Number of patients with blood culture specimen collected, stratified by age group and surveillance year

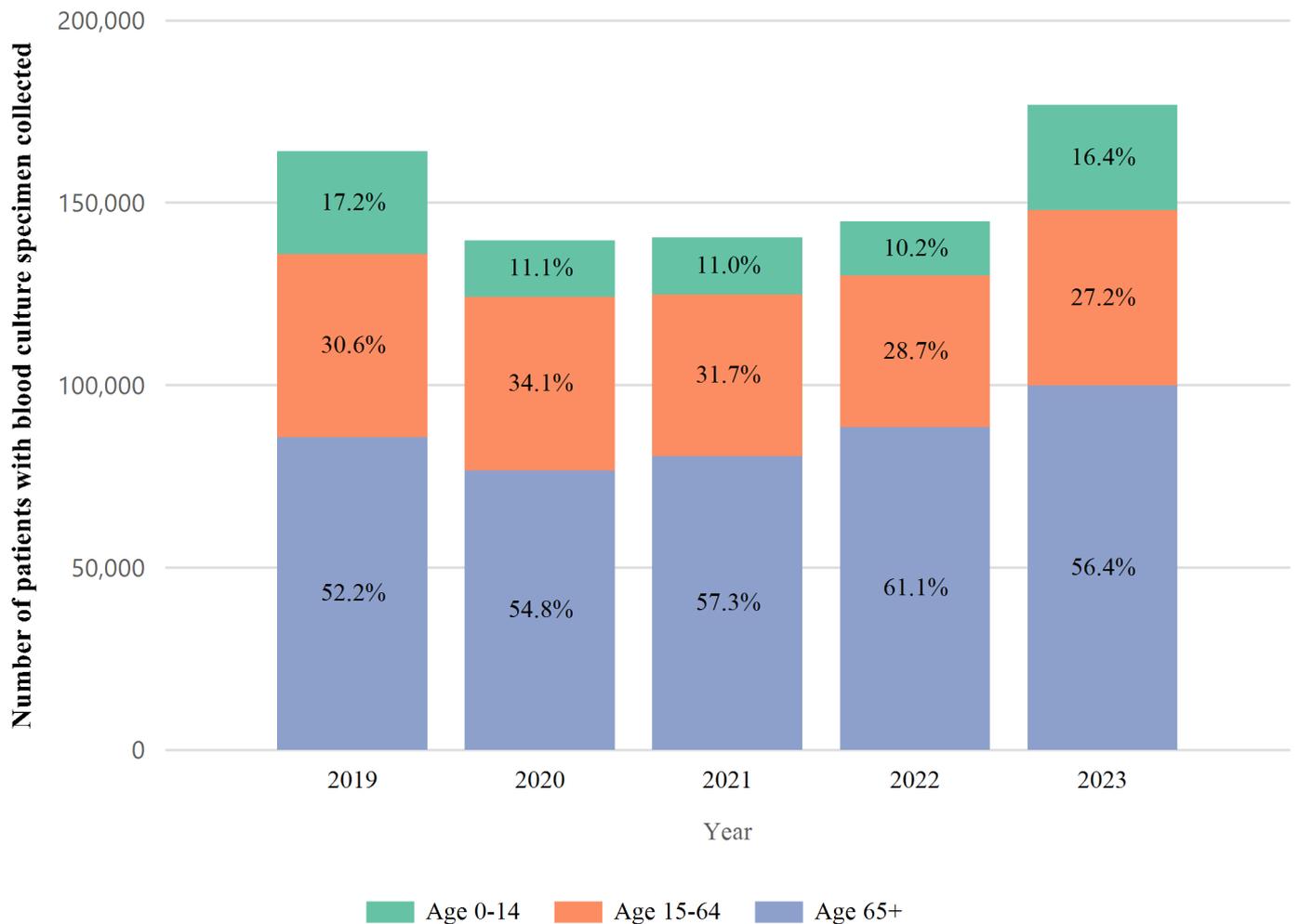|	Age 0-14		Age 15-64		Age 65+		Total	
Year	Patients Count*	%†	Patients Count*	%†	Patients Count*	%†	Patients Count*	%
2019	28,000	17.2%	50,000	30.6%	86,000	52.2%	164,000	100%
2020	15,000	11.1%	48,000	34.1%	77,000	54.8%	140,000	100%
2021	16,000	11.0%	44,000	31.7%	80,000	57.3%	140,000	100%
2022	15,000	10.2%	42,000	28.7%	89,000	61.1%	145,000	100%
2023	29,000	16.4%	48,000	27.2%	100,000	56.4%	177,000	100%

* Patient headcounts were rounded to the nearest thousand
† Percentages were rounded to one decimal place
§ Patient headcount >0 and <500

Number of patients with blood culture specimen collected, stratified by age group and surveillance year

Number of patients with blood culture specimen collected, stratified by age group and surveillance year

	Prevalence of positive blood culture (%) (95%CI)			
Year	Age 0-14	Age 15-64	Age 65+	Total
2019	400 / 28,200	4,400 / 50,200	11,700 / 85,700	16,500 / 164,100
	(1.5%)	(8.7%)	(13.7%)	(10.1%)
	(1.4%-1.7%)	(8.5%-9.0%)	(13.5%-13.9%)	(9.9%-10.2%)
2020	300 / 15,500	4,100 / 47,600	11,500 / 76,600	15,900 / 139,700
	(2.1%)	(8.6%)	(15.0%)	(11.4%)
	(1.8%-2.3%)	(8.4%-8.9%)	(14.7%-15.2%)	(11.2%-11.5%)
2021	300 / 15,500	4,100 / 44,400	11,800 / 80,400	16,100 / 140,400
	(1.6%)	(9.2%)	(14.7%)	(11.5%)
	(1.5%-1.9%)	(8.9%-9.4%)	(14.4%-14.9%)	(11.3%-11.7%)
2022	200 / 14,800	3,700 / 41,500	11,100 / 88,500	15,000 / 144,800
	(1.7%)	(8.8%)	(12.6%)	(10.4%)
	(1.5%-1.9%)	(8.5%-9.1%)	(12.4%-12.8%)	(10.2%-10.5%)
2023	300 / 29,000	3,800 / 48,100	11,800 / 99,800	15,900 / 176,800
	(1.2%)	(8.0%)	(11.8%)	(9.0%)
	(1.0%-1.3%)	(7.7%-8.2%)	(11.6%-12.0%)	(8.9%-9.1%)

Patient headcounts were rounded to the nearest hundred
Percentages were rounded to one decimal place
§ Patient headcount >0 and <50

Non susceptibility percentage of *Escherichia coli* for different antimicrobials

(Total headcount)*‡¶	Location of Onset	Non-susceptibility %† (95% CI†) (Numerator*/Denominator*)					P-Value**
		2019 (6800)	2020 (6600)	2021 (6400)	2022 (5600)	2023 (6300)	
amikacin	Hospital	0.8% (0.5%-1.5%) (§/1200)	0.9% (0.5%-1.6%) (§/1000)	1.1% (0.6%-1.9%) (§/1000)	2.1% (1.3%-3.2%) (§/900)	4.7% (3.6%-6.2%) (100/1100)	↑ <0.01
amoxicillin and beta-lactamase inhibitor	Hospital	41.2% (38.4%-44.0%) (500/1200)	37.0% (34.1%-40.0%) (400/1000)	41.1% (38.2%-44.2%) (400/1000)	45.1% (41.9%-48.3%) (400/900)	41.1% (38.2%-44.0%) (400/1100)	-
ampicillin	Hospital	84.9%†† (82.3%-87.1%) (700/800)	85.6%†† (82.8%-88.0%) (600/700)	86.0% (83.2%-88.3%) (600/700)	84.1%†† (81.0%-86.7%) (500/600)	86.7%†† (84.0%-89.0%) (600/700)	-
cefepime	Hospital	25.2% (22.7%-27.8%) (300/1100)	19.9% (17.5%-22.6%) (200/900)	19.8% (17.5%-22.4%) (200/1000)	21.4% (18.9%-24.2%) (200/900)	26.0% (23.3%-28.8%) (300/1000)	-
cefotaxime	Hospital	37.7% (34.7%-40.7%) (400/1000)	35.0% (31.9%-38.2%) (300/900)	35.3% (32.2%-38.6%) (300/800)	38.4% (35.1%-41.9%) (300/800)	39.6% (36.4%-42.8%) (300/900)	-
ceftazidime	Hospital	21.1% (18.6%-24.0%) (200/900)	17.4% (14.9%-20.3%) (100/800)	18.4% (15.9%-21.3%) (100/800)	20.3% (17.5%-23.5%) (100/700)	22.0% (19.2%-25.0%) (200/800)	-
cefuroxime	Hospital	41.5% (38.7%-44.3%) (500/1200)	39.0% (36.1%-42.0%) (400/1000)	39.4% (36.4%-42.4%) (400/1000)	40.9% (37.8%-44.1%) (400/900)	43.8% (40.8%-46.8%) (500/1100)	-
ertapenem	Hospital	0.6% (0.3%-1.2%) (§/1000)	1.0% (0.5%-1.8%) (§/900)	0.9% (0.5%-1.8%) (§/900)	2.0% (1.2%-3.2%) (§/800)	2.2% (1.4%-3.3%) (§/1000)	↑ <0.01
gentamicin	Hospital	35.0% (32.3%-37.7%) (400/1200)	29.4% (26.7%-32.2%) (300/1000)	29.2% (26.5%-32.1%) (300/1000)	30.4% (27.5%-33.4%) (300/900)	29.4% (26.7%-32.2%) (300/1100)	↓ <0.01
imipenem and cilastatin	Hospital	0.3% (0.1%-1.0%) (§/900)	0.5%†† (0.2%-1.4%) (§/600)	1.6%†† (0.8%-3.2%) (§/400)	2.6%†† (1.4%-4.8%) (§/400)	4.3%†† (2.7%-6.7%) (§/400)	↑ <0.01

Non susceptibility percentage of *Escherichia coli* for different antimicrobials

(Total headcount)*‡¶	Location of Onset	Non-susceptibility %† (95% CI†) (Numerator*/Denominator*)					P-Value**
		2019 (6800)	2020 (6600)	2021 (6400)	2022 (5600)	2023 (6300)	
levofloxacin	Hospital	46.1% (43.3%-49.0%) (500/1200)	45.9% (42.8%-49.0%) (500/1000)	46.6% (43.5%-49.8%) (500/1000)	45.5% (42.2%-48.7%) (400/900)	44.9% (41.9%-47.9%) (500/1000)	-
piperacillin and beta-lactamase inhibitor	Hospital	9.0% (7.5%-10.8%) (100/1100)	10.7% (8.9%-12.8%) (100/1000)	10.3% (8.6%-12.4%) (100/1000)	15.9% (13.7%-18.5%) (100/900)	18.3% (15.9%-20.9%) (200/900)	↑ <0.01

* Patient headcounts were rounded to the nearest hundred

† Percentages were rounded to one decimal place

‡ Total headcount refers to annual number of patients with particular organism isolated from blood/urine/stool

§ Patient headcount >0 and <50

¶ Compare with deduplication without consideration on location of onset, number of isolates selected for analysis increases because isolates from both hospital-onset and community-onset was selected for each patient, if available.

†† Since the susceptibility test was performed for less than 70% of isolates, readers should interpret the findings with caution.

** P-value was calculated using Cochran-Armitage Test to examine whether a trend with statistical significance exists, only trends with statistical significance were reported.
Legend: ↑ Increasing trend; ↓ Decreasing trend

Note:
Dataset was de-duplicated with consideration on location of onset.
Proportion confidence intervals were calculated using the Wilson method.
Non-susceptibility percentages calculated from less than 10 isolates (after de-duplication) were excluded from analysis.
The CLSI released revised fluoroquinolones interpretive criteria for Enterobacteriaceae (except Salmonella spp.) in 2019, and revised piperacillin/tazobactam interpretive criteria for Enterobacteriaceae in 2022. These updates may have contributed to the observed increase in subsequent years compared to the years prior to the criteria changes.
Revised colistin interpretive criteria for Acinetobacter spp. was released by CLSI in 2020. The increase in 2020 onwards may be contributed by the change in CLSI criteria.

Non susceptibility percentage of *Klebsiella pneumoniae* for different antimicrobials

(Total headcount)*‡¶	Location of Onset	2019 (1900)	2020 (1900)	2021 (2100)	2022 (2000)	2023 (2100)	P-Value**
amikacin	Community	0.2% (0.1%-0.6%) (§/1500)	0.3% (0.1%-0.8%) (§/1500)	0.2% (0.1%-0.6%) (§/1700)	0.6% (0.3%-1.2%) (§/1600)	1.7% (1.1%-2.4%) (§/1600)	↑ <0.01
amoxicillin and beta-lactamase inhibitor	Community	16.3% (14.5%-18.3%) (200/1500)	16.5% (14.7%-18.5%) (200/1500)	15.9% (14.2%-17.8%) (300/1700)	15.8% (14.1%-17.7%) (200/1600)	17.9% (16.0%-19.8%) (300/1600)	-
cefepime	Community	6.8% (5.6%-8.3%) (100/1400)	5.5% (4.4%-6.8%) (100/1400)	5.6% (4.6%-6.8%) (100/1600)	6.8% (5.6%-8.1%) (100/1600)	7.8% (6.5%-9.2%) (100/1500)	↑ <0.05
cefotaxime	Community	12.2% (10.5%-14.1%) (200/1200)	12.4% (10.6%-14.3%) (200/1200)	12.7% (11.0%-14.5%) (200/1400)	14.1% (12.3%-16.0%) (200/1400)	13.6% (11.8%-15.5%) (200/1300)	-
ceftazidime	Community	9.4% (7.9%-11.1%) (100/1200)	9.9% (8.4%-11.7%) (100/1300)	7.8% (6.5%-9.4%) (100/1300)	8.8% (7.3%-10.5%) (100/1200)	8.8% (7.3%-10.6%) (100/1200)	-
cefuroxime	Community	16.2% (14.4%-18.2%) (200/1500)	15.4% (13.7%-17.4%) (200/1500)	15.4% (13.7%-17.2%) (300/1700)	15.2% (13.5%-17.1%) (200/1600)	16.9% (15.1%-18.8%) (300/1600)	-
gentamicin	Community	4.9% (3.9%-6.2%) (100/1500)	4.6% (3.6%-5.8%) (100/1500)	4.6% (3.7%-5.7%) (100/1700)	5.2% (4.2%-6.4%) (100/1600)	6.2% (5.1%-7.5%) (100/1600)	↑ <0.05
imipenem and cilastatin	Community	0.2% (0.1%-0.7%) (§/1100)	0.5% (0.2%-1.1%) (§/1000)	0.4%†† (0.1%-1.0%) (§/900)	1.3%†† (0.7%-2.4%) (§/800)	1.0%†† (0.5%-2.0%) (§/700)	↑ <0.01
levofloxacin	Community	12.7% (11.1%-14.6%) (200/1400)	14.0% (12.3%-15.8%) (200/1500)	13.2% (11.6%-14.9%) (200/1600)	11.1% (9.6%-12.7%) (200/1600)	12.8% (11.2%-14.6%) (200/1500)	-
meropenem	Community	0.6% (0.3%-1.3%) (§/1000)	0.2% (<0.05%-0.6%) (§/1200)	0.3% (0.1%-0.7%) (§/1200)	0.4% (0.1%-0.9%) (§/1100)	0.7%†† (0.4%-1.5%) (§/1100)	-

Non-susceptibility %† (95% CI†) (Numerator/Denominator*)*

Non susceptibility percentage of *Klebsiella pneumoniae* for different antimicrobials

(Total headcount)*‡¶	Location of Onset	Non-susceptibility %† (95% CI†) (Numerator*/Denominator*)					*P-Value***
		2019 *(1900)*	2020 *(1900)*	2021 *(2100)*	2022 *(2000)*	2023 *(2100)*	
piperacillin and beta-lactamase inhibitor	Community	5.2% (4.2%-6.5%) (100/1400)	4.0% (3.1%-5.1%) (100/1400)	4.2% (3.3%-5.3%) (100/1600)	11.7% (10.1%-13.4%) (200/1500)	11.7% (10.0%-13.6%) (100/1200)	↑ <0.01

* Patient headcounts were rounded to the nearest hundred

† Percentages were rounded to one decimal place

‡ Total headcount refers to annual number of patients with particular organism isolated from blood/urine/stool

§ Patient headcount >0 and <50

¶ Compare with deduplication without consideration on location of onset, number of isolates selected for analysis increases because isolates from both hospital-onset and community-onset was selected for each patient, if available.

†† Since the susceptibility test was performed for less than 70% of isolates, readers should interpret the findings with caution.

** P-value was calculated using Cochran-Armitage Test to examine whether a trend with statistical significance exists, only trends with statistical significance were reported.

Legend: ↑ Increasing trend; ↓ Decreasing trend

Note:

Dataset was de-duplicated with consideration on location of onset.

Proportion confidence intervals were calculated using the Wilson method.

Non-susceptibility percentages calculated from less than 10 isolates (after de-duplication) were excluded from analysis.

The CLSI released revised fluoroquinolones interpretive criteria for Enterobacteriaceae (except Salmonella spp.) in 2019, and revised piperacillin/tazobactam interpretive criteria for Enterobacteriaceae in 2022. These updates may have contributed to the observed increase in subsequent years compared to the years prior to the criteria changes.

Revised colistin interpretive criteria for Acinetobacter spp. was released by CLSI in 2020. The increase in 2020 onwards may be contributed by the change in CLSI criteria.

Non susceptibility percentage of *Klebsiella pneumoniae* for different antimicrobials

(Total headcount)*‡¶	Location of Onset	Non-susceptibility %† (95% CI†) (Numerator*/Denominator*)					P-Value**
		2019 *(1900)*	2020 *(1900)*	2021 *(2100)*	2022 *(2000)*	2023 *(2100)*	
amikacin	Hospital	1.2% (0.5%-2.5%) (§/500)	1.2% (0.5%-2.7%) (§/400)	2.3% (1.3%-4.0%) (§/500)	2.4% (1.4%-4.2%) (§/500)	3.2% (2.1%-5.1%) (§/600)	↑ <0.01
amoxicillin and beta-lactamase inhibitor	Hospital	36.5% (32.4%-40.7%) (200/500)	39.4% (34.9%-44.1%) (200/400)	34.5% (30.5%-38.7%) (200/500)	40.0% (35.8%-44.3%) (200/500)	37.8% (33.8%-41.9%) (200/600)	-
cefepime	Hospital	17.8% (14.6%-21.5%) (100/500)	18.0% (14.5%-22.1%) (100/400)	16.4% (13.5%-19.9%) (100/500)	22.7% (19.2%-26.6%) (100/500)	20.7% (17.5%-24.4%) (100/500)	↑ <0.05
cefotaxime	Hospital	31.4% (27.1%-36.1%) (100/400)	28.7% (24.2%-33.7%) (100/300)	32.6% (28.3%-37.3%) (100/400)	34.7% (30.2%-39.5%) (100/400)	33.8% (29.7%-38.3%) (200/500)	-
ceftazidime	Hospital	24.0% (20.2%-28.2%) (100/400)	24.6% (20.5%-29.3%) (100/400)	23.8% (19.8%-28.3%) (100/400)	24.8% (20.7%-29.5%) (100/400)	22.8% (19.0%-27.1%) (100/400)	-
cefuroxime	Hospital	36.3% (32.2%-40.5%) (200/500)	38.2% (33.8%-42.9%) (200/400)	35.2% (31.3%-39.4%) (200/500)	39.8% (35.6%-44.1%) (200/500)	39.2% (35.2%-43.3%) (200/600)	-
gentamicin	Hospital	11.3% (8.8%-14.3%) (100/500)	10.4% (7.8%-13.6%) (§/400)	11.9% (9.4%-14.9%) (100/500)	15.5% (12.6%-18.9%) (100/500)	13.3% (10.7%-16.4%) (100/600)	↑ <0.05
imipenem and cilastatin	Hospital	2.3%†† (1.2%-4.5%) (§/300)	4.0%†† (2.2%-6.9%) (§/300)	6.7%†† (4.1%-10.7%) (§/200)	6.8%†† (4.1%-11.0%) (§/200)	3.7%†† (2.0%-6.9%) (§/200)	-
levofloxacin	Hospital	25.9% (22.2%-29.9%) (100/500)	29.4% (25.3%-34.0%) (100/400)	28.7% (24.9%-32.7%) (100/500)	29.6% (25.7%-33.8%) (100/500)	27.8% (24.2%-31.7%) (200/500)	-
meropenem	Hospital	2.7% (1.5%-4.8%) (§/400)	4.6% (2.9%-7.2%) (§/400)	4.3% (2.7%-6.7%) (§/400)	4.0% (2.5%-6.4%) (§/400)	3.1% (1.8%-5.2%) (§/400)	-

Non susceptibility percentage of *Klebsiella pneumoniae* for different antimicrobials

(Total headcount)*‡¶	Location of Onset	2019 (1900)	2020 (1900)	2021 (2100)	2022 (2000)	2023 (2100)	P-Value**
		Non-susceptibility %† (95% CI†) (Numerator*/Denominator*)	
piperacillin and beta-lactamase inhibitor	Hospital	12.6% (10.0%-15.8%) (100/500)	15.7% (12.5%-19.6%) (100/400)	14.9% (12.1%-18.3%) (100/500)	26.6% (22.9%-30.7%) (100/500)	29.8% (25.7%-34.3%) (100/400)	↑ <0.01
sulfamethoxazole and trimethoprim	Hospital	38.9% (34.1%-44.0%) (100/400)	40.4%†† (35.1%-46.0%) (100/300)	35.2%†† (30.2%-40.5%) (100/300)	38.7%†† (33.4%-44.2%) (100/300)	40.5%†† (35.4%-45.8%) (100/300)	-

* Patient headcounts were rounded to the nearest hundred

† Percentages were rounded to one decimal place

‡ Total headcount refers to annual number of patients with particular organism isolated from blood/urine/stool

§ Patient headcount >0 and <50

¶ Compare with deduplication without consideration on location of onset, number of isolates selected for analysis increases because isolates from both hospital-onset and community-onset was selected for each patient, if available.

†† Since the susceptibility test was performed for less than 70% of isolates, readers should interpret the findings with caution.

** P-value was calculated using Cochran-Armitage Test to examine whether a trend with statistical significance exists, only trends with statistical significance were reported.

Legend: ↑ Increasing trend; ↓ Decreasing trend

Note:

Dataset was de-duplicated with consideration on location of onset.

Proportion confidence intervals were calculated using the Wilson method.

Non-susceptibility percentages calculated from less than 10 isolates (after de-duplication) were excluded from analysis.

The CLSI released revised fluoroquinolones interpretive criteria for Enterobacteriaceae (except Salmonella spp.) in 2019, and revised piperacillin/tazobactam interpretive criteria for Enterobacteriaceae in 2022. These updates may have contributed to the observed increase in subsequent years compared to the years prior to the criteria changes.

Revised colistin interpretive criteria for Acinetobacter spp. was released by CLSI in 2020. The increase in 2020 onwards may be contributed by the change in CLSI criteria.