

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

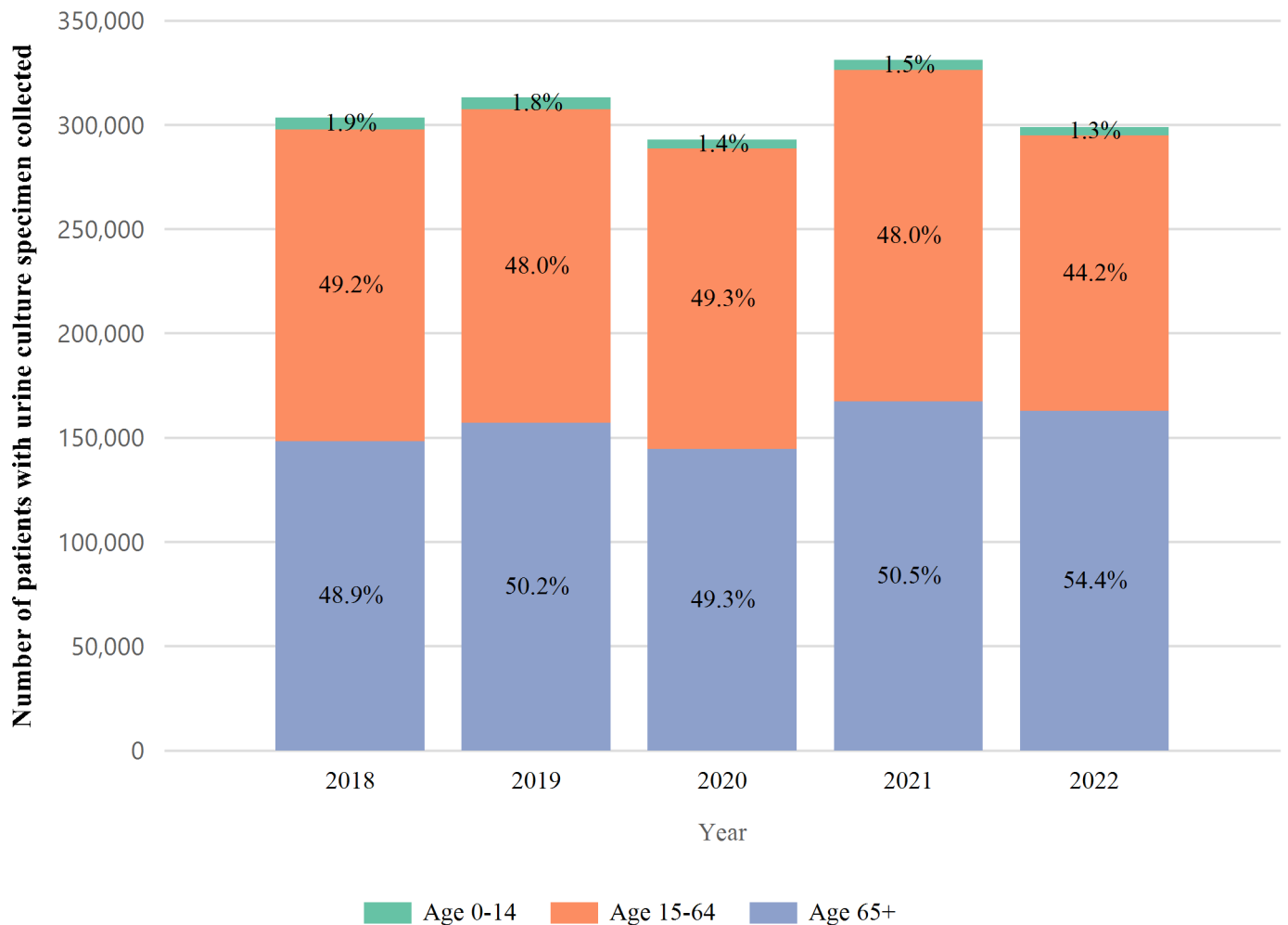
Year	Age 0-14		Age 15-64		Age 65+		Total	
	Patients Count*	%†	Patients Count*	%†	Patients Count*	%†	Patients Count*	%
2018	6,000	1.9%	149,000	49.2%	148,000	48.9%	303,000	100%
2019	6,000	1.8%	150,000	48.0%	157,000	50.2%	313,000	100%
2020	4,000	1.4%	144,000	49.3%	144,000	49.3%	293,000	100%
2021	5,000	1.5%	159,000	48.0%	167,000	50.5%	331,000	100%
2022	4,000	1.3%	132,000	44.2%	163,000	54.4%	299,000	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 urine culture specimen collected, stratified by age group and surveillance year



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

Year	Prevalence of positive urine culture (%) (95% CI)			
	Age 0-14	Age 15-64	Age 65+	Total
2018	400 / 5,800	14,300 / 149,300	31,300 / 148,300	46,000 / 303,400
	(7.1%)	(9.6%)	(21.1%)	(15.2%)
	(6.5%-7.8%)	(9.4%-9.7%)	(20.9%-21.3%)	(15.0%-15.3%)
2019	400 / 5,600	14,700 / 150,300	33,200 / 157,100	48,200 / 313,000
	(6.5%)	(9.7%)	(21.1%)	(15.4%)
	(5.9%-7.2%)	(9.6%-9.9%)	(20.9%-21.3%)	(15.3%-15.5%)
2020	300 / 4,200	13,500 / 144,200	29,200 / 144,400	43,000 / 292,800
	(6.8%)	(9.3%)	(20.2%)	(14.7%)
	(6.1%-7.6%)	(9.2%-9.5%)	(20.0%-20.5%)	(14.6%-14.8%)
2021	300 / 5,000	14,800 / 158,800	33,300 / 167,300	48,400 / 331,000
	(6.5%)	(9.3%)	(19.9%)	(14.6%)
	(5.8%-7.2%)	(9.2%-9.5%)	(19.7%-20.1%)	(14.5%-14.7%)
2022	200 / 4,000	12,400 / 132,200	31,700 / 162,600	44,400 / 298,900
	(5.8%)	(9.4%)	(19.5%)	(14.8%)
	(5.1%-6.6%)	(9.2%-9.6%)	(19.3%-19.7%)	(14.7%-15.0%)

Patient headcounts were rounded to the nearest hundred

Percentages were rounded to one decimal place

§ Patient headcount >0 and <50

Number of patients with WHO GLASS priority organism isolated from positive culture specimen, stratified by location of onset

			Year	Year	Year	Year	Year
			2018	2019	2020	2021	2022
Community-onset	Escherichia coli	Number of patient with organism isolated*	25,000	26,100	23,300	26,200	23,200
		Percentage of patient with organism isolated†	64.52%	64.21%	64.12%	64.09%	63.31%
	Klebsiella pneumoniae	Number of patient with organism isolated*	2,700	3,200	3,100	4,500	4,400
		Percentage of patient with organism isolated†	6.90%	7.82%	8.63%	10.92%	11.94%
	Other spp.	Number of patient with organism isolated*	14,300	14,900	12,900	13,500	12,000
		Percentage of patient with organism isolated†	36.89%	36.54%	35.44%	32.97%	32.71%
Hospital-onset	Escherichia coli	Number of patient with organism isolated*	4,400	4,400	3,800	4,300	4,300
		Percentage of patient with organism isolated†	46.73%	45.48%	44.68%	44.88%	43.58%
	Klebsiella pneumoniae	Number of patient with organism isolated*	500	600	600	1,100	1,200
		Percentage of patient with organism isolated†	5.59%	6.51%	7.42%	10.98%	11.98%
	Other spp.	Number of patient with organism isolated*	5,500	5,700	5,100	5,200	5,400
		Percentage of patient with organism isolated†	58.76%	58.96%	59.41%	54.54%	55.44%
Undifferentiated location of onset	Escherichia coli	Number of patient with organism isolated*	28,400	29,600	26,300	29,600	26,600
		Percentage of patient with organism isolated†	61.80%	61.40%	61.19%	61.17%	59.90%
	Klebsiella pneumoniae	Number of patient with organism isolated*	3,100	3,700	3,700	5,400	5,400
		Percentage of patient with organism isolated†	6.77%	7.73%	8.56%	11.09%	12.12%
	Other spp.	Number of patient with organism isolated*	19,100	19,800	17,300	18,100	16,800
		Percentage of patient with organism isolated†	41.40%	41.16%	40.25%	37.41%	37.94%

* Patient headcounts were rounded to the nearest hundred

† Percentages were rounded to one decimal place. If percentages >0.005% and <0.1%, percentages were rounded to two decimal place

§ Patient headcount >0 and <50

Distribution of WHO GLASS priority organism isolated from positive urine culture specimen, stratified by location of onset

Location of onset	origin	Patient count and percentage				
		2018	2019	2020	2021	2022
<i>Escherichia coli</i>	Community	25000 (85.1%)	26100 (85.5%)	23300 (86.0%)	26200 (85.9%)	23200 (84.4%)
	Hospital	4400 (14.9%)	4400 (14.5%)	3800 (14.0%)	4300 (14.1%)	4300 (15.6%)
	Undifferentiated	28400 (100.0%)	29600 (100.0%)	26300 (100.0%)	29600 (100.0%)	26600 (100.0%)
<i>Klebsiella pneumoniae</i>	Community	2700 (83.6%)	3200 (83.4%)	3100 (83.2%)	4500 (80.9%)	4400 (78.8%)
	Hospital	500 (16.4%)	600 (16.6%)	600 (16.8%)	1100 (19.1%)	1200 (21.2%)
	Undifferentiated	3100 (100.0%)	3700 (100.0%)	3700 (100.0%)	5400 (100.0%)	5400 (100.0%)
<i>Other spp.</i>	Community	14300 (72.2%)	14900 (72.1%)	12900 (71.8%)	13500 (72.1%)	12000 (68.8%)
	Hospital	5500 (27.8%)	5700 (27.9%)	5100 (28.2%)	5200 (27.9%)	5400 (31.2%)
	Undifferentiated	19100 (100.0%)	19800 (100.0%)	17300 (100.0%)	18100 (100.0%)	16800 (100.0%)

* 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

		Non-susceptibility %† (95% CI†) (Numerator*/Denominator*)					
(Total headcount)*‡¶	Location of Onset	2018 (28400)	2019 (29600)	2020 (26300)	2021 (29600)	2022 (26600)	P-Value**
amoxicillin and beta-lactamase inhibitor	Community	19.0% (18.5%-19.5%) (4800/25000)	20.7% (20.2%-21.1%) (5400/26100)	18.3% (17.8%-18.8%) (4300/23300)	18.0% (17.5%-18.5%) (4700/26200)	20.5% (20.0%-21.0%) (4800/23200)	-
Cefuroxime (IV)	Community	25.1% (24.5%-25.7%) (5500/21700)	25.2% (24.7%-25.8%) (5700/22500)	24.8% (24.2%-25.4%) (4900/19700)	23.6% (23.0%-24.1%) (5200/22200)	23.9% (23.3%-24.5%) (4800/20000)	↓ <0.01
Cefuroxime (oral)	Community	44.2% (43.5%-44.8%) (9600/21700)	41.6% (41.0%-42.3%) (9400/22500)	41.1% (40.4%-41.8%) (8100/19700)	39.9% (39.3%-40.6%) (8800/22200)	42.5% (41.8%-43.2%) (8500/20000)	↓ <0.01
levofloxacin	Community	35.0% (34.4%-35.7%) (6900/19800)	40.3% (39.6%-40.9%) (8600/21200)	44.4% (43.7%-45.1%) (8400/19000)	44.4% (43.8%-45.1%) (9500/21500)	43.9% (43.2%-44.6%) (8200/18600)	↑ <0.01
nitrofurantoin	Community	2.1% (1.9%-2.3%) (500/25000)	2.1% (2.0%-2.3%) (600/26100)	1.8% (1.6%-1.9%) (400/23300)	1.2% (1.1%-1.4%) (300/26200)	1.3% (1.2%-1.5%) (300/23200)	↓ <0.01
piperacillin and beta-lactamase inhibitor	Community	2.7% (2.4%-2.9%) (600/21000)	2.5% (2.3%-2.7%) (500/21800)	2.6% (2.4%-2.8%) (500/19000)	2.1% (1.9%-2.3%) (500/21400)	5.9% (5.6%-6.2%) (1100/19300)	↑ <0.01
sulfamethoxazole and trimethoprim	Community	37.7% (37.1%-38.3%) (8700/23000)	37.1% (36.5%-37.7%) (9000/24200)	34.8% (34.2%-35.5%) (7500/21500)	32.0% (31.4%-32.5%) (7800/24300)	30.9% (30.3%-31.6%) (6600/21400)	↓ <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 *Escherichia coli* for different antimicrobials

(Total headcount)*‡¶	Location of Onset	Non-susceptibility %† (95% CI†) (Numerator*/Denominator*)					P-Value**
		2018 (28400)	2019 (29600)	2020 (26300)	2021 (29600)	2022 (26600)	
<i>amoxicillin and beta-lactamase inhibitor</i>	Hospital	26.9% (25.6%-28.2%) (1200/4400)	27.8% (26.5%-29.2%) (1200/4400)	27.8% (26.4%-29.3%) (1100/3800)	28.7% (27.3%-30.0%) (1200/4300)	29.5% (28.2%-30.9%) (1300/4300)	↑ <0.01
<i>Cefuroxime (IV)</i>	Hospital	33.6% (32.2%-35.0%) (1500/4400)	34.5% (33.1%-35.9%) (1500/4400)	33.1% (31.7%-34.7%) (1300/3800)	32.8% (31.4%-34.2%) (1400/4300)	33.3% (31.9%-34.8%) (1400/4300)	-
<i>Cefuroxime (oral)</i>	Hospital	54.6% (53.1%-56.0%) (2400/4400)	52.1% (50.6%-53.5%) (2300/4400)	50.9% (49.3%-52.5%) (1900/3800)	51.0% (49.5%-52.5%) (2200/4300)	53.4% (51.9%-54.9%) (2300/4300)	-
<i>levofloxacin</i>	Hospital	41.8% (40.1%-43.5%) (1300/3200)	44.2% (42.6%-45.9%) (1500/3300)	45.8% (44.0%-47.6%) (1300/2900)	46.2% (44.5%-47.9%) (1500/3200)	45.8% (44.1%-47.6%) (1400/3100)	↑ <0.01
<i>nitrofurantoin</i>	Hospital	2.4% (2.0%-3.0%) (100/4400)	2.2% (1.8%-2.7%) (100/4400)	1.7% (1.3%-2.2%) (100/3800)	1.3% (1.0%-1.7%) (100/4300)	1.3% (1.0%-1.7%) (100/4300)	↓ <0.01
<i>piperacillin and beta-lactamase inhibitor</i>	Hospital	5.1% (4.5%-5.8%) (200/4200)	4.2% (3.6%-4.8%) (200/4200)	5.1% (4.4%-5.9%) (200/3600)	4.8% (4.2%-5.5%) (200/4100)	8.7% (7.8%-9.6%) (400/4100)	↑ <0.01
<i>sulfamethoxazole and trimethoprim</i>	Hospital	45.6% (44.1%-47.1%) (1900/4100)	45.4% (43.9%-46.9%) (1900/4200)	43.9% (42.3%-45.6%) (1600/3500)	40.6% (39.1%-42.1%) (1600/4000)	39.7% (38.2%-41.2%) (1600/4000)	↓ <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.