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

Japan Surveillance for Infection Prevention and Healthcare Epidemiology

J-SIPHE

Annual Report 2021

J-SIPHE
感染対策連携共通プラットフォーム

2021.1-2021.12
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National Center for Global Health and Medicine, AMR Clinical Reference Center

Japan Surveillance for Infection Prevention and Healthcare Epidemiology (J-SIPHE) Annual Report 2021

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I. Overview of J-SIPHE

Background and purpose

In 2015, the World Health Organization (WHO) General Assembly adopted a global action plan on antimicrobial resistance (AMR) and called on Member States to develop their own action plans.
In response, the Government of Japan formulated an Antimicrobial Resistance (AMR) Action Plan in 2016. The AMR Action Plan calls for efforts in areas such as public awareness, education, surveillance, monitoring (drug resistance and doses of antimicrobial drugs), infection prevention and control, and antimicrobial stewardship. Regarding the prevention and control of infections, the promotion of infection prevention and control in medical and long-term nursing care, as well as the promotion of regional cooperation are also advocated.
Based on these circumstances, the Antimicrobial Resistance (AMR) Clinical Reference Center, a project commissioned by the Ministry of Health, Labour and Welfare, took the initiative in developing a system called the Japan Surveillance for Infection Prevention and Healthcare Epidemiology (J-SIPHE; hereinafter, called "this system") to be used in countermeasures against AMR at medical institutions.
The purpose of this system is to aggregate information regarding infection treatment, measures, and structures for infection prevention, healthcare-associated infection information, major/resistant bacteria information, information on bloodstream infections due to these bacteria, and antimicrobial drug information at participating sites nationwide, and to help these participating sites and their local communities to utilize this information. It also serves as a benchmark for Japan through the aggregation of data.

Operation

The system is operated and managed by the AMR Clinical Reference Center in the National Center for Global Health and Medicine. The AMR Clinical Reference Center was established in April 2017 as a project commissioned by the Ministry of Health, Labour and Welfare, to promote measures against antimicrobial resistance (AMR) based on the "Antimicrobial Resistance (AMR) Action Plan." In addition, the J-SIPHE expert committee, which comprises experts in various fields related to this system deliberates surveillance items, rules, research, etc. from a professional viewpoint.

Registered data

This system accumulates multiple sets of data on antimicrobial resistance (AMR) measures registered by participating sites. These accumulated data are used in various efforts such as use at participating sites, community-based infection control networks, and in a network of related sites.
In order to effectively utilize the accumulated data, the AMR Clinical Reference Center, which operates this system, organizes and aggregates data on an annual basis, and prepares an annual report to provide information (public information) to medical institutions.
The important accumulated data are stored by the J-SIPHE office at the Center, and utilized for research and other activities related to antimicrobial resistance (AMR) measures under the audit of the J-SIPHE experts.

Annual report

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

1. Raw data* from January to December of the previous year at the time of data aggregation are used.
2. Raw data* of participating sites that registered data at least one month during the target period are used.
3. The annual report adopts a unique method of aggregation/representation.
4. Some data registration items are not 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**

II. Data registration items

The J-SIPHE data registration items are listed below.

Basic information (Site information)

- Number of beds
- Additional reimbursement for infection prevention category
- Presence/absence of additional reimbursement for antimicrobial stewardship support
- Presence/absence of consultation system for infections
- Working status of physicians in a consultation system for infections
- Patient-days
- Patient-days by ward
- Hospitalizations
- Average length of stay

AST-related/Infection treatment information

- Number of infectious disease consultant physicians
- Number of infectious disease specialists among infectious disease consultant physicians
- Number of pediatric infectious disease specialists among infectious disease consultant physicians
- Number of infectious disease consultations (recorded in medical charts)
- Number of bedside consultations among infectious disease consultations (recorded in medical charts)
- Number of consultations for children among infectious disease consultations (recorded in medical charts)
- Presence/absence of AST system
- Number of healthcare professionals belonging to the AST
- Number of qualified pharmacists belonging to the AST
- Number of consultations with the AST
- Number of proposals from the AST
- Presence/absence of system for starting incubation of collected blood culture bottles
- Presence/absence of system for conducting Gram staining for positive blood culture
- Presence/absence of monitoring system by the Department of Infectious Diseases, ICT, and AST for patients with positive blood cultures
- Antimicrobial agents adopted in the antimicrobial stewardship support program
- Antimicrobial agents subject to antimicrobial stewardship support
- Details of the antimicrobial stewardship support
- Number of patients starting treatment with drugs subject to TDM
- Number of patients undergoing TDM among drugs subject to TDM
- Presence/absence of staff training aimed at antimicrobial stewardship
- Number of staff training sessions for antimicrobial stewardship

AMU information

- Dose of each antimicrobial drug used
- Days of each antimicrobial drug used
- Number of patients using each antimicrobial drug

ICT-related information

- Number of healthcare professionals belonging to the ICT
- Number of qualified medical professionals belonging to the ICT
- Monitoring system for resistant bacteria detected cases
- Monitoring system for influenza-like symptom cases
- Number of patients with influenza-like symptoms
- Monitoring system for gastroenteritis
- Number of patients with gastroenteritis symptoms
- Amount of hand sanitizer used (by ward)
- Number of hand hygiene moments upon entry into rooms (by job type/ward)
- Number of hand hygiene events upon entry into rooms (by job type/ward)
- Score of the WHO Hand Hygiene Self-Assessment Framework

CLABSI/ CAUTI information (HAI information)

- Total days of central line use (by ward)
- Number of episodes of LCBI/CSEP (by ward)
- Total days of urethral catheters used (by ward)
- Number of cases of CAUTI (by ward)

SSI information (HAI information)

- Surgical procedure code
- Presence/absence of endoscope
- Number of surgeries
- Number of SSI (by risk index)

NICU information (HAI information)

- Number of beds in the NICU
- Number of beds in the GCU
- Presence/absence of pediatric surgery
- Presence/absence of cardiovascular surgery
- Presence/absence of neurosurgery
- Presence/absence of MRSA active surveillance system
- Frequency of MRSA active surveillance
- Number of newly detected MRSA cases
- Presence/absence of monitoring of the number of device-related infections
- Total days of central line used (by birth weight category)
- Number of LCBI (by birth weight category)
- Number of CSEP (by birth weight category)

Microorganisms and resistant bacteria information

- Number of patients with a positive diagnostic test for CDI
- Primary detection methods for CDI diagnosis
- Number of tests performed for CDI diagnosis
- Number of total detections, new detections, and in-hospital detections by major bacterium
- Number of total detections, new detections, and in-hospital detections by resistant bacterium
- Total number of episodes and number of episodes of nosocomial bloodstream infection by major bacterium
- Total number of episodes and number of episodes of nosocomial bloodstream infection by resistant bacterium
- Number of patients with MRSA detected by type of sample
- Number of patients with *S. aureus detected* by type of samples
- Number of blood cultures submitted from patients aged 15 years or older
- Number of submitted blood cultures with only one set from patients aged 15 years or older
- Number of blood culture sets with positive results submitted from patients aged 15 years or older
- Number of contaminated blood culture sets submitted from patients aged 15 years or older
- Number of blood cultures submitted from patients aged younger than 15 years old
- Number of submitted blood cultures with only one set from patients aged younger than 15 years old
- Number of blood culture sets with positive results submitted from patients aged younger than 15 years old
- Number of contaminated blood culture sets submitted from patients aged younger than 15 years old

***Of the above items, some data are not included in the annual report due to insufficient information, etc.**

III. 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 through December 2021 from sites that had been registered as of August 25, 2022, among sites approved for participation by December 31, 2021.
For information on how to read box plots and explanations of abbreviations, see "How to read box plots" in "Reference at the end of the document."

Basic information (Site information)

The table below shows the basic information from participating sites as of December 31, 2021.

Table 1 Participating sites

Item	Participating sites	Additional reimbursement for infection prevention 1	Additional reimbursement for infection prevention 2	Sites not claiming additional reimbursement for infection prevention
Total	818	66.9(%)	32.2(%)	1(%)
AST-related/Infectious disease treatment information	421	81.5(%)	17.8(%)	0.7(%)
AMU information	785	67.5(%)	31.7(%)	0.8(%)
ICT-related information	534	70.2(%)	28.8(%)	0.9(%)
HAI information	349	82.2(%)	17.5(%)	0.3(%)
CLABS/ CAUTI information	285	82.8(%)	16.8(%)	0.4(%)
SSI information	237	85.7(%)	14.3(%)	0(%)
NICU information	55	85.5(%)	14.5(%)	0(%)
Microorganisms and resistant bacteria information	651	68.2(%)	31.2(%)	0.6(%)

(Based on data from participating sites as of December 31, 2021)
* "Participating sites" indicates the number of sites approved for participation by December 31, 2021.
* "Additional reimbursement for infection prevention 1" indicates the proportion of sites where the Additional reimbursement for infection prevention 1 is calculated.
* "Additional reimbursement for infection prevention 2" indicates the proportion of sites where the Additional reimbursement for infection prevention 2 is calculated.
* "Sites not claiming additional reimbursement for infection prevention" indicates the proportion of sites where an additional reimbursement for infection prevention is not calculated.
* At least one item was arbitrarily selected.
  Note: The additional reimbursement for infection prevention category was changed to the additional reimbursement for improvement of infection prevention category, due to the revision of medical service fees in April 2022. Additional reimbursement for infection prevention 3 was newly added.

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/month	35	184	301	480	1275
	Patient-days/month	562.7	4227.2	6866.3	10892.9	32136.8
	Hospitalizations/month	8.3	140.3	372	826	2335.5
	Average length of stay/month	2.8	11.8	14	19.7	695
AST-related/Infection treatment information	Number of beds/month	35	231.9	357	512.2	1275
	Patient-days/month	565.8	4815.7	7408.7	11481.2	32136.8
	Hospitalizations/month	10.2	251.8	532.8	987.6	2199.9
	Average length of stay/month	5	11.6	13.2	16.8	429.3

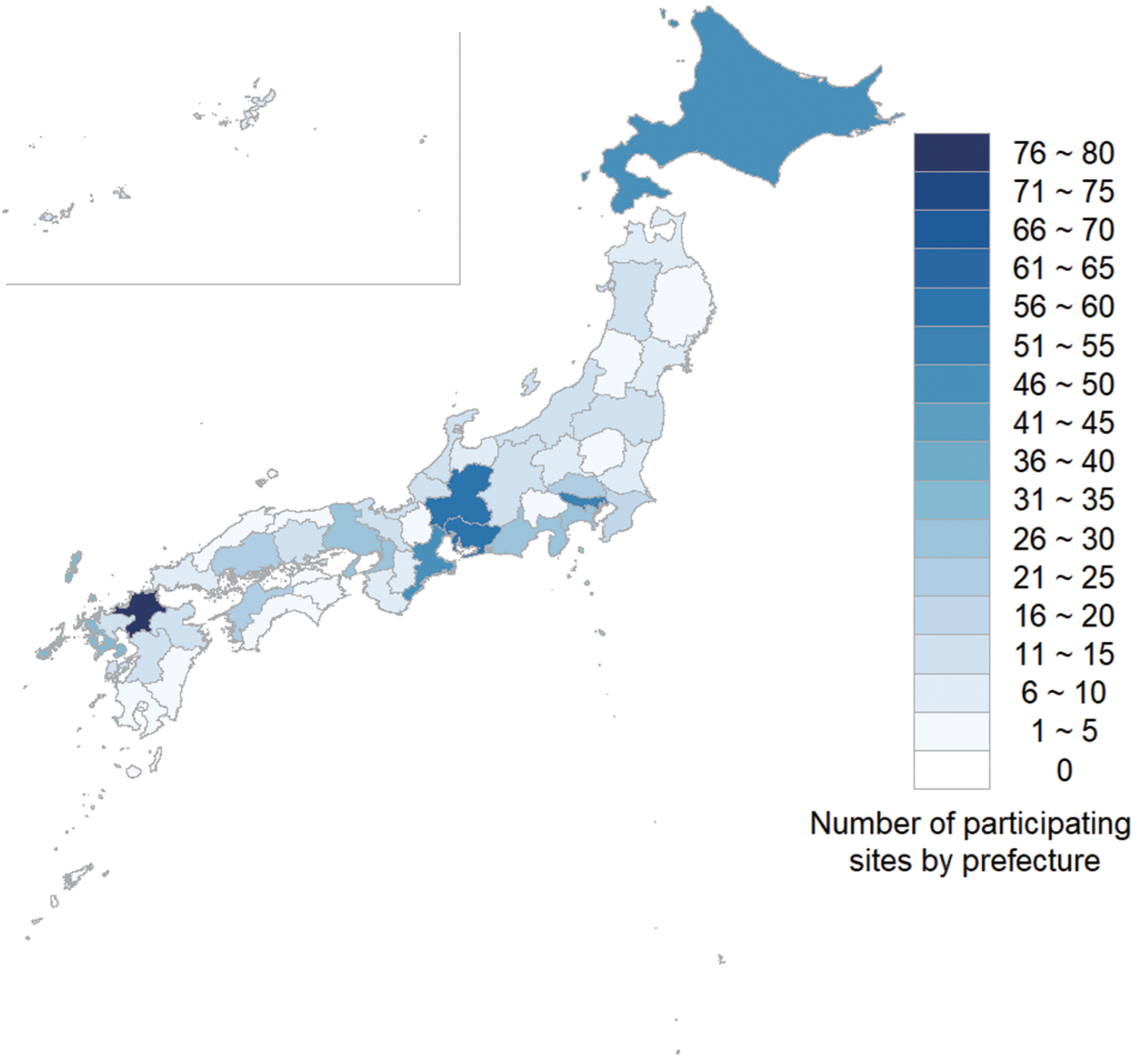
Item	Index	Minimum	1st quartile	Median	3rd quartile	Maximum
AMU information	Number of beds/month	35	187.5	304	484.5	1275
	Patient-days/month	402.6	4066.5	6404.2	10534.1	32136.8
	Hospitalizations/month	8.3	148.2	378.8	843.6	2335.5
	Average length of stay/month	2.8	11.8	13.9	19.6	695
HAI information	Number of beds/month	35	213	331	500	1160
	Patient-days/month	565.8	4724.2	7185.1	10925.1	25036.7
	Hospitalizations/month	23.7	238.9	479.7	958.6	2094.2
	Average length of stay/month	5	11.3	13.1	17	343.9
CLABSI/ CAUTI information	Number of beds/month	35	210	329	500	1160
	Patient-days/month	565.8	4696.5	7265.9	10742.1	25036.7
	Hospitalizations/month	23.7	225	505	906.2	2094.2
	Average length of stay/month	5	11.4	13.2	17.2	343.9
NICU information	Number of beds/month	50	260	473	615	1160
	Patient-days/month	944.2	5714.7	9053.8	13498.7	24629.7
	Hospitalizations/month	23.7	364.9	801.8	1151.7	1965.6
	Average length of stay/month	7.2	11.1	12.3	13.7	33.9
SSI information	Number of beds/month	45	227.5	360	504	1160
	Patient-days/month	691.7	4972.1	7527.7	11417.7	25036.7
	Hospitalizations/month	23.7	306.4	554.2	1022.6	1965.6
	Average length of stay/month	5	11.1	12.8	15.9	225.8
ICT-related information	Number of beds/month	35	189.5	306	484.5	1275
	Patient-days/month	402.6	4071.8	6578.8	10515.6	32136.8
	Hospitalizations/month	8.3	153.8	395.2	843.6	2335.5
	Average length of stay/month	5	11.8	13.9	19.4	695
Microorganisms and resistant bacteria information	Number of beds/month	35	191	305	488.5	1275
	Patient-days/month	565.8	4126	6529.4	10677.8	32136.8
	Hospitalizations/month	8.3	158.7	388.9	843.6	2335.5
	Average length of stay/month	5	11.7	13.9	19.6	695

(Based on data from January to December 2021, as of August 25, 2022)

* Sites with registration of basic 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 inpatients 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 hospital stay for each registered month, and dividing the result by the number of registered months.

Distribution of participating sites

Figure 1 Geographical distribution of participating sites



(Based on data from participating sites as of December 31, 2021)

Table 3 Participating sites subject to aggregation by prefecture

Prefecture code	Prefecture	Participating sites	Additional reimbursement for infection prevention 1	Additional reimbursement for infection prevention 2	Sites not claiming additional reimbursement for infection prevention
1	Hokkaido	49	79.6(%)	16.3(%)	4.1(%)
2	Aomori	8	62.5(%)	25(%)	12.5(%)
3	Iwate	1	100(%)	0(%)	0(%)
4	Miyagi	10	70(%)	30(%)	0(%)
5	Akita	11	72.7(%)	27.3(%)	0(%)
6	Yamagata	2	100(%)	0(%)	0(%)
7	Fukushima	13	69.2(%)	23.1(%)	7.7(%)
8	Ibaraki	7	100(%)	0(%)	0(%)
9	Tochigi	5	100(%)	0(%)	0(%)
10	Gunma	7	85.7(%)	14.3(%)	0(%)
11	Saitama	24	75(%)	25(%)	0(%)
12	Chiba	19	89.5(%)	5.3(%)	5.3(%)
13	Tokyo	52	82.7(%)	17.3(%)	0(%)
14	Kanagawa	26	88.5(%)	11.5(%)	0(%)
15	Niigata	12	66.7(%)	33.3(%)	0(%)
16	Toyama	7	85.7(%)	14.3(%)	0(%)
17	Ishikawa	13	61.5(%)	38.5(%)	0(%)
18	Fukui	13	53.8(%)	46.2(%)	0(%)
19	Yamanashi	3	66.7(%)	33.3(%)	0(%)
20	Nagano	15	93.3(%)	6.7(%)	0(%)
21	Gifu	57	42.1(%)	57.9(%)	0(%)
22	Shizuoka	27	70.4(%)	29.6(%)	0(%)
23	Aichi	56	66.1(%)	32.1(%)	1.8(%)
24	Mie	46	47.8(%)	47.8(%)	4.3(%)
25	Shiga	2	100(%)	0(%)	0(%)
26	Kyoto	13	61.5(%)	38.5(%)	0(%)
27	Osaka	28	92.9(%)	7.1(%)	0(%)
28	Hyogo	28	64.3(%)	35.7(%)	0(%)
29	Nara	6	100(%)	0(%)	0(%)
30	Wakayama	9	66.7(%)	33.3(%)	0(%)
31	Tottori	4	75(%)	25(%)	0(%)
32	Shimane	4	100(%)	0(%)	0(%)
33	Okayama	12	83.3(%)	16.7(%)	0(%)
34	Hiroshima	24	79.2(%)	20.8(%)	0(%)
35	Yamaguchi	7	100(%)	0(%)	0(%)
36	Tokushima	4	100(%)	0(%)	0(%)
37	Kagawa	3	100(%)	0(%)	0(%)
38	Ehime	21	66.7(%)	33.3(%)	0(%)
39	Kochi	4	75(%)	25(%)	0(%)
40	Fukuoka	78	42.3(%)	57.7(%)	0(%)
41	Saga	14	42.9(%)	57.1(%)	0(%)
42	Nagasaki	33	33.3(%)	66.7(%)	0(%)
43	Kumamoto	12	66.7(%)	33.3(%)	0(%)
44	Oita	13	38.5(%)	61.5(%)	0(%)
45	Miyazaki	4	100(%)	0(%)	0(%)
46	Kagoshima	3	100(%)	0(%)	0(%)
47	Okinawa	9	77.8(%)	22.2(%)	0(%)

(Based on data from January to December 2021, as of August 25, 2022)

* "Participating sites" indicates the number of sites approved for participation by December 31, 2021.
* "Additional reimbursement for infection prevention 1" indicates the proportion of sites where the Additional reimbursement for infection prevention 1 is calculated.
* "Additional reimbursement for infection prevention 2" indicates the proportion of sites where the Additional reimbursement for infection prevention 2 is calculated.
* "Sites not claiming additional reimbursement for infection prevention" indicates the proportion of sites where an additional reimbursement for infection prevention is not calculated.

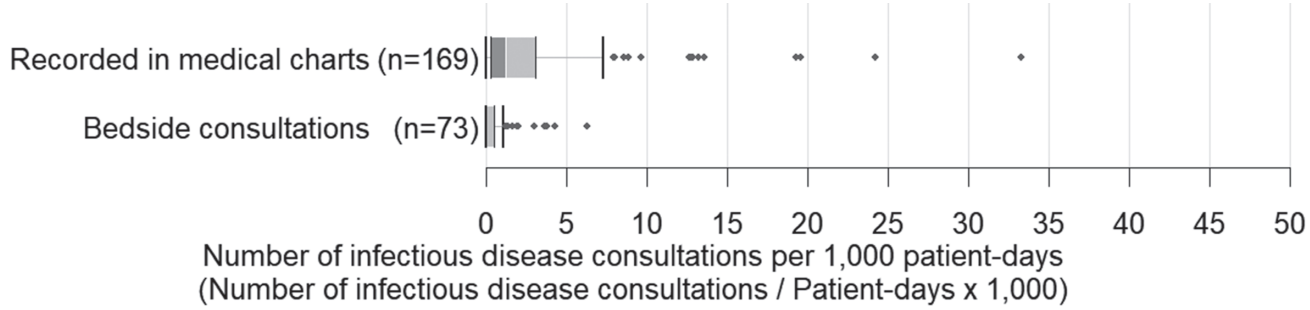
Note: The additional reimbursement for infection prevention category was changed to the additional reimbursement for improvement of infection prevention category, due to the revision of medical service fees in April 2022. Additional reimbursement for infection prevention 3 was newly added.

AST-related/Infectious disease treatment information

The data were aggregated and calculated using the registered data for AST-related/infection treatment information of sites that participated by December 31, 2021.

Number of infectious disease consultations per 1,000 patient-days

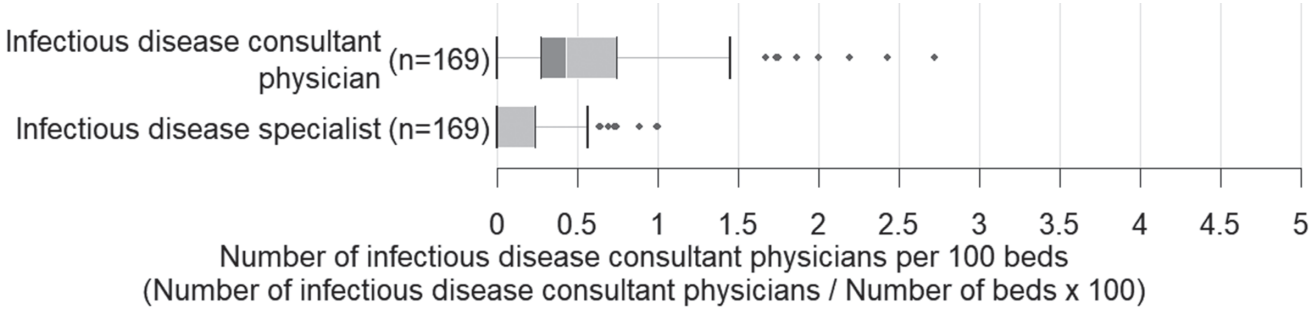
Figure 2 Distribution of the number of infectious disease consultations per 1,000 patient-days



(Based on data from January to December 2021, as of August 25, 2022)
* The value was obtained by dividing the number of infectious disease consultations by patient-days and multiplying the result by 1,000.
* "Recorded in medical charts" represents consultations with records in medical charts.
* "Bedside consultations" include consultations conducted up to bedside consultation, among cases recorded in medical charts.

Number of infectious disease consultant physicians per 100 beds

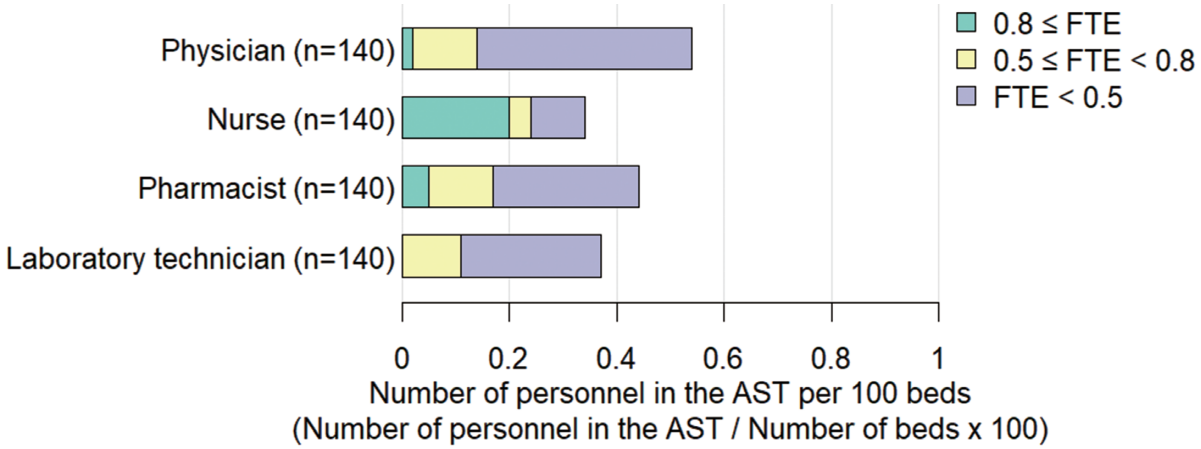
Figure 3 Distribution of the number of infectious disease consultant physicians per 100 beds



(Based on data from January to December 2021, as of August 25, 2022)
* 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 specialist is an infectious disease consultant who has a specialist license for infectious diseases.

Number of personnel in the AST by job type per 100 beds

Figure 4 Number of personnel in the AST by job type per 100 beds

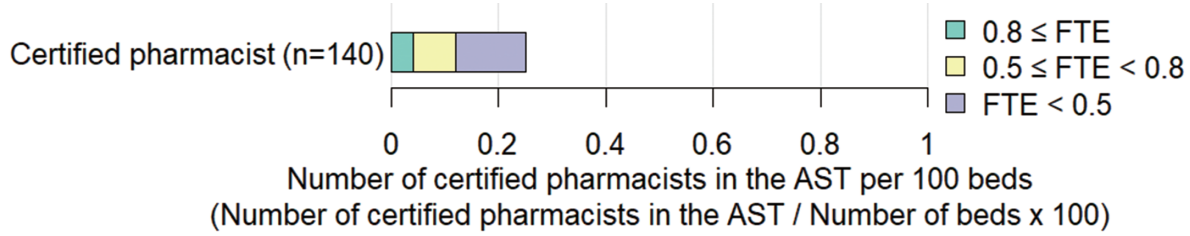


(Based on data from January to December 2021, as of August 25, 2022)

* The value was obtained by dividing the number of personnel belonging to the AST by the number of beds and multiplying the result by 100.
* The job types are classified into “physician,” “nurse,” “pharmacist,” and “laboratory technician”.
* Dedicated staff (0.8 < FTE) devote 80% or more of their working hours, regular staff (0.5 <FTE < 0.8)devote 50% or more of their working hours, and concurrent workers (FTE < 0.5) are also engaged in work for routine operations.
* If staff members in each job type do not belong to AST, the corresponding number at the site was counted as 0.

Number of certified pharmacists in the AST per 100 beds

Figure 5 Number of certified pharmacists in the AST per 100 beds

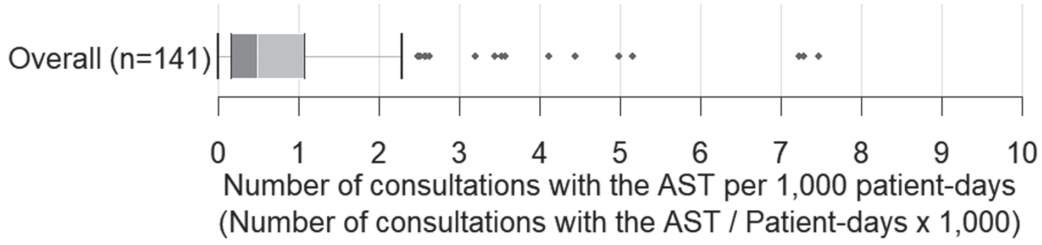


(Based on data from January to December 2021, as of August 25, 2022)

* The value was obtained by dividing the number of certified pharmacists per 100 beds in the AST by the number of beds and multiplying the result by 100.
* A certified pharmacist indicates a pharmacist who has certification for antimicrobial chemotherapy or infection control, or as an infection control specialist.
* A double-licensed person is counted as a single individual.
* Dedicated staff (0.8 < FTE) devote 80% or more of their working hours, regular staff (0.5 <FTE < 0.8)devote 50% or more of their working hours, and concurrent workers (FTE < 0.5) are also engaged in work for routine operations.
* If no certified pharmacists belong to the AST, the number at the site was counted as 0.

Number of consultations with the AST per 1,000 patient-days

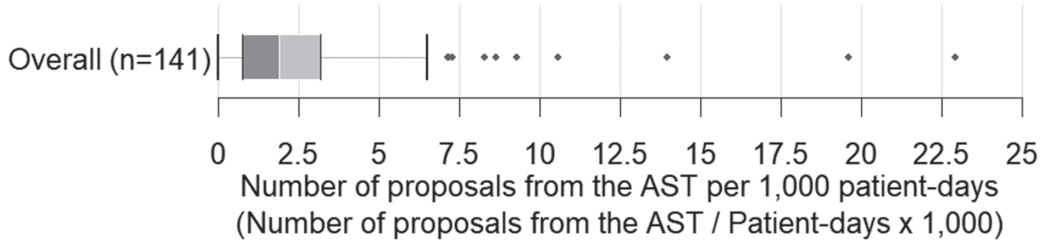
Figure 6 Distribution of the number of consultations with the AST per 1,000 patient-days



(Based on data from January to December 2021, as of August 25, 2022)
* 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 feedback (introduction, discontinuation, or change of antimicrobials) by an AST was provided, upon consultation/inquiry from attending physicians, etc.
* Note that one patient is counted only once.

Number of proposals from the AST per 1,000 patient-days

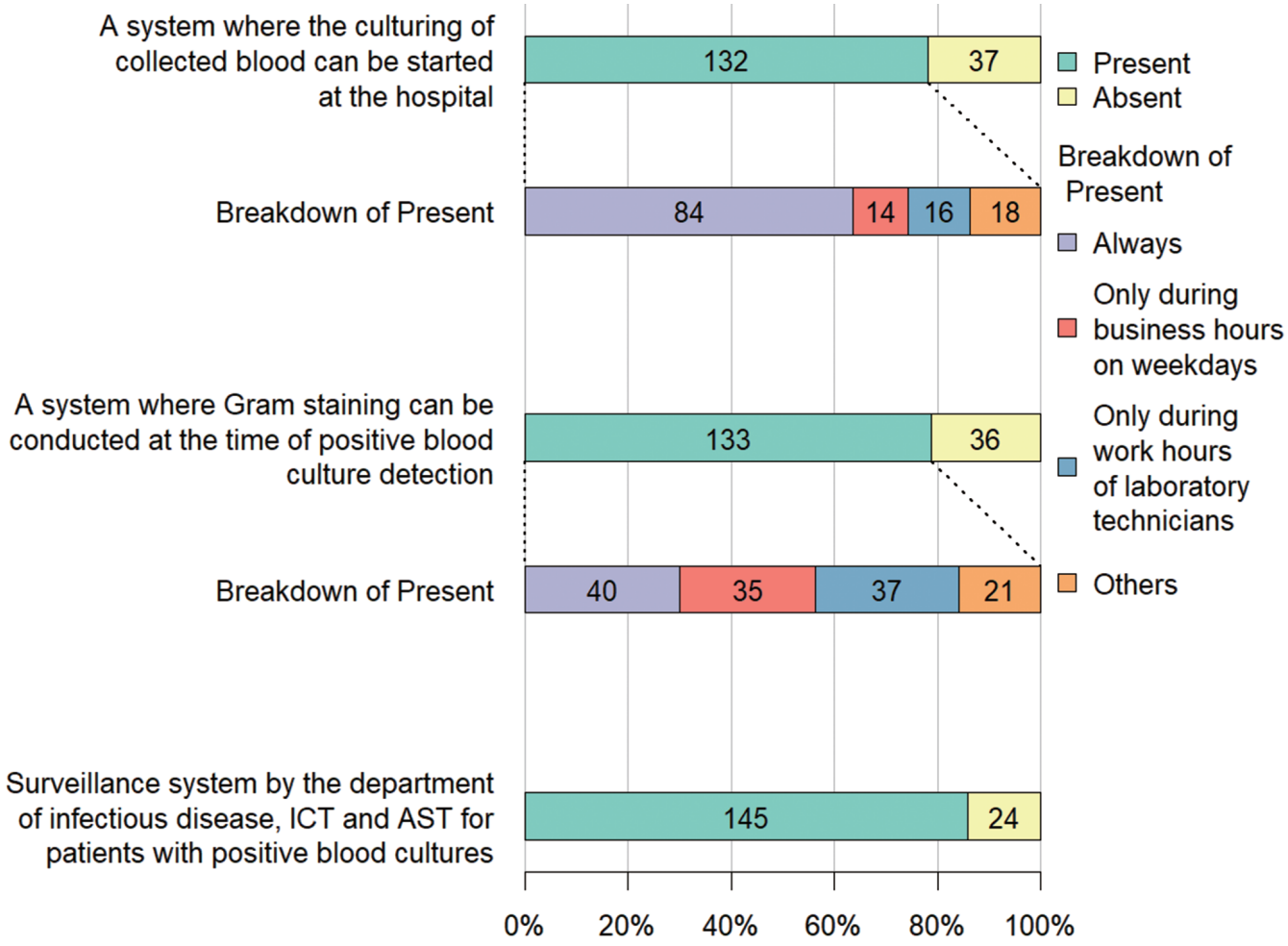
Figure 7 Distribution of the number of proposals from the AST per 1,000 patient-days



(Based on data from January to December 2021, as of August 25, 2022)
* The value was obtained by dividing the number of proposals from the AST by patient-days and multiplying the result by 1,000.
* The number of proposals from the AST refers to the number of cases in which antimicrobial stewardship was proposed by the AST, based on monitoring of the use of specified antimicrobials/bacteremia without consultations from attending physicians.
* Note that one patient is counted only once.

Blood culture testing system

Figure 8 Proportion of implementation of a blood culture testing system

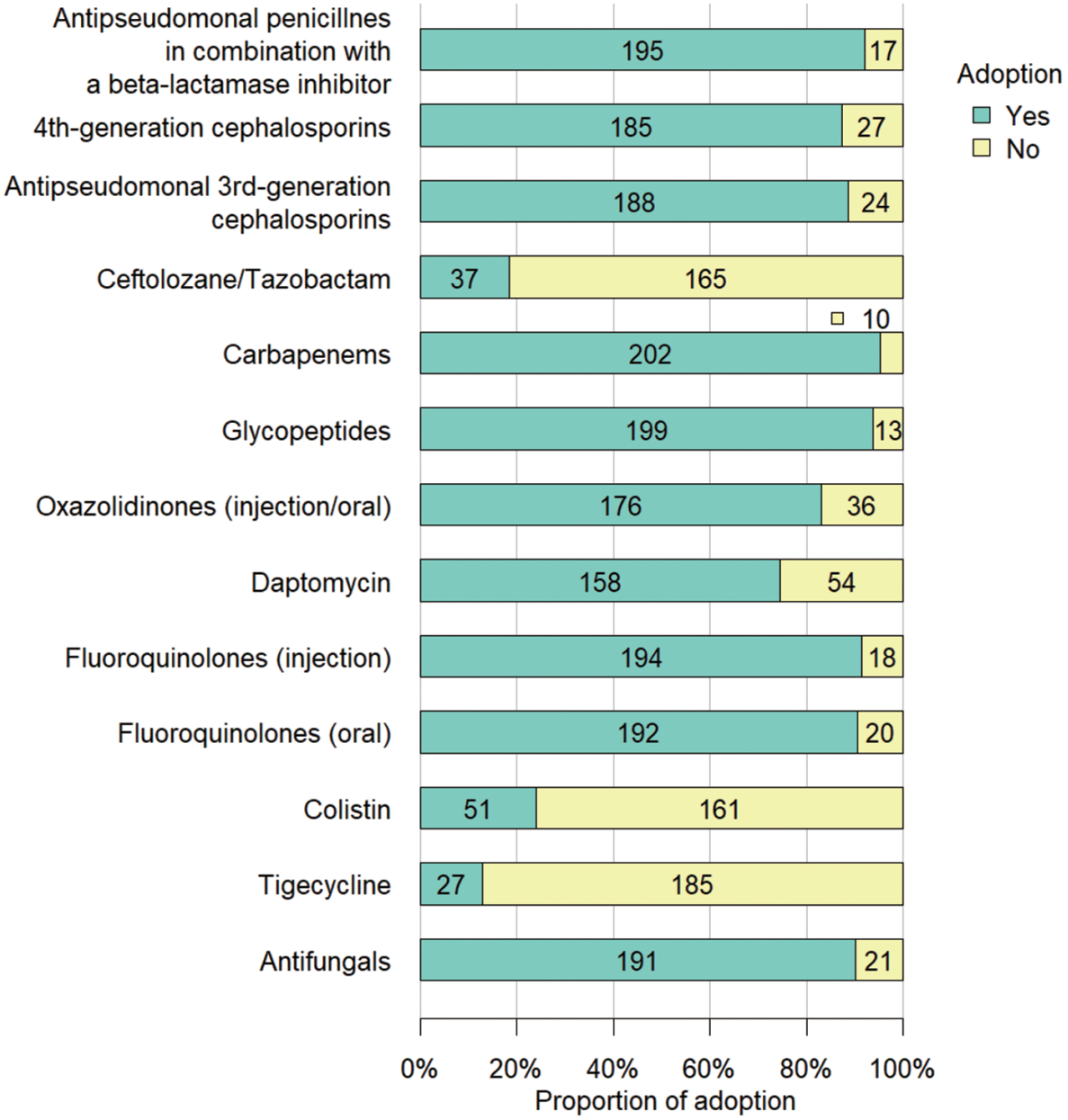


(Based on data from January to December 2021, as of August 25, 2022)

* Proportion of implementation of a system where the culturing of collected blood can be started at the hospital.
* Proportion of implementation of a system where Gram staining can be conducted at the time of positive blood culture detection.

Adoption of drugs subject to antimicrobial stewardship

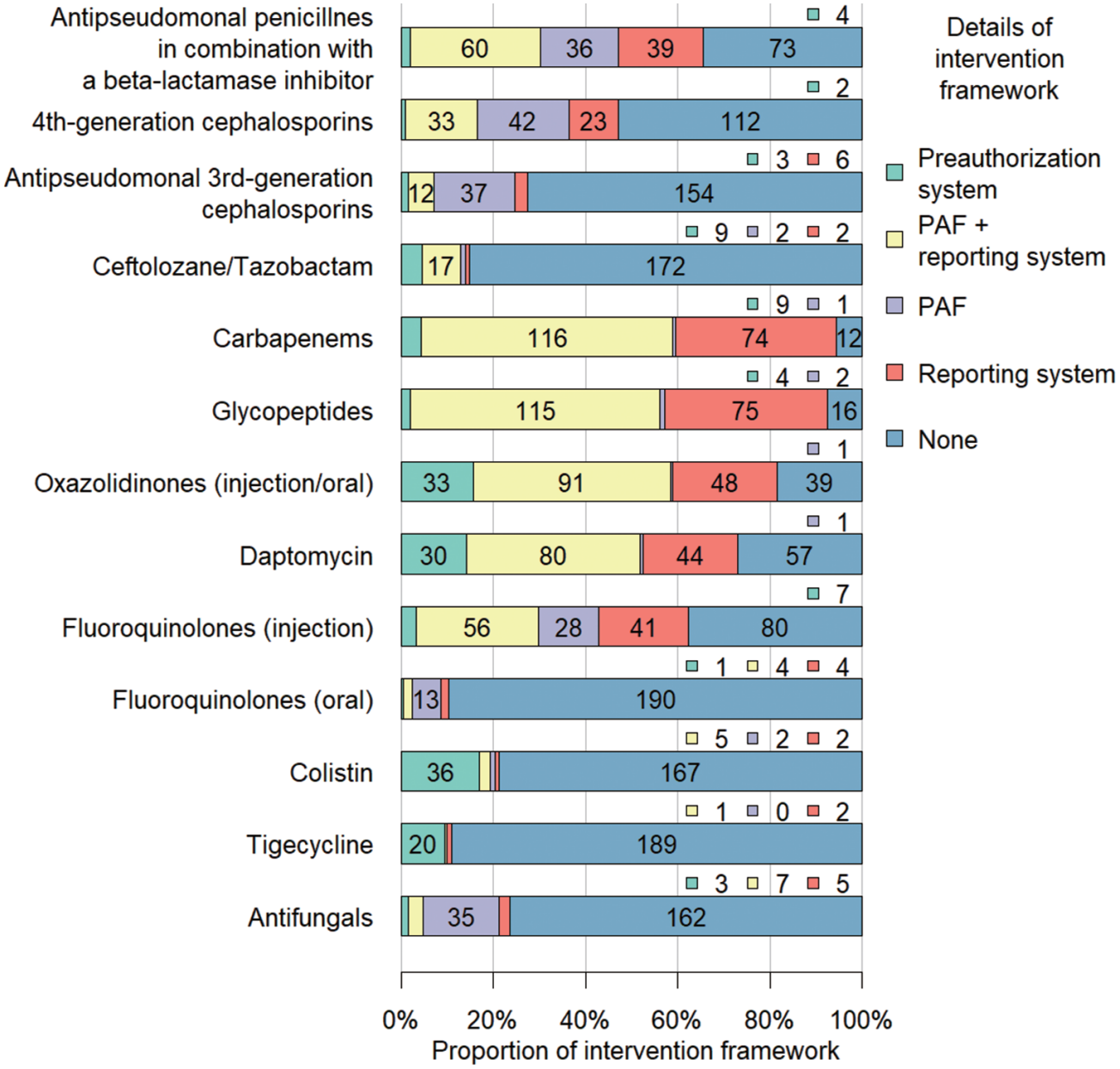
Figure 9 Proportion of adoption of antimicrobial drugs subject to antimicrobial stewardship



(Based on data from January to December 2021, as of August 25, 2022)
* Proportion of adoption by drug category.

Status of antimicrobial stewardship intervention framework

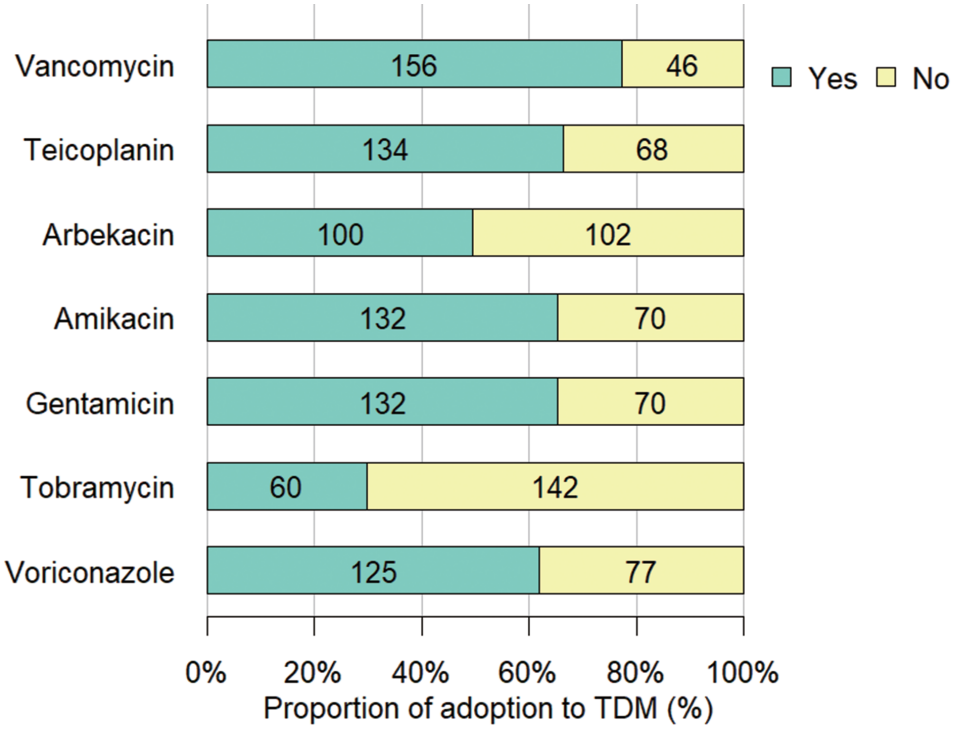
Figure 10 Proportion of antimicrobial stewardship intervention framework



(Based on data from January to December 2021, as of August 25, 2022)
* Proportion of intervention framework by drug category.
* PAF stands for prospective audit and feedback in infection treatment.

Adoption of drugs subject to TDM

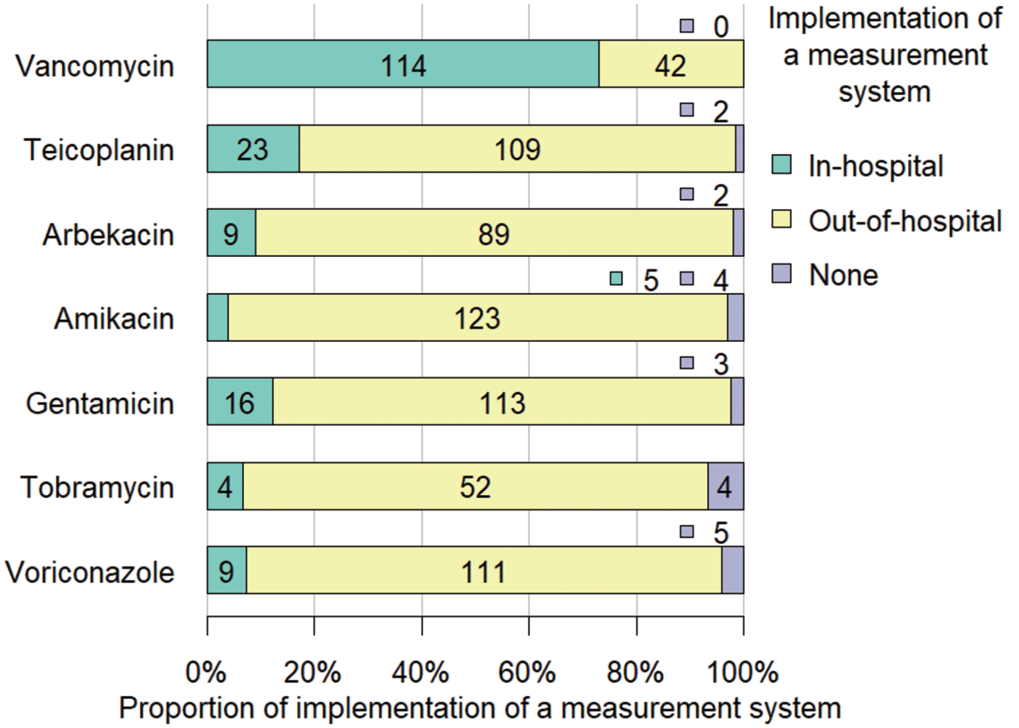
Figure 11 Proportion of adoption of drugs subject to TDM



(Based on data from January to December 2021, as of August 25, 2022)
* Proportion of adoption by drug category of TDM.

Measurement system for the blood concentration of drugs subject to TDM

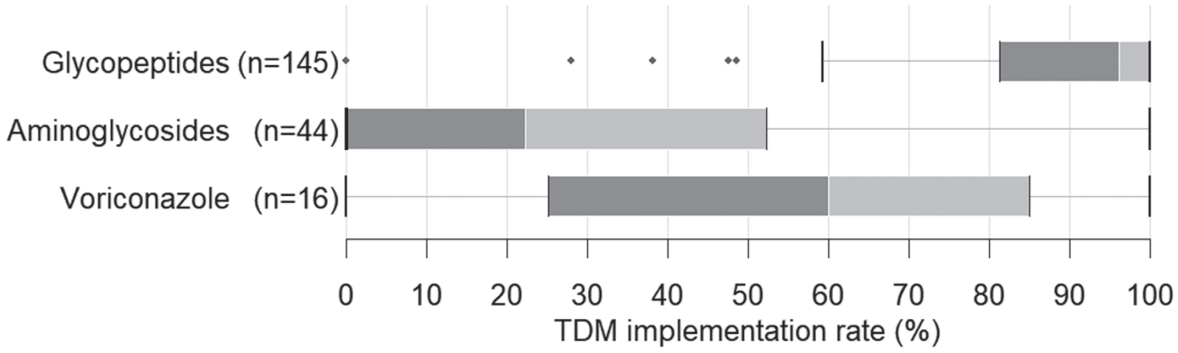
Figure 12 Proportion of a measurement system for the blood concentration of drugs subject to TDM



(Based on data from January to December 2021, as of August 25, 2022)
* 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.”

TDM implementation rate

Figure 13 Distribution of the TDM implementation rate



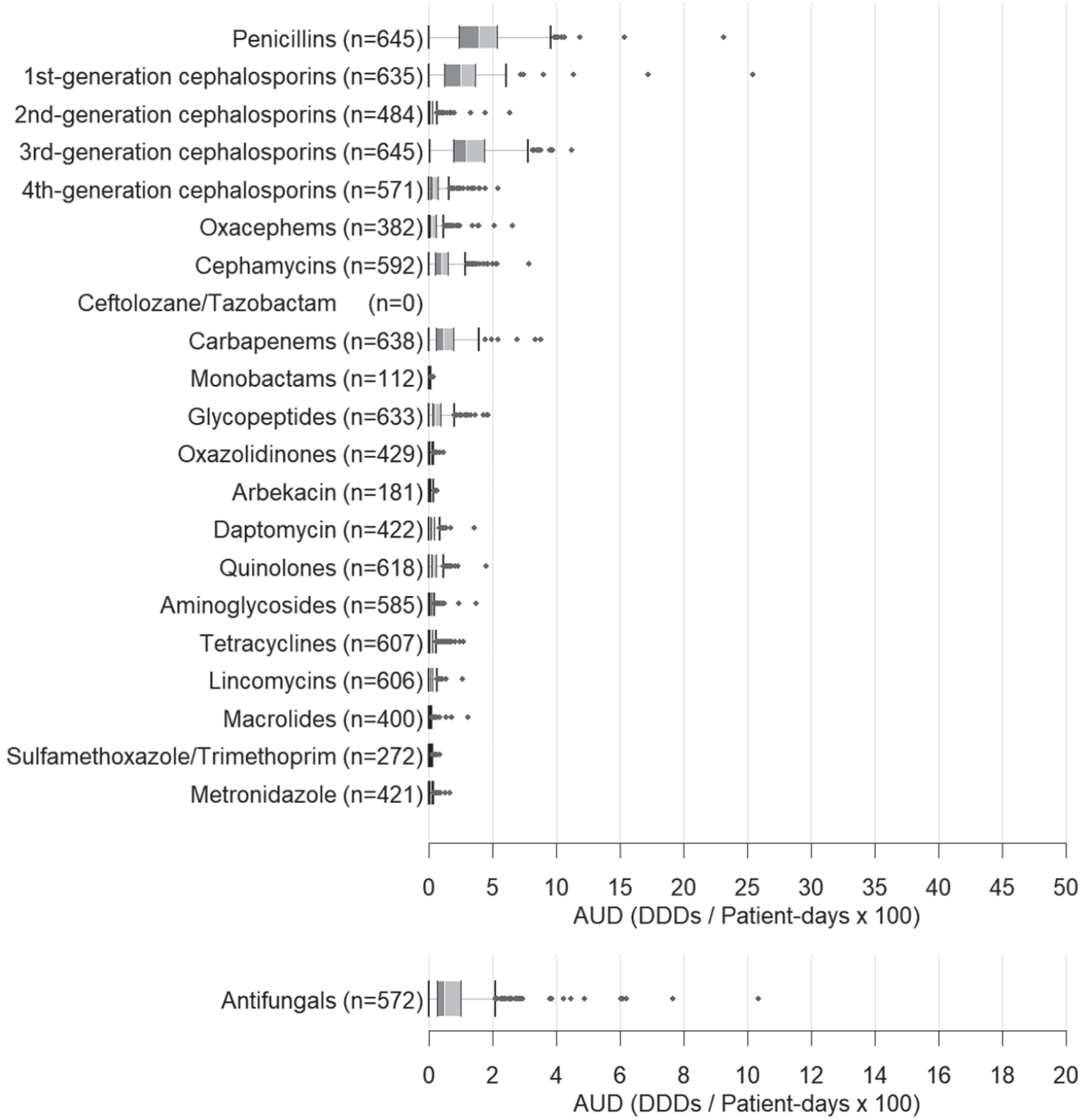
(Based on data from January to December 2021, as of August 25, 2022)
* Proportion of the number of patients undergoing TDM, among those who started antimicrobial drugs.
* Data of sites with 5 or more patients who started administration of the antimicrobial drug during the target period were included.

AMU information

The data were aggregated and calculated using an application, using data extracted from the "Inpatient EF Integration File" within the registered AMU information of sites that participated by December 31, 2021.

AUD (injection)

Figure 14 Distribution of AUD (injection)

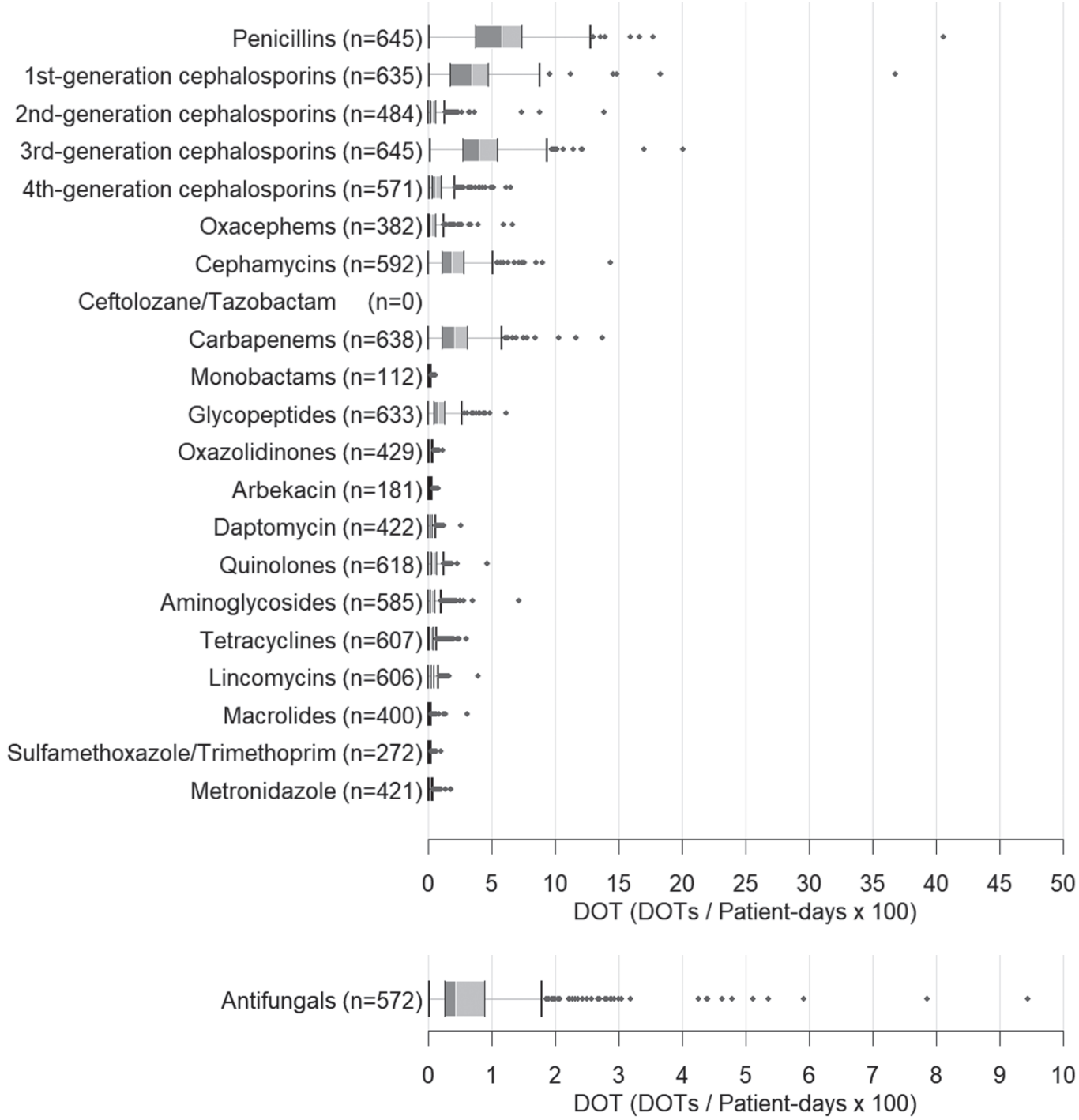


(Based on data from January to December 2021, as of August 25, 2022)

* The value was obtained by dividing the DDDs (dose/DDD) 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 for drug class/category.

DOT (injection)

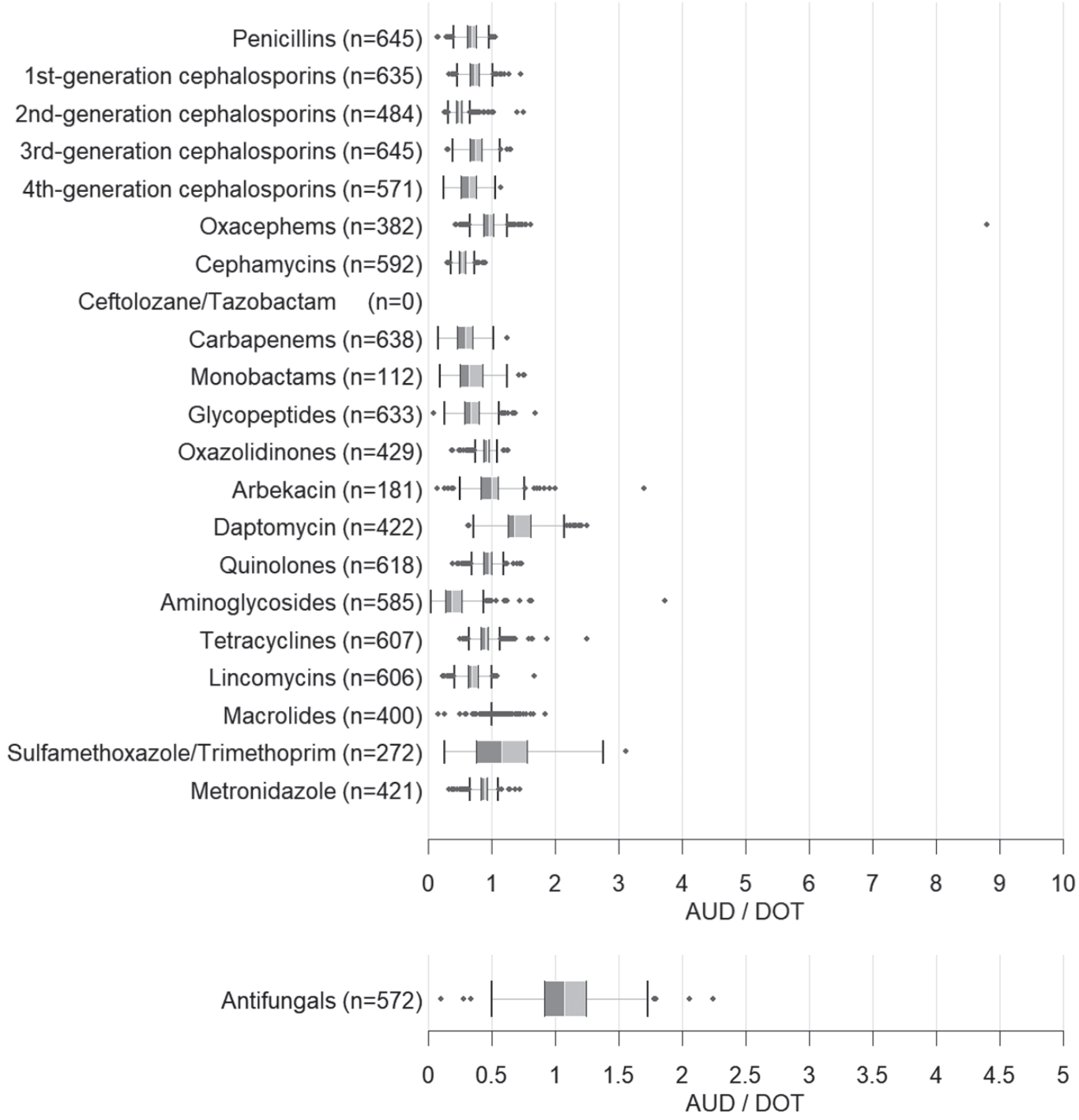
Figure 15 Distribution of DOT (injection)



(Based on data from January to December 2021, as of August 25, 2022)
* The value was obtained by dividing the total treatment days 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 for drug class/category.

AUD/ DOT (injection)

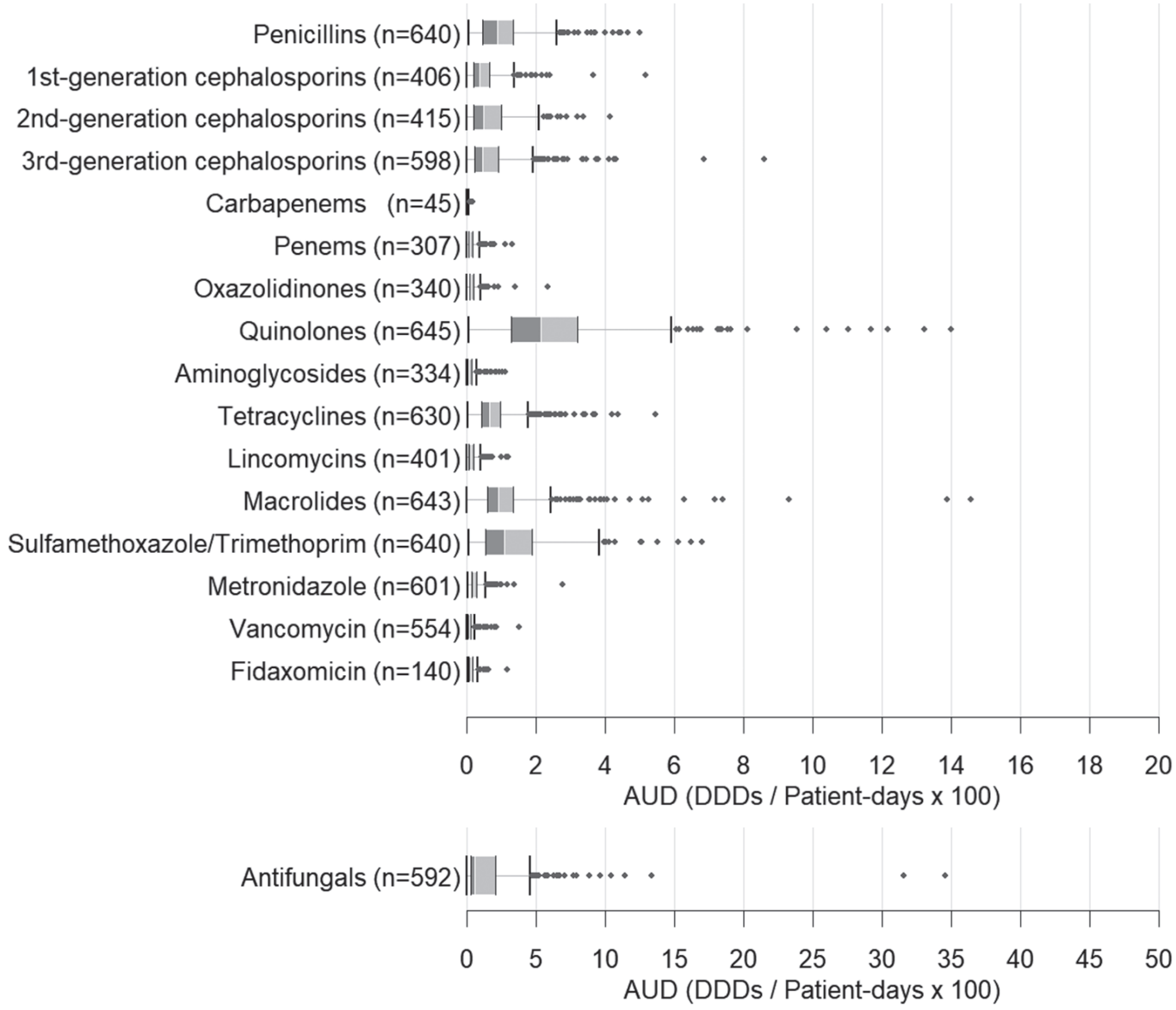
Figure 16 Distribution of AUD/ DOT



(Based on data from January to December 2021, as of August 25, 2022)
* 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 for drug class/category.

AUD (oral)

Figure 17 Distribution of AUD (oral)

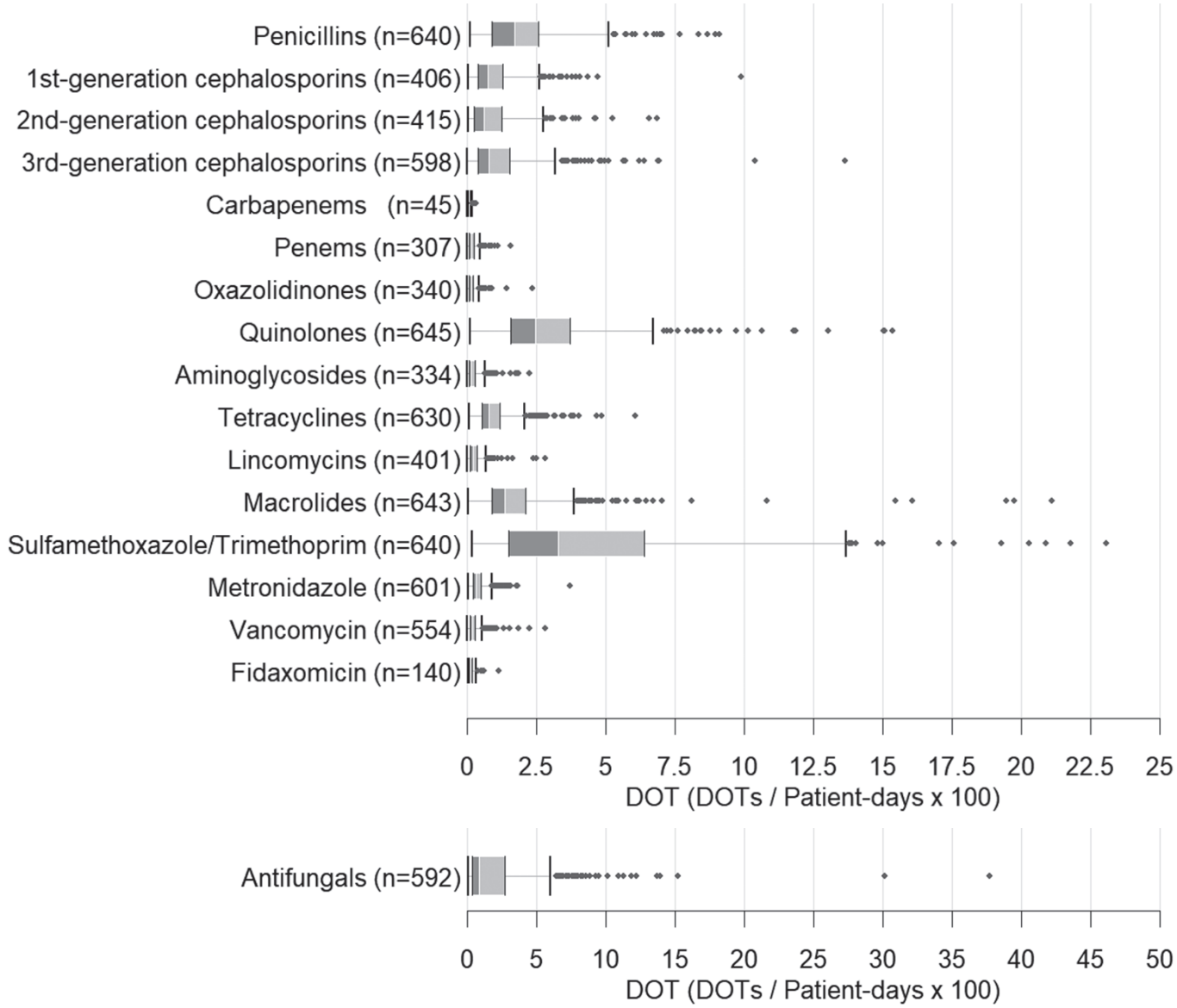


(Based on data from January to December 2021, as of August 25, 2022)

* The value was obtained by dividing the DDDs (dose/DDD) 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 for drug class/category.

DOT (oral)

Figure 18 Distribution of DOT (oral)

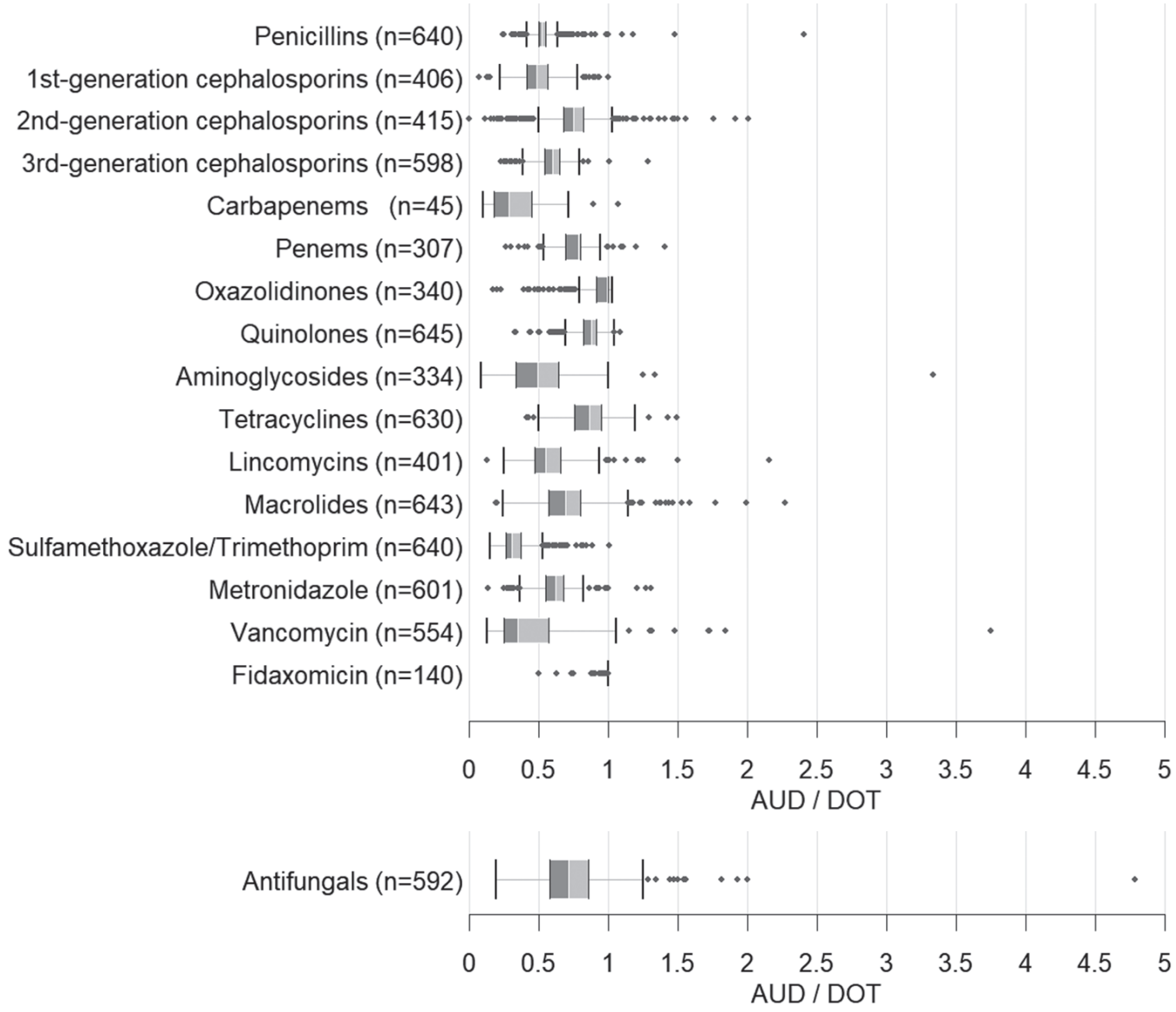


(Based on data from January to December 2021, as of August 25, 2022)

* The value was obtained by dividing the total treatment days 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 for drug class/category.

AUD/ DOT (oral)

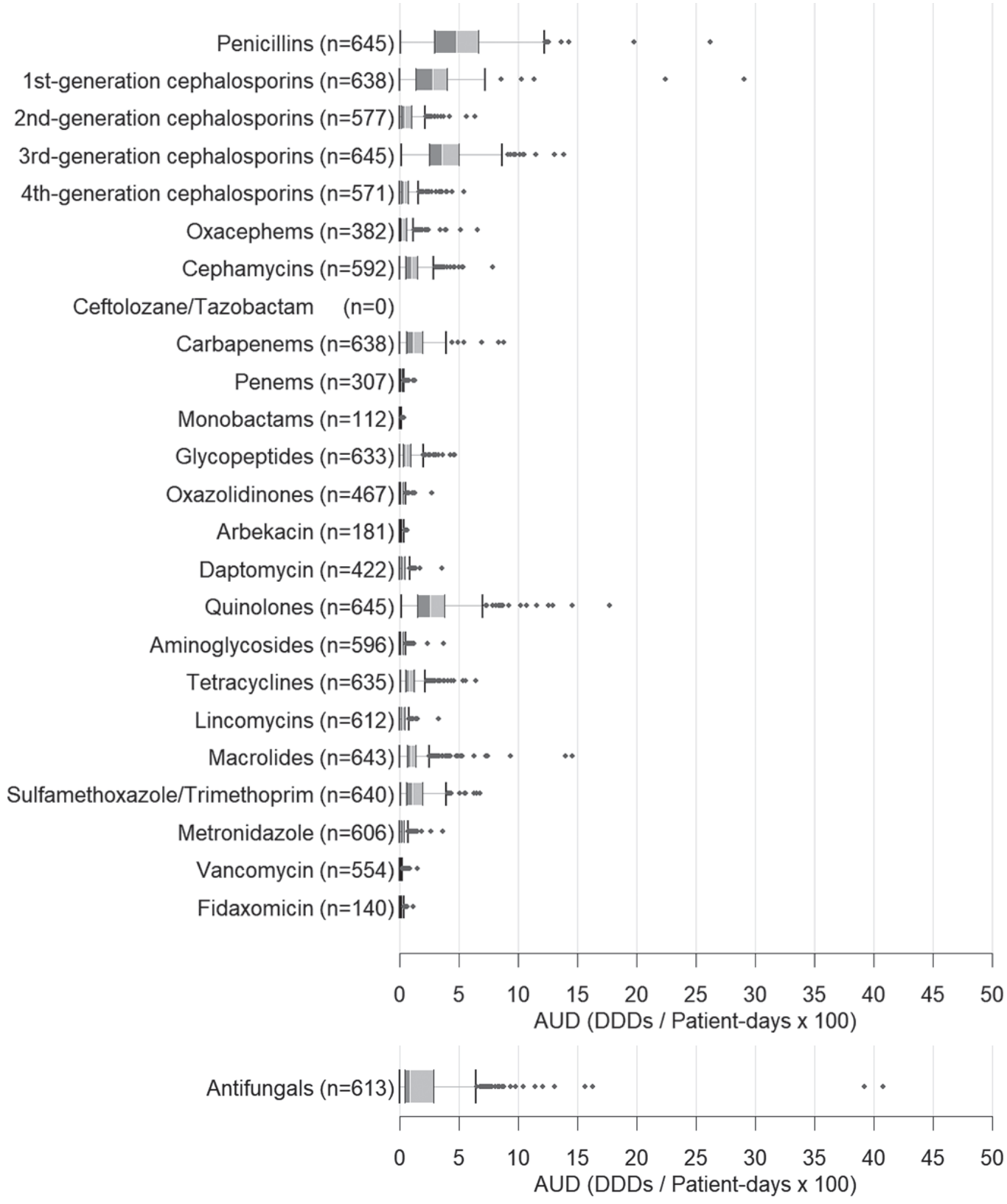
Figure 19 Distribution of AUD/ DOT (oral)



(Based on data from January to December 2021, as of August 25, 2022)
* 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 for drug class/category.

AUD (injection + oral)

Figure 20 Distribution of AUD (injection + oral)

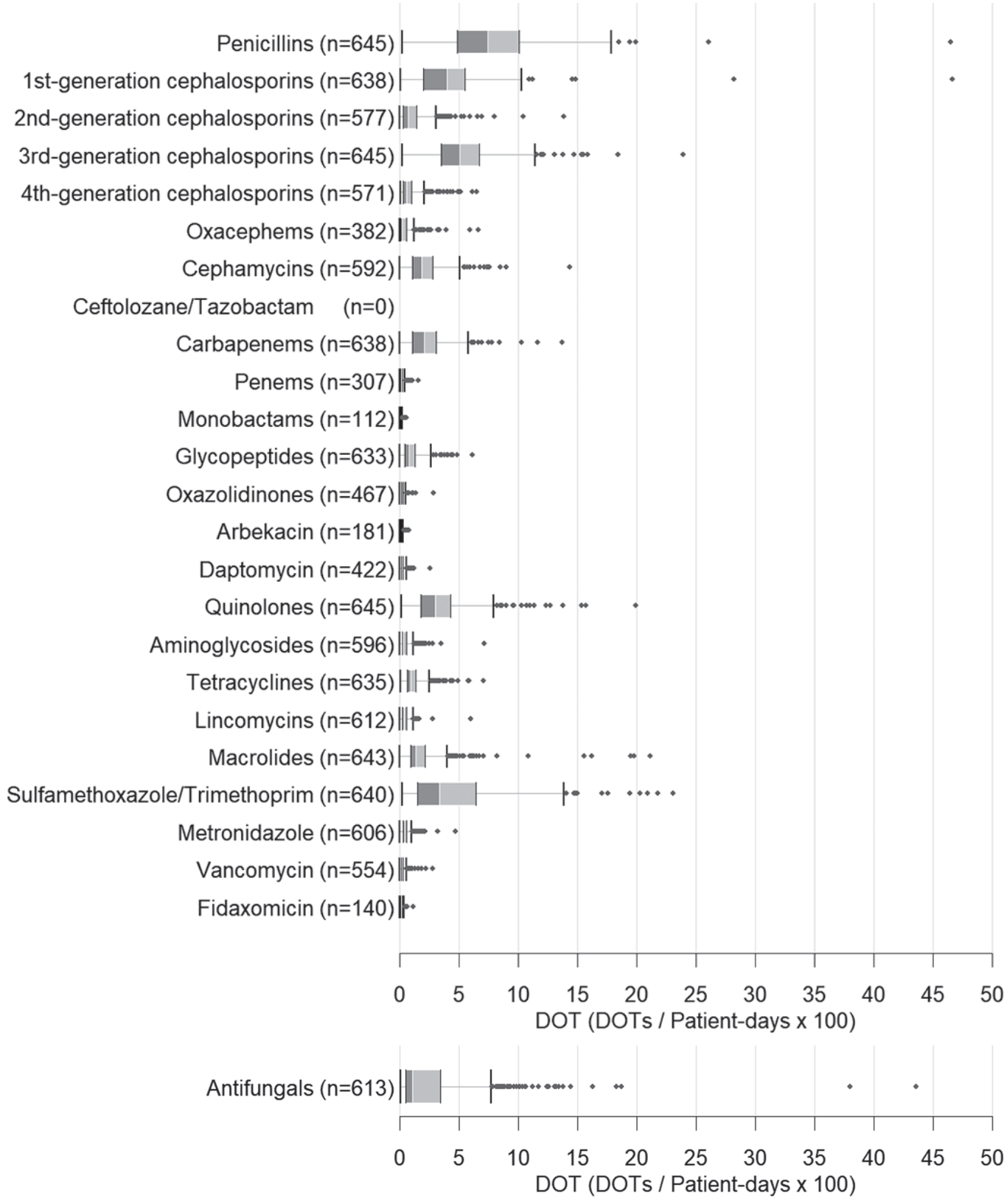


(Based on data from January to December 2021, as of August 25, 2022)

* The value was obtained by dividing the total of the DDDs (dose/DDD) of injection and oral drugs 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 for drug class/category.

DOT (injection + oral)

Figure 21 Distribution of DOT (injection + oral)

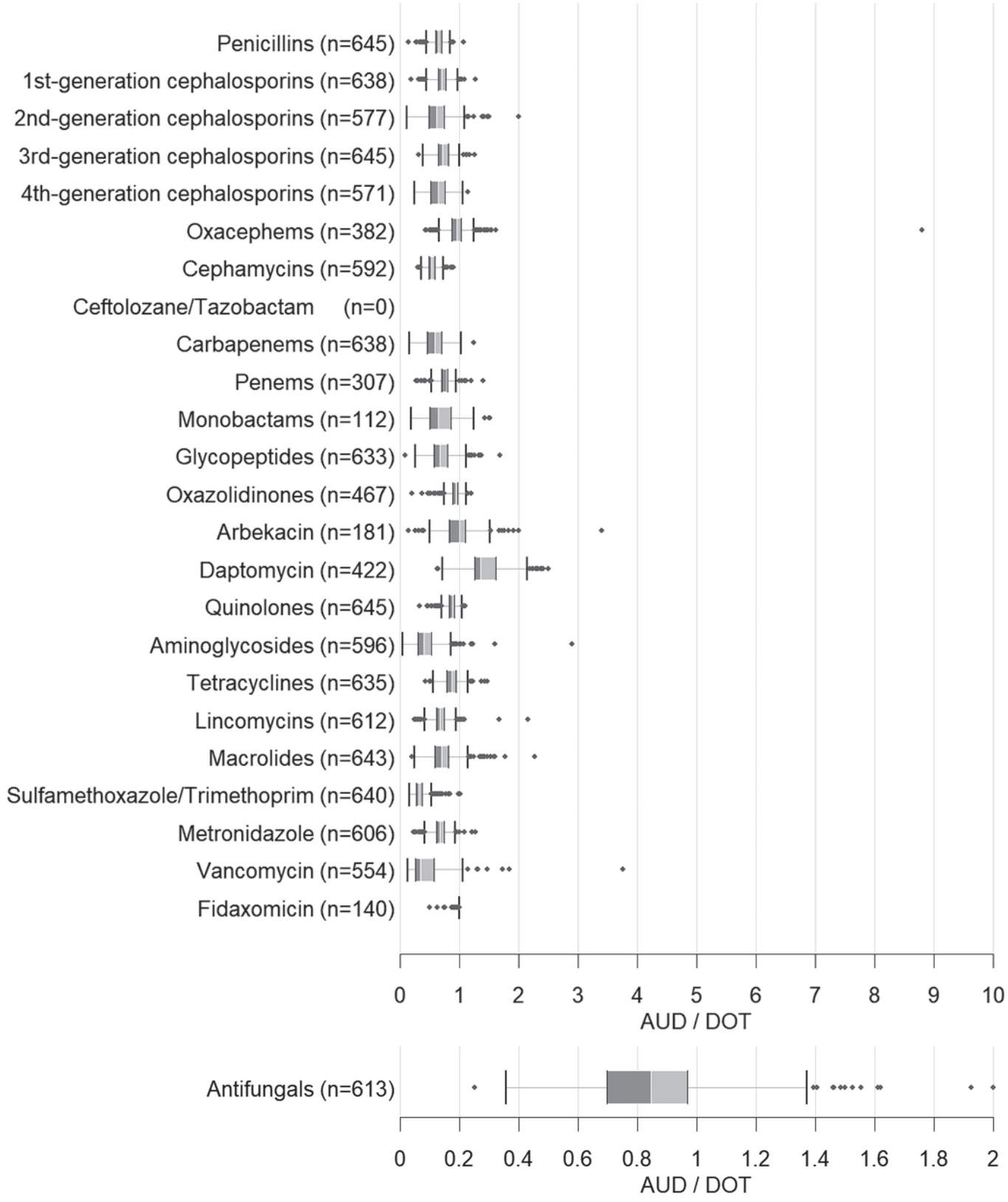


(Based on data from January to December 2021, as of August 25, 2022)

* The value was obtained by the total treatment days with injection and oral drugs 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 for drug class/category.

AUD/ DOT (injection + oral)

Figure 22 Distribution of AUD/ DOT (injection + oral)



(Based on data from January to December 2021, as of August 25, 2022)

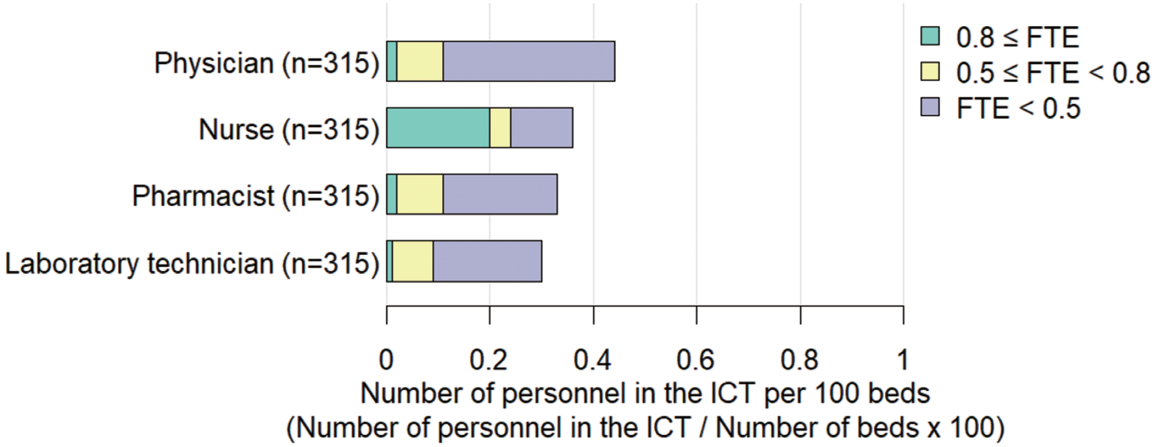
* Ratio of AUD (injection + oral) and DOT (injection + oral)
* For each antimicrobial drug, sites where the concerned antimicrobial agent was not used throughout the target period were excluded.
* Refer to the list of antimicrobial drugs for drug class/category.

ICT-related information

The data were aggregated and calculated using the registered data of the ICT-related information of sites that participated by December 31, 2021.

Number of personnel in the ICT by job type per 100 beds

Figure 23 Number of personnel in the ICT by job type per 100 beds

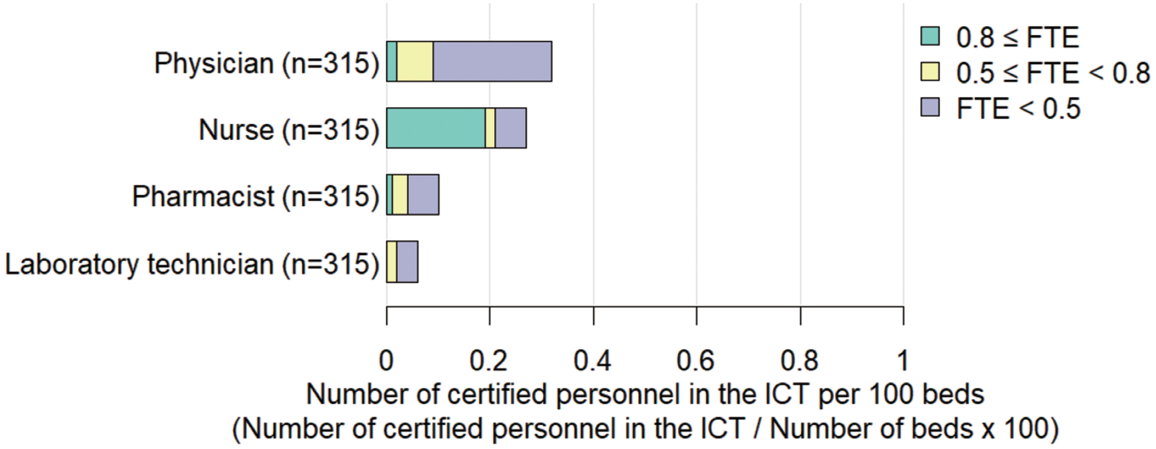


(Based on data from January to December 2021, as of August 25, 2022)

* The value was obtained by dividing the number of personnel belonging to the ICT by the number of beds and multiplying the result by 100.
* The job types are classified into “physician,” “nurse,” “pharmacist,” and “laboratory technician.”
* Dedicated staff devote 80% or more of their working hours, regular staff devote 50% or more of their working hours, and concurrent workers are also engaged in work for routine operations.
* If staff members in each job type do not belong to ICT, the corresponding number at the site was counted as 0.

Number of qualified personnel in the ICT by job type per 100 beds

Figure 24 Number of qualified personnel in the ICT by job type per 100 beds

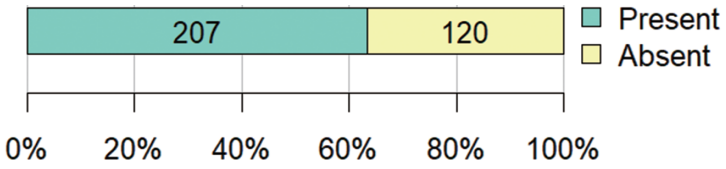


(Based on data from January to December 2021, as of August 25, 2022)

* The value was obtained by dividing the number of qualified personnel belonging to an ICT in each job type by the number of beds and multiplying the result by 100. If no staff members in a job type belong to the ICT, the number at the site was counted 0.
* Certified staff indicates a healthcare professional who is an infection control doctor, an infection care specialist nurse, a certificated infection control nurse or a nurse who has completed the relevant professional training specified in medical service fees, a certified infection control certified pharmacist or infection control specialist pharmacist, a certified infection control clinical microbiology laboratory technician, or a certified clinical microbiology laboratory technician.
* A double-licensed person is counted as a single individual.
* Dedicated staff (0.8 < FTE) devote 80% or more of their working hours, regular staff (0.5 <FTE < 0.8)devote 50% or more of their working hours, and concurrent workers (FTE < 0.5) are also engaged in work for routine operations.
* If there are no qualified personnel in the ICT, the number at the site was counted as 0.

ICT monitoring system for resistant bacteria detected cases

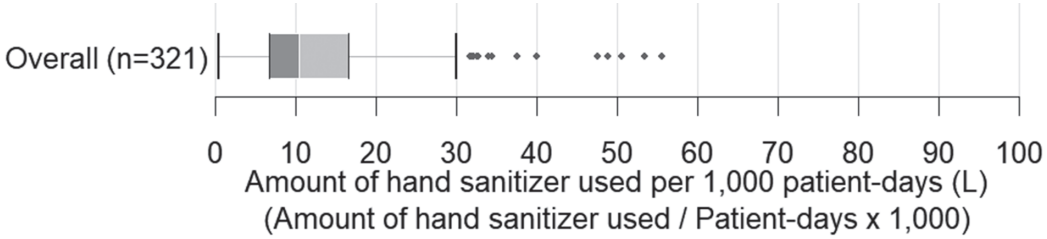
Figure 25 Proportion of implementation of an ICT monitoring system for resistant bacteria detected cases



(Based on data from January to December 2021, as of August 25, 2022)
* 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.

Amount of hand sanitizer used per 1,000 patient-days (L)

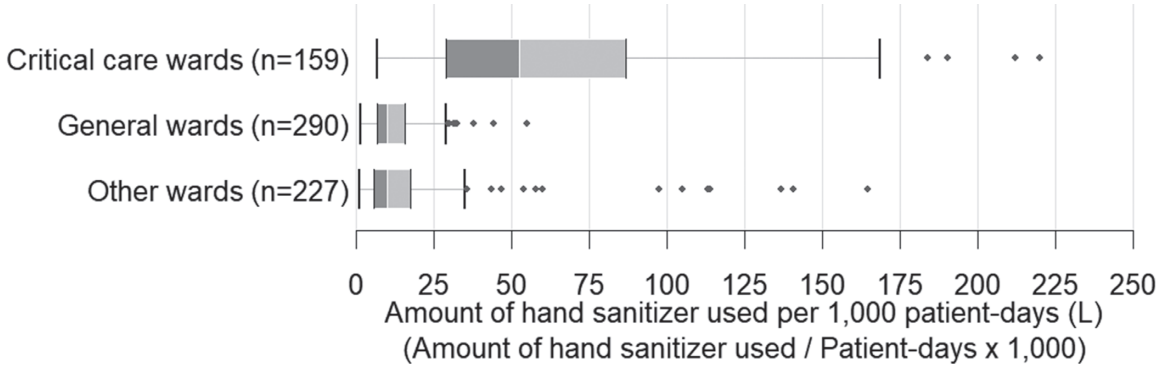
Figure 26 Distribution of amount of hand sanitizer used per 1,000 patient-days (L)



(Based on data from January to December 2021, as of August 25, 2022)
* 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 of sites where registration was made with the amount of hand sanitizer dispensed before actual consumption were also included.
* The amount of hand sanitizer used in departments without inpatient facilities such as outpatient clinics, operating rooms, or dialysis rooms is not included.

Amount of hand sanitizer used (L) by ward function per 1,000 patient-days

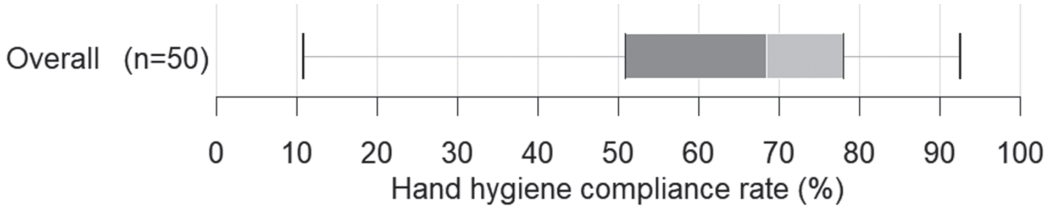
Figure 27 Distribution amount of hand sanitizer used (L) by ward function per 1,000 patient-days



(Based on data from January to December 2021, as of August 25, 2022)
* 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 of sites where registration was made with the amount of hand sanitizer dispensed before actual consumption were also 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 for ward codes by ward function.

Overall hand hygiene compliance rate

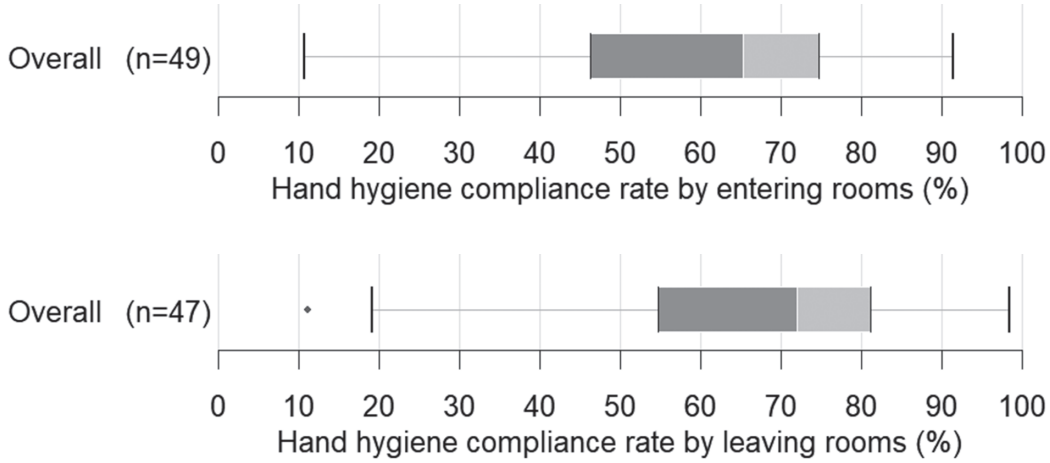
Figure 28 Distribution of overall hand hygiene compliance rate



(Based on data from January to December 2021, as of August 25, 2022)
* 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.

Overall hand hygiene compliance rate by entering/leaving rooms

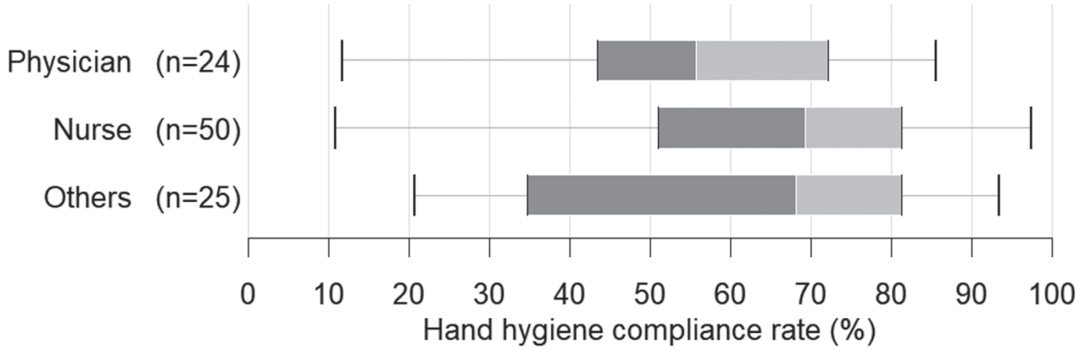
Figure 29 Distribution of overall hand hygiene compliance rate by entering/leaving rooms



(Based on data from January to December 2021, as of August 25, 2022)
* 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.

Hand hygiene compliance rate by job type

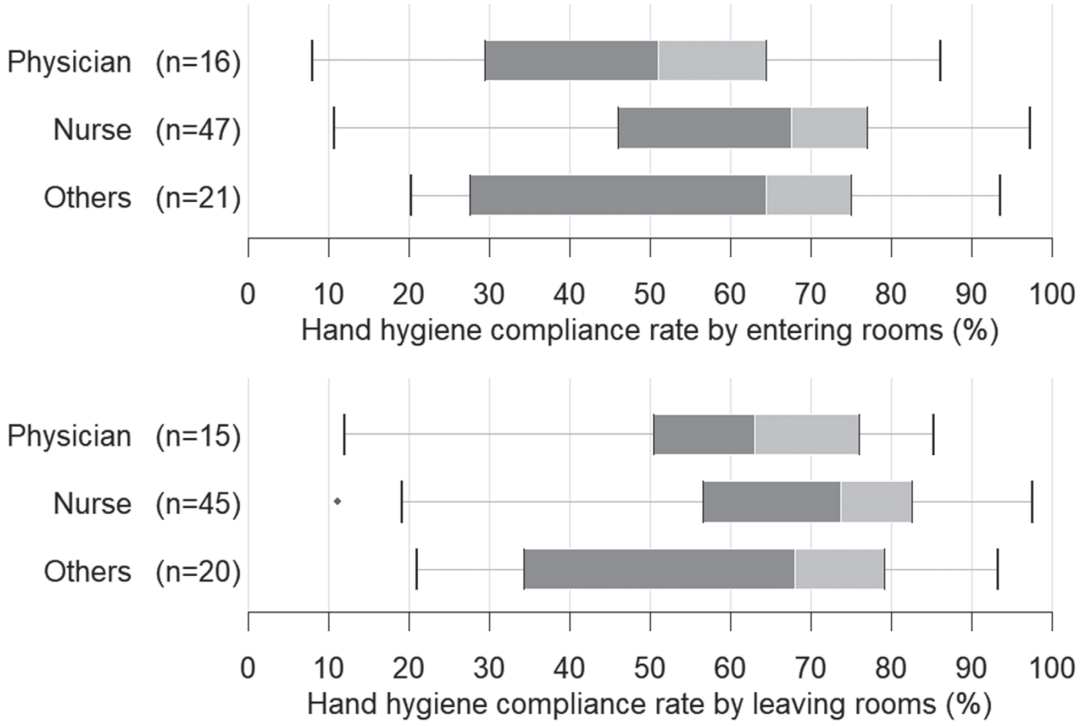
Figure 30 Distribution of hand hygiene compliance rate by job type



(Based on data from January to December 2021, as of August 25, 2022)
* 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.

Hand hygiene compliance rate at the time of entering/leaving rooms by job type

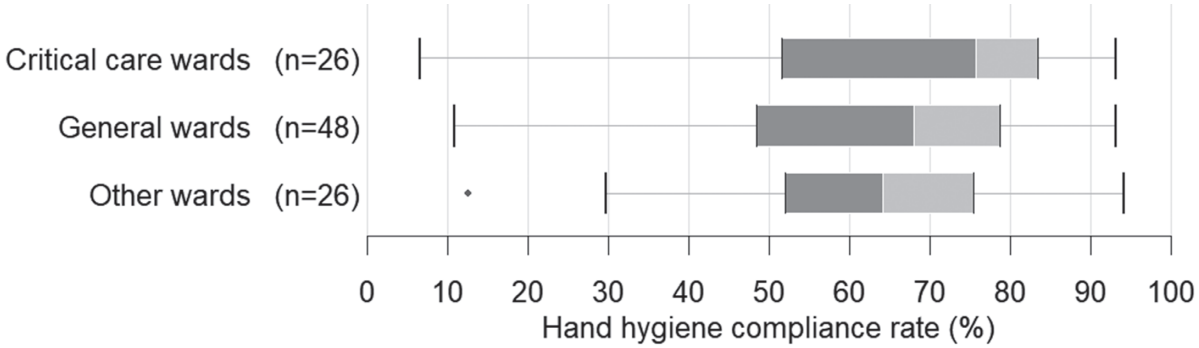
Figure 31 Distribution of hand hygiene compliance rate at the time of entering/leaving rooms by job type



(Based on data from January to December 2021, as of August 25, 2022)
* 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.

Hand hygiene compliance rate by ward function

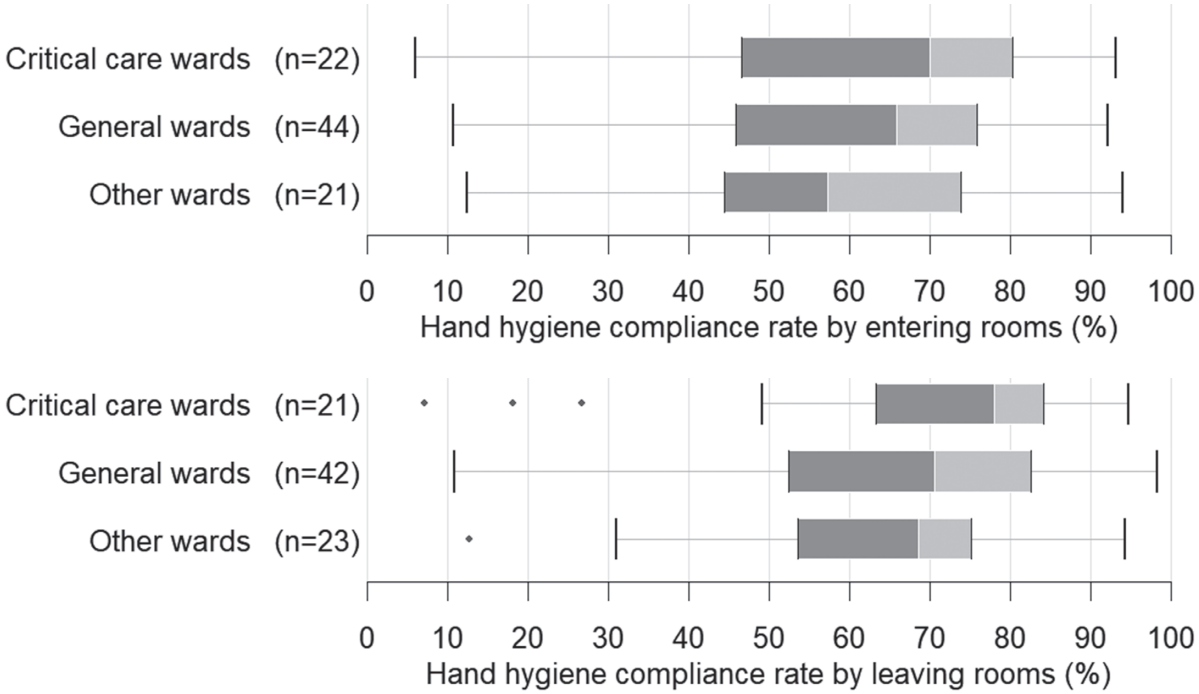
Figure 32 Distribution of hand hygiene compliance rate by ward function



(Based on data from January to December 2021, as of August 25, 2022)
* 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.
* 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 for ward codes by ward function.

Hand hygiene compliance rate at the time of entering/leaving rooms by ward function

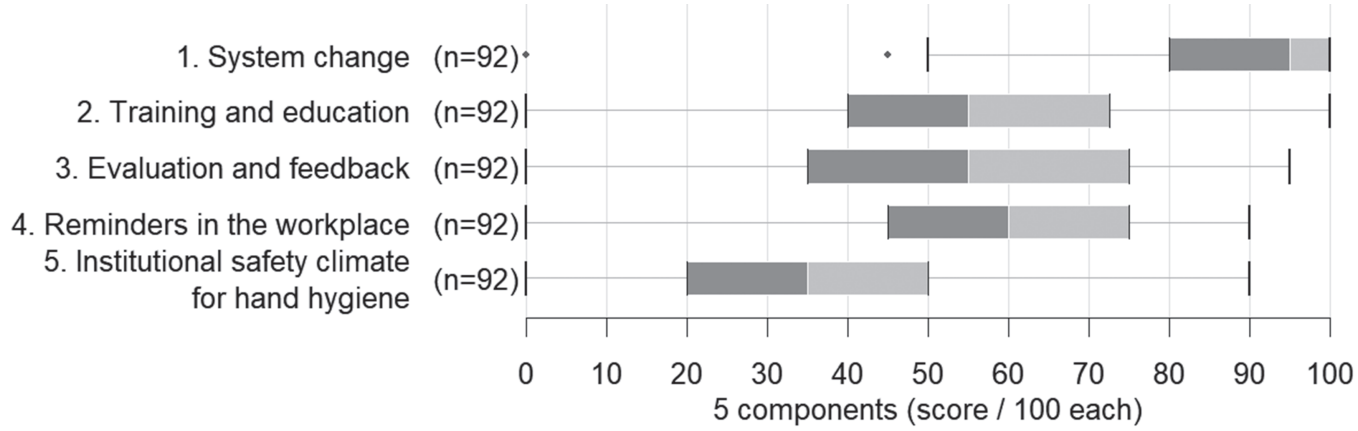
Figure 33 Distribution of hand hygiene compliance rate at the time of entering/leaving rooms by ward function



(Based on data from January to December 2021, as of August 25, 2022)
* 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.
* 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 for ward codes by ward function.

WHO Hand Hygiene Self-Assessment Framework: 5 major components

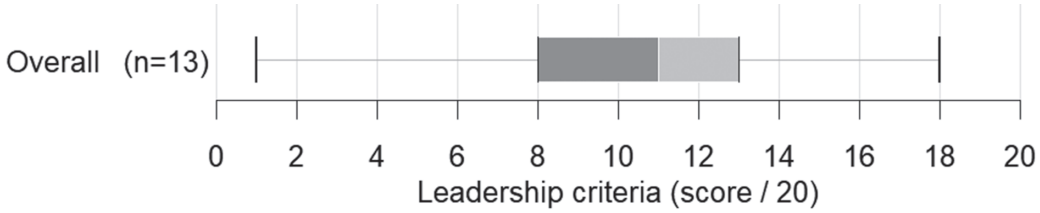
Figure 34 Distribution of WHO Hand Hygiene Self-Assessment Framework: 5 major components



(Based on data from January to December 2021, as of August 25, 2022)
* Calculated based on the latest registered data during the target period for aggregation.
* The WHO Hand Hygiene Self-Assessment Framework 2010 was used.

WHO Self-Assessment of Hand Hygiene Framework: Leadership criteria

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



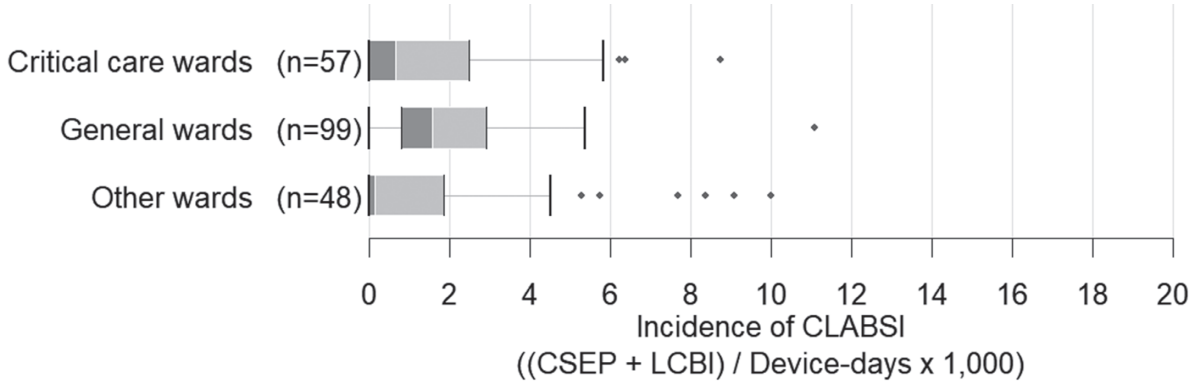
(Based on data from January to December 2021, as of August 25, 2022)
* Calculated based on the latest registered data during the target period for aggregation.
* Only sites that scored a total of ≥ 376 for the 5 major components of the WHO Self-Assessment of Hand Hygiene Framework were included.

CLABSI/CAUTI information (HAI information)

The data were aggregated and calculated using the registered data of CLABSI/CAUTI information (HAI information) of sites that participated by December 31, 2021.

Incidence of CLABSI: LCBI + CSEP by ward function

Figure 36 Distribution of the incidence of CLABSI: LCBI + CSEP by ward function

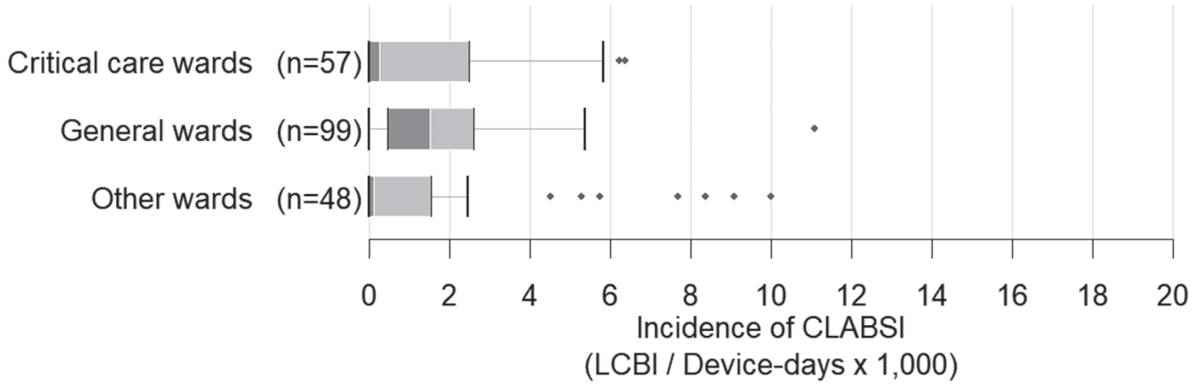


(Based on data from January to December 2021, as of August 25, 2022)

* 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 for ward codes by ward function.

Incidence of CLABSI: LCBI by ward function

Figure 37 Distribution of incidence of CLABSI: LCBI by ward function

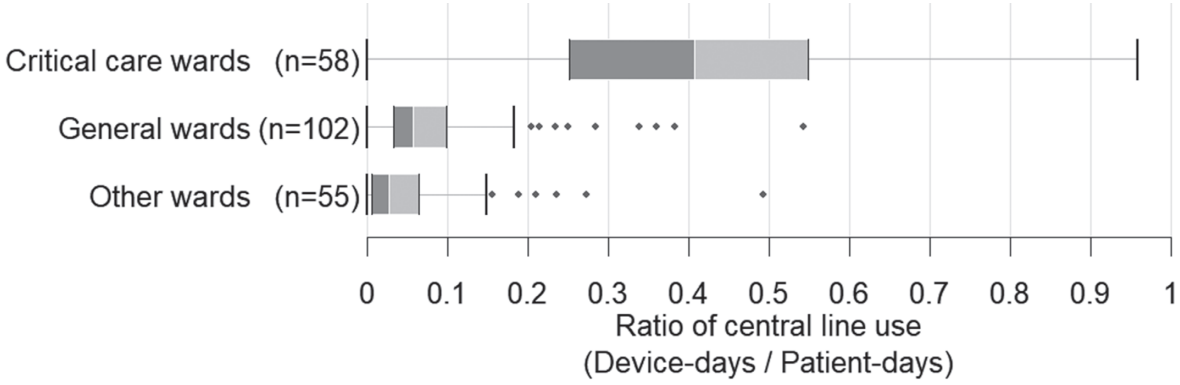


(Based on data from January to December 2021, as of August 25, 2022)

* 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 for ward codes by ward function.

Ratio of central line use by ward function

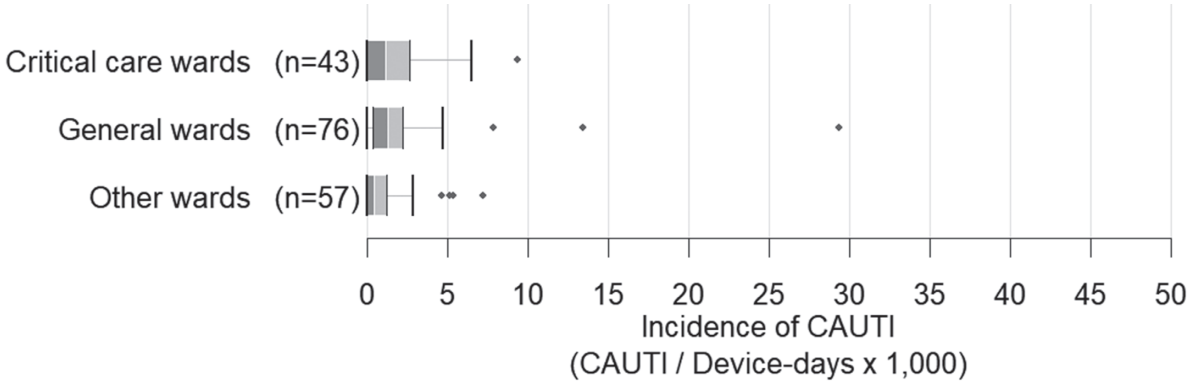
Figure 38 Distribution of the ratio of central line use by ward function



(Based on data from January to December 2021, as of August 25, 2022)
* 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 for ward codes by ward function.

Incidence of CAUTI by ward function

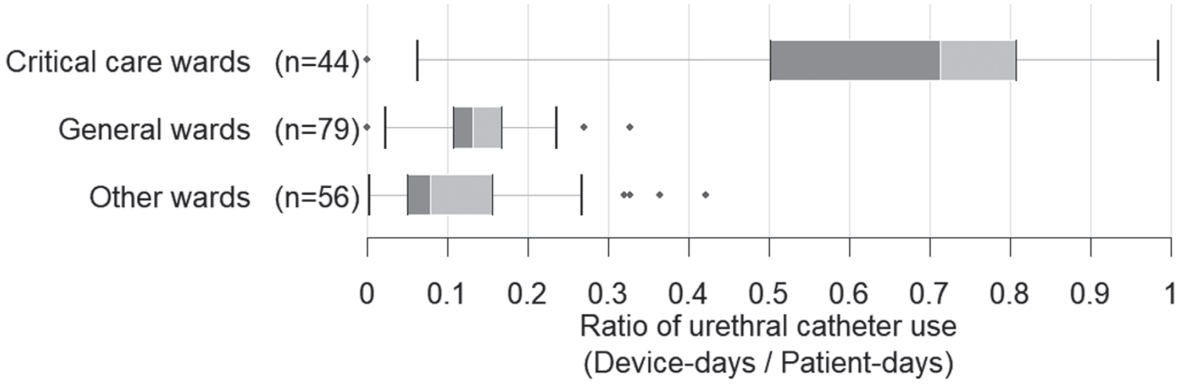
Figure 39 Distribution of the incidence of CAUTI by ward function



(Based on data from January to December 2021, as of August 25, 2022)
* 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 for ward codes by ward function.

Ratio of urethral catheter use by ward function

Figure 40 Distribution of the ratio of urethral catheter use by ward function



(Based on data from January to December 2021, as of August 25, 2022)

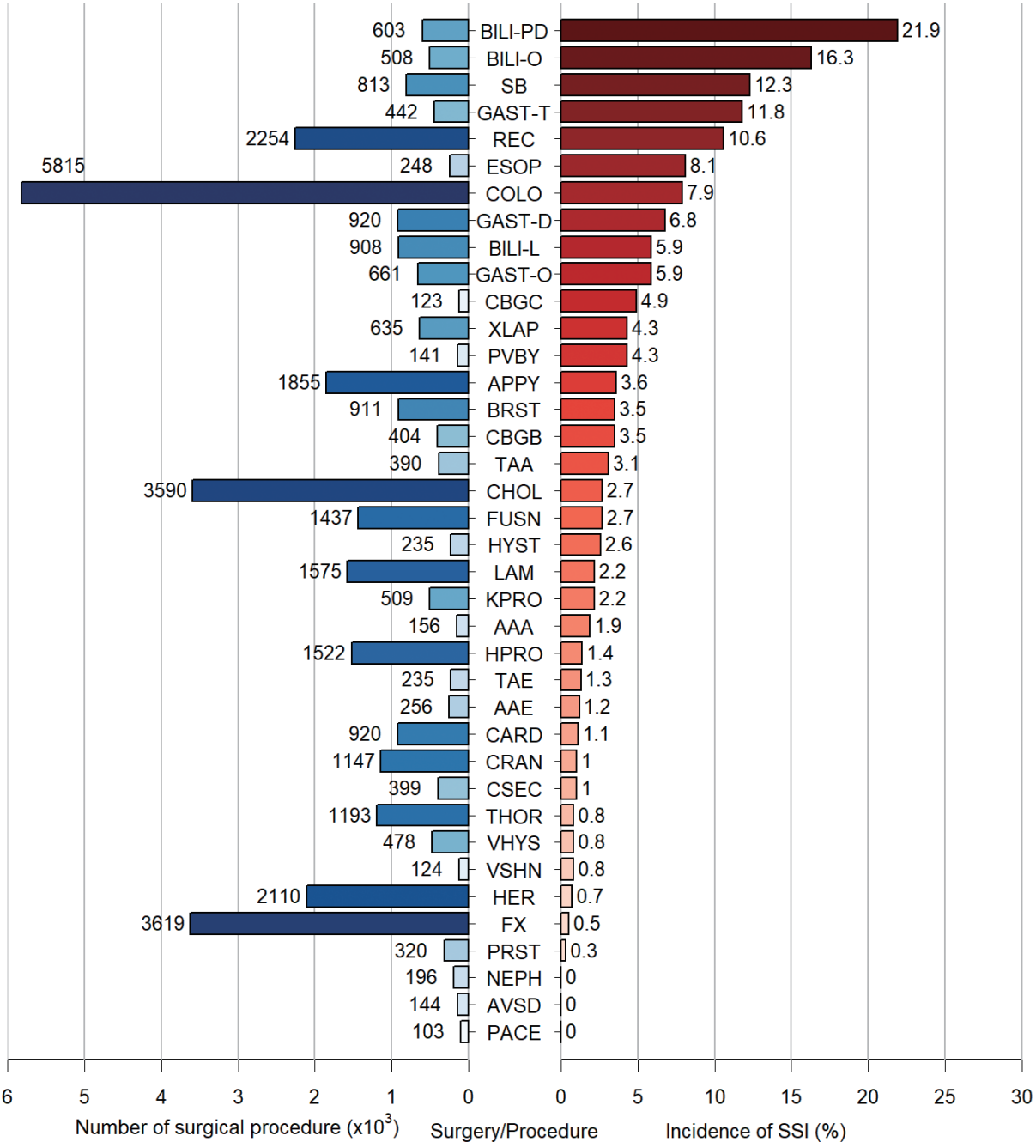
* Proportion of total patients using urethral catheters in patient-days
* Critical care wards: Calculated using ward codes JC01, JC02, JC03, JC04, JC05, JC06, JC07, and JC08.
* General wards (internal medicine, surgery, pediatrics, etc.): Calculated using ward codes JG01, JG02, JG03, JG04, JG05, JG06, 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 for ward codes by ward function.

SSI information (HAI information)

The data were aggregated and calculated using the registered data for SSI information (HAI information) of sites that participated by December 31, 2021.

Number of surgeries and incidence of SSI by surgical procedure

Figure 41 Number of surgeries and incidence of surgical site infection (SSI) by surgical procedure



(Based on data from January to December 2021, as of August 25, 2022)

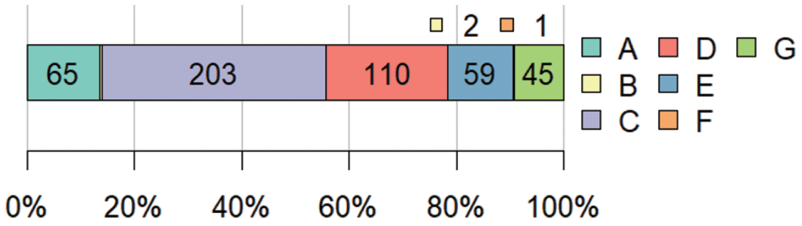
* The number of surgeries and incidence of SSI among those surgeries, by surgical procedure.
* Data that conformed to the NHSN criteria were used.
* No adjustment made according to with or without endoscope.
* No adjustment by risk index.
* Surgical procedures with ≥ 100 records were included.
* See the List of surgical procedure codes (in reference to the documents of the JANIS for surgical procedure codes).

Microorganisms and resistant bacteria information

The data were aggregated and calculated using the registered data of the microorganisms and resistant bacteria information of sites that participated by December 31, 2021.
The number of bloodstream infections caused by major bacteria indicates the number of patients in whose blood samples the major bacteria specified by this system were detected.
The number of bloodstream infections caused by resistant bacteria indicates the number of patients in whose blood samples the resistant bacteria specified by this system were detected.

Detection methods for *Clostridioides difficile* infection (CDI) diagnosis

Figure 42 Proportion of detection methods for *Clostridioides difficile* infection (CDI) diagnosis

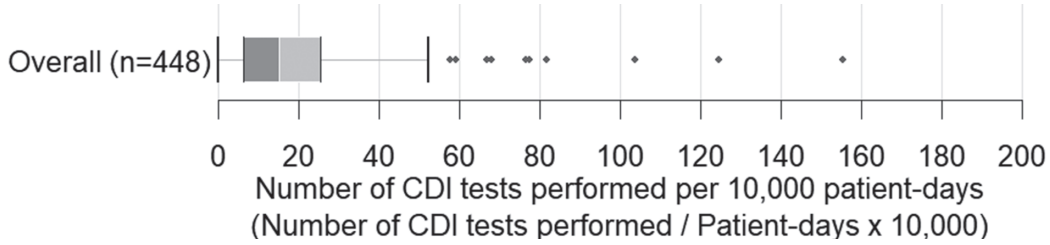


A. Only toxin is confirmed by immunochromatography. When the result is positive, *CDI* is diagnosed. If the result is negative, the test is completed.
B. Only toxin is confirmed by immunochromatography. When the result is positive, *CDI* is diagnosed. When the result is negative, toxin is determined by immunochromatography using cultured colonies. If both results are negative, the test is completed.
C. Both glutamate dehydrogenase (GDH) and toxin are confirmed by immunochromatography. When both GDH and toxin are positive, *CDI* is diagnosed. If GDH is positive and toxin is negative, *CDI* is not diagnosed and the test is completed.
D. Both GDH and toxin are confirmed by immunochromatography. When both GDH and toxin are positive, *CDI* is diagnosed. If GDH is positive and toxin is negative, toxin is determined by immunochromatography using cultured colonies. If both are negative, the test is completed.
E. Both GDH and toxin are confirmed by immunochromatography. When both GDH and toxin are positive, *CDI* is diagnosed. If GDH is positive and toxin is negative, toxin is determined using a fecal toxin gene test. If the result is negative, the test is completed.
F. Only toxin is confirmed using a fecal toxin gene test. When the result is positive, *CDI* is diagnosed. If the result is negative, the test is completed.
G. Others

(Based on data from January to December 2021, as of August 25, 2022)
*** The proportions of the test methods used to diagnose *CDI*.**
*** The test methods that are normally used are shown.**

Number of *CDI* tests performed per 10,000 patient-days

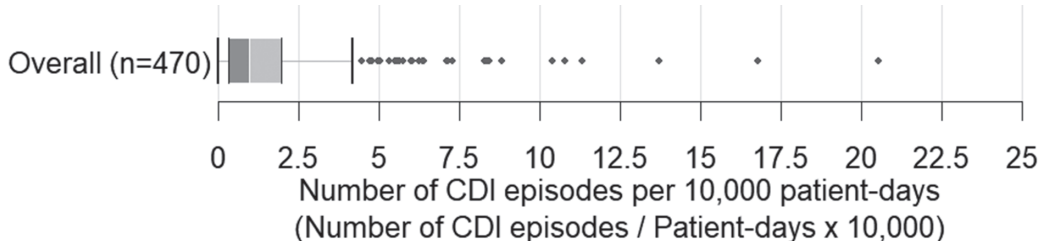
Figure 43 Distribution of the number of *CDI* tests performed per 10,000 patient-days



(Based on data from January to December 2021, as of August 25, 2022)
* The value was obtained by dividing the number of patients tested for *CDI* by patient-days and multiplying the result by 10,000.
* Sites with 0 tests were included regardless of whether there was an eligible patient for inclusion.

Number of *CDI* episodes per 10,000 patient-days

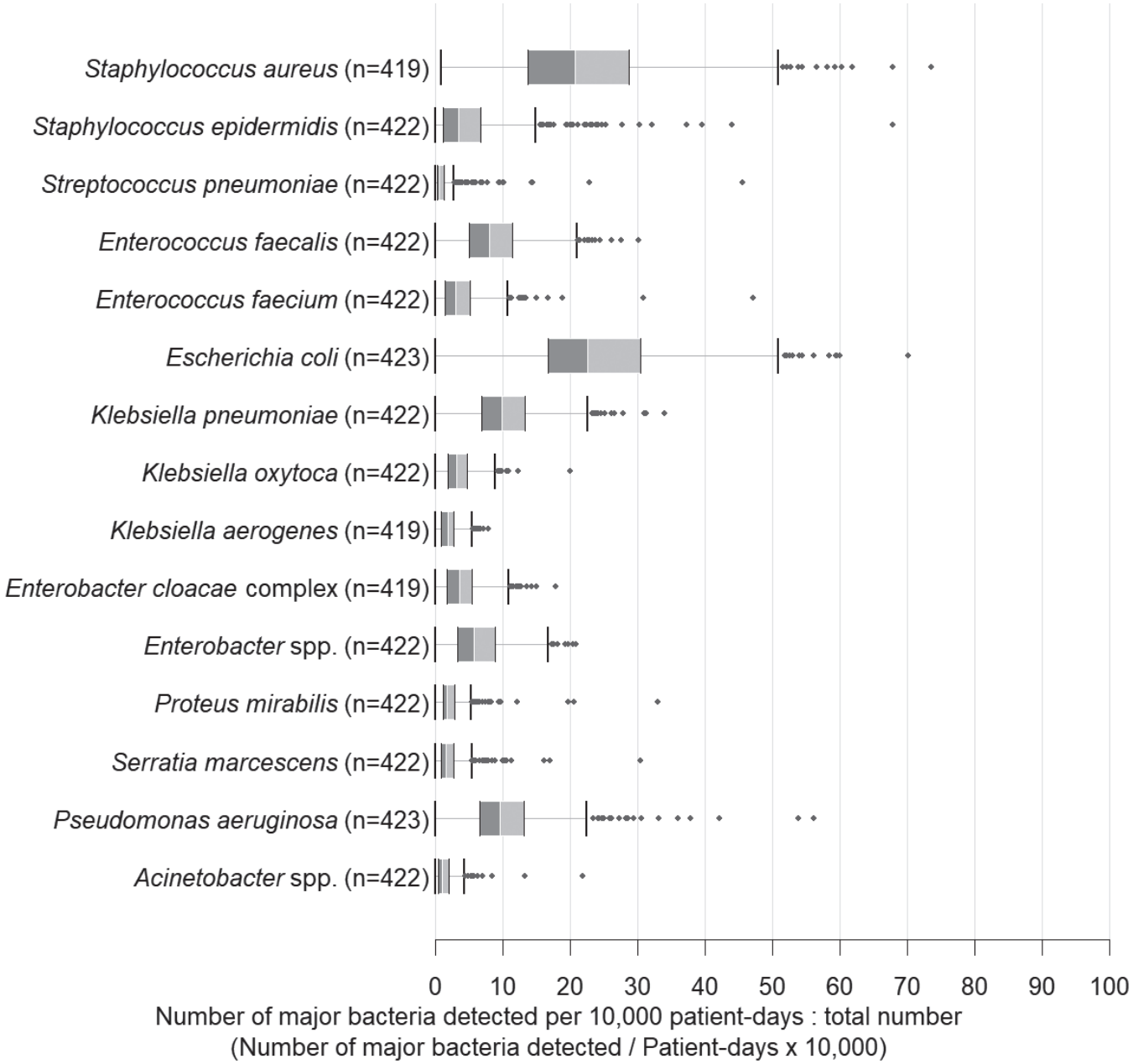
Figure 44 Distribution of the number of *CDI* episodes per 10,000 patient-days



(Based on data from January to December 2021, as of August 25, 2022)
* The value was obtained by dividing the number of patients diagnosed with *CDI* in hospitals by the total patient-days and multiplying the result by 10,000.
* Sites with 0 occurrences were included regardless of whether a test was conducted.
* Multiple detections within the previous 14 days for the same patient were processed as duplicate data.

Number of major bacteria detected per 10,000 patient-days (total number)

Figure 45 Distribution of the number of major bacteria detected per 10,000 patient-days (total number)

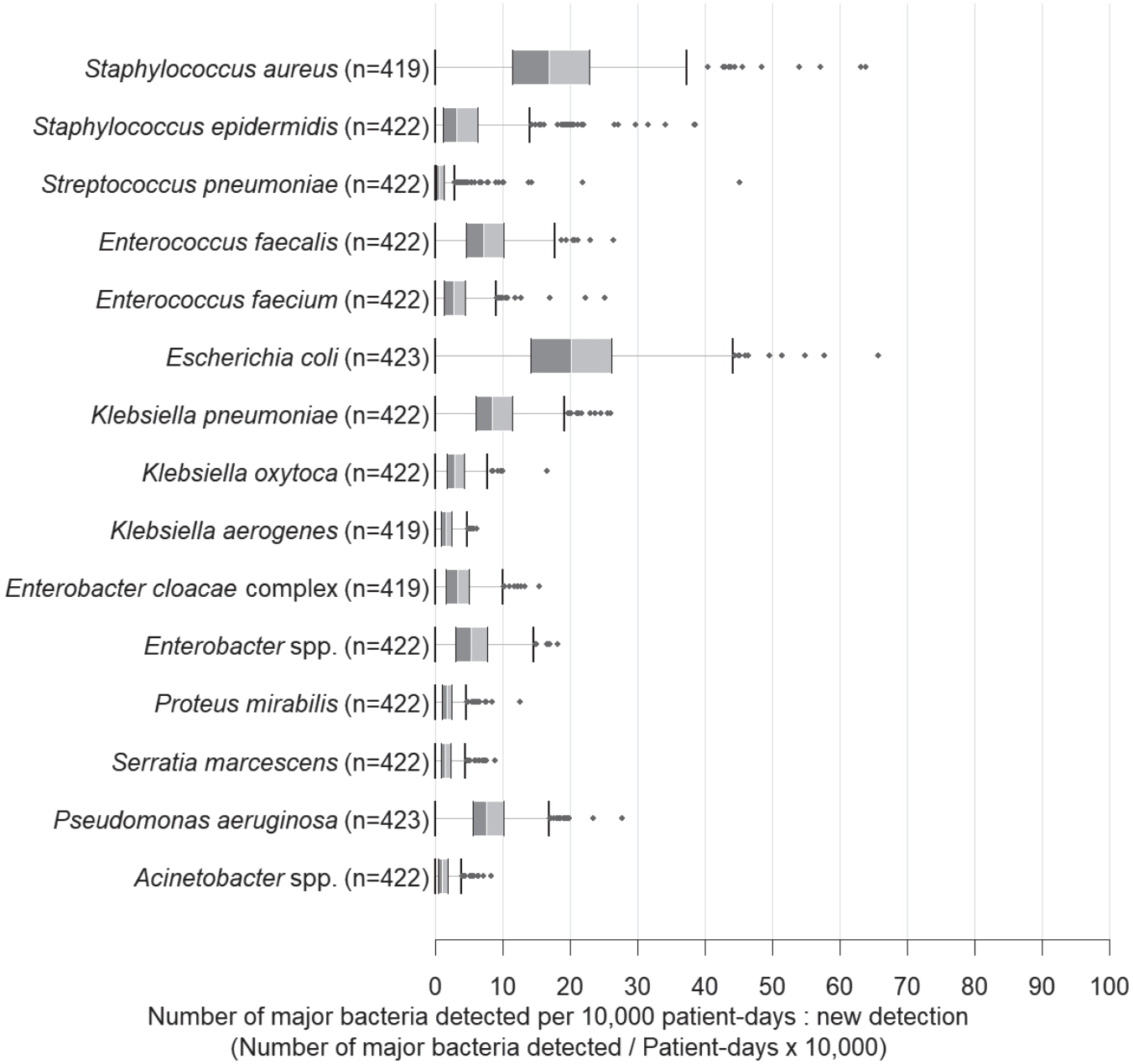


(Based on data from January to December 2021, as of August 25, 2022)

* The value was obtained by dividing the number of patients in which bacteria were detected by patient-days and multiplying the result by 10,000.
* [Total number] Counted once even in cases where multiple detections were made in 1 patient per month, by bacterium.
* Data registered via the “reduced information file of the JANIS Clinical Division” were used.
* Summarized by bacterium. Sites with no data were excluded.

Number of major bacteria detected per 10,000 patient-days (new detection)

Figure 46 Distribution of the number of major bacteria detected per 10,000 patient-days (new detection)

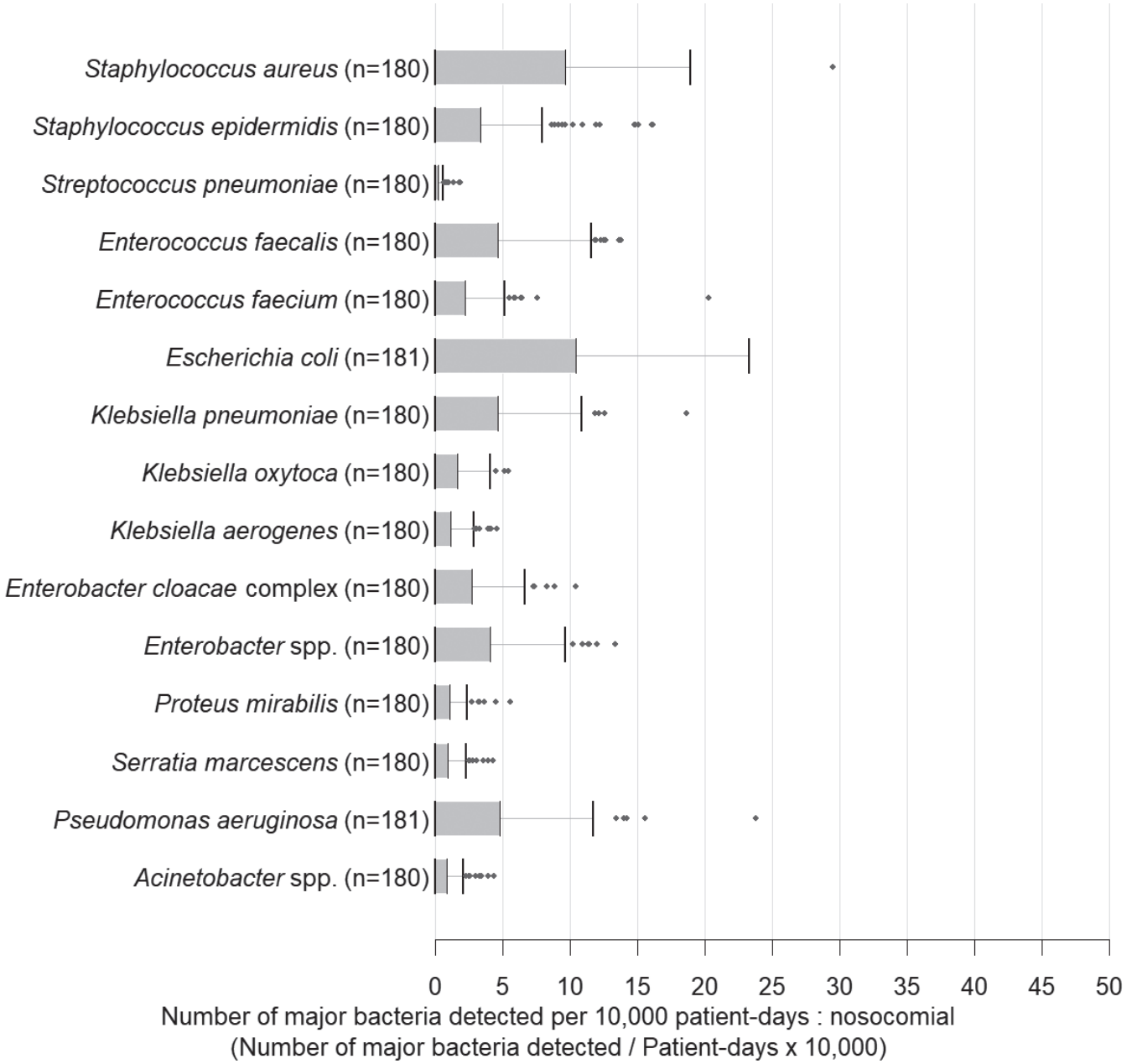


(Based on data from January to December 2021, as of August 25, 2022)

* The value was obtained by dividing the number of patients in which bacteria were detected by patient-days and multiplying the result by 10,000.
* [New detection] Counted once even in cases where multiple detections were made in 1 patient per 90 days, by bacterium.
* Data registered via the “reduced information file of the JANIS Clinical Division” were used.
* Summarized by bacterium. Sites with no data were excluded.

Number of major bacteria detected per 10,000 patient-days (nosocomial)

Figure 47 Distribution of the number of major bacteria detected per 10,000 patient-days (nosocomial)

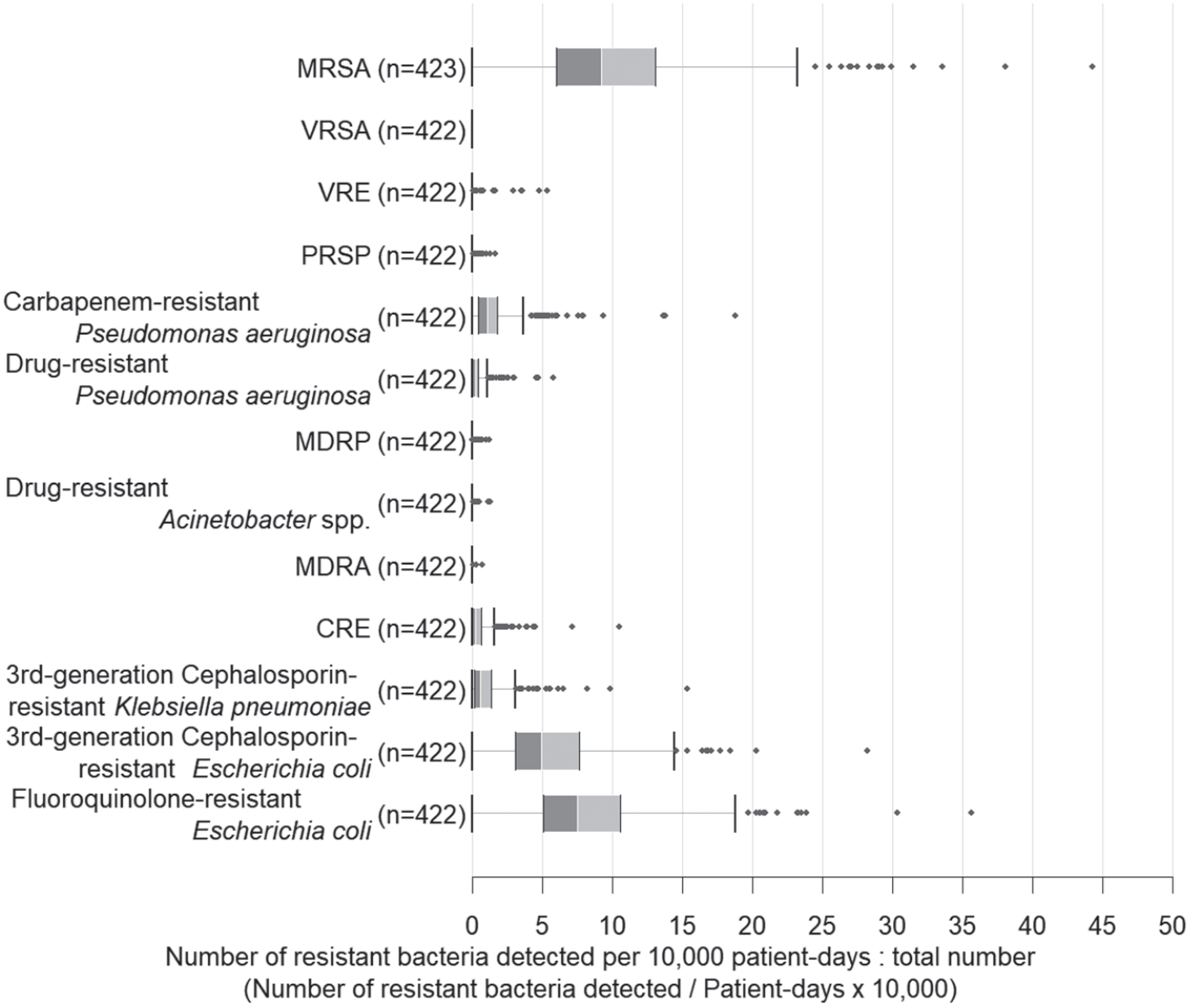


(Based on data from January to December 2021, as of August 25, 2022)

* The value was obtained by dividing the number of patients in which bacteria were detected by patient-days and multiplying the result by 10,000.
* [Nosocomial] Multiple detections per 90 days were processed as duplicate data, by bacterium. Patients with detected bacteria submitted on and after Day 4 of hospitalization were counted.
* Data registered via the “reduced information file of the JANIS Clinical Division” were used.
* Summarized by bacterium. Sites with no data were excluded.

Number of resistant bacteria detected per 10,000 patient-days (total number)

Figure 48 Distribution of the number of resistant bacteria detected per 10,000 patient-days (total number)

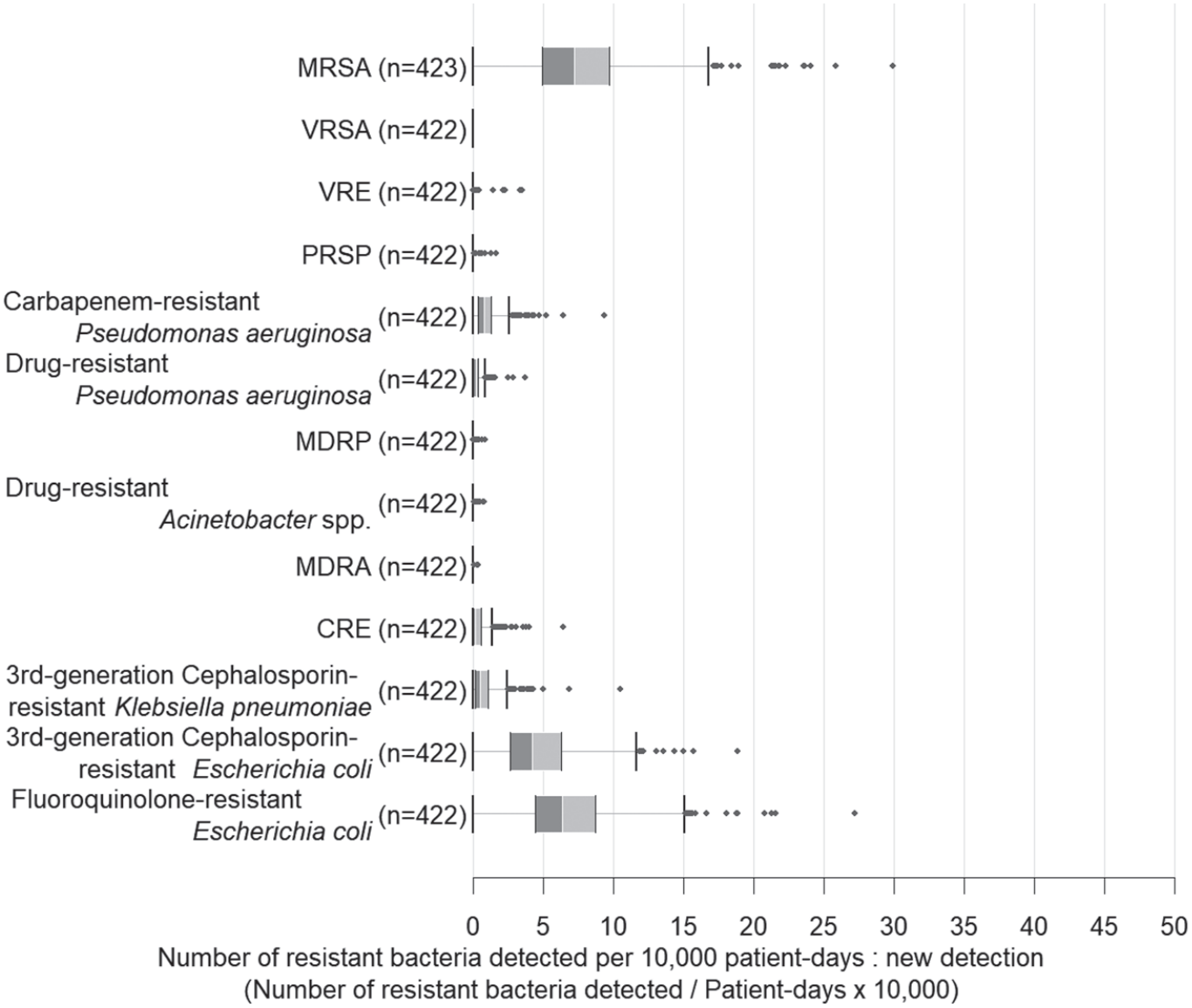


(Based on data from January to December 2021, as of August 25, 2022)

* The value was obtained by dividing the number of patients in which bacteria were detected by patient-days and multiplying the result by 10,000.
* [Total number] Counted once even in cases where multiple detections were made in 1 patient per month, by bacterium.
* Data registered via the “reduced information file of the JANIS Clinical Division” were used.
* Summarized by bacterium. Sites with no data were excluded.

Number of resistant bacteria detected per 10,000 patient-days (new detection)

Figure 49 Distribution of the number of resistant bacteria detected per 10,000 patient-days (new detection)

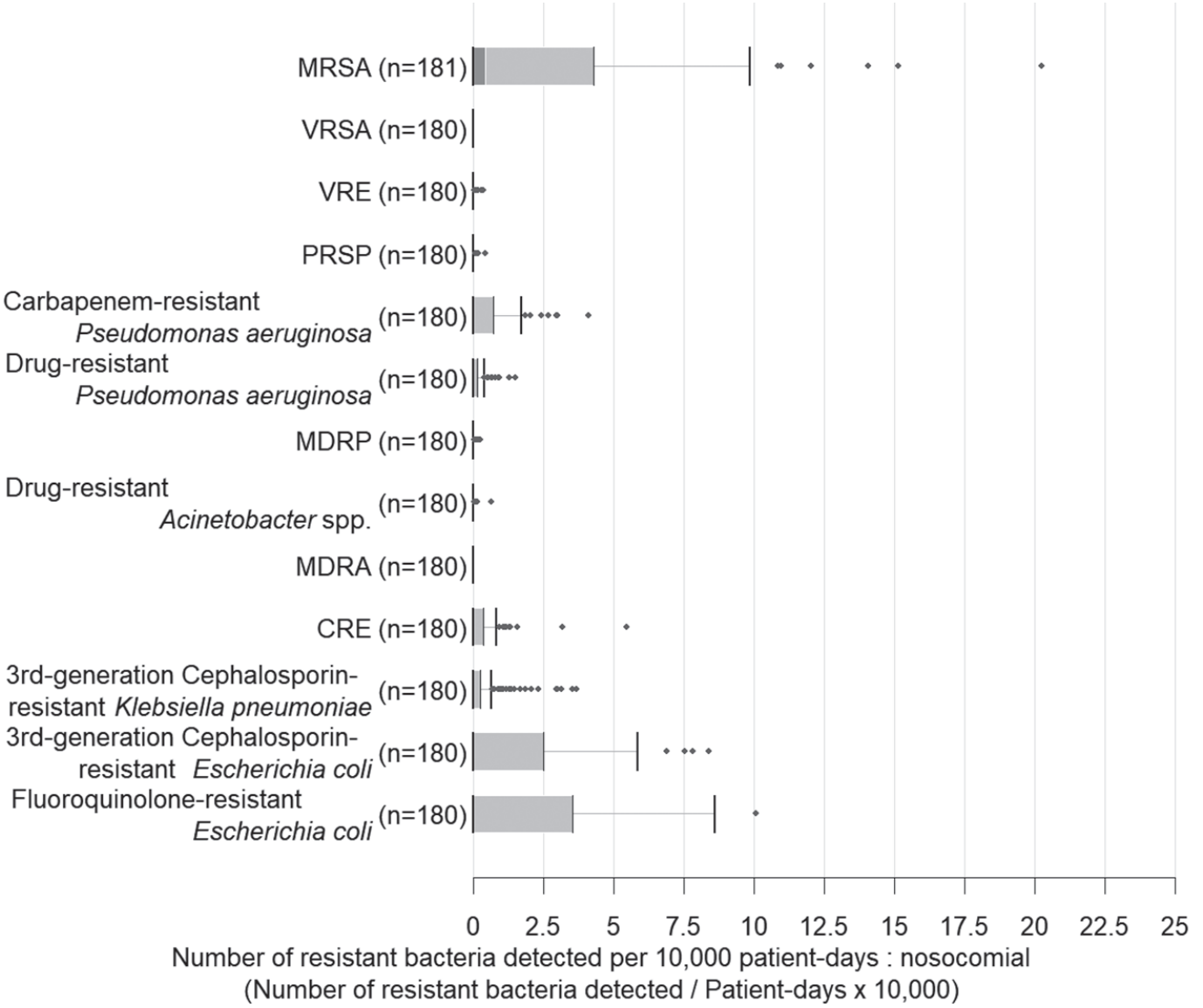


(Based on data from January to December 2021, as of August 25, 2022)

* The value was obtained by dividing the number of patients in which bacteria were detected by patient-days and multiplying the result by 10,000.
* [New detection] Counted once even in cases where multiple detections were made in 1 patient per 90 days, by bacterium.
* Data registered via the “reduced information file of the JANIS Clinical Division” were used.
* Summarized by bacterium. Sites with no data were excluded.

Number of resistant bacteria detected per 10,000 patient-days (nosocomial)

Figure 50 Distribution of the number of resistant bacteria detected per 10,000 patient-days (nosocomial)

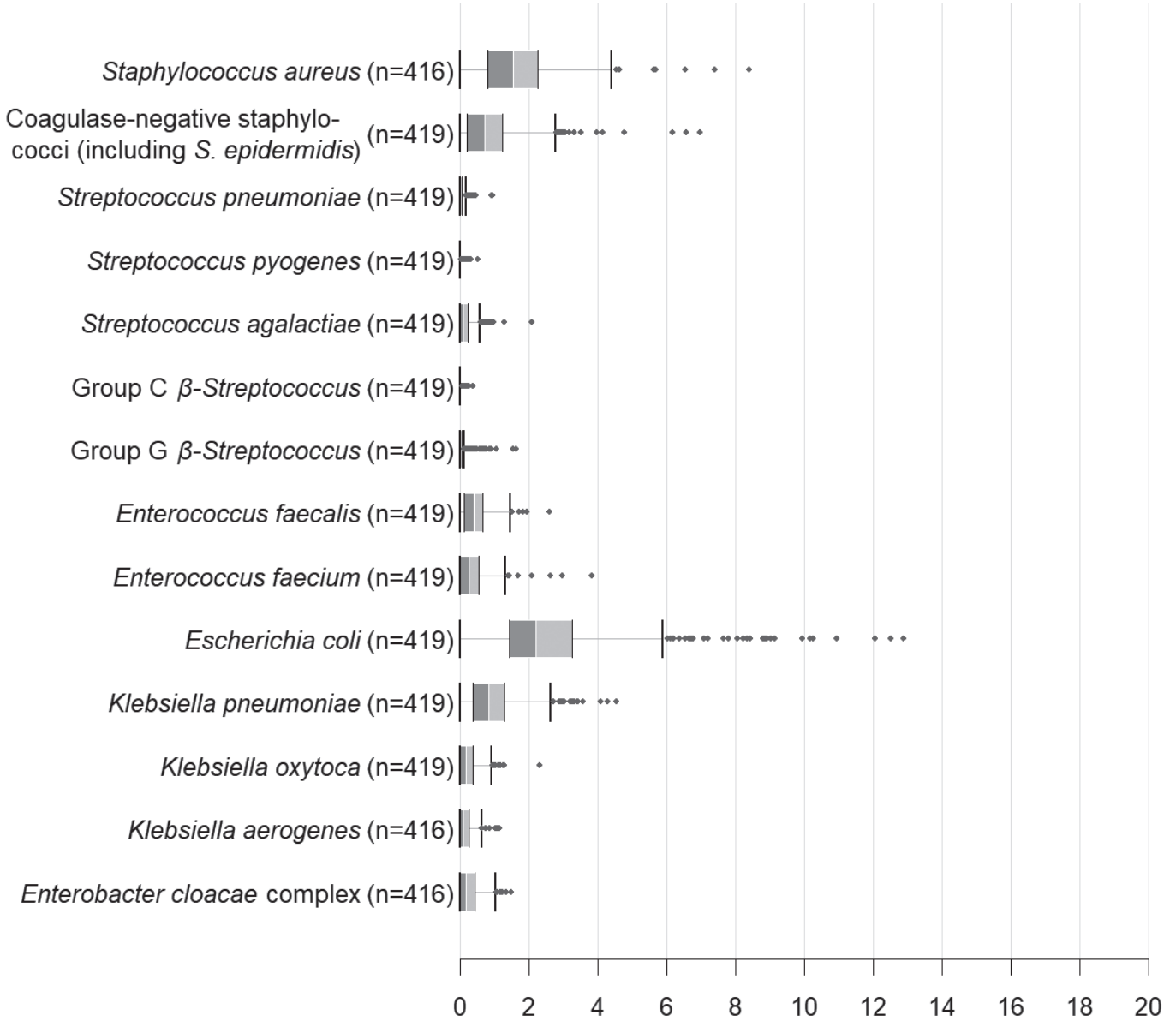


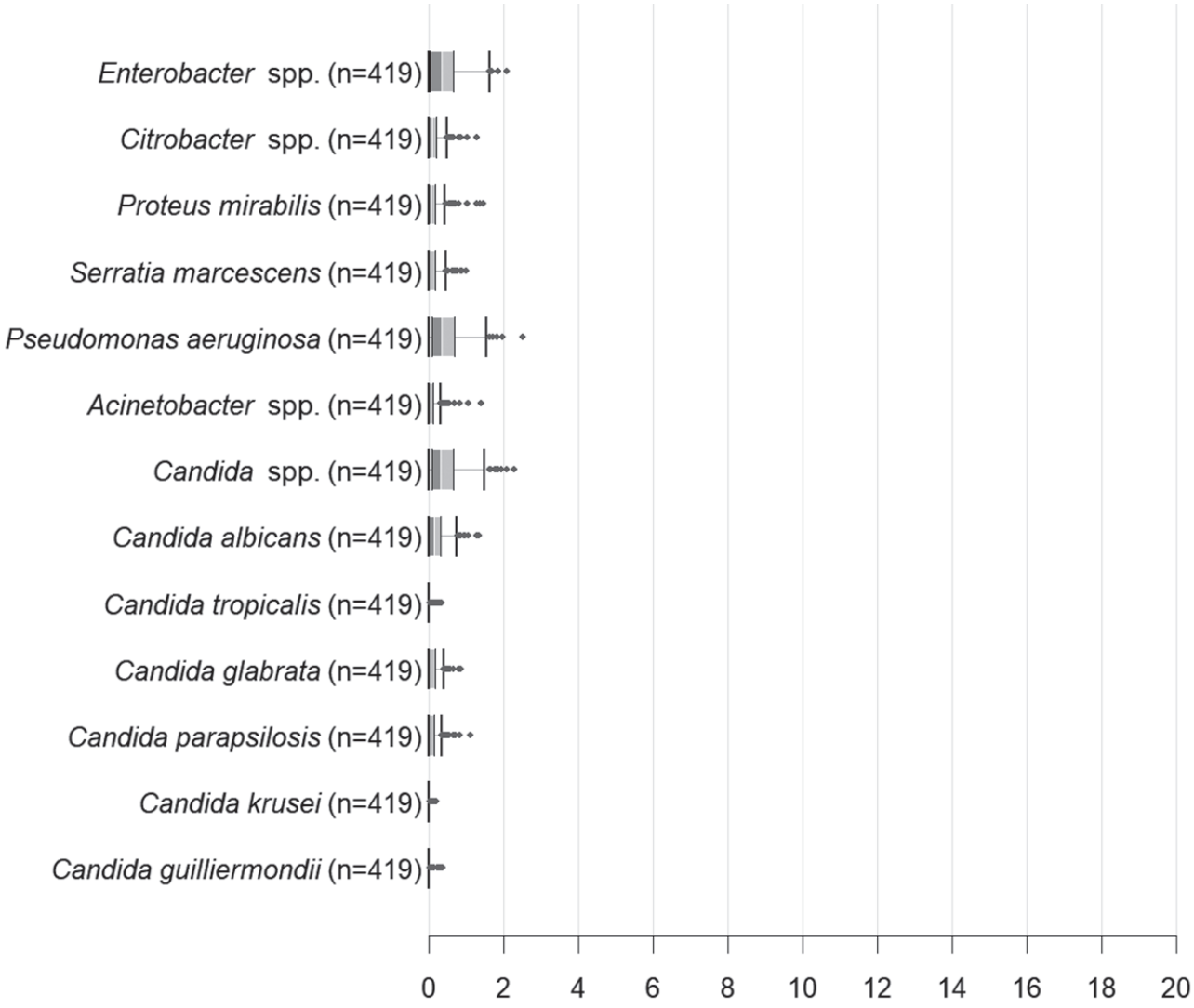
(Based on data from January to December 2021, as of August 25, 2022)

* The value was obtained by dividing the number of patients in which bacteria were detected by patient-days and multiplying the result by 10,000.
* [Nosocomial] Multiple detections per 90 days were processed as duplicate data, by bacterium. Patients with detected bacteria submitted on and after Day 4 of hospitalization were counted.
* Data registered via the “reduced information file of the JANIS Clinical Division” were used.
* Summarized by bacterium. Sites with no data were excluded.

Number of episodes of bloodstream infection caused by major bacteria per 10,000 patient-days (total number)

Figure 51 Distribution of the number of episodes of bloodstream infection caused by major bacteria per 10,000 patient-days (total number)



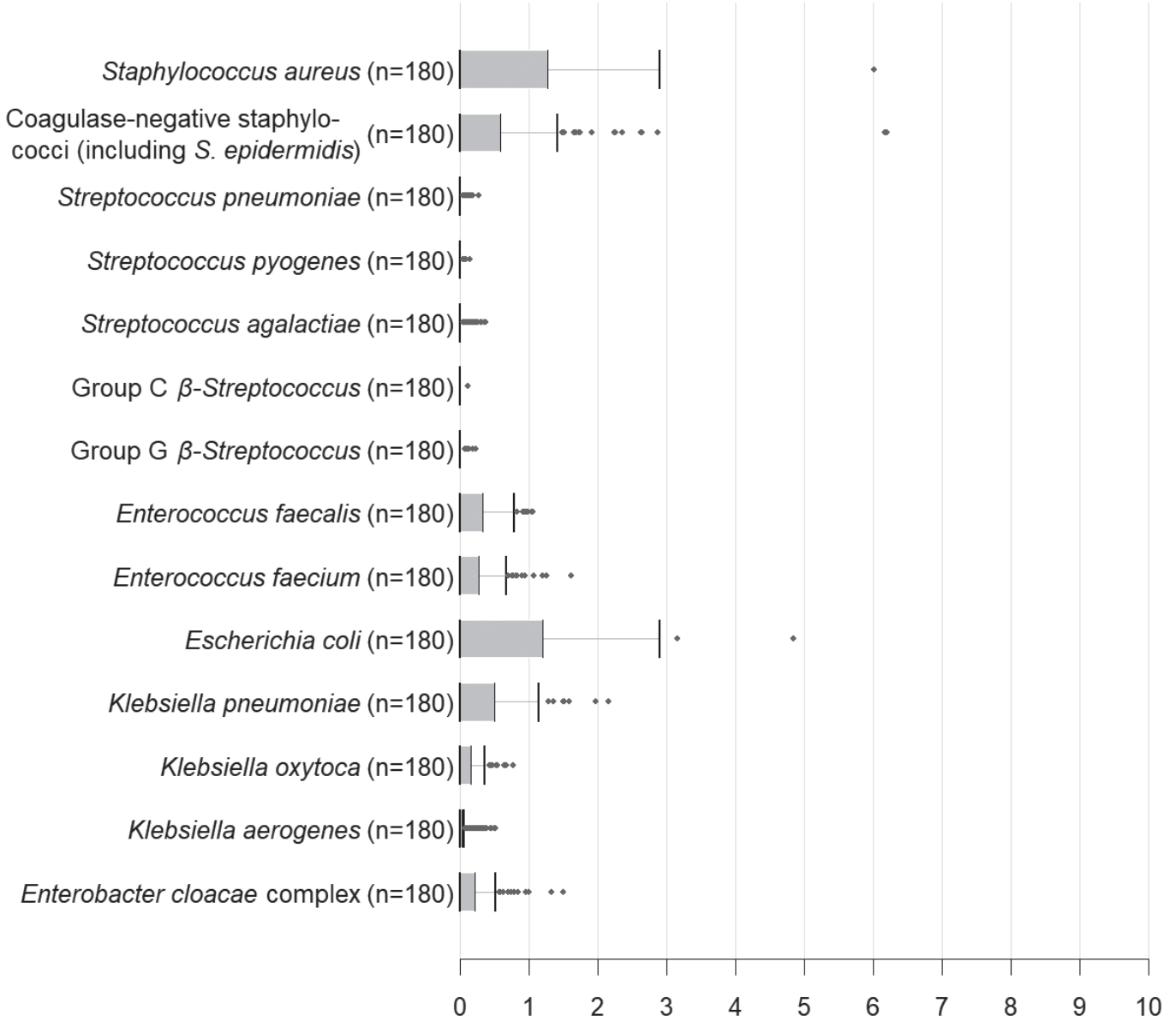


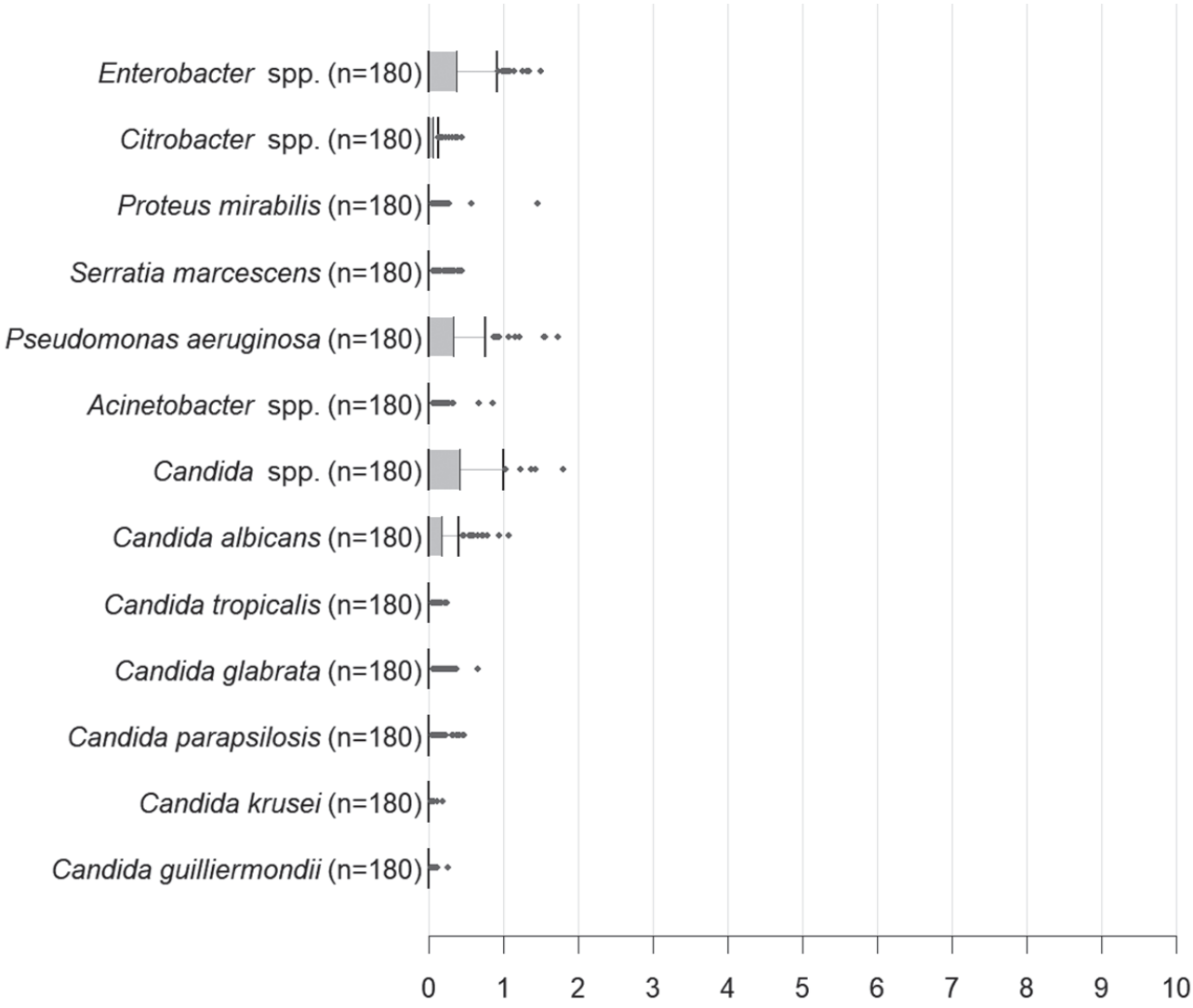
(Based on data from January to December 2021, as of August 25, 2022)

* The value was obtained by dividing the number of patients for which bacteria were detected in blood samples by patient-days and multiplying the result by 10,000.
* [Total number] Counted once even in cases where multiple detections were made in 1 patient per month, by bacterium.
* Contaminated samples were excluded from the count.
* Data registered via the “reduced information file of the JANIS Clinical Division” were used.
* Summarized by bacterium. Sites with no data were excluded.

Number of episodes of bloodstream infection caused by major bacteria per 10,000 patient-days (nosocomial)

Figure 52 Distribution of number of episodes of bloodstream infection caused by major bacteria per 10,000 patient-days (nosocomial)



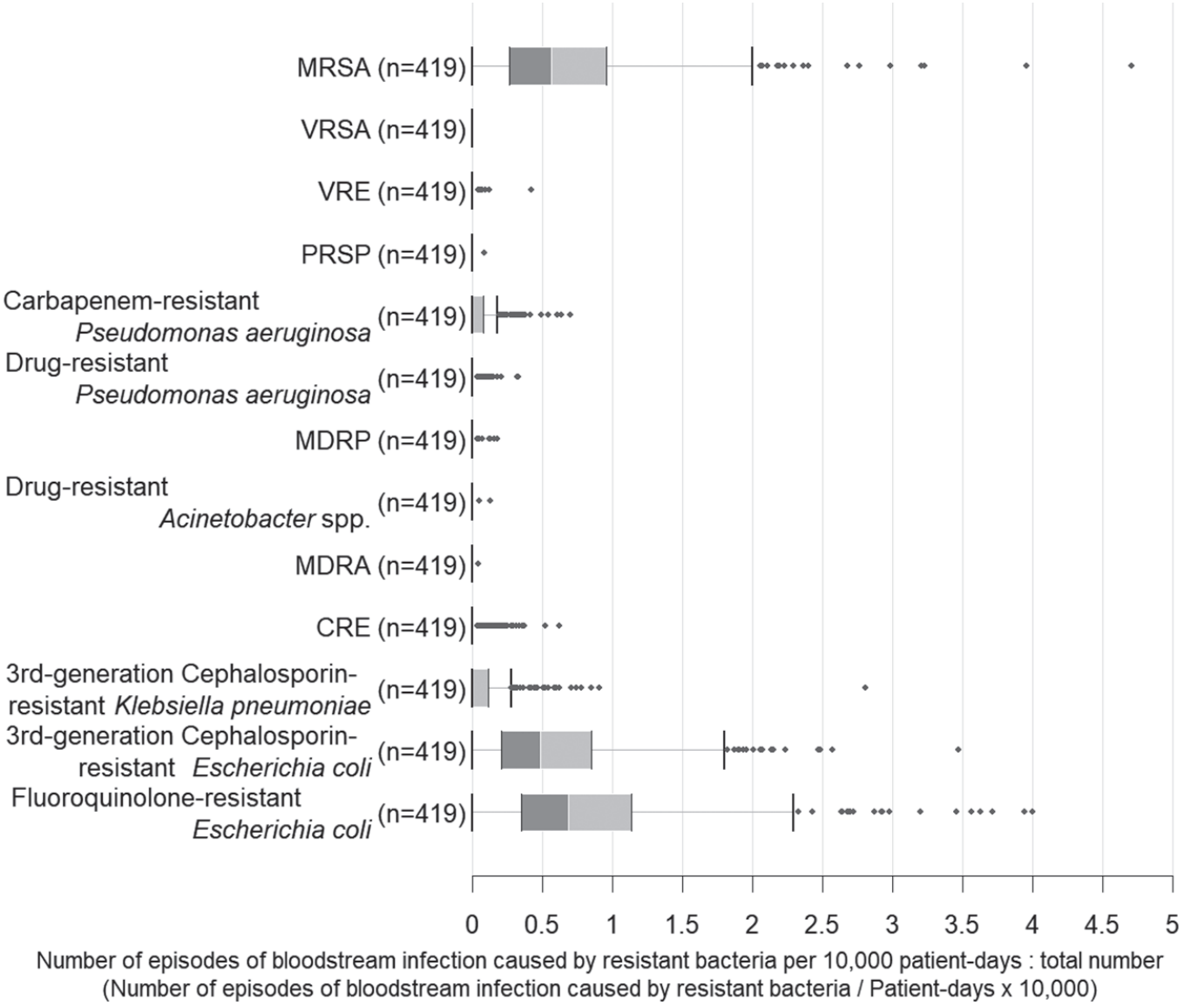


(Based on data from January to December 2021, as of August 25, 2022)

* The value was obtained by dividing the number of patients for which bacteria were detected in blood samples by patient-days and multiplying the result by 10,000.
* [Nosocomial] Patients with detected bacteria submitted on and after Day 4 of hospitalization were counted.
* Contaminated samples were excluded from the count.
* Data registered via the “reduced information file of the JANIS Clinical Division” were used.
* Summarized by bacterium. Sites with no data were excluded.

Number of episodes of bloodstream infection caused by resistant bacteria per 10,000 patient-days (total number)

Figure 53 Distribution of the number of episodes of bloodstream infection caused by resistant bacteria per 10,000 patient-days (total number)

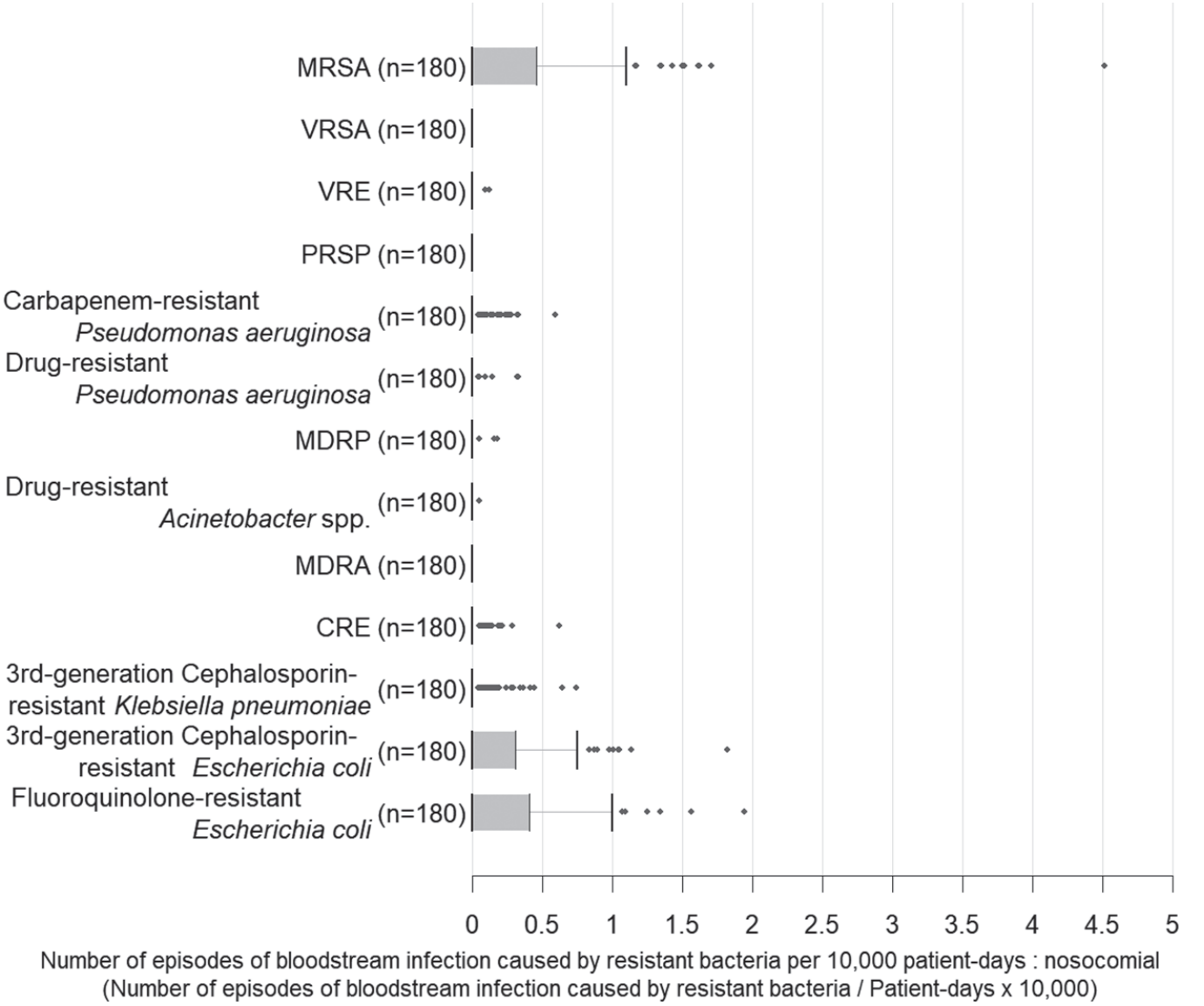


(Based on data from January to December 2021, as of August 25, 2022)

* The value was obtained by dividing the number of patients for which bacteria were detected in blood samples by patient-days and multiplying the result by 10,000.
* [Total number] Counted once even in cases where multiple detections were made in 1 patient per month, by bacterium.
* Contaminated samples were excluded from the count.
* Data registered via the “reduced information file of the JANIS Clinical Division” were used.
* Summarized by bacterium. Sites with no data were excluded.

Number of episodes of bloodstream infection caused by resistant bacteria per 10,000 patient-days (nosocomial)

Figure 54 Distribution of the number of episodes of bloodstream infection caused by resistant bacteria per 10,000 patient-days (nosocomial)

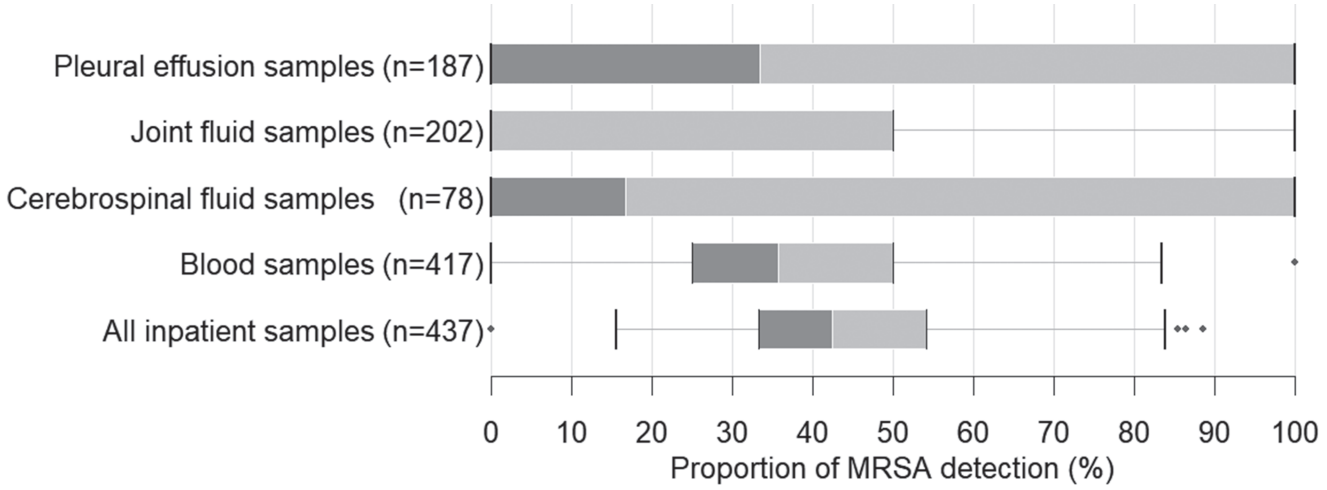


(Based on data from January to December 2021, as of August 25, 2022)

* The value was obtained by dividing the number of patients for which bacteria were detected in blood samples by patient-days and multiplying the result by 10,000.
* [Nosocomial] Patients with detected bacteria submitted on and after Day 4 of hospitalization were counted.
* Contaminated samples were excluded from the count.
* Data registered via the “reduced information file of the JANIS Clinical Division” were used.
* Summarized by bacterium. Sites with no data were excluded.

Proportion of methicillin-resistant *Staphylococcus aureus* (MRSA) detection

Figure 55 Distribution of the proportion of patients with newly detected methicillin-resistant *Staphylococcus aureus* (MRSA)

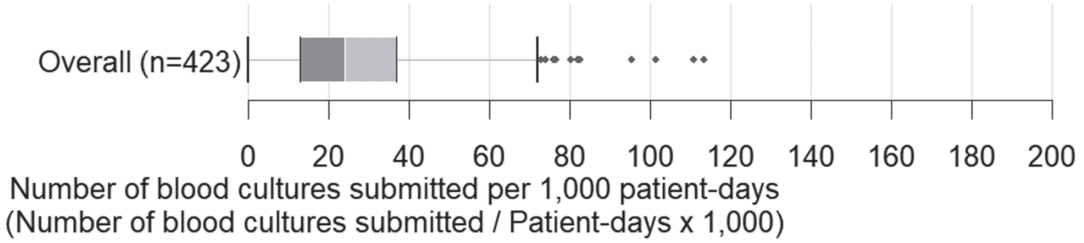


(Based on data from January to December 2021, as of August 25, 2022)

* Proportion of patients with newly detected methicillin-resistant *Staphylococcus aureus* (MRSA), among those with newly detected *S. aureus*
* Patients with detected *S. aureus* or methicillin-resistant *Staphylococcus aureus* (MRSA) were counted only once, even in cases where multiple detections were confirmed in a patient within the previous 90 days.
* If methicillin-resistant *Staphylococcus aureus* (MRSA) was detected once in a patient, the patient was considered as with MRSA.

Number of blood cultures submitted per 1,000 patient-days

Figure 56 Distribution of the number of blood cultures submitted per 1,000 patient-days

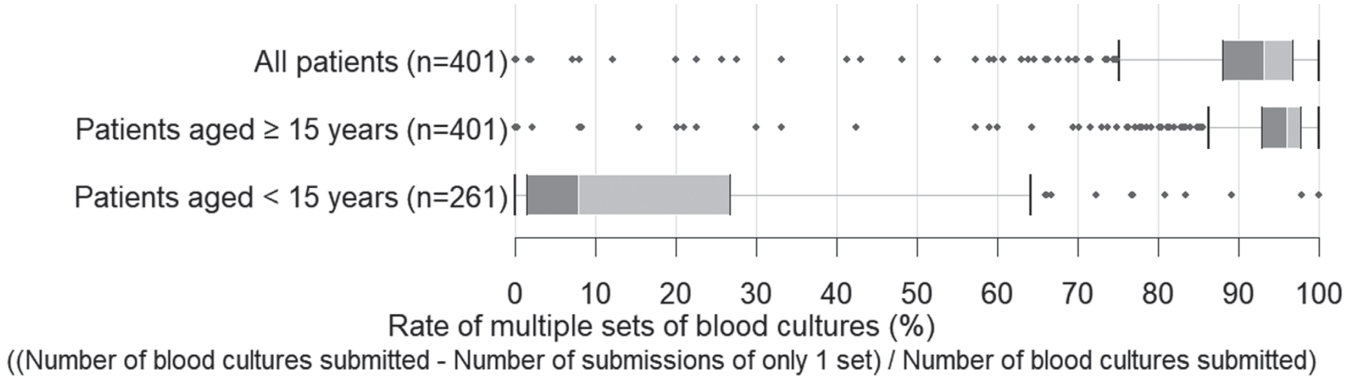


(Based on data from January to December 2021, as of August 25, 2022)

* The value was obtained by dividing the number of submitted blood cultures by patient-days and multiplying the result by 1,000.

Rate of multiple sets of blood cultures

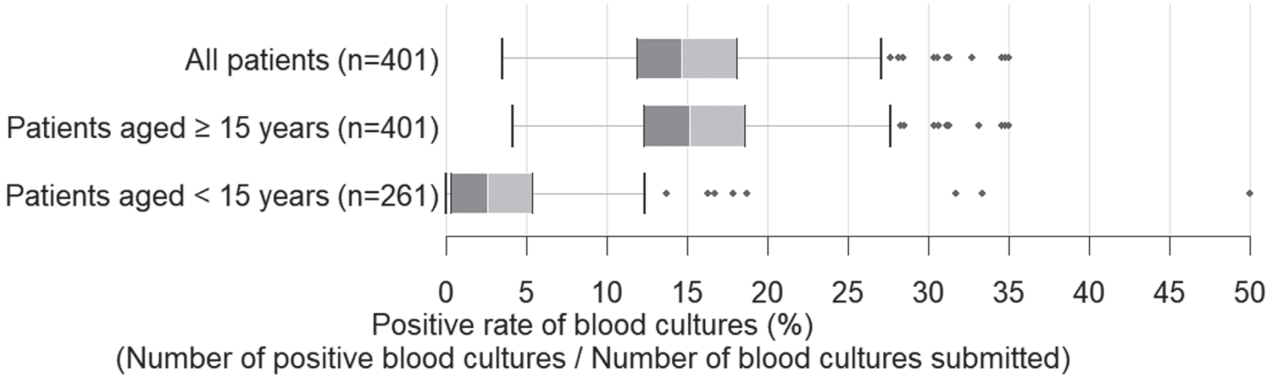
Figure 57 Distribution of the rate of multiple sets of blood cultures



(Based on data from January to December 2021, as of August 25, 2022)
* The value obtained by subtracting the number of submissions of only 1 set from the total number of submitted blood cultures, and dividing by the total number of blood cultures submitted.
* Sites with registered data for 20 or more submitted blood cultures during the target period.

Positive rate of blood cultures

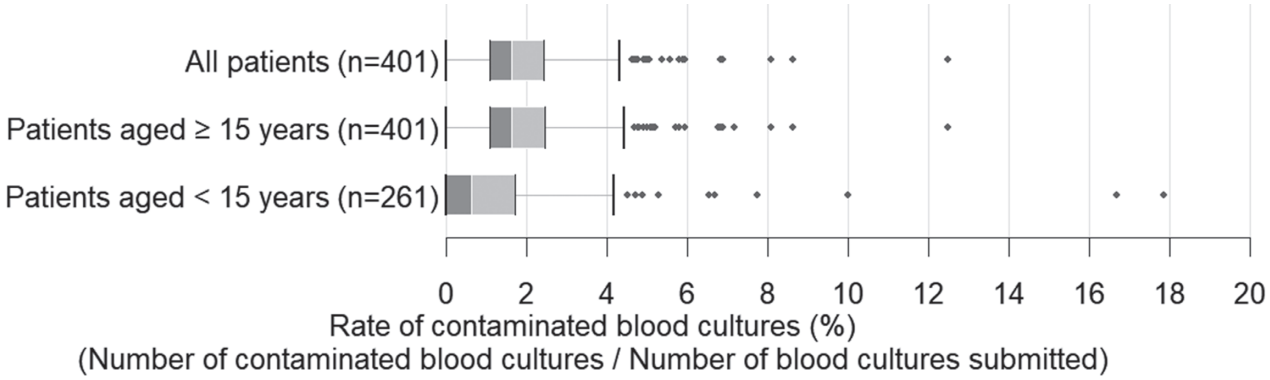
Figure 58 Distribution of the positive rate of blood cultures



(Based on data from January to December 2021, as of August 25, 2022)
* Proportion of the number of blood culture sets with a positive result, among the blood cultures submitted.
* Contaminated samples were counted as positive.
* Sites with registered data for 20 or more submitted blood cultures during the target period.

Rate of contaminated blood cultures

Figure 59 Distribution of the rate of contaminated blood cultures



(Based on data from January to December 2021, as of August 25, 2022)
* Proportion of the number of contaminated blood culture sets among the blood cultures 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.

Antibiogram

Figure 60 Table of antibiogram

Name of bacterium	No. of Target strains	PCG	AMPC/CVA	MPIPC	CEZ	IPM/CS	EM	CLDM	LVFX	VCM	TEIC	LZD	SMZ/TMP	MINO
Staphylococcus aureus	126582	34.3	83.0	-	85.8	92.7	55.5	88.4	59.1	100.0	100.0	100.0	97.1	93.2
Methicillin-sensitive *Staphylococcus aureus* (MSSA)	82934	51.7	99.9	-	100.0	100.0	75.6	97.2	83.3	-	-	-	97.2	99.2
Methicillin-resistant *Staphylococcus aureus* (MRSA)	47113	-	-	-	-	-	17.5	71.6	14.4	100.0	100.0	100.0	97.0	81.9
Coagulase negative *Staphylococcus* (CNS)	59707	26.6	-	42.3	-	-	55.2	82.9	48.6	100.0	97.5	99.9	86.2	96.2

Name of bacterium	No. of Target strains	ABPC	PCG	CTX	CTRX	MEPM	EM	CLDM	LVFX	VCM
Streptococcus pneumoniae [spinal fluid samples]	41	-	95.0	100.0	94.7	80.0	25.0	46.7	97.1	100.0
Streptococcus pneumoniae [other than spinal fluid samples]	11810	-	98.0	97.7	97.9	79.7	16.7	48.5	96.8	100.0
Streptococcus pyogenes	2051	99.6	100.0	100.0	99.9	-	76.1	85.3	88.7	-
Streptococcus agalactiae	26883	99.2	97.9	99.4	99.3	-	64.1	79.2	62.7	-

Name of bacterium	No. of Target strains	PCG	ABPC	EM	LVFX	VCM	TEIC	LZD	MINO
Enterococcus faecalis	51786	99.3	99.9	20.1	91.6	100.0	100.0	99.3	31.4
Enterococcus faecium	16519	13.8	14.6	8.9	11.8	98.5	98.9	99.4	46.9

Name of bacterium	No. of Target strains	ABPC	PIPC	ABPC/SBT	PIPC/TAZ	AMPC/CVA	CEZ	CEZ*1	CEZ*2	CMZ	CTX	CTRX	CAZ	CFPM	AZT	MEPM	IPM/CS	GM	AMK	LVFX	SMZ/TMP
Escherichia coli	158676	57.3	62.2	71.4	98.1	89.8	41.2	68.5	56.7	99.0	79.7	79.4	87.6	87.7	84.0	100.0	99.9	91.5	99.8	65.3	81.8
Escherichia coli [CTX/CTRX/CAZ R]	33968	0.2	1.4	41.9	95.5	79.8	0.1	0.1	0.1	96.8	0.3	0.5	42.9	39.0	21.1	99.8	99.8	81.5	99.4	16.8	59.3
Klebsiella pneumoniae	58467	6.3	68.5	84.2	97.1	93.8	52.5	86.3	79.4	98.8	92.1	91.1	92.9	94.7	92.8	99.8	99.6	97.0	99.9	96.0	87.5
Klebsiella pneumoniae [CTX/CTRX/CAZ R]	5482	0.5	4.5	9.6	76.2	43.2	2.7	3.6	2.8	91.1	4.7	2.5	29.0	37.2	19.8	97.4	97.5	71.4	99.4	68.5	27.2
Klebsiella oxytoca	20199	4.8	65.1	73.7	91.9	91.4	17.9	35.3	21.8	99.4	94.8	91.9	97.9	98.5	92.5	99.9	99.0	99.0	99.9	96.0	95.0
Enterobacter cloacae	19571	11.2	77.5	32.8	85.2	4.6	1.0	2.0	1.0	7.5	69.9	71.2	76.5	96.6	76.5	99.5	95.6	98.8	99.9	96.1	92.2
Klebsiella aerogenes	11158	11.5	77.3	49.7	85.4	5.9	2.0	5.5	2.1	6.7	73.8	75.3	76.4	98.9	80.8	99.5	85.7	99.4	99.9	98.8	97.1
Proteus mirabilis	12915	78.3	81.8	86.9	99.5	95.5	30.1	59.6	42.8	99.6	89.4	86.3	97.2	92.5	94.7	99.9	46.3	93.0	99.7	85.0	86.8
Proteus vulgaris	3409	6.4	72.9	77.8	99.3	92.6	0.6	3.2	0.7	99.2	78.3	64.3	96.7	98.2	87.8	99.9	45.7	98.9	99.8	98.8	94.1
Citrobacter freundii	7337	32.8	75.9	65.0	92.5	19.1	2.1	4.3	2.1	49.8	76.0	76.9	78.4	98.4	79.0	99.8	97.2	98.2	99.8	95.1	89.6
Citrobacter koseri	6525	1.1	47.2	91.3	96.4	96.4	53.0	88.1	81.8	97.1	94.3	94.5	94.2	96.8	94.8	100.0	99.8	99.1	99.9	95.8	96.2
Serratia marcescens	11248	9.0	86.5	14.8	91.5	4.5	0.1	0.1	0.1	83.2	83.9	81.6	89.4	99.2	89.0	99.8	91.1	98.9	99.5	95.3	97.5

Name of bacterium	Target strains	PIPC	ABPC/SBT	PIPC/TAZ	CAZ	CFPM	AZT	MEPM	IPM/CS	GM	AMK	LVFX	SMZ/TMP	MINO
Pseudomonas aeruginosa	52716	90.2	-	92.6	93.4	93.5	82.7	93.4	88.4	89.1	98.2	90.8	-	-
Acinetobacter baumannii	4271	80.3	95.4	87.9	90.5	91.2	-	99.0	99.3	88.5	98.2	90.7	89.4	98.5
Acinetobacter spp.	7913	80.3	95.0	88.5	88.5	91.8	-	99.0	99.2	90.7	98.3	92.8	90.5	98.2
Stenotrophomonas maltophilia	9077	-	-	-	38.7	-	-	-	-	-	-	91.4	94.2	99.6

Name of bacterium	Target strains	ABPC	ABPC/SBT	AMPC/CVA	CTX	CTRX	MEPM	CAM	LVFX	TC
Haemophilus influenzae	11062	43.2	66.0	81.4	98.5	99.3	96.1	78.3	97.2	99.1

* The data for the single year 2021, which had been registered as of August 25, 2022 were used to generate the antibiogram.
* The information was derived from the reduced information file of the JANIS Clinical Division of participating sites.
* 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 same patient more than once in the month of enrollment, only the first susceptibility result of that month was adopted.
* The proportion was calculated with the total of susceptibility (S) of bacteria as the numerator and the total of values other than susceptibility (S) as the denominator.
* SI that cannot be classified as intermediate (I) or susceptibility (S) is not included in the numerator or 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.")

IV. Reference at the end of the document

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

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 cholecystotomy
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 not involving 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

List of antimicrobial drugs

Drug class name	Category	Name of antimicrobial drug	Abbreviation
Penicillins	Injection	Benzylpenicillin (Inj.)	PCG
	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	Cefmetazole (Inj.)	CMZ
	Injection	Cefminox (Inj.)	CMNX
Ceftolozane/tazobactam	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	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
Arbekacin	Injection	Arbekacin (Inj.)	ABK
Daptomycin	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	Isepamicin (Inj.)	ISP
	Injection	Kanamycin (Inj.)	KM
	Injection	Gentamicin (Inj.)	GM
	Injection	Dibekacin (Inj.)	DKB
	Injection	Streptomycin (Inj.)	SM
	Injection	Tobramycin (Inj.)	TOB
Tetracyclines	Injection	Tigecycline (Inj.)	TGC
	Injection	Minocycline (Inj.)	MINO

Drug class name	Category	Name of antimicrobial drug	Abbreviation
Lincomycins	Injection	Clindamycin (Inj.)	CLDM
	Injection	Lincomycin (Inj.)	LCM
Macrolides	Injection	Azithromycin (Inj.)	AZM
	Injection	Erythromycin (Inj.)	EM
Sulfamethoxazole/trimethoprim	Injection	Sulfamethoxazole/trimethoprim (Inj.)	SMX/TMP
Metronidazole	Injection	Metronidazole (Inj.)	MNZ
Antifungals	Injection	Amphotericin B (Inj.)	AMPH-B
	Injection	Itraconazole (Inj.)	ITCZ
	Injection	Caspofungin (Inj.)	CPFG
	Injection	Fluconazole (Inj.)	FLCZ
	Injection	Posaconazole (Inj.)	PSCZ
	Injection	Fosfluconazole (Inj.)	F-FLCZ
	Injection	Voriconazole (Inj.)	VRCZ
	Injection	Micafungin (Inj.)	MCFG
	Injection	Miconazole (Inj.)	MCZ
	Injection	Liposomal amphotericin B (Inj.)	L-AMB
Penicillins	Oral	Benzylpenicillin benzathine (po)	DBECPCG
	Oral	Ampicillin (po)	ABPC
	Oral	Bacampicillin (po)	BAPC
	Oral	Amoxicillin (po)	AMPC
	Oral	Sultamicillin (po)	SBTPC
	Oral	Ampicillin/cloxacillin (po)	ABPC/MCIPC
	Oral	Amoxicillin/clavulanic acid (2:1) (po)	AMPC/CVA
	Oral	Amoxicillin/clavulanic acid (14:1) (po)	AMPC/CVA
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 pivoxil (po)	TBPM-PI
Penems	Oral	Faropenem (po)	FRPM
Oxazolidinones	Oral	Tedizolid (po)	TZD
	Oral	Linezolid (po)	LZD
Quinolones	Oral	Ofloxacin (po)	OFLX
	Oral	Levofloxacin (po)	LVFX
	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

Drug class name	Category	Name of antimicrobial drug	Abbreviation
Quinolones	Oral	Lomefloxacin (po)	LFLX
	Oral	Lascufloxacin (po)	LSFX
Aminoglycosides	Oral	Kanamycin (po)	KM
Tetracyclines	Oral	Tetracycline (po)	TC
	Oral	Demethylchlortetracycline (po)	DMCTC
	Oral	Doxycycline (po)	DOXY
	Oral	Minocycline (po)	MINO
Lincomycins	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	Acetyl-spiramycin (po)	AC-SPM
	Oral	Roxithromycin (po)	RXM
Sulfamethoxazole/trimethoprim	Oral	Sulfamethoxazole/trimethoprim (po)	SMZ/TMP
Metronidazole	Oral	Metronidazole (po)	MNZ
Vancomycin	Oral	Vancomycin (po)	VCM
Fidaxomicin	Oral	Fidaxomicin (po)	FDX
Antifungals	Oral	Fluconazole (po)	FLCZ
	Oral	Flucytosine (po)	5-FC
	Oral	Itraconazole (po)	ITCZ
	Oral	Posaconazole (po)	PSCZ
	Oral	Voriconazole (po)	VRCZ

List of microorganisms and resistant bacteria

Situation concerning the detection of major bacteria/resistant bacteria

Name of 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 marcescen
Staphylococcus aureus
Staphylococcus epidermidis
Streptococcus pneumoniae

Name of resistant bacterium
Multidrug-resistant *Acinetobacter*
Multidrug-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*

Situation concerning the occurrence of bloodstream infection

Name of 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

Name of resistant bacterium causing bloodstream infection
Multidrug-resistant *Acinetobacter*
Multidrug-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*

List of bacteria in contaminated samples

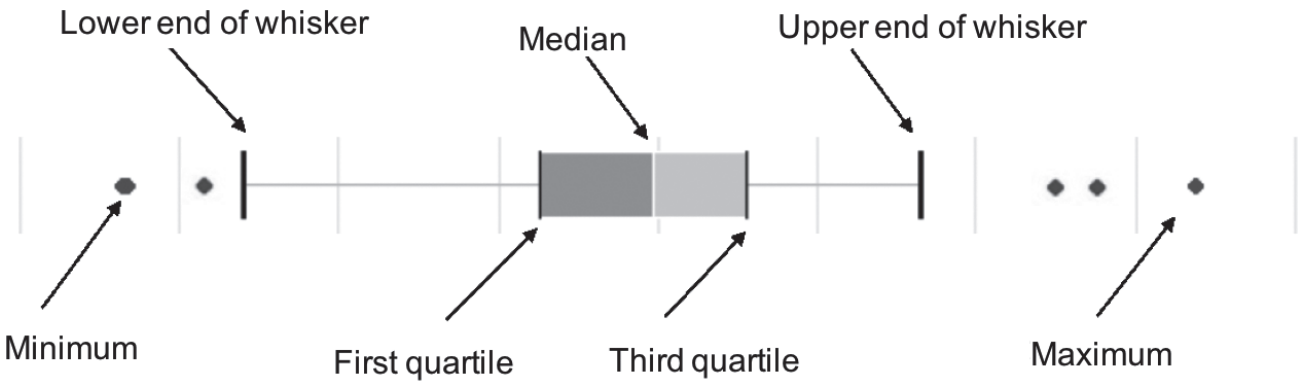
Name of bacteria
Staphylococcus sp.
Staphylococcus, coagulase negative (CNS)
Staphylococcus epidermidis
Staphylococcus saprophyticus subsp. *saprophyticus*
Staphylococcus hominis subsp. *hominis*
Staphylococcus warneri
Staphylococcus lentus
Staphylococcus auricularis
Staphylococcus simulans
Staphylococcus cohnii subsp. *cohnii*
Staphylococcus xylosus
Staphylococcus sciuri subsp. *sciuri*
Staphylococcus intermedius
Staphylococcus hyicus
Staphylococcus haemolyticus

Name of bacteria
Staphylococcus capitis subsp. *capitis*
Propionibacterium sp.
Propionibacterium acnes
Corynebacterium sp.
Corynebacterium diphtheriae
Corynebacterium jeikeium
Bacillus sp.
Bacillus cereus
Bacillus subtilis subsp. *subtilis*
Bacillus anthracis

How to read box plots

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**



List of abbreviations

	Full and non-abbreviated name
AMR	Antimicrobial Resistance
AMU	Antimicrobial Use
ASP	Antimicrobial Stewardship Program
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
CSEP	Clinical Sepsis
DDD	Defined Daily Dose
DOT	Days of Therapy
GCU	Growing Care Unit
HCU	High Care Unit
ICT	Infection Control Team
ICU	Intensive Care Unit
JANIS	Japan Nosocomial Infections Surveillance
LCBI	Laboratory Confirmed Bloodstream Infection
NICU	Neonatal Intensive Care Unit
PAF	Prospective Audit and Feedback
PICU	Pediatric Intensive Care Unit
SSI	Surgical Site Infection
SCU	Stroke Care Unit
TDM	Therapeutic Drug Monitoring
WHO	World Health Organization

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