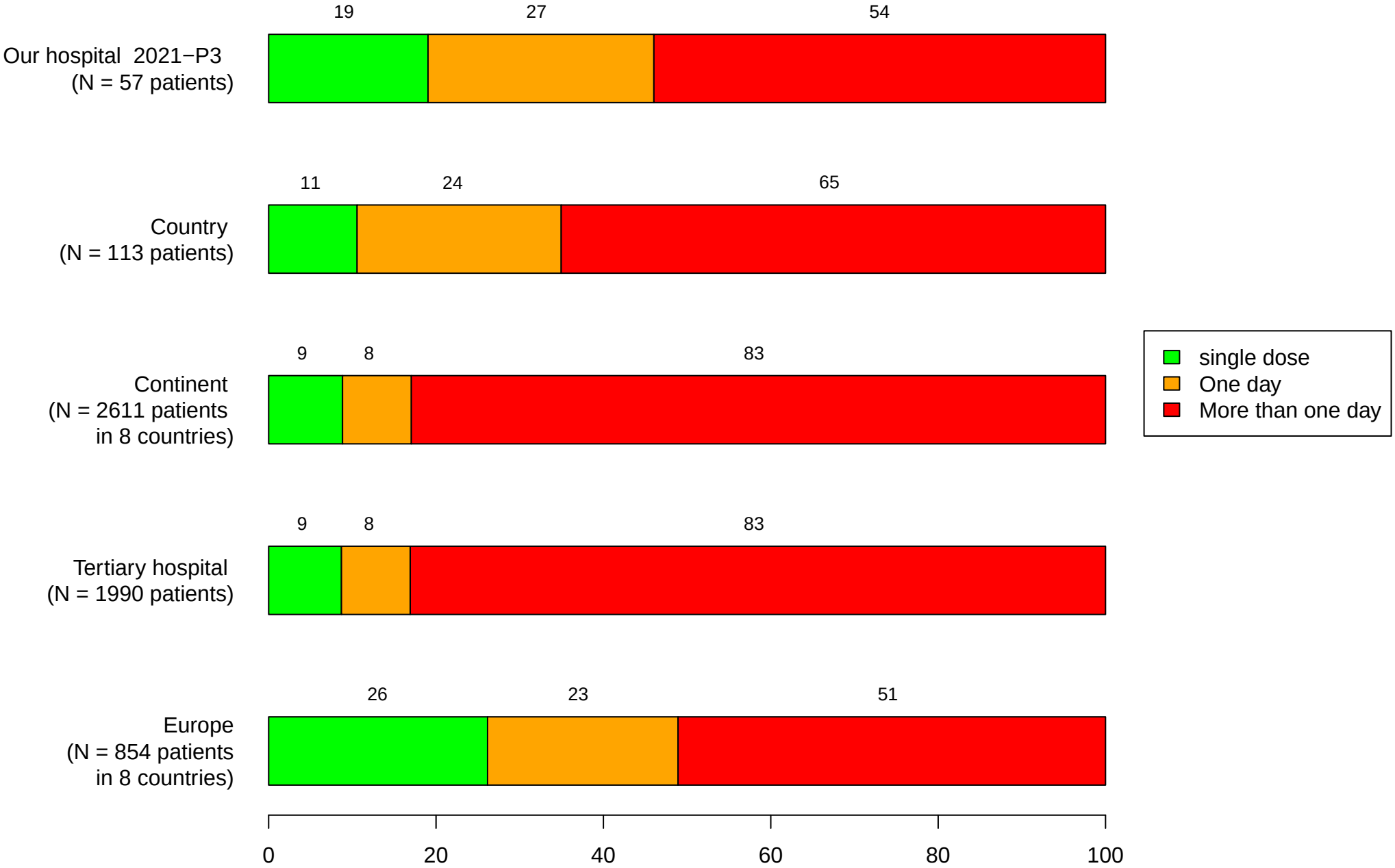
Top 5 most frequently used antibiotics for lower (Cys) and upper (Pye) Urinary Tract Infections



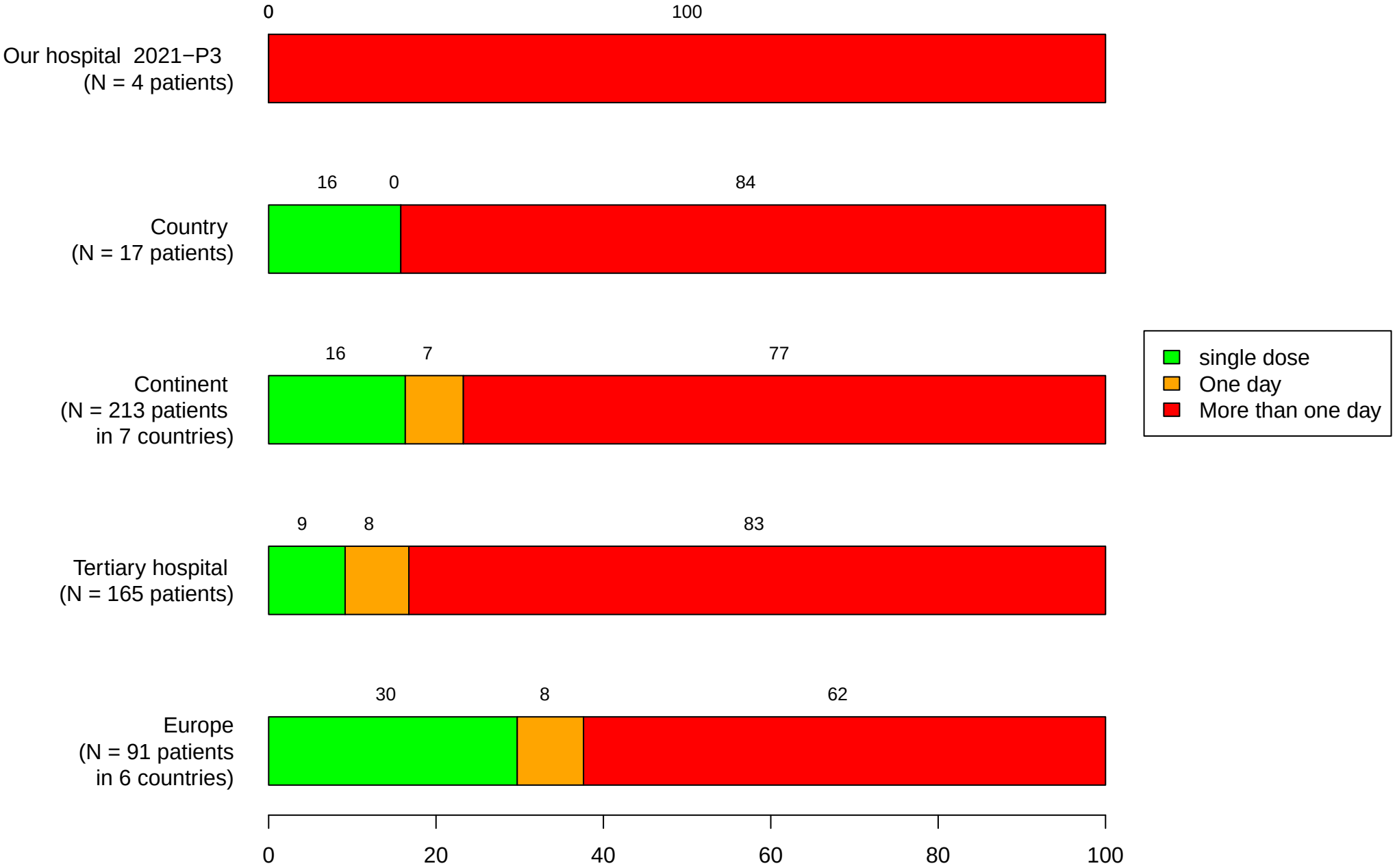
Selection on antibacterials for systemic use (J01). Top 5 most prescribed antibiotics (ATC5, substance level) for lower and upper urinary tract infections at hospital level, supplemented with the most prescribed antibiotics at country, continent and hospital type level if they do not fall within top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

Country: Country ; Continent: Continent ; Hospital type: Tertiary hospital

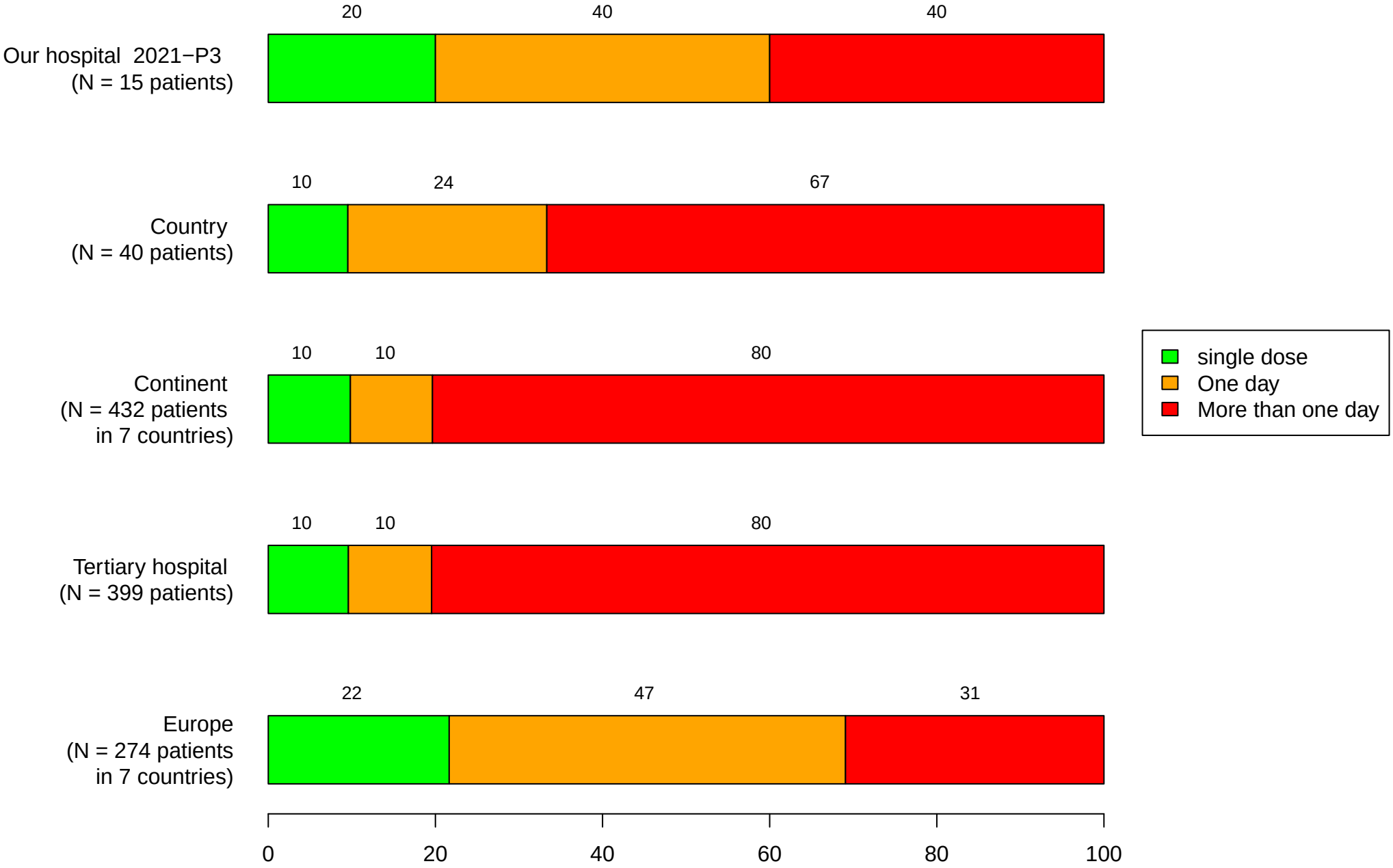
Duration of surgical prophylaxis in adults and children



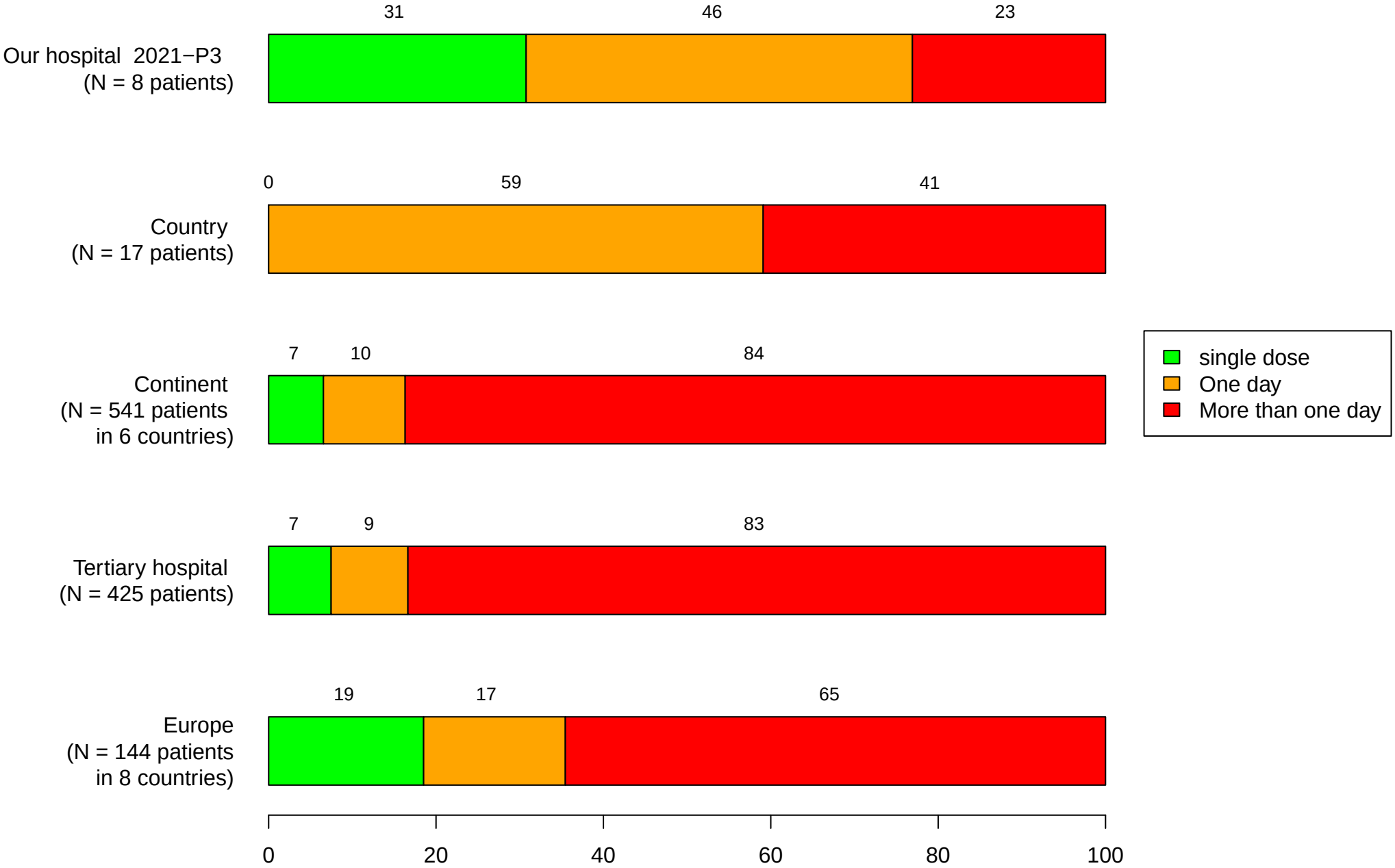
Duration of UTI prophylaxis in adults and children



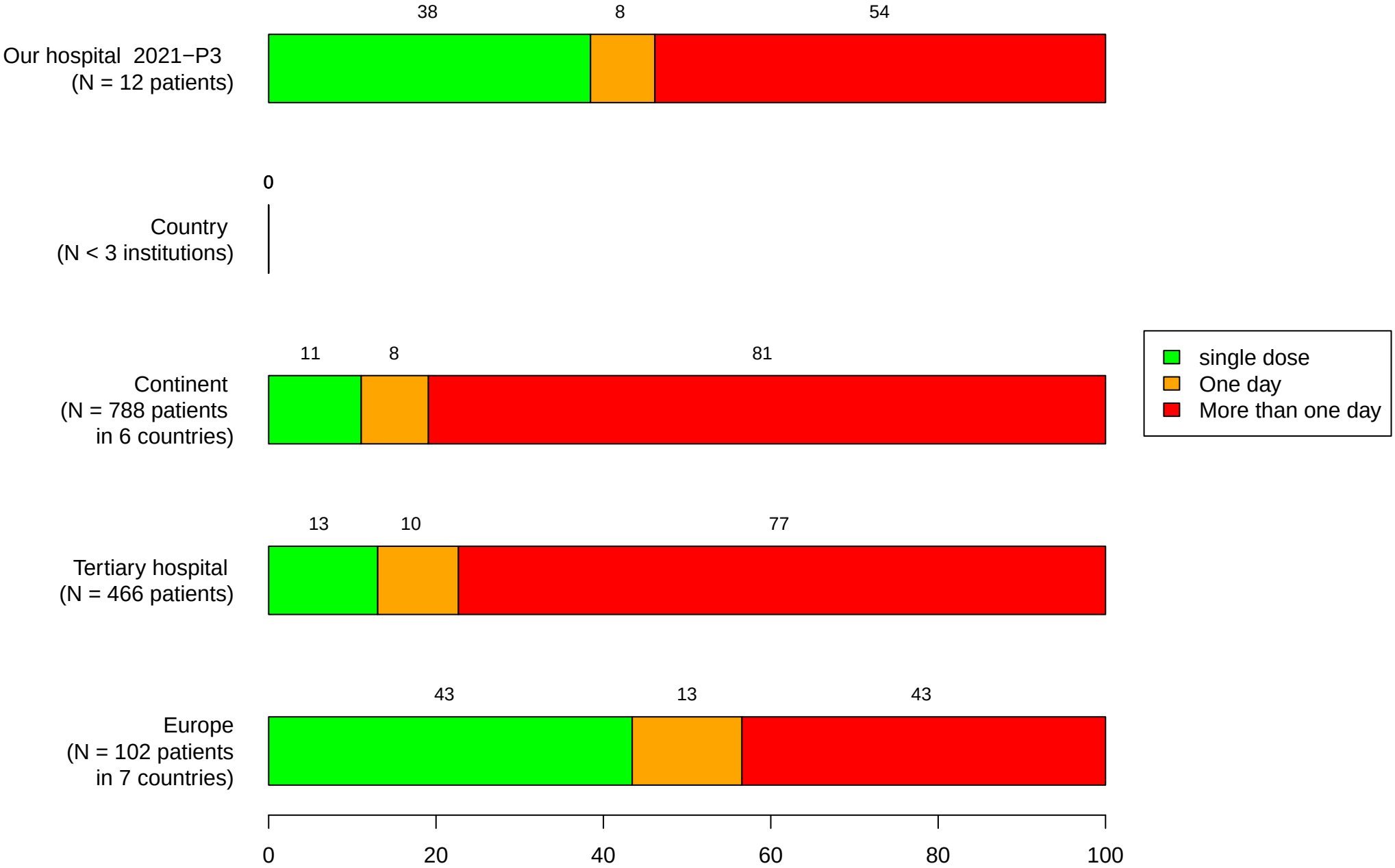
Duration of prophylaxis for plastic and orthopedic surgery in adults and children



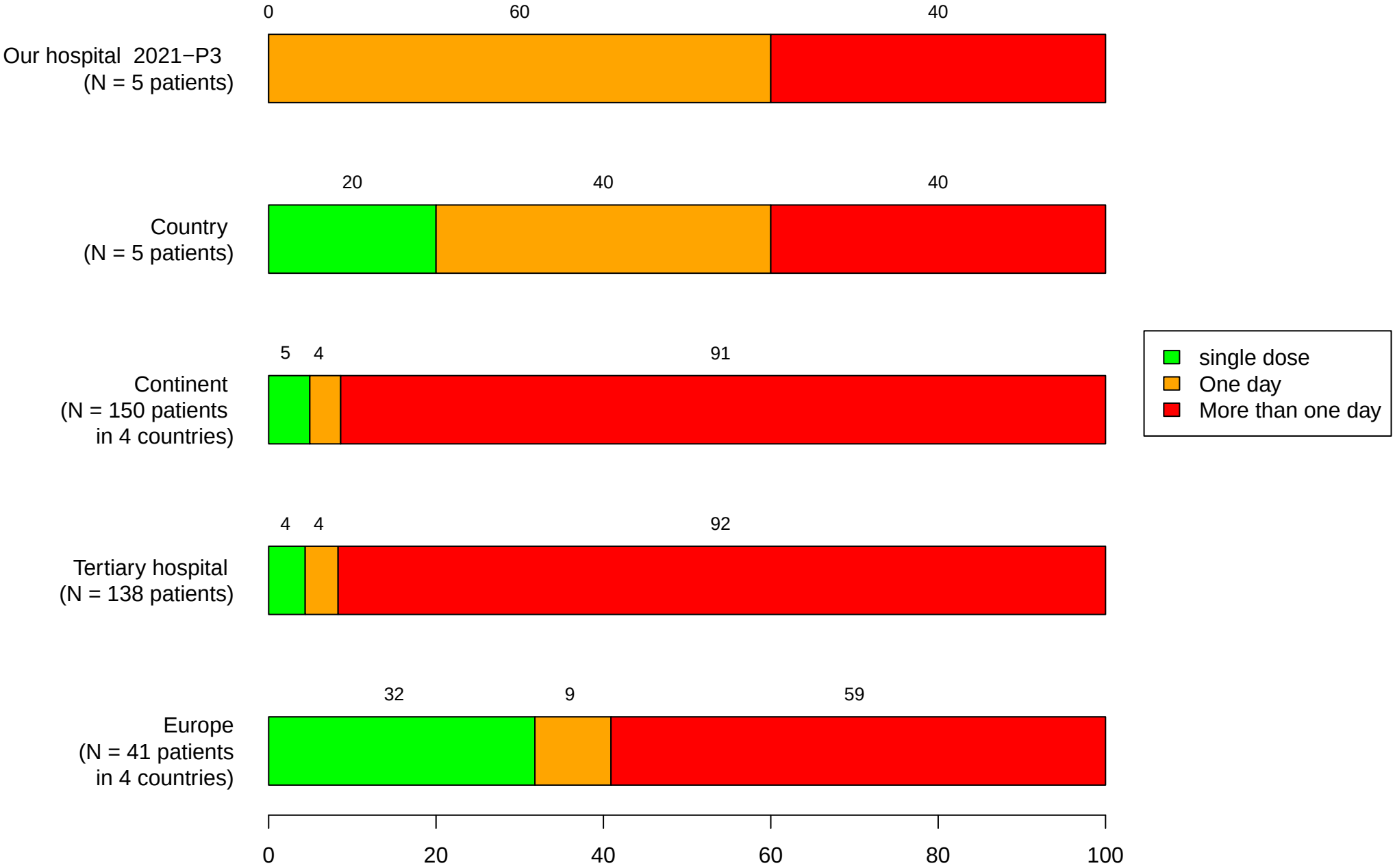
Duration of GI prophylaxis in adults and children



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 2021−P3		Country		Continent		Hospital type		Europe	
	N	%	N	%	N	%	N	%	N	%
All patients										
IV therapy	268	68.4	1160	65.4	9971	83.7	7748	85.0	3549	78.9
Multiple ATB diagnosis	44	10.8	223	12.2	4167	33.1	3180	33.0	775	16.8
Multiple ATB patient	59	15.1	271	15.3	4596	38.6	3516	38.6	850	18.9
Medical										
IV therapy	120	58.5	730	56.4	5706	73.0	4216	73.1	1775	67.5
Multiple ATB diagnosis	11	5.2	149	11.7	2298	31.7	1629	30.5	394	15.3
Multiple ATB patient	23	11.6	183	14.9	2543	36.8	1824	35.9	439	17.5
Surgical										
IV therapy	114	70.8	335	73.8	2559	75.7	2099	79.4	1385	85.7
Multiple ATB diagnosis	27	16.8	54	12.2	953	28.2	802	30.3	286	17.7
Multiple ATB patient	29	18.2	63	14.5	1045	32.1	861	33.6	303	19.2
ICU										
IV therapy	34	87.2	95	82.6	1706	88.7	1433	88.7	389	95.3
Multiple ATB diagnosis	6	16.2	20	17.4	916	47.3	749	45.7	95	22.5
Multiple ATB patient	7	20.0	25	23.4	1008	57.4	831	56.3	108	26.8

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: Continent ; Hospital type: Tertiary hospital

Type of antibiotic treatment − Summary

	Our hospital 2021−P3		Country		Continent		Hospital type		Europe	
	N	%	N	%	N	%	N	%	N	%
All patients										
Empiric	363	79.1	1599	78.0	16501	90.0	12262	88.8	4401	80.9
Targeted	96	20.9	452	22.0	1842	10.0	1549	11.2	1037	19.1
Adults (>= 18 years)										
Empiric	334	78.6	1541	77.4	11271	88.7	9271	87.9	4015	80.2
Targeted	91	21.4	449	22.6	1432	11.3	1271	12.1	989	19.8
Children (< 18 years)										
Empiric	23	85.2	53	98.1	3910	92.6	2128	91.1	323	88.0
Targeted	4	14.8	1	1.9	312	7.4	208	8.9	44	12.0
Neonates (NICU)										
Empiric	6	85.7	5	71.4	1320	93.1	863	92.5	63	94.0
Targeted	1	14.3	2	28.6	98	6.9	70	7.5	4	6.0

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: Continent ; Hospital type: Tertiary hospital

Type of antibiotic treatment by activity

	Our hospital 2021−P3		Country		Continent		Hospital type		Europe	
	N	%	N	%	N	%	N	%	N	%
All patients										
Empiric	254	73.0	1353	75.1	10779	86.1	8072	84.6	3124	75.5
Targeted	94	27.0	449	24.9	1737	13.9	1472	15.4	1014	24.5
Medical										
Empiric	142	77.2	997	76.9	7135	88.3	5222	87.1	2024	76.1
Targeted	42	22.8	300	23.1	946	11.7	770	12.9	635	23.9
Surgical										
Empiric	83	66.4	270	70.3	1319	83.9	1102	82.1	739	76.1
Targeted	42	33.6	114	29.7	254	16.1	241	17.9	232	23.9
ICU										
Empiric	29	74.4	86	71.1	2325	81.2	1748	79.1	361	71.1
Targeted	10	25.6	35	28.9	537	18.8	461	20.9	147	28.9

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: Continent ; Hospital type: Tertiary hospital

Treatment based on microbiology data

	Our hospital 2021−P3		Country		Continent		Hospital type		Europe	
	N	%	N	%	N	%	N	%	N	%
MRSA	4	1.3	11	0.7	63	0.7	53	0.8	32	1.0
MRCoNS	0	0.0	3	0.2	74	0.9	53	0.8	21	0.6
VRE	1	0.3	2	0.1	28	0.3	26	0.4	11	0.3
ESBL	0	0.0	6	0.4	209	2.5	190	2.9	58	1.7
3GCREB	23	7.5	19	1.2	110	1.3	95	1.5	41	1.2
CRE	0	0.0	2	0.1	55	0.7	51	0.8	20	0.6
ESBL−NF	0	0.0	6	0.4	77	0.9	68	1.0	18	0.5
CR−NF	5	1.6	13	0.8	123	1.5	108	1.7	19	0.6
Other MDR	0	0.0	21	1.3	0	0.0	0	0.0	0	0.0
PNSP	0	0.0	0	0.0	2	0.0	0	0.0	0	0.0
MLS	0	0.0	0	0.0	8	0.1	7	0.1	6	0.2
Any of the above	31	10.1	74	4.7	655	7.8	566	8.7	195	5.8

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

Country: Country ; Continent: Continent ; Hospital type: Tertiary hospital

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

	Hospital 2021−P3	Country	Continent	Hospital type	Europe
Numerator (N patients)	135	504	2344	1989	1059
Denominator (N admitted patients)	889	4116	24415	18395	14603
HAI rate (%)	15.2	12.2	9.6	10.8	7.3
Post−operative surgical site infection (%)	1.7	1.2	1.2	1.5	1.2
Intervention related infection (%)	3.8	2.2	2.5	3.1	1.9
CDAD (%)	0.7	0.2	0.1	0.1	0.1
Other HAI (%)	7.8	6.4	5.7	6.1	3.7
HAI from another hospital (%)	1.6	0.5	0.2	0.3	0.1
HAI from LTCF or nursing home (%)	0.3	2.1	0.2	0.3	0.4

Country: Country ; Continent: Continent ; Hospital type: Tertiary hospital

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

	Hospital 2021−P3	Country	Continent	Hospital type	Europe
Numerator (N patients)	135	504	2344	1989	1059
Denominator (N admitted patients)	889	4116	24415	18395	14603
HAI rate (%)	15.2	12.2	9.6	10.8	7.3
Intervention−related infections (%)					
Mixed origin	1.6	2.1	1.1	1.4	0.5
CVC−BSI	0.2	0.0	0.3	0.3	0.2
PVC−BSI	0.0	0.0	0.1	0.2	0.0
Ventilator−Associated Pneumonia (VAP)	0.6	0.0	0.8	1.0	0.7
CAUTI	1.5	0.1	0.4	0.5	0.5
Other Hospital−Associated Infections (%)					
HAI of mixed or undefined origin	4.6	4.8	2.8	2.9	1.7
Blood Stream Infection (BSI)	0.3	0.1	0.7	0.7	0.2
Hospital−Acquired Pneumonia (not VAP)	2.2	1.2	1.8	2.1	1.1
Urinary Tract Infection (UTI)	0.7	0.2	0.5	0.5	0.7

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 2021−P3	Country	Continent	Hospital type	Europe
Numerator (N patients)	129	499	1742	1567	1023
Denominator (N admitted patients)	784	3972	18566	15173	13195
HAI rate (%)	16.5	12.6	9.4	10.3	7.8
Post−operative surgical site infection (%)	1.7	1.3	1.4	1.6	1.2
Intervention related infection (%)	4.1	2.3	2.4	2.7	2.0
CDAD (%)	0.8	0.2	0.2	0.2	0.1
Other HAI (%)	8.5	6.5	5.3	5.7	3.9
HAI from another hospital (%)	1.8	0.5	0.3	0.3	0.1
HAI from LTCF or nursing home (%)	0.4	2.1	0.3	0.3	0.4

Country: Country ; Continent: Continent ; Hospital type: Tertiary hospital

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

	Hospital 2021−P3	Country	Continent	Hospital type	Europe
Numerator (N patients)	129	499	1742	1567	1023
Denominator (N admitted patients)	784	3972	18566	15173	13195
HAI rate (%)	16.5	12.6	9.4	10.3	7.8
Intervention−related infections (%)					
Mixed origin	1.8	2.1	1.0	1.2	0.5
CVC−BSI	0.3	0.1	0.3	0.3	0.2
PVC−BSI	0.0	0.0	0.1	0.1	0.0
Ventilator−Associated Pneumonia (VAP)	0.6	0.0	0.8	0.9	0.8
CAUTI	1.4	0.1	0.4	0.5	0.6
Other Hospital−Associated Infections (%)					
HAI of mixed or undefined origin	5.0	4.9	2.6	2.7	1.8
Blood Stream Infection (BSI)	0.4	0.1	0.4	0.4	0.2
Hospital−Acquired Pneumonia (not VAP)	2.6	1.3	2.0	2.2	1.2
Urinary Tract Infection (UTI)	0.8	0.3	0.5	0.5	0.7

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 2021−P3	Country	Continent	Hospital type	Europe
Numerator (N patients)	6		602	422	36
Denominator (N admitted patients)	105		5849	3222	1408
HAI rate (%)	5.7		10.3	13.1	2.6
Post−operative surgical site infection (%)	1.9		0.8	1.0	0.7
Intervention related infection (%)	1.9		2.9	4.7	0.9
CDAD (%)	0.0		0.1	0.0	0.0
Other HAI (%)	1.9		6.8	7.8	0.9
HAI from another hospital (%)	0.0		0.2	0.3	0.0
HAI from LTCF or nursing home (%)	0.0		0.1	0.1	0.0

Country: Country ; Continent: Continent ; Hospital type: Tertiary hospital

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

	Hospital 2021−P3	Country	Continent	Hospital type	Europe
Numerator (N patients)	6		602	422	36
Denominator (N admitted patients)	105		5849	3222	1408
HAI rate (%)	5.7		10.3	13.1	2.6
Intervention−related infections (%)					
Mixed origin	0.0		1.5	2.5	0.7
CVC−BSI	0.0		0.2	0.3	0.1
PVC−BSI	0.0		0.3	0.4	0.1
Ventilator−Associated Pneumonia (VAP)	0.0		0.9	1.4	0.1
CAUTI	1.9		0.3	0.5	0.0
Other Hospital−Associated Infections (%)					
HAI of mixed or undefined origin	1.9		3.5	3.9	0.6
Blood Stream Infection (BSI)	0.0		1.8	2.2	0.1
Hospital−Acquired Pneumonia (not VAP)	0.0		1.3	1.7	0.1
Urinary Tract Infection (UTI)	0.0		0.4	0.4	0.1

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 2021−P3	Country	Continent	Hospital type	Europe
Numerator (N patients)	24	40	422	391	173
Denominator (N admitted patients)	58	157	1842	1701	597
HAI rate (%)	41.4	25.5	22.9	23.0	29.0
Post−operative surgical site infection (%)	0.0	1.3	1.8	1.9	2.0
Intervention related infection (%)	22.4	7.0	9.3	9.3	14.2
CDAD (%)	1.7	0.6	0.3	0.3	0.5
Other HAI (%)	20.7	16.6	12.2	12.1	11.7
HAI from another hospital (%)	5.2	1.3	1.0	1.1	0.5
HAI from LTCF or nursing home (%)	0.0	0.0	0.4	0.4	0.2

Country: Country ; Continent: Continent ; Hospital type: Tertiary hospital

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

	Hospital 2021−P3	Country	Continent	Hospital type	Europe
Numerator (N patients)	24	40	422	391	173
Denominator (N admitted patients)	58	157	1842	1701	597
HAI rate (%)	41.4	25.5	22.9	23.0	29.0
Intervention−related infections (%)					
Mixed origin	10.3	7.0	2.8	3.1	2.2
CVC−BSI	1.7	0.0	0.7	0.6	0.8
PVC−BSI	0.0	0.0	0.2	0.2	0.0
Ventilator−Associated Pneumonia (VAP)	8.6	0.0	5.5	5.4	11.2
CAUTI	1.7	0.0	1.4	1.4	0.3
Other Hospital−Associated Infections (%)					
HAI of mixed or undefined origin	12.1	15.9	5.2	5.1	5.0
Blood Stream Infection (BSI)	1.7	0.0	1.4	1.4	1.0
Hospital−Acquired Pneumonia (not VAP)	6.9	0.6	5.6	5.7	5.7
Urinary Tract Infection (UTI)	0.0	0.0	0.6	0.5	0.2

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 2021−P3	Country	Continent	Hospital type	Europe
Numerator (N patients)	69	364	985	862	575
Denominator (N admitted patients)	426	2927	11868	9285	8677
HAI rate (%)	16.2	12.4	8.3	9.3	6.6
Post−operative surgical site infection (%)	1.2	0.8	0.6	0.7	0.4
Intervention related infection (%)	1.6	2.4	1.8	2.0	1.5
CDAD (%)	1.2	0.3	0.2	0.2	0.1
Other HAI (%)	9.6	6.3	5.4	5.9	4.0
HAI from another hospital (%)	2.1	0.4	0.2	0.3	0.1
HAI from LTCF or nursing home (%)	0.7	2.7	0.3	0.4	0.6

Country: Country ; Continent: Continent ; Hospital type: Tertiary hospital

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

	Hospital 2021−P3	Country	Continent	Hospital type	Europe
Numerator (N patients)	69	364	985	862	575
Denominator (N admitted patients)	426	2927	11868	9285	8677
HAI rate (%)	16.2	12.4	8.3	9.3	6.6
Intervention−related infections (%)					
Mixed origin	0.7	2.2	0.8	1.0	0.3
CVC−BSI	0.2	0.0	0.3	0.3	0.2
PVC−BSI	0.0	0.0	0.1	0.2	0.0
Ventilator−Associated Pneumonia (VAP)	0.0	0.0	0.3	0.4	0.3
CAUTI	0.7	0.1	0.3	0.3	0.7
Other Hospital−Associated Infections (%)					
HAI of mixed or undefined origin	5.6	4.4	2.8	3.0	1.9
Blood Stream Infection (BSI)	0.5	0.1	0.4	0.4	0.2
Hospital−Acquired Pneumonia (not VAP)	2.8	1.5	1.8	2.1	1.2
Urinary Tract Infection (UTI)	0.9	0.3	0.6	0.6	0.7

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 2021−P3	Country	Continent	Hospital type	Europe
Numerator (N patients)	36	95	335	314	275
Denominator (N admitted patients)	300	888	4856	4187	3921
HAI rate (%)	12.0	10.7	6.9	7.5	7.0
Post−operative surgical site infection (%)	2.7	2.9	3.1	3.5	2.8
Intervention related infection (%)	4.0	1.1	1.4	1.6	1.4
CDAD (%)	0.0	0.0	0.0	0.0	0.2
Other HAI (%)	4.7	5.7	2.5	2.6	2.6
HAI from another hospital (%)	0.7	0.6	0.0	0.0	0.1
HAI from LTCF or nursing home (%)	0.0	0.6	0.0	0.0	0.1

Country: Country ; Continent: Continent ; Hospital type: Tertiary hospital

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

	Hospital 2021−P3	Country	Continent	Hospital type	Europe
Numerator (N patients)	36	95	335	314	275
Denominator (N admitted patients)	300	888	4856	4187	3921
HAI rate (%)	12.0	10.7	6.9	7.5	7.0
Intervention−related infections (%)					
Mixed origin	1.7	0.9	0.8	0.9	0.6
CVC−BSI	0.0	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	0.1	0.2	0.4
CAUTI	2.3	0.1	0.4	0.5	0.3
Other Hospital−Associated Infections (%)					
HAI of mixed or undefined origin	2.7	4.8	1.2	1.2	1.1
Blood Stream Infection (BSI)	0.0	0.1	0.1	0.1	0.2
Hospital−Acquired Pneumonia (not VAP)	1.3	0.7	0.9	0.9	0.5
Urinary Tract Infection (UTI)	0.7	0.2	0.3	0.4	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

Invasive device use hospital−wide

	Our hospital 2021−P3		Country		Continent		Hospital type		Europe	
	N	%	N	%	N	%	N	%	N	%
N total admitted patients	889				18084		13051		9276	
N admitted patients with:										
PVC	531	59.7			11652	64.4	8369	64.1	4194	45.2
CVC	115	12.9			1588	8.8	1221	9.4	744	8.0
Indwelling UC	136	15.3			2533	14.0	2042	15.6	1590	17.1
Tubes/Drains	93	10.5			1785	9.9	1482	11.4	601	6.5
IRI	46	5.2			803	4.4	626	4.8	239	2.6
CiPAP−BiPAP	27	3.0			777	4.3	599	4.6	188	2.0

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: Continent ; Hospital type: Tertiary hospital

Invasive device use − Adult wards

	Our hospital 2021−P3		Country		Continent		Hospital type		Europe	
	N	%	N	%	N	%	N	%	N	%
N total admitted patients	784				13810		10722		8407	
N admitted patients with:										
PVC	490	62.5			8676	62.8	6891	64.3	3841	45.7
CVC	108	13.8			1271	9.2	1024	9.6	705	8.4
Indwelling UC	129	16.5			2264	16.4	1900	17.7	1570	18.7
Tubes/Drains	86	11.0			1435	10.4	1212	11.3	582	6.9
IRI	43	5.5			575	4.2	483	4.5	232	2.8
CiPAP−BiPAP	20	2.6			537	3.9	445	4.2	139	1.7

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: Continent ; Hospital type: Tertiary hospital

Invasive device use − Adult ICU

	Our hospital 2021−P3		Country		Continent		Hospital type		Europe	
	N	%	N	%	N	%	N	%	N	%
N total admitted patients	58				1013		890		440	
N admitted patients with:										
PVC	52	89.7			776	76.6	678	76.2	274	62.3
CVC	35	60.3			311	30.7	283	31.8	288	65.5
Indwelling UC	40	69.0			613	60.5	560	62.9	310	70.5
Tubes/Drains	10	17.2			352	34.7	314	35.3	121	27.5
IRI	26	44.8			337	33.3	292	32.8	191	43.4
CiPAP−BiPAP	3	5.2			170	16.8	141	15.8	52	11.8

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: Continent ; Hospital type: Tertiary hospital

Invasive device use − Adult medical wards

	Our hospital 2021−P3		Country		Continent		Hospital type		Europe	
	N	%	N	%	N	%	N	%	N	%
N total admitted patients	426				9232		6836		5495	
N admitted patients with:										
PVC	230	54.0			5514	59.7	4106	60.1	2294	41.7
CVC	56	13.1			786	8.5	574	8.4	260	4.7
Indwelling UC	47	11.0			1122	12.2	866	12.7	766	13.9
Tubes/Drains	40	9.4			720	7.8	560	8.2	163	3.0
IRI	12	2.8			179	1.9	145	2.1	29	0.5
CiPAP−BiPAP	15	3.5			324	3.5	268	3.9	77	1.4

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: Continent ; Hospital type: Tertiary hospital

Invasive device use − Adult surgical ward

	Our hospital 2021−P3		Country		Continent		Hospital type		Europe	
	N	%	N	%	N	%	N	%	N	%
N total admitted patients	300				3565		2996		2472	
N admitted patients with:										
PVC	208	69.3			2386	66.9	2107	70.3	1273	51.5
CVC	17	5.7			174	4.9	167	5.6	157	6.4
Indwelling UC	42	14.0			529	14.8	474	15.8	494	20.0
Tubes/Drains	36	12.0			363	10.2	338	11.3	298	12.1
IRI	5	1.7			59	1.7	46	1.5	12	0.5
CiPAP−BiPAP	2	0.7			43	1.2	36	1.2	10	0.4

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: Continent ; 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

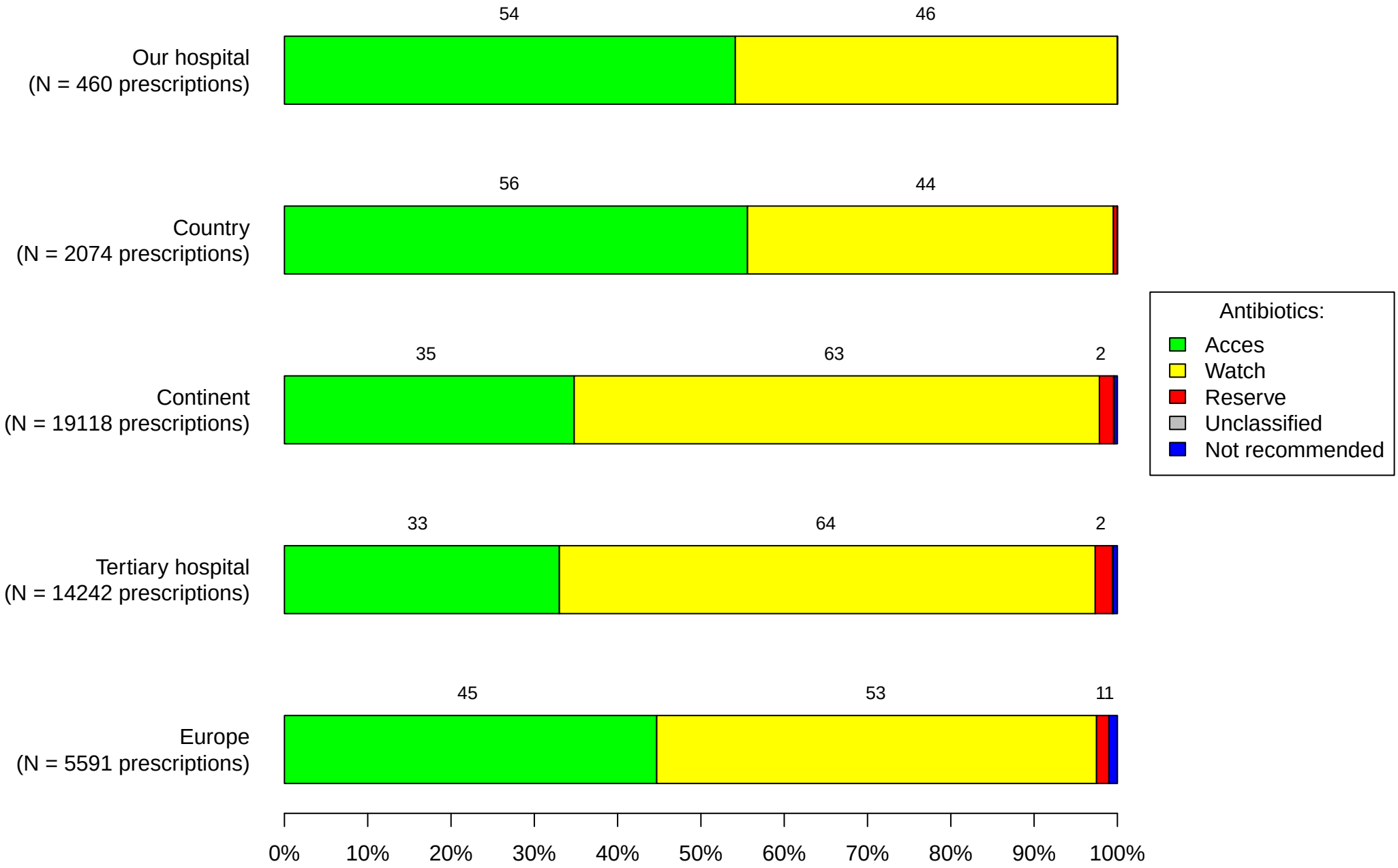
To be used only as a last resort, when no other alternatives are available
Colistin, linezolid, tigecyclin...

Not recommended (new category 2019)

Mainly fixed−dose combinations of broad−spectrum antibiotics

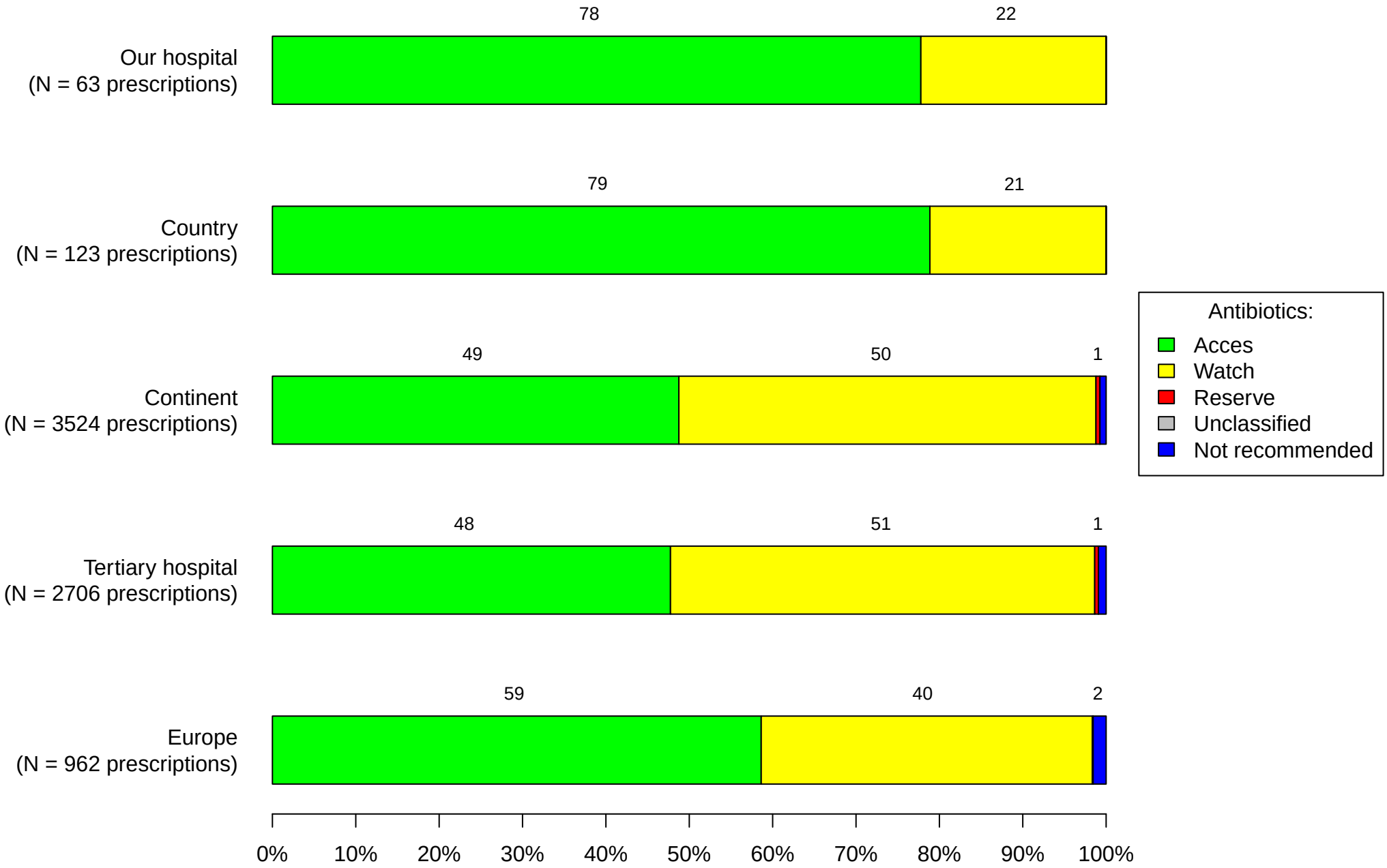
More info on the WHO AWaRe classification:
https://adoptaware.org/

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

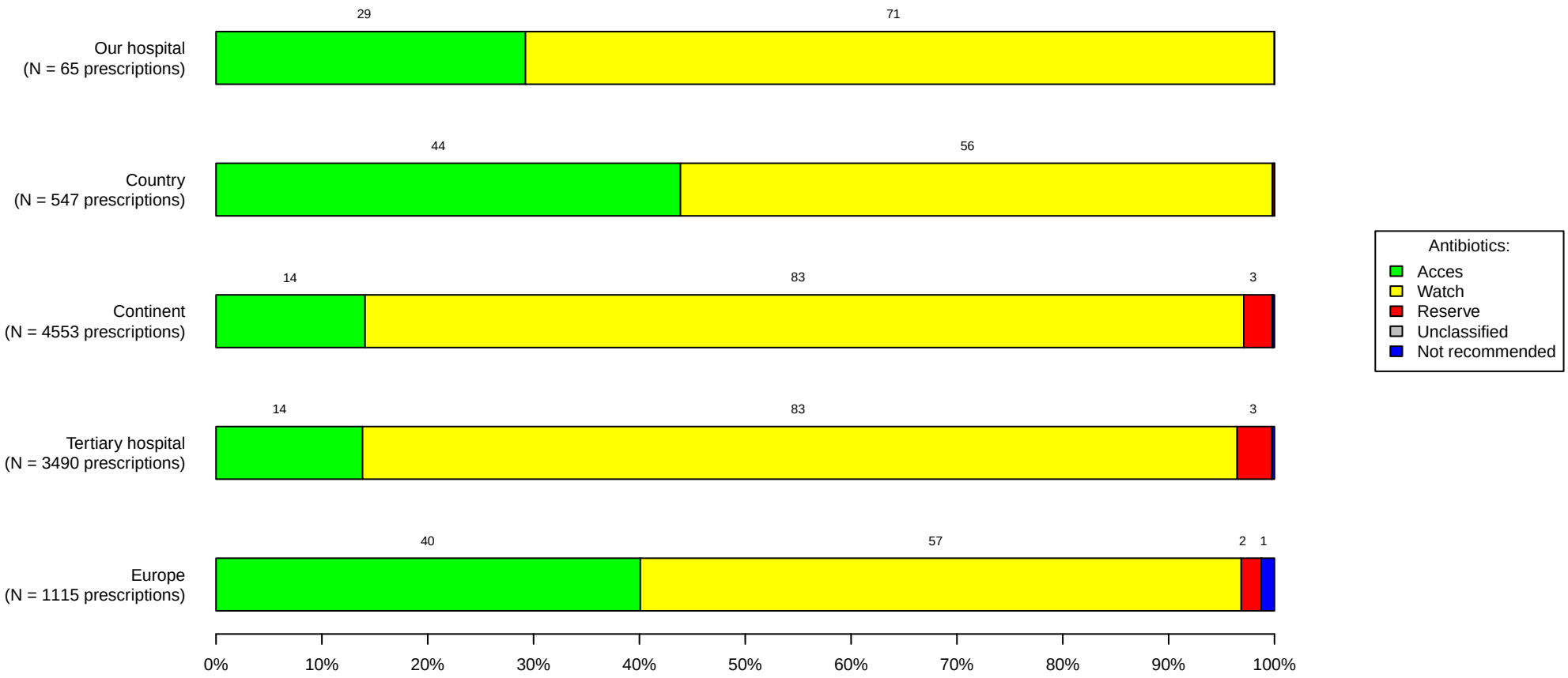


Antibiotic use (ATC J01) by activity according to the WHO AWaRe classification

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

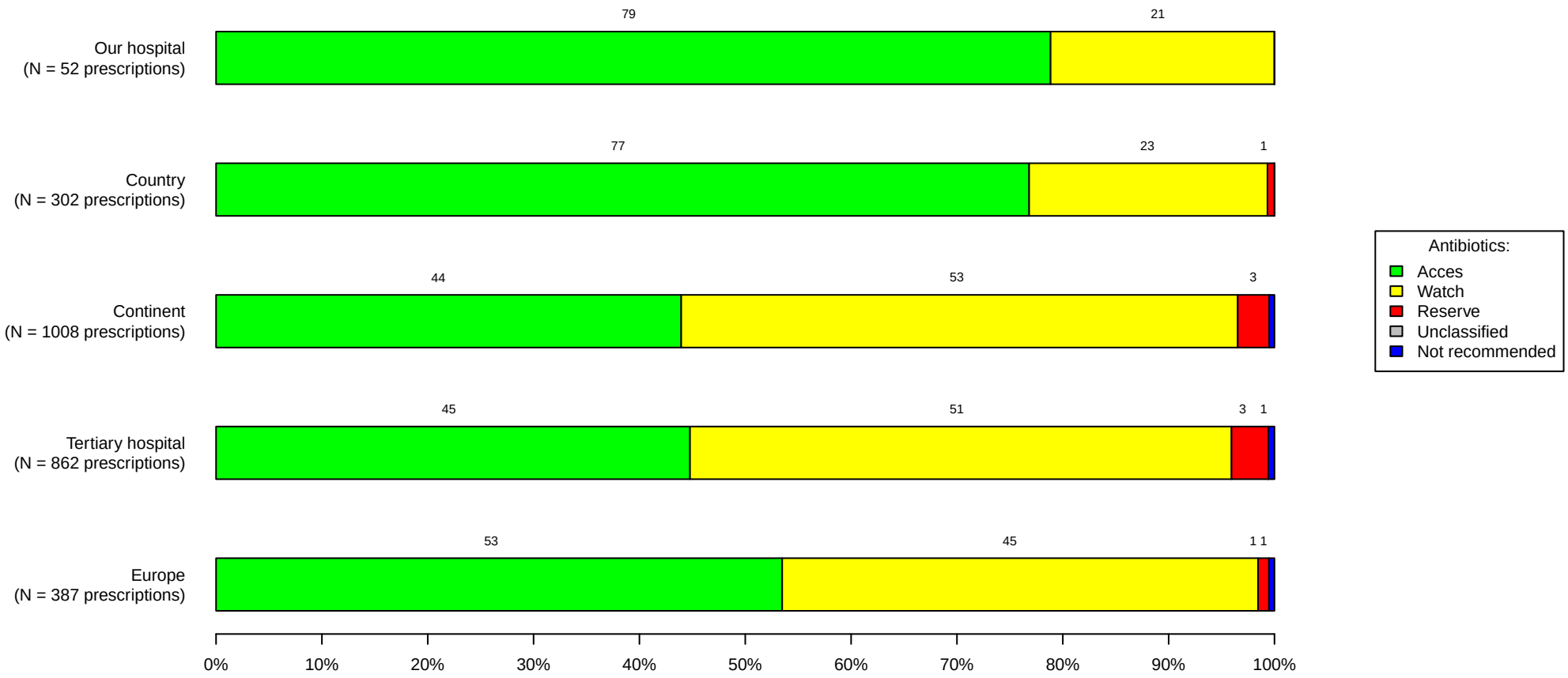


Overall antibiotic use (ATC J01) according to the WHO AWaRe classification – pneumonia



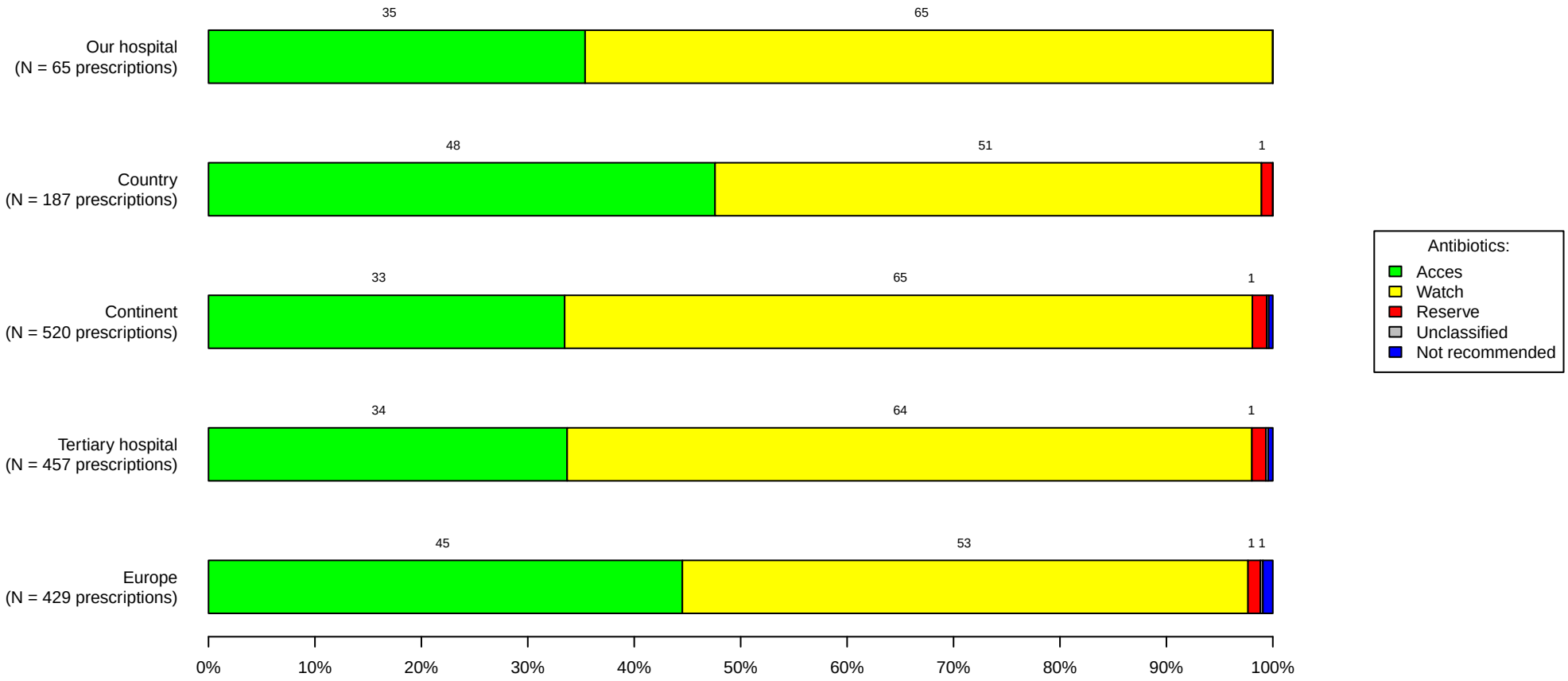
Prophylactic prescribing and patients admitted on NICU or NMW are excluded from this analysis

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



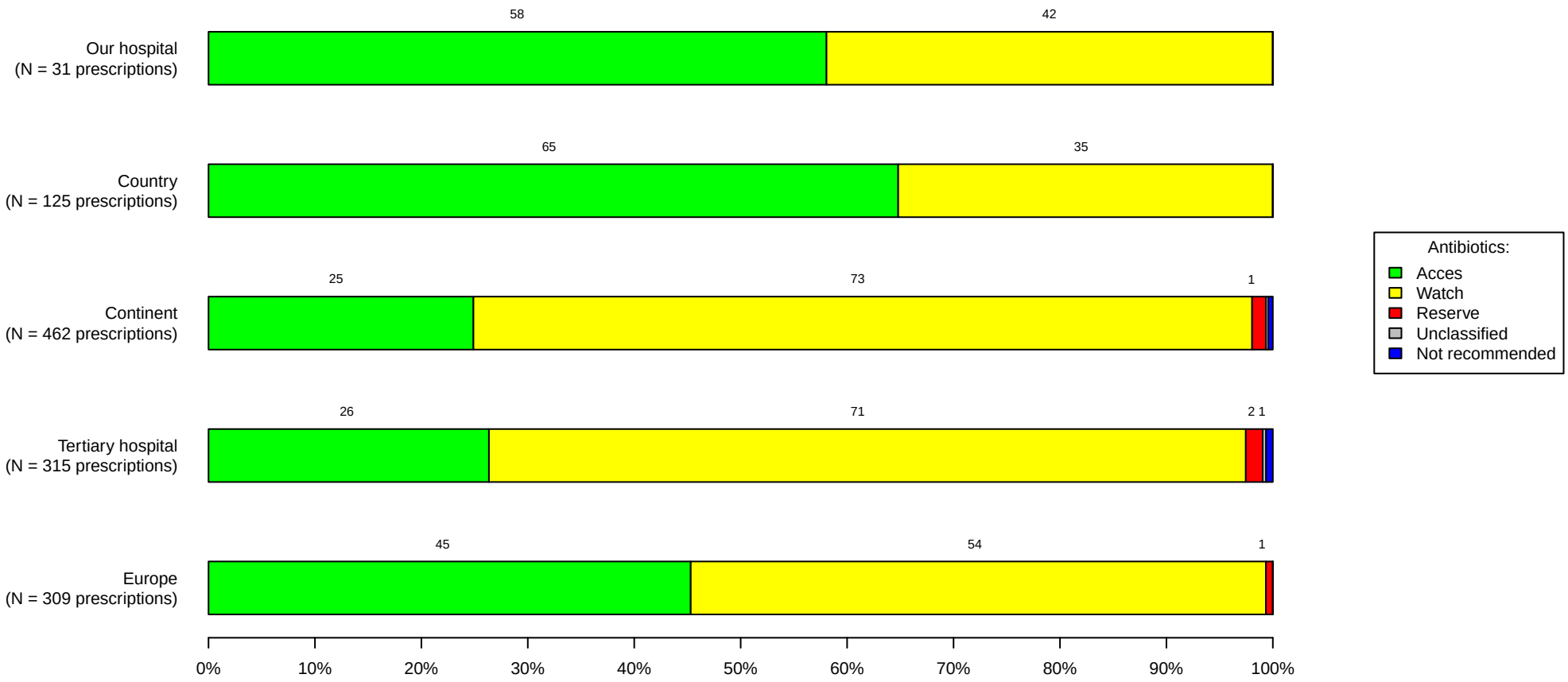
Prophylactic prescribing and patients admitted on NICU or NMW are excluded from this analysis

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



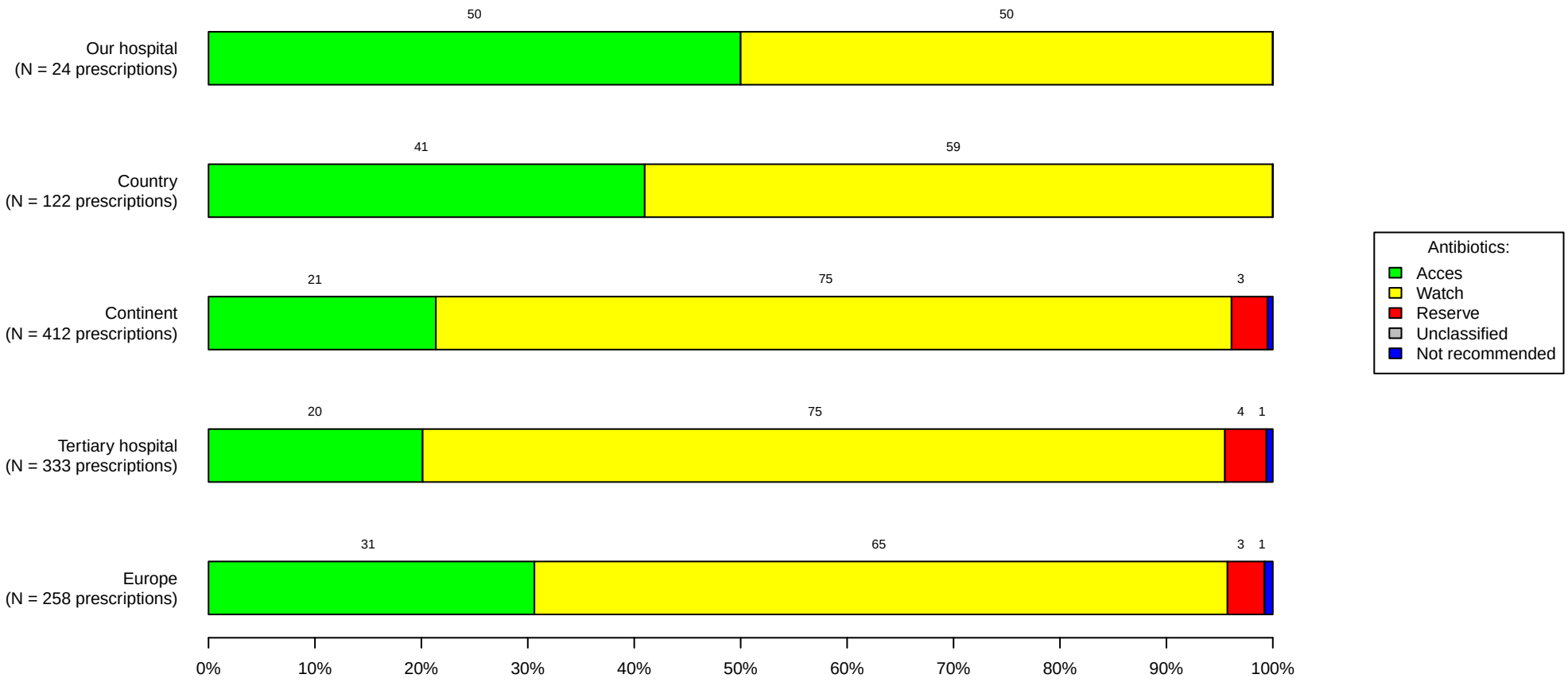
Prophylactic prescribing and patients admitted on NICU or NMW are excluded from this analysis

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



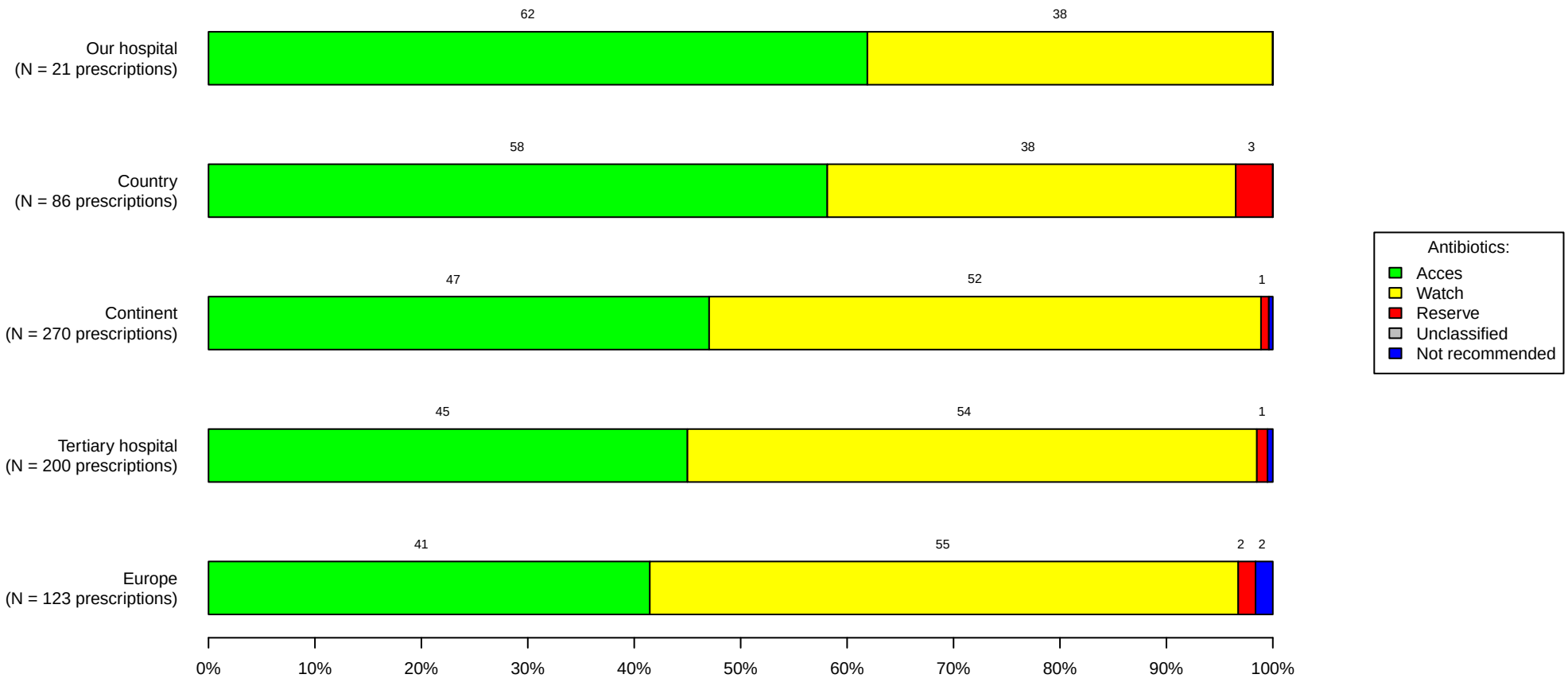
Prophylactic prescribing and patients admitted on NICU or NMW are excluded from this analysis

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

Access Our Hospital	Access Country	Watch Our Hospital	Watch Country	Reserve Our Hospital	Reserve Country
AMC 26.5%	AMC 32%	TZP 13.5%	TZP 12.8%		Polymyxin b P 0.2%
Cefazolin 6.7%	Cefazolin 7.2%	Ceftriaxone 11.7%	Ceftriaxone 7%		Aztreonam 0.1%
SXT 6.1%	SXT 4.1%	Meropenem 6.1%	Meropenem 5.8%		Daptomycin 0.1%
Metronidazole P 5.7%	Metronidazole P 2.6%	Ciprofloxacin 3%	Ciprofloxacin 5.2%		
Clindamycin 2%	Doxycycline 1.9%	Ceftazidime 2.4%	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.