National Center for Global Health and Medicine,
AMR Clinical Reference Center

Japan Surveillance for Infection Prevention and Healthcare Epidemiology

J-SIPHE

Annual Report 2023

J-SIPHE

2023.1-2023.12
Published Jan 2025

National Center for Global Health and Medicine, AMR Clinical Reference Center

Japan Surveillance for Infection Prevention and Healthcare Epidemiology (J-SIPHE) Annual Report 2023

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I. List of abbreviations

AMR	Antimicrobial Resistance
AMRCRC	AMR Clinical Reference Center
AMU	Antimicrobial Use
AST	Antimicrobial Stewardship Team
AUD	Antimicrobial Use Density
CAUTI	Catheter-associated Urinary Tract Infection
CDI	*Clostridioides Difficile* Infection
CLABSI	Central Line-associated Blood Stream Infection
CRE	Carbapenem-Resistant *Enterobacteriaceae*
CSEP	Clinical Sepsis
DDD	Defined Daily Dose
DOT	Days of Therapy
FTE	Full Time Equivalent
GCU	Growing Care Unit
HAI	Healthcare-Associated Infections
HCU	High Care Unit
ICT	Infection Control Team
ICU	Intensive Care Unit
IPC	Infection Prevention and Control
JANIS	Japan Nosocomial Infections Surveillance
LCBI	Laboratory Confirmed Bloodstream Infection
MDRA	Multidrug-resistant *Acinetobacter* spp.
MDRP	Multidrug-resistant *P. aeruginosa*
MRSA	Methicillin-resistant *Staphylococcus aureus*
NAP	National Action Plan
NICU	Neonatal Intensive Care Unit
PAF	Prospective Audit and Feedback
PICU	Pediatric Intensive Care Unit
PRSP	Penicillin-resistant *S. pneumoniae*
SSI	Surgical Site Infection
SCU	Stroke Care Unit
TDM	Therapeutic Drug Monitoring
VRE	Vancomycin-resistant *Enterococcus* spp.
VRSA	Vancomycin-resistant *S. aureus*
WHO	World Health Organization

II. Overview of J-SIPHE

Background and purpose

In 2015, the World Health Organization (WHO) General Assembly endorsed a global action plan on antimicrobial resistance (AMR). A year later, in 2016, the global action plan was reaffirmed as the world's blueprint for tackling AMR during the 71st session of the United Nations General Assembly, where 193 Heads of State including Japan adopted the resolution. In response the Government of Japan has developed and implemented its own national action plan (NAP) to combat AMR. This plan has committed Japan to action in six key areas including professional education and public engagement, surveillance and monitoring, infection prevention and control (IPC), antimicrobial stewardship, research, and international collaboration. IPC has always been a key element of high quality and safe care, especially since the COVID-19 pandemic. Therefore, measuring and evaluating IPC practices in medical and long-term nursing care settings and promoting regional and national cooperation have strongly been advocated in the NAP against AMR.

Operation

To facilitate the above set goals the Ministry of Health, Labour and Welfare of Japan commissioned the AMR Clinical Reference Center (AMRCRC), an organization established in April 2017 at the National Center for Global Health and Medicine. To better track, measure, and tackle AMR in healthcare at local, regional, and national level the AMRCRC launched a system called the Japan Surveillance for Infection Prevention and Healthcare Epidemiology (J-SIPHE; hereinafter referred to as "this system"). This system aggregates epidemiological information on IPC measures, healthcare-associated infections (HAI), occurrence of AMR bacteria and associated blood stream infections, and antimicrobial use (AMU) at participating sites nationwide.

Data registration

This system not only collects multiple sets of important AMR measures (see section III. Data registration items) recorded by participating sites, it represents the delivery of a shared platform providing tools and real time data which individual sites can use to progress towards improving patient care, IPC practices and achieve the national standards. The data is cleaned, organized, and safely stored at the J-SIPHE office. The J-SIPHE expert committee at the AMRCRC in charge of this system is comprised of a multidisciplinary team of experts in their field who continuously strive to improve surveillance and monitoring processes. The resulting large scale data aggregation is then consolidated and summarized on an annual basis to evaluate, compare, and make progress towards achieving the goals set out in the NAP against AMR.
The annual report is made publicly available on the J-SIPHE website for better public engagement and used for continuous professional education at medical institutions. This system also aims to be the national benchmark when addressing AMR, fostering regional and national collaboration amongst participating sites.

Annual Report

This annual report is prepared based on the registered data entered by participating sites using this system, in accordance with the following criteria:

1. Raw data* ranging from January to December of the previous year at the time of data aggregation are used.
2. The raw data* of participating sites are used that entered data for at least one month during the target period.
3. The annual report adopts a unique data aggregation and representation method.
4. Not all data registration items are included in the annual report.
5. Figures and tables are generated for sites with calculable data.
6. Data by which sites are likely to be identified are not shown.
7. Registration data with very limited information, extreme outliers, and obviously misregistered data are excluded from the aggregation.

*** Raw data: Data registered in this system by participating sites**

III. Data registration items

The following items are part of the J-SIPHE data collection system:

Basic site Information

- Number of beds
- Status of infection control improvement notification
- Total number of inpatient days
- Number of admissions
- Number of discharges
- Total number of inpatient days by ward

AST and Infection Treatment Information

- Presence of AST system
  - If present: Number of consultations to AST
  - If present: Number of proposals from AST
- Blood concentration measurement system for TDM target drugs
  - Adoption status of various TDM target drugs, measurement system and location, number of days to return measurement results
- TDM implementation status
  - Number of patients starting administration of various TDM target drugs, number of patients undergoing TDM
- Infection consultation (physician intervention)
  - Number of physicians for infection consultation
  - Number of infectious disease specialists
  - Number of pediatric infectious disease specialists
  - Number of infection consultations (chart entries, bedside consultations)
  - Number of infection consultations for pediatric patients

AMU Information

- Antimicrobial Usage Status
  - Usage amount of various antimicrobials
  - Number of days of therapy for various antimicrobials
  - Number of patients using various antimicrobials

ICT-related Information

- Evaluation of Nosocomial Infections
  - Surveillance and incidence of patients with influenza-like illness
  - Surveillance and incidence of patients with gastroenteritis-like illness
- Hand Sanitizer Usage by Ward (mL)
  - Actual usage or dispensed amount
- Hand Hygiene Evaluation by Ward

Number of opportunities and implementations by profession using entry/exit method or the five moments for hand hygiene

- WHO Hand Hygiene Self-Assessment Framework

Device-Associated Infections Information (Healthcare-Associated Infections)

- Surveillance of Device-Associated Infections (CLABSI, CAUTI)

  Total inpatient days by ward, central line days, urinary catheter days, number of CLABSI cases, number of CAUTI cases

SSI Information (Healthcare-Associated Infections)

- Surgical Site Infections (SSI)

  Selection of surgical procedures, presence of endoscopy, number of surgeries by risk index, number of SSI cases by risk index

NICU Information (Healthcare-Associated Infections)

- Ward Information

  Number of NICU beds, number of GCU beds, departments capable of neonatal surgery

- CLABSI Surveillance

  Total inpatient days by birth weight category, central line days, number of CLABSI cases

- MRSA Active Surveillance

  Frequency, target sites, number of new MRSA detections

Microorganism and Antimicrobial Resistance Information

- CDI Lab Event Surveillance

  Main testing methods, number of tests conducted on the subjects, number of HO (Hospital-Onset) cases

- Detection Status of Major Bacteria

  Number of cases of various major bacteria and resistant bacteria (total, new, nosocomial)

- Bloodstream Infection Incidence

  Number of cases of various major bacteria and resistant bacteria from blood samples (total, nosocomial)

- Blood Culture Status

  Number of blood culture sets submitted, number of single set submissions, number of positive sets, number of contaminated sets

- MRSA/S. aureus Detection Rates

  Number of patients with MRSA and S. aureus detected from various materials

- Specimen Submission Status

  Number of specimens submitted from various materials, number of patients from whom specimens were submitted

Annual Registration Information

- Presence of Bacteriology Laboratory
- Presence of Infection Consultation System
- Presence of AST System
  - If present: Status of personnel by profession (weekly activity hours of AST members, presence of qualifications)
  - If present: Status of staff training
- Efforts for Appropriate Use of Antimicrobials
  - Adoption status of major antimicrobials requiring surveillance, surveillance system
- Blood Culture Evaluation System
  - Culture system for blood cultures, system capable of Gram staining
- Bloodstream Infection Treatment System
  - Response System for Positive Blood Cultures
- ICT System
  - If present: Status of personnel by profession (weekly activity hours of ICT members, presence of qualifications)

Some of the above registration items are not included in the annual report.

IV. Summary of data aggregation results

The figures and tables for each item were aggregated and calculated on a site-by-site basis, using data from January to December 2023. This data was collected from sites approved for participation by December 31, 2023, and registered as of July 26, 2024.
Refer to the appendix for an explanation on how to read box plots.

Basic site Information

A summary of the facility information for all participating sites is provided below.

Table 1: Basic Registered Data for Participating Sites by IPC Additional Reimbursement Type

Item	Participating sites	Additional healthcare reimbursement for IPC			
		type 1	type 2	type 3	non
Total	2534	1057	668	751	58
AST and Infection Treatment Information	1183	715	221	234	13
AMU Information	2434	1053	641	705	35
ICT-related Information	1984	864	503	569	48
HAI Information	966	643	171	139	13
Device-Associated Infections Information	850	555	154	130	11
SSI Information	603	451	87	62	3
NICU Information	149	104	21	24	0
Microorganism and Antimicrobial Resistance Information	2088	926	538	596	28

(Based on data as of December 31, 2023)
*** Eligible facilities were those approved for participation by December 31, 2023.**

Table 2: Distribution of the Number of Beds, Patient Days, Hospitalizations, and Average Length of Stay at Participating Sites

Item	Index	Minimum	1st quartile	Median	3rd quartile	Maximum
All sites	Number of Beds per Month	22	120.8	199	356.2	1376
	Patient Days per Month	115.5	2822.6	4825.2	8022	40706.6
	Hospitalizations per Month	1.3	65	172.2	508.4	2766.6
	Average Length of Stay per Month	2.1	12.7	19.7	43.1	2646
AST and Infection Treatment Information	Number of Beds per Month	22	164.5	280	418.5	1376
	Patient Days per Month	115.5	3670.2	6093.2	9563.5	40706.6
	Hospitalizations per Month	1.3	112.1	325.5	742.9	2766.6
	Average Length of Stay per Month	2.1	11.9	15.3	26.4	2646
AMU Information	Number of Beds per Month	22	122.1	199	360	1376
	Patient Days per Month	115.5	2838.9	4836.9	8080.8	40706.6
	Hospitalizations per Month	1.3	66	179.1	525.1	2766.6
	Average Length of Stay per Month	2.1	12.7	19.3	41.3	2646

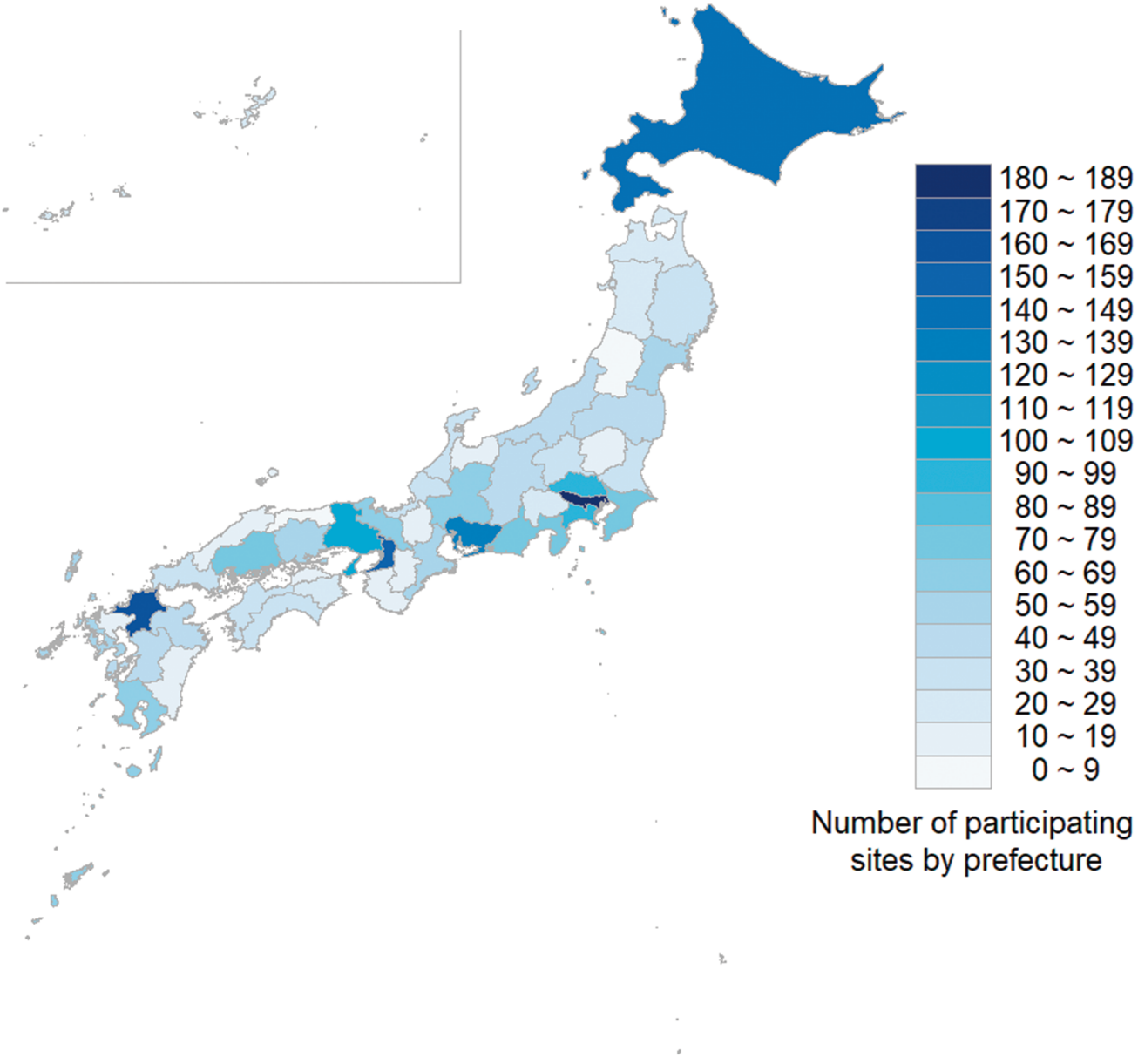
Item	Index	Minimum	1st quartile	Median	3rd quartile	Maximum
HAI Information	Number of Beds per Month	29	180	299.5	447.5	1376
	Patient Days per Month	406.9	3969.1	6365.9	10018.8	40706.6
	Hospitalizations per Month	1.3	149.2	384.3	803.4	2766.6
	Average Length of Stay per Month	4.3	11.5	14.3	23	1092.3
Device-Associated Infections Information	Number of Beds per Month	29	179	299	444	1376
	Patient Days per Month	406.9	3994.6	6498.8	10095.6	40706.6
	Hospitalizations per Month	1.3	133.4	379.2	806.4	2766.6
	Average Length of Stay per Month	4.3	11.5	14.4	24.7	1092.3
NICU Information	Number of Beds per Month	37	199.2	402	611.2	1160
	Patient Days per Month	529.7	4623.4	9008.1	13874.2	25647.6
	Hospitalizations per Month	7.9	235	722.8	1194.5	2199.1
	Average Length of Stay per Month	6	10.7	12.4	17.1	632.4
SSI Information	Number of Beds per Month	29	199	322	487	1376
	Patient Days per Month	406.9	4506.3	6892.2	11018.5	40706.6
	Hospitalizations per Month	7.9	242.8	486.8	962.1	2766.6
	Average Length of Stay per Month	4.3	11.1	13.1	17.8	632.4
ICT-related Information	Number of Beds per Month	22	123.8	205	369	1376
	Patient Days per Month	115.5	2876.2	4953	8237.8	40706.6
	Hospitalizations per Month	1.3	67.2	179.1	545.8	2766.6
	Average Length of Stay per Month	2.1	12.7	19.4	42	2646
Microorganism and Antimicrobial Resistance Information	Number of Beds per Month	22	127	208	370	1376
	Patient Days per Month	115.5	2892	4965.2	8276.1	40706.6
	Hospitalizations per Month	1.3	67.8	190.1	552.5	2766.6
	Average Length of Stay per Month	2.1	12.6	19.2	40.9	2646

(Based on data from January to December 2023, as of July 26, 2024)

* Eligible facilities were those approved for participation by December 31, 2023, and had registered basic site information for each item.
* “Number of beds” indicates the value obtained by summing the number of beds for each registered month and dividing the result by the number of registered months.
* “Patient days” indicates the value obtained by summing the patient days for each registered month and dividing the result by the number of registered months.
* “Hospitalizations” indicates the value obtained by summing the number of new hospitalizations for each registered month and dividing the result by the number of registered months.
* “Average length of stay” indicates the value obtained by summing the average length of stay for each registered month and dividing the result by the number of registered months.

Distribution of Participating Sites Nationwide

Figure 1: Map of Japan Showing the Number of Participating Sites by Prefecture



(Based on data as of December 31, 2023)
* Eligible facilities were those approved for participation by December 31, 2023.

Table 3: Summary of Participating Sites Subject to Aggregation by Prefecture and IPC Additional Reimbursement Type

Prefecture code	Prefecture	Participating sites	Additional healthcare reimbursement for IPC			
			type 1	type 2	type 3	non
1	Hokkaido	144	59	47	35	3
2	Aomori	28	14	2	7	5
3	Iwate	37	12	13	12	0
4	Miyagi	53	19	8	24	2
5	Akita	21	11	5	5	0
6	Yamagata	9	6	1	2	0
7	Fukushima	41	19	10	10	2
8	Ibaraki	36	19	9	8	0
9	Tochigi	17	10	3	1	3
10	Gunma	37	17	6	14	0
11	Saitama	95	32	35	27	1
12	Chiba	72	40	18	9	5
13	Tokyo	187	83	40	53	11
14	Kanagawa	99	59	20	18	2
15	Niigata	45	14	13	16	2
16	Toyama	20	11	6	3	0
17	Ishikawa	33	15	5	12	1
18	Fukui	31	12	14	5	0
19	Yamanashi	22	6	9	5	2
20	Nagano	43	28	9	6	0
21	Gifu	63	25	15	22	1
22	Shizuoka	75	32	12	31	0
23	Aichi	140	56	24	59	1
24	Mie	56	20	10	23	3
25	Shiga	15	11	2	2	0
26	Kyoto	68	26	22	20	0
27	Osaka	159	76	43	39	1
28	Hyogo	105	49	27	27	2
29	Nara	20	9	10	1	0
30	Wakayama	17	8	4	4	1
31	Tottori	5	3	1	1	0
32	Shimane	14	7	4	3	0
33	Okayama	59	13	21	24	1
34	Hiroshima	71	26	20	25	0
35	Yamaguchi	39	14	11	14	0
36	Tokushima	22	10	4	8	0
37	Kagawa	13	9	2	1	1
38	Ehime	37	19	13	5	0
39	Kochi	32	9	9	14	0
40	Fukuoka	169	50	38	76	5
41	Saga	19	8	7	4	0
42	Nagasaki	57	13	28	16	0
43	Kumamoto	48	16	23	9	0
44	Oita	47	13	15	16	3
45	Miyazaki	19	11	6	2	0
46	Kagoshima	68	22	18	28	0
47	Okinawa	27	16	6	5	0

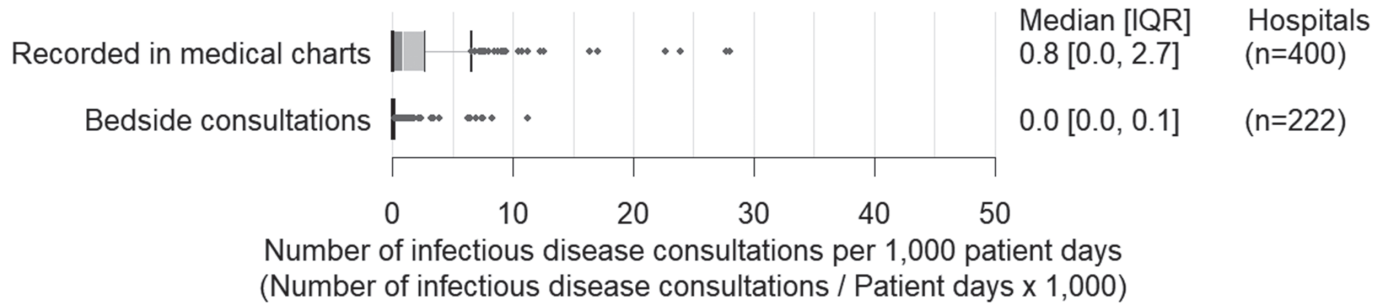
(Based on data as of December 31, 2023)
* Eligible facilities were those approved for participation by December 31, 2023.

AST and Infection Treatment Information

The data were aggregated and calculated using the registered data for AST and infection treatment information.

Figure 2: Number of Infectious Disease Consultations per 1,000 Patient Days

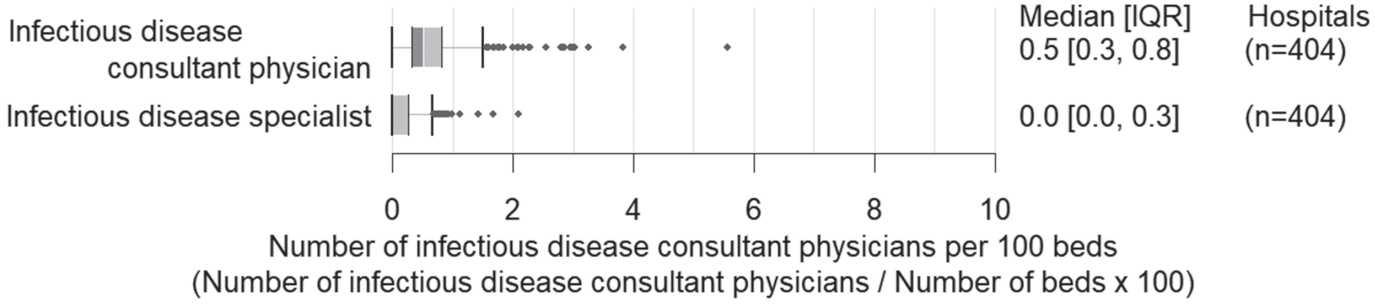
Box plot showing the number of infectious disease consultations per 1,000 patient days.



(Based on data from January to December 2023, as of July 26, 2024)
* Eligible facilities were those approved for participation by December 31, 2023.
* The value was obtained by dividing the number of infectious disease consultations by patient days and multiplying the result by 1,000.
* An infectious disease consultation is defined as a consultation by a physician.
* Multiple consultations per patient are defined as one consultation. However, different consultations are counted separately.
* "Recorded in medical charts" represents consultations with records in medical charts.
* "Bedside consultations" include consultations conducted at the bedside, for cases recorded in the medical charts.

Figure 3: Number of Infectious Disease Consultant Physicians per 100 Beds

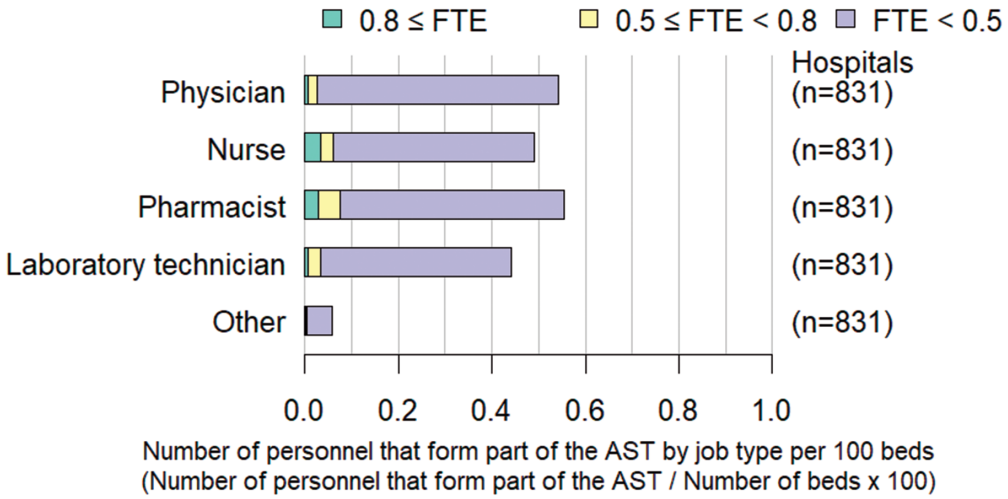
Box plot showing the number of infectious disease consultant physicians per 100 beds.



(Based on data from January to December 2023, as of July 26, 2024)
* Eligible facilities were those approved for participation by December 31, 2023.
* The value was obtained by dividing the number of infectious disease consultant physicians by the number of beds and multiplying the result by 100.
* An infectious disease consultant is defined as a physician who performs infectious disease consultations.
* The number of infectious disease consultants includes the number of infectious disease specialists.

Figure 4: Number of Personnel that Form Part of the AST by Job Type per 100 Beds

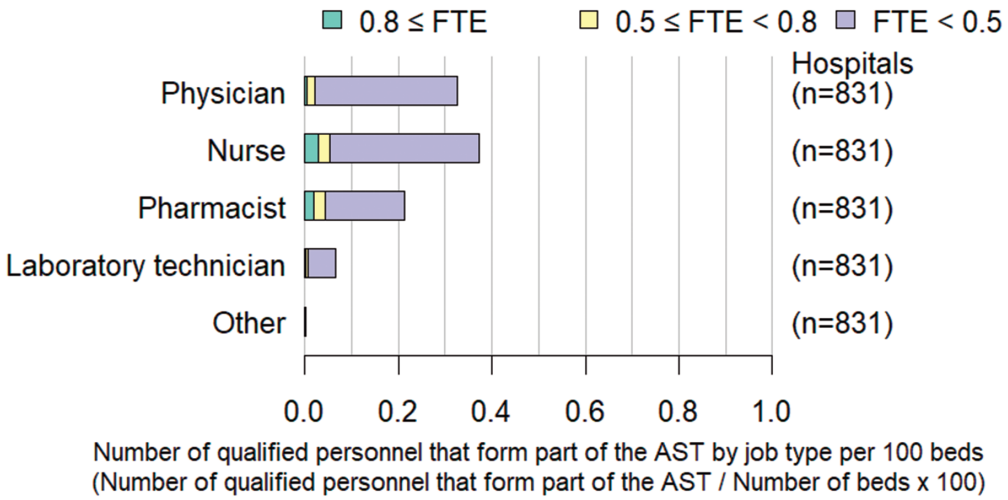
Bar chart showing the number of personnel that form part of the AST by full-time equivalent (FTE) job type per 100 beds.



(Based on data from January to December 2023, as of July 26, 2024)
* Eligible facilities are those approved for participation by December 31, 2023.
* The value is obtained by dividing the number of personnel belonging to the AST by the number of beds and multiplying the result by 100.
* Job types are classified into “physician,” “nurse,” “pharmacist,” “laboratory technician,” and “other job types.”
* Staff dedicate either 0.8 ≤ FTE (80% or more of their working hours), 0.5 < FTE < 0.8 (50% or more), or FTE ≤ 0.5 (less than 50%) to AST work.
* If staff members in each job type do not belong to the AST, the corresponding number at the site is counted as 0.

Figure 5: Number of Qualified Personnel that Form Part of the AST by Job Type per 100 Beds

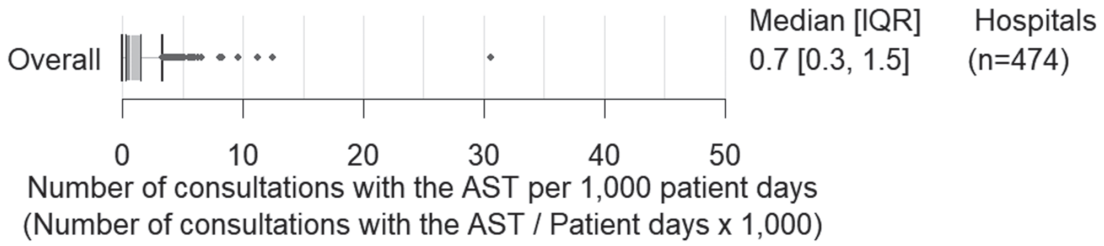
Bar chart showing the number of qualified personnel that form part of the AST by FTE job type per 100 beds.



(Based on data from January to December 2023, as of July 26, 2024)
* Eligible facilities are those approved for participation by December 31, 2023.
* The value is obtained by dividing the number of certified professionals in each role within the AST by the number of beds and multiplying the result by 100.
* Certified staff refers to healthcare professionals who are infection control doctors, certified nurse specialist in infection control nursing, certified infection control nurses, nurses who have completed the relevant professional training specified in medical service fees, certified infection control pharmacists, antimicrobial chemotherapy certified pharmacists, infection control specialist pharmacists, certified infection control clinical microbiology laboratory technicians, or certified clinical microbiology laboratory technicians.
* Professionals with multiple certifications in the relevant roles are counted as a single individual.
* Staff are classified as full-time (FTE ≥ 0.8), part-time (0.5 < FTE < 0.8), or less than part-time (FTE ≤ 0.5) based on their dedication to AST work.
* Only facilities with an established AST are included. If a specific role within the AST has no certified professionals, the count for that role at the facility is recorded as 0.

Figure 6: Number of Consultations with the AST per 1,000 Patient Days

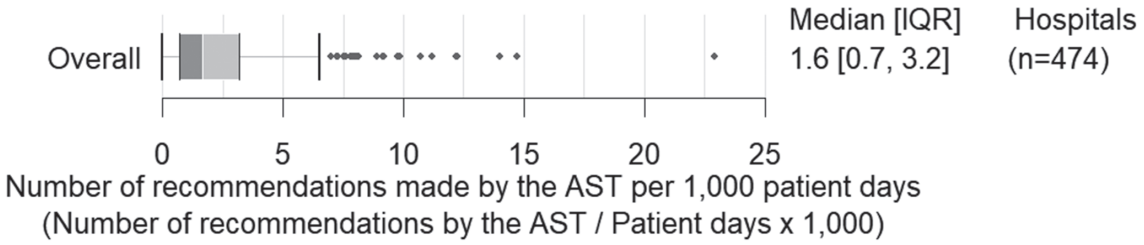
Box plot showing the overall number of consultations with the AST per 1,000 patient days.



(Based on data from January to December 2023, as of July 26, 2024)
* Eligible facilities were those approved for participation by December 31, 2023.
* The value was obtained by dividing the number of AST consultations by patient days and multiplying the result by 1,000.
* The number of consultations with the AST refers to the number of cases in which a change of management plan, such as the introduction, discontinuation, or modification of antimicrobials, was recommended by a member of the AST upon consultation/inquiry from attending physicians, etc.
* Note that each patient is only counted once, regardless of the number of consultations, unless the consultation content differs.

Figure 7: Number of Recommendations Made by the AST per 1,000 Patient Days

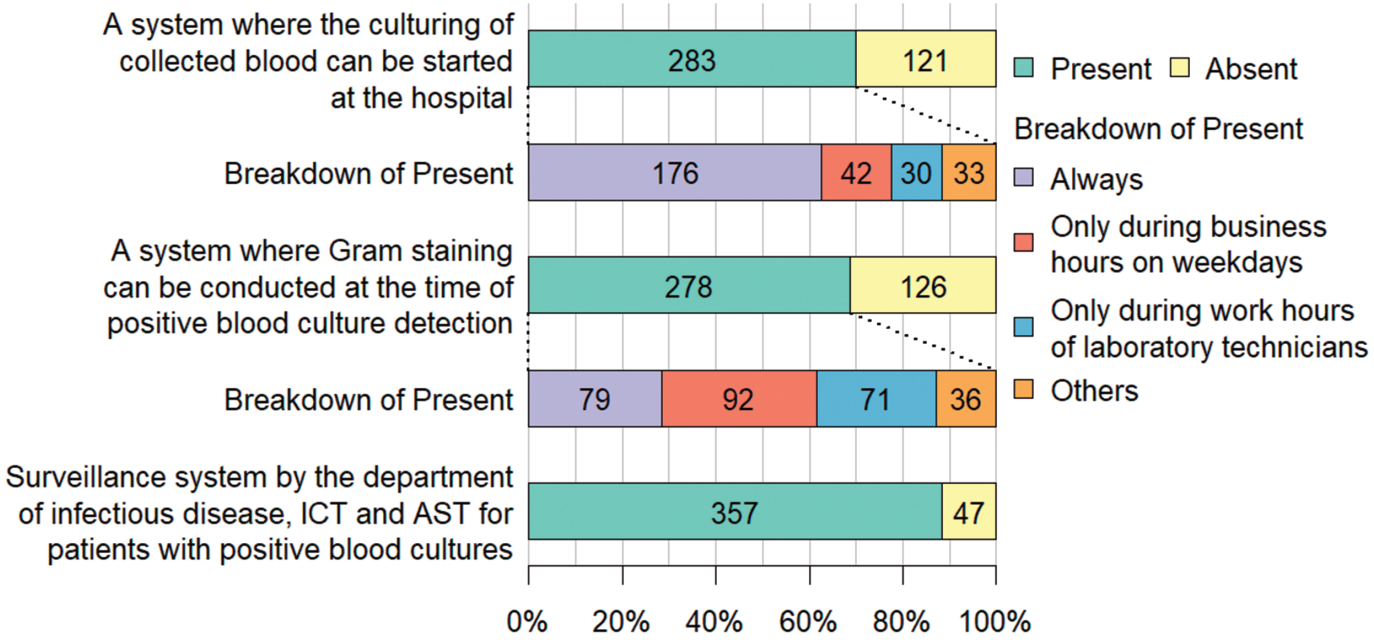
Box plot showing the number of recommendations made by the AST per 1,000 patient days.



(Based on data from January to December 2023, as of July 26, 2024)
* Eligible facilities were those approved for participation by December 31, 2023.
* The value was obtained by dividing the number of recommendations made by the AST by patient days and multiplying the result by 1,000.
* The number of recommendations made by the AST refers to the number of cases in which a change of management plan was proposed by the AST, based on monitoring of the use of specified antimicrobials/bacteremia without consultations from attending physicians.
* Note that each patient is only counted once, regardless of the number of recommendations, unless the consultation content differs.

Figure 8: Blood Culture Testing System

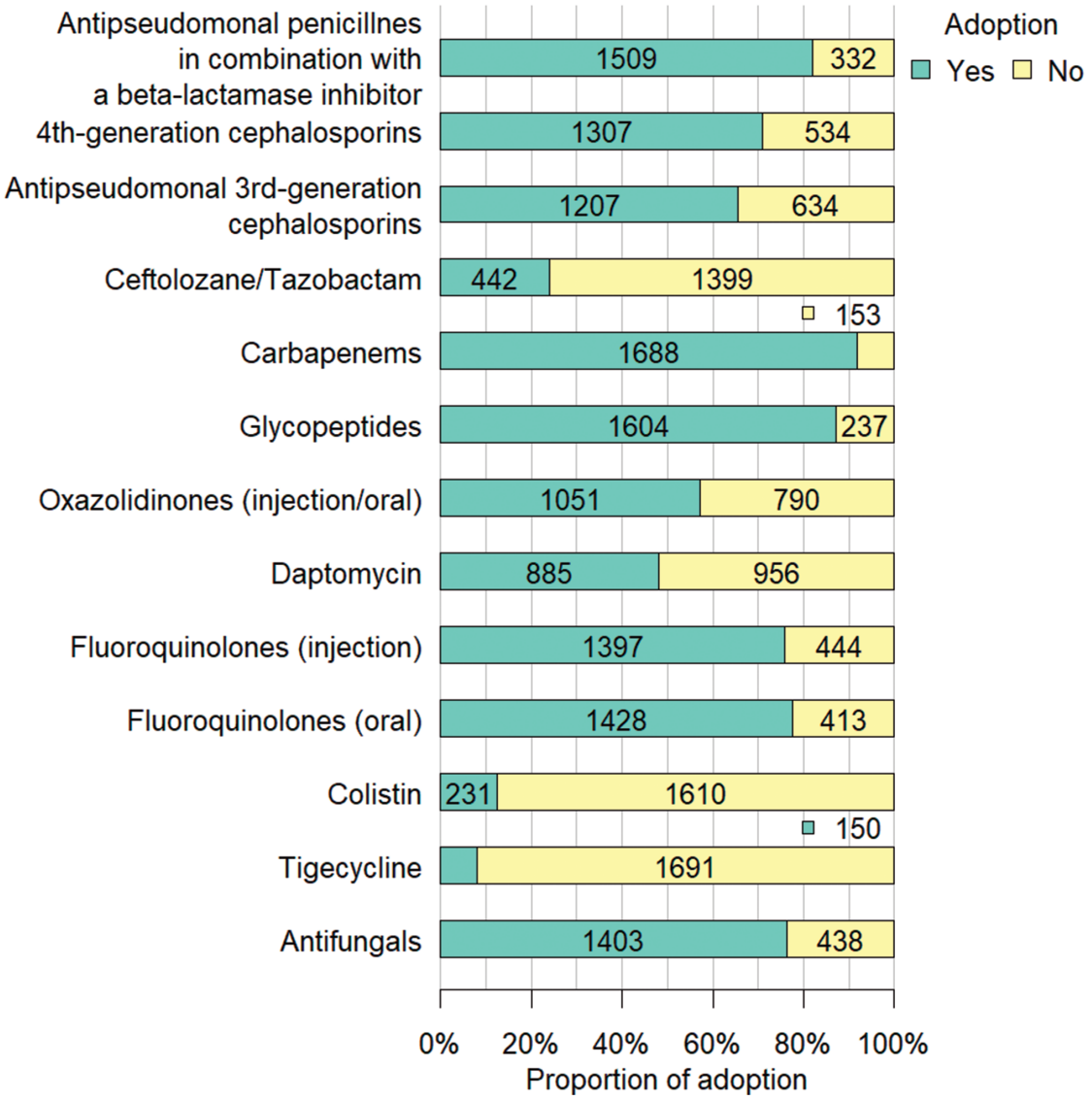
Bar chart showing the proportion of blood culture testing systems.



(Based on data from January to December 2023, as of July 26, 2024)
* Eligible facilities were those approved for participation by December 31, 2023.
* A proportion of hospitals that have the capability to start culturing collected blood culture bottles on site.
* Proportion of sites that have the capability to perform Gram staining at the time of positive blood culture detection.
* Proportion of sites with a monitoring system by the infectious disease department, ICT, or AST for positive blood culture results.

Figure 9: Adoption of Drugs Subject to Antimicrobial Stewardship

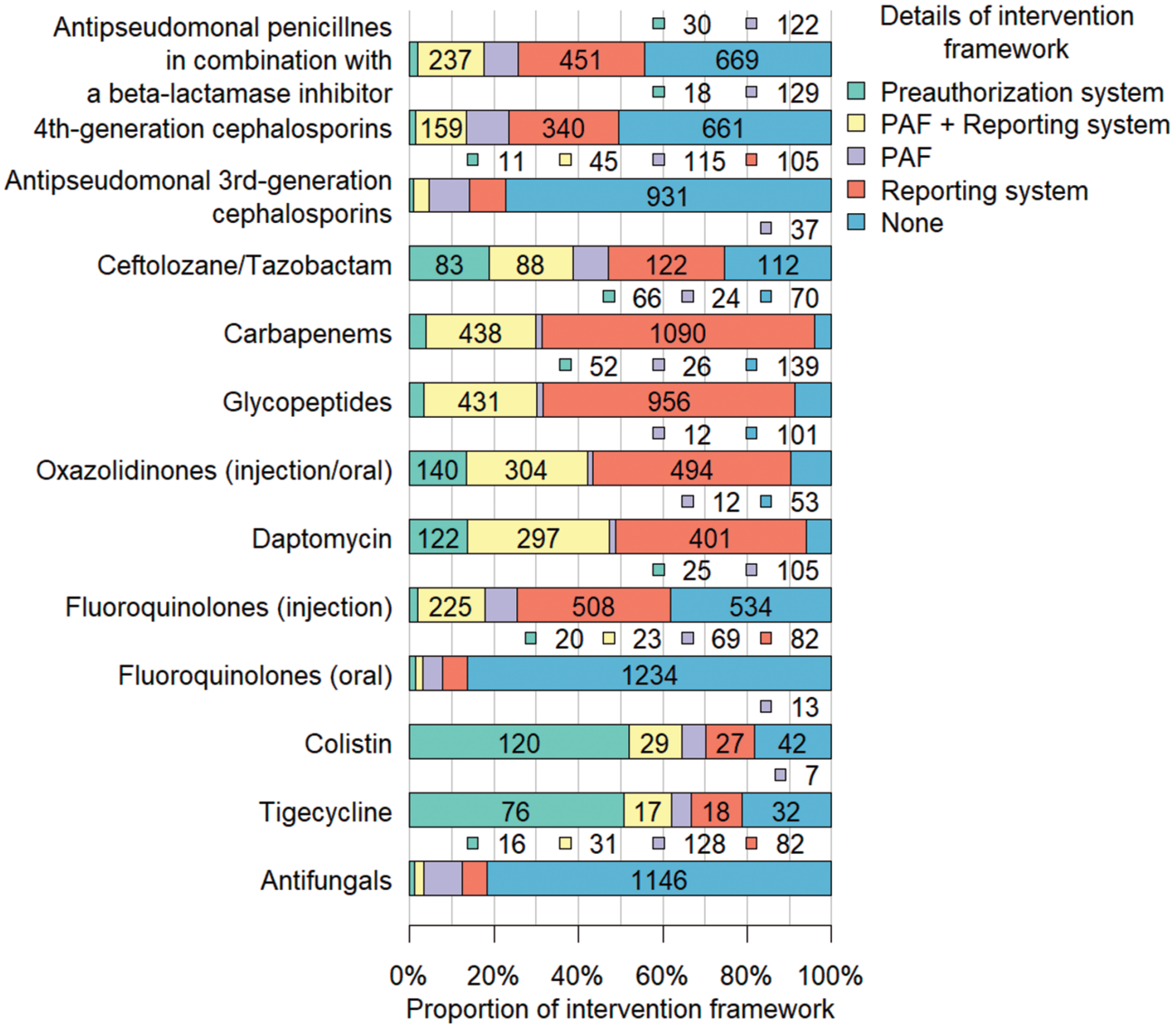
Bar chart showing the proportion of adoption of drugs subject to antimicrobial stewardship by drug category.



(Based on data from January to December 2023, as of July 26, 2024)
* Eligible facilities were those approved for participation by December 31, 2023.
* Proportion of adoption by drug category.

Figure 10: Existing Antimicrobial Stewardship Strategies

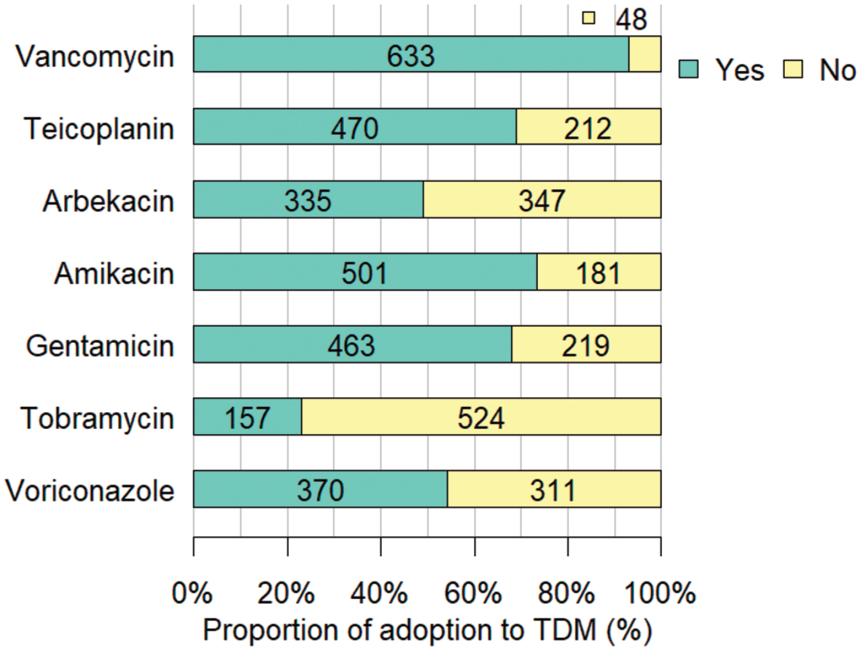
Bar chart showing the proportion of existing antimicrobial stewardship strategies by drug category.



(Based on data from January to December 2023, as of July 26, 2024)
* Eligible facilities were those approved for participation by December 31, 2023.
* Proportion of antimicrobial stewardship strategies by drug category.
* PAF stands for prospective audit and feedback in infection treatment.

Figure 11: TDM of Antimicrobials

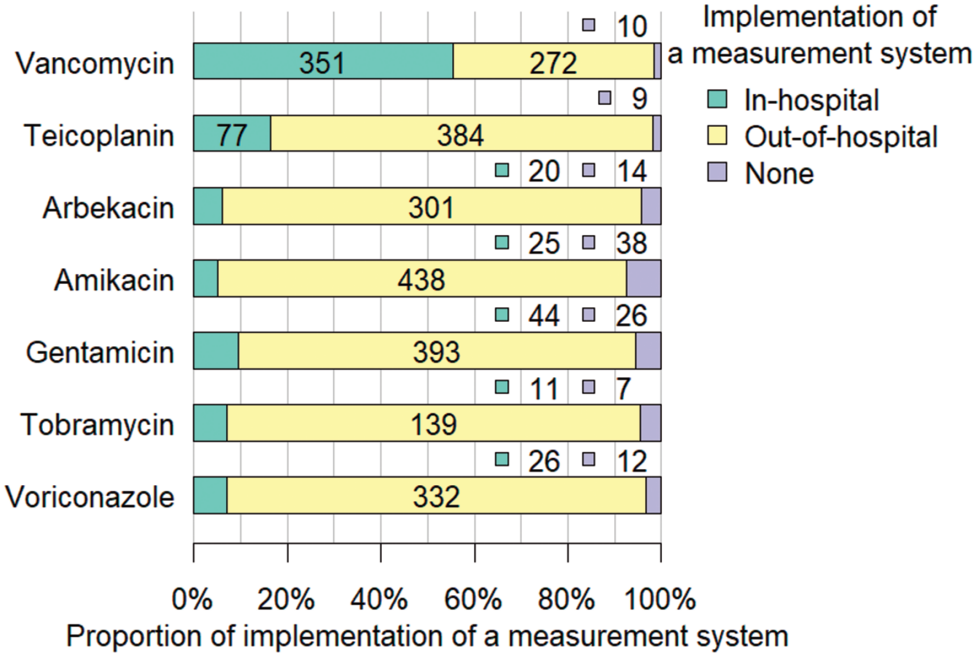
Bar chart showing the proportion of antimicrobials subject to TDM by drug category.



(Based on data from January to December 2023, as of July 26, 2024)
* Eligible facilities were those approved for participation by December 31, 2023.
* Proportion of adoption by drug category of TDM.

Figure 12: Implementation System to Measure the Blood Concentration of Antimicrobials Subject to TDM

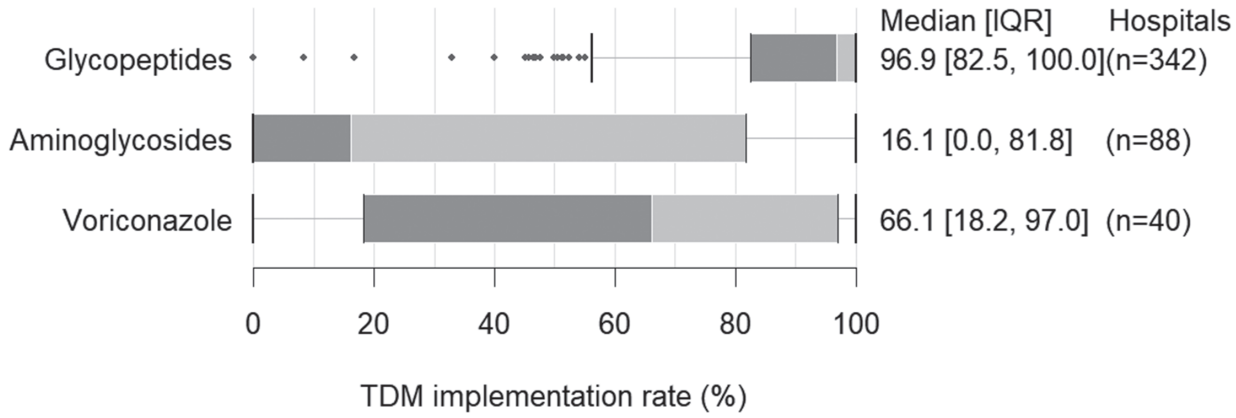
Bar chart showing the proportion of systems available in hospitals to measure blood concentration levels of antimicrobials by drug category.



(Based on data from January to December 2023, as of July 26, 2024)
* Eligible facilities were those approved for participation by December 31, 2023.
* Proportion of implementation of a measurement system for blood concentration by intended drug category.
* The measurement system for blood concentration is categorized into “in-hospital measurement,” “out-of-hospital measurement,” and “no system for measurement.”

Figure 13: TDM Implementation Rate

Box plot showing the TDM implementation rate.



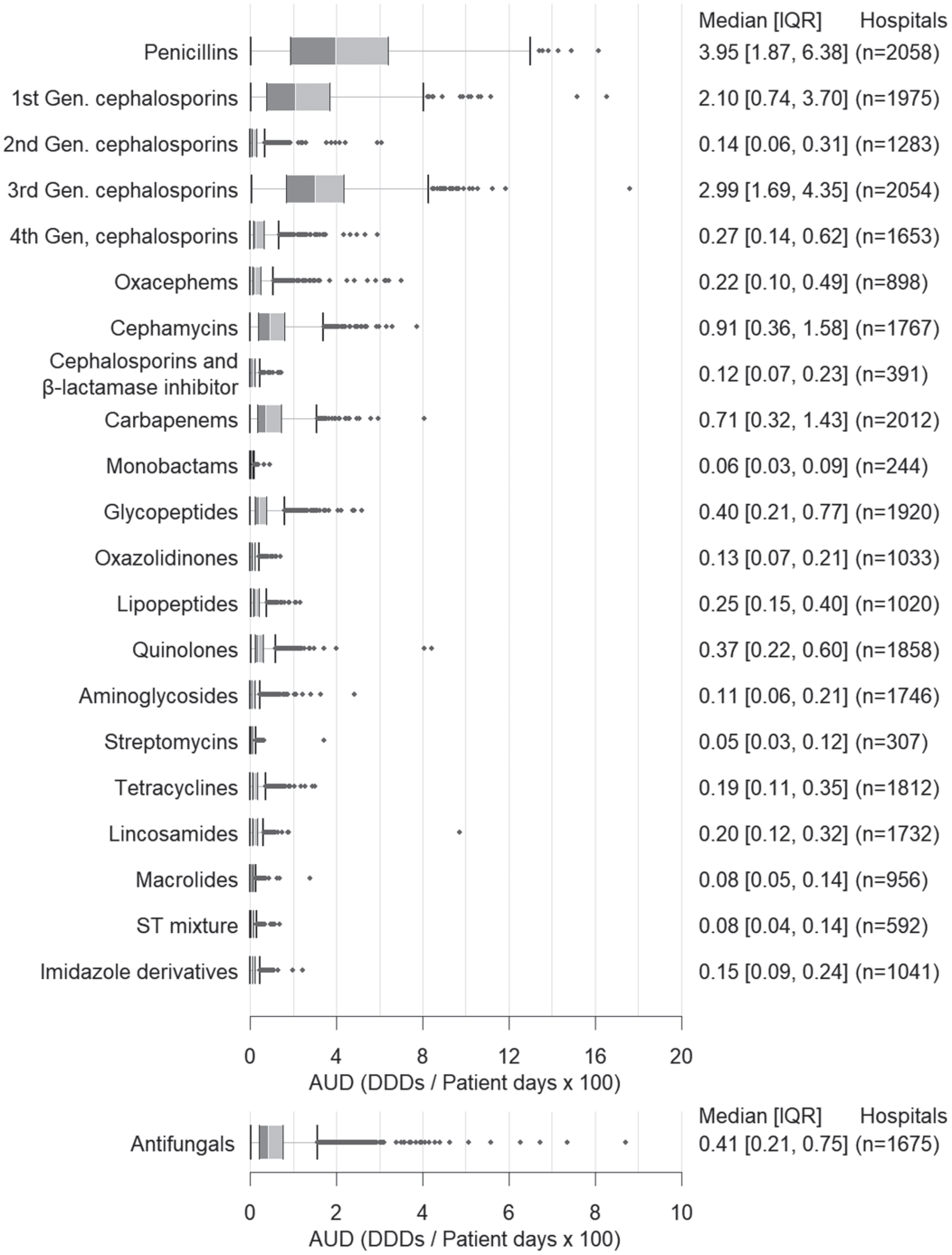
(Based on data from January to December 2023, as of July 26, 2024)
* Eligible facilities were those approved for participation by December 31, 2023.
* Proportion of the number of patients undergoing TDM among those who started antimicrobial drugs.
* Data of sites with 5 or more patients who started administration of the antimicrobial drug during the target period were included.

AMU Information

The data were aggregated and calculated using the registered information on AMU. The registered data were extracted from the "Inpatient EF Integration File."
The DDDs used for calculations are based on the values at the time of the annual report's creation.

Figure 14: AUD (Injection)

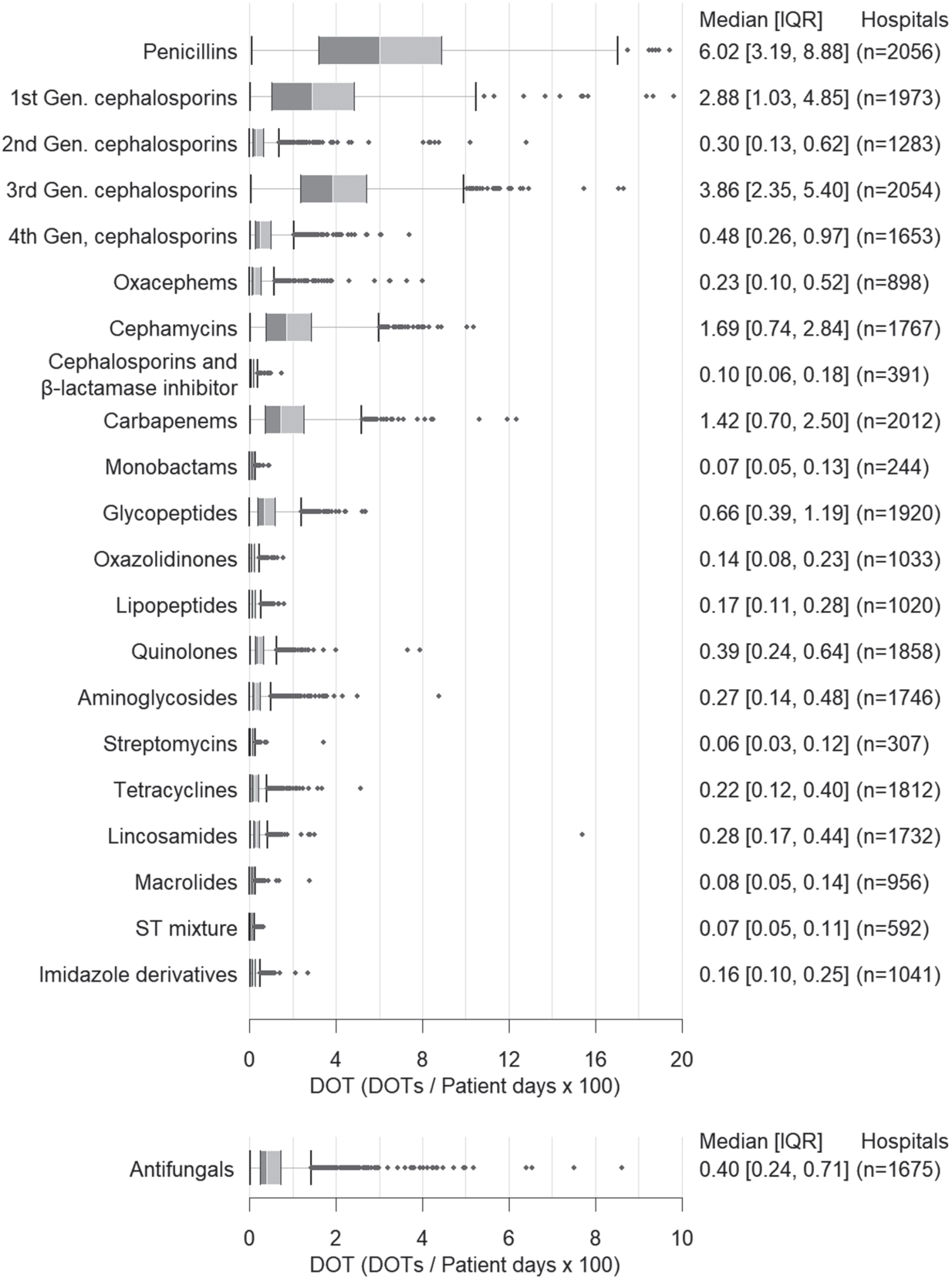
Box plot showing the AUD for each antimicrobial class given by injection.



(Based on data from January to December 2023, as of July 26, 2024)
* Eligible facilities were those approved for participation by December 31, 2023.
* The value was obtained by dividing DDDs (dose/DDD) by patient days and multiplying by 100.
* For each antimicrobial drug, sites where the concerned antimicrobial agent was not used throughout the target period were excluded.
* Refer to the list of antimicrobial drugs in the appendix for drug class/category.

Figure 15: DOT (Injection)

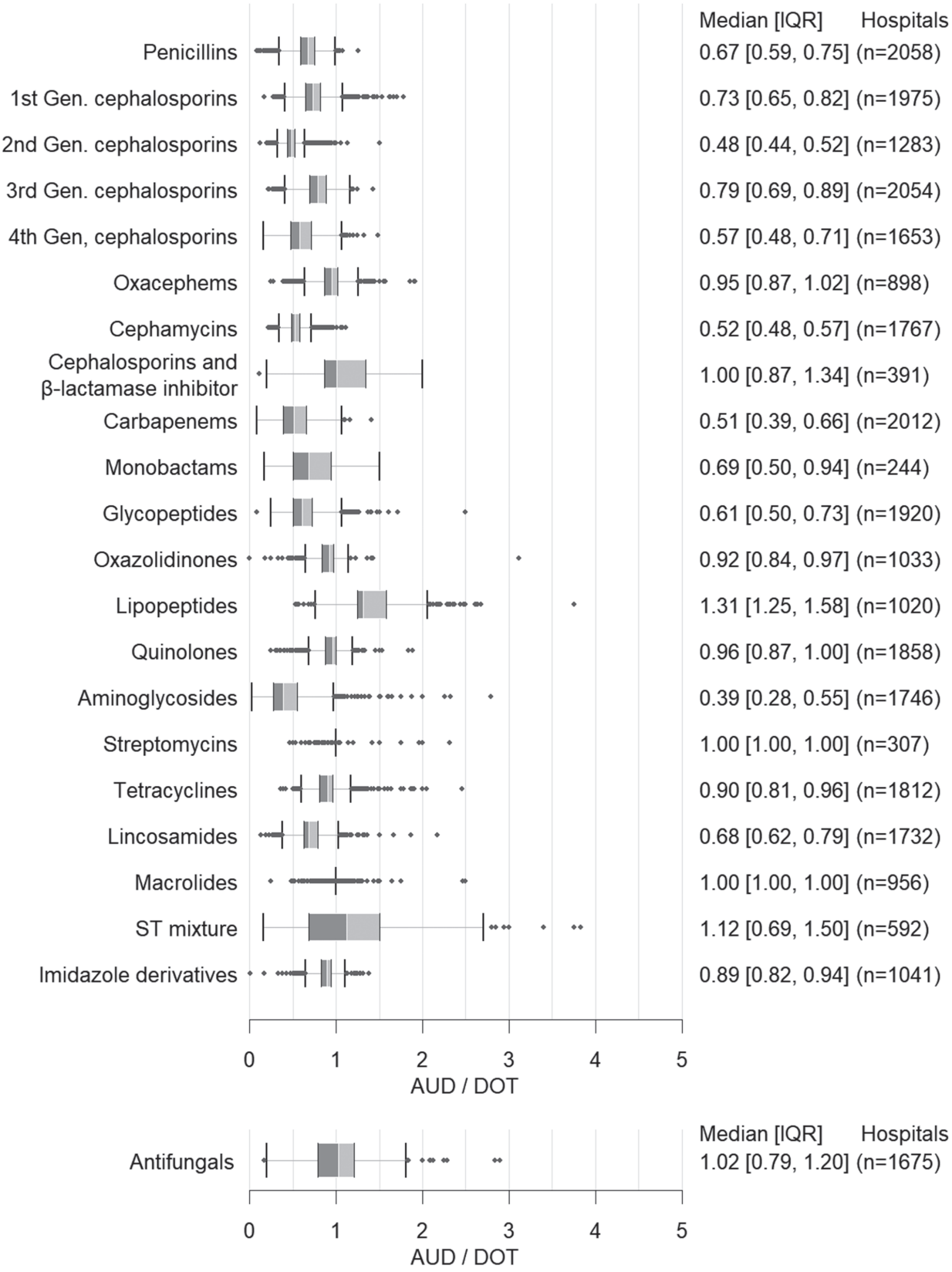
Box plot showing the distribution of DOT for each antimicrobial class given by injection.



(Based on data from January to December 2023, as of July 26, 2024)
* Eligible facilities were those approved for participation by December 31, 2023.
* The value was obtained by dividing the days of therapy by patient days and multiplying the result by 100.
* For each antimicrobial drug, sites where the concerned antimicrobial agent was not used throughout the target period were excluded.
* Refer to the list of antimicrobial drugs in the appendix for drug class/category.

Figure 16: AUD/DOT (Injection)

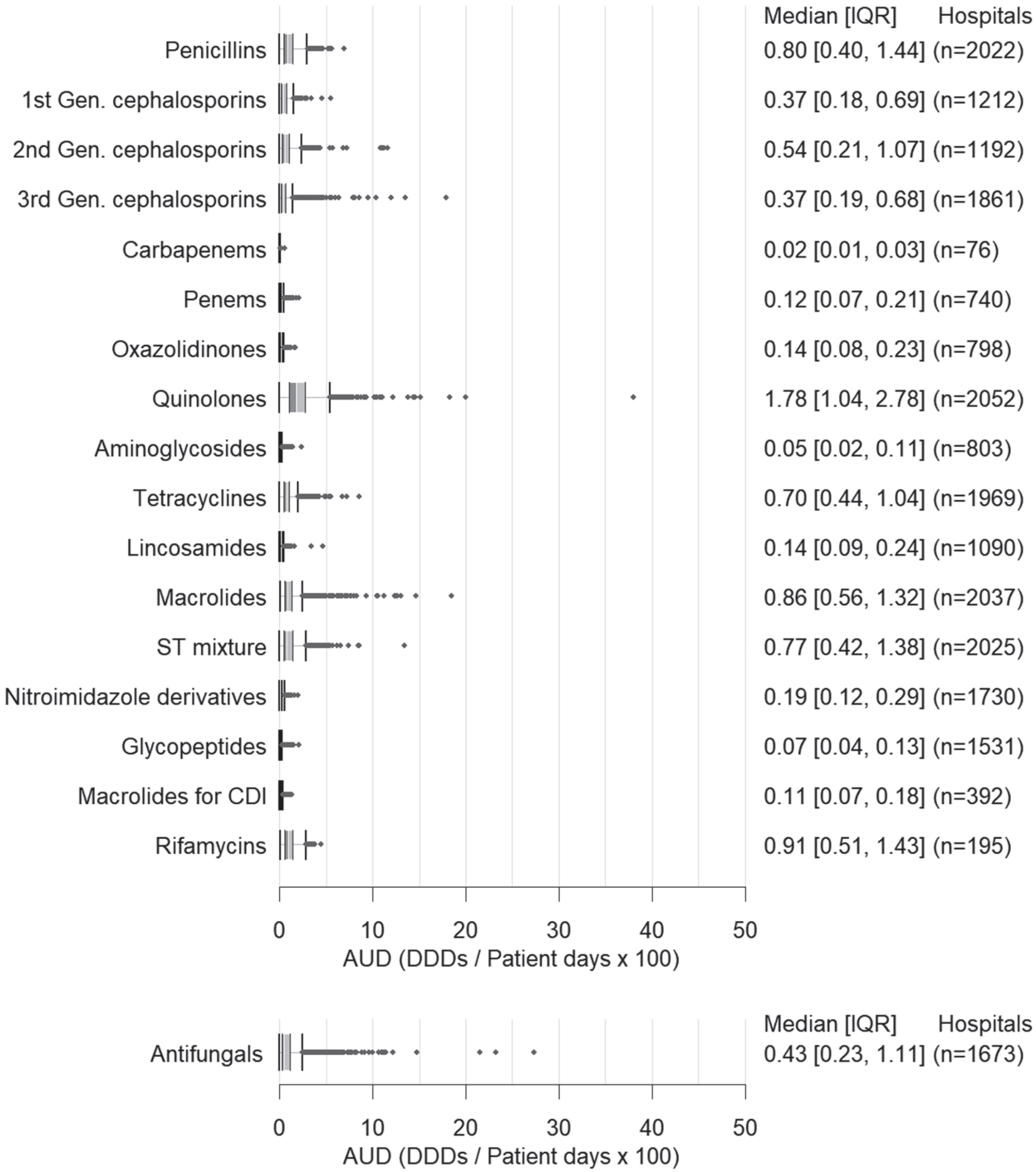
Box plot showing the AUD to DOT ratio for each antimicrobial class given by injection.



(Based on data from January to December 2023, as of July 26, 2024)
* Eligible facilities were those approved for participation by December 31, 2023.
* Ratio of AUD (injection) and DOT (injection).
* For each antimicrobial drug, sites where the concerned antimicrobial agent was not used throughout the target period were excluded.
* Refer to the list of antimicrobial drugs in the appendix for drug class/category.

Figure 17: AUD (Oral)

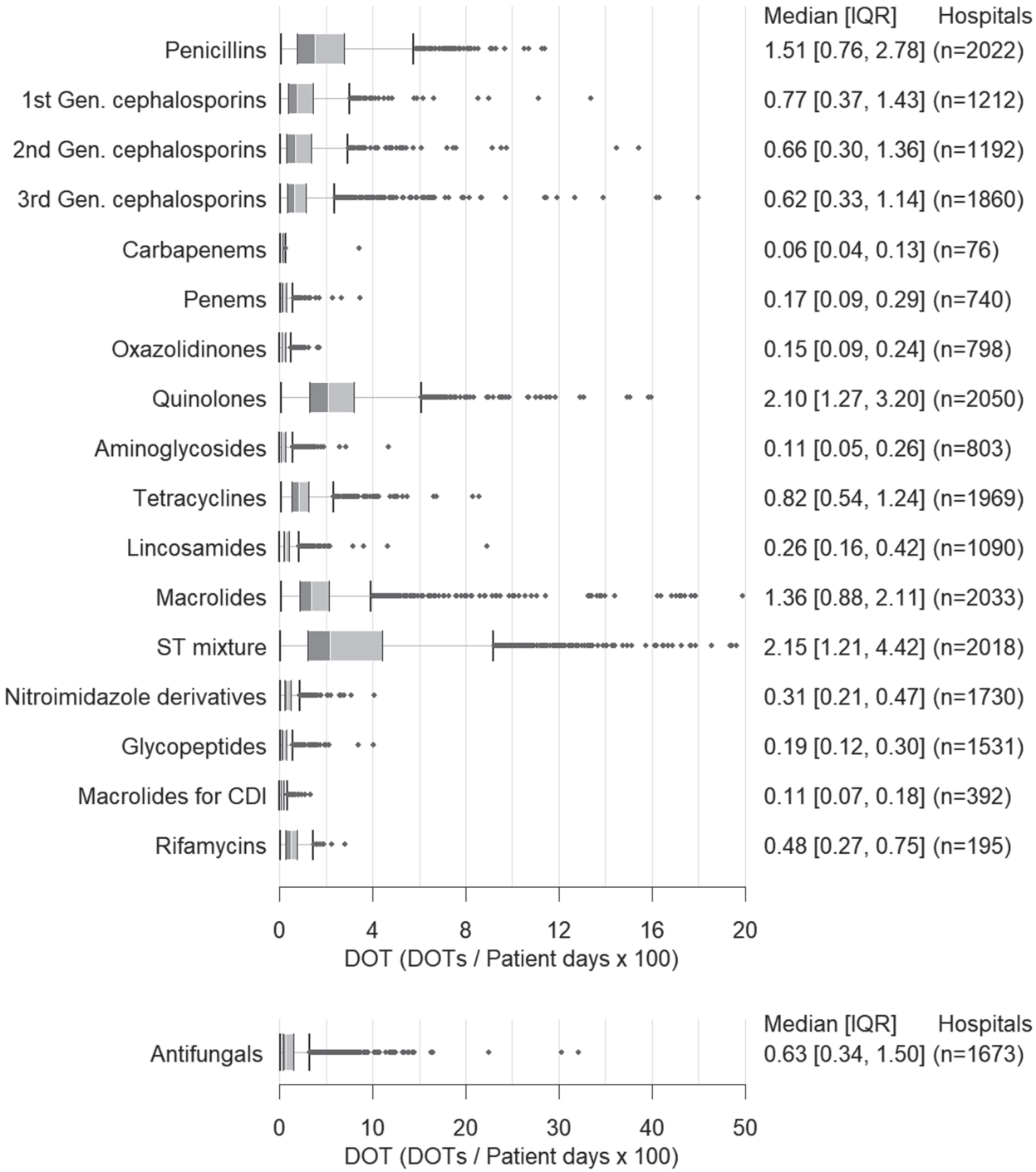
Box plot showing the AUD for each antimicrobial class given orally.



(Based on data from January to December 2023, as of July 26, 2024)
* Eligible facilities were those approved for participation by December 31, 2023.
* The value was obtained by dividing DDDs (dose/DDD) by patient days and multiplying by 100.
* For each antimicrobial drug, sites where the concerned antimicrobial agent was not used throughout the target period were excluded.
* Refer to the list of antimicrobial drugs in the appendix for drug class/category.

Figure 18: DOT (Oral)

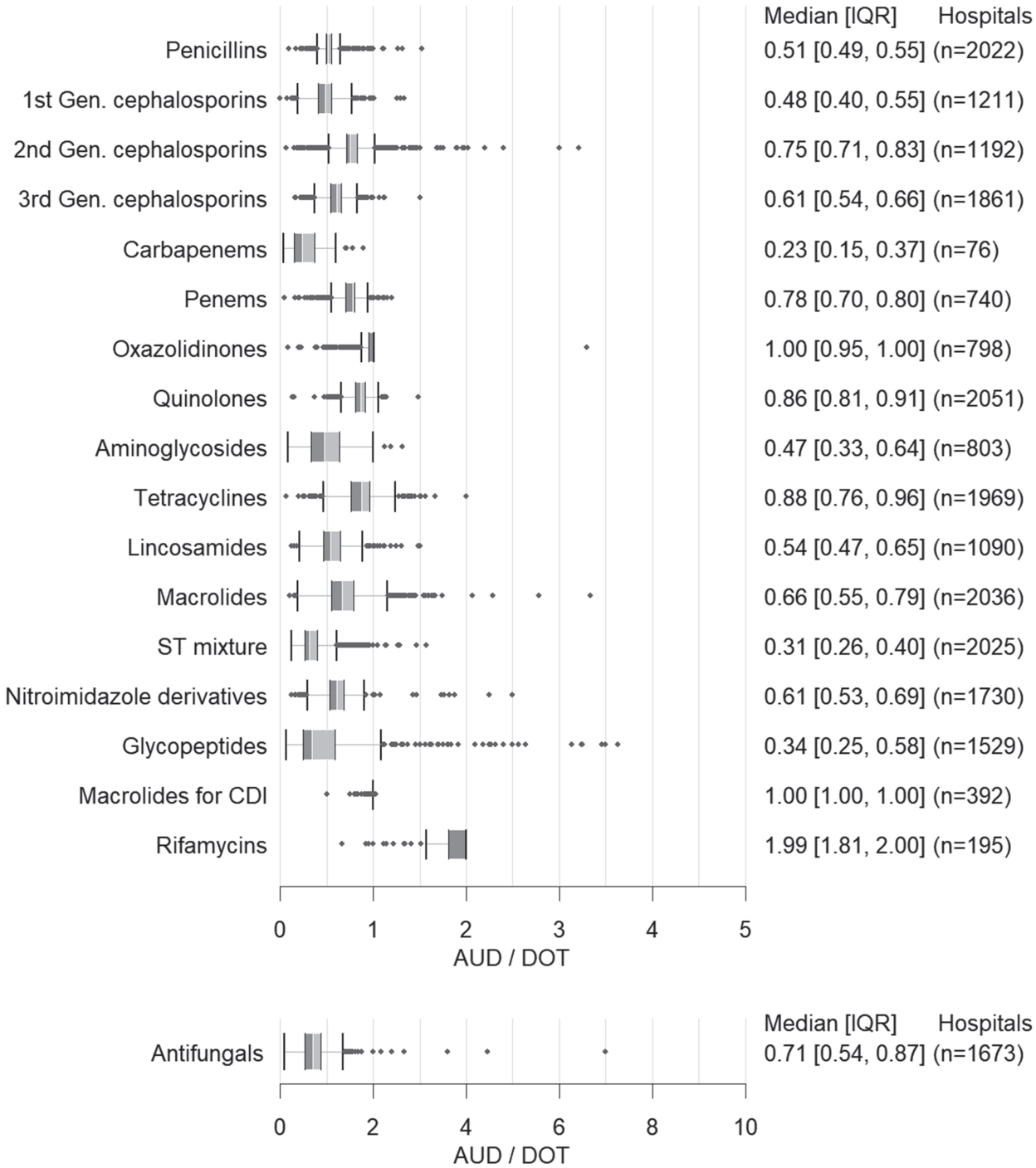
Box plot showing the DOT for each antimicrobial class given orally.



(Based on data from January to December 2023, as of July 26, 2024)
* Eligible facilities were those approved for participation by December 31, 2023.
* The value was obtained by dividing the days of therapy by patient days and multiplying the result by 100.
* For each antimicrobial drug, sites where the concerned antimicrobial agent was not used throughout the target period were excluded.
* Refer to the list of antimicrobial drugs in the appendix for drug class/category.

Figure 19: AUD/DOT (Oral)

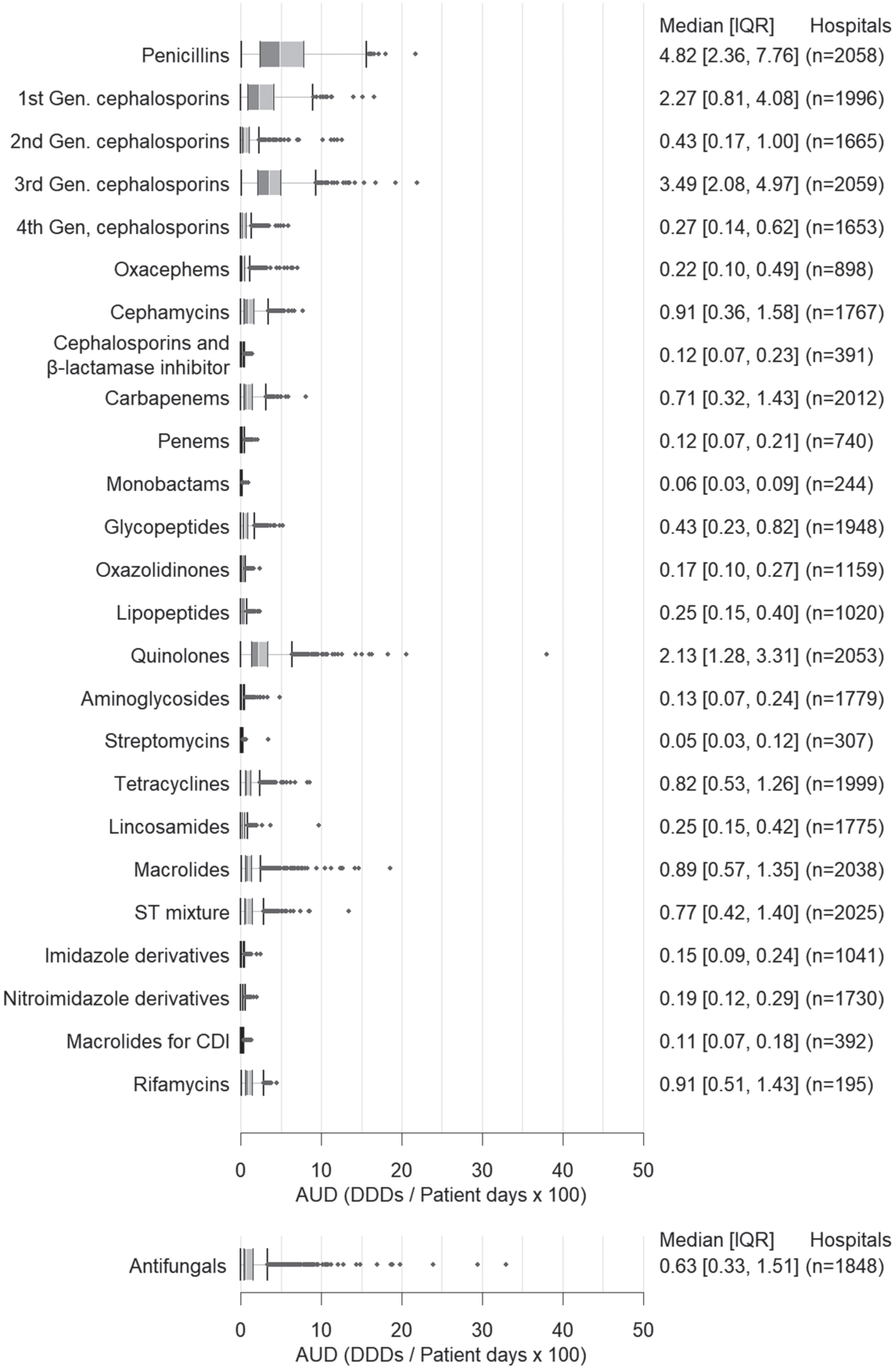
Box plot showing the AUD to DOT ratio for each antimicrobial class given orally.



(Based on data from January to December 2023, as of July 26, 2024)
* Eligible facilities were those approved for participation by December 31, 2023.
* Ratio of AUD (oral) and DOT (oral).
* For each antimicrobial drug, sites where the concerned antimicrobial agent was not used throughout the target period were excluded.
* Refer to the list of antimicrobial drugs in the appendix for drug class/category.

Figure 20: AUD (Injection + Oral)

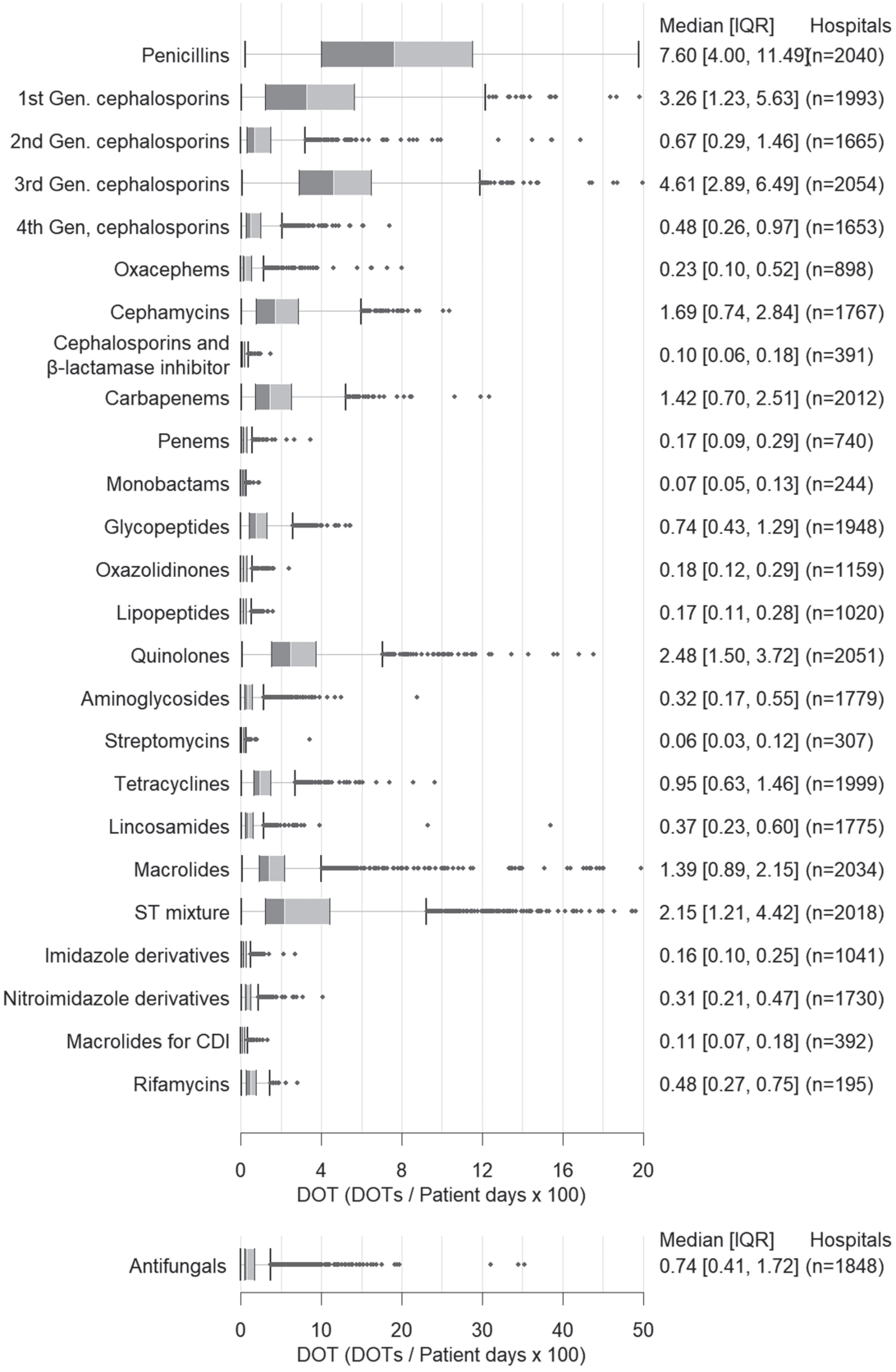
Box plot showing the AUD for each antimicrobial class given both by injection and oral.



(Based on data from January to December 2023, as of July 26, 2024)
* Eligible facilities were those approved for participation by December 31, 2023.
* The value was obtained by dividing DDDs (dose/DDD) by patient days and multiplying by 100.
* For each antimicrobial drug, sites where the concerned antimicrobial agent was not used throughout the target period were excluded.
* Refer to the list of antimicrobial drugs in the appendix for drug class/category.

Figure 21: DOT (Injection + Oral)

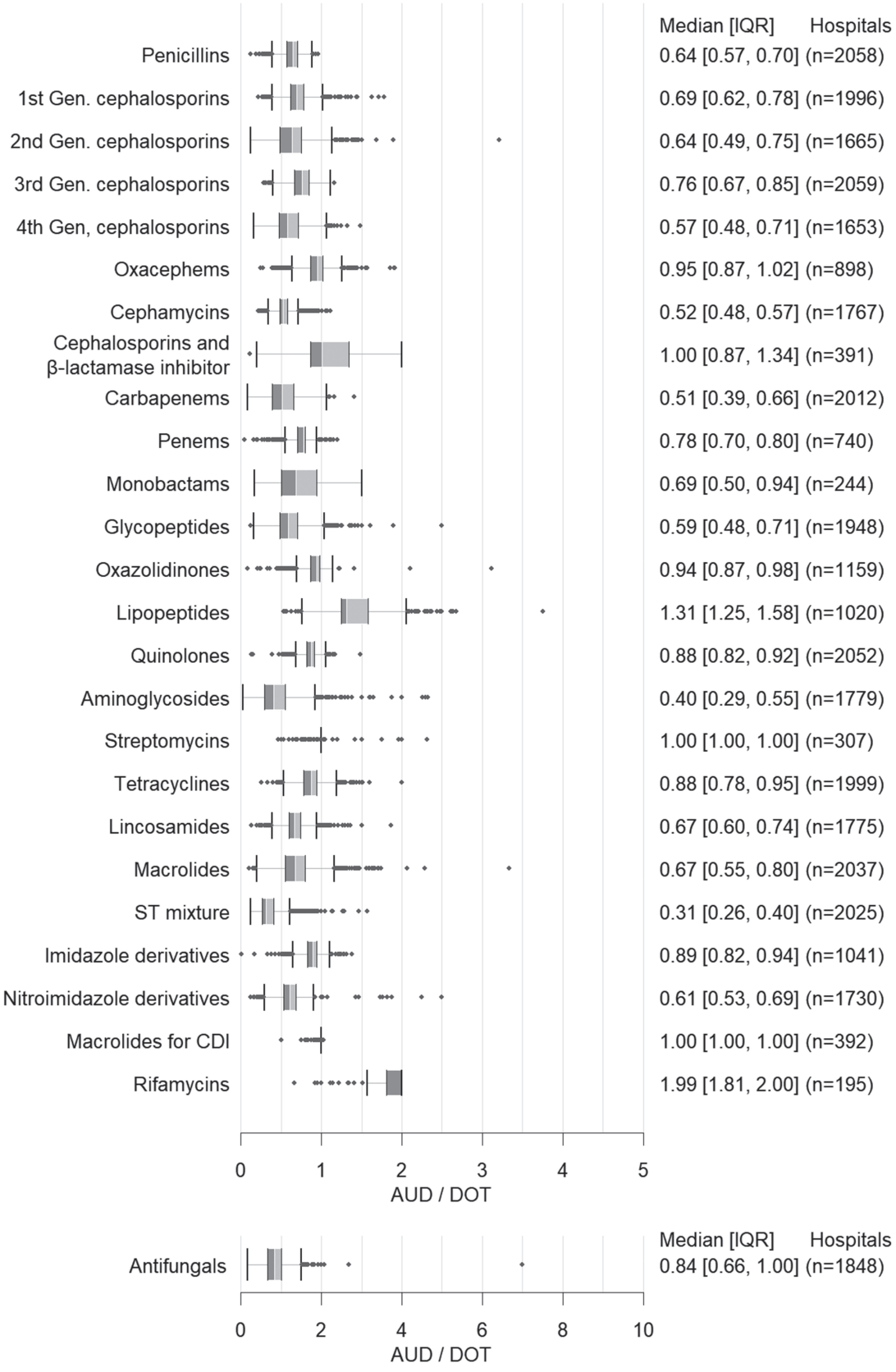
Box plot showing the DOT for each antimicrobial class given both by injection and oral.



(Based on data from January to December 2023, as of July 26, 2024)
* Eligible facilities were those approved for participation by December 31, 2023.
* The value was obtained by dividing the days of therapy by patient days and multiplying the result by 100.
* For each antimicrobial drug, sites where the concerned antimicrobial agent was not used throughout the target period were excluded.
* Refer to the list of antimicrobial drugs in the appendix for drug class/category.

Figure 22: AUD/DOT (Injection + Oral)

Box plot showing the AUD to DOT ratio for each antimicrobial class given both by injection and oral.



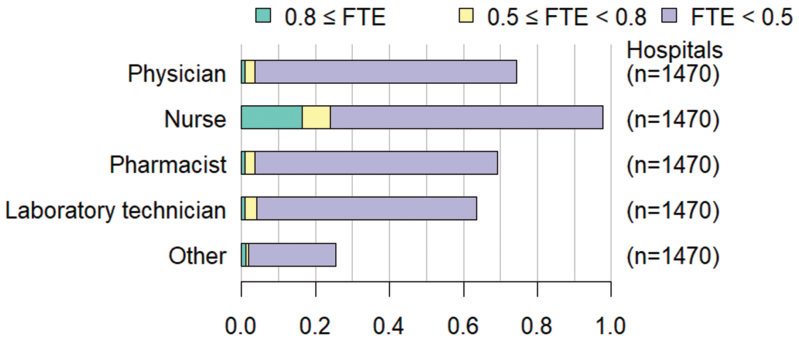
(Based on data from January to December 2023, as of July 26, 2024)
* Eligible facilities were those approved for participation by December 31, 2023.
* Ratio of AUD (injection + oral) and DOT (injection + oral).
* For each antimicrobial drug, sites where the concerned antimicrobial agent was not used throughout the target period were excluded.
* Refer to the list of antimicrobial drugs in the appendix for drug class/category.

ICT-related Information

The data were aggregated and calculated using the registered data for ICT-related information.

Figure 23: Number of Personnel that Form Part of the ICT by Job Type per 100 Beds

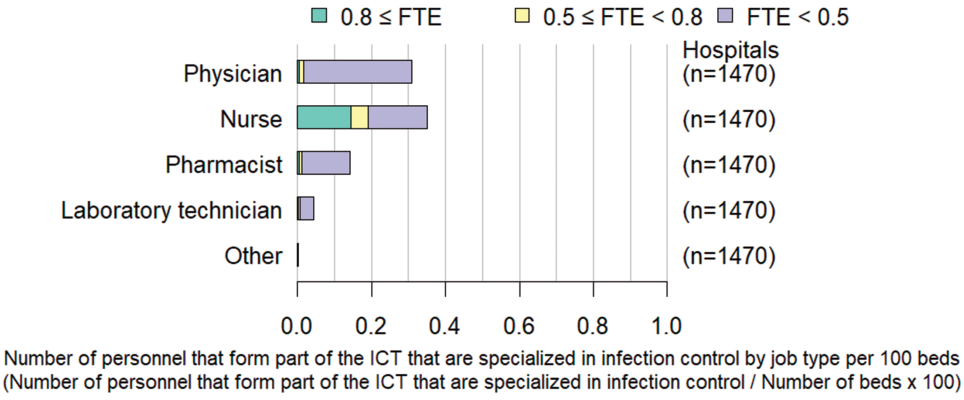
Bar chart showing the number of personnel that form part of the ICT by full-time equivalent (FTE) job type per 100 beds.



(Based on data from January to December 2023, as of July 26, 2024)
* Eligible facilities are those approved for participation by December 31, 2023.
* The value is obtained by dividing the number of personnel belonging to the ICT by the number of beds and multiplying the result by 100.
* Job types are classified into “physician,” “nurse,” “pharmacist,” “laboratory technician,” and “other job types.”
* Staff dedicate either 0.8 ≤ FTE (80% or more of their working hours), 0.5 < FTE < 0.8 (50% or more), or FTE ≤ 0.5 (less than 50%) to ICT work.
* If staff members in each job type do not belong to the ICT, the corresponding number at the site is counted as 0.

Figure 24: Number of Qualified Personnel that Form Part of the ICT by Job Type per 100 Beds

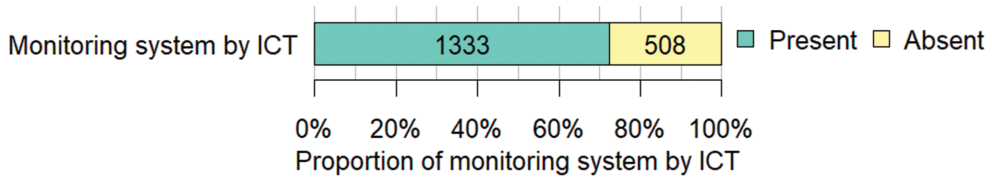
Bar chart showing the number of qualified personnel that form part of the ICT by FTE job type per 100 beds.



(Based on data from January to December 2023, as of July 26, 2024)
* Eligible facilities are those approved for participation by December 31, 2023.
* The value is obtained by dividing the number of qualified personnel in each job type within the ICT by the number of beds and multiplying the result by 100.
* Certified staff refers to healthcare professionals who are infection control doctors, certified nurse specialist in infection control nursing, certified infection control nurses, nurses who have completed the relevant professional training specified in medical service fees, certified infection control pharmacists, infection control specialist pharmacists, certified infection control clinical microbiology laboratory technicians, or certified clinical microbiology laboratory technicians.
* Professionals with multiple certifications in the relevant roles are counted as a single individual.
* Staff are classified as full-time (FTE ≥ 0.8), part-time (0.5 < FTE < 0.8), or less than part-time (FTE ≤ 0.5) based on their dedication to ICT work.
* Only facilities with an established ICT are included. If a specific role within the ICT has no certified professionals, the count for that role at the facility is recorded as 0.

Figure 25: ICT Monitoring System for Cases of Resistant Bacteria

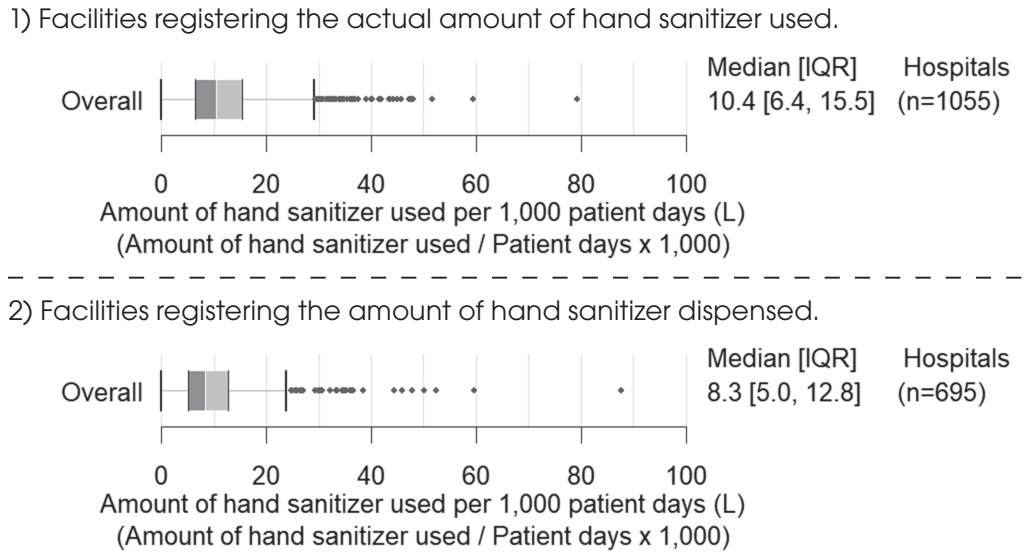
Bar chart showing the proportion of sites that have an ICT monitoring system in place for cases of resistant bacteria shown in numbers and percentages (%).



(Based on data from January to December 2023, as of July 26, 2024)
* Eligible facilities were those approved for participation by December 31, 2023.
* Proportion of implementation of an ICT monitoring system for resistant bacteria.
* The resistant organisms monitored at sites include MRSA, ESBL-producing bacteria, CRE (CPE), C. difficile, MDRP, MDRA, PRSP, VRE, VRSA, and other microorganisms designated as resistant organisms by specialists at each site.

Figure 26: Amount of Hand Sanitizer Used per 1,000 Patient Days in Liters (L)

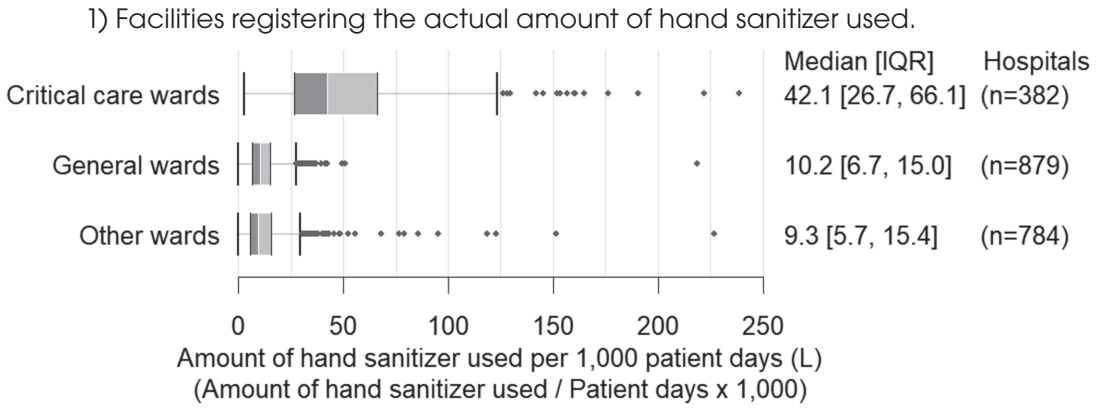
Box plot showing the amount of hand sanitizer used in liters (L) per 1,000 patient days for 1) the actual amount used and 2) the amount of hand sanitizer dispensed.

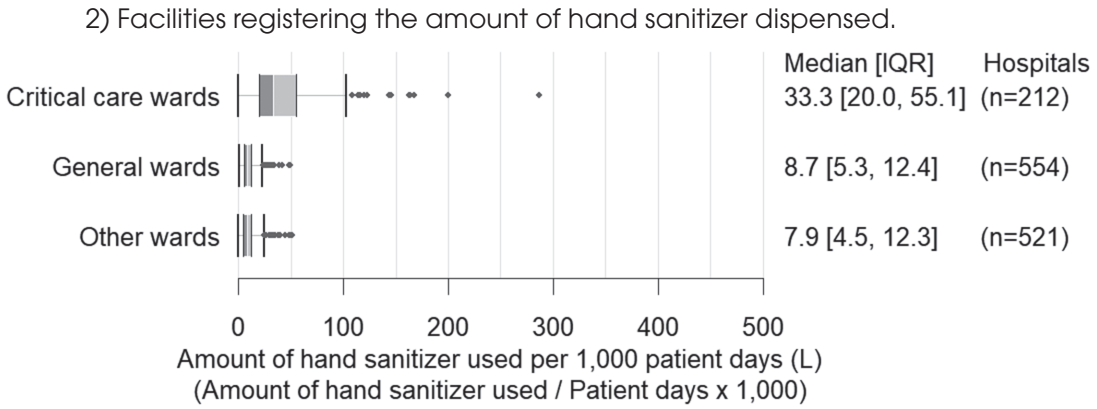


(Based on data from January to December 2023, as of July 26, 2024)
* Eligible facilities were those approved for participation by December 31, 2023.
* The value was obtained by dividing the amount of hand sanitizer used by patient days and multiplying the result by 1,000.
* Data were registered by the participating site arbitrarily selected ward.
* Data for facilities registering the actual usage and those registering the amount of hand sanitizer that was dispensed.
* Facilities that have a period during which they registered actual usage and a period during which they registered the disbursement during the data registration period are counted using both types of data.
* The amount of hand sanitizer used in departments without inpatient facilities such as outpatient clinics, operating rooms, or dialysis rooms is not included.
* Data regardless of dosage form (liquid, gel, or foam).

Figure 27: Amount of Hand Sanitizer Used by Ward in Liters (L) per 1,000 Patient Days

Box plot showing the amount of hand sanitizer used in liters (L) by ward type per 1,000 patient days for 1) the actual amount used and 2) the amount of hand sanitizer dispensed.

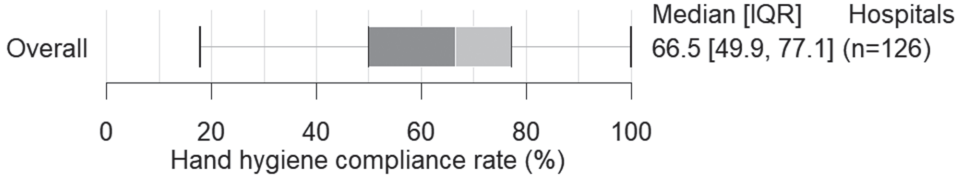




(Based on data from January to December 2023, as of July 26, 2024)
* Eligible facilities were those approved for participation by December 31, 2023.
* The value was obtained by dividing the amount of hand sanitizer used by patient days and multiplying the result by 1,000.
* Participating sites optionally selected wards.
* The amount of hand sanitizer used in departments without inpatient facilities such as outpatient clinics, operating rooms, or dialysis rooms is not included.
* Data for facilities registering the actual usage and those registering the amount of hand sanitizer that was dispensed.
* Facilities that have a period during which they registered by actual consumption and a period during which they registered by disbursement during the data registration period are counted using both types of data.
* The amount of hand sanitizer used in departments without inpatient facilities such as outpatient clinics, operating rooms, or dialysis rooms is not included.
* Data regardless of dosage form (liquid, gel, or foam).
* Critical care wards: Calculated using ward codes JC01, JC02, JC03, JC04, JC05, JC06, JC07, and JC08.
* General wards (internal medicine, surgery, pediatrics, etc.): Calculated using ward codes JG01, JG02, JG03, JG04, JG05, JG06, JG07, and JG08.
* Other wards (psychiatry, palliative care, rehabilitation, recuperation, dementia, disabled, etc., tuberculosis, and other special): Calculated using ward codes JE01, JE02, JE03, JE04, JE05, JE06, JE07, JE08, JE09, JE10, and JE11.
* Refer to the list of ward codes in the appendix for ward codes by ward function.

Figure 28: Overall Hand Hygiene Compliance Rate

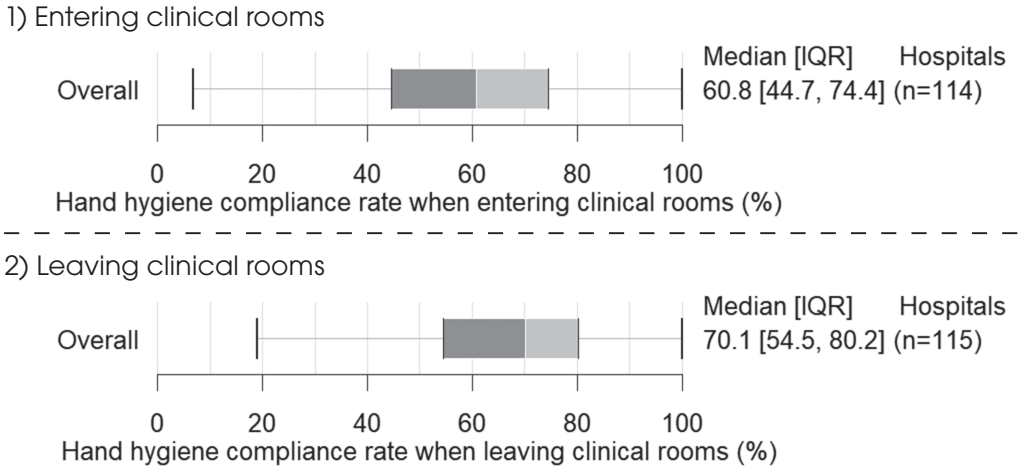
Box plot showing the overall hand hygiene compliance rate in percentage (%).



(Based on data from January to December 2023, as of July 26, 2024)
* Eligible facilities were those approved for participation by December 31, 2023.
* A proportion of performed hand hygiene actions, among the total number of opportunities in hand hygiene monitoring.
* Data at sites where the number of opportunities during hand hygiene monitoring is 100 or more were included.

Figure 29: Overall Hand Hygiene Compliance Rate When Entering and Leaving Clinical Rooms

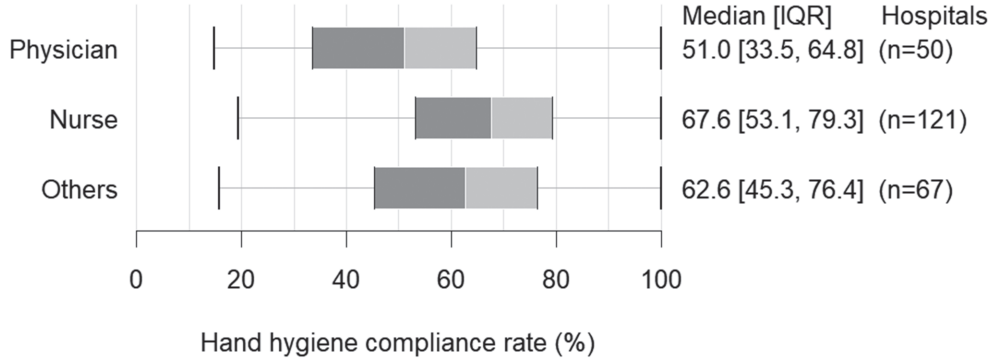
Box plot showing the overall hand hygiene compliance rate when 1) entering and 2) leaving clinical rooms in percentages (%).



(Based on data from January to December 2023, as of July 26, 2024)
* Eligible facilities were those approved for participation by December 31, 2023.
* A proportion of performed hand hygiene actions, among the total number of opportunities in hand hygiene monitoring.
* Data at sites where the number of opportunities during hand hygiene monitoring is 100 or more were included.
* The point of care starts when entering the room.
* The point of care ends when leaving the room.

Figure 30: Hand Hygiene Compliance Rate by Job Type

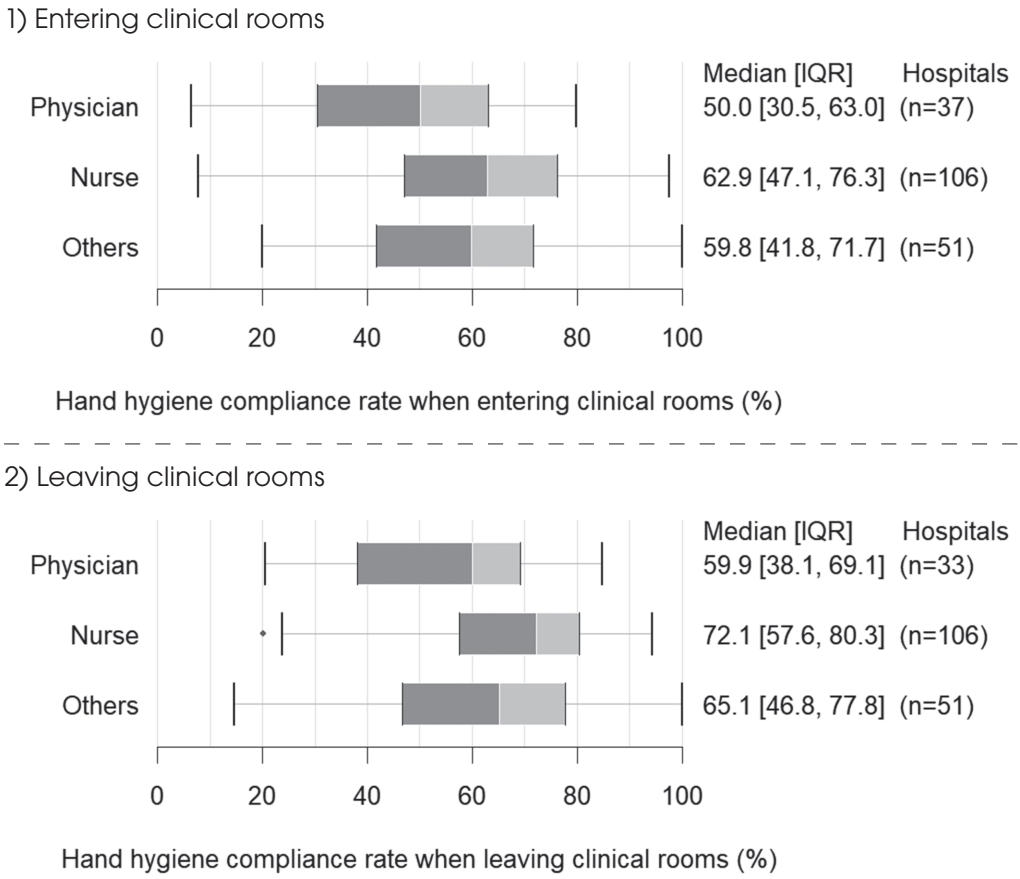
Box plot showing the hand hygiene compliance rate in percentages (%) by job types.



(Based on data from January to December 2023, as of July 26, 2024)
* Eligible facilities were those approved for participation by December 31, 2023.
* A proportion of performed hand hygiene actions, among the total number of opportunities in hand hygiene monitoring.
* Data at sites where the number of opportunities during hand hygiene monitoring is 100 or more were included.

Figure 31: Hand Hygiene Compliance Rate Upon Entering and Leaving Clinical Rooms by Job Type

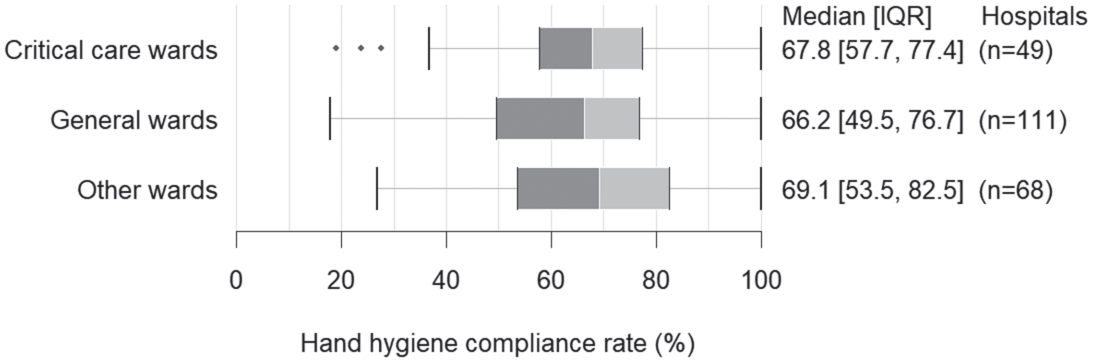
Box plot showing the hand hygiene compliance rate in percentages (%) when 1) entering and 2) leaving clinical rooms by job type.



(Based on data from January to December 2023, as of July 26, 2024)
* Eligible facilities were those approved for participation by December 31, 2023.
* A proportion of performed hand hygiene actions, among the total number of opportunities in hand hygiene monitoring.
* Data at sites where the number of opportunities during hand hygiene monitoring is 100 or more were included.
* The point of care starts when entering the room.
* The point of care ends when leaving the room.

Figure 32: Hand Hygiene Compliance Rate by Ward Type

Box plot showing the hand hygiene compliance rate in percentages (%) by ward type.

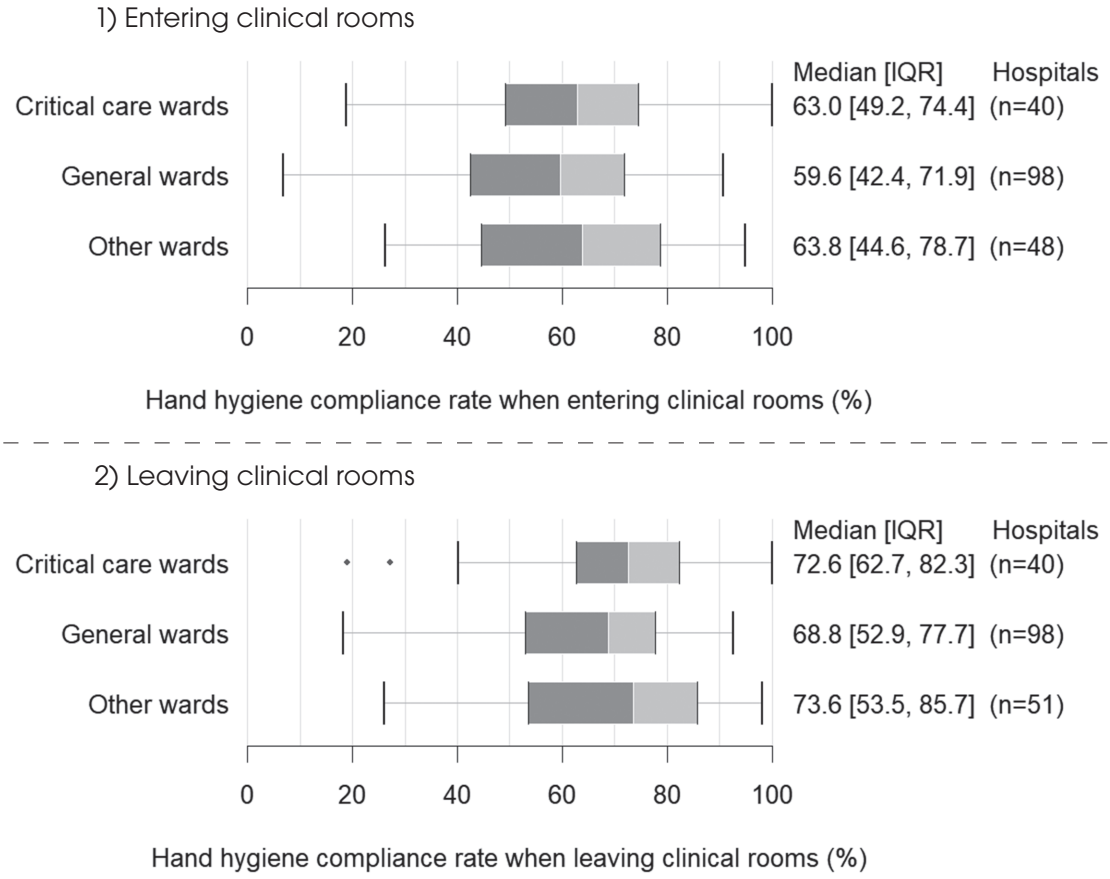


(Based on data from January to December 2023, as of July 26, 2024)
* Eligible facilities were those approved for participation by December 31, 2023.

* A proportion of performed hand hygiene actions among the total number of opportunities in hand hygiene monitoring.
* Data from sites where the number of opportunities during hand hygiene monitoring is 100 or more were included.
* Critical care wards: Calculated using ward codes JC01, JC02, JC03, JC04, JC05, JC06, JC07, and JC08.
* General wards (internal medicine, surgery, pediatrics, etc.): Calculated using ward codes JG01, JG02, JG03, JG04, JG05, JG06, JG07, and JG08.
* Other wards (psychiatry, palliative care, rehabilitation, recuperation, dementia, disabled, etc., tuberculosis, and other special): Calculated using ward codes JE01, JE02, JE03, JE04, JE05, JE06, JE07, JE08, JE09, JE10, and JE11.
* Refer to the list of ward codes in the appendix for ward codes by ward function.

Figure 33: Hand Hygiene Compliance Rate When Entering and Leaving Clinical Rooms by Ward Type

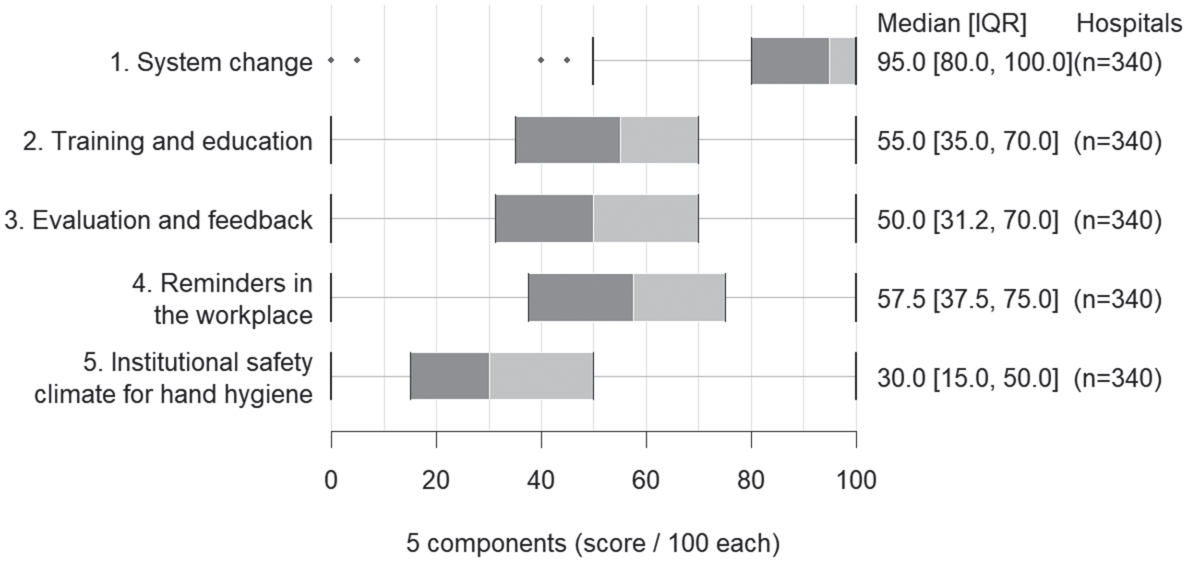
Box plot showing the hand hygiene compliance rate in percentages (%) when 1) entering and 2) leaving clinical rooms by ward type.



(Based on data from January to December 2023, as of July 26, 2024)
* Eligible facilities were those approved for participation by December 31, 2023.
* A proportion of performed hand hygiene actions among the total number of opportunities in hand hygiene monitoring.
* Data from sites where the number of opportunities during hand hygiene monitoring is 100 or more were included.
* The point of care starts when entering the room.
* The point of care ends when leaving the room.
* Critical care wards: Calculated using ward codes JC01, JC02, JC03, JC04, JC05, JC06, JC07, and JC08.
* General wards (internal medicine, surgery, pediatrics, etc.): Calculated using ward codes JG01, JG02, JG03, JG04, JG05, JG06, JG07, and JG08.
* Other wards (psychiatry, palliative care, rehabilitation, recuperation, dementia, disabled, etc., tuberculosis, and other special): Calculated using ward codes JE01, JE02, JE03, JE04, JE05, JE06, JE07, JE08, JE09, JE10, and JE11.
* Refer to the list of ward codes in the appendix for ward codes by ward function.

Figure 34: WHO Hand Hygiene Self-Assessment Framework and Its 5 Major Components

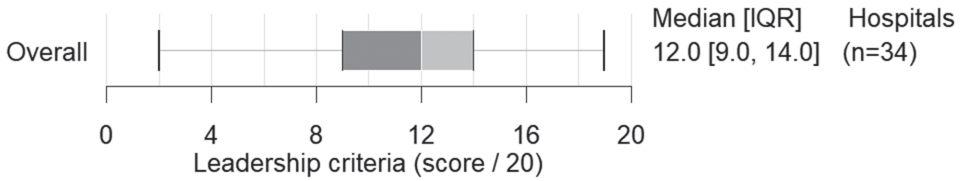
Box plot showing the scores for each of the 5 major components of the WHO Hand Hygiene Self-Assessment Framework.



(Based on data from January to December 2023, as of July 26, 2024)
* Eligible facilities were those approved for participation by December 31, 2023.
* Calculated based on the latest registered data during the target period for aggregation.
* The WHO Hand Hygiene Self-Assessment Framework 2010 was used.

Figure 35: WHO Self-Assessment of Hand Hygiene Framework: Leadership Criteria

Box plot showing the overall scores for the Leadership criteria of the WHO Hand Hygiene Self-Assessment Framework.



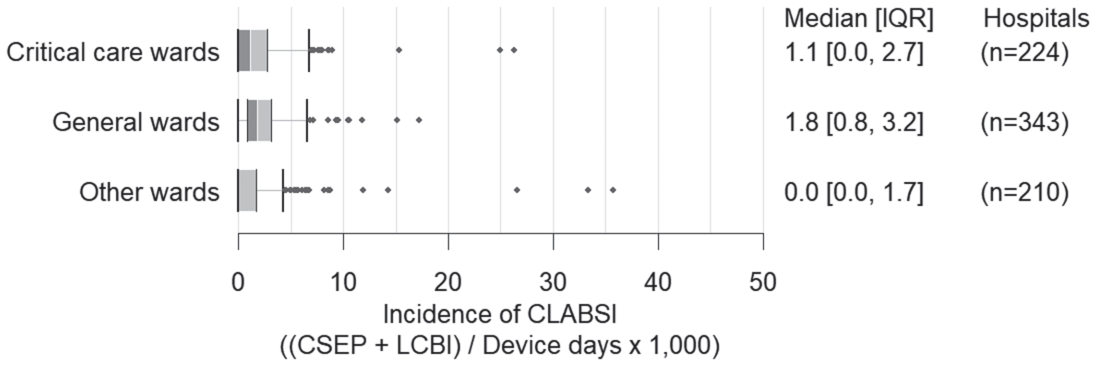
(Based on data from January to December 2023, as of July 26, 2024)
* Eligible facilities were those approved for participation by December 31, 2023.
* Calculated based on the latest registered data during the target period for aggregation.
* Only sites that scored a total of ≥ 376 for the 5 major components of the WHO Self-Assessment of Hand Hygiene Framework were included.

Device-Associated Infections Information (Healthcare-Associated Infections)

The data were aggregated and calculated using all the Device-Associated Infections information registered by the sites.

Figure 36: Incidence of CLABSI by Ward Type

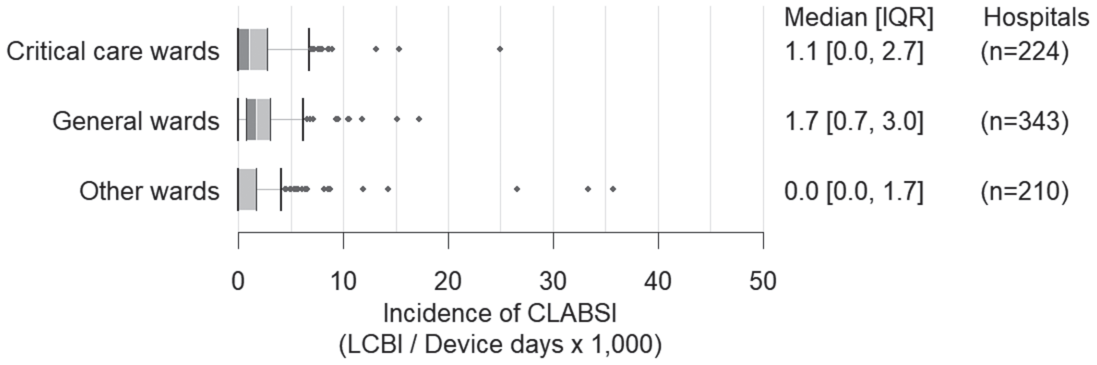
Box plot showing the incidence of CLABSI by ward type.



(Based on data from January to December 2023, as of July 26, 2024)
* Eligible facilities were those approved for participation by December 31, 2023.
* The value was obtained by dividing the total number of cases of laboratory-confirmed bloodstream infection (LCBI) and clinical sepsis (CSEP) by the total number of patients using central lines and multiplying the result by 1,000.
* Critical care wards: Calculated using ward codes JC01, JC02, JC03, JC04, JC05, JC06, JC07, and JC08.
* General wards (internal medicine, surgery, pediatrics, etc.): Calculated using ward codes JG01, JG02, JG03, JG04, JG05, JG06, JG07, and JG08.
* Other wards (psychiatry, palliative care, rehabilitation, recuperation, dementia, disabled, etc., tuberculosis, and other special): Calculated using ward codes JE01, JE02, JE03, JE04, JE05, JE06, JE07, JE08, JE09, JE10, and JE11.
* Refer to the list of ward codes in the appendix for ward codes by ward function.

Figure 37: Incidence of CLABSI: LCBI by Ward Type

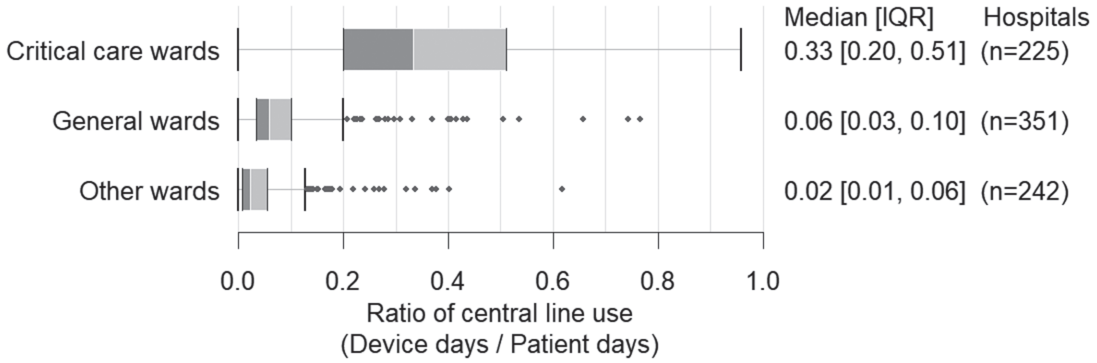
Box plot showing the incidence of CLABSI: LCBI by ward type.



(Based on data from January to December 2023, as of July 26, 2024)
* Eligible facilities were those approved for participation by December 31, 2023.
* The value was obtained by dividing the total number of cases of laboratory-confirmed bloodstream infection (LCBI) by the total number of patients using central lines and multiplying the result by 1,000.
* Critical care wards: Calculated using ward codes JC01, JC02, JC03, JC04, JC05, JC06, JC07, and JC08.
* General wards (internal medicine, surgery, pediatrics, etc.): Calculated using ward codes JG01, JG02, JG03, JG04, JG05, JG06, JG07, and JG08.
* Other wards (psychiatry, palliative care, rehabilitation, recuperation, dementia, disabled, etc., tuberculosis, and other special): Calculated using ward codes JE01, JE02, JE03, JE04, JE05, JE06, JE07, JE08, JE09, JE10, and JE11.
* Refer to the list of ward codes in the appendix for ward codes by ward function.

Figure 38: Ratio of Central Line Use by Ward Type

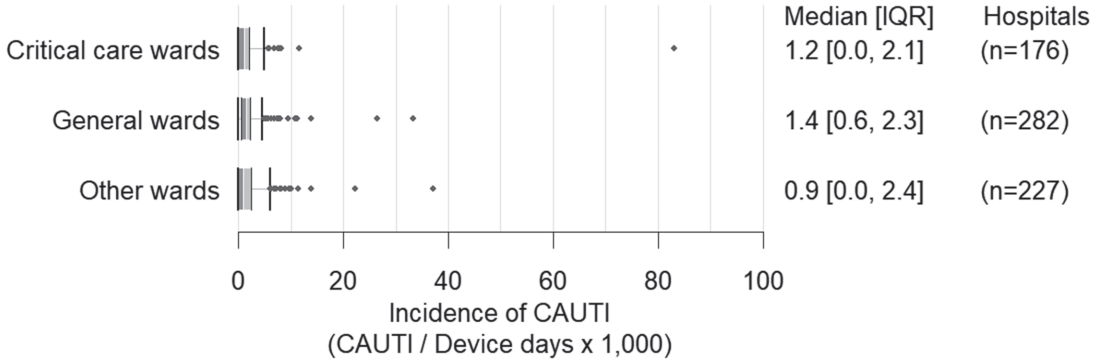
Box plot showing the ratio of central line use by ward type.



(Based on data from January to December 2023, as of July 26, 2024)
* Eligible facilities were those approved for participation by December 31, 2023.
* Proportion of all patients using central lines in patient days.
* Critical care wards: Calculated using ward codes JC01, JC02, JC03, JC04, JC05, JC06, JC07, and JC08.
* General wards (internal medicine, surgery, pediatrics, etc.): Calculated using ward codes JG01, JG02, JG03, JG04, JG05, JG06, JG07, and JG08.
* Other wards (psychiatry, palliative care, rehabilitation, recuperation, dementia, disabled, etc., tuberculosis, and other special): Calculated using ward codes JE01, JE02, JE03, JE04, JE05, JE06, JE07, JE08, JE09, JE10, and JE11.
* Refer to the list of ward codes in the appendix for ward codes by ward function.

Figure 39: Incidence of CAUTI by Ward Type

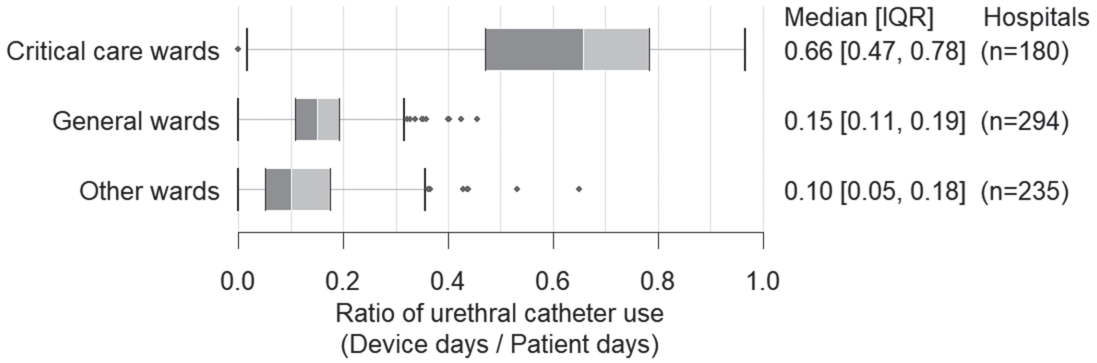
Box plot showing the incidence of CAUTI by ward type.



(Based on data from January to December 2023, as of July 26, 2024)
* Eligible facilities were those approved for participation by December 31, 2023.
* The value was obtained by dividing the total number of cases of CAUTI by the total number of patients using urethral catheters and multiplying the result by 1,000.
* Critical care wards: Calculated using ward codes JC01, JC02, JC03, JC04, JC05, JC06, JC07, and JC08.
* General wards (internal medicine, surgery, pediatrics, etc.): Calculated using ward codes JG01, JG02, JG03, JG04, JG05, JG06, JG07, and JG08.
* Other wards (psychiatry, palliative care, rehabilitation, recuperation, dementia, disabled, etc., tuberculosis, and other special): Calculated using ward codes JE01, JE02, JE03, JE04, JE05, JE06, JE07, JE08, JE09, JE10, and JE11.
* Refer to the list of ward codes in the appendix for ward codes by ward function.

Figure 40: Ratio of Urethral Catheter Use by Ward Type

Box plot showing the ratio of urethral catheter use by ward type.



(Based on data from January to December 2023, as of July 26, 2024)

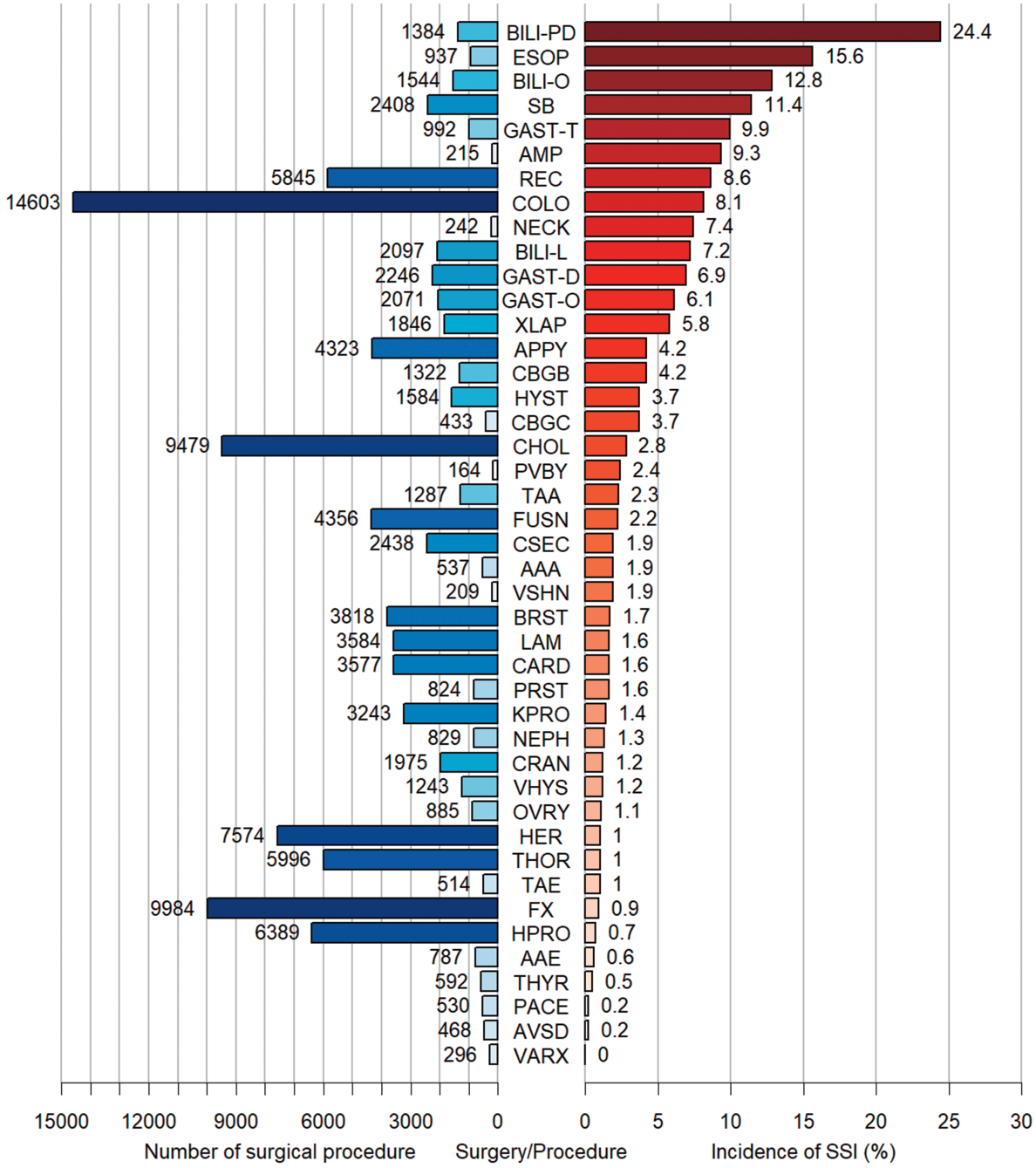
* Eligible facilities were those approved for participation by December 31, 2023.
* A proportion of total patients using urethral catheters in patient days.
* Critical care wards: Calculated using ward codes JC01, JC02, JC03, JC04, JC05, JC06, JC07, and JC08.
* General wards (internal medicine, surgery, pediatrics, etc.): Calculated using ward codes JG01, JG02, JG03, JG04, JG05, JG06, JG07, and JG08.
* Other wards (psychiatry, palliative care, rehabilitation, recuperation, dementia, disabled, etc., tuberculosis, and other special): Calculated using ward codes JE01, JE02, JE03, JE04, JE05, JE06, JE07, JE08, JE09, JE10, and JE11.
* Refer to the list of ward codes in the appendix for ward codes by ward function.

SSI Information (Healthcare-Associated Infections)

The data were aggregated and calculated using all the SSI information registered by the sites.

Figure 41: Number of Surgeries and Incidence of SSI by Surgical Procedure

Bar graph showing the number of surgeries (left) and the incidence of SSI by surgical procedure (right) in both numbers and percentages (%).



(Based on data from January to December 2023, as of July 26, 2024)

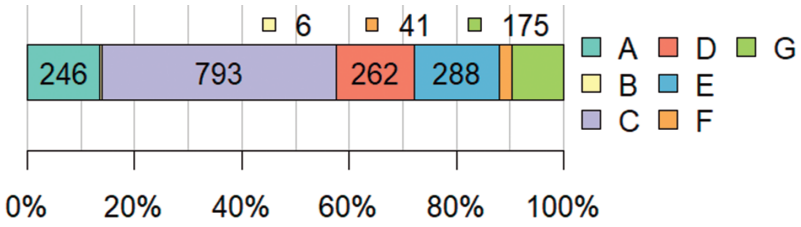
* Eligible facilities were those approved for participation by December 31, 2023.
* The number of surgeries and the incidence of SSI among those surgeries, categorized by surgical procedure.
* Data that conformed to NHSN criteria were used.
* The SSI incidence rate is the percentage of SSIs among the number of surgeries per surgical procedure.
* No adjustments were made based on the use of an endoscope.
* No adjustments were made by the risk index.
* Surgical procedures with ≥ 100 records were included.
* See the full list of surgical procedure codes in the appendix (refer to the JANIS documents for surgical procedure codes).

Microorganism and Antimicrobial Resistance Information

The data were aggregated and calculated using information on microorganisms and resistant bacteria registered by the sites.

Figure 42: Diagnostic Approaches for the Detection of CDI

Bar chart showing the proportion of different testing strategies used by sites to diagnose CDI, presented in both numbers and percentages (%).



A. Only the toxin is confirmed by immunochromatography; CDI is diagnosed when the result is positive, and the test is completed if the result is negative.

B. Only the toxin is confirmed by immunochromatography; CDI is diagnosed when the result is positive. If the result is negative, the toxin is determined by immunochromatography using cultured colonies. If both results are negative, the test is completed.

C. Both glutamate dehydrogenase (GDH) and the toxin are confirmed by immunochromatography; CDI is diagnosed when both GDH and the toxin are positive. If GDH is positive and the toxin is negative, CDI is not diagnosed, and the test is completed.

D. Both GDH and the toxin are confirmed by immunochromatography; CDI is diagnosed when both GDH and the toxin are positive. If GDH is positive and the toxin is negative, the toxin is determined using cultured colonies. If both are negative, the test is completed.

E. Both GDH and the toxin are confirmed by immunochromatography; CDI is diagnosed when both GDH and the toxin are positive. If GDH is positive and the toxin is negative, the toxin is determined using a fecal toxin gene test. If the result is negative, the test is completed.

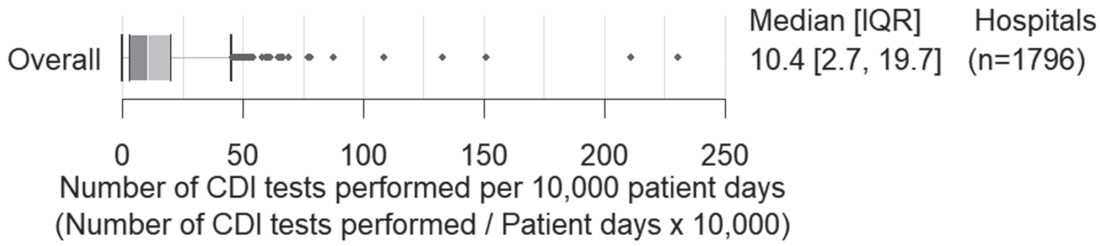
F. The toxin is confirmed using a fecal toxin gene test only; CDI is diagnosed when the result is positive, and the test is completed if the result is negative.

G. Others

(Based on data from January to December 2023, as of July 26, 2024)
*** Eligible facilities were those approved for participation by December 31, 2023.**
*** The proportions of the test methods used to diagnose CDI are shown.**
*** The test methods that are normally used are displayed.**

Figure 43: Number of CDI Tests Performed per 10,000 Patient Days

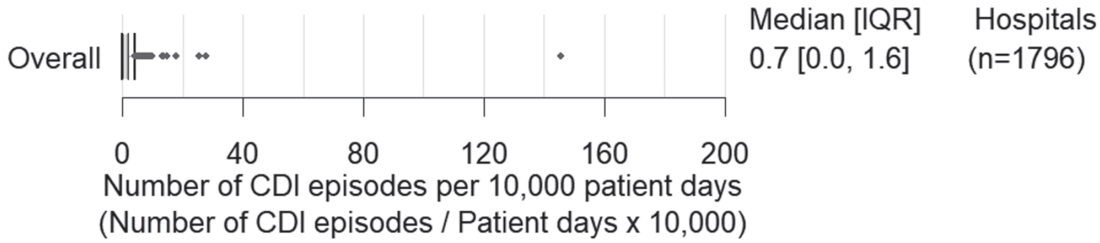
Box plot showing the number of CDI tests performed per 10,000 patient days.



(Based on data from January to December 2023, as of July 26, 2024)
* Eligible facilities were those approved for participation by December 31, 2023.
* The value was obtained by dividing the number of patients tested for CDI by patient days and multiplying the result by 10,000.
* Even if multiple tests are performed for one episode per patient, they are counted as one.
* Sites with 0 tests were included.

Figure 44: Number of CDI Cases per 10,000 Patient Days

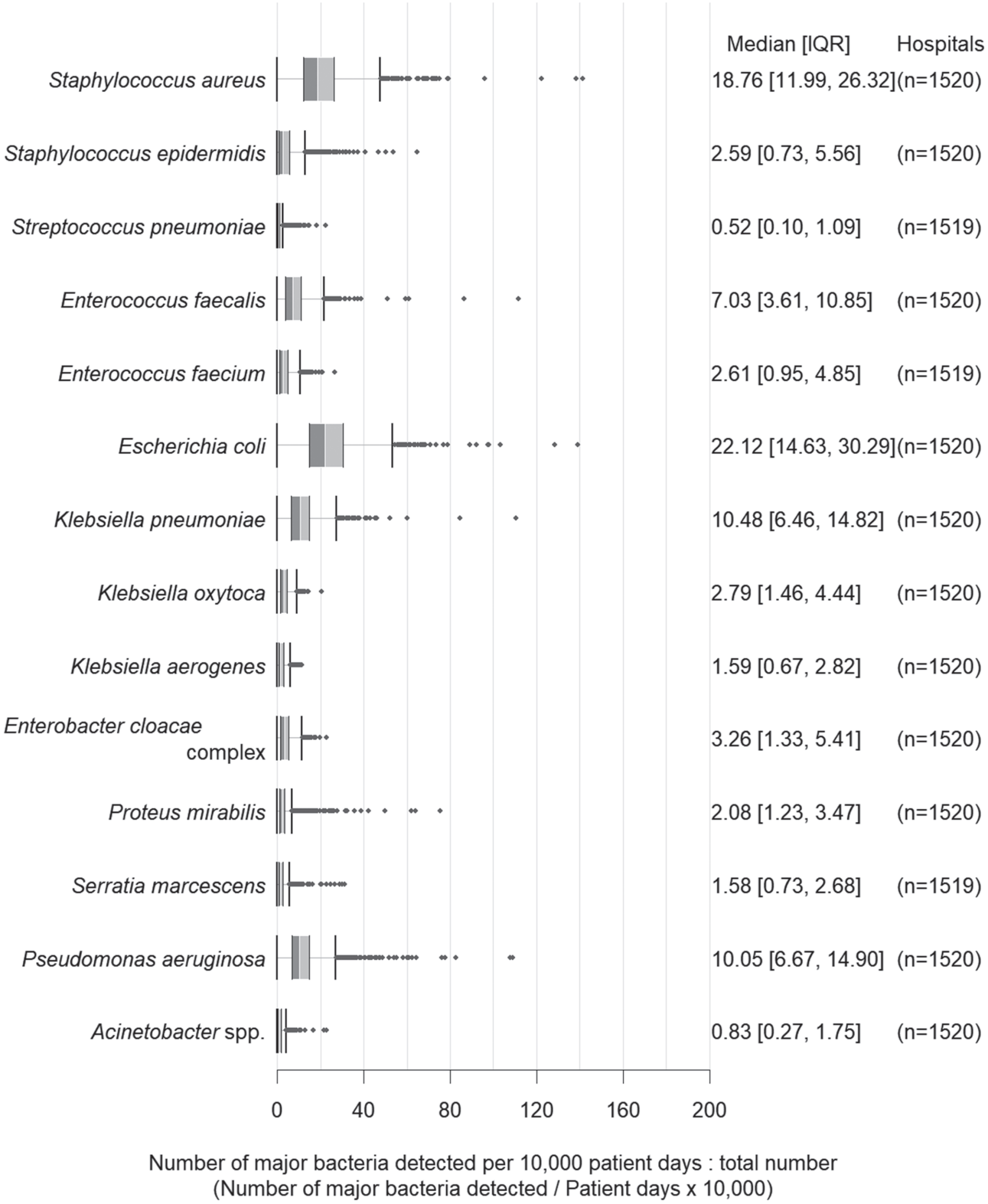
Box plot showing the overall number of CDI cases per 10,000 patient days.



(Based on data from January to December 2023, as of July 26, 2024)
* Eligible facilities were those approved for participation by December 31, 2023.
* This refers to the CDI Lab Event Surveillance.
* This definition refers to the number of Hospital-Onset (HO) cases.
* The value was obtained by dividing the number of patients determined to have CDI by the total patient days and multiplying the result by 10,000.
* Sites with 0 CDI cases were included.
* Multiple detections within the previous 14 days for the same patient were processed as duplicate data.

Figure 45: Total Number of Major Bacteria Detected per 10,000 Patient Days

Box plot showing the total number of major bacteria detected per 10,000 patient days.

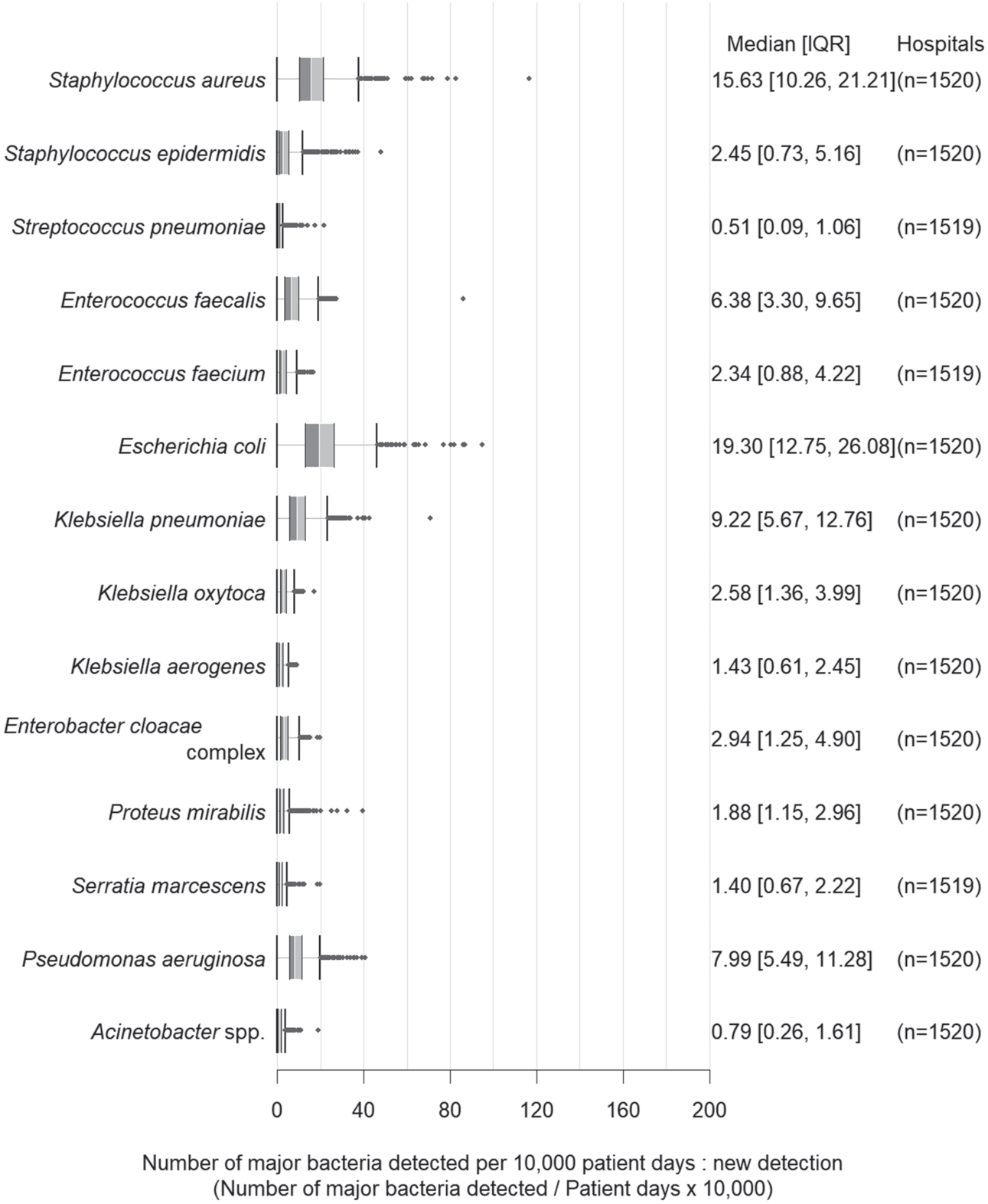


(Based on data from January to December 2023, as of July 26, 2024)

* Eligible facilities were those approved for participation by December 31, 2023.
* The value was obtained by dividing the number of patients in which bacteria were detected by the total patient days and multiplying the result by 10,000.
* [Total number] Counted once even in cases where multiple detections were made for one patient per month, categorized by bacterium.
* Data registered via the “JANIS Testing Division Reduced Information” were used.
* Summarized by bacterium, excluding sites with no data. Facilities with a detection count of 0 were included.

Figure 46: Number of New Detections of Major Bacteria per 10,000 Patient Days

Box plot showing the number of new major bacteria detected per 10,000 patient days.

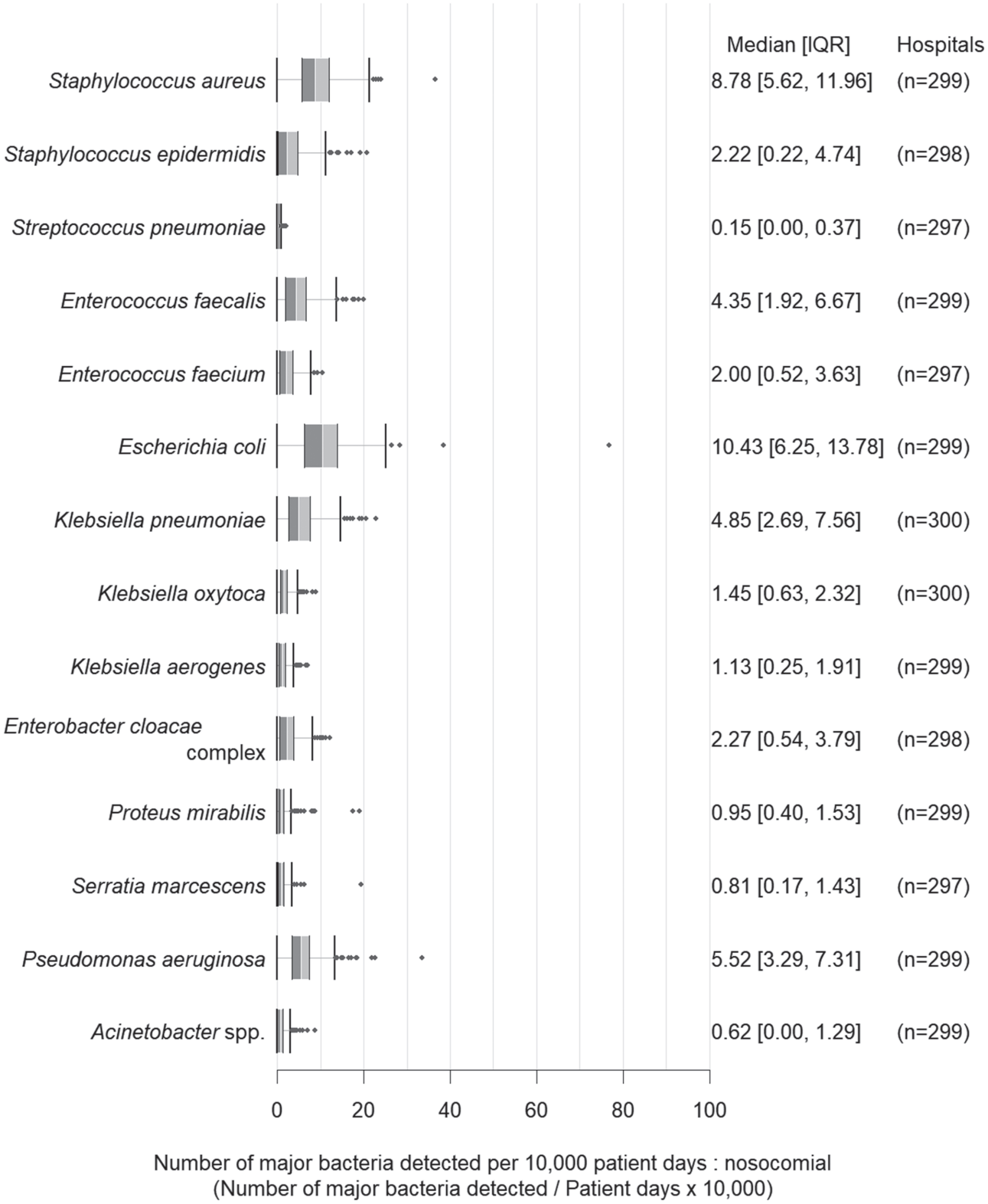


(Based on data from January to December 2023, as of July 26, 2024)

* Eligible facilities were those approved for participation by December 31, 2023.
* The value was obtained by dividing the number of patients with new bacteria detections by the total patient days and multiplying the result by 10,000.
* [New detection] Counted once even in cases where multiple detections were made for one patient within 90 days, categorized by bacterium.
* Data registered via the “JANIS Testing Division Reduced Information” were used.
* Summarized by bacterium, excluding sites with no data. Facilities with a detection count of 0 were included.

Figure 47: Number of Major Bacteria Detected in Nosocomial Infections per 10,000 Patient Days

Box plot showing the number of major bacteria detected in nosocomial infections per 10,000 patient days.

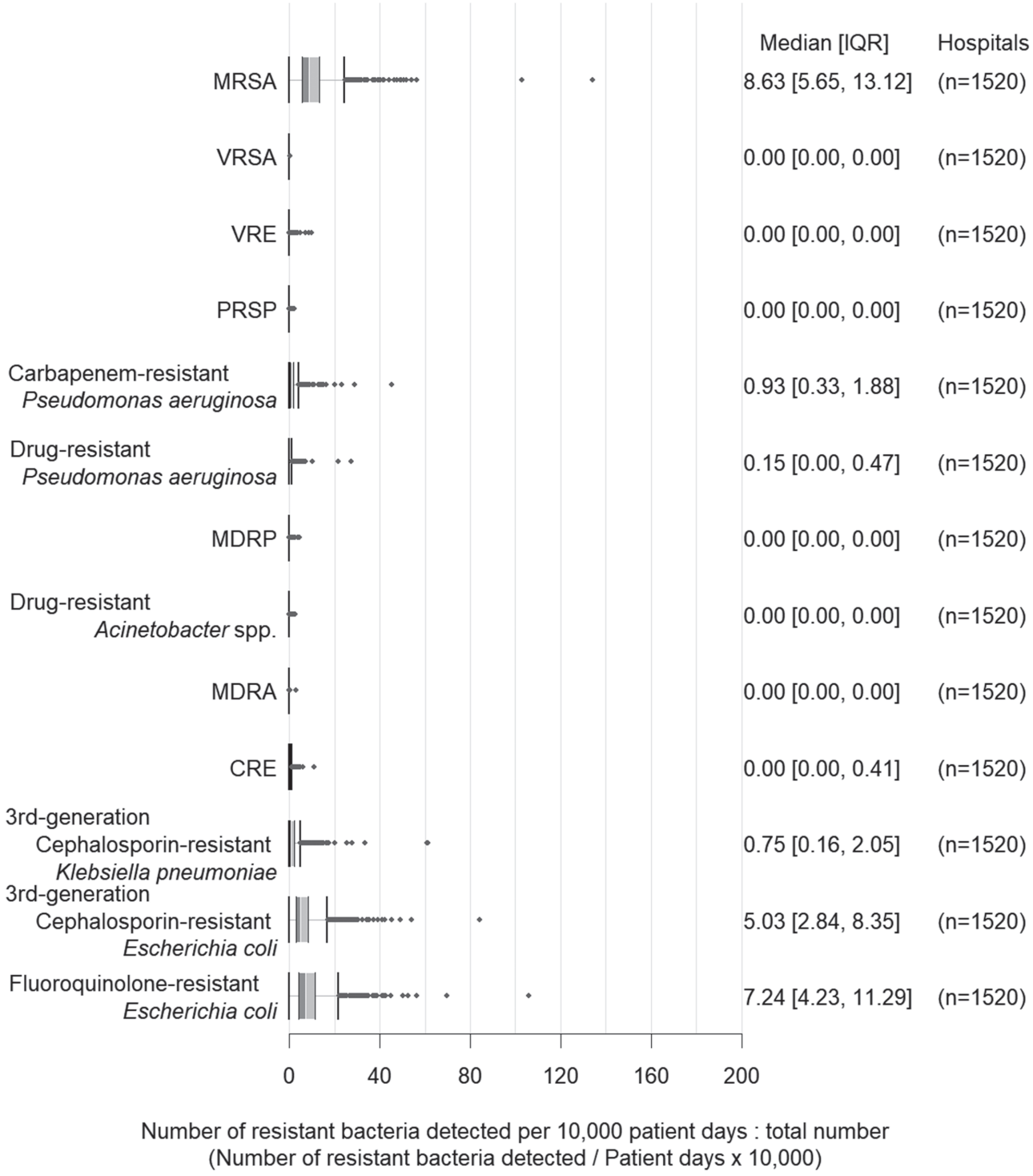


(Based on data from January to December 2023, as of July 26, 2024)

* Eligible facilities were those approved for participation by December 31, 2023.
* The value was obtained by dividing the number of patients in which bacteria were detected by the total patient days and multiplying the result by 10,000.
* [Nosocomial] Multiple detections within 90 days were processed as duplicate data, categorized by bacterium. Patients with detected bacteria submitted on or after Day 4 of hospitalization were counted.
* Data registered via the "JANIS Testing Division Reduced Information" were used.
* Summarized by bacterium, excluding sites with no data. Facilities with a detection count of 0 were included.

Figure 48: Total Number of Resistant Bacteria Detected per 10,000 Patient Days

Box plot showing the total number of resistant bacteria detected per 10,000 patient days.

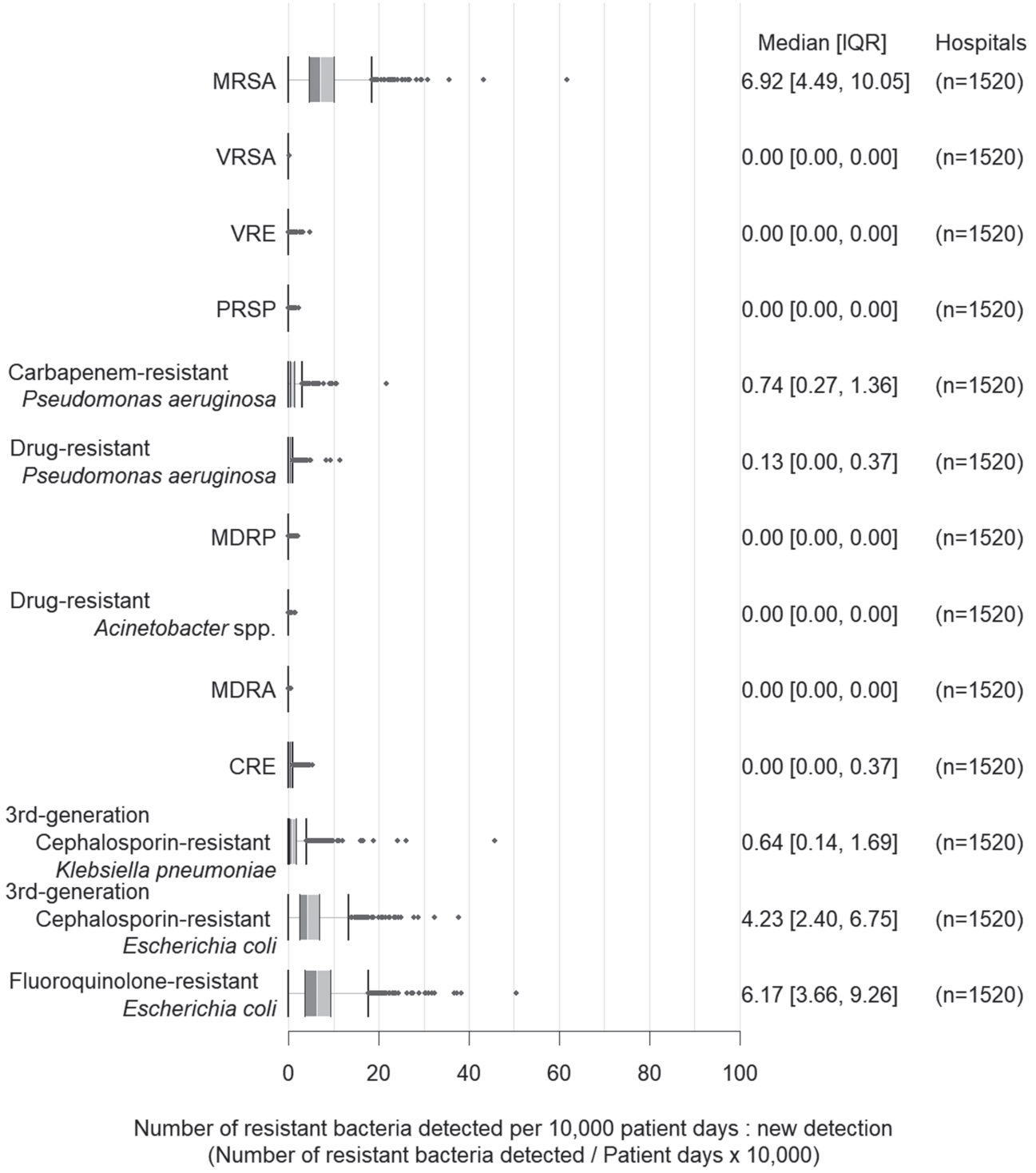


(Based on data from January to December 2023, as of July 26, 2024)

* Eligible facilities were those approved for participation by December 31, 2023.
* The value was obtained by dividing the number of patients in which resistant bacteria were detected by the total patient days and multiplying the result by 10,000.
* [Total number] Counted once even in cases where multiple detections were made for one patient per month, categorized by bacterium.
* Data registered via the "JANIS Clinical Division Reduced Information" were used.
* Summarized by bacterium, excluding sites with no data. Facilities with a detection count of 0 were included.

Figure 49: Number of New Detections of Resistant Bacteria per 10,000 Patient Days

Box plot showing the number of new resistant bacteria detections per 10,000 patient days.

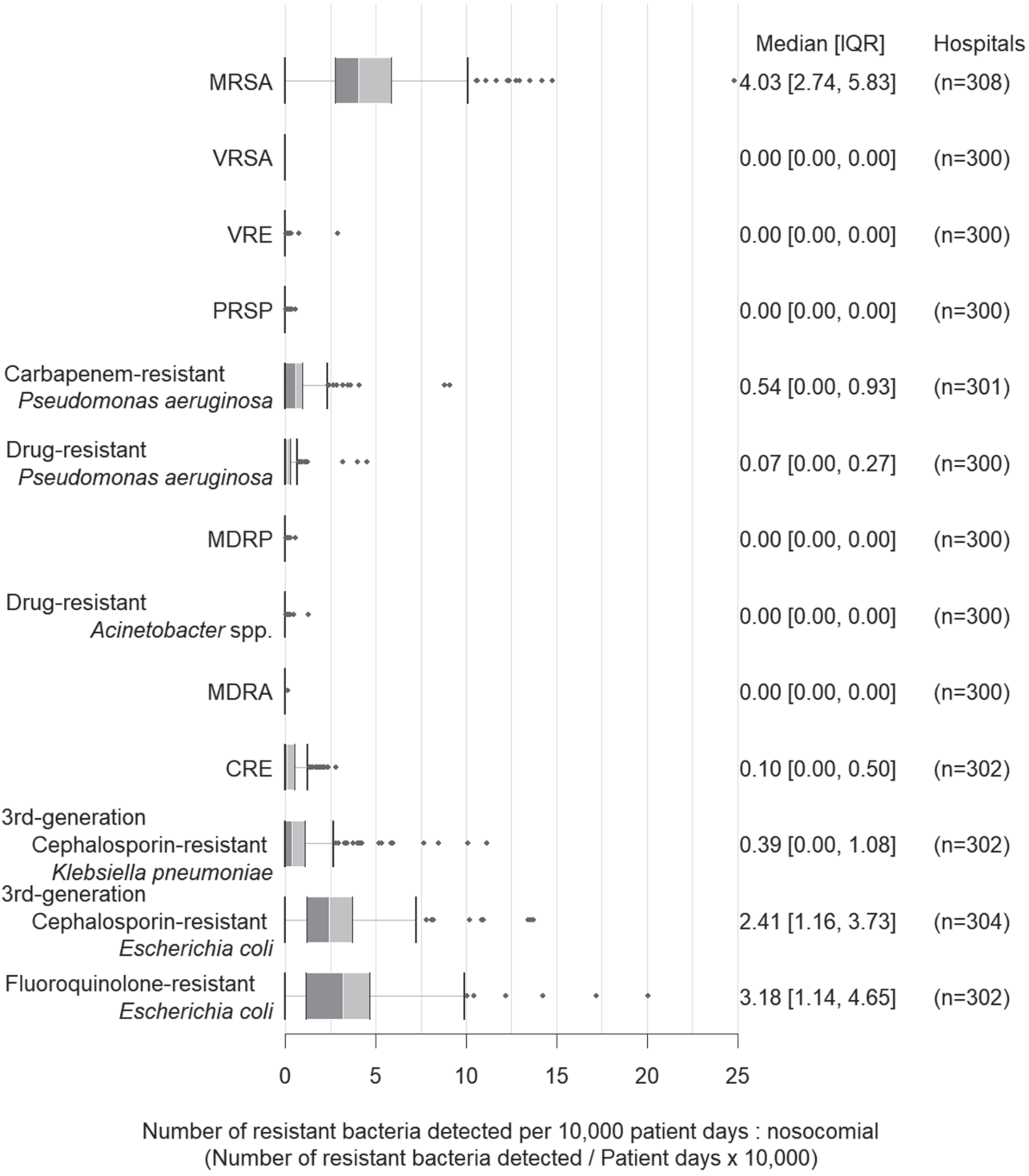


(Based on data from January to December 2023, as of July 26, 2024)

* Eligible facilities were those approved for participation by December 31, 2023.
* The value was obtained by dividing the number of patients with new resistant bacteria detections by the total patient days and multiplying the result by 10,000.
* [New detection] Counted once even in cases where multiple detections were made for one patient within 90 days, categorized by bacterium.
* Data registered via the "JANIS Clinical Division Reduced Information" were used.
* Summarized by bacterium, excluding sites with no data. Facilities with a detection count of 0 were included.

Figure 50: Number of Resistant Bacteria Detected in Nosocomial Infections per 10,000 Patient Days

Box plot showing the number of resistant bacteria detected in nosocomial infections per 10,000 patient days.

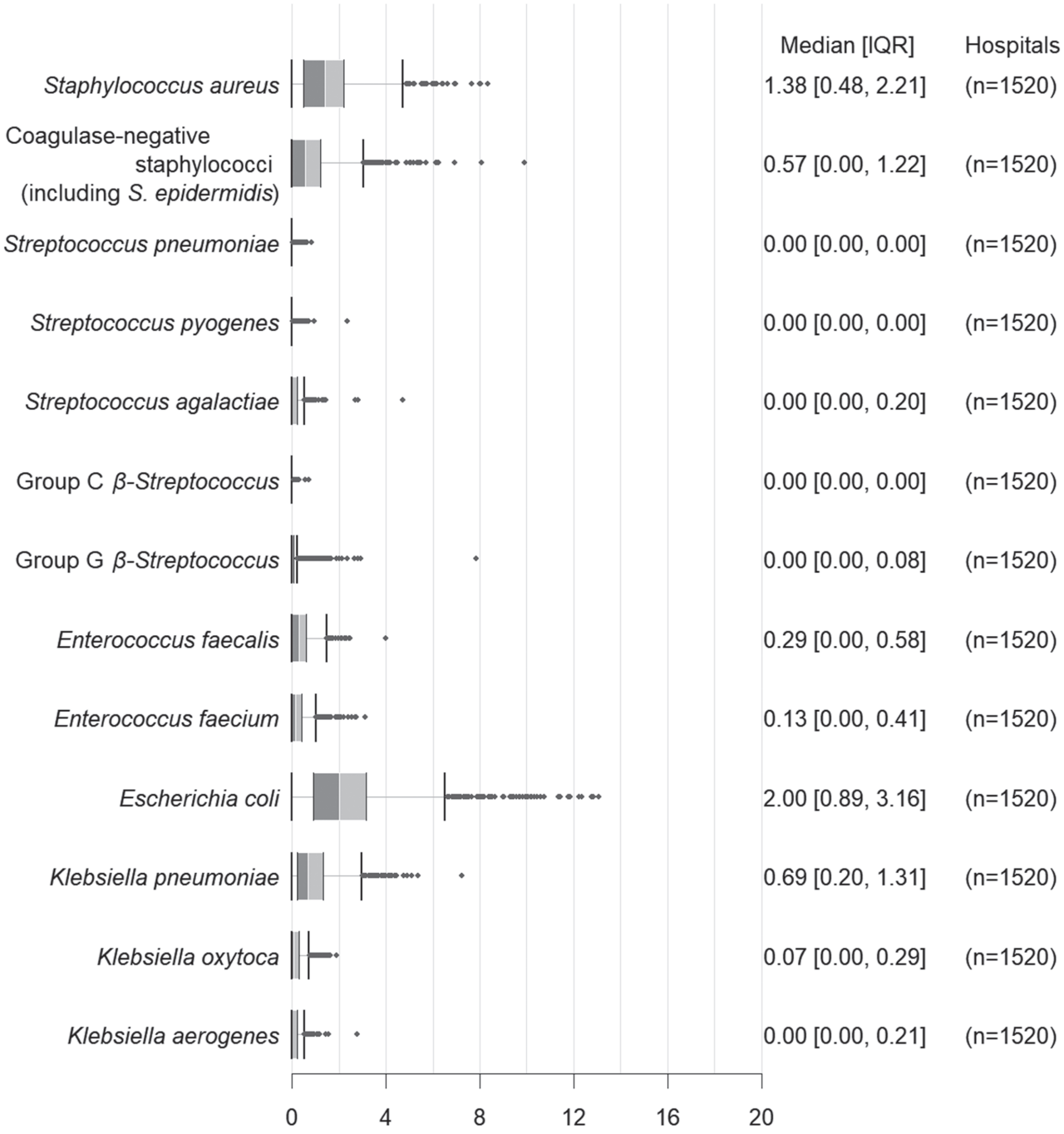


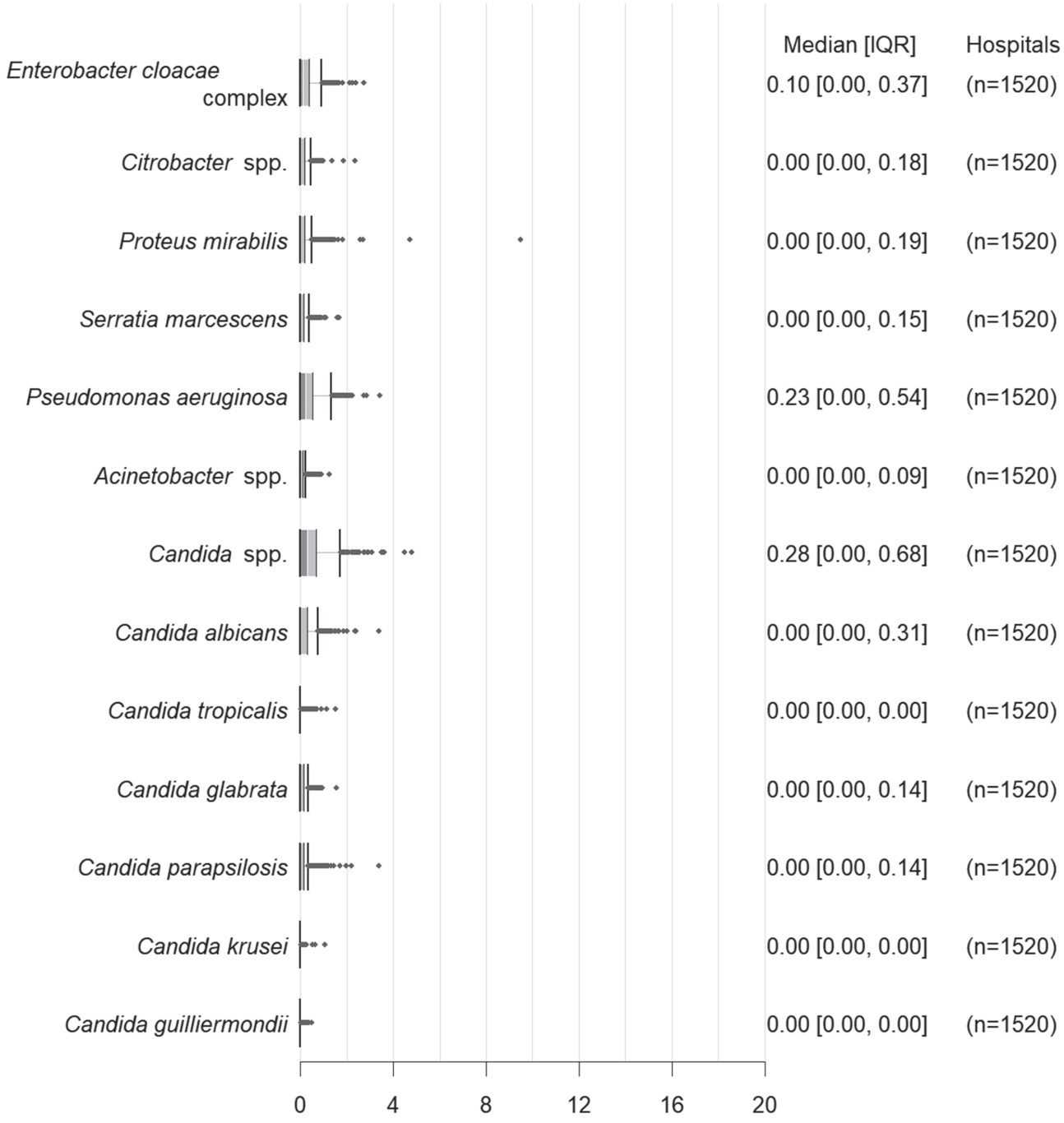
(Based on data from January to December 2023, as of July 26, 2024)

* Eligible facilities were those approved for participation by December 31, 2023.
* The value was obtained by dividing the number of patients in which resistant bacteria were detected by the total patient days and multiplying the result by 10,000.
* [Nosocomial] Multiple detections within 90 days were processed as duplicate data, categorized by bacterium. Patients with detected bacteria submitted on or after Day 4 of hospitalization were counted.
* Data registered via the "JANIS Clinical Division Reduced Information" were used.
* Summarized by bacterium, excluding sites with no data. Facilities with a detection count of 0 were included.

Figure 51: Total Number of Bloodstream Infections Caused by Major Bacteria per 10,000 Patient Days

Box plot showing the total number of bloodstream infections caused by major bacteria per 10,000 patient days.



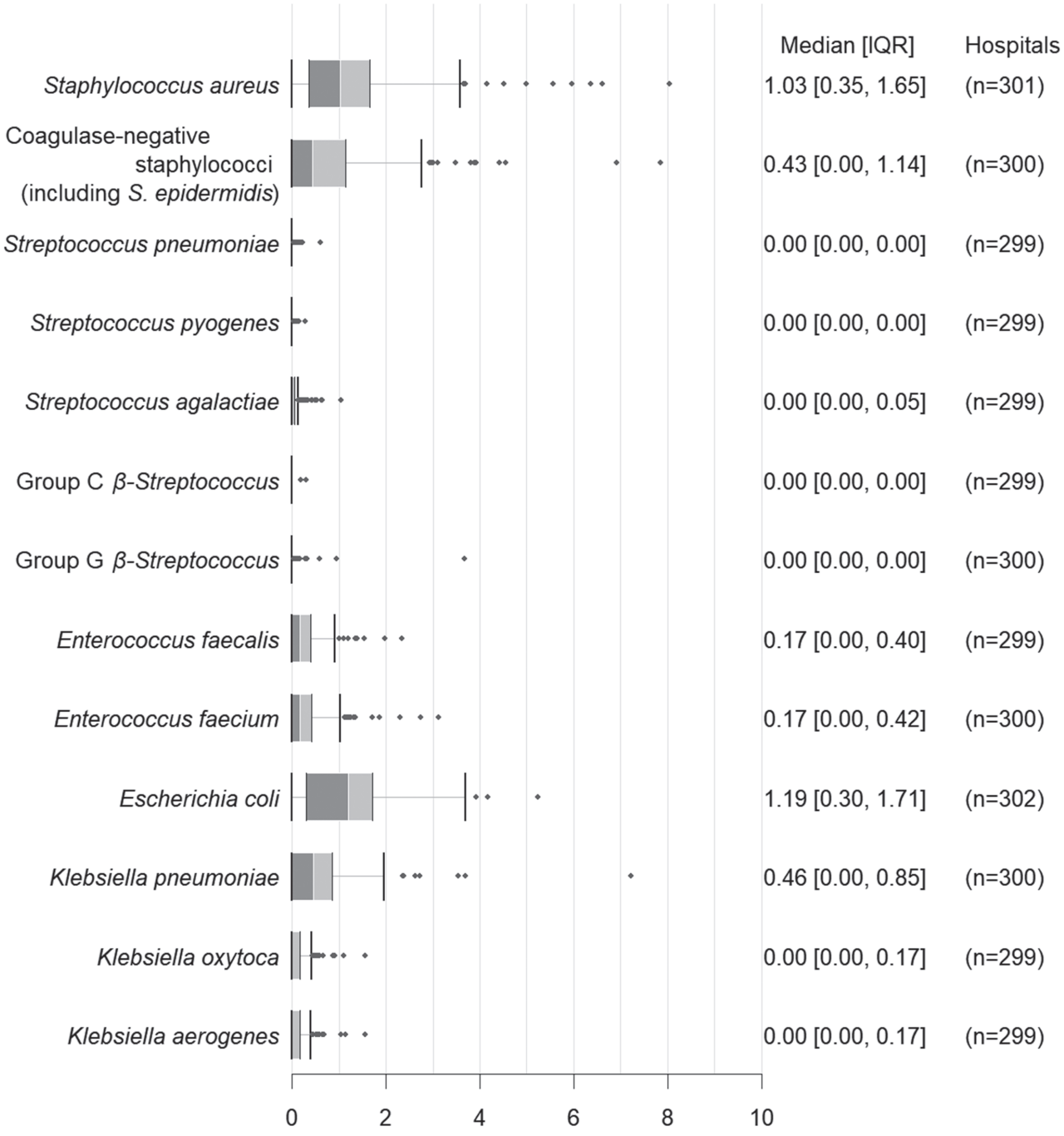


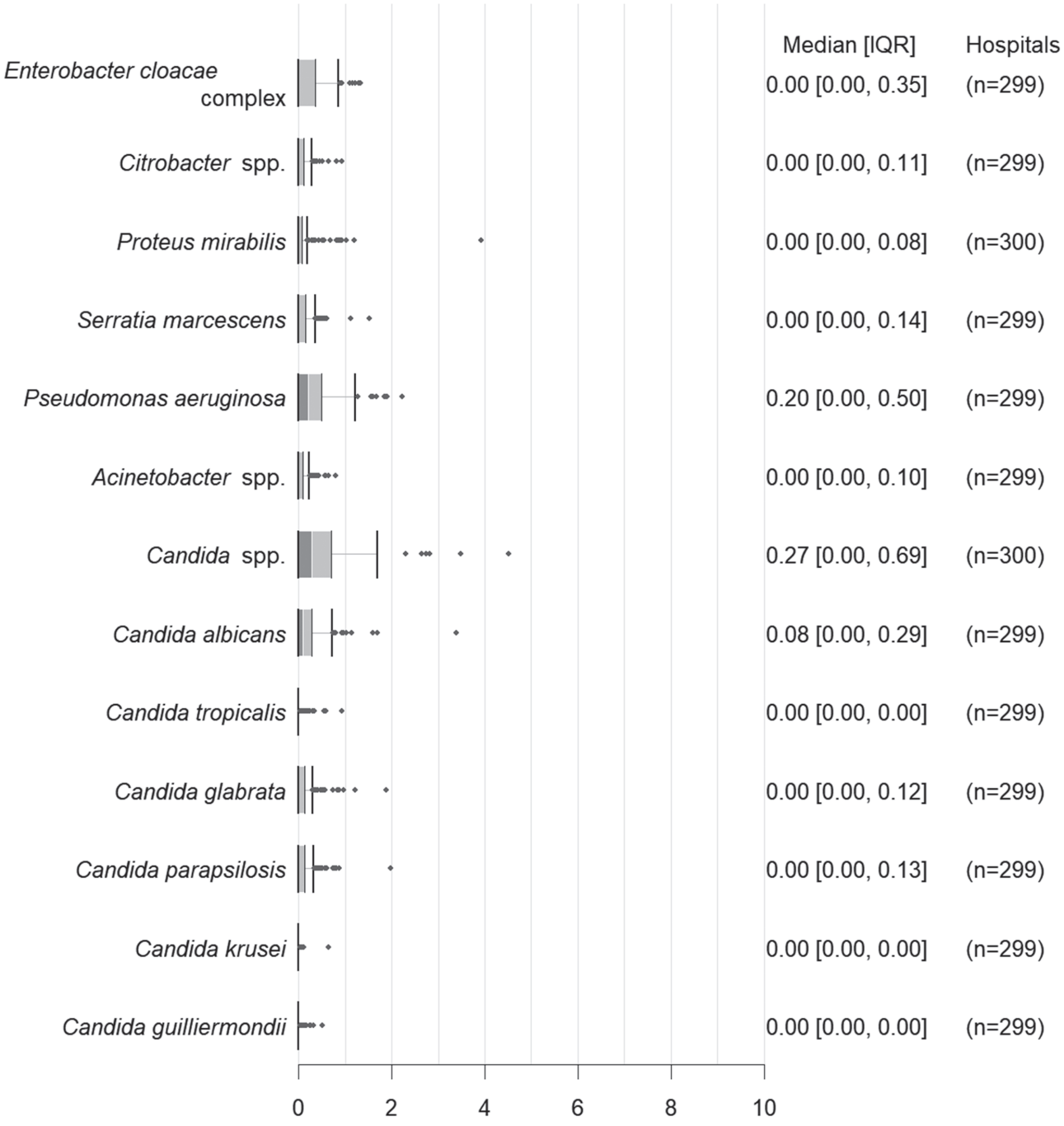
(Based on data from January to December 2023, as of July 26, 2024)

* Eligible facilities were those approved for participation by December 31, 2023.
* The number of major bacterial bloodstream infection cases refers to the number of patients in whom major bacterial species were detected in blood specimens.
* The value was obtained by dividing the number of patients for whom bacteria were detected in blood samples by the total patient days and multiplying the result by 10,000.
* [Total number] Counted once even in cases where multiple detections were made for one patient per month, categorized by bacterium.
* Contaminated samples were excluded from the count.
* Data registered via the “JANIS Clinical Division Reduced Information” were used.
* Summarized by bacterium, excluding sites with no data. Facilities with a detection count of 0 were included.

Figure 52: Number of Nosocomial Bloodstream Infections Caused by Major Bacteria per 10,000 Patient Days

Box plot showing the number of nosocomial bloodstream infections caused by major bacteria per 10,000 patient days.



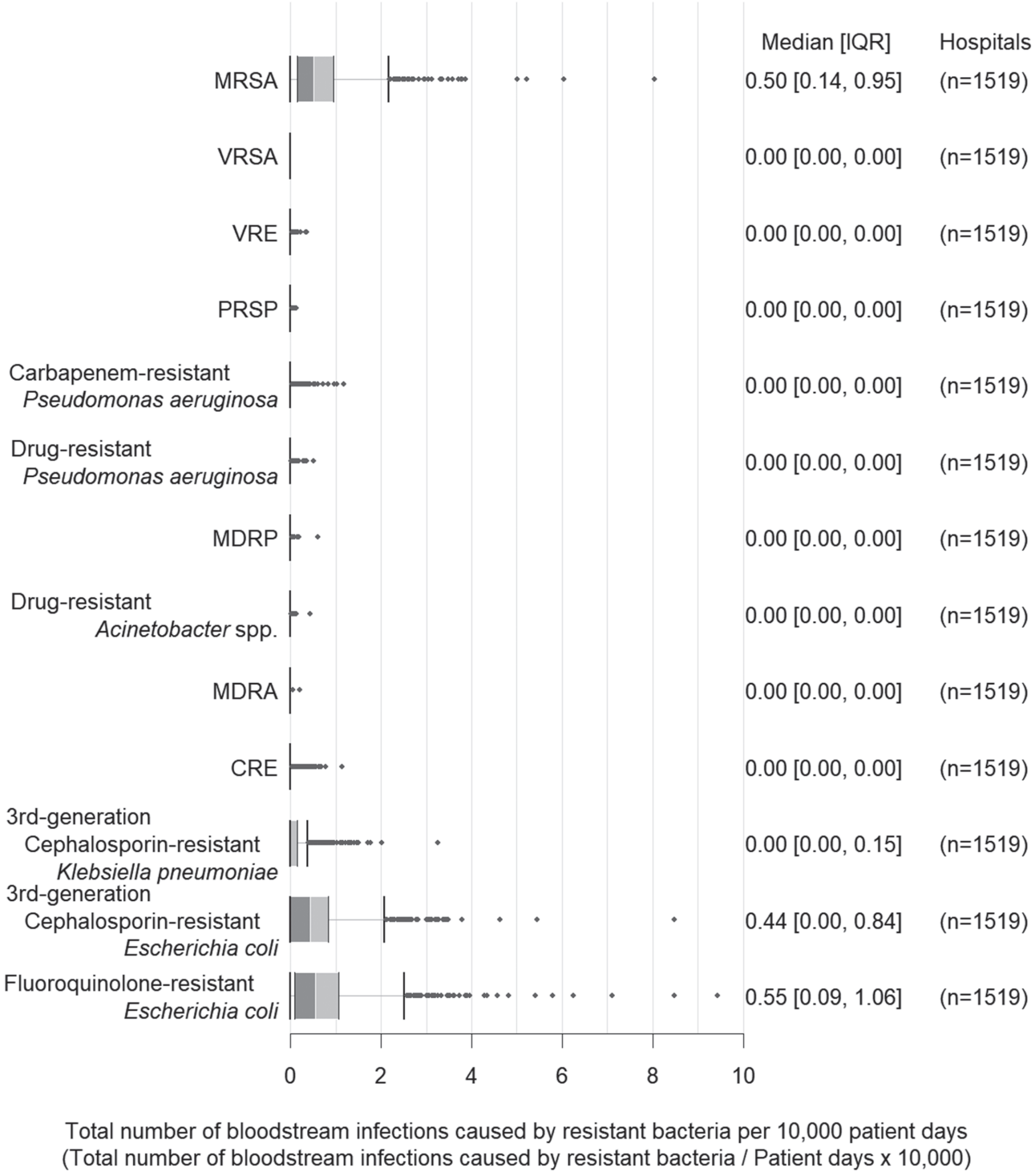


(Based on data from January to December 2023, as of July 26, 2024)

* Eligible facilities were those approved for participation by December 31, 2023.
* The number of major bacterial bloodstream infection cases refers to the number of patients in whom major bacterial species were detected in blood specimens.
* The value was obtained by dividing the number of patients for whom bacteria were detected in blood samples by the total patient days and multiplying the result by 10,000.
* [Nosocomial] Patients with detected bacteria submitted on or after Day 4 of hospitalization were counted.
* Contaminated samples were excluded from the count.
* Data registered via the “JANIS Clinical Division Reduced Information” were used.
* Summarized by bacterium, excluding sites with no data. Facilities with a detection count of 0 were included.

Figure 53: Total Number of Bloodstream Infections Caused by Resistant Bacteria per 10,000 Patient Days

Box plot showing the total number of bloodstream infections caused by resistant bacteria per 10,000 patient days.

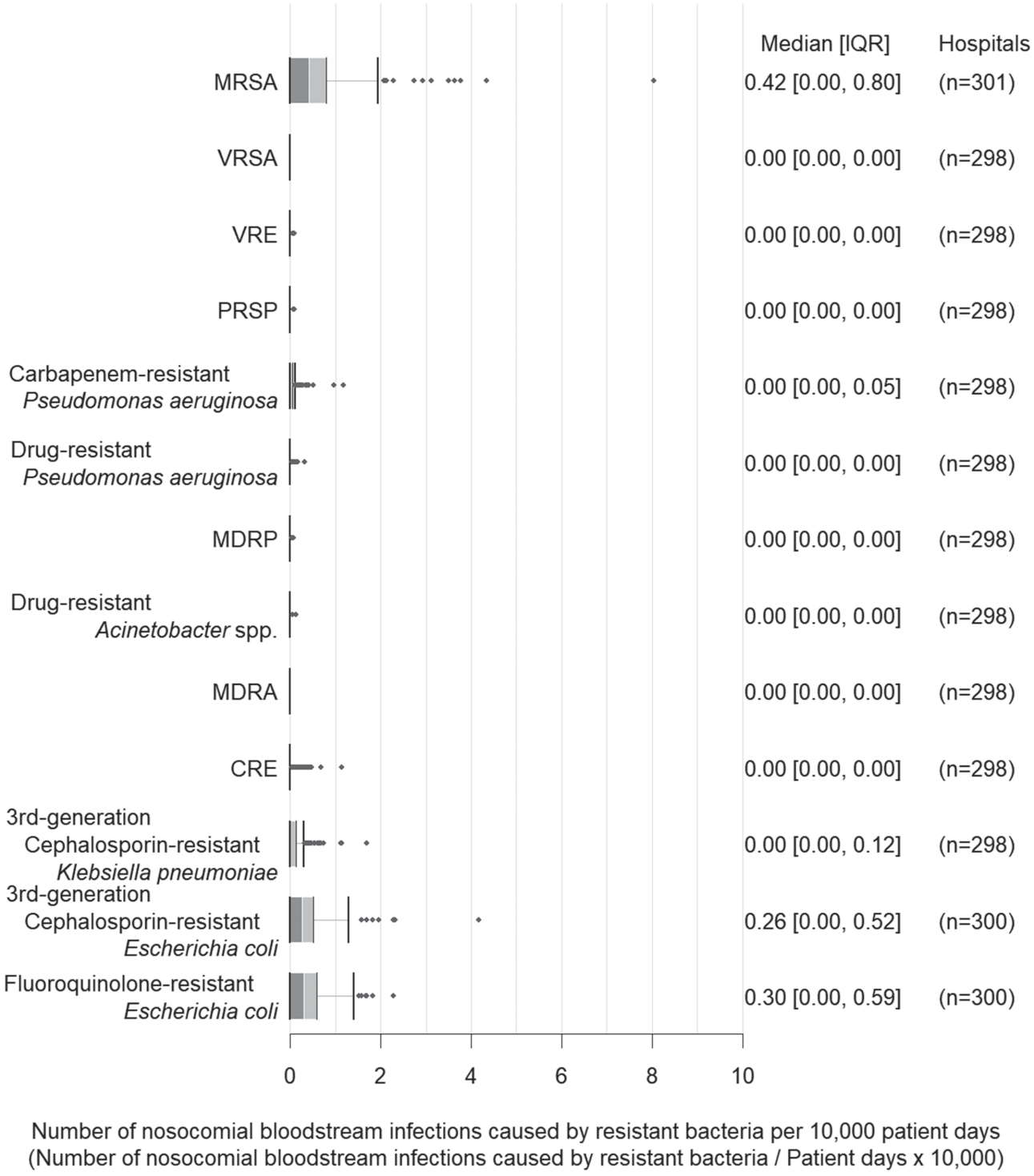


(Based on data from January to December 2023, as of July 26, 2024)

* Eligible facilities were those approved for participation by December 31, 2023.
* The number of resistant bloodstream infection cases refers to the number of patients in whom resistant organisms were detected in blood specimens.
* The value was obtained by dividing the number of patients for whom resistant bacteria were detected in blood samples by the total patient days and multiplying the result by 10,000.
* [Total number] Counted once even in cases where multiple detections were made for one patient per month, categorized by bacterium.
* Contaminated samples were excluded from the count.
* Data registered via the "JANIS Clinical Division Reduced Information" were used.
* Summarized by bacterium, excluding sites with no data. Facilities with a detection count of 0 were included.

Figure 54: Number of Nosocomial Bloodstream Infections Caused by Resistant Bacteria per 10,000 Patient Days

Box plot showing the number of nosocomial bloodstream infections caused by resistant bacteria per 10,000 patient days.

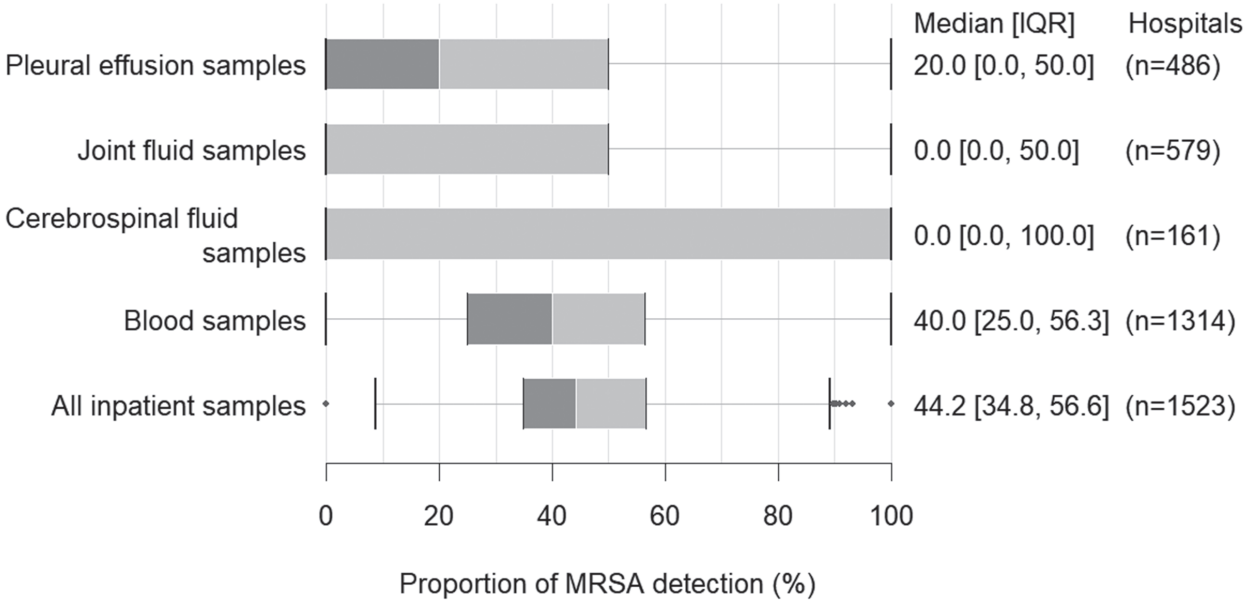


(Based on data from January to December 2023, as of July 26, 2024)

* Eligible facilities were those approved for participation by December 31, 2023.
* The number of resistant bloodstream infection cases refers to the number of patients in whom resistant organisms were detected in blood specimens.
* The value was obtained by dividing the number of patients for whom resistant bacteria were detected in blood samples by the total patient days and multiplying the result by 10,000.
* [Nosocomial] Patients with detected bacteria submitted on or after Day 4 of hospitalization were counted.
* Contaminated samples were excluded from the count.
* Data registered via the "JANIS Clinical Division Reduced Information" were used.
* Summarized by bacterium, excluding sites with no data. Facilities with a detection count of 0 were included.

Figure 55: Proportion of MRSA Detection

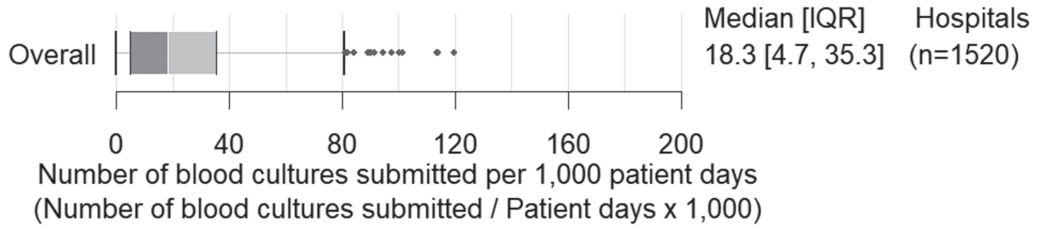
Box plot showing the proportion of patients with newly detected MRSA by sample type, expressed in percentages (%).



(Based on data from January to December 2023, as of July 26, 2024)
* Eligible facilities were those approved for participation by December 31, 2023.
* Proportion of patients with newly detected methicillin-resistant *Staphylococcus aureus* (MRSA) among those with newly detected *S. aureus*.
* Patients with detected *S. aureus* or MRSA were counted only once, even in cases where multiple detections were confirmed in a patient within the previous 90 days.
* If MRSA was detected once in a patient, that patient was considered to have MRSA.

Figure 56: Number of Blood Cultures Submitted per 1,000 Patient Days

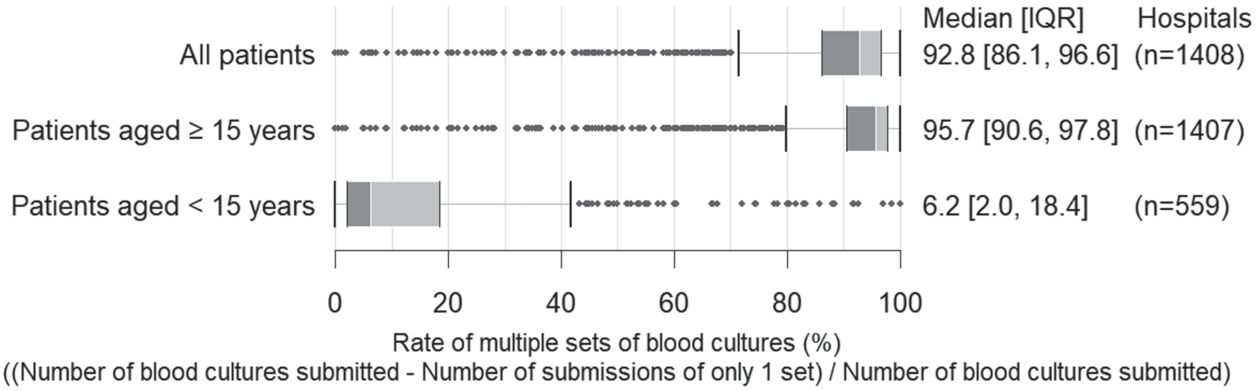
Box plot showing the overall number of blood cultures submitted per 1,000 patient days.



(Based on data from January to December 2023, as of July 26, 2024)
* Eligible facilities were those approved for participation by December 31, 2023.
* The value was obtained by dividing the number of submitted blood cultures by the total patient days and multiplying the result by 1,000.
* The number of blood cultures submitted refers to the number of blood cultures submitted in one set (aerobic bottle + anaerobic bottle or mixed bottle).

Figure 57: Rate of Multiple Blood Culture Sets

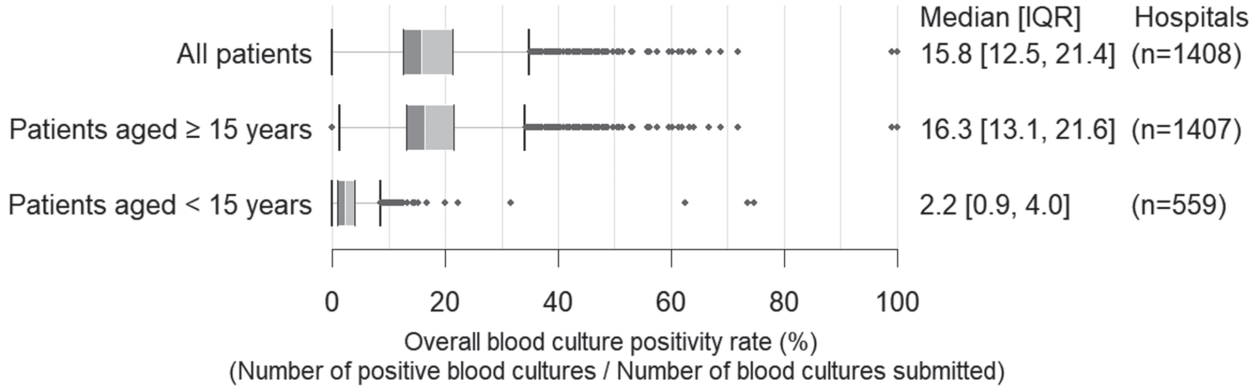
Box plot showing the rate of multiple blood culture sets taken for all patients and for those over and under the age of 15 years, expressed in percentages (%).



(Based on data from January to December 2023, as of July 26, 2024)
* Eligible facilities were those approved for participation by December 31, 2023.
* The value was obtained by subtracting the number of submissions of only one set from the total number of submitted blood cultures and dividing by the total number of blood cultures submitted.
* The number of blood cultures submitted for one set only refers to the number of blood cultures not submitted from the same patient within one day before or after.
* The number of blood cultures submitted refers to the number of blood culture sets (aerobic bottle + anaerobic bottle or mixed bottle) submitted.
* Sites with registered data for 20 or more submitted blood cultures during the target period were included.

Figure 58: Overall Blood Culture Positivity Rate

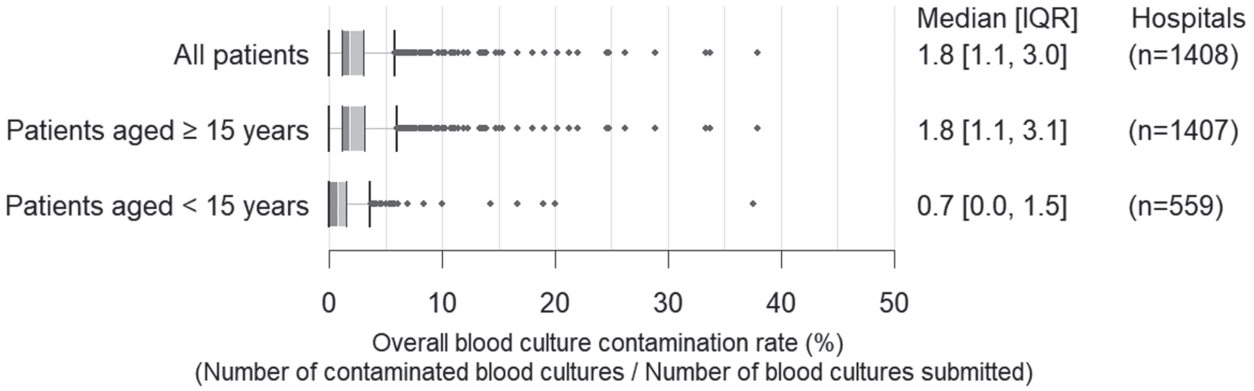
Box plot showing the overall positivity rate of blood cultures collected for all patients and for those over and under the age of 15 years, expressed in percentages (%).



(Based on data from January to December 2023, as of July 26, 2024)
* Eligible facilities were those approved for participation by December 31, 2023.
* The proportion of the number of blood culture sets with a positive result among the blood cultures submitted.
* The number of positive blood culture sets refers to the number of sets that tested positive for blood culture.
* The number of blood culture submissions refers to the number of blood culture sets (aerobic bottle + anaerobic bottle or mixed bottle) submitted.
* Contaminated samples were counted as positive.
* Sites with registered data for 20 or more submitted blood cultures during the target period were included.

Figure 59: Overall Blood Culture Contamination Rate

Box plot showing the overall blood culture contamination rate for all patients and for those over and under the age of 15 years, expressed in percentages (%).



(Based on data from January to December 2023, as of July 26, 2024)
* Eligible facilities were those approved for participation by December 31, 2023.
* The proportion of the number of contaminated blood culture sets among the blood cultures submitted.
* The number of contaminated blood culture sets refers to the number of sets in which contaminating bacteria were detected in the blood culture.
* The number of blood culture submissions refers to the number of blood culture sets (aerobic bottles + anaerobic bottles or mixed bottles) submitted.
* Contaminated sets were determined and counted using a fixed algorithm.
* Sites with registered data for 20 or more submitted blood cultures during the target period were included.
* For contaminating organisms, see the list of target organisms for contaminated specimens in the appendix.

Figure 60: Table of antibiogram

Name of bacterium	No. of strains	PCG	MPIPC	CVA/AMPC	CEZ	IPM/CS	TEIC	VCM	LZD	LVFX	MINO	CLDM	EM	ST
Staphylococcus aureus	335875	34.4	65.9	-	-	92.9	100.0	100.0	100.0	57.0	94.0	89.1	55.5	97.1
Methicillin-sensitive *Staphylococcus aureus* (MSSA)	217984	52.2	-	99.8	99.9	100.0	-	-	-	81.8	99.1	97.0	76.5	97.1
Methicillin-resistant *Staphylococcus aureus* (MRSA)	127097	-	-	-	-	79.3	100.0	100.0	100.0	12.4	84.8	74.3	16.5	97.3
Coagulase negative Staphylococcus (CNS)	151716	26.9	43.6	-	-	-	97.6	100.0	99.9	49.1	96.2	83.2	57.0	85.2

Name of bacterium	No. of strains	PCG	ABPC	CTX	CTRX	MEPM	VCM	LVFX	CLDM	EM
Streptococcus pneumoniae [cerebrospinal fluid]	121	96.6	-	93.1	94.3	79.6	100.0	-	-	-
Streptococcus pneumoniae [other than cerebrospinal fluid]	30654	97.9	-	97.6	97.7	78.2	100.0	95.4	49.5	17.5
Streptococcus pyogenes	10565	99.9	99.6	99.9	99.8	-	100.0	-	89.8	81.8
Streptococcus agalactiae	78638	97.4	98.3	99.5	99.2	-	100.0	-	77.3	63.2

Name of bacterium	No. of strains	PCG	ABPC	TEIC	VCM	LZD	LVFX	MINO	EM
Enterococcus faecalis	137357	98.6	99.9	100.0	100.0	99.5	92.0	33.3	19.3
Enterococcus faecium	44239	13.1	13.5	99.3	98.9	99.2	11.5	48.8	8.6

Name of bacterium	No. of strains	ABPC	PIPC	CVA/AMPC	SBT/ABPC	TAZ/PIPC	CEZ	CEZ*1	CEZ*2	CMZ	CTX	CTRX	CAZ	MEPM	IPM/CS	AZT	CPFX	LVFX	AMK	GM	ST
Escherichia coli	440673	56.9	61.1	90.2	71.2	97.5	47.2	67.2	59.0	99.1	79.8	78.8	87.5	100.0	99.9	83.9	65.8	64.8	99.9	91.3	82.0
Escherichia coli [CTX or CTRX or CAZ R]	95725	0.2	0.8	79.3	41.1	93.9	0.1	0.2	0.1	97.0	-	-	-	99.8	99.7	21.1	21.0	18.2	99.5	80.9	61.1
Klebsiella pneumoniae	178477	R	65.2	92.4	82.2	96.2	59.6	83.4	78.2	98.8	91.0	89.0	91.7	99.8	99.6	91.7	93.5	94.9	99.9	96.6	86.1
Klebsiella pneumoniae [CTX or CTRX or CAZ R]	20440	R	0.8	43.1	6.9	74.1	0.2	0.5	0.2	92.3	-	-	-	98.5	98.2	15.6	52.6	64.5	99.5	73.4	27.0
Klebsiella oxytoca	55842	R	64.6	91.6	73.8	91.1	20.0	33.0	23.0	99.4	94.7	91.3	98.7	99.9	99.1	92.3	95.6	95.5	99.9	99.0	94.7
Enterobacter cloacae	56610	R	76.9	R	R	84.3	R	R	R	R	70.2	69.4	75.5	99.5	95.4	76.0	94.8	96.1	99.9	98.8	92.4
Klebsiella aerogenes	31629	R	75.0	R	R	84.2	R	R	R	R	72.2	71.7	75.5	99.7	87.4	80.1	98.5	98.7	99.9	99.4	96.5
Proteus mirabilis	42141	76.7	78.8	96.6	85.2	99.2	37.8	57.5	47.1	99.6	88.7	84.7	97.9	99.9	51.3	94.3	81.9	84.0	99.8	93.2	85.4
Proteus vulgaris	9397	R	70.9	92.4	77.2	99.4	R	R	R	99.3	75.8	59.7	98.0	99.9	40.3	87.3	99.0	99.3	99.9	99.3	92.8
Citrobacter freundii	20134	R	76.7	R	R	91.4	R	R	R	R	76.4	76.7	78.5	99.8	96.8	79.4	93.5	95.0	99.9	98.3	89.3
Citrobacter koseri	20790	R	46.3	96.1	92.4	96.0	63.9	89.3	85.6	98.0	95.3	95.1	95.9	99.9	99.7	95.4	96.9	96.7	99.9	99.3	96.7
Serratia marcescens	30219	R	82.9	R	R	90.1	R	R	R	R	82.3	78.8	89.0	99.9	92.5	88.2	91.4	94.6	99.5	99.0	96.9

Name of bacterium	No. of strains	PIPC	SBT/ABPC	TAZ/PIPC	CAZ	CFPM	MEPM	IPM/CS	AZT	LVFX	AMK	GM	MINO	ST
Pseudomonas aeruginosa	153601	90.2	R	92.3	93.3	94.2	93.9	88.5	83.8	91.8	98.6	89.9	R	R
Acinetobacter baumannii	10568	82.2	94.7	88.8	90.2	91.0	98.5	98.9	R	90.7	98.6	90.5	97.9	89.7
Acinetobacter spp.	21544	82.0	94.9	90.1	88.1	91.8	98.7	99.0	R	92.1	98.7	92.1	97.7	90.9
Stenotrophomonas maltophilia	24158	R	R	R	37.7	-	R	R	R	92.4	R	R	99.6	94.8

Name of bacterium	No. of strains	ABPC	CVA/AMPC	SBT/ABPC	CTX	CTRX	CAZ	MEPM	LVFX	TC
Haemophilus influenzae	56847	44.0	82.1	71.8	99.1	99.7	97.9	97.4	97.7	97.5

(Based on data from January to December 2023, as of July 26, 2024)

* Eligible facilities were those approved for participation by December 31, 2023.
* Data registered via the "JANIS Clinical Division Reduced Information" were used.
* Samples from both inpatients and outpatients are included without distinction.
* The data were aggregated using the JANIS "S•I•R" criteria, which conform to CLSI 2012 (M100-S22).
* Samples were registered by month, multiple detections for each patient in the previous 90 days were processed, and only those that were newly detected in the concerned month were adopted.
* In cases where detection occurred in the same patient more than once in the month of enrollment, only the first susceptibility result of that month was adopted.
* The proportion (%S) was calculated with the total susceptibility (S) of bacteria as the numerator and the total of all values, including susceptibility (S), as the denominator.
* SI that cannot be classified as either intermediate (I) or susceptible (S) is not included in the numerator but is aggregated in the denominator.
  (However, Cefazolin (CEZ) is handled as follows:
* CEZ*1: The numerator includes "S" and "SI," while the denominator includes all values that can be aggregated.*
* *CEZ*2: The numerator includes only "S," while the denominator includes all values that can be aggregated other than "SI.")

V. Appendix

1. List of ward codes

Ward code	Ward category
JC01	ICU/ CCU
JC02	ICU/ CCU (ICU includes patients with burns)
JC03	PICU
JC04	NICU
JC05	SCU
JC06	HCU
JC07	GCU
JC08	Emergency ward
JG01	Surgical and internal medicine ward
JG02	Internal medicine ward
JG03	Surgical ward
JG04	Oncology/hematology ward
JG05	Obstetrics/gynecology ward
JG06	Pediatric ward
JG07	Pediatric ward with pediatric surgery
JG08	General wards not otherwise classified
JE01	Psychiatric ward
JE02	Palliative care ward
JE03	Recovery rehabilitation ward
JE04	Recuperation ward
JE05	General ward for people with disabilities
JE06	Special disease ward
JE07	Dementia treatment ward
JE08	Community-based integrated care ward
JE09	Clinic with beds
JE10	Tuberculosis/infectious disease ward
JE11	Special ward not otherwise classified

2. List of surgical procedure codes (in reference to the document of JANIS)

Code	Surgical procedures	Description
AAA	Abdominal aortic repair	Resection of abdominal aorta with anastomosis or replacement
AAE	Abdominal aortic endovascular surgery	Endovascular stent placement for abdominal aortic aneurysm
AMP	Limb amputation	Total or partial disarticulation or amputation of an upper or lower limb including the fingers or toes
APPY	Appendix surgery	Appendectomy (excluding those performed in association with other surgical procedures)
AVSD	Shunt for dialysis	Arteriovenous anastomosis for renal dialysis
BILI-L	Hepatectomy without biliary reconstruction	Hepatectomy without biliary reconstruction
BILI-PD	Pancreaticoduodenectomy	Pancreaticoduodenectomy
BILI-O	Other hepatobiliary and pancreatic surgeries	Hepatobiliary and pancreatic surgery (hepatectomy without biliary reconstruction, pancreaticoduodenectomy, and surgeries involving only the gallbladder are not included)
BRST	Breast surgery	Breast lesion or tissue excision. Including radical resection, atypical resection, quadrantectomy, local excision, incisional biopsy, and mammoplasty.

Code	Surgical procedures	Description
CARD	Cardiac surgery	Heart valve or septum thoracotomy. Coronary artery bypass graft, vascular surgery, cardiac transplantation, and pacemaker implantation are not included.
CEA	Carotid endarterectomy	Carotid endarterectomy
CBGB	Coronary artery bypass graft with both chest and donor site incisions.	Thoracotomy for direct cardiac revascularization. Including collection of an appropriate vein from the site of graft harvesting.
CBGC	Coronary artery bypass grafts with chest incision only	Thoracotomy for direct revascularization of the heart using the internal mammary artery, etc.
CHOL	Gallbladder surgery	Cholecystectomy and cholecystostomy
COLO	Colon surgery	Incision/resection or anastomosis of the large intestine. Anastomosis of the large/small intestine are included. Rectal surgeries are not included.
CRAN	Craniotomy	Incision of the skull for excision/repair or examination of the brain. Puncture is not included.
CSEC	Cesarean section	Obstetric delivery by cesarean section
ESOP	Esophageal surgery	Surgery involving resection/reconstruction of the esophagus
FUSN	Spinal fusion	Fusion of the spine
FX	Open reduction of fracture	Open reduction of a fracture or dislocation of a long bone requiring internal or external fixation. Replacement of a joint prosthesis is not included.
GAST-D	Distal gastrectomy	Distal gastrectomy, B-I/B-II reconstruction
GAST-T	Total gastrectomy	Total gastrectomy
GAST-O	Other gastrectomy	Incision or resection of the stomach (distal and total gastrectomy are excluded). Vagotomy and fundoplication are not included.
HER	Herniorrhaphy	Groin/femur/umbilicus or anterior abdominal wall hernia repair. Diaphragmatic hernia, esophageal hiatal hernia, and other hernias are not included.
HPRO	Hip prosthesis	Hip arthroplasty
HTP	Heart transplant	Transplantation of the heart
HYST	Abdominal hysterectomy	Hysterectomy with abdominal incision
KPRO	Knee prosthesis	Knee arthroplasty
KTP	Kidney transplant	Transplantation of the kidney
LAM	Laminectomy	Examination or decompression of the spinal cord by resection/incision of the spinal tissues
LTP	Liver transplant	Transplantation of the liver
NECK	Neck surgery	Major larynx resection or incision, and radical neck dissection. Surgeries of the thyroid and parathyroid gland are not included.
NEPH	Kidney surgery	With or without resection or manipulation of the kidney, or resection of related tissues.
OVRY	Ovarian surgery	Surgery of the ovaries and related tissues
PACE	Pacemaker surgery	Placement/manipulation or replacement of pacemaker
PRST	Prostate surgery	Suprapubic, retropubic, radical or perineal prostatectomy. Transurethral prostatectomy is not included.
PVBY	Peripheral vascular bypass surgery	Bypass surgery of a peripheral vessel
REC	Rectal surgery	Surgery of the rectum
RFUSN	Spinal re-fusion	Re-fusion of the spine
SB	Small bowel surgery	Incision or resection of the small bowel. Small and large bowel anastomoses are not included.
SPLE	Spleen surgery	Resection or manipulation of the spleen
TAA	Thoracic aortic surgery	Surgical procedures to manipulate the thoracic aorta
TAE	Thoracic aortic endovascular surgery	Surgical procedures to manipulate the thoracic vessels
THOR	Thoracic surgery	Other surgical procedures of the chest do not involve the heart or blood vessels. Pneumonectomy and diaphragmatic and esophageal hiatal hernia repair are included.
THYR	Thyroid and/or parathyroid surgery	Resection or manipulation of the thyroid or parathyroid gland
VARX	Varicose vein surgery of the lower limbs	Removal of a varicose vein in the lower limbs
VHYS	Vaginal hysterectomy	Hysterectomy by colpotomy or episiotomy
VSHN	Ventricular shunt	Including cerebroventricular shunting and correction and removal of shunt
XLAP	Abdominal surgery	Abdominal surgeries without manipulation of the gastrointestinal tract or biliary system

3. List of antimicrobial drugs

Drug class name	Category	Name of antimicrobial drug	Abbreviation
Penicillins	Injection	Benzylpenicillin (Inj.)	PCG
	Injection	Benzylpenicillin benzathine (Inj.)	DBECPCG
	Injection	Ampicillin (Inj.)	ABPC
	Injection	Piperacillin (Inj.)	PIPC
	Injection	Ampicillin/cloxacillin (Inj.)	ABPC/MCIPC
	Injection	Ampicillin/sulbactam (Inj.)	ABPC/SBT
	Injection	Piperacillin/tazobactam (Inj.)	PIPC/TAZ
First-generation cephalosporins	Injection	Cefazolin (Inj.)	CEZ
	Injection	Cephalothin (Inj.)	CET
Second-generation cephalosporins	Injection	Cefotiam (Inj.)	CTM
Third-generation cephalosporins	Injection	Cefotaxime (Inj.)	CTX
	Injection	Ceftazidime (Inj.)	CAZ
	Injection	Ceftriaxone (Inj.)	CTRX
	Injection	Cefmenoxime (Inj.)	CMX
	Injection	Cefoperazone/sulbactam (Inj.)	CPZ/SBT
Fourth-generation cephalosporins	Injection	Cefepime (Inj.)	CFPM
	Injection	Cefozopran (Inj.)	CZOP
	Injection	Cefpirome (Inj.)	CPR
Oxacephems	Injection	Flomoxef (Inj.)	FMOX
	Injection	Latamoxef (Inj.)	LMOX
Cephamycins	Injection	Cefminox (Inj.)	CMNX
	Injection	Cefmetazole (Inj.)	CMZ
Cephalosporin and Beta-Lactamase Inhibitor Combinations	Injection	Ceftolozane/tazobactam (Inj.)	CTLZ/TAZ
Carbapenems	Injection	Doripenem (Inj.)	DRPM
	Injection	Biapenem (Inj.)	BIPM
	Injection	Meropenem (Inj.)	MEPM
	Injection	Imipenem/cilastatin (Inj.)	IPM/CS
	Injection	Imipenem/cilastatin/relebactam (Inj.)	REL/IPM/CS
	Injection	Panipenem/betamipron (Inj.)	PAPM/BP
Monobactams	Injection	Aztreonam (Inj.)	AZT
Glycopeptides	Injection	Teicoplanin (Inj.)	TEIC
	Injection	Vancomycin (Inj.)	VCM
Oxazolidinones	Injection	Tedizolid (Inj.)	TZD
	Injection	Linezolid (Inj.)	LZD
lipopeptides	Injection	Daptomycin (Inj.)	DAP
Quinolones	Injection	Ciprofloxacin (Inj.)	CPFX
	Injection	Pazufloxacin (Inj.)	PZFX
	Injection	Lascufloxacin (Inj.)	LSFX
	Injection	Levofloxacin (Inj.)	LVFX
Aminoglycosides	Injection	Amikacin (Inj.)	AMK
	Injection	Arbekacin (Inj.)	ABK
	Injection	Isepamicin (Inj.)	ISP
	Injection	Kanamycin (Inj.)	KM
	Injection	Gentamicin (Inj.)	GM
	Injection	Dibekacin (Inj.)	DKB
	Injection	Spectinomycin	SPCM
	Injection	Tobramycin (Inj.)	TOB

Drug class name	Category	Name of antimicrobial drug	Abbreviation
Streptomycins	Injection	Streptomycin (Inj.)	SM
Tetracyclines	Injection	Tigecycline (Inj.)	TGC
	Injection	Minocycline (Inj.)	MINO
Lincomycins	Injection	Clindamycin (Inj.)	CLDM
	Injection	Lincomycin (Inj.)	LCM
Macrolides	Injection	Azithromycin (Inj.)	AZM
	Injection	Erythromycin (Inj.)	EM
Sulfonamide and Trimethoprim Combinations	Injection	Sulfamethoxazole/trimethoprim (Inj.)	ST
Imidazole derivatives	Injection	Metronidazole (Inj.)	MNZ
Antifungals	Injection	Amphotericin B (Inj.)	AMPH-B
	Injection	Liposomal amphotericin B (Inj.)	L-AMB
	Injection	Miconazole (Inj.)	MCZ
	Injection	Isavuconazole (Inj.)	ISCZ
	Injection	Itraconazole (Inj.)	ITCZ
	Injection	Fluconazole (Inj.)	FLCZ
	Injection	Posaconazole (Inj.)	PSCZ
	Injection	Fosfluconazole (Inj.)	F-FLCZ
	Injection	Voriconazole (Inj.)	VRCZ
	Injection	Caspofungin (Inj.)	CPFG
	Injection	Micafungin (Inj.)	MCFG
Penicillins	Oral	Benzylpenicillin benzathine (po)	DBECPCG
	Oral	Amoxicillin (po)	AMPC
	Oral	Ampicillin (po)	ABPC
	Oral	Bacampicillin (po)	BAPC
	Oral	Sultamicillin (po)	SBTPC
	Oral	Amoxicillin/clavulanic acid (2:1) (po)	CVA/AMPC
	Oral	Amoxicillin/clavulanic acid (14:1) (po)	CVA/ AMPC
	Oral	Ampicillin/cloxacillin (po)	ABPC/MCIPC
First-generation cephalosporins	Oral	Cefalexin/combination granules (po)	CEX
	Oral	Cefroxadine (po)	CXD
Second-generation cephalosporins	Oral	Cefaclor/combination granules (po)	CCL
	Oral	Cefotiam (po)	CTM
	Oral	Cefuroxime (po)	CXM-AX
Third-generation cephalosporins	Oral	Cefixime (po)	CFIX
	Oral	Cefcapene (po)	CFPN-PI
	Oral	Cefditoren (po)	CDTR-PI
	Oral	Cefdinir (po)	CFDN
	Oral	Ceftibuten (po)	CETB
	Oral	Cefteram (po)	CFTM-PI
	Oral	Cefpodoxime (po)	CPDX-PR
Carbapenems	Oral	Tebipenem (po)	TBPM-PI
Penems	Oral	Faropenem (po)	FRPM
Oxazolidinones	Oral	Tedizolid (po)	TZD
	Oral	Linezolid (po)	LZD

Drug class name	Category	Name of antimicrobial drug	Abbreviation
Quinolones	Oral	Ofloxacin (po)	OFLX
	Oral	Garenoxacin (po)	GRNX
	Oral	Sitafloxacin (po)	STFX
	Oral	Ciprofloxacin (po)	CPFX
	Oral	Tosufloxacin (po)	TFLX
	Oral	Norfloxacin (po)	NFLX
	Oral	Prulifloxacin (po)	PUFX
	Oral	Moxifloxacin (po)	MFLX
	Oral	Lascufloxacin (po)	LSFX
	Oral	Levofloxacin (po)	LVFX
	Oral	Lomefloxacin (po)	LFLX
Aminoglycosides	Oral	Kanamycin (po)	KM
Tetracyclines	Oral	Tetracycline (po)	TC
	Oral	Demethylchlortetracycline (po)	DMCTC
	Oral	Doxycycline (po)	DOXY
	Oral	Minocycline (po)	MINO
Lincosamides	Oral	Clindamycin (po)	CLDM
	Oral	Lincomycin (po)	LCM
Macrolides	Oral	Azithromycin (po)	AZM
	Oral	Erythromycin (po)	EM
	Oral	Clarithromycin (po)	CAM
	Oral	Josamycin (po)	JM
	Oral	Spiramycin (po)	SPM
	Oral	Acetyl-spiramycin (po)	AC-SPM
	Oral	Roxithromycin (po)	RXM
Sulfonamide and Trimethoprim Combinations	Oral	Sulfamethoxazole/trimethoprim (po)	ST
Nitroimidazole derivatives	Oral	Metronidazole (po)	MNZ
	Oral	Tinidazole	TNZ
Glycopeptide	Oral	Vancomycin (po)	VCM
Macrolide for CDI	Oral	Fidaxomicin (po)	FDX
Rifamycins	Oral	Rifaximin (po)	RFX
Antifungals	Oral	Isavuconazole (po)	ISCZ
	Oral	Itraconazole (po)	ITCZ
	Oral	Fluconazole (po)	FLCZ
	Oral	Posaconazole (po)	PSCZ
	Oral	Voriconazole (po)	VRCZ
	Oral	Flucytosine (po)	5-FC

1. Since Tinidazole and Rifaximin became available for data registration from April 2024, the data compiled includes facilities that registered 2023 data after April 2024.
2. The DDDs used for calculations are based on the values at the time of the annual report's creation.
3. The following drugs and drug classes have been added or modified this year:
   - Added Rifamycin class to the drug classes.
   - Changed Metronidazole (inj.) to the Imidazole derivatives.
   - Changed Metronidazole (oral) to the Nitroimidazole derivatives.
   - Added Tinidazole (oral) to the Nitroimidazole derivatives.
   - Added Rifaximin (oral) to the Rifamycin class.
   - Added Isavuconazole (inj.) and Isavuconazole (oral) to the antifungal drugs.

4. List of microorganisms and resistant bacteria

Current list of all major bacteria and resistant bacteria detected in clinical samples.

Major bacterium
Acinetobacter spp.
Enterobacter cloacae complex
Enterobacter spp.
Enterococcus faecalis
Enterococcus faecium
Escherichia coli
Klebsiella aerogenes
Klebsiella oxytoca
Klebsiella pneumoniae
Proteus mirabilis
Pseudomonas aeruginosa
Serratia marcescens
Staphylococcus aureus
Staphylococcus epidermidis
Streptococcus pneumoniae

Resistant bacterium
Drug-resistant *Acinetobacter* spp.*
Drug-resistant *Pseudomonas aeruginosa***
CRE: Carbapenem-Resistant *Enterobacteriaceae*
MDRA: Multidrug-resistant *Acinetobacter* spp.
MDRP: Multidrug-resistant *P. aeruginosa*
MRSA: Methicillin-resistant *S. aureus*
PRSP: Penicillin-resistant *S. pneumoniae*
VRE: Vancomycin-resistant *Enterococcus* spp.
VRSA: Vancomycin-resistant *S.aureus*
Carbapenem-resistant *Pseudomonas aeruginosa*
Fluoroquinolone-resistant *Escherichia coli*
3rd Generation Cephalosporin-resistant *Escherichia coli*
3rd Generation Cephalosporin-resistant *Klebsiella pneumoniae*

* Drug-Resistant *Acinetobacter* spp.: *Acinetobacter* spp. resistant to two classes of antibiotics among carbapenem, fluoroquinolone, aminoglycoside (intermediate or resistant to amikacin) by drug susceptibility testing (broth microdilution methods) per CLSI criteria (M100-2012)
**Drug-resistant *Pseudomonas aeruginosa*: *P. aeruginosa* resistant to two classes of antibiotics among carbapenem, fluoroquinolone, aminoglycoside (intermediate or resistant to amikacin) by drug susceptibility testing (broth microdilution methods) per CLSI criteria (M100-2012)

5. Current list of all known bacteria causing bloodstream infections

Major bacterium causing bloodstream infection
Acinetobacter spp.
Candida spp.
Candida albicans
Candida tropicalis
Candida glabrata
Candida parapsilosis
Candida krusei
Candida guilliermondii
Citrobacter spp.
CNS (including *S. epidermidis)*
Group C β-*Streptococcus*
Enterobacter spp.
Enterobacter cloacae complex
Enterococcus faecalis
Enterococcus faecium
Escherichia coli
Group G β-*Streptococcus*
Klebsiella aerogenes
Klebsiella oxytoca
Klebsiella pneumoniae
Proteus mirabilis
Pseudomonas aeruginosa
Staphylococcus aureus
Serratia marcescens
Streptococcus agalactiae
Streptococcus pneumoniae
Streptococcus pyogenes

Resistant bacterium causing bloodstream infection
Drug-resistant *Acinetobacter* spp.*
Drug-resistant *Pseudomonas aeruginosa***
CRE: Carbapenem-Resistant *Enterobacteriaceae*
MDRA: Multidrug-resistant *Acinetobacter* spp.
MDRP: Multidrug-resistant *P. aeruginosa*
MRSA: Methicillin-resistant *S. aureus*
PRSP: Penicillin-resistant *S. pneumoniae*
VRE: Vancomycin-resistant *Enterococcus* spp.
VRSA: Vancomycin-resistant *S. aureus*
Carbapenem-resistant *Pseudomonas aeruginosa*
Fluoroquinolone-resistant *Escherichia coli*
3rd Generation Cephalosporin-resistant *Escherichia coli*
3rd Generation Cephalosporin-resistant *Klebsiella pneumoniae*

* Drug-Resistant *Acinetobacter* spp.: *Acinetobacter* spp. resistant to two classes of antibiotics among carbapenem, fluoroquinolone, aminoglycoside (intermediate or resistant to amikacin) by drug susceptibility testing (broth microdilution methods) per CLSI criteria (M100-2012)
**Drug-resistant *Pseudomonas aeruginosa*: *P. aeruginosa* resistant to two classes of antibiotics among carbapenem, fluoroquinolone, aminoglycoside (intermediate or resistant to amikacin) by drug susceptibility testing (broth microdilution methods) per CLSI criteria (M100-2012)

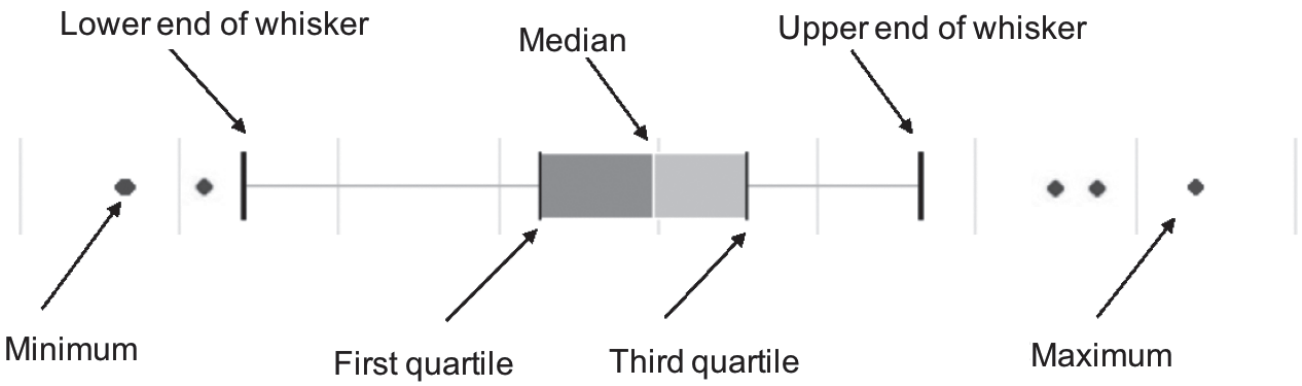
6. List of bacteria in contaminated samples

Name of bacteria
Staphylococcus spp.
Staphylococcus, coagulase negative (CNS)
Staphylococcus epidermidis
Staphylococcus saprophyticus subsp. *saprophyticus*
Staphylococcus hominis subsp. *hominis*
Staphylococcus warneri
Staphylococcus lentus
Staphylococcus auricularis
Staphylococcus simulans
Staphylococcus cohnii subsp. *cohnii*
Staphylococcus xylosus
Staphylococcus sciuri subsp. *sciuri*
Staphylococcus intermedius
Staphylococcus hyicus
Staphylococcus haemolyticus
Staphylococcus capitis subsp. *capitis*
Propionibacterium spp.
Propionibacterium acnes
Corynebacterium spp.
Corynebacterium diphtheriae
Corynebacterium jeikeium
Bacillus spp.
Bacillus cereus
Bacillus subtilis subsp. *subtilis*
Bacillus anthracis

7. How to read a box plot

Box plots were generated based on data from medical institutions.
Outliers were plotted as individual points, and the upper and lower ends of whiskers represent the maximum and minimum values of the outlier criteria.
Values falling within the box plot are not shown in the plot.
Outlier criterion (lower limit) = Q1 - 1.5 × (Q3 - Q1)
Outlier criterion (upper limit) = Q3 + 1.5 × (Q3 - Q1)

***Q1: 1st quartile, Q3: 3rd quartile**



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