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

Japan Surveillance for Infection Prevention and Healthcare Epidemiology

J-SIPHE

Annual Report 2020

J-SIPHE
感染対策連携共通プラットフォーム

2020.1-2020.12
Published Nov 2021

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

Japan Surveillance for Infection Prevention and Healthcare Epidemiology (J-SIPHE) Annual Report 2020

2020.1-2020.12
Published Nov 2021

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

I. Overview of J-SIPHE

Background and purpose

In 2015, the World Health Organization (WHO) General Assembly adopted the Global Action Plan on Antimicrobial Resistance (AMR) and called on Member States to develop their own action plan.
In response, the Government of Japan formulated an AMR Action Plan in 2016. The AMR Action Plan calls for efforts in such areas as public awareness and education, surveillance and monitoring (drug resistance and the amount of use of antimicrobials), infection prevention and control, and antimicrobial stewardship. The prevention and control of infection in healthcare and long-term nursing is also advocated, along with the promotion of regional cooperation.
Against this background, the AMR Clinical Reference Center, commissioned by the Ministry of Health, Labour and Welfare (MHLW), has developed a system called Japan Surveillance for Infection Prevention and Healthcare Epidemiology (J-SIPHE) that can be used for AMR measures at medical institutions.
The purpose of J-SIPHE is to aggregate information related to AMR measures and help participating sites and their local communities to utilize the information. The information to be summarized includes the treatment status of infectious diseases at participating sites nationwide, approaches to and structure of infection control, incidence of healthcare-associated infections, emergence of major bacteria and antimicrobial-resistant bacteria, incidence of bloodstream infections, and antimicrobial use. It also plays a role to provide a benchmark in Japan by consolidating the relevant 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 MHLW to promote measures against AMR based on the AMR Action Plan. The J-SIPHE Expert Meeting consists of experts in various fields related to this system and deliberates surveillance items, rules, research, etc. from a professional viewpoint.

Registered data

This system accumulates multiple sets of data on AMR measures registered by participating sites. These accumulated data are used in various efforts at the participating sites, in the community-based infection control network, and in the network of related sites.
In the AMR Clinical Reference Center where this system is operated, data are collected on an annual basis, and an annual report is prepared for the purpose of providing information to medical institutions (public information), in order to effectively utilize the accumulated data.
The important accumulated data are securely stored by the J-SIPHE office in the Center, strictly reviewed by external experts, and utilized for research and other activities concerning AMR measures.

Annual report

Based on the data registered by the participating sites that use this system, an annual report is prepared according to the following criteria.

1. Raw data* from January to December of the previous year at the time of data aggregation is used.
2. Raw data* of the participating sites that have registered data for at least one month within the said period is used.
3. The annual report uses its specific methods of aggregation/representation.
4. Sites that have calculable data are included in each figure/table.
5. It is avoided to graph or present data that would likely identify the site.
6. Registered data with very limited information and marked outliers are excluded from aggregation.

*** Raw data: data registered in the system by participating sites**

II. Data Registration Items

The J-SIPHE data registration items at the time of this annual report are listed below.

Basic information (site information)

- Number of beds
- Infection prevention and control premium category
- Antimicrobial stewardship support premium
- Presence/absence of infectious disease consultation system
- Working status of physicians for the infectious disease consultation system
- Total number of hospitalized patients
- Total number of hospitalized patients by ward
- Number of inpatients
- Average days of hospitalization

Infection treatment/antimicrobial stewardship team (AST)-related information

- Number of infectious disease consultation physicians
- Number of infectious disease specialists among infectious disease consultation physicians
- Number of pediatric infectious disease specialists among infectious disease consultation physicians
- Number of infectious disease consultations (described in medical records)
- Number of consultations conducted at the bedside among the number of infectious disease consultations (described in medical records)
- Number of pediatric consultations among the number of infectious disease consultations (described in medical records)
- Presence/absence of system for starting the culture of blood culture bottles collected in the hospital
- Presence/absence of system for Gram staining for positive blood culture
- Presence/absence of surveillance system by the department of infectious diseases and infection control team (ICT) for patients with positive blood culture
- Antimicrobial agents with the use of antimicrobial stewardship support program
- Details of the antimicrobial stewardship support program
- Number of patients starting treatment with drugs subject to therapeutic drug monitoring (TDM)
- Number of patients on TDM among patients receiving treatment with drugs subject to TDM
- Presence/absence of staff training aimed at antimicrobial stewardship
- Number of staff training sessions aimed at antimicrobial stewardship

Antimicrobial usage (AMU) information

- Dose of each antimicrobial drug used
- Days of use of each antimicrobial drug

ICT-related information

- ICT system (number of qualified persons in each job type)
- Monitoring system for cases in which resistant bacteria have been detected

- Influenza-like illness monitoring system
- Number of patients with influenza-like symptoms
- Gastroenteritis onset monitoring system
- Number of patients with gastroenteritis symptoms
- Amount of hand rub consumed (by ward)
- Number of hand hygiene moments upon entry into hospital rooms (by job type/ward)
- Number of hand hygiene practices upon entry into hospital rooms (by job type/ward)
- Number of hand hygiene moments upon exit from hospital rooms (by job type/ward)
- Number of hand hygiene practices upon exit from hospital rooms (by job type/ward)
- The WHO Hand Hygiene Self-Assessment Framework score

Central Line-Associated Bloodstream Infection (CLABSI)/Catheter-Associated Urinary Tract Infection (CAUTI) information (information on healthcare-associated infections)

- Total days of use of central line (by ward)
- Number of Laboratory Confirmed Bloodstream Infection (LCBI) occurrences (by ward)
- Number of Clinical Sepsis (CSEP) occurrences (by ward)
- Total days of use of urethral catheter (by ward)
- Number of CAUTI occurrences (by ward)

Surgical Site Infection (SSI) information (information on healthcare-associated infections)

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

Neonatal intensive care unit (NICU) information (information on healthcare-associated infections)

- Number of beds in NICU
- Number of beds in growing care unit (GCU)
- Presence/absence of pediatric surgery
- Presence/absence of cardiovascular surgery
- Presence/absence of neurosurgery
- Presence/absence of methicillin-resistant *Staphylococcus aureus* (MRSA) active surveillance system
- Frequency of MRSA active surveillance
- Number of new MRSA detected
- Presence/absence of monitoring of the number of device-related infections
- Total days of use of central line (by birth weight category)
- Number of LCBI occurrences (by birth weight category)
- Number of CSEP occurrences (by birth weight category)

Information on microorganisms and resistant bacteria

- Number of patients with a positive *Clostridioides difficile* infection (CDI) diagnostic test
- Detection method
- Total number of each major bacteria, number of new bacteria detected, number of bacteria detected in the hospital
- Total number of each resistant bacteria, number of new bacteria detected, number of bacteria detected in the hospital
- Total number of cases and number of nosocomial bloodstream infections by bacterial species
- Number of patients with MRSA detected in blood samples
- Number of patients with *S. aureus* detected in blood samples
- Number of patients who provided blood samples
- Number of patients with MRSA detected in cerebrospinal fluid samples
- Number of patients with *S. aureus* detected in cerebrospinal fluid samples
- Number of patients who provided cerebrospinal fluid samples
- Number of patients with MRSA detected in joint fluid samples
- Number of patients with *S. aureus* detected in joint fluid samples
- Number of patients who provided synovial fluid samples
- Number of patients with MRSA detected in pleural effusion samples
- Number of patients with *S. aureus* detected in pleural effusion samples
- Number of patients who provided pleural effusion samples
- Number of patients with MRSA detected in all inpatient material samples
- Number of patients with *S. aureus* detected in all inpatient material samples
- Number of patients who provided all inpatient samples
- Number of patients aged 15 years or older who provided blood cultures
- Number of patients aged 15 years or older who provided only one set of blood culture
- Number of patients aged 15 years or older with positive blood culture
- Number of patients aged 15 years or older with contaminated blood culture
- Number of patients younger than 15 years who provided blood cultures
- Number of patients younger than 15 years who provided only one set of blood culture
- Number of patients younger than 15 years with positive blood culture
- Number of patients younger than 15 years with contaminated blood culture

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

III. Summary of Tabulated Data Registration Items

Using the data from January to December 2020 registered as of August 25, 2021, tabulation and calculation were performed for each item by site, and figures and tables were prepared.
See "How to read box plots" to read box plots.

Basic information (site information)

Basic information and other information on participating sites are tabulated.

Table 1 Participating sites

Participating item	Participating sites	Share of Premium 1	Share of Premium 2	Share of no premium
Total	778	69.3(%)	29.8(%)	0.9(%)
Infection treatment/Antimicrobial Stewardship Program (ASP) activity information	380	84.5(%)	14.7(%)	0.8(%)
AMU information	723	71.1(%)	28.1(%)	0.8(%)
ICT information	448	71.9(%)	27.2(%)	0.9(%)
Information on healthcare-associated infections	304	84.9(%)	14.8(%)	0.3(%)
CLABSI/CAUTI information	248	84.3(%)	15.3(%)	0.4(%)
SSI information	208	88.9(%)	11.1(%)	0(%)
NICU Information	49	85.7(%)	14.3(%)	0(%)
Information on microorganisms and resistant bacteria	552	71.7(%)	27.5(%)	0.7(%)

(Based on data from January to December 2020 as of August 25, 2021)
* "Number of participating sites" indicates the sum of participating sites in each premium category.
* "Premium 1" indicates the share of sites calculating Infection Prevention and Control Premium 1
* "Premium 2" indicates the share of sites calculating Infection Prevention and Control Premium 2
* "No premium" indicates the share of sites not calculating Infection Prevention and Control Premium
* One or more items were selected optionally.

Table 2 Distribution of the number of beds, the total number of hospitalized patients, the number of inpatients, and the average days of hospitalization at participating sites

Site	Item	Minimum	First quartile	Median	Third quartile	Maximum
All sites	Number of beds	36.0	196.0	308.1	498.3	1275.0
	Average total number of hospitalized patients	562.7	4227.2	6866.3	10892.9	31661.6
	Number of new inpatients	6.9	165.3	394.1	836.2	2149.3
	Average days of hospitalization	3.5	12.0	14.4	19.0	248.6
Sites selecting information on infection treatment/ ASP activity	Number of beds	36.0	239.0	370.0	514.5	1275.0
	Average total number of hospitalized patients	562.7	5236.6	8431.9	12043.4	31661.6
	Number of new inpatients	17.0	257.8	543.2	1001.1	2101.7
	Average days of hospitalization	3.7	11.8	13.8	16.8	248.6

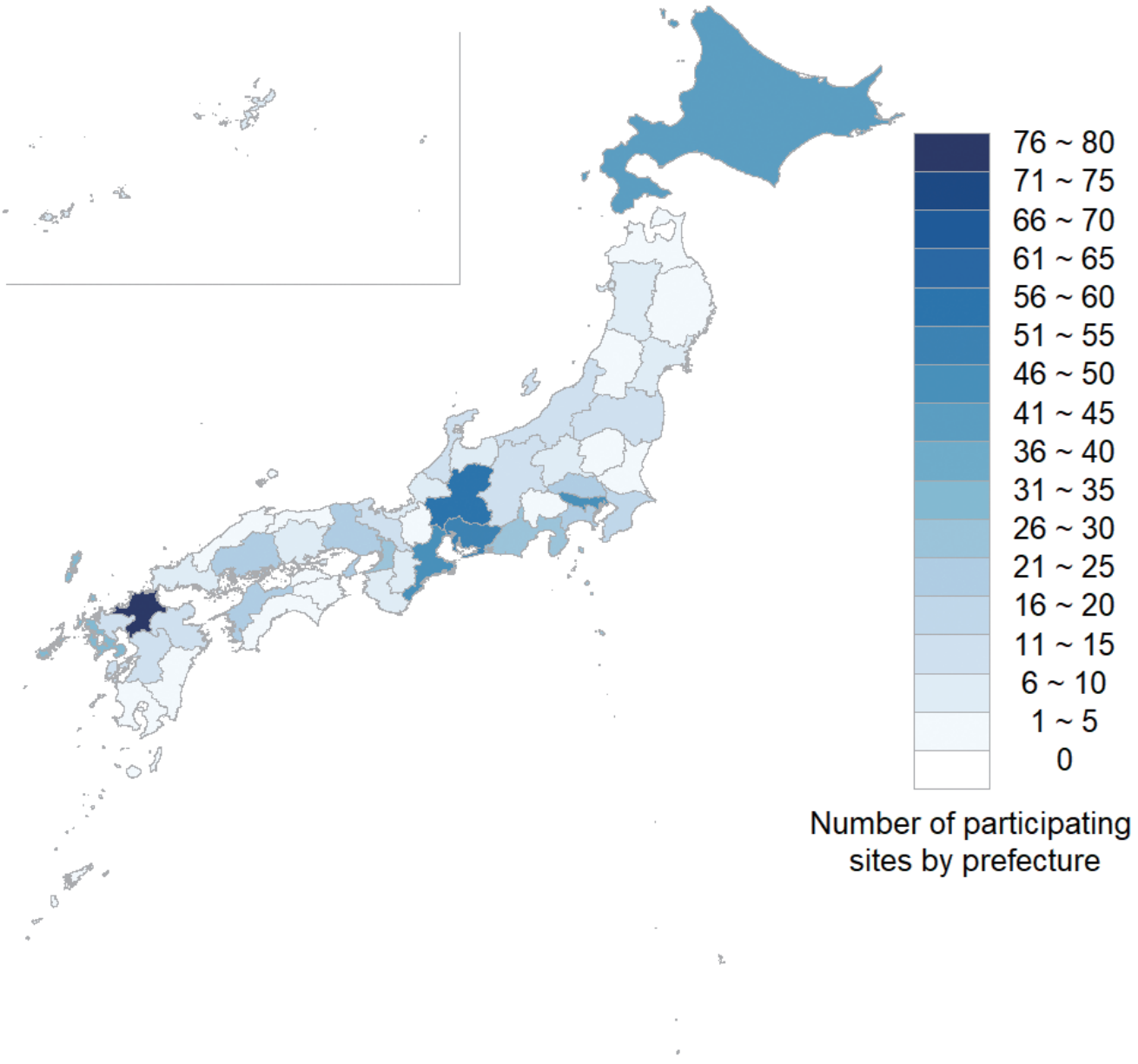
Site	Item	Minimum	First quartile	Median	Third quartile	Maximum
AMU information -selecting sites	Number of beds	36.0	198.0	313.0	499.0	1275.0
	Average total number of hospitalized patients	562.7	4284.1	6927.5	11125.3	31661.6
	Number of new inpatients	6.9	172.3	406.3	843.1	2149.3
	Average days of hospitalization	3.5	12.0	14.3	18.7	248.6
Sites selecting information on healthcare-associated infections	Number of beds	36.0	215.0	319.5	500.0	1160.0
	Average total number of hospitalized patients	562.7	4777.5	7564.9	11218.6	26383.8
	Number of new inpatients	19.9	225.1	471.1	912.3	1893.3
	Average days of hospitalization	3.7	11.5	13.8	17.5	248.6
CLABSI/CAUTI -selecting sites	Number of beds	36.0	212.1	313.5	498.0	1160.0
	Average total number of hospitalized patients	562.7	4617.7	7145.0	10803.6	26383.8
	Number of new inpatients	19.9	191.4	467.3	886.1	1893.3
	Average days of hospitalization	3.7	11.6	13.8	17.8	248.6
NICU -selecting sites	Number of beds	50.0	241.3	486.5	619.5	1160.0
	Average total number of hospitalized patients	562.7	5335.6	10749.8	14396.2	26383.8
	Number of new inpatients	19.9	313.0	908.9	1227.9	1893.3
	Average days of hospitalization	8.5	10.9	12.2	14.9	36.0
SSI -selecting sites	Number of beds	50.0	237.5	350.0	500.0	1160.0
	Average total number of hospitalized patients	562.7	5227.4	7887.9	11377.1	26383.8
	Number of new inpatients	19.9	311.4	514.9	996.8	1893.3
	Average days of hospitalization	3.7	11.4	13.4	16.4	248.6
ICT information -selecting sites	Number of beds	36.0	195.0	303.0	480.0	1275.0
	Average total number of hospitalized patients	562.7	4149.8	6824.2	10661.0	31661.6
	Number of new inpatients	6.9	152.8	391.4	808.4	2101.7
	Average days of hospitalization	3.7	12.0	14.5	18.6	248.6
Sites selecting information on microorganisms and resistant bacteria	Number of beds	36.0	199.0	311.0	491.3	1275.0
	Average total number of hospitalized patients	562.7	4371.4	6922.4	10981.5	31661.6
	Number of new inpatients	6.9	171.3	404.2	805.3	2101.7
	Average days of hospitalization	3.7	11.9	14.3	19.3	248.6

(Based on data from January to December 2020 as of August 25, 2021)

* "Number of beds" indicates the value obtained by totaling the number of beds for each year and month of registration and dividing it by the number of years and months of registration.
* "Average total number of hospitalized patients" indicates the value obtained by totaling the total number of hospitalized patients for each year and month of registration and dividing it by the number of years and months of registration.
* "Number of new inpatients" indicates the value obtained by totaling the number of new inpatients for each year and month of registration and dividing it by the number of years and months of registration.
* "Average days of hospitalization" indicates the value obtained by totaling the average days of hospitalization for each year and month of registration and dividing it by the number of years and months of registration.

Distribution of participating sites

Figure 1 Geographic distribution of participating sites



(Based on data from January to December 2020 as of August 25, 2021)

Table 3 Participating sites by prefecture

Prefecture code	Prefecture	Participating sites	Premium 1	Premium 2	No premium
1	Hokkaido	45	75.6(%)	17.8(%)	6.7(%)
2	Aomori	3	66.7(%)	33.3(%)	0(%)
3	Iwate	1	100(%)	0(%)	0(%)
4	Miyagi	10	70(%)	30(%)	0(%)
5	Akita	10	70(%)	30(%)	0(%)
6	Yamagata	2	100(%)	0(%)	0(%)
7	Fukushima	11	72.7(%)	27.3(%)	0(%)
8	Ibaraki	5	100(%)	0(%)	0(%)
9	Tochigi	5	100(%)	0(%)	0(%)
10	Gunma	7	85.7(%)	14.3(%)	0(%)
11	Saitama	24	83.3(%)	16.7(%)	0(%)
12	Chiba	19	89.5(%)	5.3(%)	5.3(%)
13	Tokyo	50	86(%)	14(%)	0(%)
14	Kanagawa	24	95.8(%)	4.2(%)	0(%)
15	Niigata	11	72.7(%)	27.3(%)	0(%)
16	Toyama	7	85.7(%)	14.3(%)	0(%)
17	Ishikawa	13	69.2(%)	30.8(%)	0(%)
18	Fukui	10	50(%)	50(%)	0(%)
19	Yamanashi	2	100(%)	0(%)	0(%)
20	Nagano	15	93.3(%)	6.7(%)	0(%)
21	Gifu	57	47.4(%)	52.6(%)	0(%)
22	Shizuoka	27	70.4(%)	29.6(%)	0(%)
23	Aichi	52	71.2(%)	26.9(%)	1.9(%)
24	Mie	46	47.8(%)	47.8(%)	4.3(%)
25	Shiga	2	100(%)	0(%)	0(%)
26	Kyoto	14	64.3(%)	35.7(%)	0(%)
27	Osaka	27	96.3(%)	3.7(%)	0(%)
28	Hyogo	25	64(%)	36(%)	0(%)
29	Nara	6	100(%)	0(%)	0(%)
30	Wakayama	10	70(%)	30(%)	0(%)
31	Tottori	3	100(%)	0(%)	0(%)
32	Shimane	3	100(%)	0(%)	0(%)
33	Okayama	10	90(%)	10(%)	0(%)
34	Hiroshima	24	83.3(%)	16.7(%)	0(%)
35	Yamaguchi	6	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	76	47.4(%)	52.6(%)	0(%)
41	Saga	13	38.5(%)	61.5(%)	0(%)
42	Nagasaki	33	33.3(%)	66.7(%)	0(%)
43	Kumamoto	11	72.7(%)	27.3(%)	0(%)
44	Oita	13	38.5(%)	61.5(%)	0(%)
45	Miyazaki	4	100(%)	0(%)	0(%)
46	Kagoshima	3	100(%)	0(%)	0(%)
47	Okinawa	7	100(%)	0(%)	0(%)

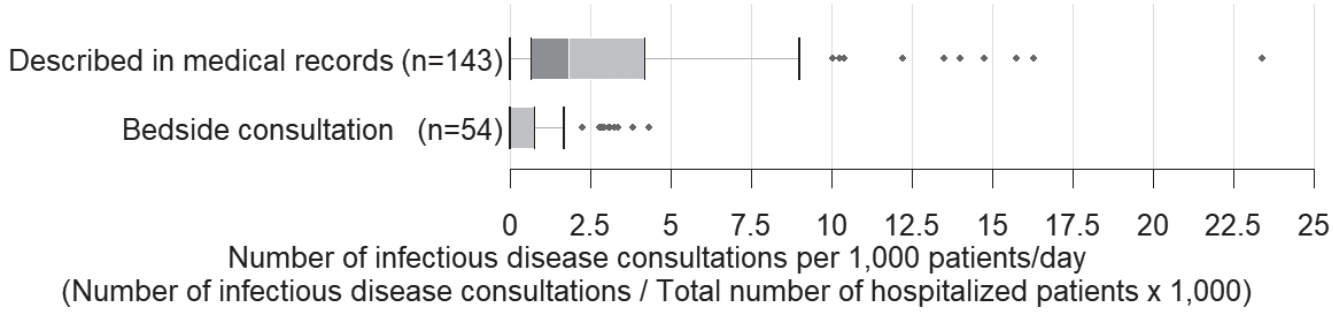
(Based on data from January to December 2020 as of August 25, 2021)
* “Number of participating sites” indicates the sum of participating sites in each prefecture.
* “Premium 1” indicates the share of sites calculating Infection Prevention and Control Premium 1
* “Premium 2” indicates the share of sites calculating Infection Prevention and Control Premium 2
* “No premium” indicates the share of sites not calculating Infection Prevention and Control Premium

Infection treatment/AST-related information

Tabulation and calculation were performed for the data of infection treatment/AST-related information registered by participating sites.

Number of infectious disease consultations per 1,000 patients/day

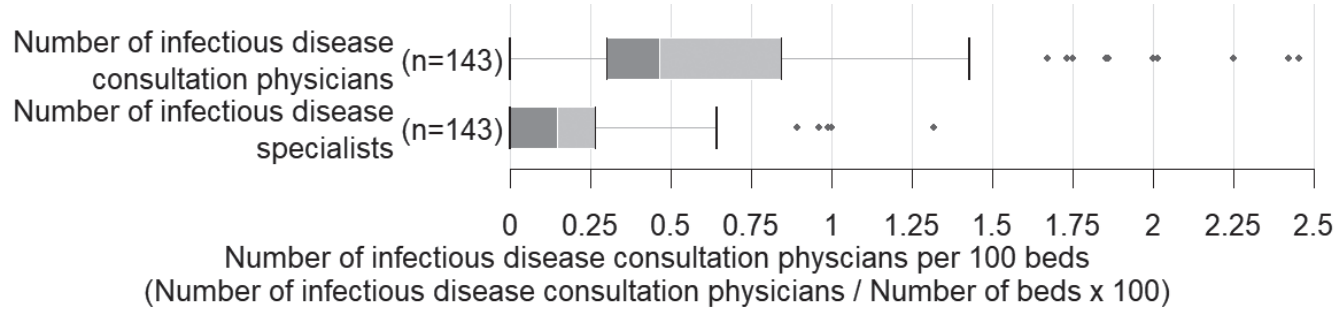
Figure 2 Distribution of the number of infectious disease consultations per 1,000 patients/day



(Based on data from January to December 2020 as of August 25, 2021)
* The values were obtained by dividing the number of infectious disease consultations by the total number of hospitalized patients and multiplying it by 1,000.
* "Described in medical records" represents consultations that were described in medical records.
* "Bedside consultation" represents consultations that were described in medical records and conducted at the bedside.

Number of infectious disease consultation physicians per 100 beds

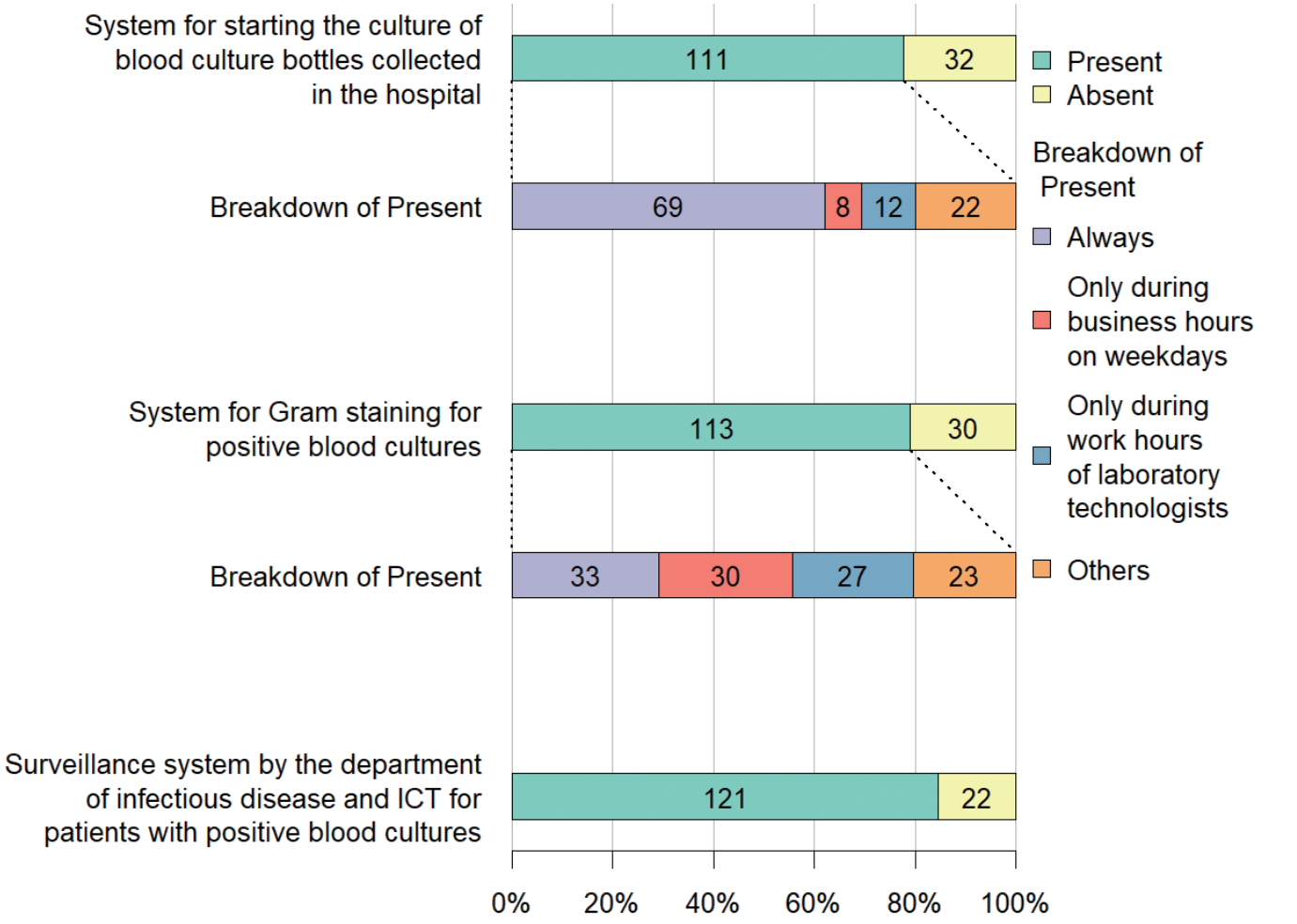
Figure 3 Distribution of the number of infectious disease consultation physicians per 100 beds



(Based on data from January to December 2020 as of August 25, 2021)
* The values were obtained by dividing the number of infectious disease consultation physicians by the number of beds and multiplying it by 100.
* "Infectious disease specialist" is an infectious disease consultation physician who is qualified as an infectious disease specialist.

System for blood culture testing

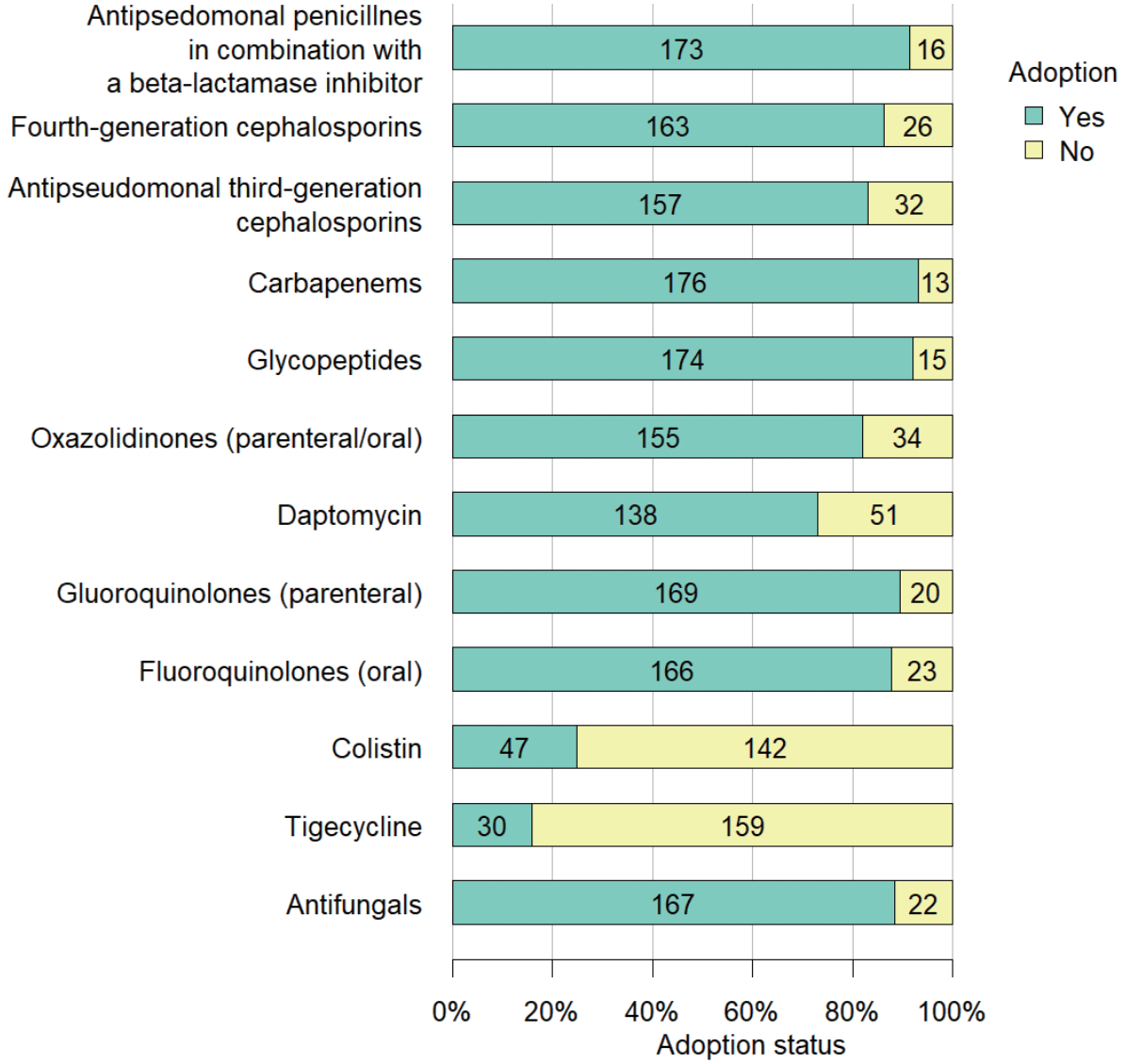
Figure 4 Shares of systems for blood culture testing



(Based on data from January to December 2020 as of August 25, 2021)
* Share of systems for starting the culture of blood culture bottles collected in the hospital
* Share of systems for Gram staining for positive blood cultures
* Share of surveillance systems by the department of infectious diseases or ICT for patients with positive blood cultures

Adoption status of drugs subject to antimicrobial stewardship

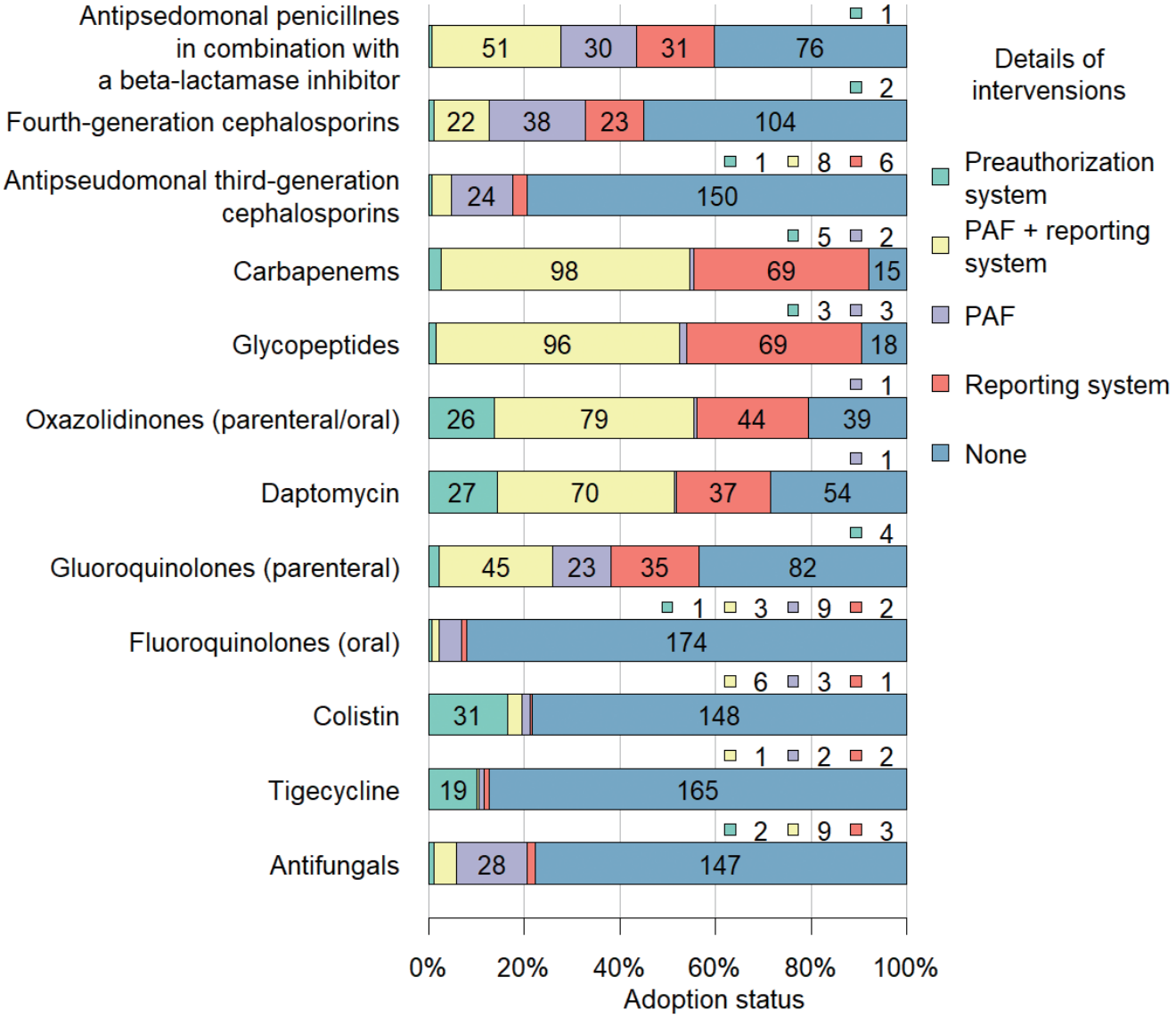
Figure 5 Shares of adoption of drugs subject to antimicrobial stewardship



(Based on data from January to December 2020 as of August 25, 2021)
* Share of adoption/non-adoption by drug category

Status of antimicrobial stewardship interventions

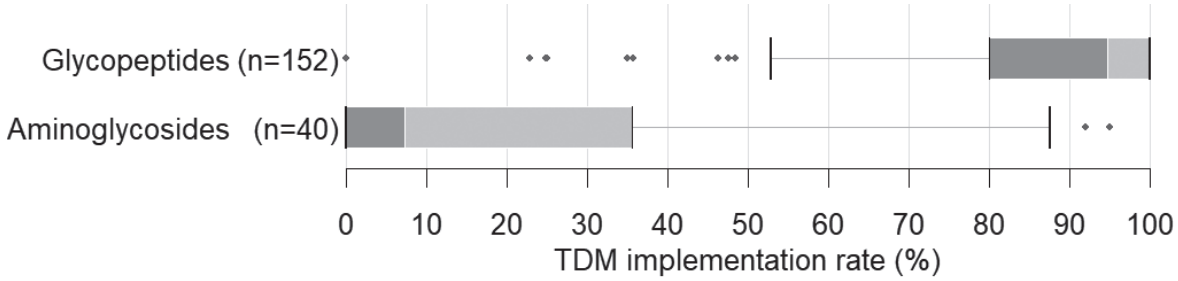
Figure 6 Shares of antimicrobial stewardship interventions



(Based on data from January to December 2020 as of August 25, 2021)
* Shares of interventions by drug category
* PAF stands for “prospective audit and feedback” in infectious disease treatment.

TDM implementation rate

Figure 7 Distribution of TDM implementation rate



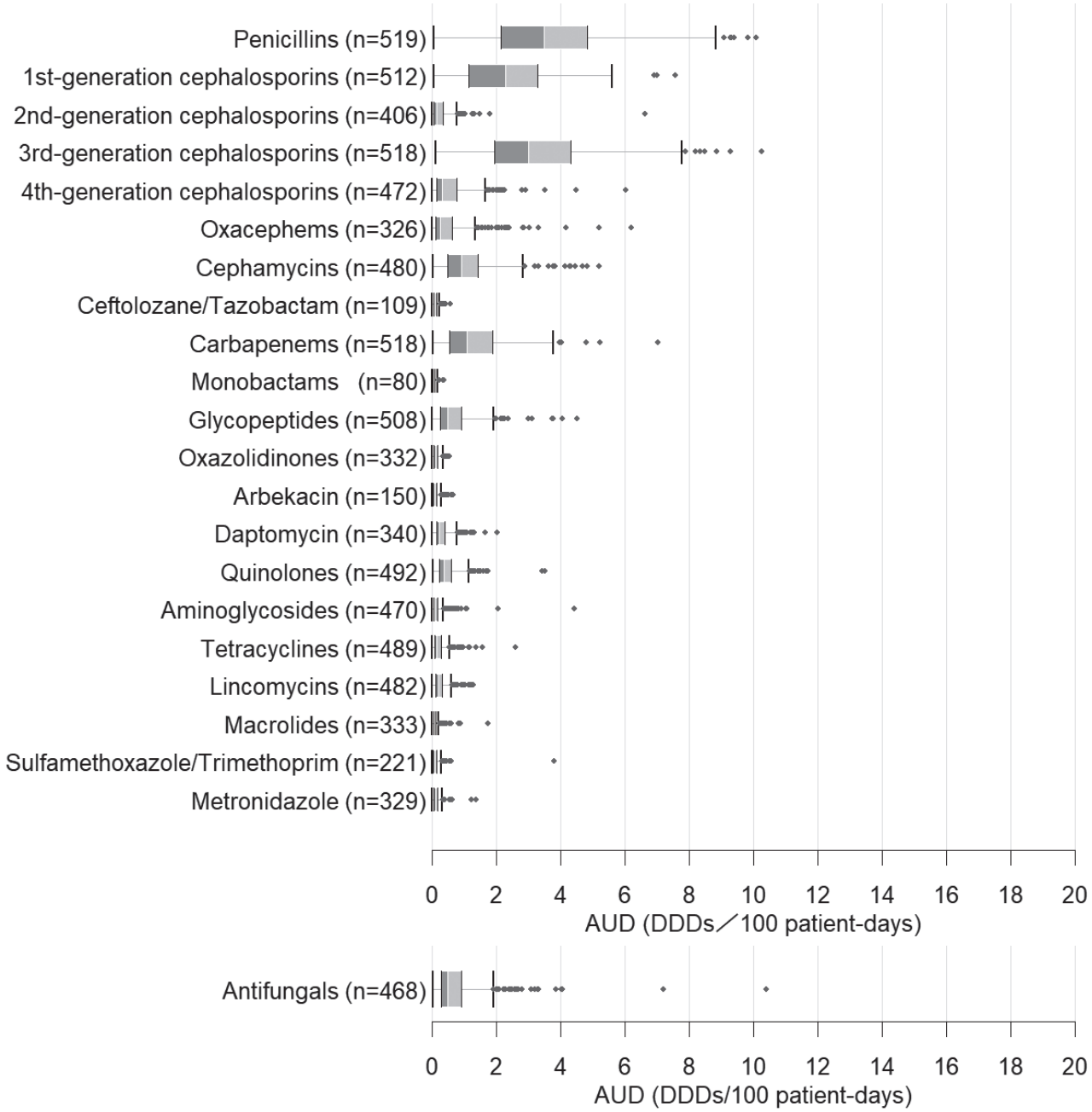
(Based on data from January to December 2020 as of August 25, 2021)
* Share of patients on TDM among patients who started treatment with antimicrobial drugs subject to TDM
* The included data sets consist of at least five patients who started treatment with antimicrobial drugs in the target period.

AMU information

Tabulation and calculation were performed for the data of AMU information registered by participating sites. J-SIPHE has an application which automatically creates a file that can be imported into the system from the medical fee statement (receipt). The data registered in the "Inpatient EF Integration File" were used as the AMU information data by the application.
Antimicrobial use density (AUD) and days of therapy (DOT) were calculated from the values for each site in the tabulation period.

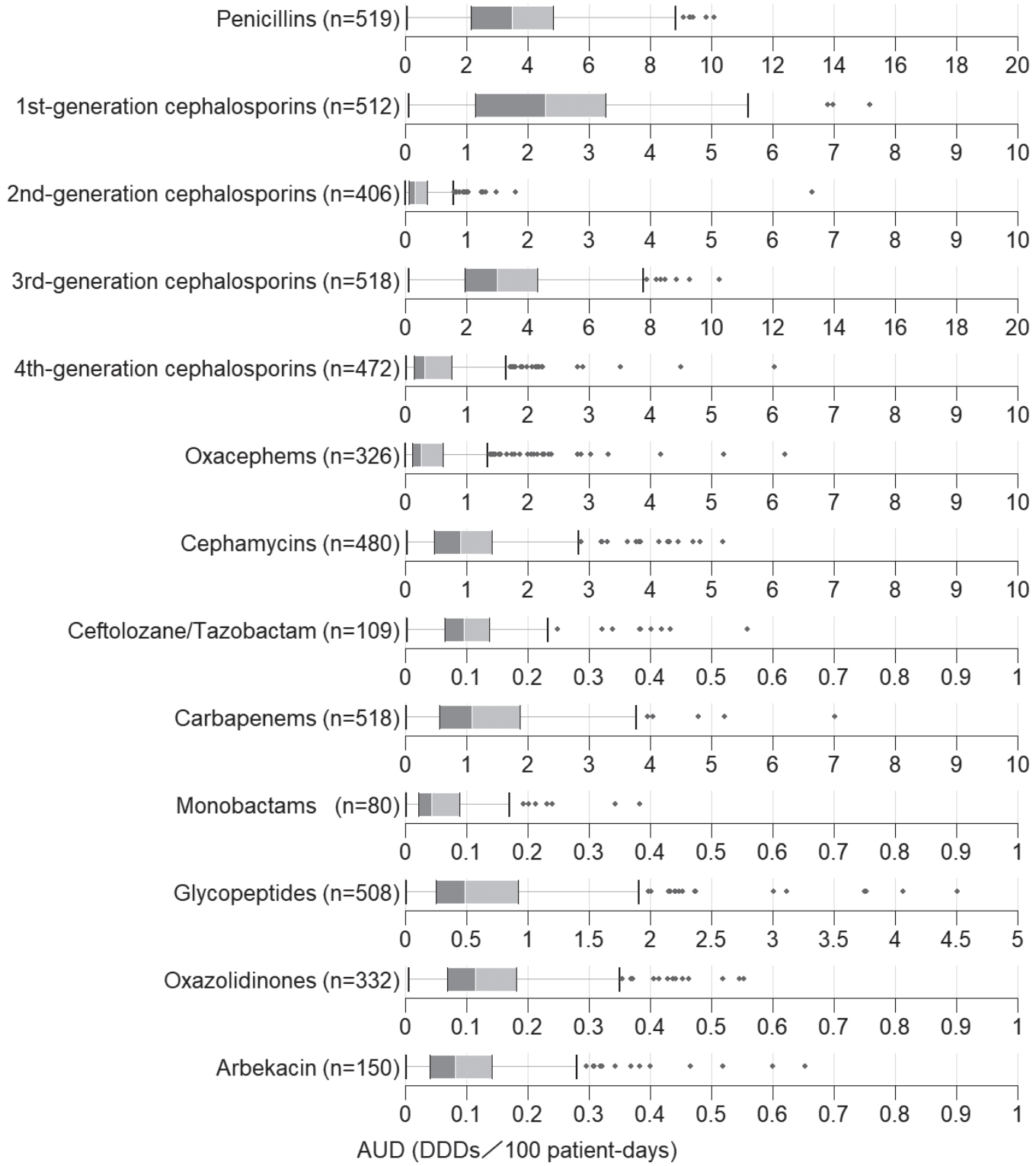
AUD (parenteral)

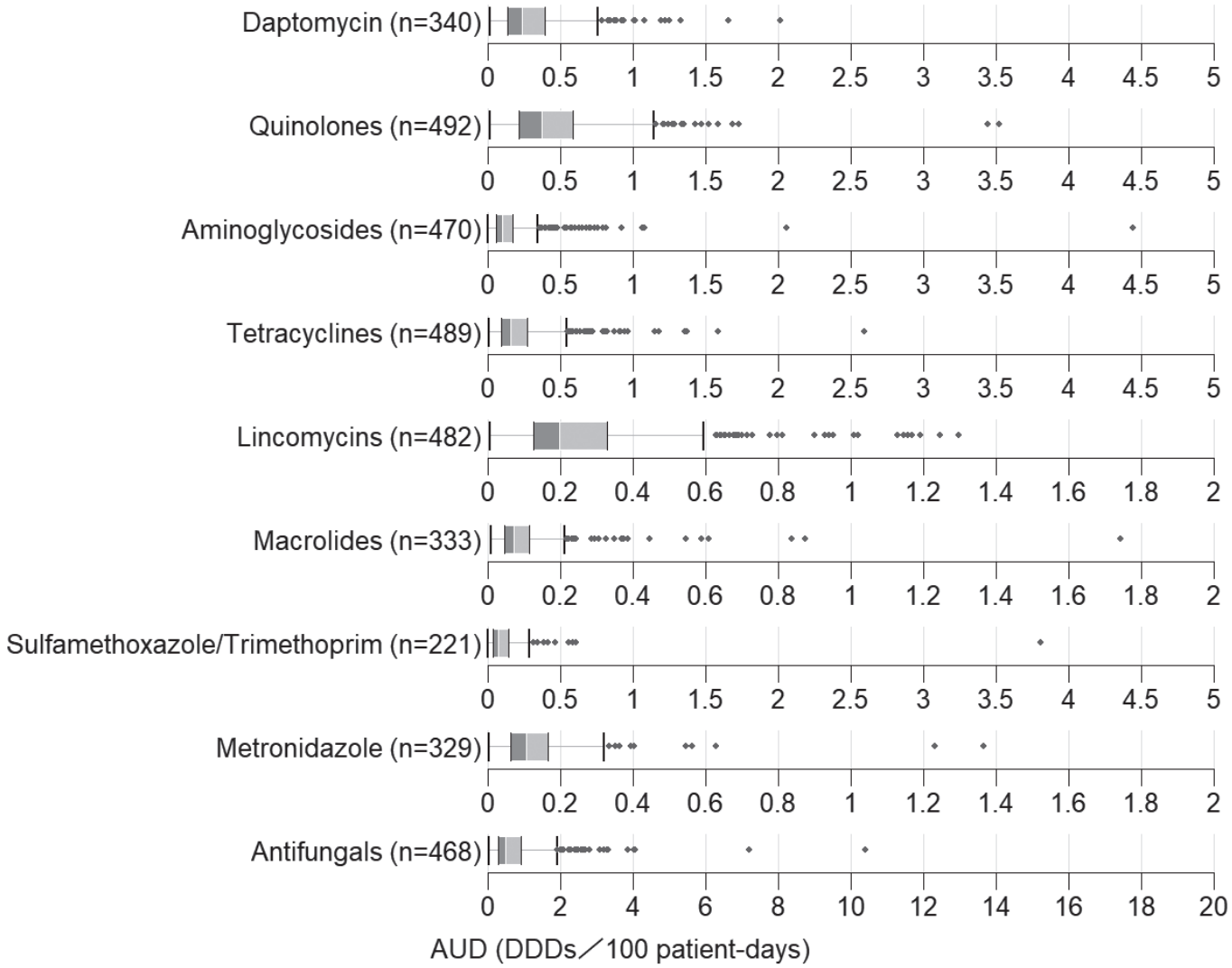
Figure 8 Distribution of AUD (parenteral: all drug categories)



(Based on data from January to December 2020 as of August 25, 2021)
* "AUD (parenteral)" indicates the value obtained by dividing defined daily doses (DDDs) (dose/DDD) by the total number of hospitalized patients and multiplying it by 100.
* See the List of antimicrobial drugs for drug categories.

Figure 9 Distribution of AUD (parenteral: per drug category)



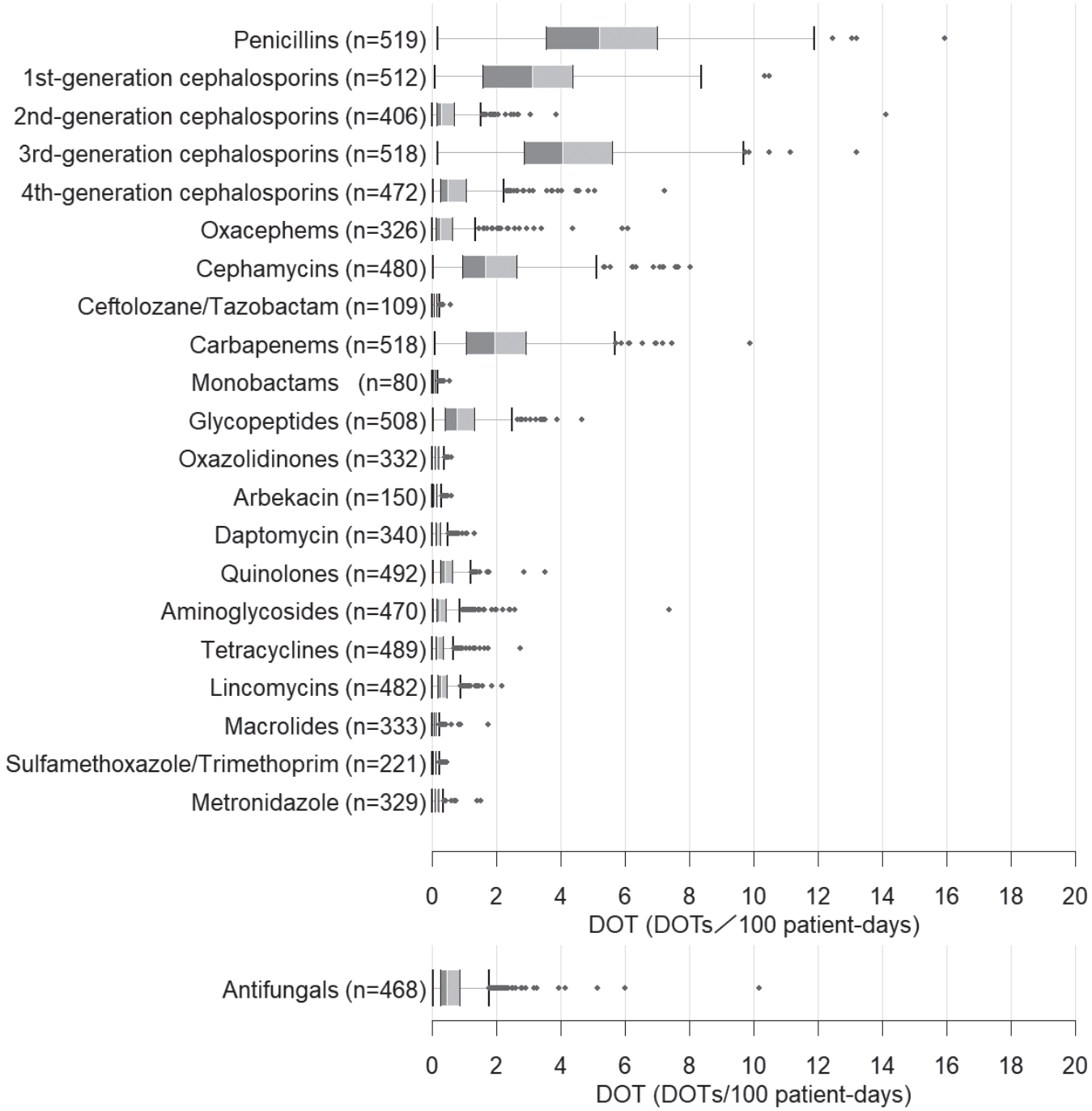


(Based on data from January to December 2020 as of August 25, 2021)

* "AUD (parenteral)" indicates the value obtained by dividing defined daily doses (DDDs) (dose/DDD) by the total number of hospitalized patients and multiplying it by 100.
* See the List of antimicrobial drugs for drug categories.

DOT (parenteral)

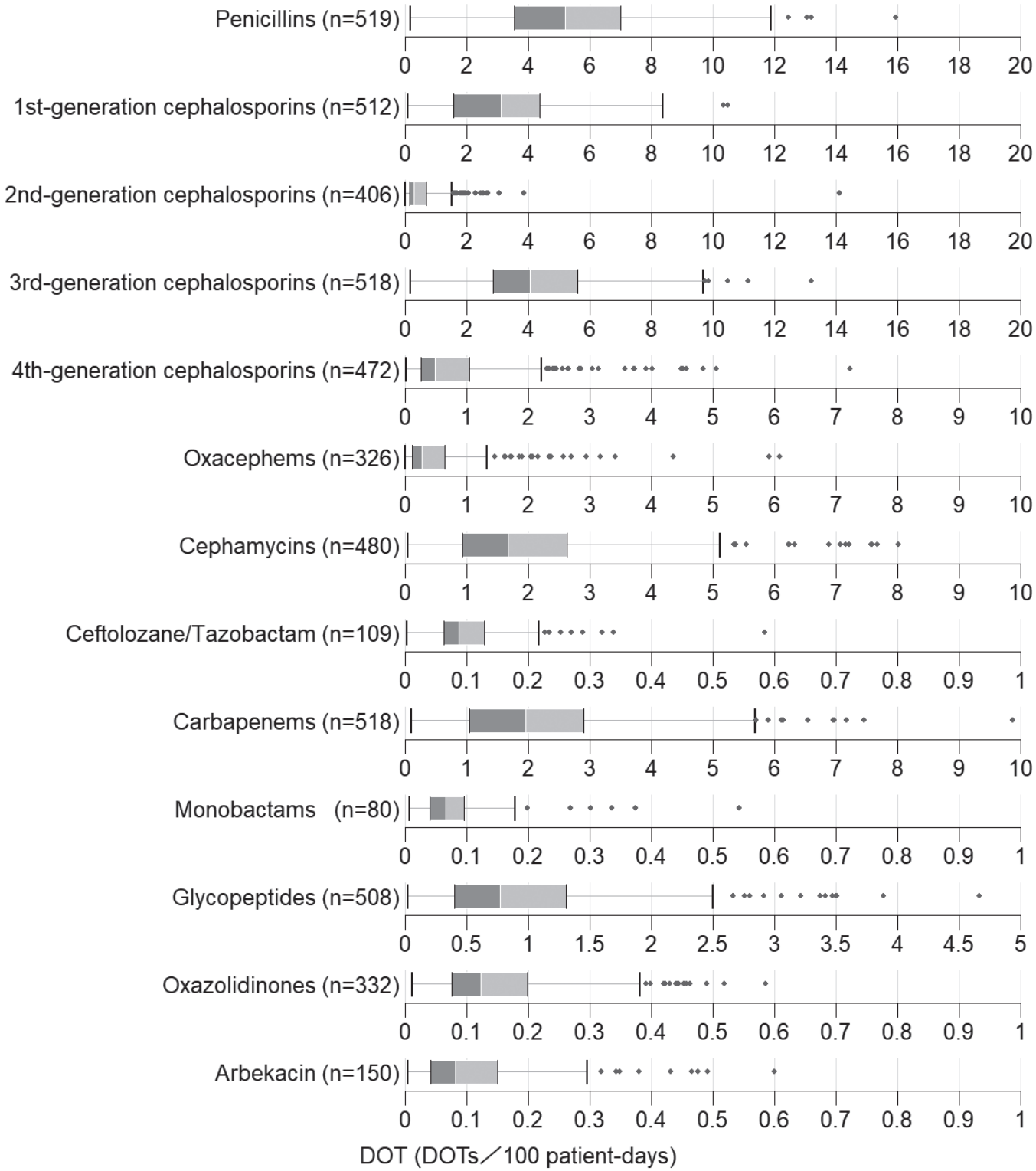
Figure 10 Distribution of DOT (parenteral: all drug categories)

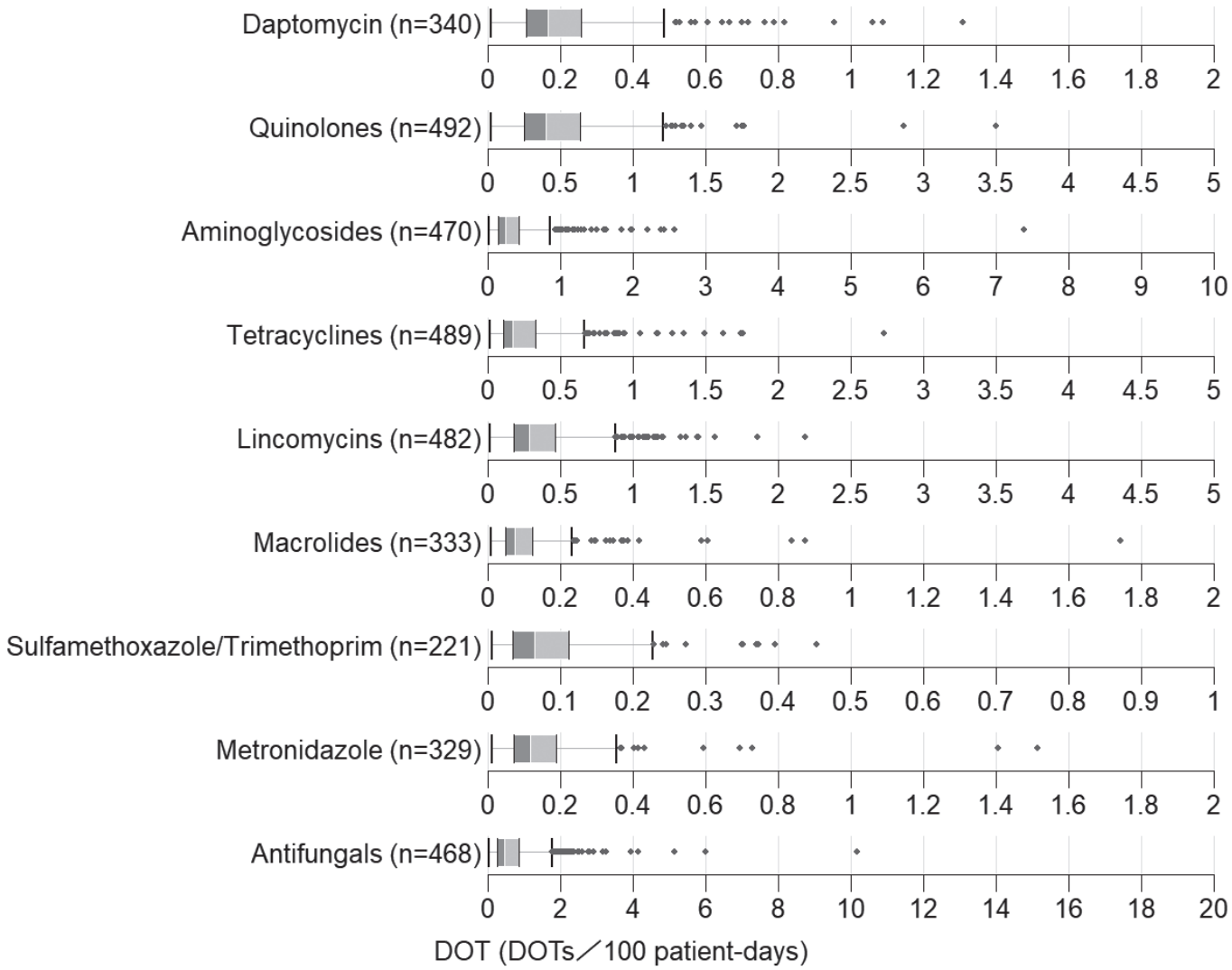


(Based on data from January to December 2020 as of August 25, 2021)

* "DOT (parenteral)" indicates the value obtained by dividing days of treatment by the total number of hospitalized patients and multiplying it by 100.
* See the List of antimicrobial drugs for drug categories.

Figure 11 Distribution of DOT (parenteral: per drug category)



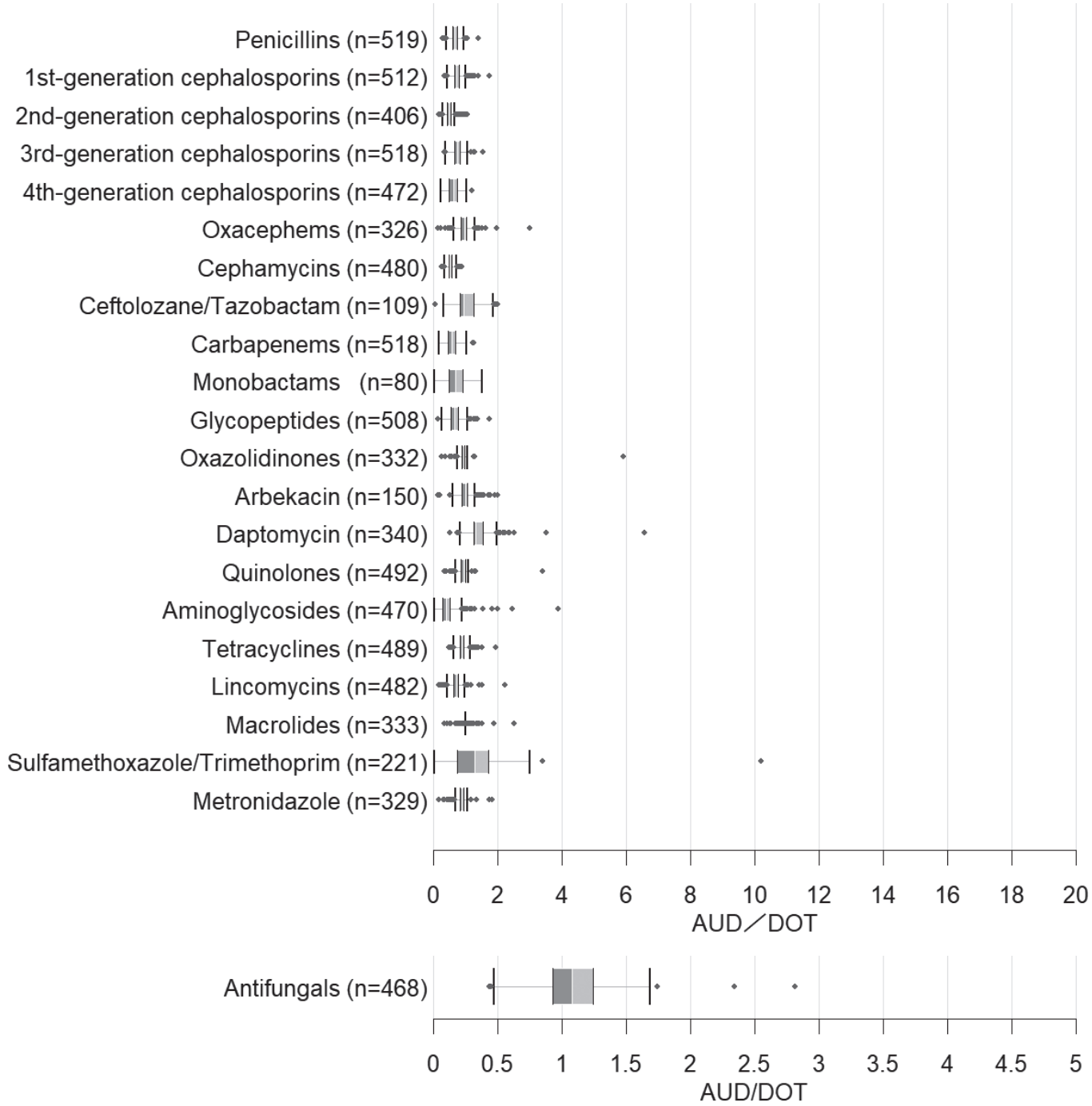


(Based on data from January to December 2020 as of August 25, 2021)

* "DOT (parenteral)" indicates the value obtained by dividing days of treatment by the total number of hospitalized patients and multiplying it by 100.
* See the List of antimicrobial drugs for drug categories.

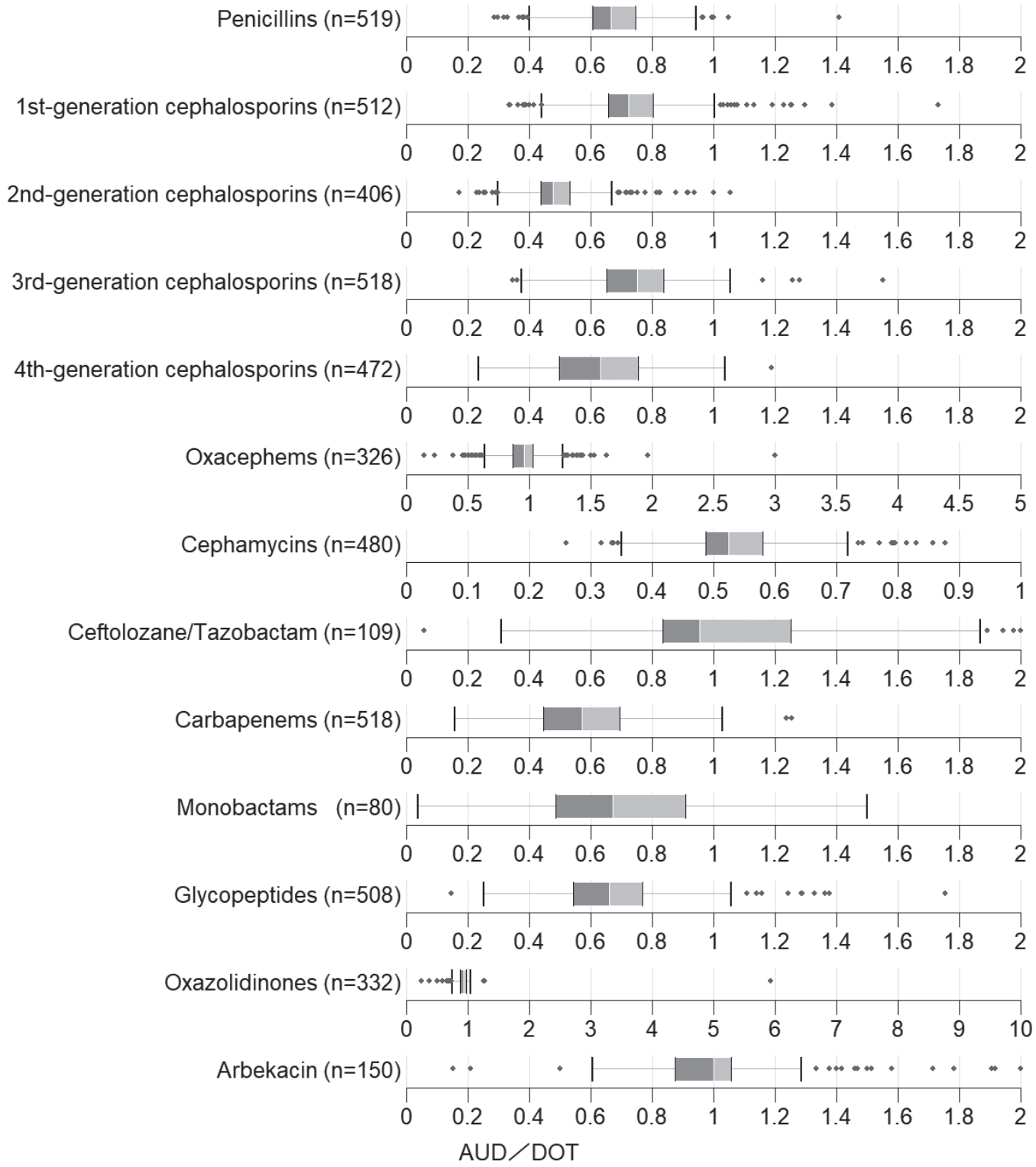
AUD/DOT (parenteral)

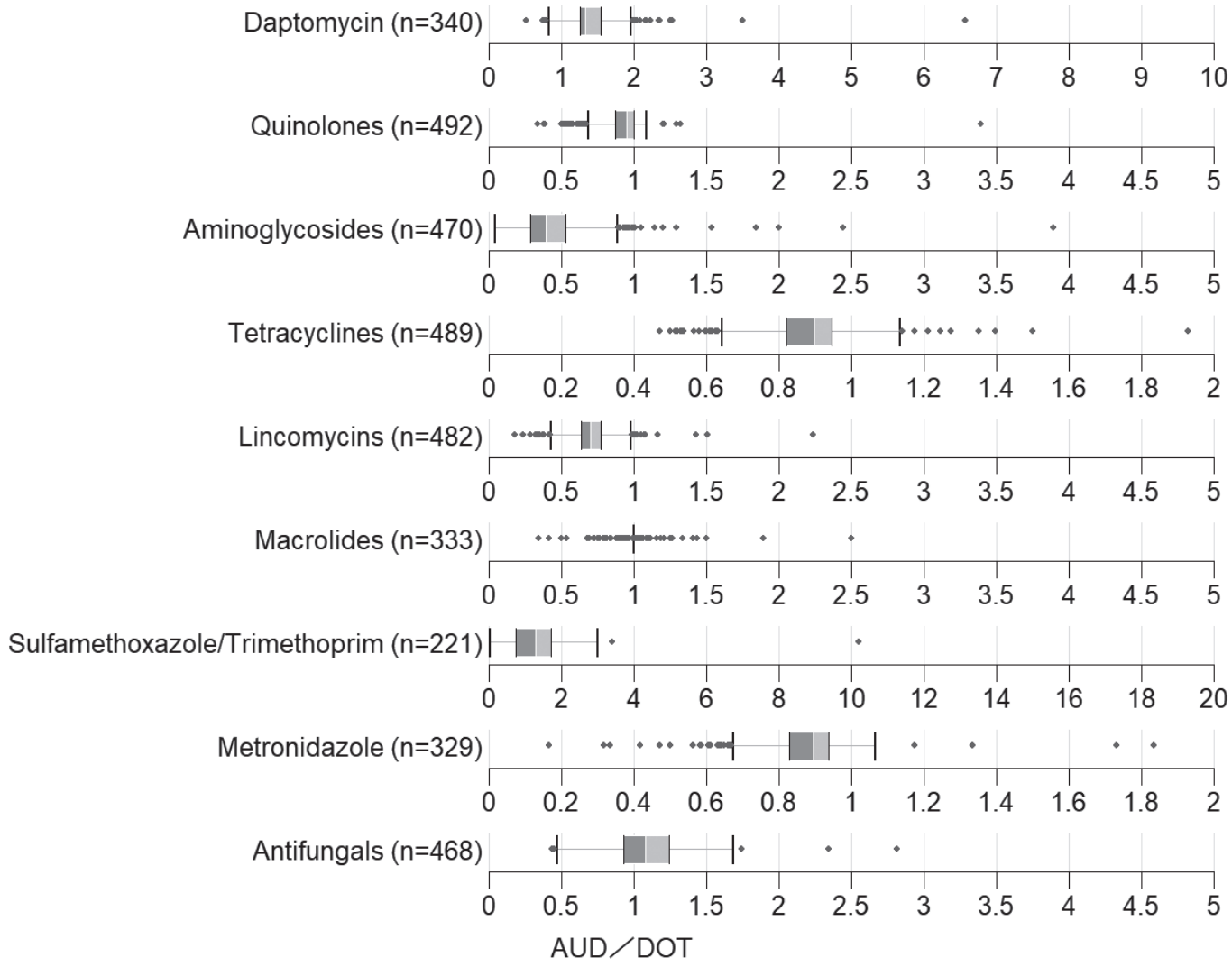
Figure 12 Distribution of AUD/DOT (parenteral: all drug categories)



(Based on data from January to December 2020 as of August 25, 2021)
* "AUD/DOT (parenteral)" is the ratio of AUD (parenteral) to DOT (parenteral).
* See the List of antimicrobial drugs for drug categories.

Figure 13 Distribution of AUD/DOT (parenteral: per drug category)

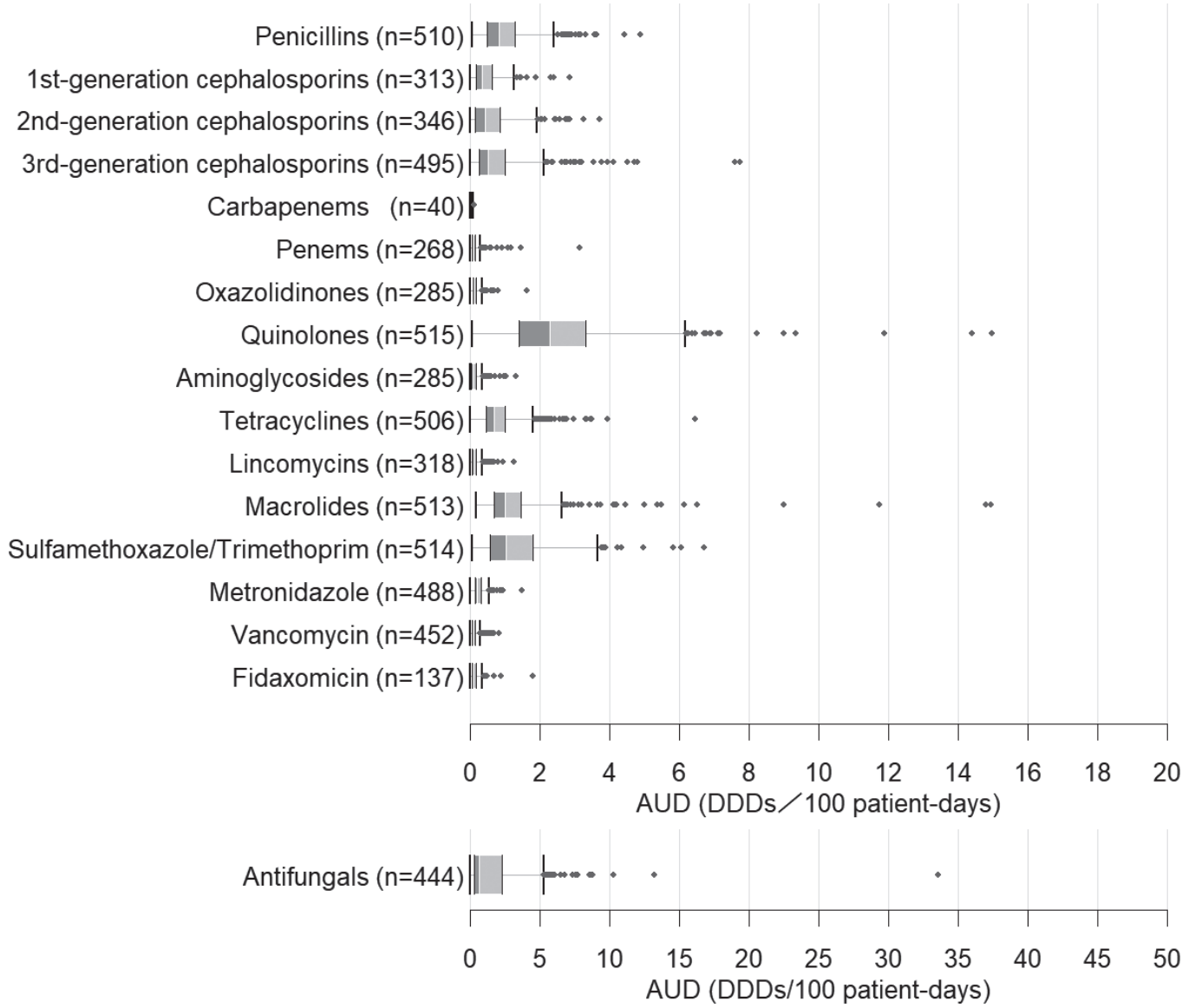




(Based on data from January to December 2020 as of August 25, 2021)
* "AUD/DOT (parenteral)" is the ratio of AUD (parenteral) to DOT (parenteral).
* See the List of antimicrobial drugs for drug categories.

AUD (oral)

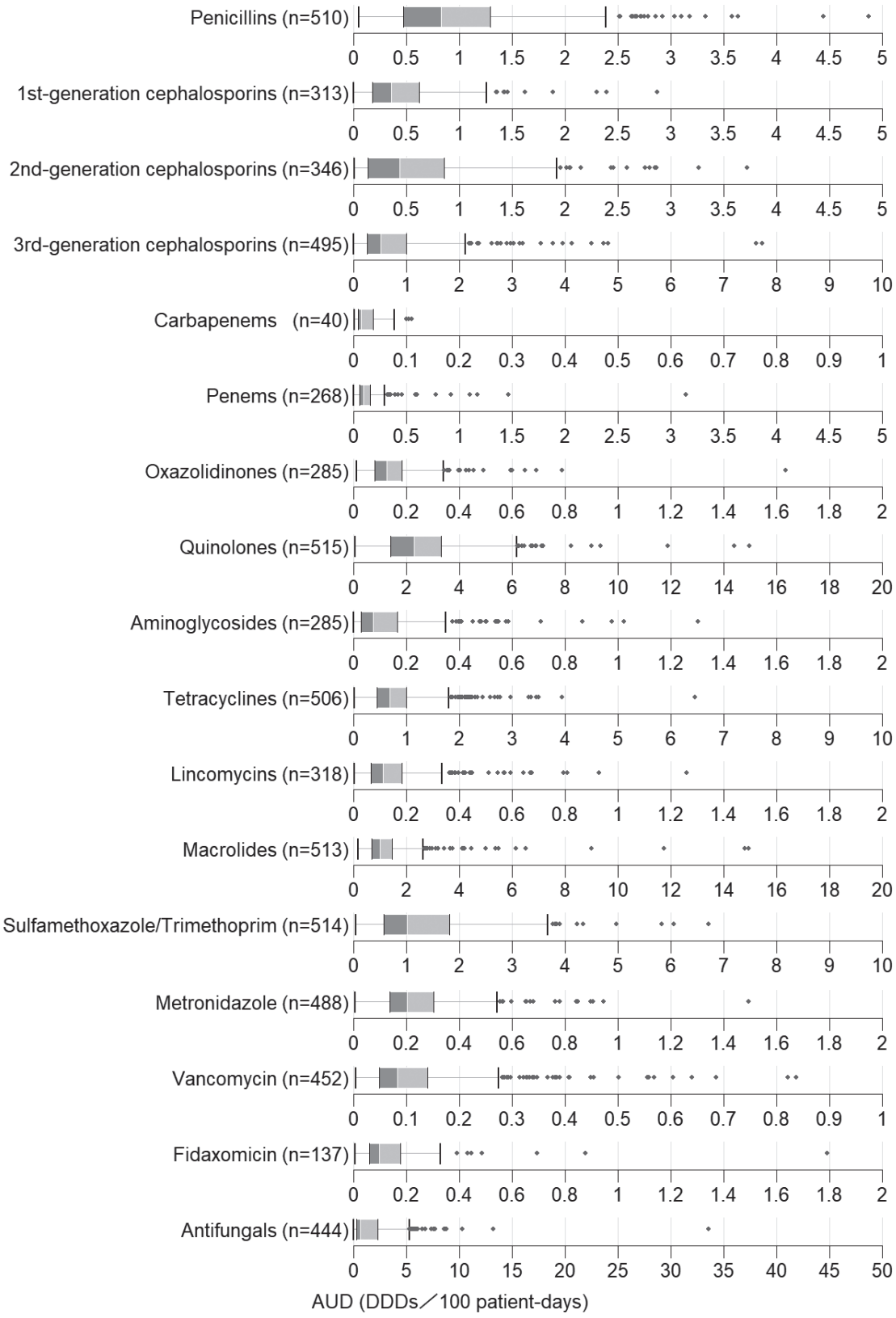
Figure 14 Distribution of AUD (oral: all drug categories)



(Based on data from January to December 2020 as of August 25, 2021)

* "AUD (oral)" indicates the value obtained by dividing defined daily doses (DDDs) (dose/DDD) by the total number of hospitalized patients and multiplying it by 100.
* See the List of antimicrobial drugs for drug categories.

Figure 15 Distribution of AUD (oral: per drug category)

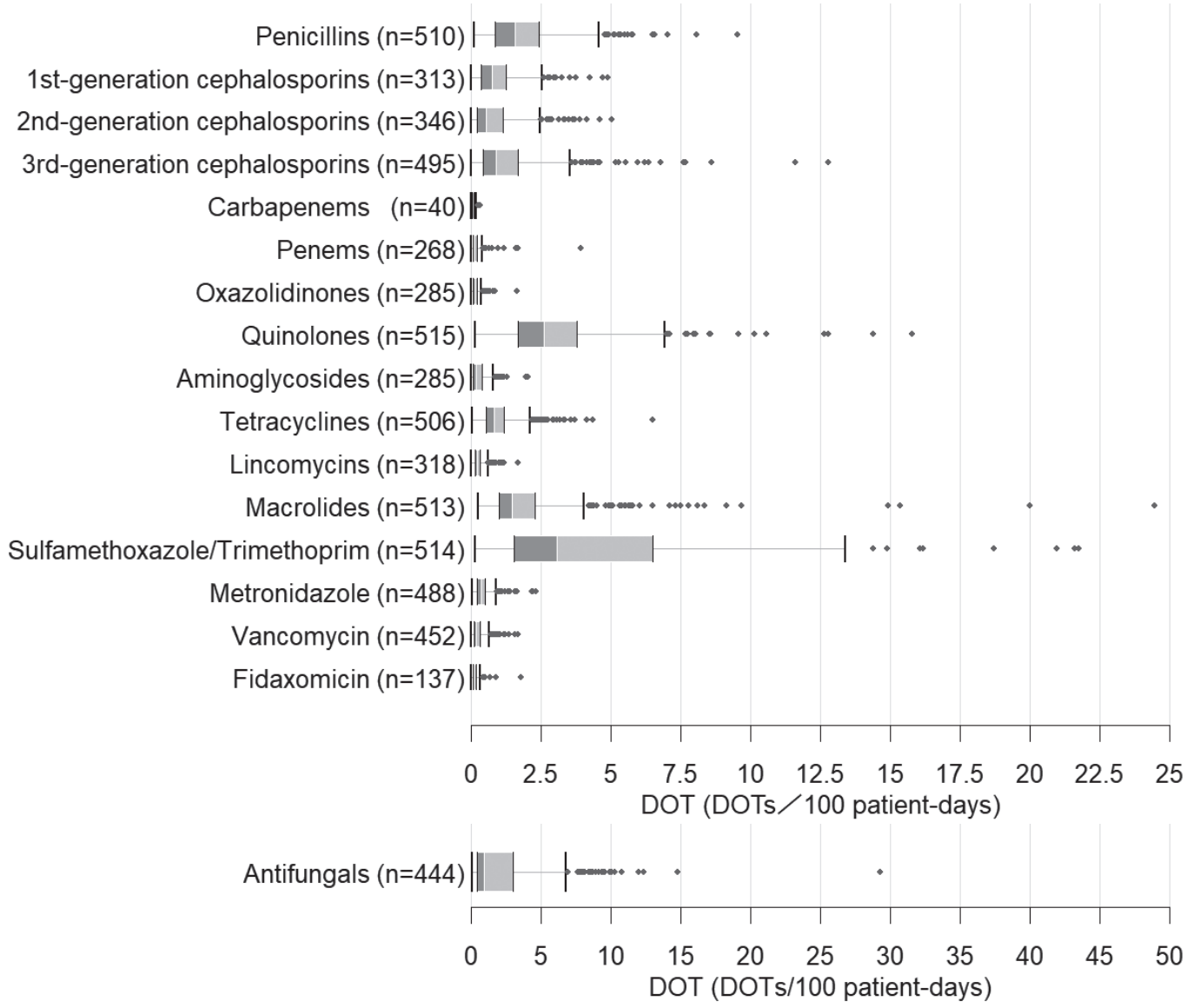


(Based on data from January to December 2020 as of August 25, 2021)

* "AUD (oral)" indicates the value obtained by dividing defined daily doses (DDDs) (dose/DDD) by the total number of hospitalized patients and multiplying it by 100.
* See the List of antimicrobial drugs for drug categories.

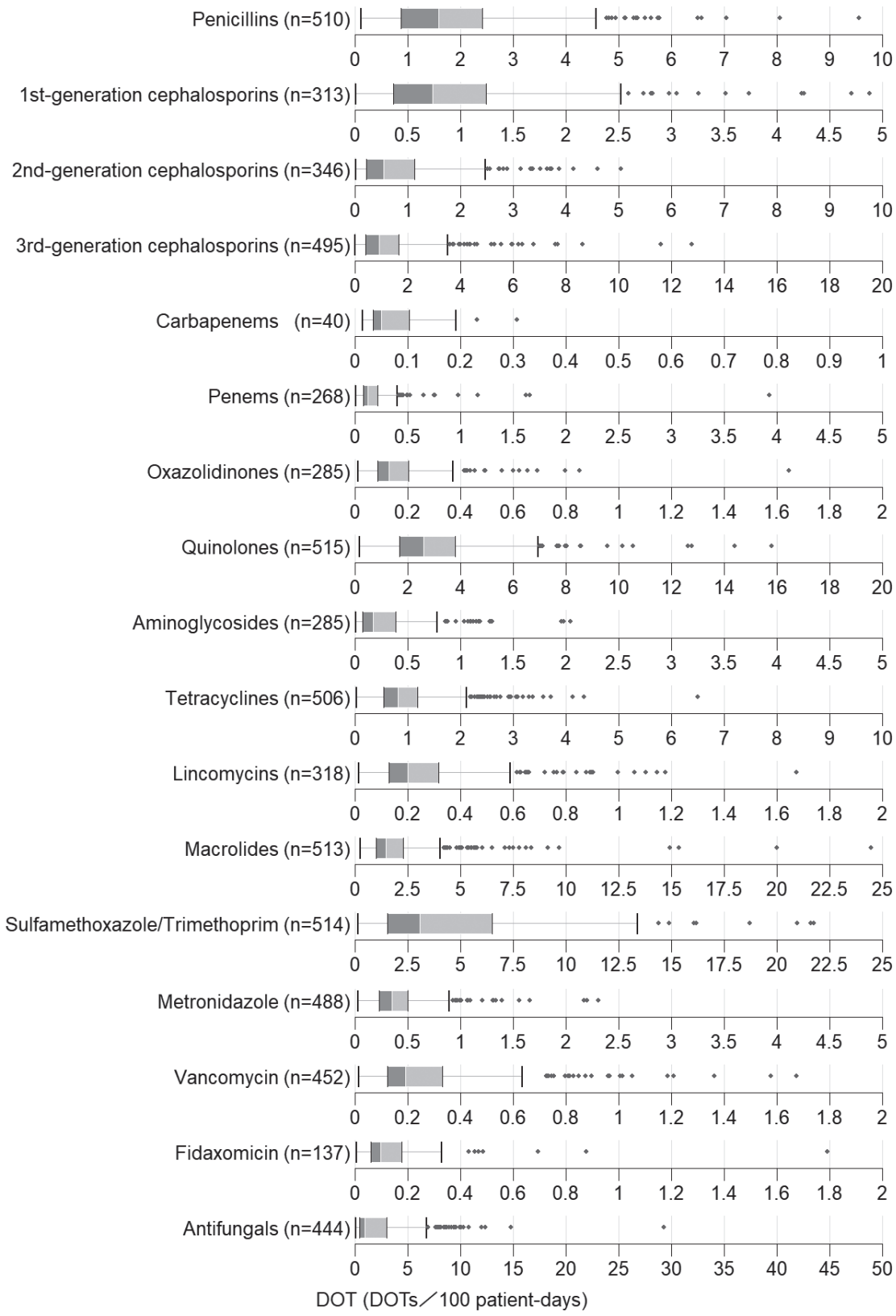
DOT (oral)

Figure 16 Distribution of DOT (oral: all drug categories)



(Based on data from January to December 2020 as of August 25, 2021)
* "DOT (oral)" indicates the value obtained by dividing days of treatment by the total number of hospitalized patients and multiplying it by 100.
* See the List of antimicrobial drugs for drug categories.

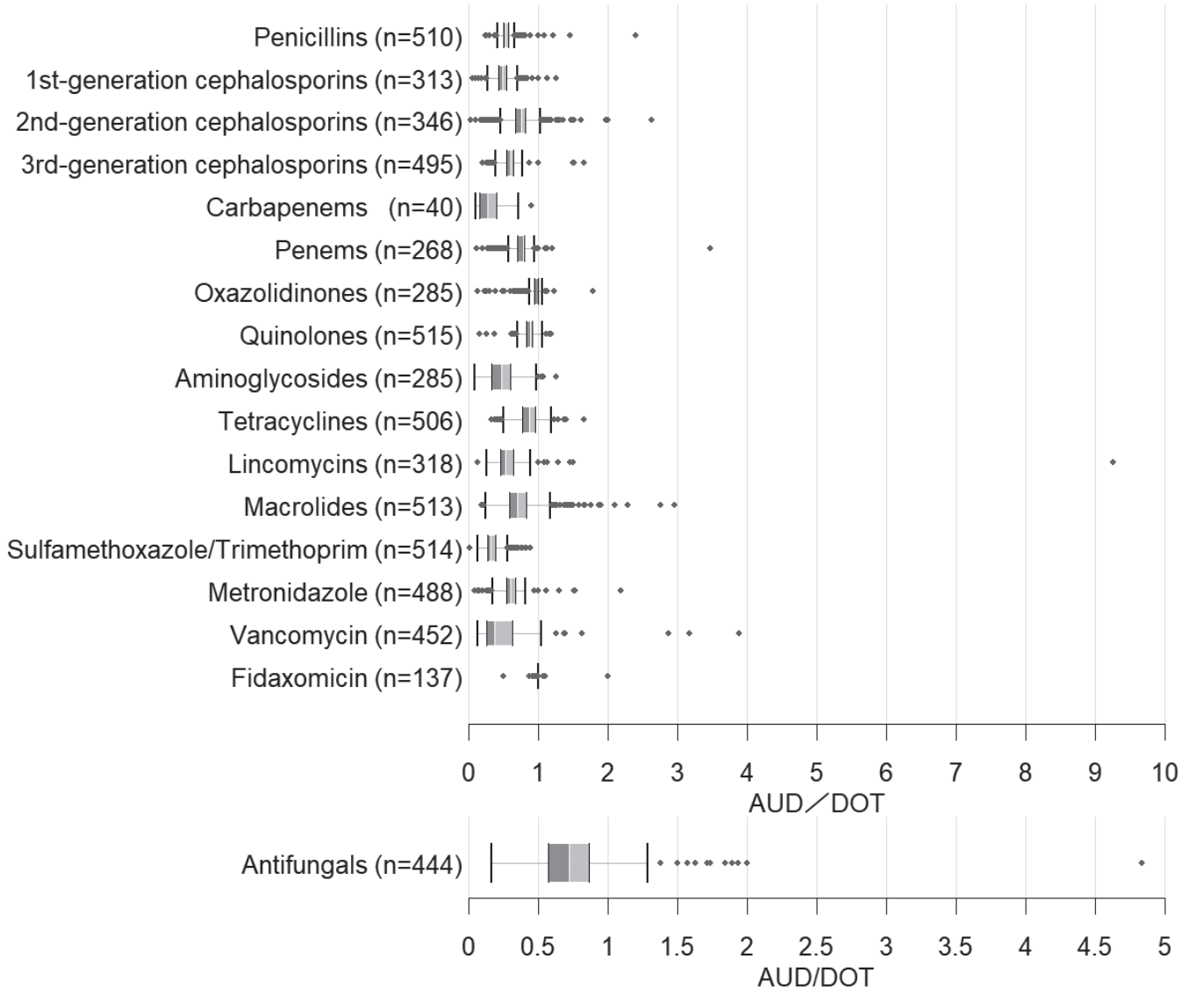
Figure 17 Distribution of DOT (oral: per drug category)



(Based on data from January to December 2020 as of August 25, 2021)
* "DOT (oral)" indicates the value obtained by dividing days of treatment by the total number of hospitalized patients and multiplying it by 100.
* See the List of antimicrobial drugs for drug categories.

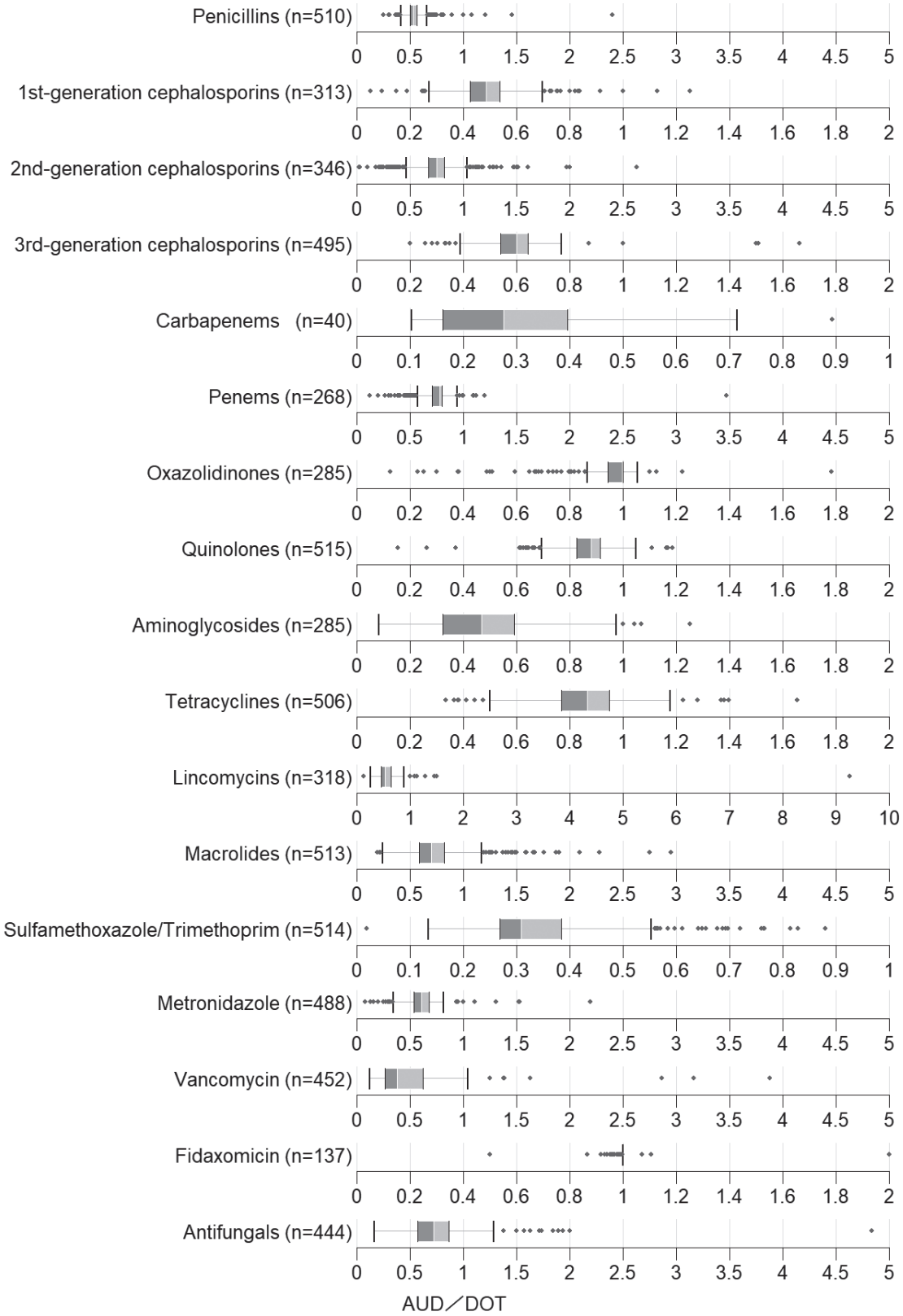
AUD/DOT (oral)

Figure 18 Distribution of AUD/DOT (oral: all drug categories)



(Based on data from January to December 2020 as of August 25, 2021)
* "AUD/DOT (oral)" is the ratio of AUD (parenteral) to DOT (parenteral).
* See the List of antimicrobial drugs for drug categories.

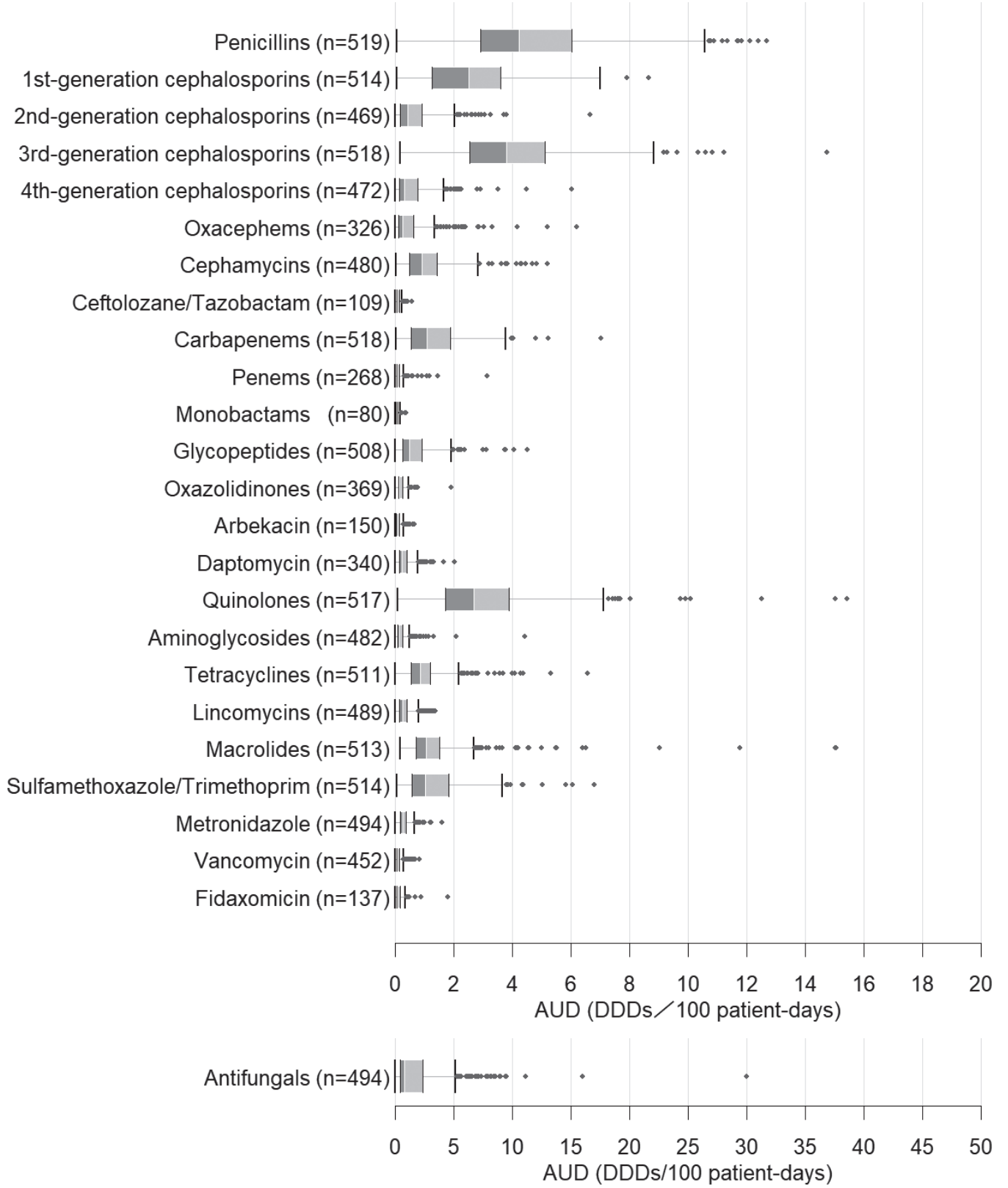
Figure 19 Distribution of AUD/DOT (oral: per drug category)



(Based on data from January to December 2020 as of August 25, 2021)
* "AUD/DOT (oral)" is the ratio of AUD (parenteral) to DOT (parenteral).
* See the List of antimicrobial drugs for drug categories.

AUD (parenteral+oral)

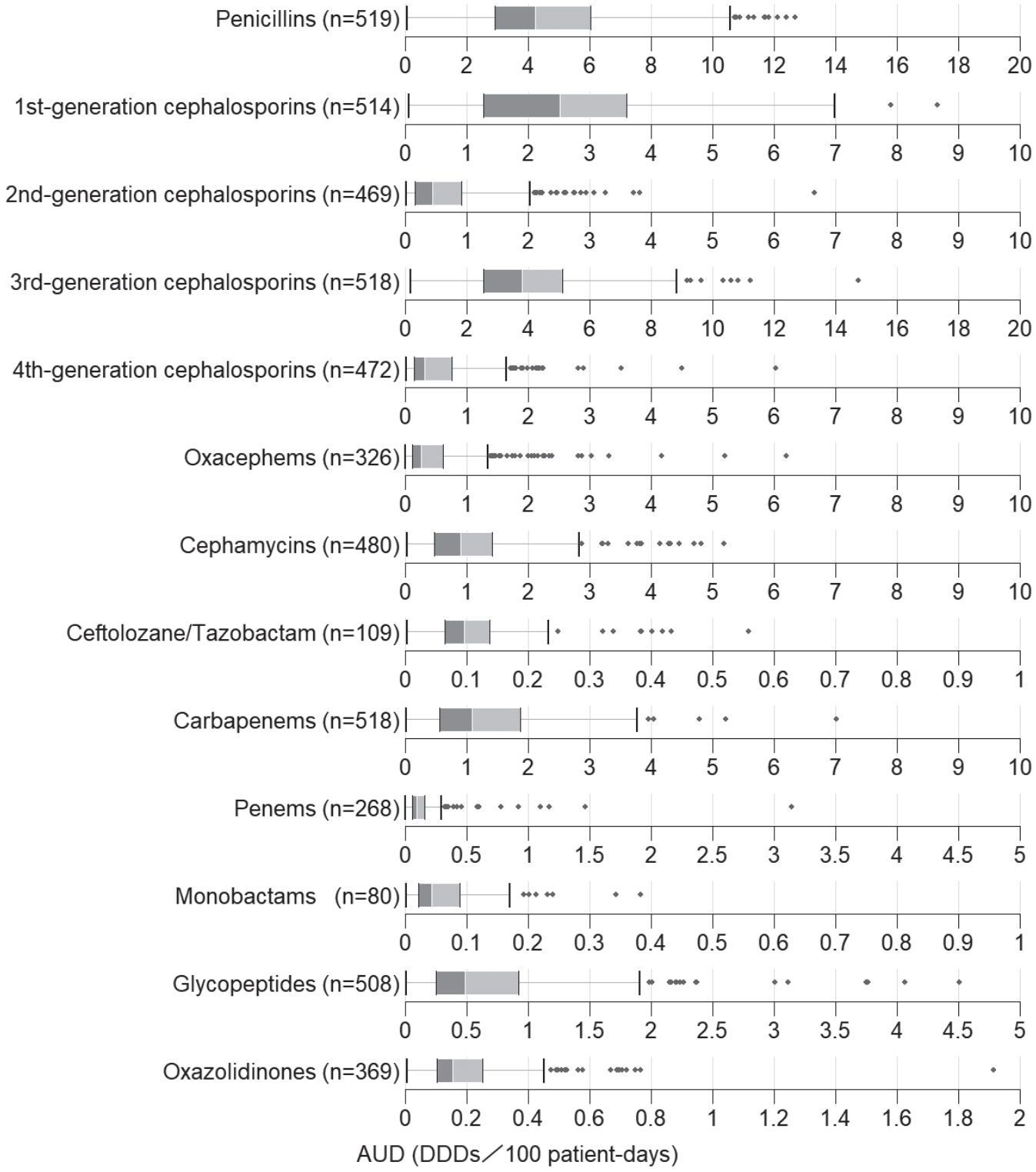
Figure 20 Distribution of AUD (parenteral+oral: all drug categories)

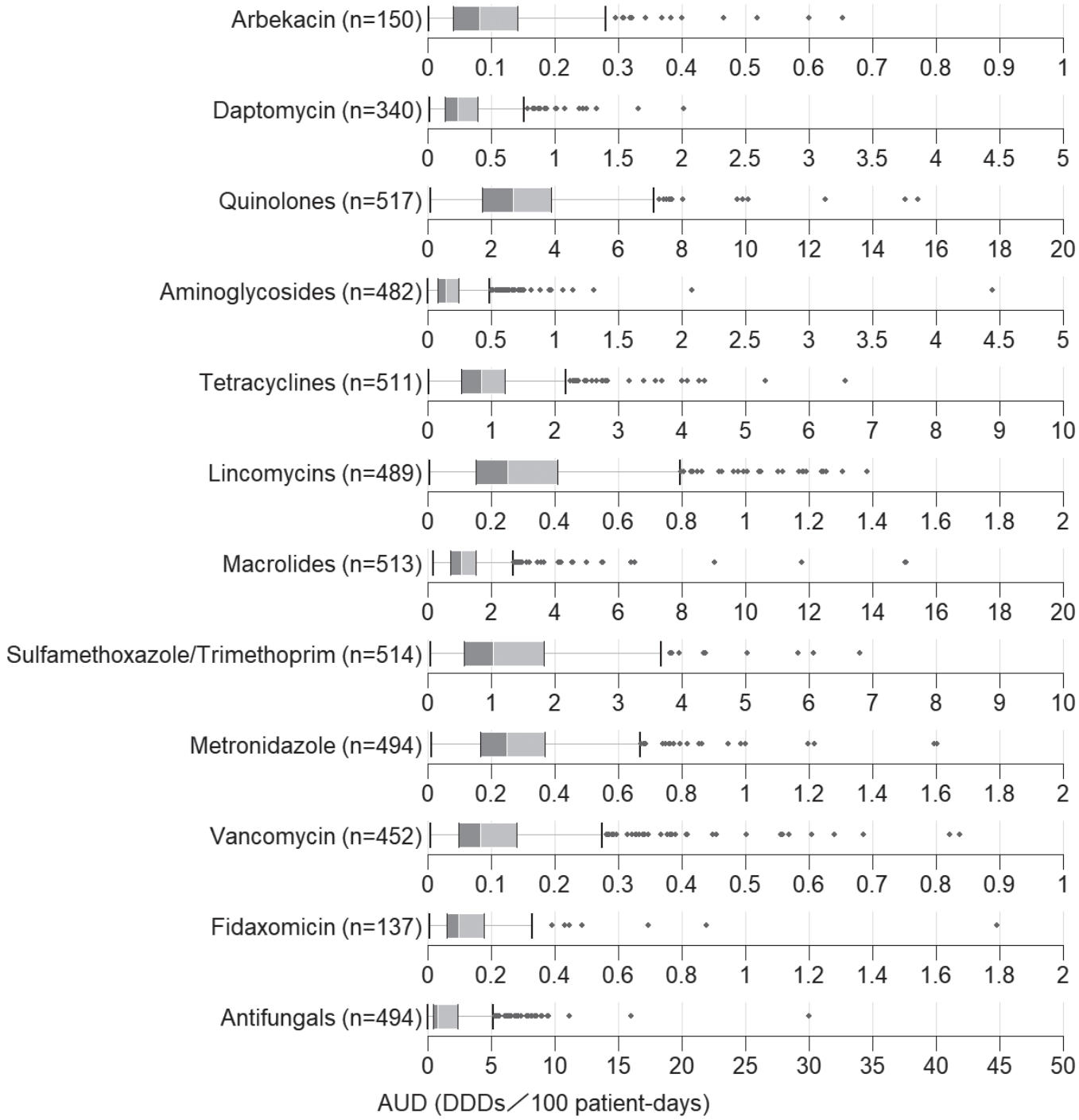


(Based on data from January to December 2020 as of August 25, 2021)

* "AUD (parenteral+oral)" indicates the value obtained by dividing defined daily doses (DDDs) (dose/DDD) by the total number of hospitalized patients and multiplying it by 100.
* See the List of antimicrobial drugs for drug categories.

Figure 21 Distribution of AUD (parenteral+oral: per drug category)



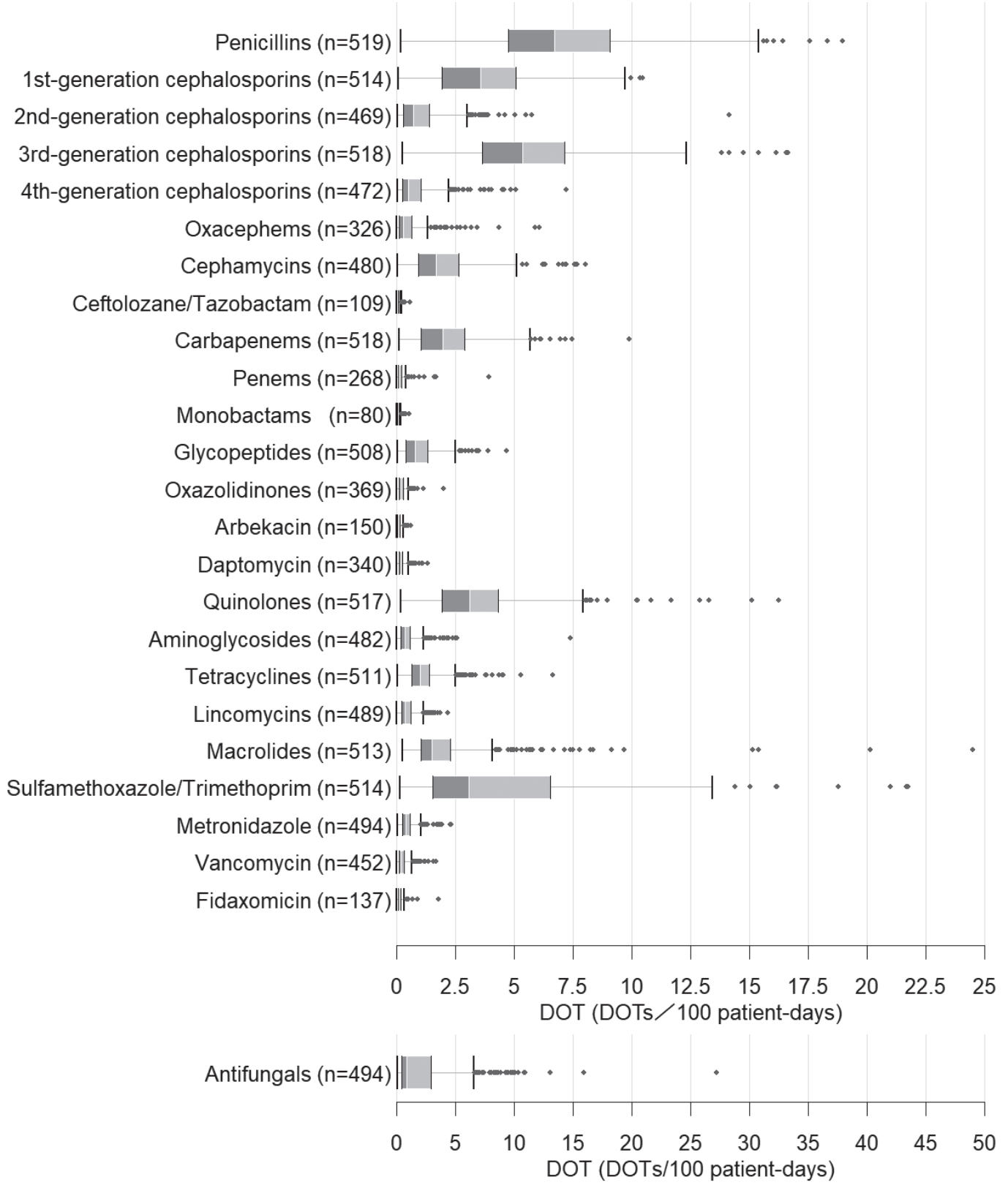


(Based on data from January to December 2020 as of August 25, 2021)

* "AUD (parenteral+oral)" indicates the value obtained by dividing defined daily doses (DDDs) (dose/DDD) by the total number of hospitalized patients and multiplying it by 100.
* See the List of antimicrobial drugs for drug categories.

DOT (parenteral+oral)

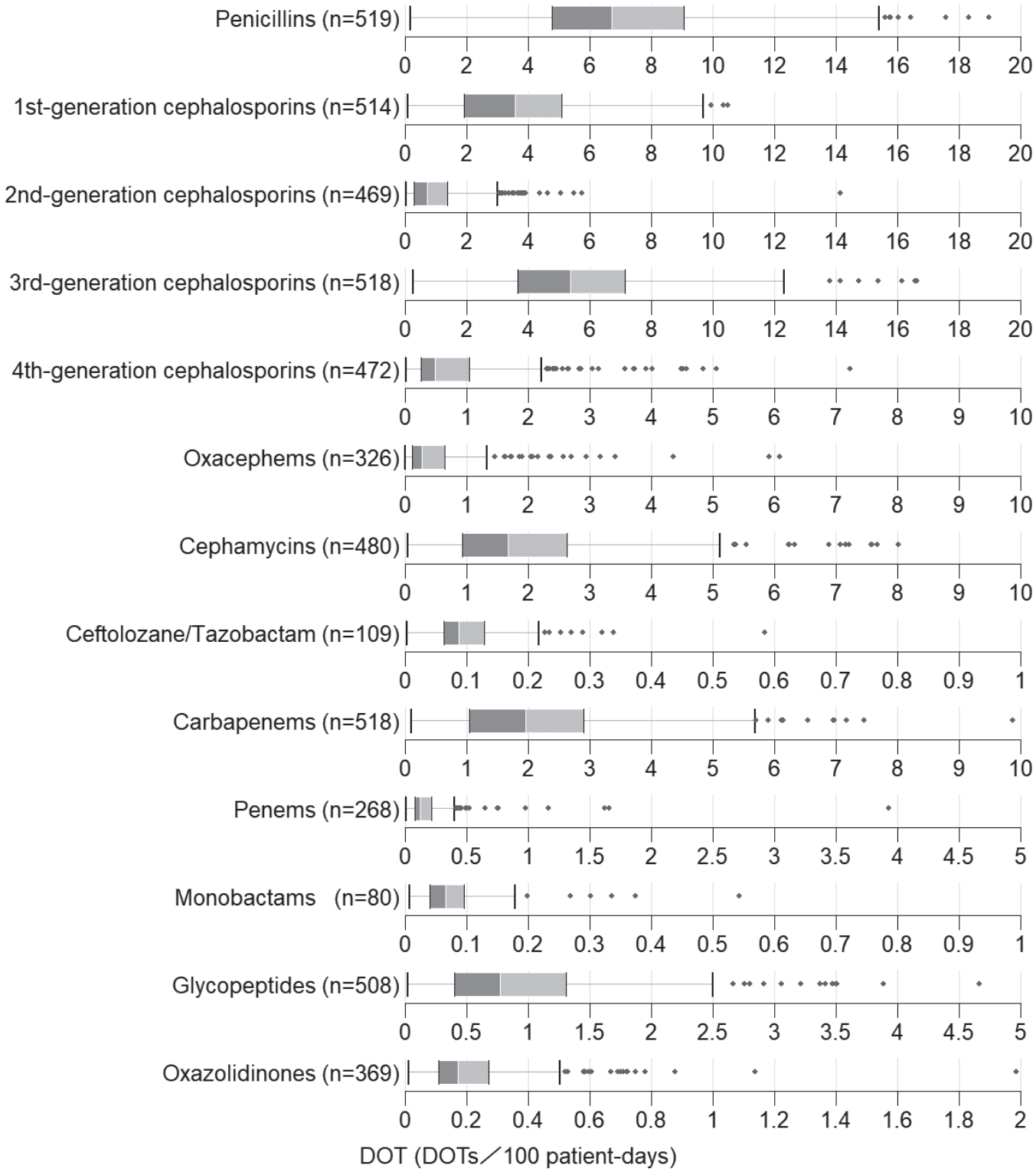
Figure 22 Distribution of DOT (parenteral+oral: all drug categories)

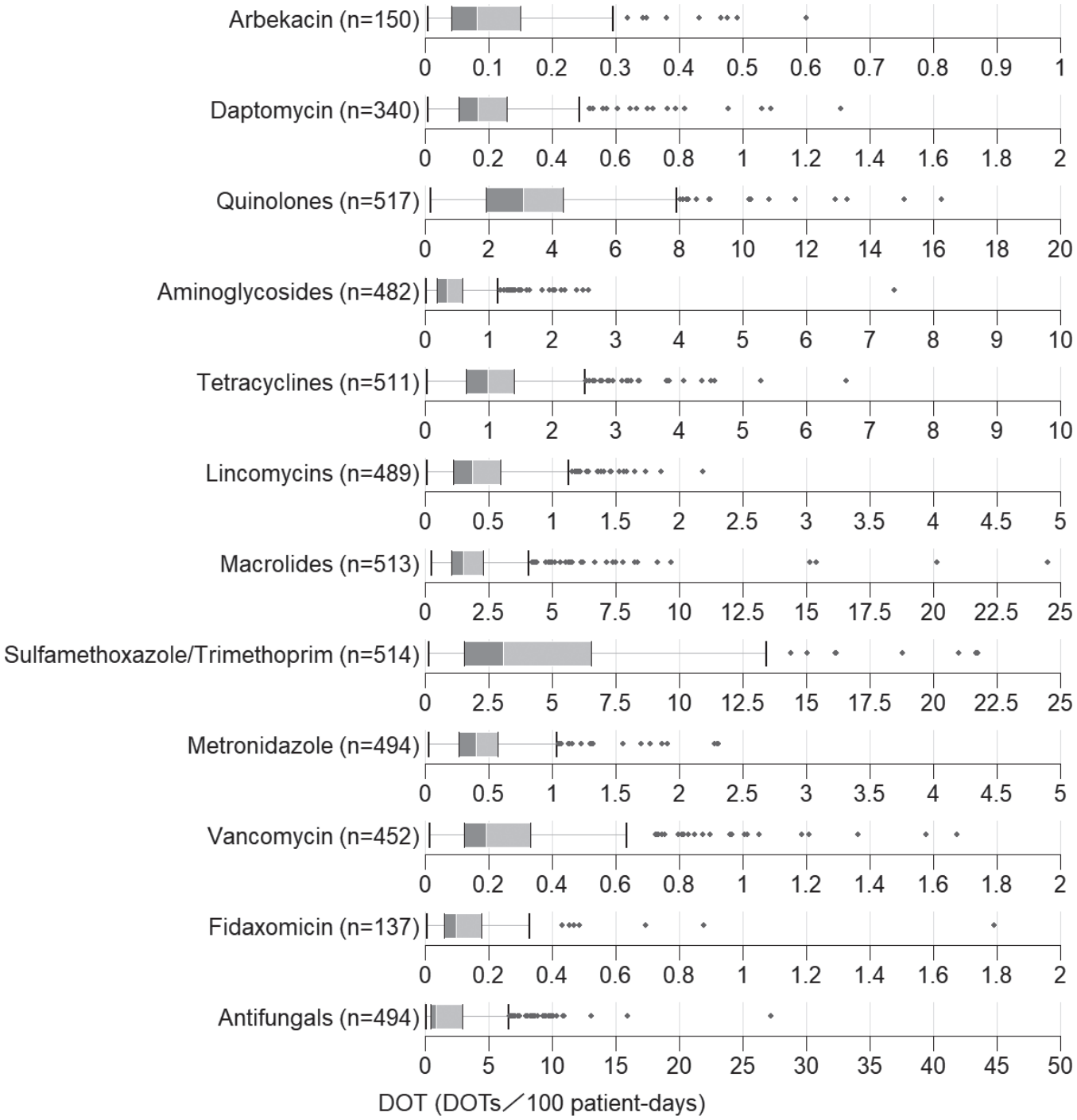


(Based on data from January to December 2020 as of August 25, 2021)

* "DOT (parenteral+oral)" indicates the value obtained by dividing days of treatment by the total number of hospitalized patients and multiplying it by 100.
* See the List of antimicrobial drugs for drug categories.

Figure 23 Distribution of DOT (parenteral+oral: per drug category)



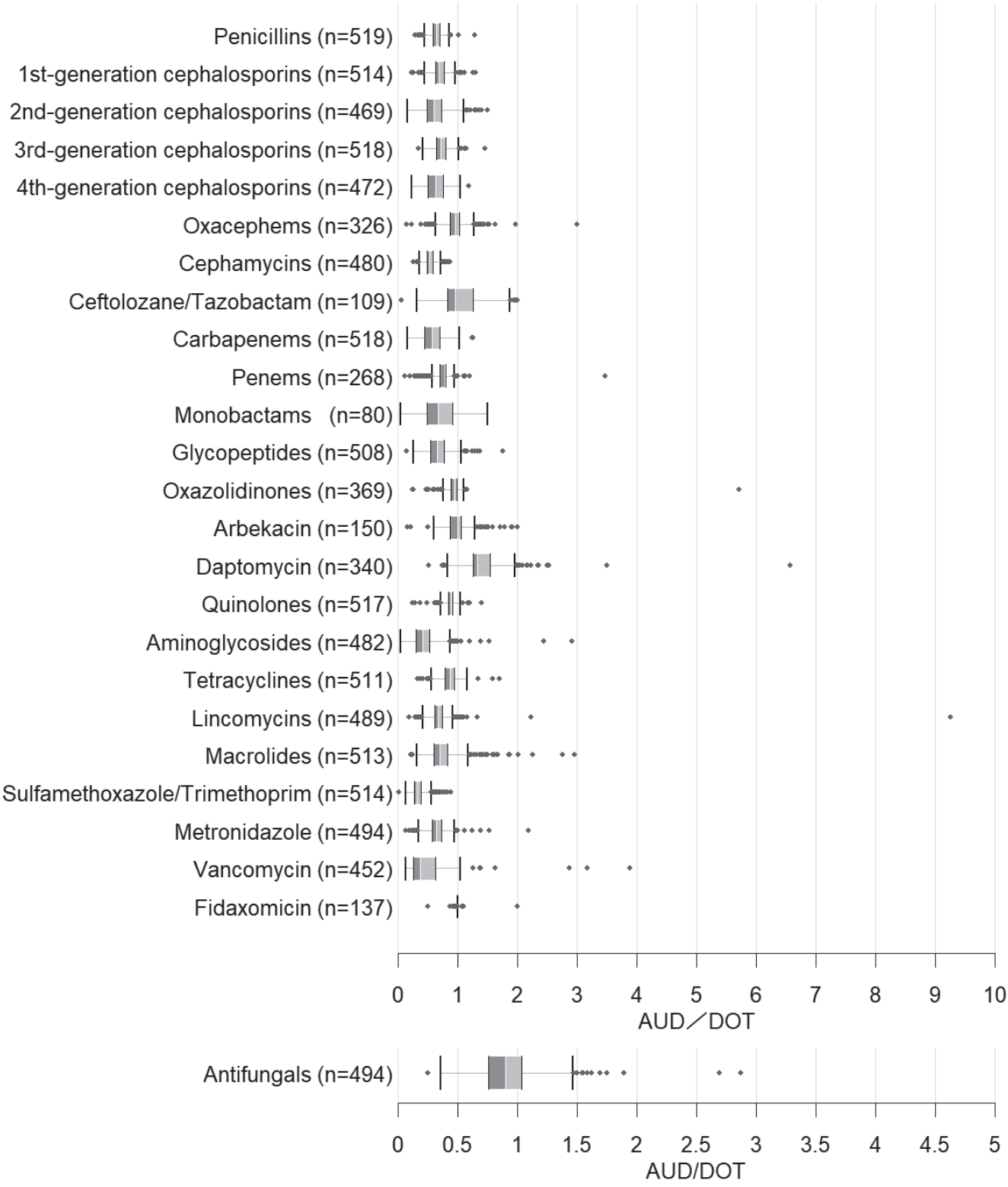


(Based on data from January to December 2020 as of August 25, 2021)

* "DOT (parenteral+oral)" indicates the value obtained by dividing days of treatment by the total number of hospitalized patients and multiplying it by 100.
* See the List of antimicrobial drugs for drug categories.

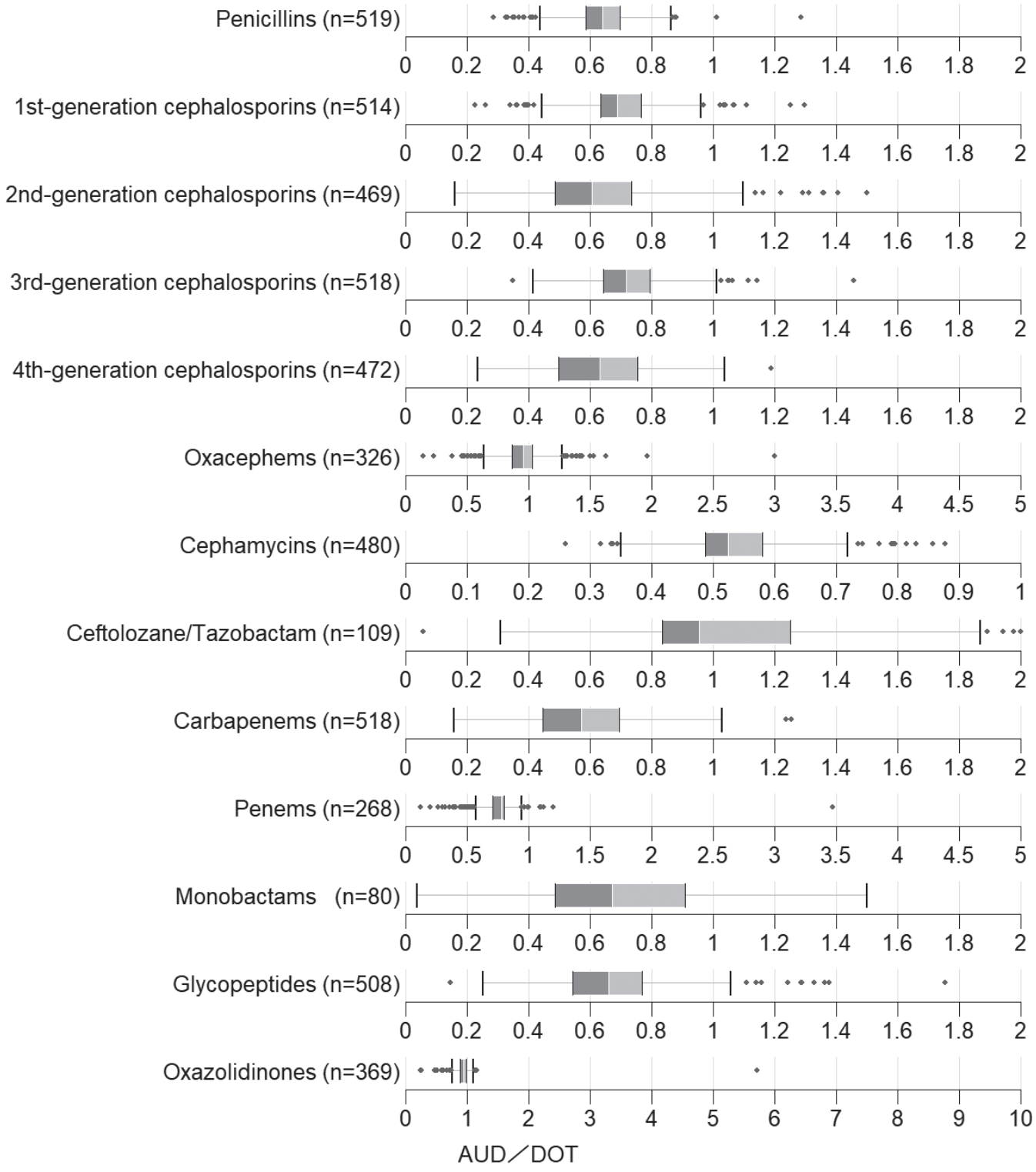
AUD/DOT (parenteral+oral)

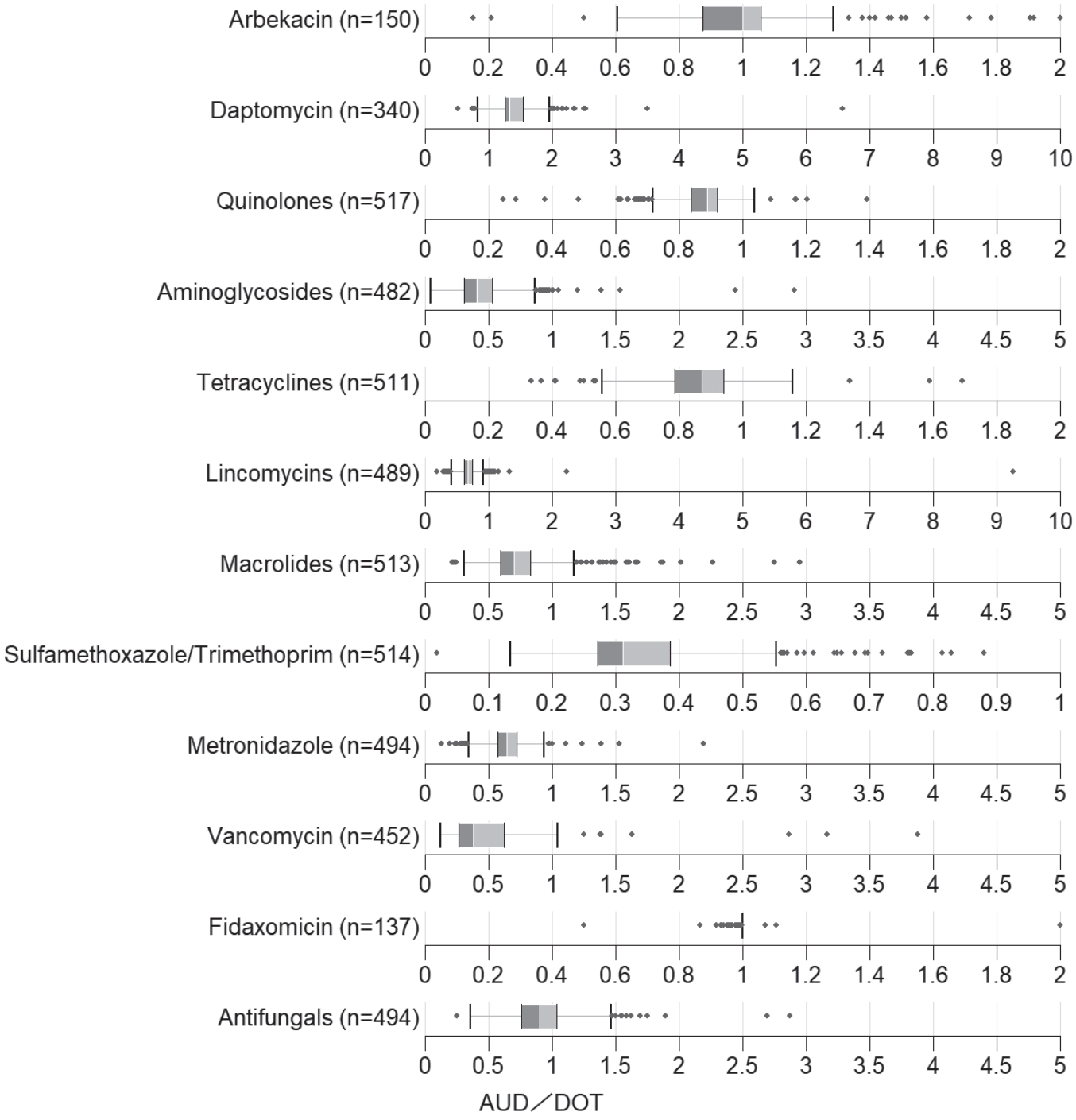
Figure 24 Distribution of AUD/DOT (parenteral+oral: all drug categories)



(Based on data from January to December 2020 as of August 25, 2021)
* "AUD/DOT (parenteral+oral)" is the ratio of AUD (parenteral) to DOT (parenteral).
* See the List of antimicrobial drugs for drug categories.

Figure 25 Distribution of AUD/DOT (parenteral+oral: per drug category)





(Based on data from January to December 2020 as of August 25, 2021)
* "AUD/DOT (parenteral+oral)" is the ratio of AUD (parenteral) to DOT (parenteral).
* See the List of antimicrobial drugs for drug categories.

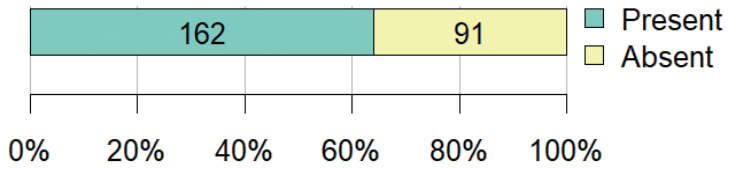
ICT-related information

Tabulation and calculation were performed for the data of ICT-related information registered by participating sites.

Since registration of the hand rub consumed and hand hygiene compliance rate is voluntary, and patients may select one of these two choices, the populations are not identical.

Qualified persons in ICT

Figure 26 Share of ICTs with qualified persons



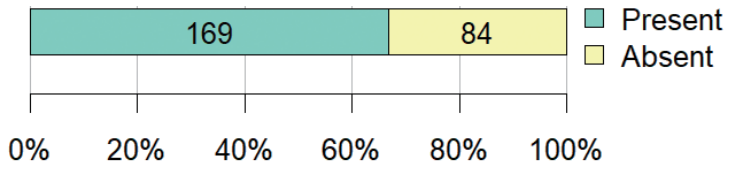
(Based on data from January to December 2020 as of August 25, 2021)

* Share of ICTs with qualified persons

* Qualified persons include Infection Control Doctors; Certified Nurse Specialists in Infection Control Nursing, Certified Nurses in Infection Control, and nurses who have completed specialized training and can calculate medical fees; Board Certified Pharmacists in Infection Control and Board Certified Infection Control Pharmacy Specialists; Infection Control Microbiological Technologists and Certified Medical Technologist in Clinical Microbiology.

ICT monitoring systems for cases in which resistant bacteria have been detected

Figure 27 Share of ICT monitoring systems for cases in which resistant bacteria have been detected



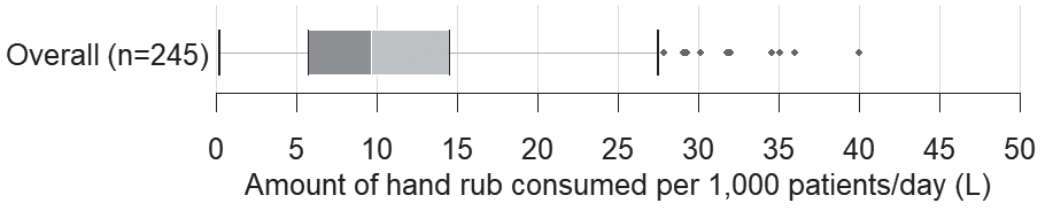
(Based on data from January to December 2020 as of August 25, 2021)

* Share of ICTs with or without resistant bacteria monitoring systems

* Resistant bacteria to be monitored in hospitals are MRSA, ESBL-producing bacteria, CRE (CPE), *C. difficile,* MDRP, MDRA, PRSP, VRE, VRSA, and other microorganisms designated as resistant bacteria by the expert at each site

Amount of hand rub consumed per 1,000 patients/day (L)

Figure 28 Distribution of the amount of hand rub consumed per 1,000 patients/day (L)



(Based on data from January to December 2020 as of August 25, 2021)

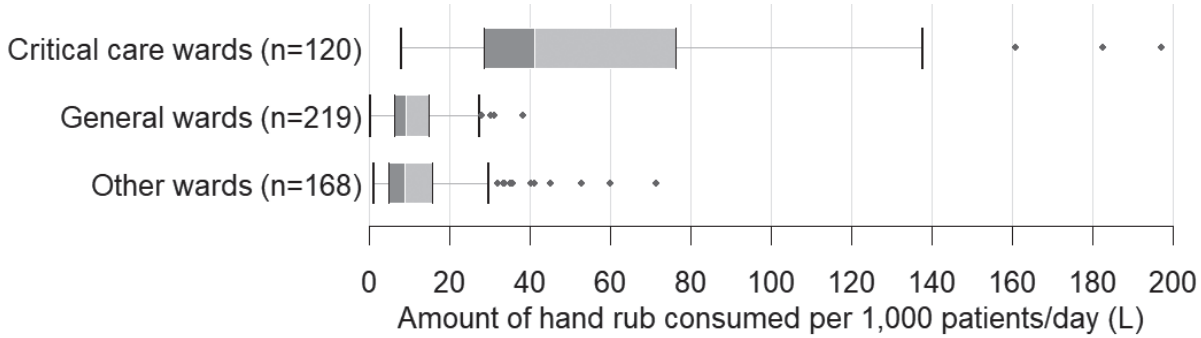
* The values were obtained by dividing the amount of hand rub consumed by the total number of hospitalized patients and multiplying it by 1,000.

* Participating sites arbitrarily selected wards.

* The amount of hand rub consumed in departments without outpatient services as well as hospitalization facilities such as operating rooms and dialysis rooms is excluded.

Amount of hand rub consumed per 1,000 patients/day (L) by ward function

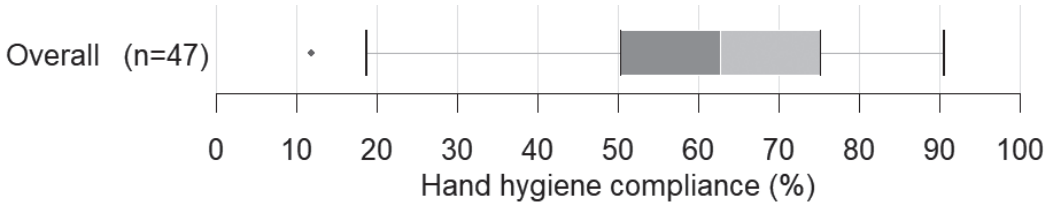
Figure 29 Distribution of the amount of hand rub consumed per 1,000 patients/day (L) by ward function



(Based on data from January to December 2020 as of August 25, 2021)
* The values were obtained by dividing the amount of hand rub consumed by the total number of hospitalized patients and multiplying it by 1,000.
* Participating sites arbitrarily selected wards.
* Data on wards with amount of hand rub consumed of 1 or higher and a total number of hospitalized patients of 0 are excluded.
* The amount of hand rub consumed in departments without outpatient services as well as hospitalization facilities such as operating rooms and dialysis rooms is excluded.
* Critical care wards: Calculated using ward codes JC01, JC02, JC03, JC04, JC05, JC06, JC07, and JC08.
* General wards (e.g., internal medicine, surgery, pediatrics): Calculated using ward codes JG01, JG02, JG03, JG04, JG05, JG06, JG07, and JG08.
* Other wards (psychiatry, palliative care, rehabilitation, recuperation, dementia, persons with disabilities, tuberculosis, and other special wards): Calculated using JE01, JE02, JE03, JE04, JE05, JE06, JE07, JE08, JE09, JE10, and JE11.
* See the List of ward codes for the ward codes by ward function.

Overall hand hygiene compliance

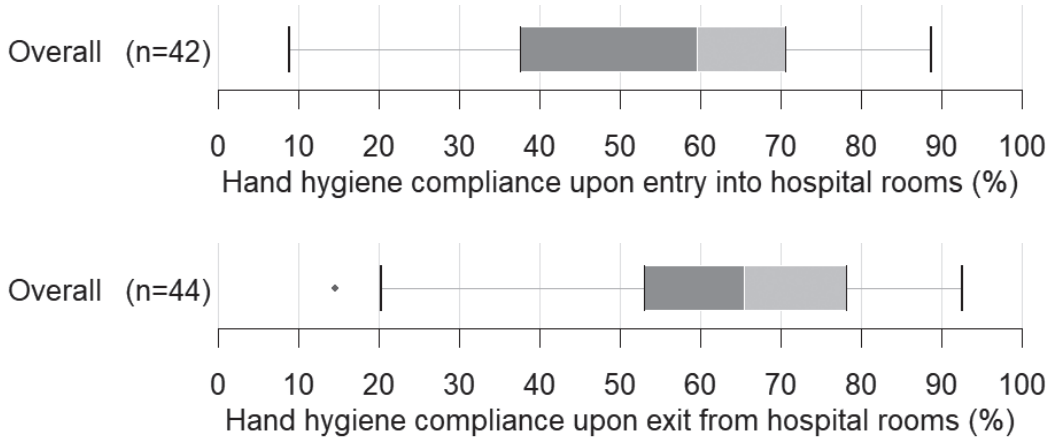
Figure 30 Distribution of overall hand hygiene compliance



(Based on data from January to December 2020 as of August 25, 2021)
* Using the direct observation method
* Share of hand hygiene practices among all hand hygiene moments
* Included if the number of hand hygiene moments is 100 or higher.

Overall hand hygiene compliance upon entry into and exit from hospital rooms

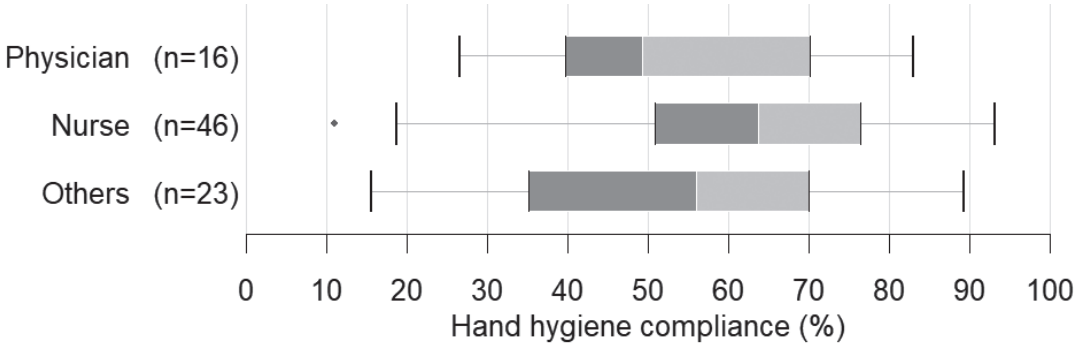
Figure 31 Distribution of overall hand hygiene compliance upon entry into and exit from hospital rooms



(Based on data from January to December 2020 as of August 25, 2021)
* Using the direct observation method
* Share of hand hygiene practices among all hand hygiene moments
* Included if the number of hand hygiene moments is 100 or higher.

Hand hygiene compliance by job type

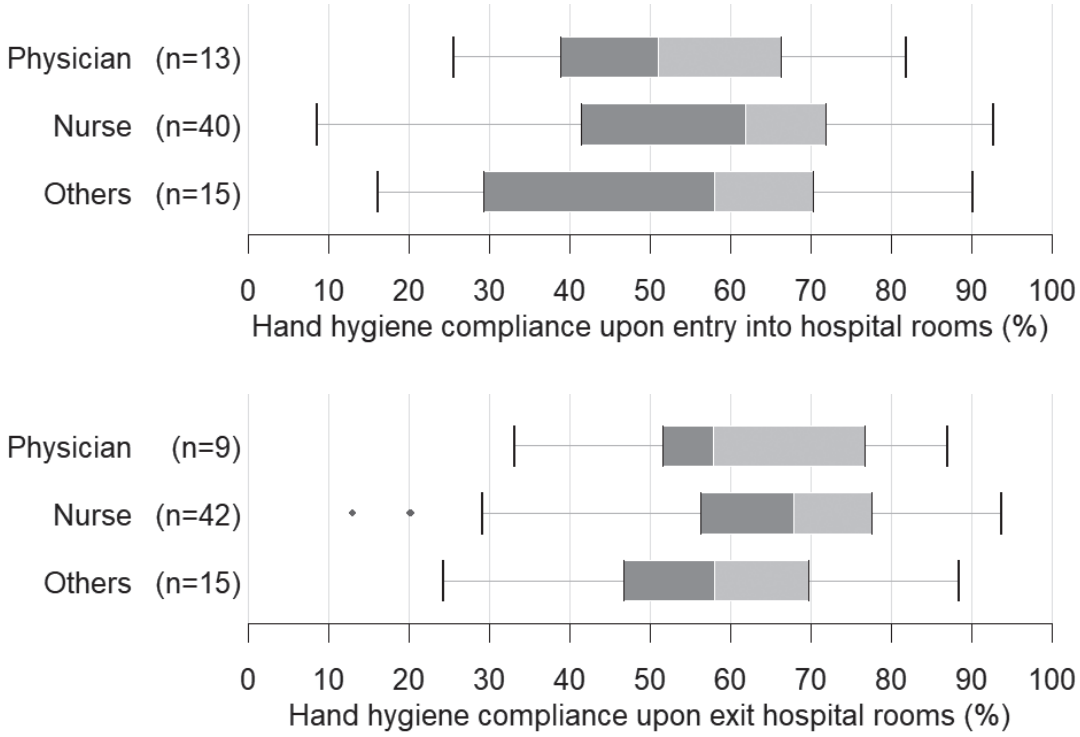
Figure 32 Distribution of the hand hygiene compliance by job type



(Based on data from January to December 2020 as of August 25, 2021)
* Using the direct observation method
* Share of hand hygiene practices among all hand hygiene moments
* Included if the number of hand hygiene moments is 100 or higher.

Hand hygiene compliance upon entry into and exit from hospital rooms by job type

Figure 33 Distribution of hand hygiene compliance upon entry into and exit from hospital rooms by job type

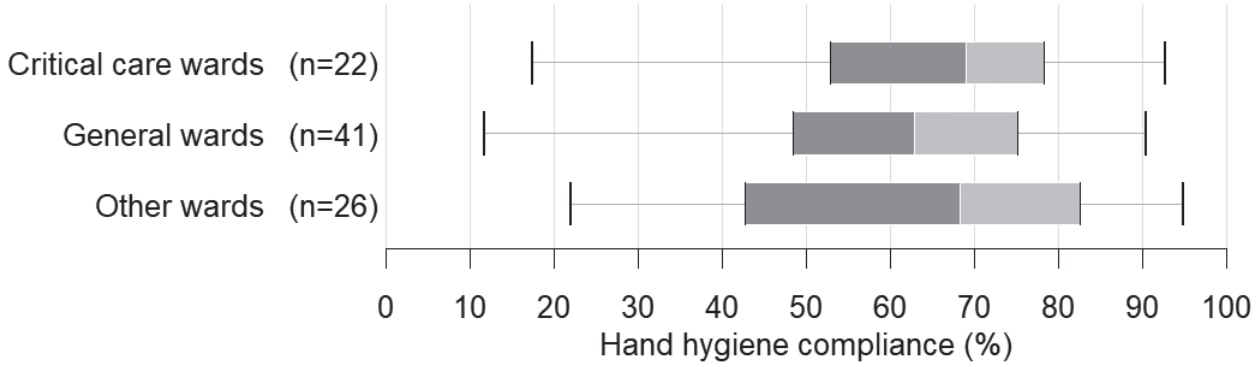


(Based on data from January to December 2020 as of August 25, 2021)

* Using the direct observation method
* Share of hand hygiene practices among all hand hygiene moments
* Included if the number of hand hygiene moments is 100 or higher.
* Upon entry into hospital rooms, observation at the time point of entering the point of care corresponds to that (i) before touching a patient and (ii) before clean/aseptic procedures under "WHO's Five Moments for Hand Hygiene."
* Upon exit from hospital rooms, observations at the time point of leaving the point of care corresponds to that (iii) after body fluid exposure/risk, (iv) after touching a patient, and (v) after touching a patient's surroundings under "WHO's Five Moments for Hand Hygiene."

Hand hygiene compliance by ward function

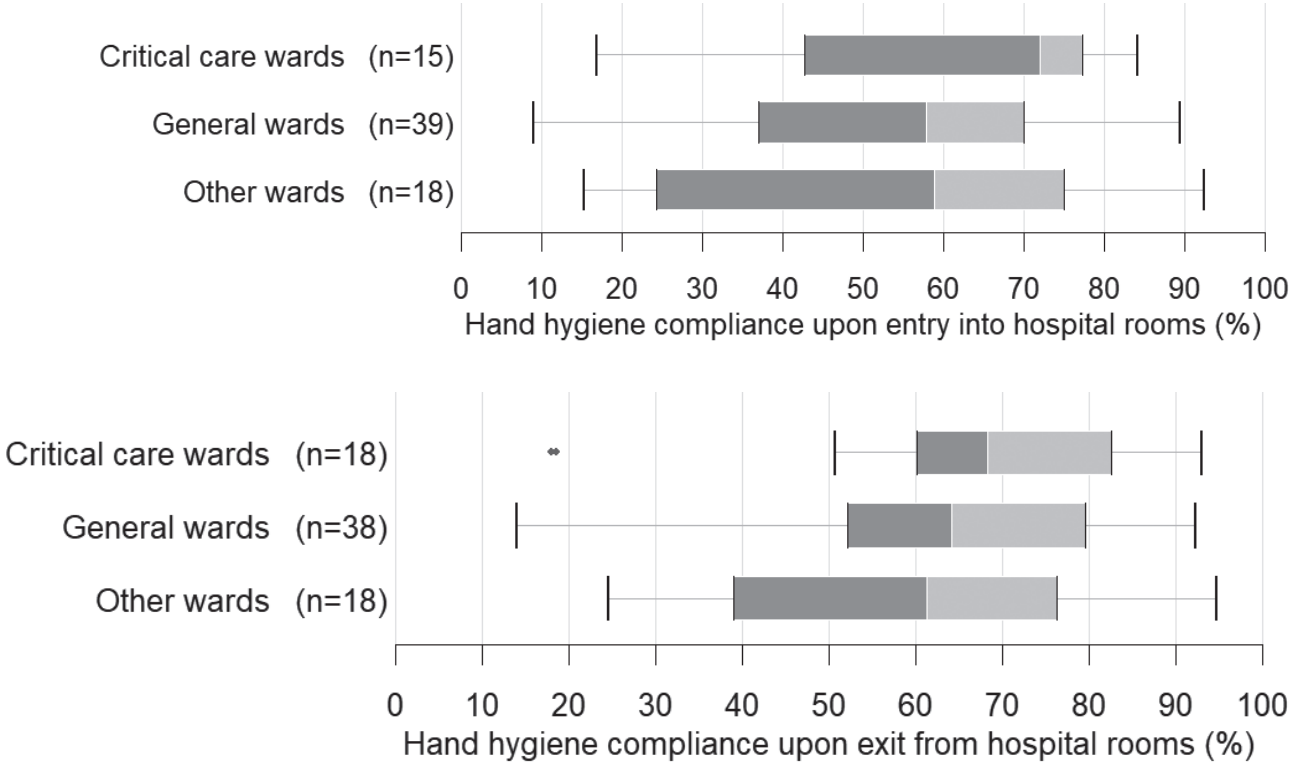
Figure 34 Distribution of the hand hygiene compliance by ward function



(Based on data from January to December 2020 as of August 25, 2021)
* Using the direct observation method
* Share of hand hygiene practices among all hand hygiene moments
* Included if the number of hand hygiene moments is 100 or higher.
* Critical care wards: Calculated using ward codes JC01, JC02, JC03, JC04, JC05, JC06, JC07, and JC08.
* General wards (e.g., internal medicine, surgery, pediatrics): Calculated using ward codes JG01, JG02, JG03, JG04, JG05, JG06, JG07, and JG08.
* Other wards (psychiatry, palliative care, rehabilitation, recuperation, dementia, persons with disabilities, tuberculosis, and other special wards): Calculated using ward codes JE01, JE02, JE03, JE04, JE05, JE06, JE07, JE08, JE09, JE10, and JE11.
* See the List of ward codes for the ward codes by ward function.

Hand hygiene compliance upon entry into and exit from hospital rooms by ward function

Figure 35 Distribution of the hand hygiene compliance upon entry into and exit from hospital rooms by ward function

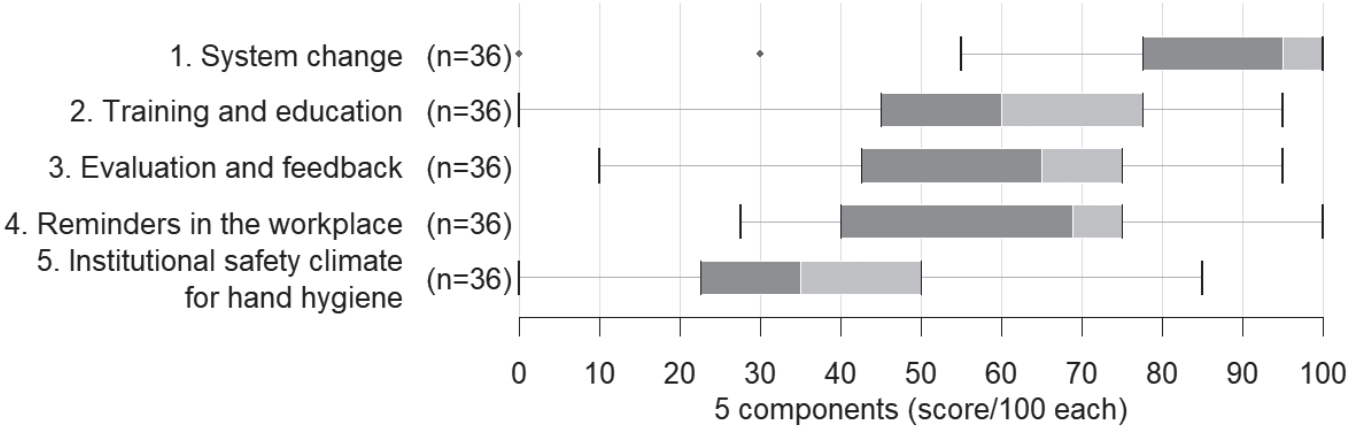


(Based on data from January to December 2020 as of August 25, 2021)

* Using the direct observation method
* Share of hand hygiene practices among all hand hygiene moments
* Included if the number of hand hygiene moments is 100 or higher.
* Upon entry into hospital rooms, observation at the time point of entering the point of care corresponds to that (i) before touching a patient and (ii) before clean/aseptic procedures under "WHO's Five Moments for Hand Hygiene."
* Upon exit from hospital rooms, observations at the time point of leaving the point of care corresponds to that (iii) after body fluid exposure/risk, (iv) after touching a patient, and (v) after touching a patient's surroundings under "WHO's Five Moments for Hand Hygiene."
* Critical care wards: Calculated using ward codes JC01, JC02, JC03, JC04, JC05, JC06, JC07, and JC08.
* General wards (e.g., internal medicine, surgery, pediatrics): Calculated using ward codes JG01, JG02, JG03, JG04, JG05, JG06, JG07, and JG08.
* Other wards (psychiatry, palliative care, rehabilitation, recuperation, dementia, persons with disabilities, tuberculosis, and other special wards): Calculated using ward codes JE01, JE02, JE03, JE04, JE05, JE06, JE07, JE08, JE09, JE10, and JE11.
* See the List of ward codes for the ward codes by ward function.

Five components of WHO Hand Hygiene Self-Assessment Framework

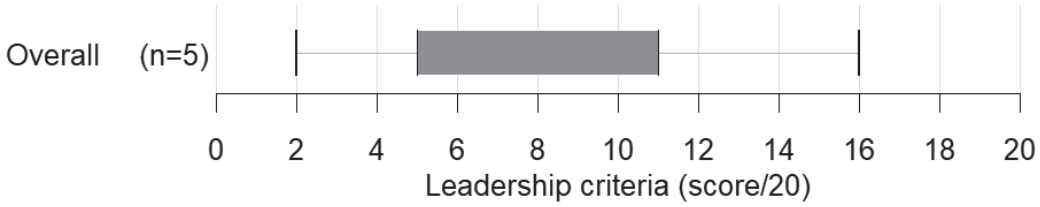
Figure 36 Distribution of scores on the five components of the WHO Hand Hygiene Self-Assessment Framework



(Based on data from January to December 2020 as of August 25, 2021)
* Calculated using the latest registration data in the tabulation period.
* The WHO Hand Hygiene Self-Assessment Framework 2010 was used.

The WHO Hand Hygiene Self-Assessment Framework Leadership criteria

Figure 37 Distribution of scores on the leadership criteria of the WHO Hand Hygiene Self-Assessment Framework



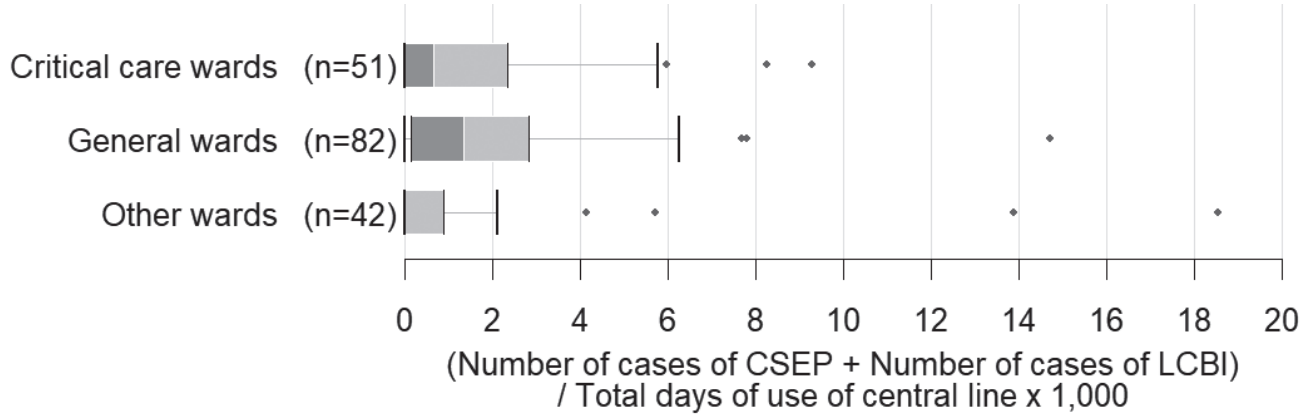
(Based on data from January to December 2020 as of August 25, 2021)
* Calculated using the latest registration data in the tabulation period.
* Only sites with a total score on the five components of the WHO Hand Hygiene Self-Assessment Framework of 376 or higher are included.

CLABSI/CAUTI information (healthcare-associated infections)

Tabulation and calculation were performed for the data of CLABSI/CAUTI information (healthcare-associated infections) registered by participating sites.

Incidence of CLABSI (LCBI + CSEP) by ward function

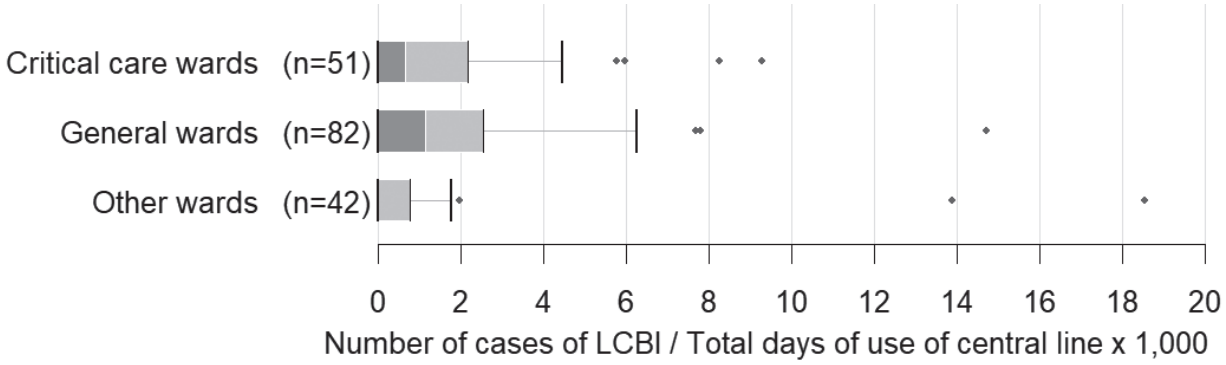
Figure 38 Distribution of the incidence of CLABSI (LCBI + CSEP) by ward function



(Based on data from January to December 2020 as of August 25, 2021)
* The values were obtained by dividing total LCBI and CSEP cases by the total number of hospitalized patients and multiplying it by 1,000.
* Critical care wards: Calculated using ward codes JC01, JC02, JC03, JC04, JC05, JC06, JC07, and JC08.
* General wards (e.g., internal medicine, surgery, pediatrics): Calculated using ward codes JG01, JG02, JG03, JG04, JG05, JG06, JG07, and JG08.
* Other wards (psychiatry, palliative care, rehabilitation, recuperation, dementia, persons with disabilities, tuberculosis, and other special wards): Calculated using JE01, JE02, JE03, JE04, JE05, JE06, JE07, JE08, JE09, JE10, and JE11.
* See the List of ward codes for the ward codes by ward function.

Incidence of CLABSI (LCBI) by ward function

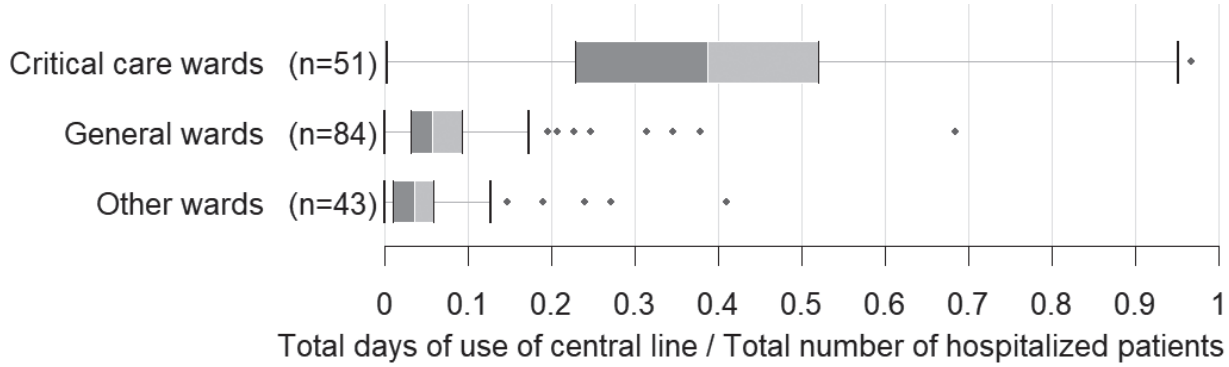
Figure 39 Distribution of the incidence of CLABSI (LCBI) by ward function



(Based on data from January to December 2020 as of August 25, 2021)
* The values were obtained by dividing total LCBI cases by the total number of hospitalized patients and multiplying it by 1,000.
* Critical care wards: Calculated using ward codes JC01, JC02, JC03, JC04, JC05, JC06, JC07, and JC08.
* General wards (e.g., internal medicine, surgery, pediatrics): Calculated using ward codes JG01, JG02, JG03, JG04, JG05, JG06, JG07, and JG08.
* Other wards (psychiatry, palliative care, rehabilitation, recuperation, dementia, persons with disabilities, tuberculosis, and other special wards): Calculated using JE01, JE02, JE03, JE04, JE05, JE06, JE07, JE08, JE09, JE10, and JE11.
* See the List of ward codes for the ward codes by ward function.

Ratio of central line use by ward function

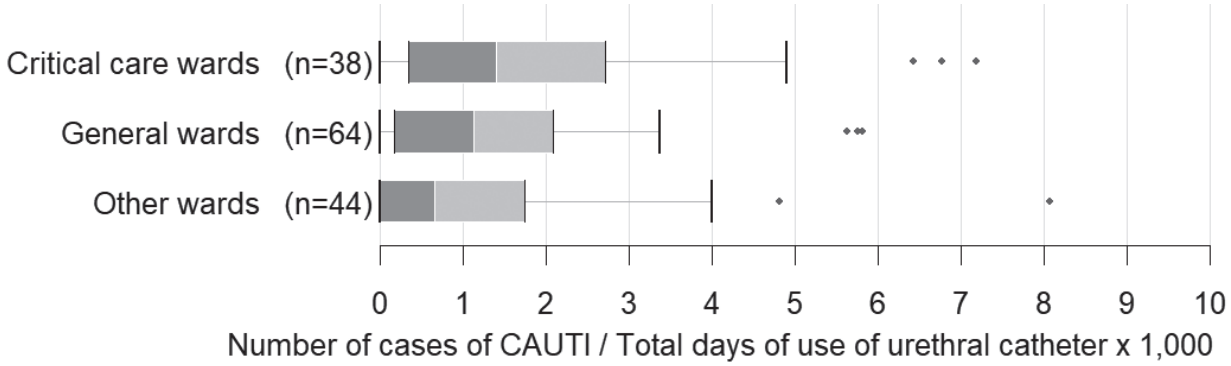
Figure 40 Distribution of the ratio of central line use by ward function



(Based on data from January to December 2020 as of August 25, 2021)
* Ratio of the total number of patients using a central line to the total number of hospitalized patients
* Critical care wards: Calculated using ward codes JC01, JC02, JC03, JC04, JC05, JC06, JC07, and JC08.
* General wards (e.g., internal medicine, surgery, pediatrics): Calculated using ward codes JG01, JG02, JG03, JG04, JG05, JG06, JG07, and JG08.
* Other wards (psychiatry, palliative care, rehabilitation, recuperation, dementia, persons with disabilities, tuberculosis, and other special wards): Calculated using JE01, JE02, JE03, JE04, JE05, JE06, JE07, JE08, JE09, JE10, and JE11.
* See the List of ward codes for the ward codes by ward function.

Incidence of CAUTI by ward function

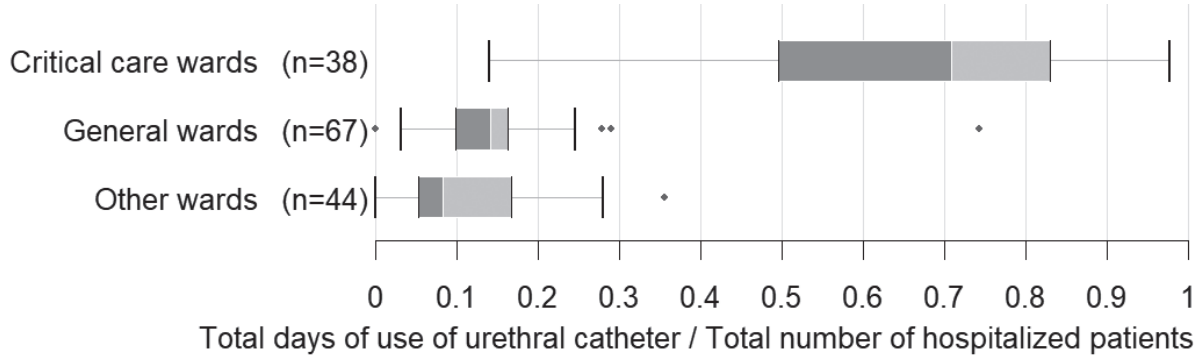
Figure 41 Distribution of the incidence of CAUTI by ward function



(Based on data from January to December 2020 as of August 25, 2021)
* The values were obtained by dividing total CAUTI cases by the total number of hospitalized patients and multiplying it by 1,000.
* Critical care wards: Calculated using ward codes JC01, JC02, JC03, JC04, JC05, JC06, JC07, and JC08.
* General wards (e.g., internal medicine, surgery, pediatrics): Calculated using ward codes JG01, JG02, JG03, JG04, JG05, JG06, JG07, and JG08.
* Other wards (psychiatry, palliative care, rehabilitation, recuperation, dementia, persons with disabilities, tuberculosis, and other special wards): Calculated using JE01, JE02, JE03, JE04, JE05, JE06, JE07, JE08, JE09, JE10, and JE11.
* See the List of ward codes for the ward codes by ward function.

Ratio of catheter use by ward function

Figure 42 Distribution of the ratio of catheter use by ward function



(Based on data from January to December 2020 as of August 25, 2021)

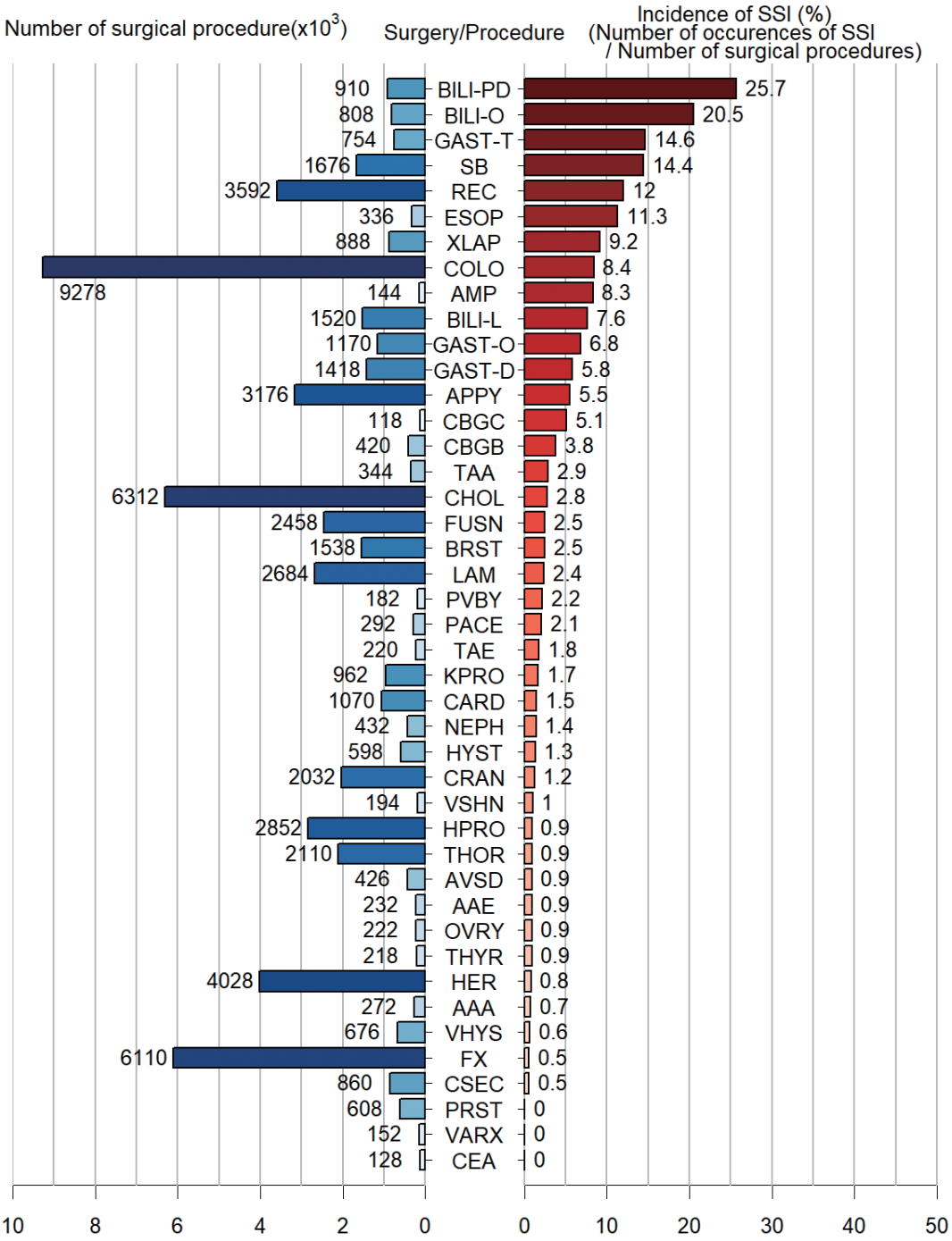
* Share of the total number of patients using a urethral catheter among the total number of hospitalized patients
* Critical care wards: Calculated using ward codes JC01, JC02, JC03, JC04, JC05, JC06, JC07, and JC08.
* General wards (e.g., internal medicine, surgery, pediatrics): Calculated using ward codes JG01, JG02, JG03, JG04, JG05, JG06, JG07, and JG08.
* Other wards (psychiatry, palliative care, rehabilitation, recuperation, dementia, persons with disabilities, tuberculosis, and other special wards): Calculated using JE01, JE02, JE03, JE04, JE05, JE06, JE07, JE08, JE09, JE10, and JE11.
* See the List of ward codes for the ward codes by ward function.

SSI information (healthcare-associated infections)

Tabulation and calculation were performed for the data of SSI information (healthcare-associated infections) registered by participating sites.

Incidence of SSI and the number of procedures for each surgical procedure

Figure 43 Incidence of SSI and the number of procedures for each surgical procedure



(Based on data from January to December 2020 as of August 25, 2021)

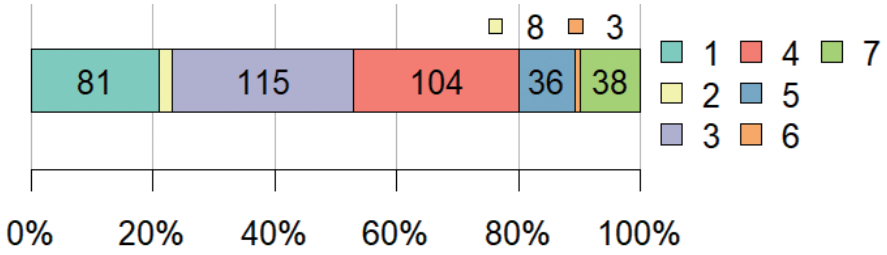
* Share of SSI (incidence) among the number of procedures for each surgical procedure
* Tabulated from the results according to the NHSN criteria of the SSI division of Japan Nosocomial Infections Surveillance (JANIS), etc.
* No adjustment for with or without endoscope.
* No adjustment per risk index.
* Surgical procedures of 100 or more cases are included.
* See the List of surgical procedure codes (in reference to the documents of JANIS) for each surgical procedure code.

Information on microorganisms and resistant bacteria

Tabulation and calculation were performed for the data of information on microorganisms and resistant bacteria registered by participating sites.
The data on microorganisms and information on resistant bacteria were linked from the "JANIS server," or data registered from the "reduced information file of the JANIS Clinical Division" were used.

Test methods of determining CDI

Figure 44 Share of test methods of determining CDI

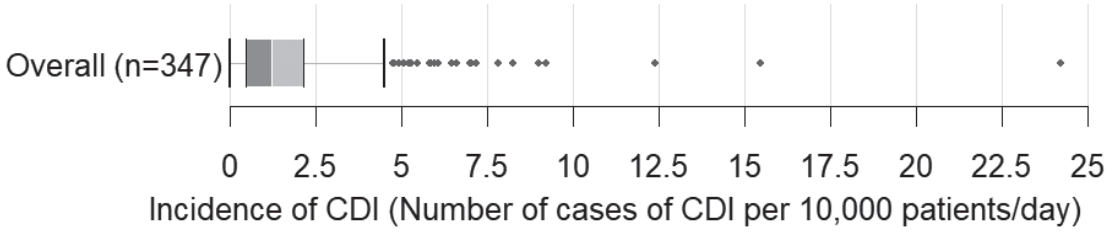


1 Only toxin is confirmed by immunochromatography. If positive, the test is judged as CDI. If negative, the test is terminated.
2 Only toxin is confirmed by immunochromatography. If positive, the test is judged as CDI. If negative, toxin is determined by immunochromatography using cultured colonies; if negative, the test is terminated.
3 Both GDH and toxin are confirmed by immunochromatography. If both GDH and toxin are positive, the test is judged as CDI. If GDH is positive and toxin is negative, the test is terminated without judging the test as CDI.
4 Both GDH and toxin are confirmed by immunochromatography. If GDH is positive and toxin is positive, the test is judged as CDI. If GDH is positive and toxin is negative, toxin is determined using cultured colonies; if both are negative, the test is terminated.
5 Both GDH and toxin are confirmed by immunochromatography. If GDH is positive and toxin is positive, the test is judged as CDI. If GDH is positive and toxin is negative, toxin is determined using a fecal toxin gene test; if negative, the test is terminated.
6 Only toxin is confirmed using a fecal toxin gene test. If positive, the test is judged as CDI. If negative, the test is terminated.
7 Others (other than the above)

(Based on data from January to December 2020 as of August 25, 2021)
* Share of test methods used to determine CDI
* The normally used test methods are shown.

Number of cases of CDI per 10,000 patients/day

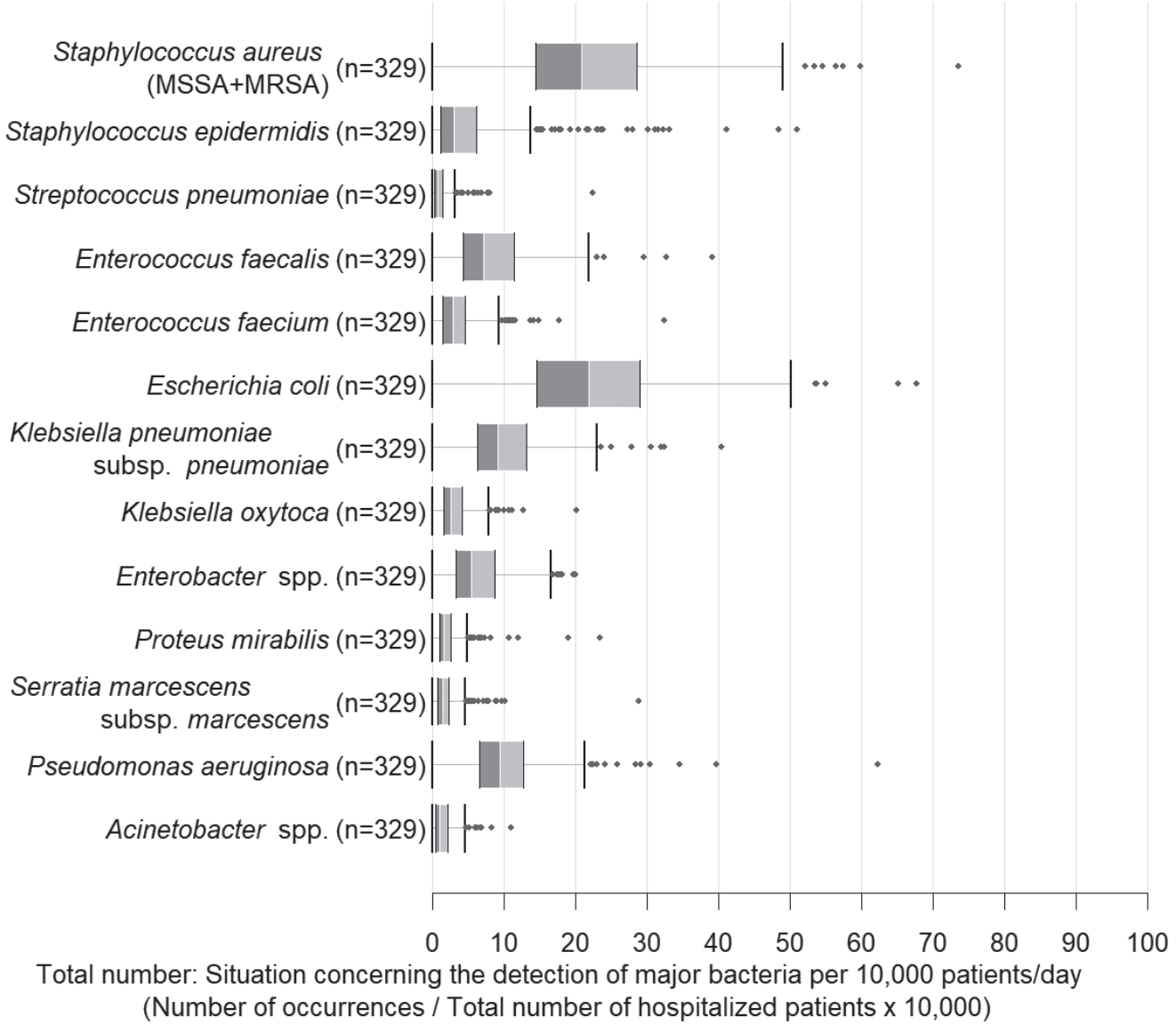
Figure 45 Distribution of the number of cases of CDI per 10,000 patients/day



(Based on data from January to December 2020 as of August 25, 2021)
* The values were obtained by dividing the number of patients determined to have CDI in hospitals by the total number of hospitalized patients and multiplying it by 10,000.
* Multiple detection within the past 14 days for the same patient is processed as duplicate.

Number of major bacteria detected per 10,000 patients/day (total number: all bacteria)

Figure 46 Distribution of the number of major bacteria detected per 10,000 patients/day (total number: all bacteria)

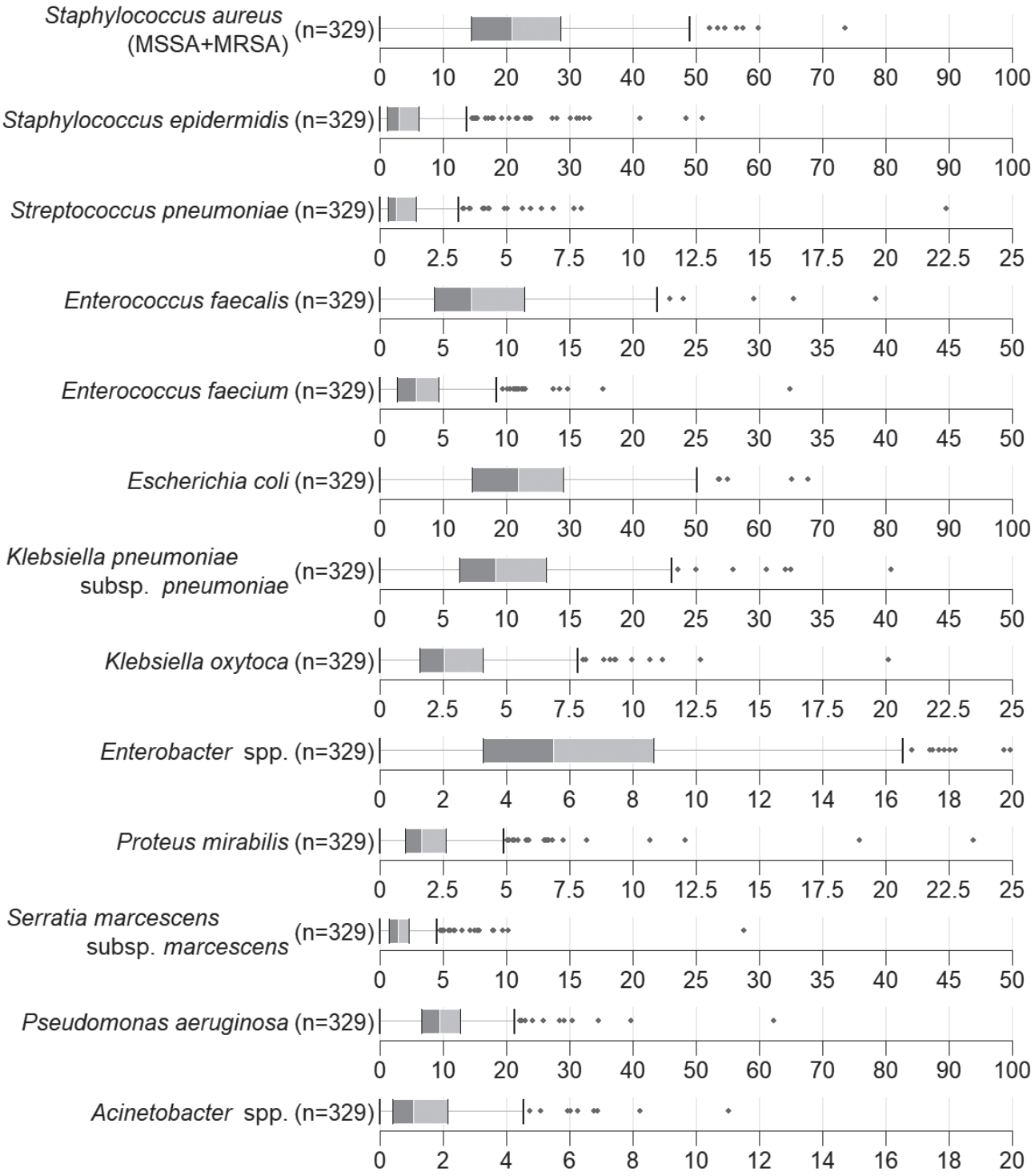


(Based on data from January to December 2020 as of August 25, 2021)

* The values were obtained by dividing the number of patients in whom bacteria were detected by the total number of hospitalized patients and multiplying it by 10,000
* [Total number] Counted as 1 for multiple times of detection in 1 patient per bacterium per month.
* MSSA and MRSA are totaled for *Staphylococcus aureus*

Number of major bacteria detected per 10,000 patients/day (total number: per bacterium)

Figure 47 Distribution of the number of major bacteria detected per 10,000 patients/day (total number: per bacterium)



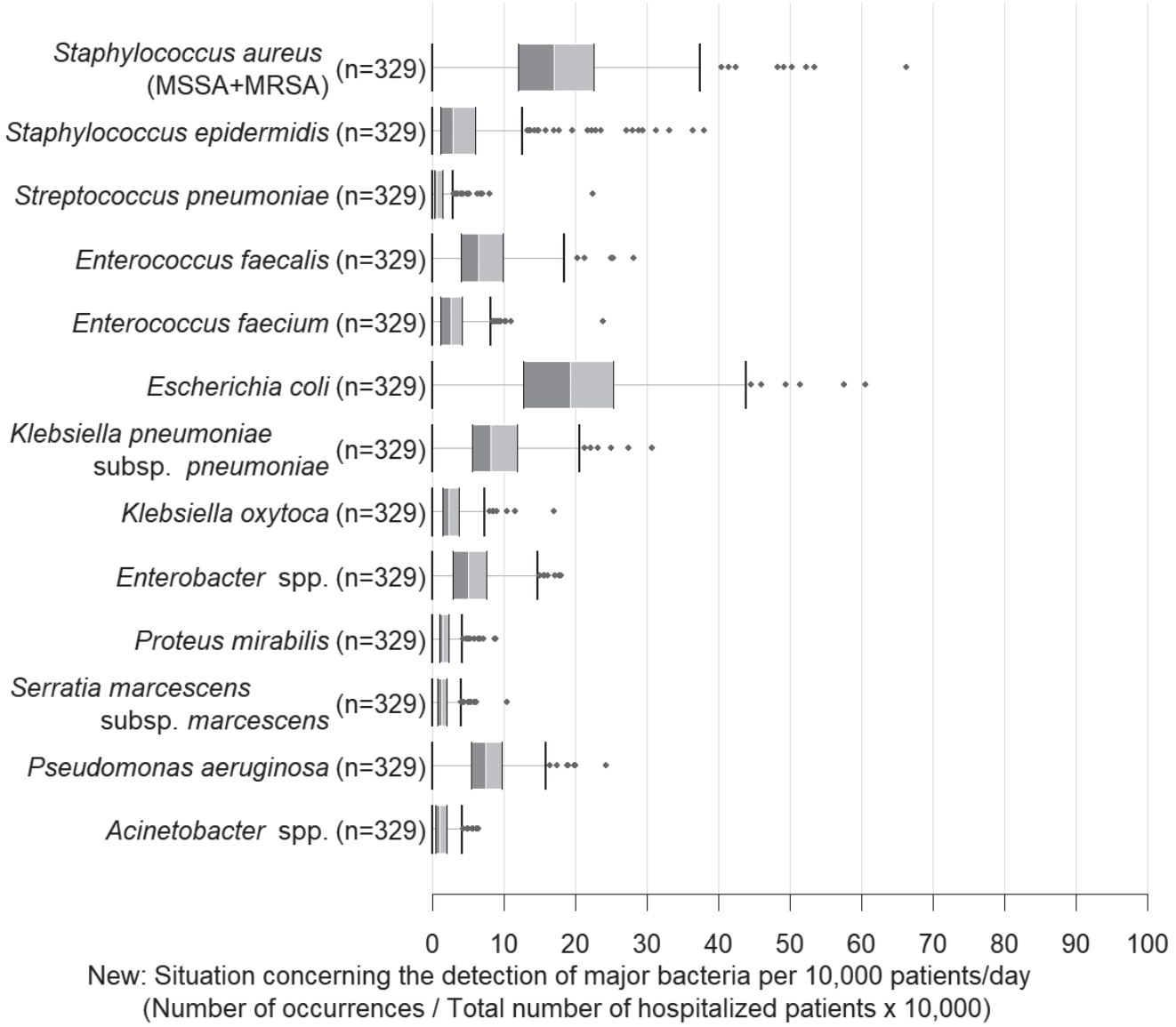
Total number: Situation concerning the detection of major bacteria per 10,000 patients/day
(Number of occurrences / Total number of hospitalized patients x 10,000)

(Based on data from January to December 2020 as of August 25, 2021)

* The values were obtained by dividing the number of patients in whom bacteria were detected by the total number of hospitalized patients and multiplying it by 10,000
* [Total number] Counted as 1 for multiple times of detection in 1 patient per bacterium per month.
* MSSA and MRSA are totaled for *Staphylococcus aureus*

Number of major bacteria detected per 10,000 patients/day (new: all bacteria)

Figure 48 Distribution of the number of major bacteria detected per 10,000 patients/day (new: all bacteria)

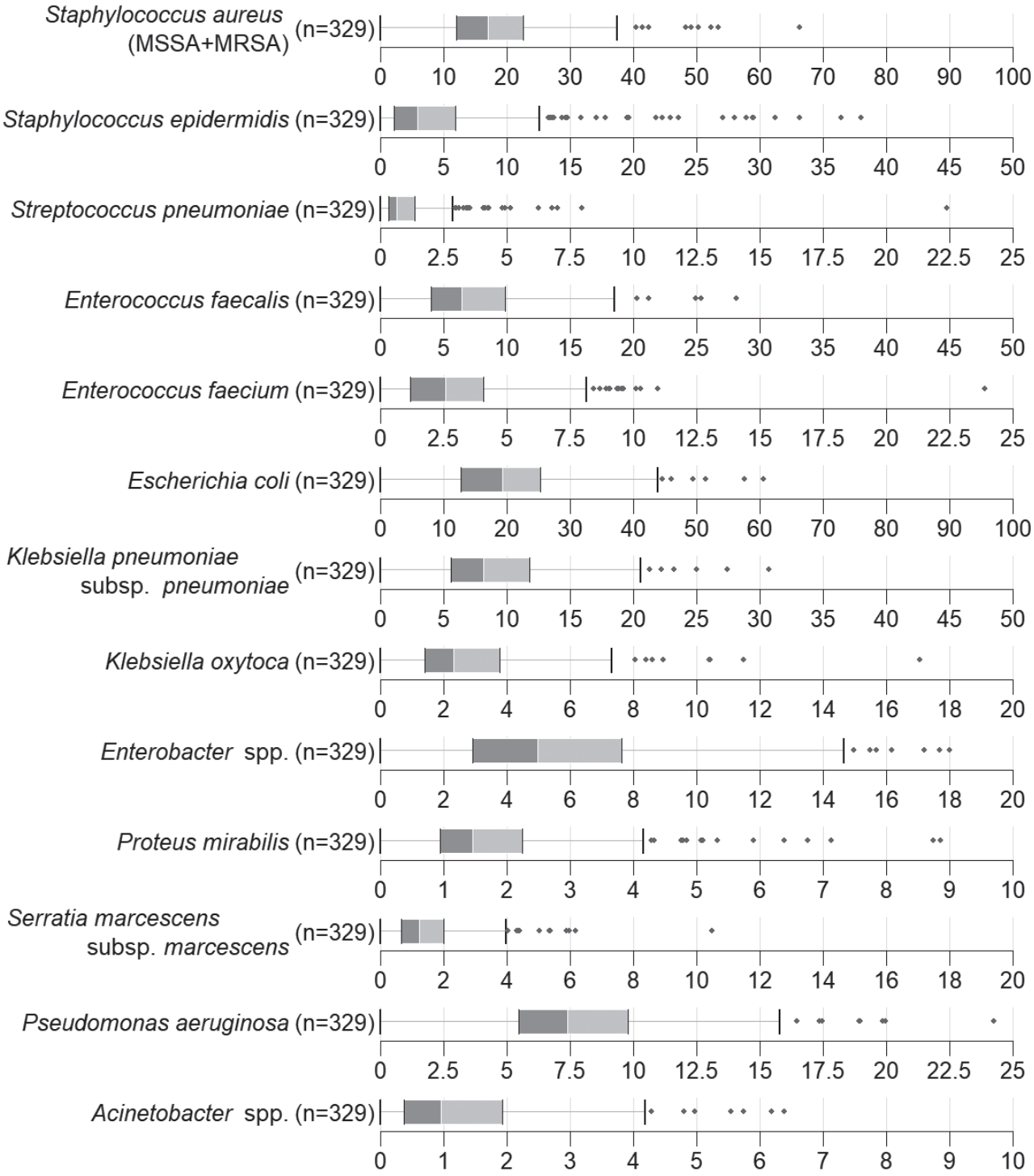


(Based on data from January to December 2020 as of August 25, 2021)

* The values were obtained by dividing the number of patients in whom bacteria were detected by the total number of hospitalized patients and multiplying it by 10,000
* [New] Counted as 1 for multiple times of detection in 1 patient per bacterium over the past 90 days.
* MSSA and MRSA are totaled for *Staphylococcus aureus*

Number of major bacteria detected per 10,000 patients/day (new: per bacterium)

Figure 49 Distribution of the number of major bacteria detected per 10,000 patients/day (new: per bacterium)



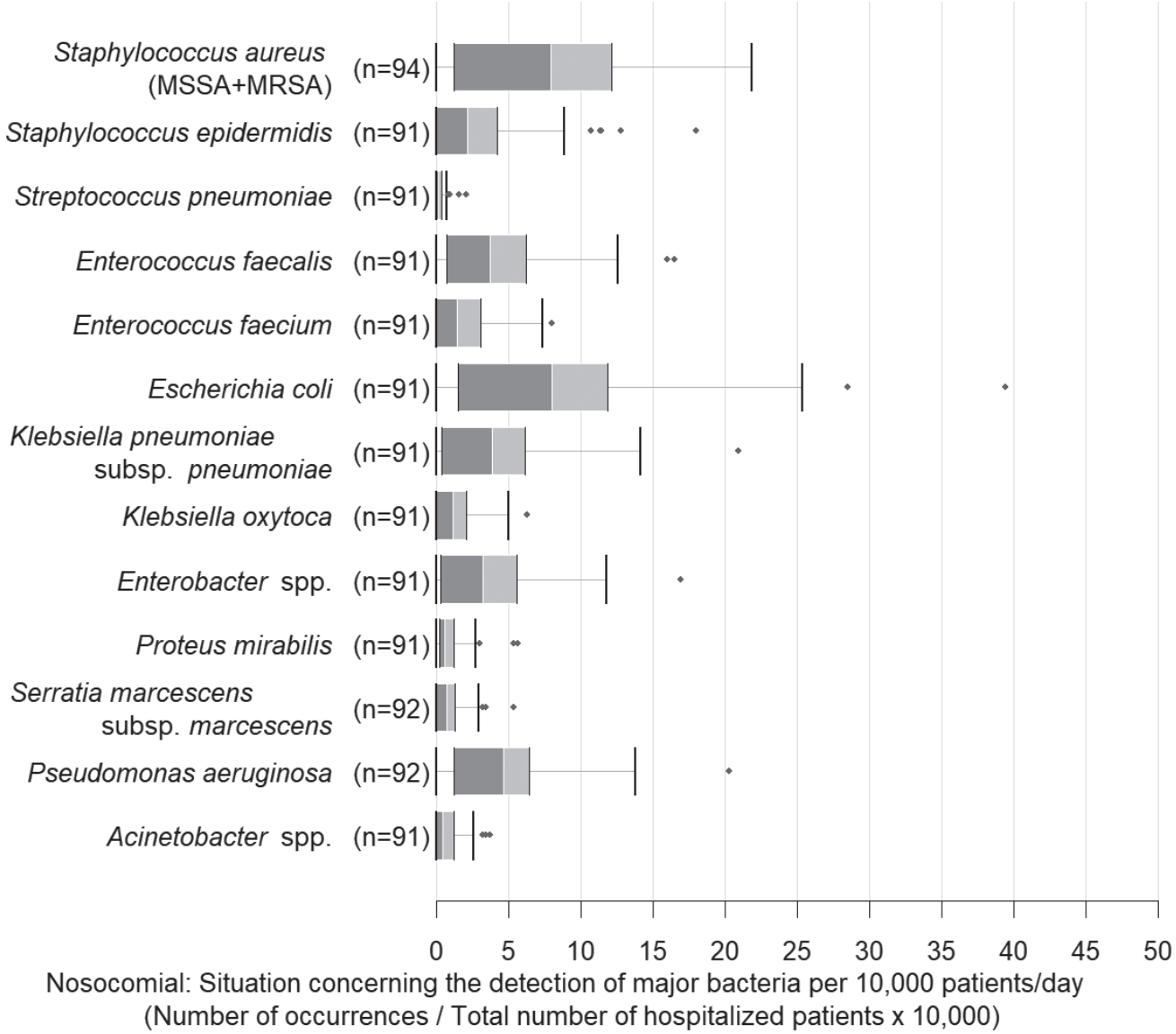
New: Situation concerning the detection of major bacteria per 10,000 patients/day
(Number of occurrences / Total number of hospitalized patients x 10,000)

(Based on data from January to December 2020 as of August 25, 2021)

* The values were obtained by dividing the number of patients in whom bacteria were detected by the total number of hospitalized patients and multiplying it by 10,000
* [New] Counted as 1 for multiple times of detection in 1 patient per bacterium over the past 90 days.
* MSSA and MRSA are totaled for *Staphylococcus aureus*

Number of major bacteria detected per 10,000 patients/day (nosocomial: all bacteria)

Figure 50 Distribution of the number of major bacteria detected per 10,000 patients/day (nosocomial: all bacteria)

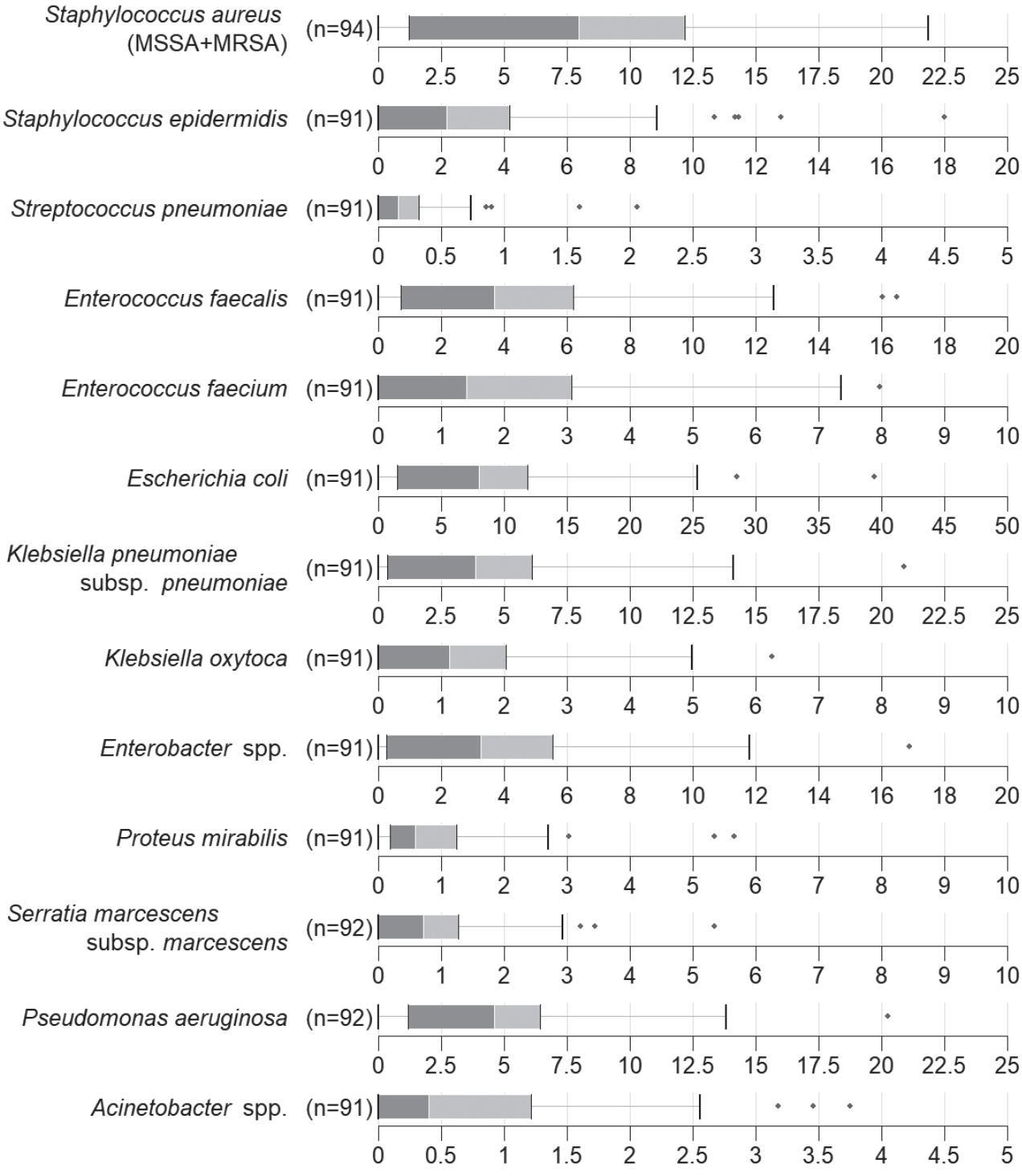


(Based on data from January to December 2020 as of August 25, 2021)

* The values were obtained by dividing the number of patients in whom bacteria were detected by the total number of hospitalized patients and multiplying it by 10,000
* [Nosocomial] Multiple times of detection per bacterium over the past 90 days is processed as duplicate, and patients with detected bacteria submitted on and after Day 4 of hospitalization are counted.
* MSSA and MRSA are totaled for *Staphylococcus aureus*

Number of major bacteria detected per 10,000 patients/day (nosocomial: per bacterium)

Figure 51 Distribution of the number of major bacteria detected per 10,000 patients/day (nosocomial: per bacterium)



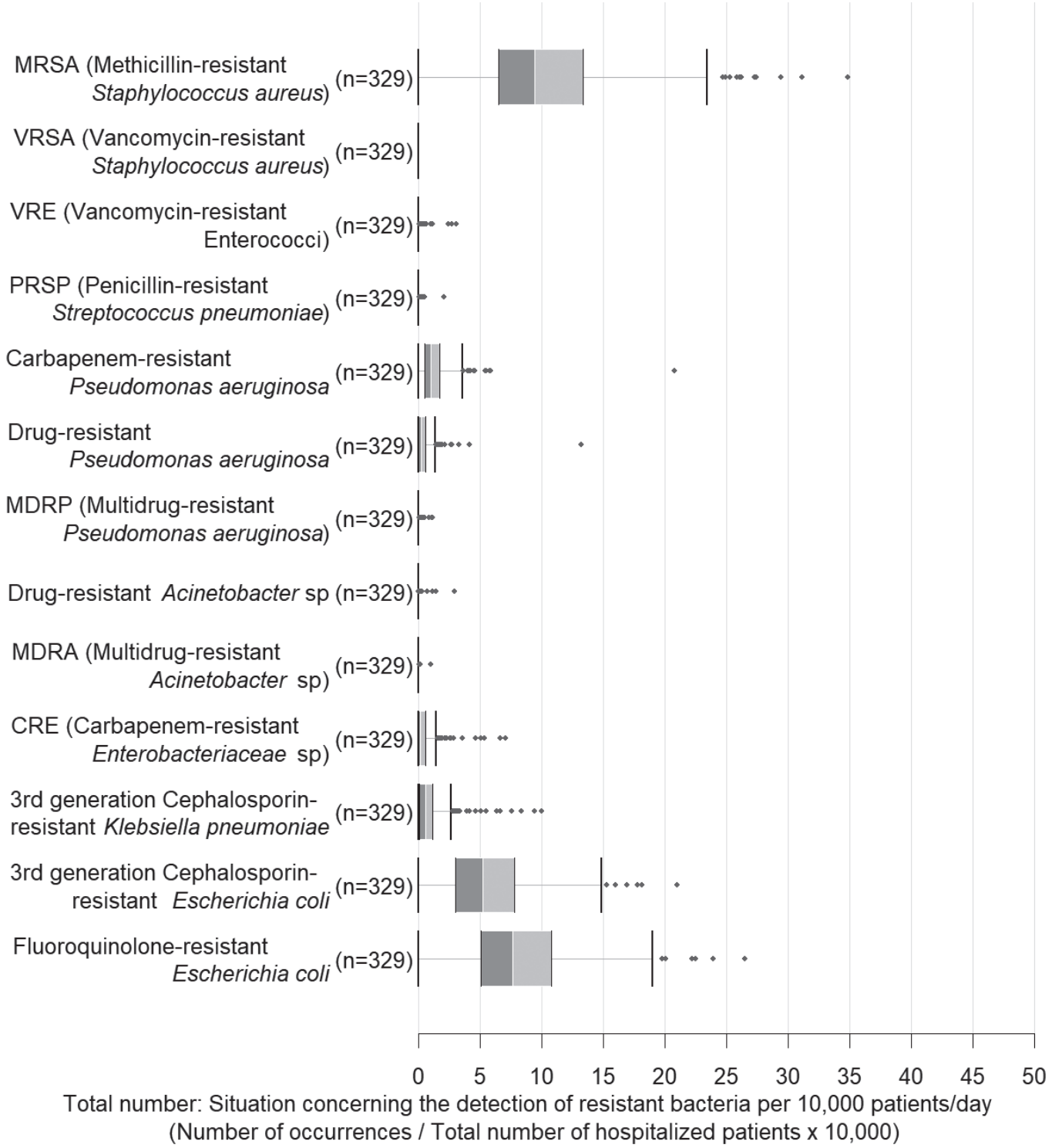
Nosocomial: Situation concerning the detection of major bacteria per 10,000 patients/day
(Number of occurrences / Total number of hospitalized patients x 10,000)

(Based on data from January to December 2020 as of August 25, 2021)

* The values were obtained by dividing the number of patients in whom bacteria were detected by the total number of hospitalized patients and multiplying it by 10,000
* [Nosocomial] Multiple times of detection per bacterium over the past 90 days is processed as duplicate, and patients with detected bacteria submitted on and after Day 4 of hospitalization are counted.
* MSSA and MRSA are totaled for *Staphylococcus aureus*

Number of resistant bacteria detected per 10,000 patients/day (total number: all bacteria)

Figure 52 Distribution of the number of resistant bacteria detected per 10,000 patients/day (total number: all bacteria)

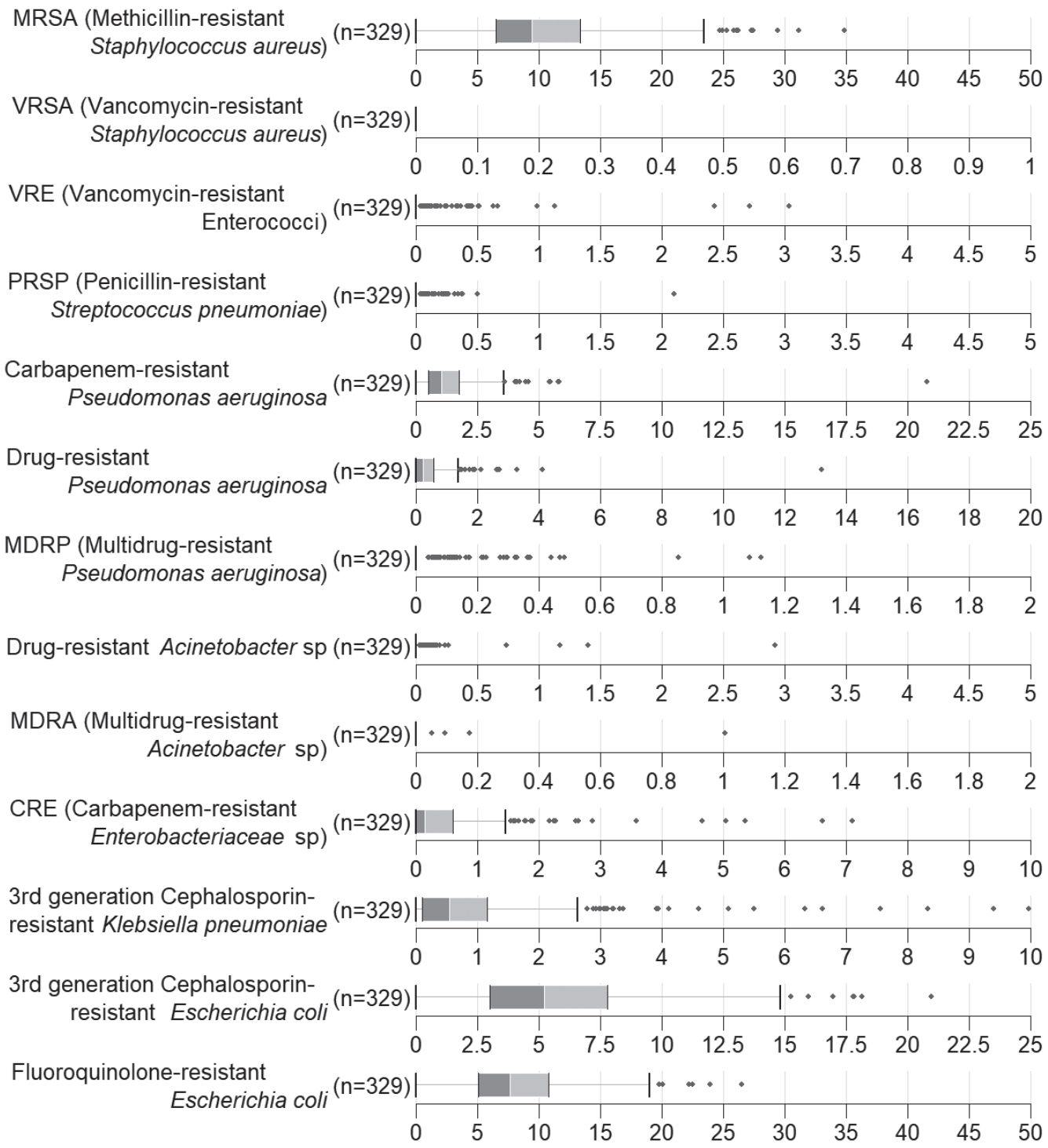


(Based on data from January to December 2020 as of August 25, 2021)

* The values were obtained by dividing the number of patients in whom bacteria were detected by the total number of hospitalized patients and multiplying it by 10,000
* [Total number] Counted as 1 for multiple times of detection in 1 patient per bacterium per month.
* Only resistant bacteria are tabulated.

Number of resistant bacteria detected per 10,000 patients/day (total number: per bacterium)

Figure 53 Distribution of the number of resistant bacteria detected per 10,000 patients/day (total number: per bacterium)



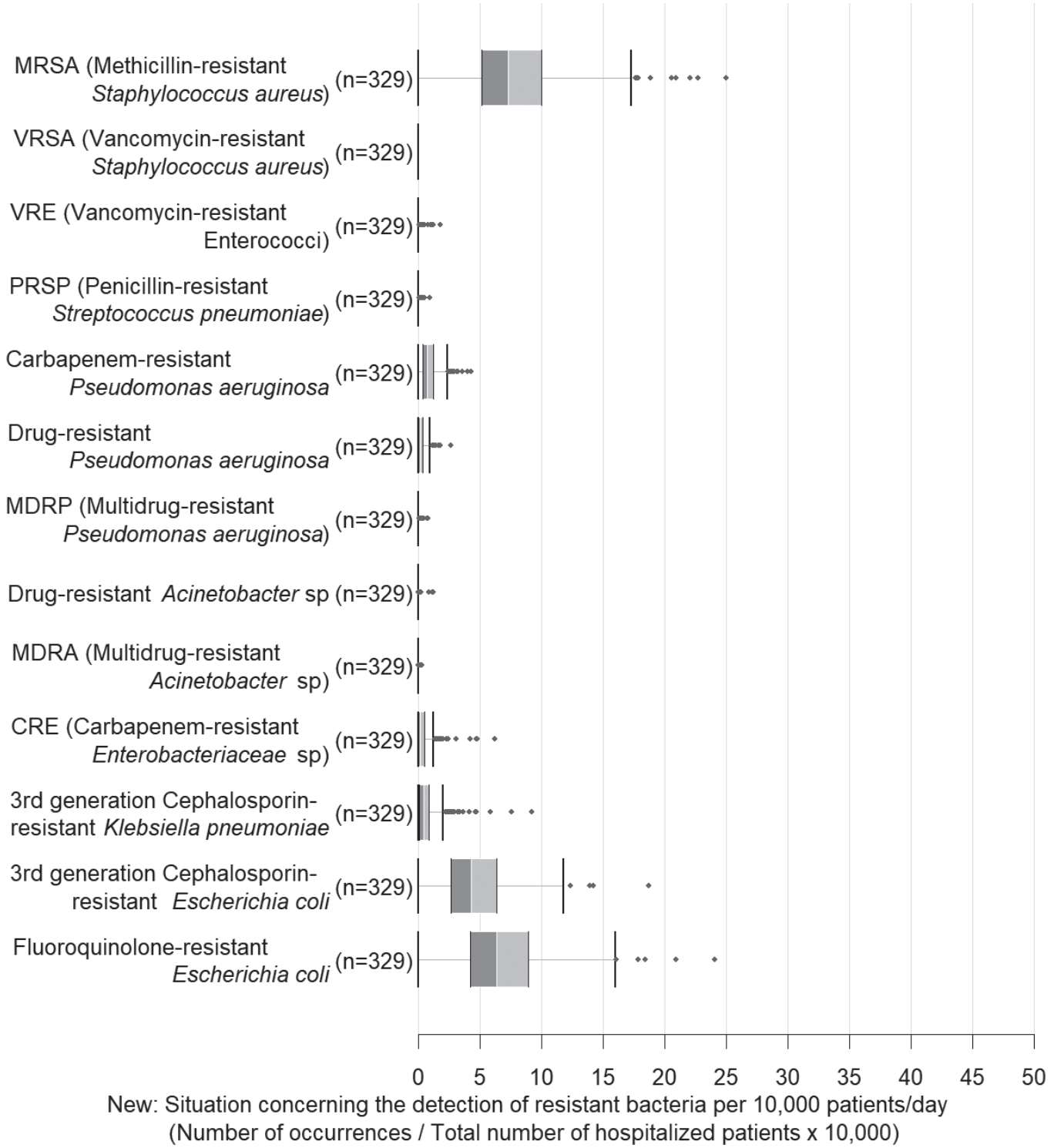
Total number: Situation concerning the detection of resistant bacteria per 10,000 patients/day
(Number of occurrences / Total number of hospitalized patients x 10,000)

(Based on data from January to December 2020 as of August 25, 2021)

* The values were obtained by dividing the number of patients in whom bacteria were detected by the total number of hospitalized patients and multiplying it by 10,000
* [Total number] Counted as 1 for multiple times of detection in 1 patient per bacterium per month.
* Only resistant bacteria are tabulated.

Number of resistant bacteria detected per 10,000 patients/day (new: all bacteria)

Figure 54 Distribution of the number of resistant bacteria detected per 10,000 patients/day (new: all bacteria)

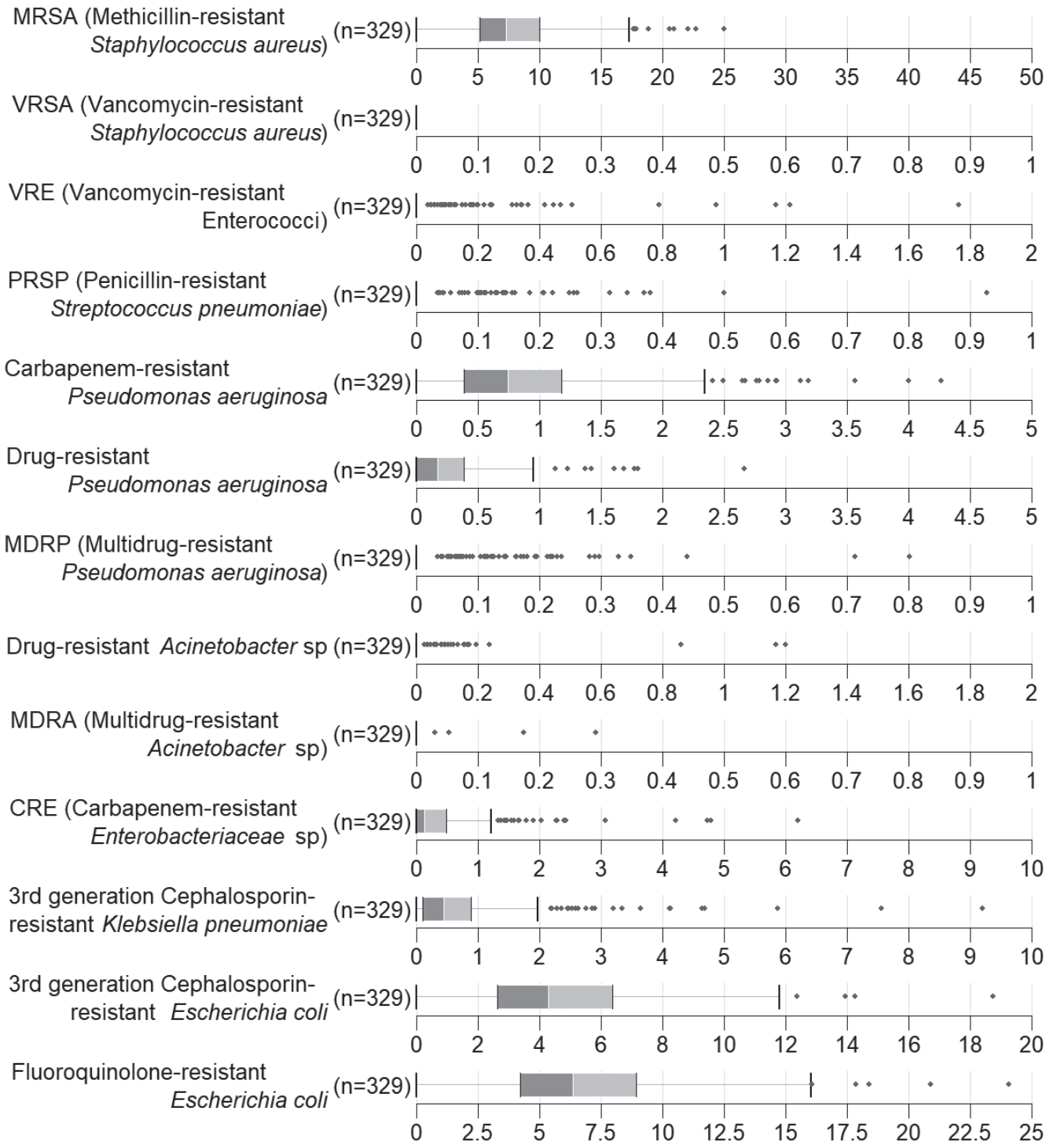


(Based on data from January to December 2020 as of August 25, 2021)

* The values were obtained by dividing the number of patients in whom bacteria were detected by the total number of hospitalized patients and multiplying it by 10,000
* [New] Counted as 1 for multiple times of detection in 1 patient per bacterium over the past 90 days.
* Tabulated per resistant bacterium

Number of resistant bacteria detected per 10,000 patients/day (new: per bacterium)

Figure 55 Distribution of the number of resistant bacteria detected per 10,000 patients/day (new: per bacterium)



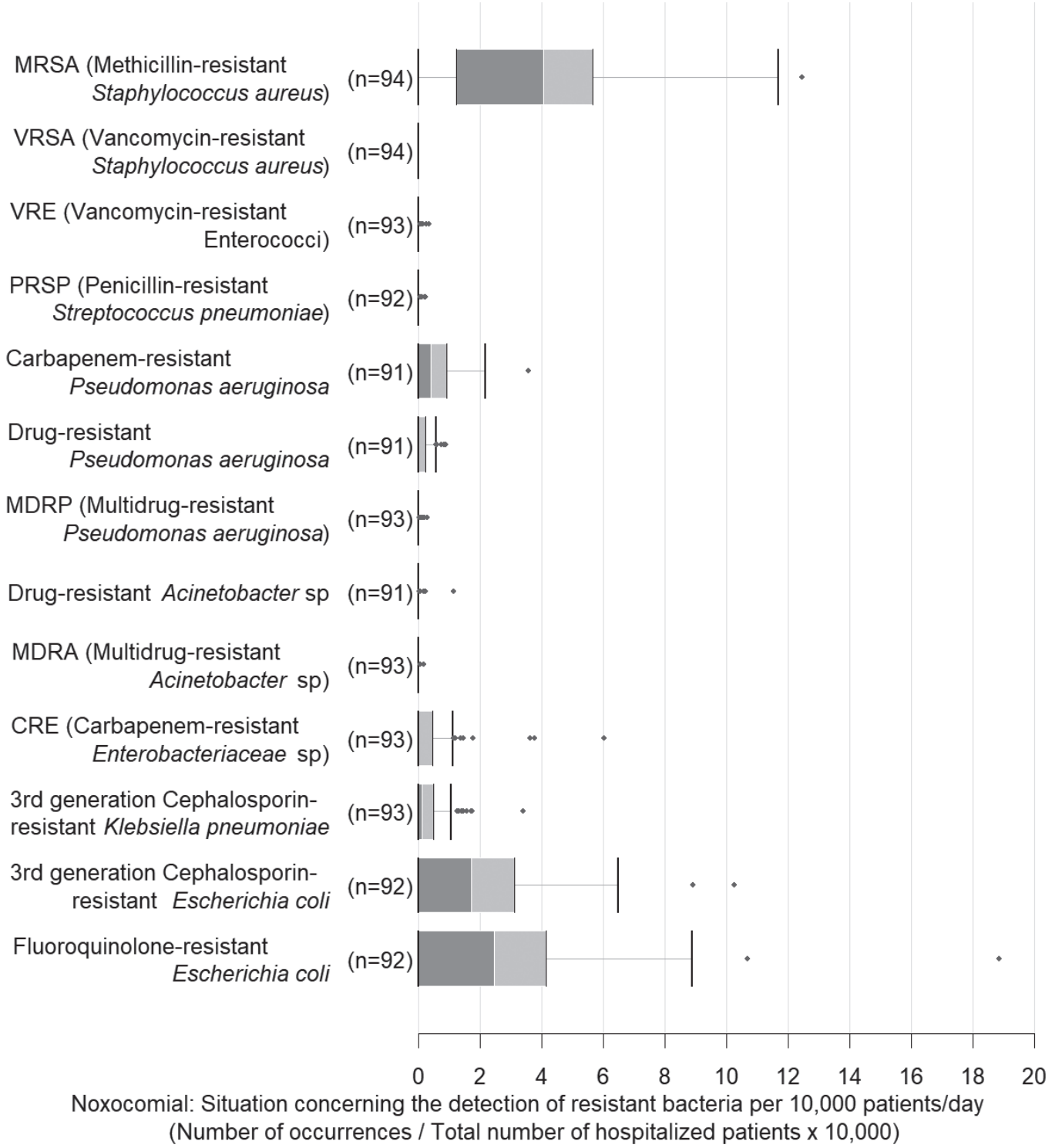
New: Situation concerning the detection of resistant bacteria per 10,000 patients/day
(Number of occurrences / Total number of hospitalized patients x 10,000)

(Based on data from January to December 2020 as of August 25, 2021)

* The values were obtained by dividing the number of patients in whom bacteria were detected by the total number of hospitalized patients and multiplying it by 10,000
* [New] Counted as 1 for multiple times of detection in 1 patient per bacterium over the past 90 days.
* Tabulated per resistant bacterium

Number of resistant bacteria detected per 10,000 patients/day (nosocomial: all bacteria)

Figure 56 Distribution of the number of resistant bacteria detected per 10,000 patients/day (nosocomial: all bacteria)

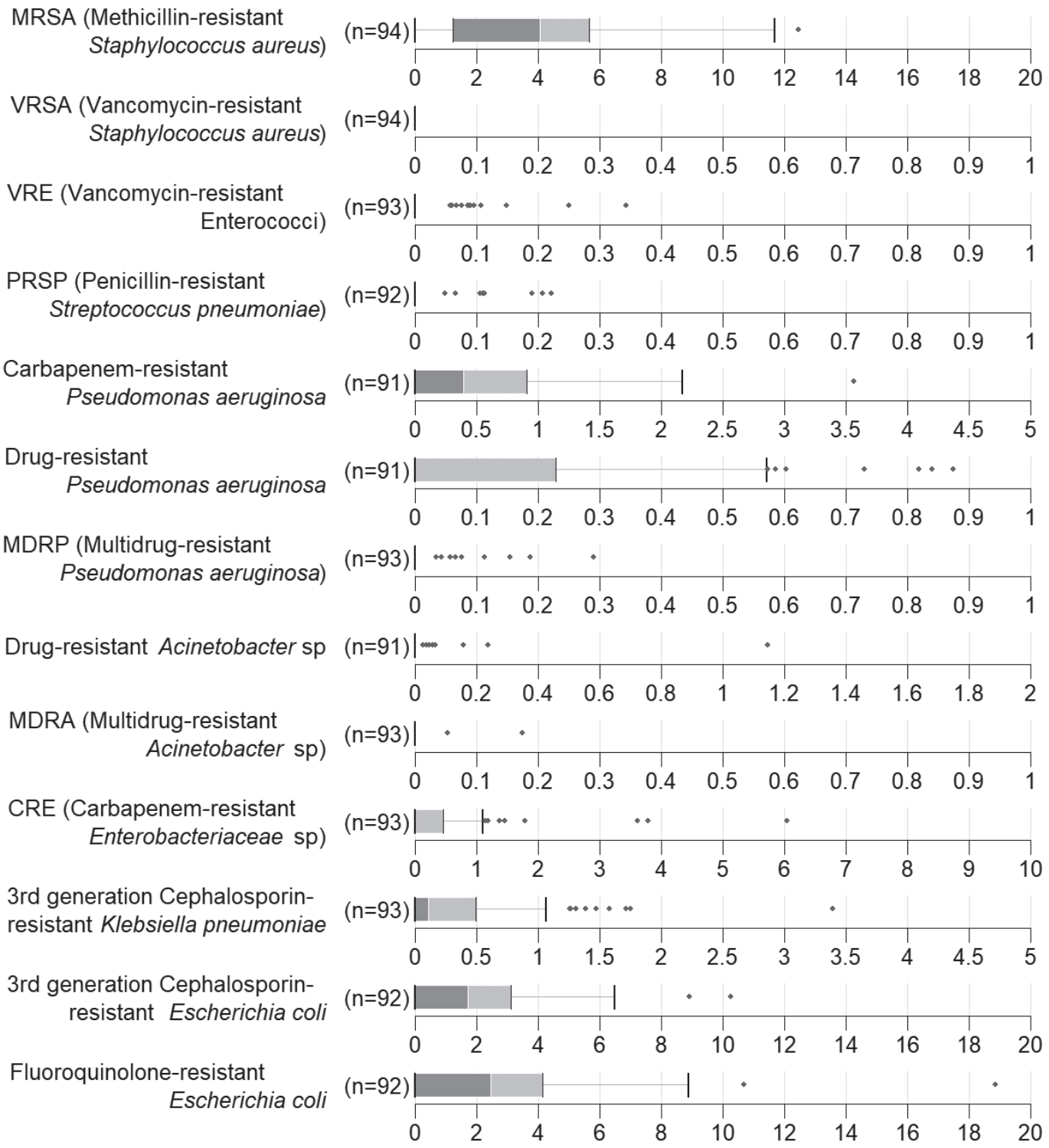


(Based on data from January to December 2020 as of August 25, 2021)

* The values were obtained by dividing the number of patients in whom bacteria were detected by the total number of hospitalized patients and multiplying it by 10,000
* [Nosocomial] Multiple times of detection per bacterium over the past 90 days is processed as duplicate, and patients with detected bacteria submitted on and after Day 4 of hospitalization are counted.
* Tabulated per resistant bacterium

Detection rate of resistant bacteria per 10,000 patients/day (nosocomial: per bacterium)

Figure 57 Distribution of the detection rate of resistant bacteria per 10,000 patients/day (nosocomial: per bacterium)



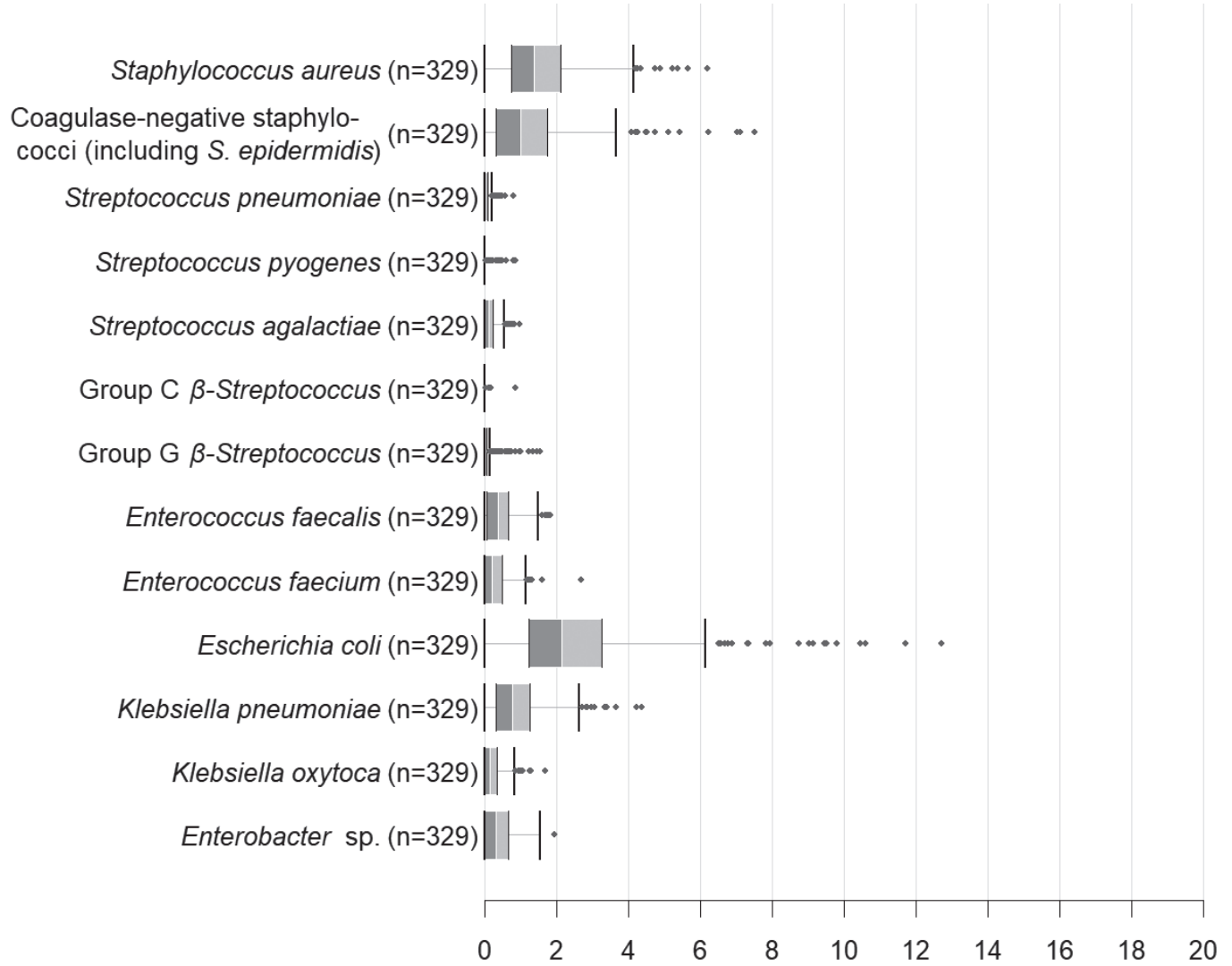
Noxocomial: Situation concerning the detection of resistant bacteria per 10,000 patients/day
(Number of occurrences / Total number of hospitalized patients x 10,000)

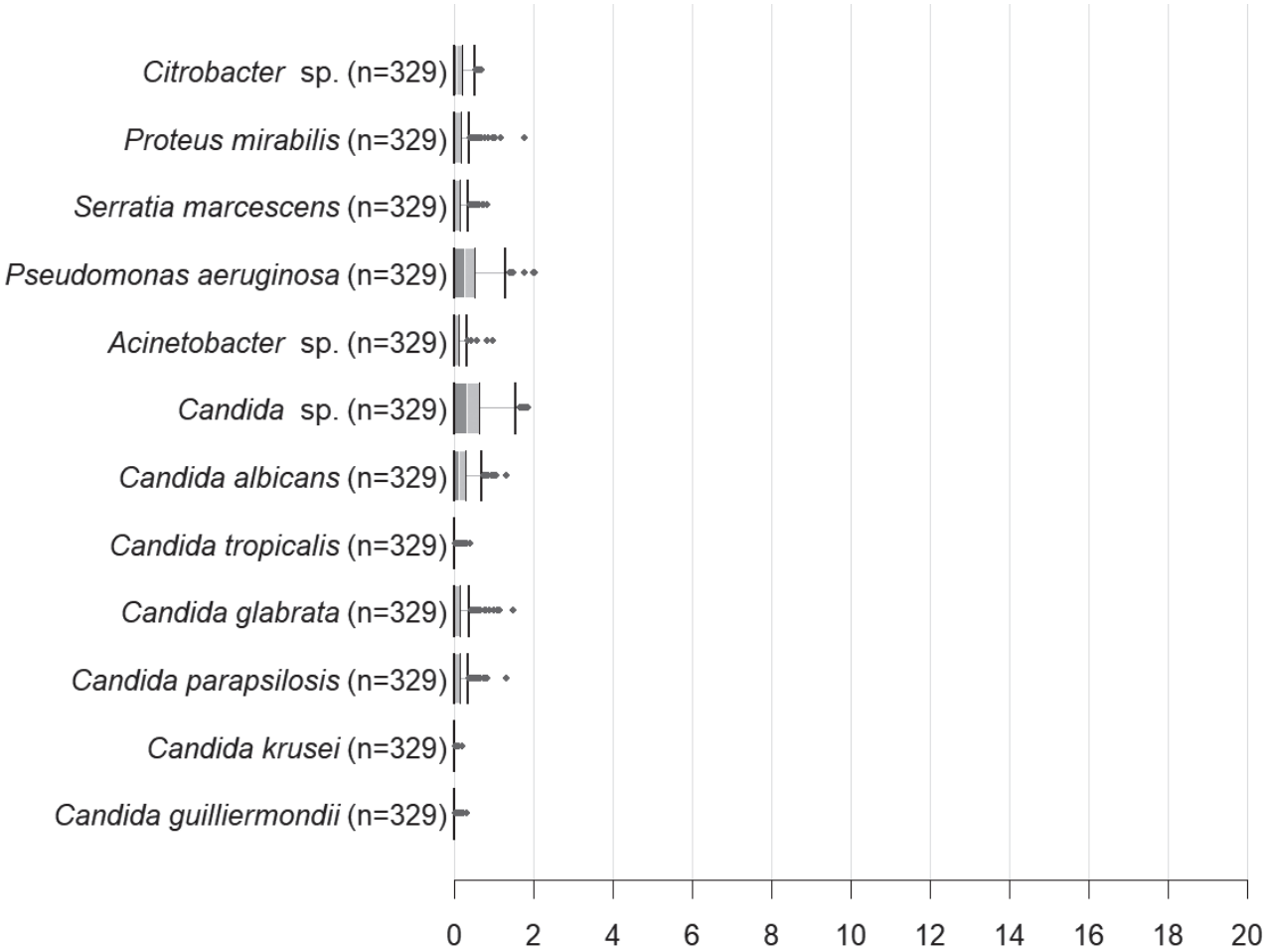
(Based on data from January to December 2020 as of August 25, 2021)

* The values were obtained by dividing the number of patients in whom bacteria were detected by the total number of hospitalized patients and multiplying it by 10,000
* [Nosocomial] Multiple times of detection per bacterium over the past 90 days is processed as duplicate, and patients with detected bacteria submitted on and after Day 4 of hospitalization are counted.
* Tabulated per resistant bacterium

Number of occurrences of bloodstream infection with major bacteria per 10,000 patients/day (total number: all bacteria)

Figure 58 Distribution of the number of occurrences of bloodstream infection with major bacteria per 10,000 patients/day (total number: all bacteria)





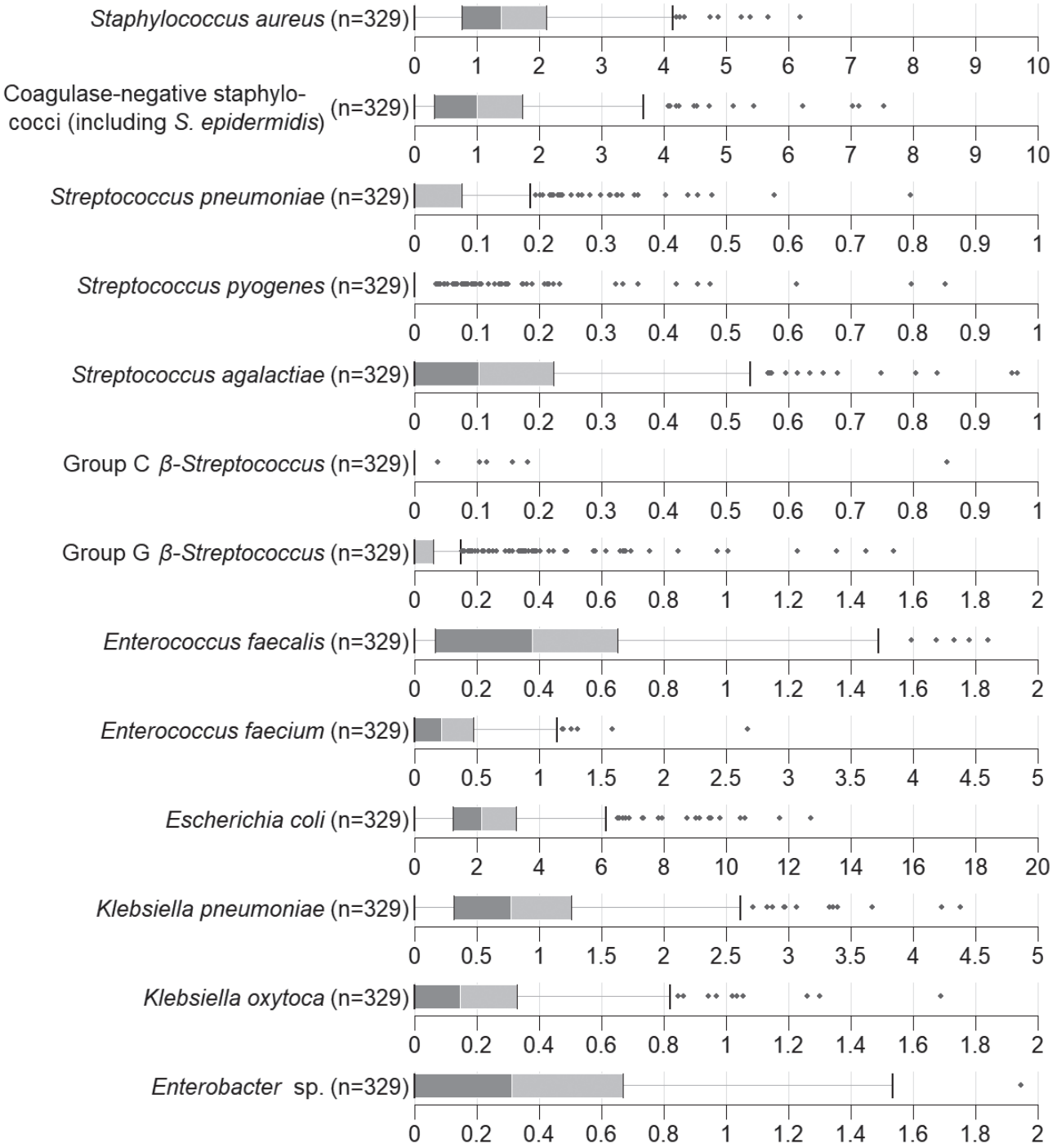
Total number: Situation concerning the detection of bloodstream infection with major bacteria per 10,000 patients/day (Number of occurrences / Total number of hospitalized patients x 10,000)

(Based on data from January to December 2020 as of August 25, 2021)

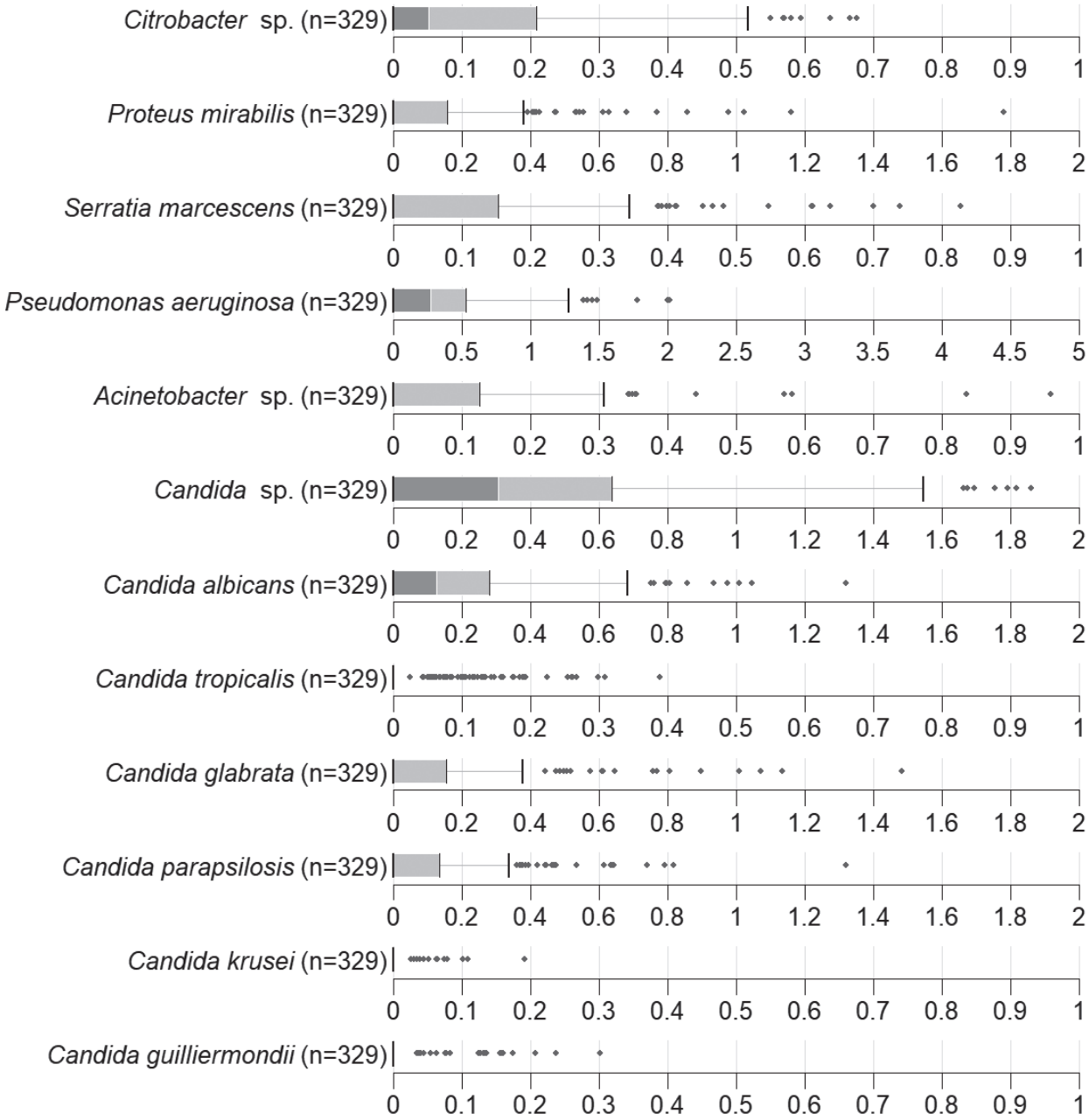
* The values were obtained by dividing the number of patients in whom bacteria were detected in blood samples by the total number of hospitalized patients and multiplying it by 10,000.
* [Total number] Counted as 1 for multiple times of detection in 1 patient per bacterium per month.
* Contaminated samples are excluded.
* MSSA and MRSA are totaled for *Staphylococcus aureus*

Number of occurrences of bloodstream infection with major bacteria per 10,000 patients/day (total number: per bacterium)

Figure 59 Distribution of the number of occurrences of bloodstream infection with major bacteria per 10,000 patients/day (total number: per bacterium)



Total number: Situation concerning the detection of bloodstream infection with major bacteria per 10,000 patients/day (Number of occurrences / Total number of hospitalized patients x 10,000)



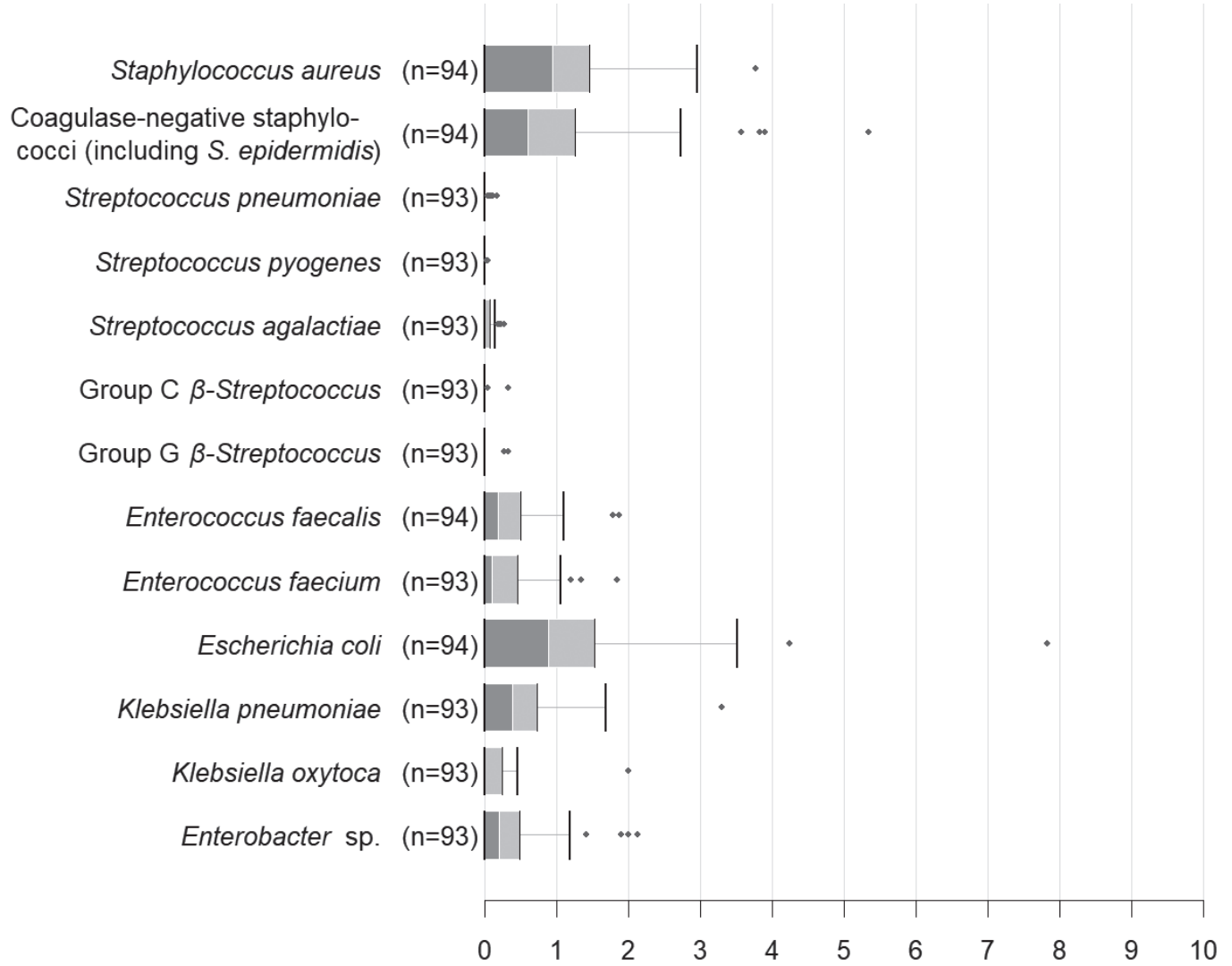
Total number: Situation concerning the detection of bloodstream infection with major bacteria per 10,000 patients/day (Number of occurrences / Total number of hospitalized patients x 10,000)

(Based on data from January to December 2020 as of August 25, 2021)

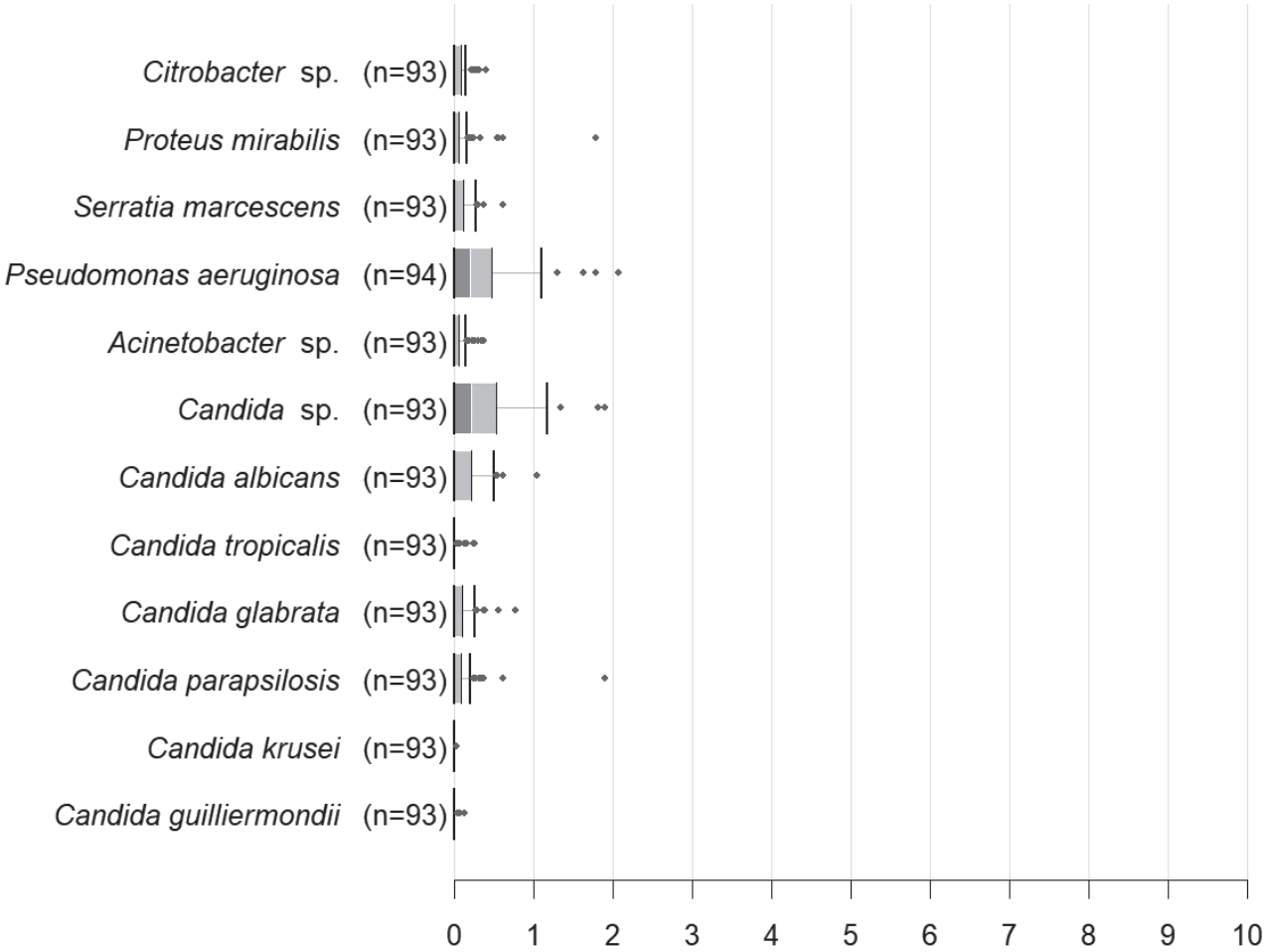
* The values were obtained by dividing the number of patients in whom bacteria were detected in blood samples by the total number of hospitalized patients and multiplying it by 10,000.
* [Total number] Counted as 1 for multiple times of detection in 1 patient per bacterium per month.
* Contaminated samples are excluded.
* MSSA and MRSA are totaled for *Staphylococcus aureus*

Number of occurrences of bloodstream infection with major bacteria per 10,000 patients/day (nosocomial: all bacteria)

Figure 60 Distribution of the number of occurrences of bloodstream infection with major bacteria per 10,000 patients/day (nosocomial: all bacteria)



Nosocomial: Situation concerning the detection of bloodstream infection with major bacteria per 10,000 patients/day (Number of occurrences / Total number of hospitalized patients x 10,000)



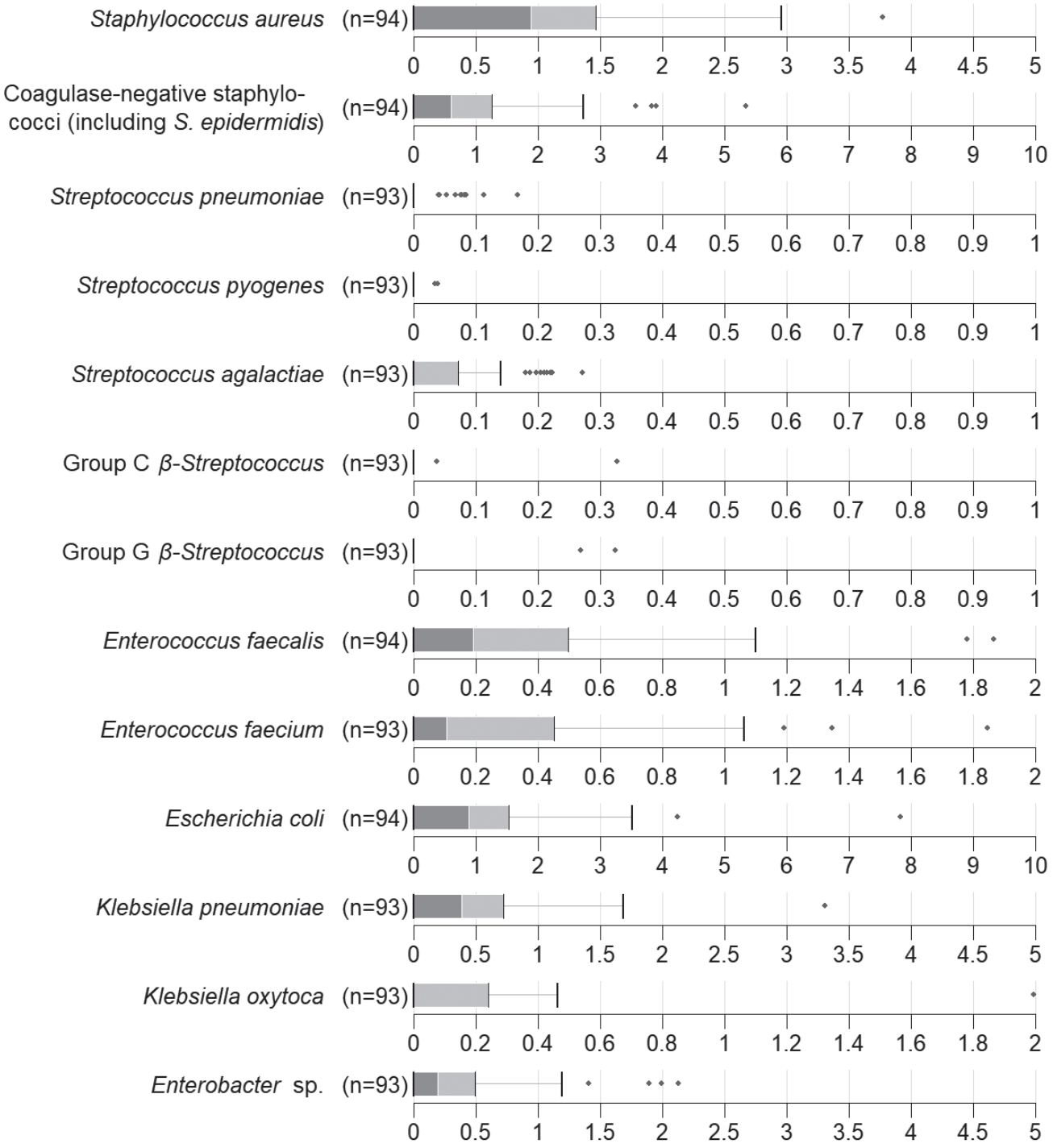
Nosocomial: Situation concerning the detection of bloodstream infection with major bacteria per 10,000 patients/day (Number of occurrences / Total number of hospitalized patients x 10,000)

(Based on data from January to December 2020 as of August 25, 2021)

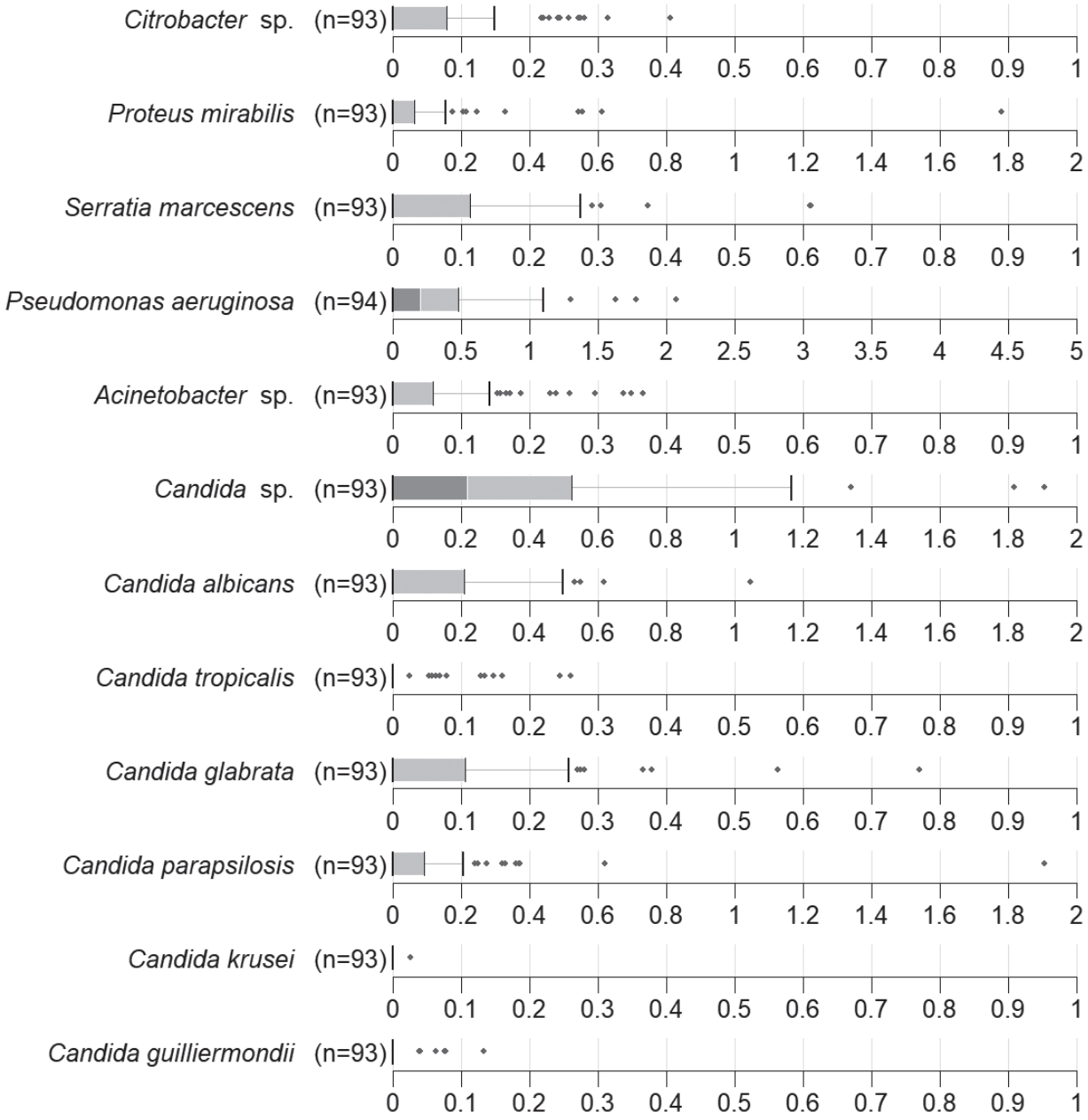
* The values were obtained by dividing the number of patients in whom bacteria were detected in blood samples by the total number of hospitalized patients and multiplying it by 10,000.
* [Nosocomial] Multiple times of detection per bacterium over the past 90 days is processed as duplicate, and patients with detected bacteria submitted on and after Day 4 of hospitalization are counted.
* Contaminated samples are excluded.
* MSSA and MRSA are totaled for *Staphylococcus aureus*

Number of occurrences of bloodstream infection with major bacteria per 10,000 patients/day (nosocomial: per bacterium)

Figure 61 Distribution of the number of occurrences of bloodstream infection with major bacteria per 10,000 patients/day (nosocomial: per bacterium)



Nosocomial: Situation concerning the detection of bloodstream infection with major bacteria per 10,000 patients/day (Number of occurrences / Total number of hospitalized patients x 10,000)



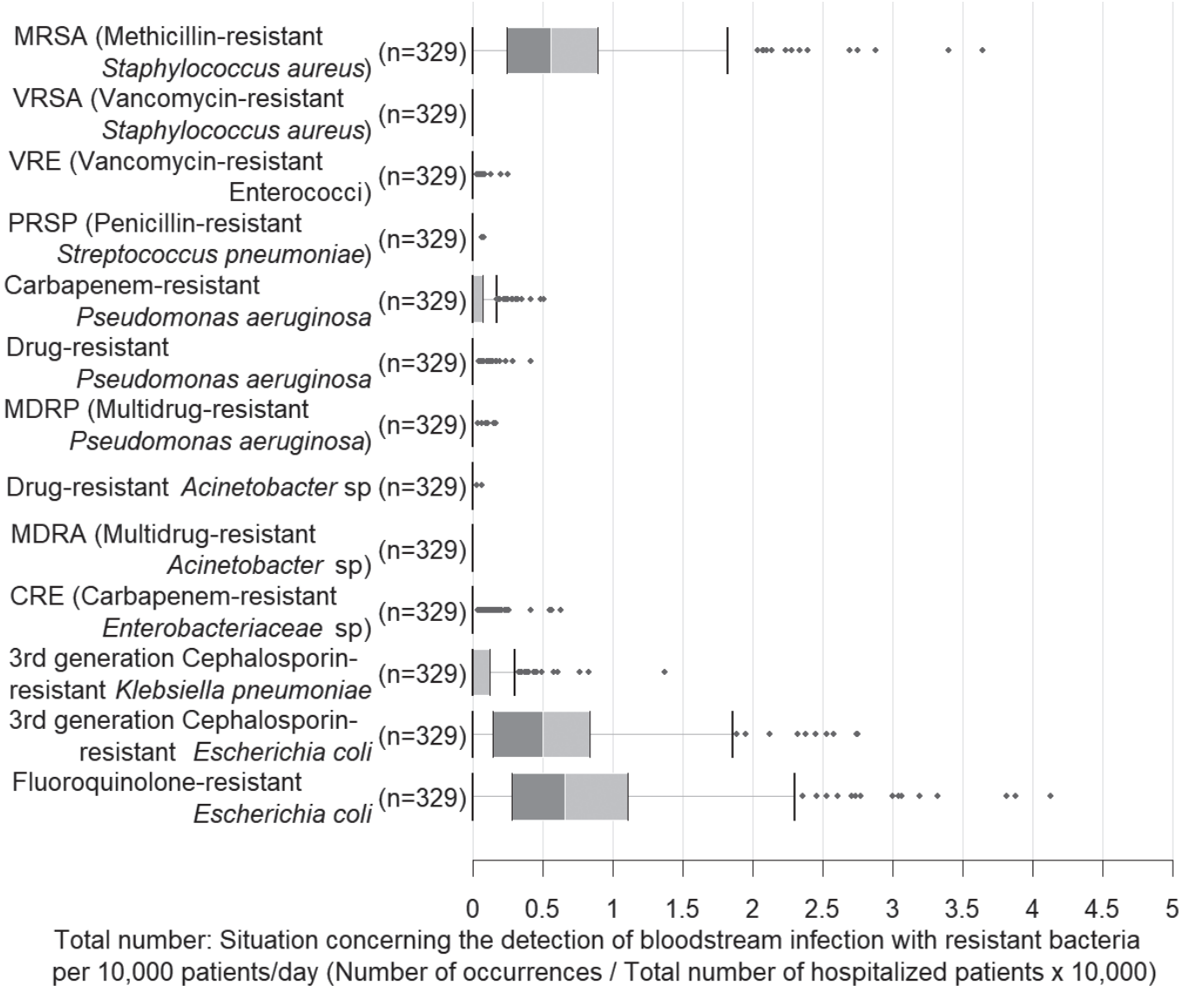
Nosocomial: Situation concerning the detection of bloodstream infection with major bacteria per 10,000 patients/day (Number of occurrences / Total number of hospitalized patients x 10,000)

(Based on data from January to December 2020 as of August 25, 2021)

* The values were obtained by dividing the number of patients in whom bacteria were detected in blood samples by the total number of hospitalized patients and multiplying it by 10,000.
* [Nosocomial] Multiple times of detection per bacterium over the past 90 days is processed as duplicate, and patients with detected bacteria submitted on and after Day 4 of hospitalization are counted.
* Contaminated samples are excluded.
* MSSA and MRSA are totaled for *Staphylococcus aureus*

Number of occurrences of bloodstream infection with resistant bacteria per 10,000 patients/day (total number: all bacteria)

Figure 62 Distribution of the number of occurrences of bloodstream infection with resistant bacteria per 10,000 patients/day (total number: all bacteria)

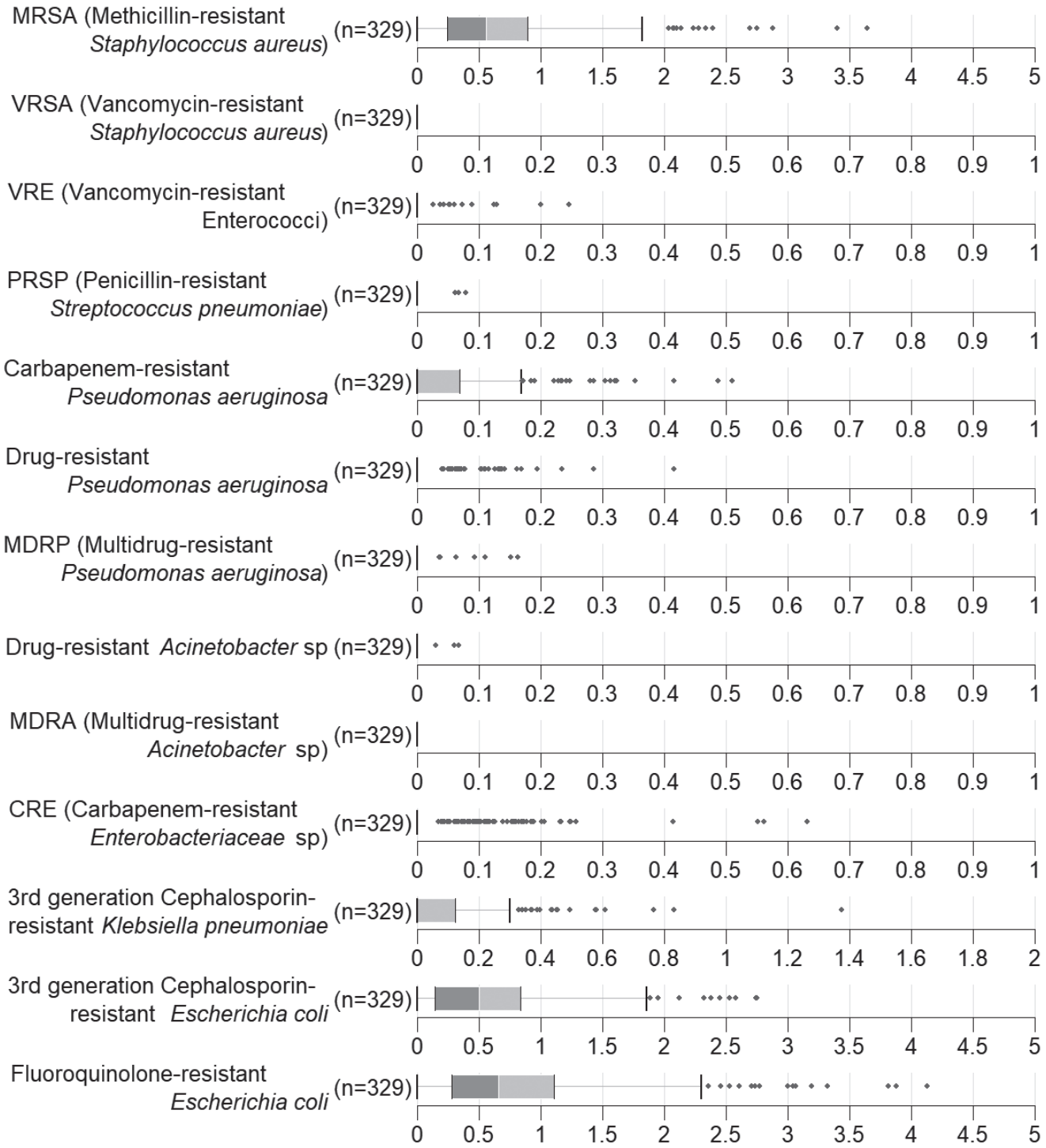


(Based on data from January to December 2020 as of August 25, 2021)

* The values were obtained by dividing the number of patients in whom bacteria were detected in blood samples by the total number of hospitalized patients and multiplying it by 10,000.
* [Total number] Counted as 1 for multiple times of detection in 1 patient per bacterium per month.
* Contaminated samples are excluded.

Number of occurrences of bloodstream infection with resistant bacteria per 10,000 patients/day (total number: per bacterium)

Figure 63 Distribution of the number of occurrences of bloodstream infection with resistant bacteria per 10,000 patients/day (total number: per bacterium)



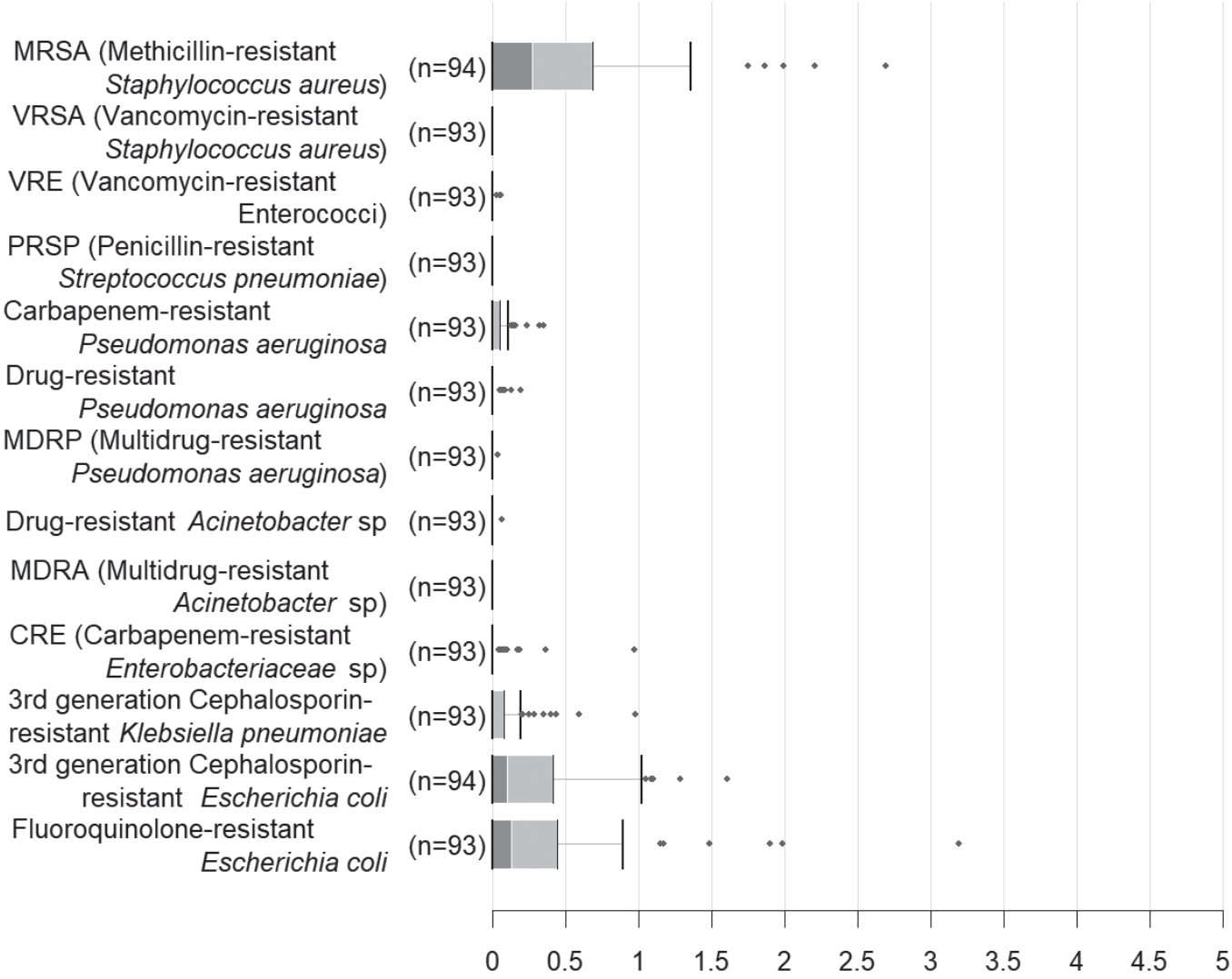
Total number: Situation concerning the detection of bloodstream infection with resistant bacteria per 10,000 patients/day (Number of occurrences / Total number of hospitalized patients x 10,000)

(Based on data from January to December 2020 as of August 25, 2021)

* The values were obtained by dividing the number of patients in whom bacteria were detected in blood samples by the total number of hospitalized patients and multiplying it by 10,000.
* [Total number] Counted as 1 for multiple times of detection in 1 patient per bacterium per month.
* Tabulated per resistant bacterium
* Contaminated samples are excluded.

Number of occurrences of bloodstream infection with resistant bacteria per 10,000 patients/day (nosocomial: all bacteria)

Figure 64 Distribution of the number of occurrences of bloodstream infection with resistant bacteria per 10,000 patients/day (nosocomial: all bacteria)

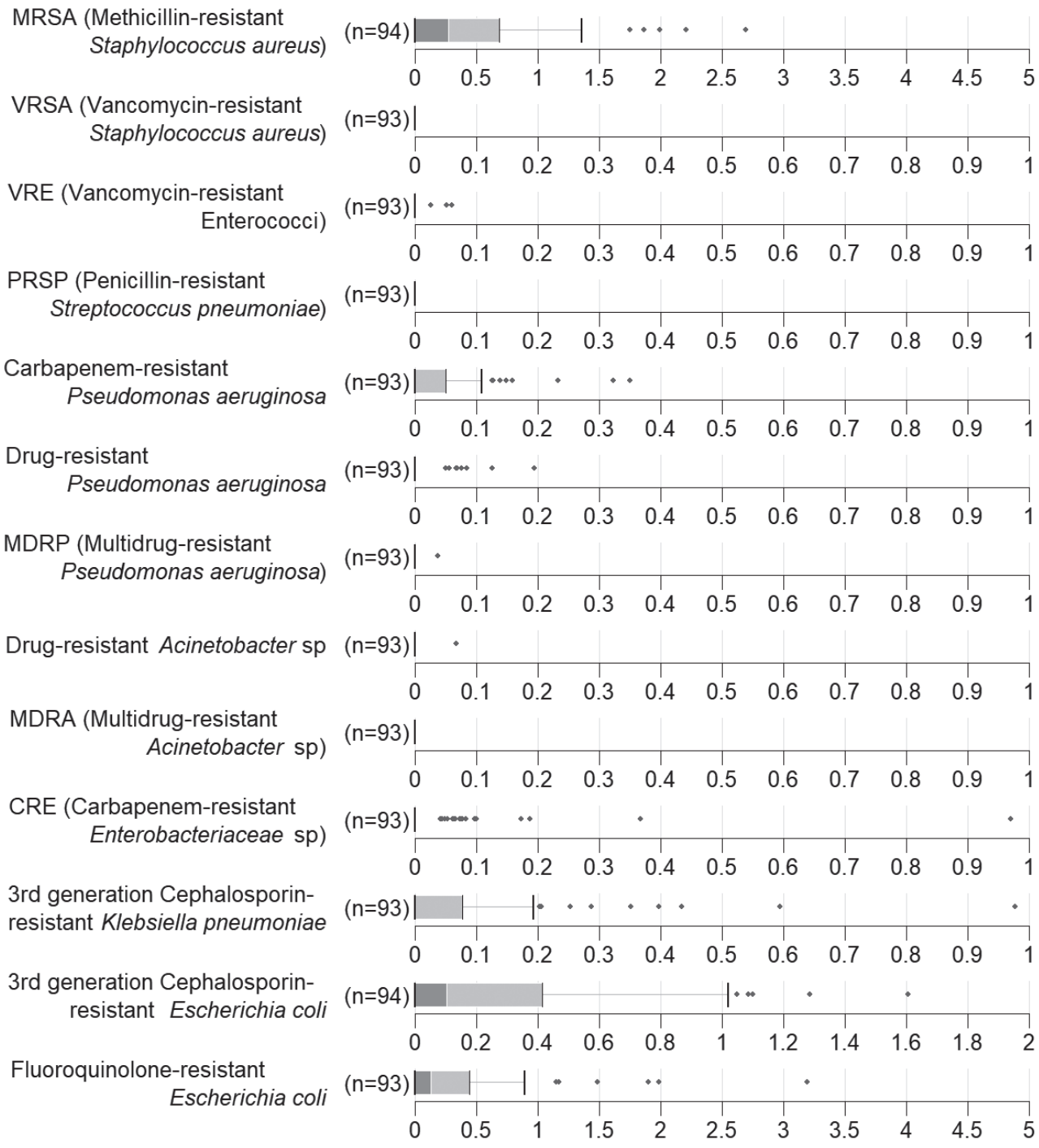


(Based on data from January to December 2020 as of August 25, 2021)

* The values were obtained by dividing the number of patients in whom bacteria were detected in blood samples by the total number of hospitalized patients and multiplying it by 10,000.
* [Nosocomial] Multiple times of detection per bacterium over the past 90 days is processed as duplicate, and patients with detected bacteria submitted on and after Day 4 of hospitalization are counted.
* Tabulated per resistant bacterium
* Contaminated samples are excluded.

Number of occurrences of bloodstream infection with resistant bacteria per 10,000 patients/day (nosocomial: per bacterium)

Figure 65 Distribution of the number of occurrences of bloodstream infection with resistant bacteria per 10,000 patients/day (nosocomial: per bacterium)



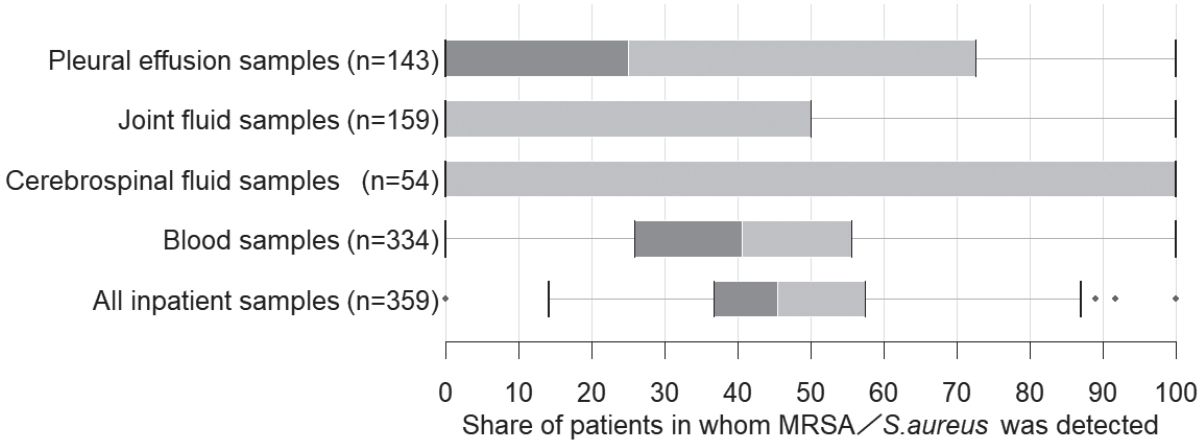
Nosocomial: Situation concerning the detection of bloodstream infection with resistant bacteria per 10,000 patients/day (Number of occurrences / Total number of hospitalized patients x 10,000)

(Based on data from January to December 2020 as of August 25, 2021)

* The values were obtained by dividing the number of patients in whom bacteria were detected in blood samples by the total number of hospitalized patients and multiplying it by 10,000.
* [Nosocomial] Multiple times of detection per bacterium over the past 90 days is processed as duplicate, and patients with detected bacteria submitted on and after Day 4 of hospitalization are counted.
* Tabulated per resistant bacterium
* Contaminated samples are excluded.

Share of patients in whom MRSA/*S. aureus* was detected

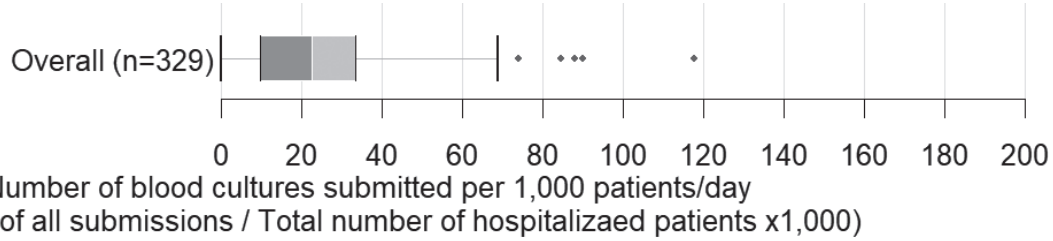
Figure 66 Share of patients in whom MRSA/*S. aureus* was detected



(Based on data from January to December 2020 as of August 25, 2021)
* Share of patients in whom MRSA was newly detected among patients in whom *S. aureus* was newly detected
* For *S. aureus* and MRSA, counted as 1 for multiple times of detection per patient over the past 90 days.
* A patient is counted as having MRSA if MRSA was detected at least once in the patient.

Number of blood cultures submitted per 1,000 patients/day

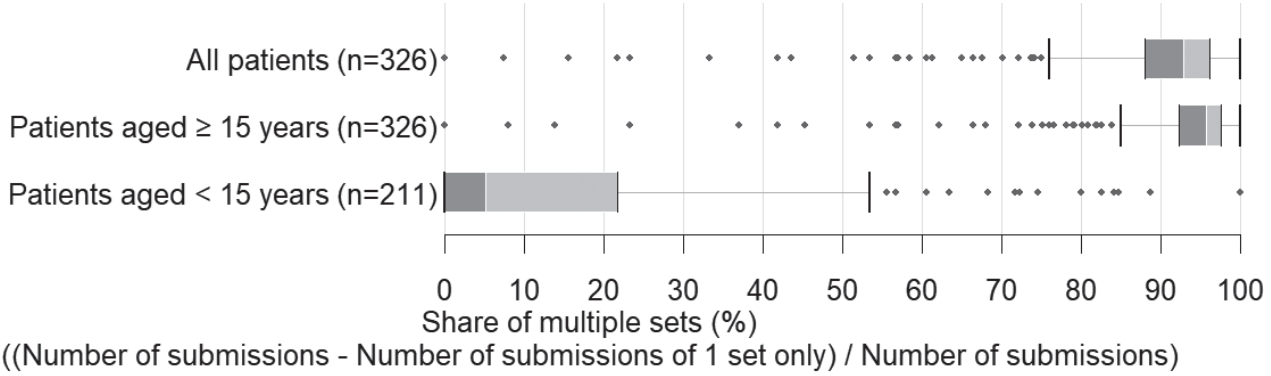
Figure 67 Distribution of the number of blood cultures submitted per 1,000 patients/day



(Based on data from January to December 2020 as of August 25, 2021)
* The values were obtained by dividing the number of blood culture submissions by the total number of hospitalized patients and multiplying it by 1,000.

Share of multiple sets of blood culture

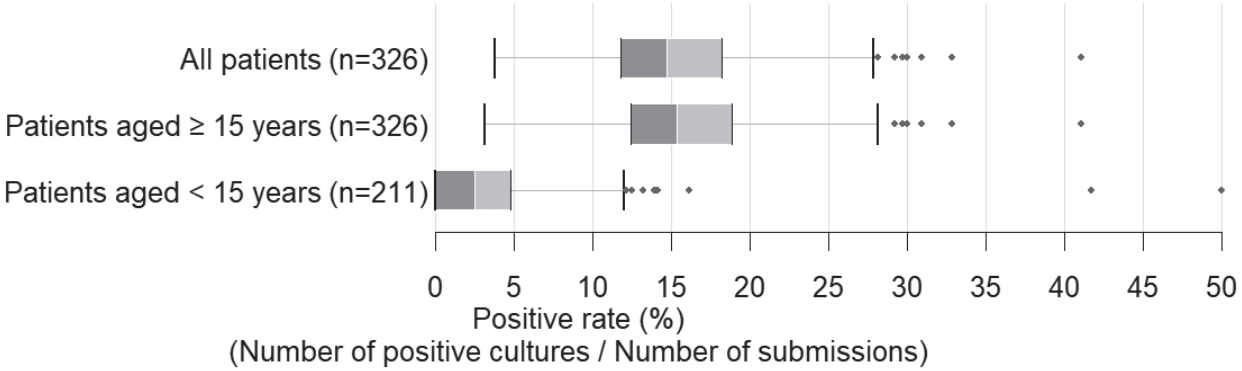
Figure 68 Distribution of the share of multiple sets of blood culture



(Based on data from January to December 2020 as of August 25, 2021)
* Share of submissions of 2 sets or more of blood culture among blood culture submissions
* The included data sets consist of at least 20 submissions of blood culture among blood culture submissions in the target period.

Positive rate of blood culture

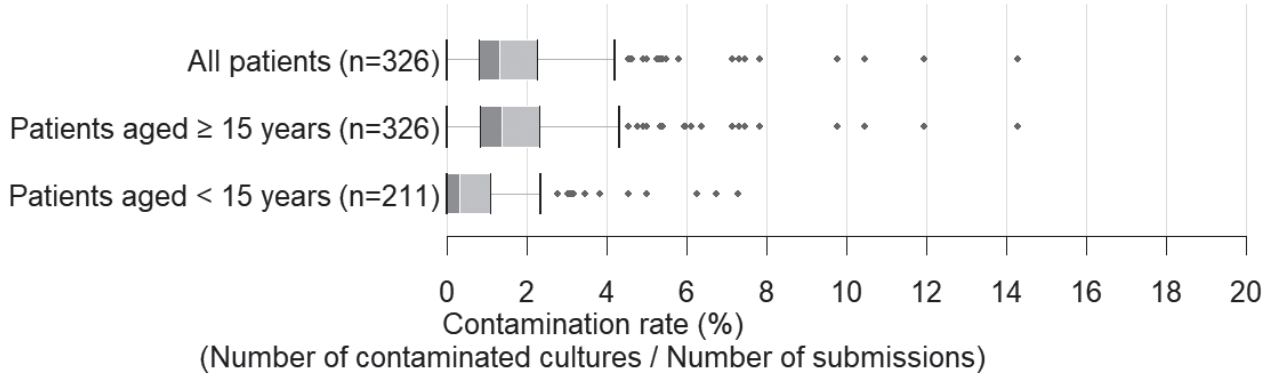
Figure 69 Distribution of the positive rate of blood culture



(Based on data from January to December 2020 as of August 25, 2021)
* Share of positive blood cultures among blood culture submissions
* Contaminated samples are counted as positive.
* The included data sets consist of at least 20 submissions of blood culture among blood culture submissions in the target period.

Rate of contaminated blood cultures

Figure 70 Distribution of the rate of contaminated blood cultures



* Share of contaminated blood cultures among blood culture submissions
* The target bacteria of contaminated samples are determined and counted by an algorithm of contaminated samples under certain conditions.
* The included data sets consist of at least 20 submissions of blood culture among blood culture submissions in the target period.

Tabulation results of antibiogram

Name of bacterium	Target strains	PCG	AMPC/CVA	MPIPC	CEZ	IPM/CS	EM	CLDM	LVFX	VCM	TEIC	LZD	SMZ/TMP	MINO
Staphylococcus aureus	73531	32.4	79.4	-	84.6	91.0	52.3	87.0	57.2	100	100	100	97.0	91.9
Staphylococcus aureus (MSSA)	46371	50.7	99.8	-	99.9	100	74.2	96.9	83.2	-	-	-	97.2	99.0
Staphylococcus aureus (MRSA)	29517	-	-	-	-	-	16.5	70.2	14.8	100	100	100	96.8	80.2
CNS (Including *S. epidermidis*)	35420	26.1	-	41.0	-	-	53.0	82.5	48.1	100	97.5	99.9	86.4	96.3

Name of bacterium	Target strains	ABPC	PCG	CTX	CTRX	MEPM	EM	CLDM	LVFX	VCM
Streptococcus pneumoniae [1)]	27	-	96.0	95.0	90.9	87.5	12.5	42.1	100	100
Streptococcus pneumoniae [2)]	6310	-	97.6	97.1	97.3	80.9	17.1	49.4	95.6	100
Streptococcus pyogenes	1924	99.3	99.9	100	99.9	-	75.2	86.3	91.5	-
Streptococcus agalactiae	15063	99.0	97.6	99.2	98.9	-	62.8	78.7	62.5	-

Name of bacterium	Target strains	PCG	ABPC	EM	LVFX	VCM	TEIC	LZD	MINO
Enterococcus faecalis	30172	99.1	99.9	16.7	91.5	100	100	99.4	31.8
Enterococcus faecium	9376	14.5	15.3	8.0	12.3	99.0	99.4	98.9	40.1

Name of bacterium	Target strains	ABPC	PIPC	ABPC/SBT	PIPC/TAZ	AMPC/CVA	CEZ	CMZ	CTX	CTRX	CAZ	CFPM	AZT	MEPM	IPM/CS	GM	AMK	LVFX	SMZ/TMP
Escherichia coli	91881	55.6	60.6	69.4	97.6	88.8	36.9	98.8	78.3	78.9	87.0	87.4	83.3	99.9	99.9	90.5	99.8	64.7	80.7
Escherichia coli (CTX or CTRX R)	20441	0.2	1.6	40.8	94.4	77.0	0.1	96.4	0.1	0.2	43.4	41.0	21.5	99.8	99.8	80.1	99.3	16.8	58.3
Klebsiella pneumoniae	33865	5.5	70.4	84.6	97.5	93.5	50.2	98.6	92.9	92.7	94.1	95.8	94.2	99.7	99.6	97.3	99.9	96.7	88.1
Klebsiella oxytoca	11333	4.3	65.6	73.6	92.2	91.3	19.4	99.2	94.8	91.8	98.2	98.4	92.5	99.8	98.8	99.1	100	95.5	94.7
Enterobacter cloacae	11822	10.6	77.0	33.1	84.6	4.8	1.0	7.1	70.6	69.1	76.5	96.2	76.1	99.3	96.0	98.5	99.9	95.4	91.4
Enterobacter aerogenes	6308	11.0	75.8	48.7	84.3	5.8	2.1	7.3	72.6	74.3	75.9	99.1	80.0	99.5	86.0	99.7	100	98.8	96.8
Proteus mirabilis	7306	79.1	82.5	87.5	99.6	95.1	26.7	99.4	89.9	85.6	97.4	93.2	95.4	99.9	43.2	94.1	99.8	85.5	86.4
Proteus vulgaris	1853	8.3	74.8	77.0	99.5	89.5	0.8	99.4	80.8	64.8	97.5	99.0	87.6	99.9	51.7	98.7	99.9	98.4	92.9
Citrobacter freundii	4536	32.2	76.0	66.9	91.2	19.6	1.9	48.2	76.6	76.5	78.9	98.4	79.5	99.8	98.1	98.4	99.7	95.6	90.6
Citrobacter koseri	3665	1.1	43.0	90.2	96.2	92.5	46.3	96.3	92.3	95.2	93.6	96.5	93.6	99.9	99.6	98.7	99.7	95.1	96.1
Serratia marcescens	6218	6.5	85.8	13.3	90.7	3.9	0.0	82.6	84.7	79.1	90.6	99.2	90.4	99.8	94.1	98.9	99.4	94.1	96.8

Name of bacterium	Target strains	PIPC	ABPC/SBT	PIPC/TAZ	CAZ	CFPM	AZT	MEPM	IPM/CS	GM	AMK	LVFX	SMZ/TMP	MINO
Pseudomonas aeruginosa	29941	89.7	-	92.2	93.5	93.0	81.8	93.3	89.2	88.7	98.1	90.3	-	-
Acinetobacter spp. (Including *baumannii*)	4837	80.3	95.2	88.9	87.8	92.0	-	99.0	99.3	90.7	98.2	92.8	91.6	97.8
Acinetobacter baumannii	2927	81.0	95.1	88.4	89.6	91.7	-	98.7	99.1	89.9	98.1	91.9	90.8	97.8
Stenotrophomonas maltophilia	5159	-	-	-	39.0	-	-	-	-	-	-	91.1	94.0	99.4

Name of bacterium	Target strains	ABPC	ABPC/SBT	AMPC/CVA	CTX	CTRX	MEPM	CAM	LVFX	TC
Haemophilus influenzae	8028	41.7	63.8	77.3	98.7	99.3	95.9	79.5	96.9	99.2

Tabulated using the 2020 data (1 year) as of August 25, 2021.
1)Spinal fluid samples
2)Other than spinal fluid samples
* The data were created based on the susceptibility standards of the JANIS Clinical Division.
* Only the susceptibility of the first detected organism, detected within 90 days from the same patient was used.
* Share of susceptible (S) bacteria among the target bacteria
* SI that cannot be classified as intermediate (I) or susceptible (S) is not included in susceptible (S).
* Samples of inpatients and outpatients are included.
* Data registered by participating sites with only the number of detected bacteria are not included.

IV. Reference Information at the End of the Document

List of ward codes

Ward code	Ward category
JC01	ICU/CCU (intensive care unit)
JC02	ICU/CCU (intensive care unit including burn treatment room)
JC03	PICU (pediatric intensive care unit)
JC04	NICU (neonatal intensive care unit)
JC05	SCU (stroke care unit)
JC06	HCU (high care unit)
JC07	GCU (growing care unit)
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 including pediatric surgery
JG08	General ward not classified
JE01	Psychiatric ward
JE02	Palliative care ward
JE03	Recovery rehabilitation ward
JE04	Recuperation ward
JE05	General ward for people with disabilities
JE06	Specified diseases ward
JE07	Dementia treatment ward
JE08	Community-based integrated care ward
JE09	Clinic with beds
JE10	Tuberculosis/infectious diseases ward
JE11	Specified ward not classified

List of surgical procedure codes (in reference to the documents of JANIS)

Code	Surgical procedure	Description
AAA	AAbdominal aortic aneurysm 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 when performed in association with another surgical procedure)
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 surgery	Hepatobiliary and pancreatic surgery (hepatectomy without biliary reconstruction, pancreaticoduodenectomy, and surgery 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 procedure	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 revascularization of the heart. Including collection of an appropriate vein from the site of graft harvesting
CBGC	Coronary artery bypass graft 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 bowel. Including anastomosis of the large bowel and small bowel. Rectal surgery is not included
CRAN	Craniotomy	Incision of the scull for excision/repair or examination of the brain. Puncture is not included
CSEC	Cesarean section	Obstetric delivery by cesarean section
ESOP	Esophageal surgery	Surgical procedures including resection/reconstruction of the esophagus
FUSN	Spinal fusion	Fusion of the spine
FX	Open reduction of fracture	Open reduction of fracture or dislocation of a long bone requiring internal or external fixation. Replacement of 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 gastric surgery	Incision or resection of the stomach (excluding distal and total gastrectomy). 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	Search for or decompression of the spinal cord by resecting or incising the myeloid tissue
LTP	Liver transplant	Transplantation of the liver
NECK	Neck surgery	Major larynx resection or incision, and radical neck dissection. Thyroid and parathyroid gland surgery is 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 ovary 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 anastomosis is 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 large thoracic vessels
THOR	Thoracic surgery	Other surgical procedures of the chest than the heart and blood vessels. Including pneumonectomy and diaphragmatic and esophageal hiatal hernia repair
THYR	Thyroid and/or parathyroid surgery	Resection or manipulation of the thyroid or parathyroid gland
VARX	Varicose vein surgery	Varicose vein removal
VHYS	Vaginal hysterectomy	Hysterectomy by colpotomy or episiotomy
VSHN	Ventricular shunt	Including cerebroventricular shunting and correction and removal of shunt
XLAP	Exploratory Laparotomy	Abdominal surgery excluding manipulation of the gastrointestinal tract or biliary system

List of antimicrobial drugs (parenteral)

Name of drug category	Name of antimicrobial drug	Abbreviation
Penicillins	Benzylpenicillin	PCG
	Ampicillin	ABPC
	Piperacillin	PIPC
	Ampicillin/cloxacillin	ABPC/MCIPC
	Ampicillin/sulbactam	ABPC/SBT
	Piperacillin/tazobactam	PIPC/TAZ
First-generation cephalosporins	Cefazolin	CEZ
	Cefalotin	CET
Second-generation cephalosporins	Cefotiam	CTM
Third-generation cephalosporins	Cefotaxime	CTX
	Ceftazidime	CAZ
	Ceftriaxone	CTRX
	Cefmenoxime	CMX
	Cefoperazone/sulbactam	CPZ/SBT
Fourth-generation cephalosporins	Cefepime	CFPM
	Cefozopran	CZOP
	Cefpirome	CPR
Oxacephems	Flomoxef	FMOX
	Latamoxef	LMOX
Cephamycins	Cefmetazole	CMZ
	Cefminox	CMNX
Ceftolozane/tazobactam	Ceftolozane/tazobactam	CTLZ/TAZ
Carbapenems	Doripenem	DRPM
	Biapenem	BIPM
	Meropenem	MEPM
	Imipenem/cilastatin	IPM/CS
	Panipenem/betamipron	PAPM/BP
Monobactams	Aztreonam	AZT
Glycopeptides	Teicoplanin	TEIC
	Vancomycin	VCM
Oxazolidinones	Tedizolid	TZD
	Linezolid	LZD
Arbekacin	Arbekacin	ABK
Daptomycin	Daptomycin	DAP
Quinolones	Ciprofloxacin	CPFX
	Pazufloxacin	PZFX
	Levofloxacin	LVFX
Aminoglycosides	Amikacin	AMK
	Isepamicin	ISP
	Kanamycin	KM
	Gentamicin	GM
	Dibekacin	DKB
	Streptomycin	SM
	Tobramycin	TOB
Tetracyclines	Tigecycline	TGC
	Minocycline	MINO
Lincomycins	Clindamycin	CLDM
	Lincomycin	LCM

Name of drug category	Name of antimicrobial drug	Abbreviation
Macrolides	Azithromycin	AZM
	Erythromycin	EM
Sulfamethoxazole/trimethoprim	Sulfamethoxazole/trimethoprim	SMZ/TMP
Metronidazole	Metronidazole	MNZ
Antifungals	Amphotericin B	AMPH
	Itraconazole	ITCZ
	Caspofungin	CPFG
	Fluconazole	FLCZ
	Fosfluconazole	F-FLCZ
	Voriconazole	VRCZ
	Micafungin	MCFG
	Miconazole	MCZ
	Liposomal amphotericin B	L-AMB

List of antimicrobial drugs (oral)

Name of drug category	Name of antimicrobial drug	Abbreviation
Penicillins	Benzathine benzylpenicillin	DBECPCG
	Ampicillin	ABPC
	Bacampicillin	BAPC
	Amoxicillin	AMPC
	Sultamicillin	SBTPC
	Combinations of penicillins	ABPC/MCIPC
	Amoxicillin and beta-lactamase inhibitor(2:1)	AMPC/CVA
	Amoxicillin and beta-lactamase inhibitor(14:1)	AMPC/CVA
First-generation cephalosporins	Cefalexin	CEX
	Cefadroxil	CXD
Second-generation cephalosporins	Cefaclor	CCL
	Cefotiam	CTM
	Cefuroxime	CXM-AX
Third-generation cephalosporins	Cefixime	CFIX
	Cefcapene	CFPN-PI
	Cefditoren	CDTR-PI
	Cefdinir	CFDN
	Ceftibuten	CETB
	Cefteram	CFTM-PI
	Cefpodoxime	CPDX-PR
Carbapenems	Tebipenem pivoxil	TBPM-P
Penems	Faropenem	FRPM
Oxazolidinones	Tedizolid	TZD
	Linezolid	LZD
Quinolones	Ofloxacin	OFLX
	Levofloxacin	LVFX
	Garenoxacin	GRNX
	Sitafloxacin	STFX
	Ciprofloxacin	CPFX
	Tosufloxacin	TFLX
	Norfloxacin	NFLX
	Prulifloxacin	PUFX

Name of drug category	Name of antimicrobial drug	Abbreviation
Quinolones	Moxifloxacin	MFLX
	Lomefloxacin	LFLX
	Lascufloxacin	LSFX
Aminoglycosides	Kanamycin	KM
Tetracyclines	Tetracycline	TC
	Demeclocycline	DMCTC
	Doxycycline	DOXY
	Minocycline	MINO
Lincomycins	Clindamycin	CLDM
Macrolides	Lincomycin	LCM
	Azithromycin	AZM
	Erythromycin	EM
	Clarithromycin	CAM
	Josamycin	JM
	Acetyl-spiramycin	AC-SPM
	Roxithromycin	RXM
Sulfamethoxazole/trimethoprim	Sulfamethoxazole and trimethoprim	SMZ/TMP
Metronidazole	Metronidazole	MNZ
Vancomycin	Vancomycin	VCM
Fidaxomicin	Fidaxomicin	FDX
Antifungals	Fluconazole	FLCZ
	Flucytosine	5-FC
	Itraconazole	ITCZ
	Posaconazole	PSCZ
	Voriconazole	VRCZ

List of microorganisms and resistant bacteria

Situation concerning the detection of major bacteria/resistant bacteria

Name of main bacterium	Name of resistant bacterium
Acinetobacter sp.	Drug-resistant *Acinetobacter* sp*
Enterobacter sp.	Drug-resistant *Pseudomonas aeruginosa***
Enterococcus faecalis	CRE (Carbapenem-resistant *Enterobacteriaceae*)
Enterococcus faecium	MDRA (Multidrug-resistant *Acinetobacter* sp)
Escherichia coli	MDRP (Multidrug-resistant *Pseudomonas aeruginosa*)
Klebsiella oxytoca	MRSA (Methicillin-resistant *Staphylococcus aureus*)
Klebsiella pneumoniae	PRSP (Penicillin-resistant *Streptococcus pneumoniae*)
Proteus mirabilis	VRE (Vancomycin-resistant Enterococci)
Pseudomonas aeruginosa	VRSA (Vancomycin-resistant *Staphylococcus aureus*)
Serratia marcescen	Carbapenem-resistant *Pseudomonas aeruginosa*
Staphylococcus aureus	Fluoroquinolone-resistant *Escherichia coli*
Staphylococcus epidermidis	3rd Generation Cephalosporin-resistant *Escherichia coli*
Streptococcus pneumoniae	3rd Generation Cephalosporin-resistant *Klebsiella pneumoniae*

* Drug-Resistant Acinetobacter sp:Acinetobacter spresistant to two classes of antibiotics among carbapenem, fluoroquinolone, aminoglycoside (intermdeciate or resistant to amikacin) by drug susiceptibility testing (broth microdilution methods) per CLSI criteria (M100-2012)

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

Situation concerning the occurrence of bloodstream infection

Name of main bacterium causing bloodstream infection
Acinetobacter sp.
Candida sp.
Citrobacter sp.
Coagulase-negative staphylococci (including *S. epidermidis*)
Group *C* β-*Streptococcus*
Enterobacter sp.
Enterococcus faecalis
Enterococcus faecium
Escherichia coli
Group G β-*Streptococcus*
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
Drug-resistant *Acinetobacter* sp*
Drug-resistant *Pseudomonas aeruginosa***
CRE (Carbapenem-resistant *Enterobacteriaceae*)
MDRA (Multidrug-resistant *Acinetobacter* sp)
MDRP (Multidrug-resistant *Pseudomonas aeruginosa*)
MRSA (Methicillin-resistant *Staphylococcus aureus*)
PRSP (Penicillin-resistant *Streptococcus pneumoniae*)
VRE (Vancomycin-resistant Enterococci)
VRSA (Vancomycin-resistant *Staphylococcus aureus*)
Carbapenem-resistant *Pseudomonas aeruginosa*
Fluoroquinolone-resistant *Escherichia coli*
3rd Generation Cephalosporin-resistant *Escherichia coli*
3rd Generation Cephalosporin-resistant *Klebsiella pneumoniae*

* Drug-Resistant Acinetobacter sp:Acinetobacter spresistant to two classes of antibiotics among carbapenem, fluoroquinolone, aminoglycoside (intermdeciate or resistant to amikacin) by drug susiceptibility testing (broth microdilution methods) per CLSI criteria (M100-2012)

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

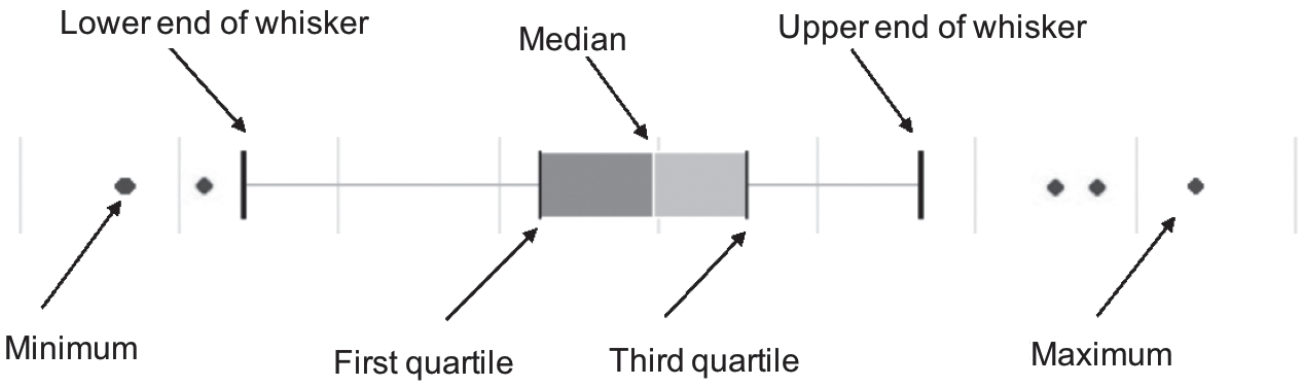
Target bacteria in contaminated samples

Name of target bacterium of contamination
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
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 have been prepared using the data of each medical institution.
Outliers are plotted as individual points and the upper and lower ends of whiskers represent the maximum and minimum of the outlier criteria.
If there is a biased distribution of values, the box plot may be collapsed and only outliers may be displayed.
Values within the box plot are not plotted as individual points.
Outlier criterion (lower limit) = Q1 – 1.5 × (Q3 – Q1)
Outlier criterion (upper limit) = Q3 + 1.5 × (Q3 – Q1)

* Q1: First quartile, Q3: Third quartile



List of abbreviations

	Definition
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 Bloodstream 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

J-SIPHE expert committee

Yusuke Ito	Hyogo Prefectural Amagasaki General Medical Center
Kazuhiro Uda	Okayama University Hospital
Kei Kasahara	Nara Medical University
Ichiro Kawamura	Osaka International Cancer Institute
Yoshiaki Gu	Tokyo Medical and Dental University
Fumie Sakamoto	St. Luke's International Hospital
Keigo Shibayama	Nagoya University Graduate School of Medicine
Yasushi Harihara	Towa Hospital
Hiroshige Mikamo	Aichi Medical University
Isao Miyairi	Hamamatsu University School of Medicine
Nobuo Murakami	Gifu General Healthcheckup Centre/ Center for Regional Medicine, Gifu University School of Medicine
Yuichi Muraki	Kyoto Pharmaceutical University
Tetsuya Yagi	Nagoya University Graduate School of Medicine
Katsunori Yanagihara	Nagasaki University Graduate School of Biomedical Sciences
Kazunori Yamada	Nakamura Memorial Hospital
Makiko Yoshida	Tohoku Medical and Pharmaceutical University
Norio Ohmagari	National Center for Global Health and Medicine
Kayoko Hayakawa	National Center for Global Health and Medicine
Nobuaki Matsunaga	National Center for Global Health and Medicine

The Ministry of Health, Labour and Welfare

Jun Sugihara	Tuberculosis and Infectious Diseases Control Division, Health Service Bureau
Shouhei Nagae	Tuberculosis and Infectious Diseases Control Division, Health Service Bureau
Yuu Nanamatsu	Tuberculosis and Infectious Diseases Control Division, Health Service Bureau

Editing/preparation

Takayuki Akiyama	AMR Clinical Reference Center
Yusuke Asai	AMR Clinical Reference Center
Toshiaki Azuma	AMR Clinical Reference Center
Jiefu Yu	AMR Clinical Reference Center
Haruhiko Ishioka	AMR Clinical Reference Center
Mio Endo	AMR Clinical Reference Center
Mikiyo Sakaguchi	AMR Clinical Reference Center
Taichi Tajima	AMR Clinical Reference Center
Shinya Tsuzuki	AMR Clinical Reference Center
Hiroko Hashimoto	AMR Clinical Reference Center
Kayoko Hayakawa	AMR Clinical Reference Center
Naoki Fujii	AMR Clinical Reference Center
Nobuaki Matsunaga	AMR Clinical Reference Center

J-SIPHE Office (Division of Clinical Epidemiology)
National Center for Global Health and Medicine
Project commissioned by the Ministry of Health, Labour and Welfare
AMR Clinical Reference Center