Yılın Ses Getiren Makaleleri:

Nozokomiyal İnfeksiyonlar

Dr. Şiran Keske

27 Aralık 2022

KOÇ ÜNİVERSİTESİ TIP FAKÜLTESİ

AMERİKAN HASTANESİ

Innovation for infection prevention and control—revisiting Pasteur's vision

Gabriel Birgand, Raheelah Ahmad, Andre N H Bulabula, Sanjeev Singh, Gonzalo Bearman, Enrique Castro Sánchez, Alison Holmes

Lancet 2022; 400: 2250–60

Louis Pasteur has long been heralded as one of the fathers of microbiology and immunology. Less known is Pasteur's

"the dust in the atmosphere contains microorganisms which develop and multiply"

"the most putrescible liquids remain unaltered if, after heating them, they are left protected from the air, and therefore from these microorganisms"

LOUIS PASTEUR

1875
Paris maternity hospital
Lohusa humması.
64 ölüm

“Il me vient cette idée que le corps étranger quand il amène le pus, ce qui n’est pas constant, doit apporter un germe, lequel germe serait cause de la formation de pus.”
“ Yabancı cisimler iltihabi akıntıya yol açıyorsa beraberinde “germ“ da getiriyor olmalılar ve bu “germ“ bu akıntının sebebi olmalı.

Bu olaydan sonra el hijyeninin önemi arttı.
Pasteur kendisini “el hijyeni fanatiği” olarak tanımlamıştır.

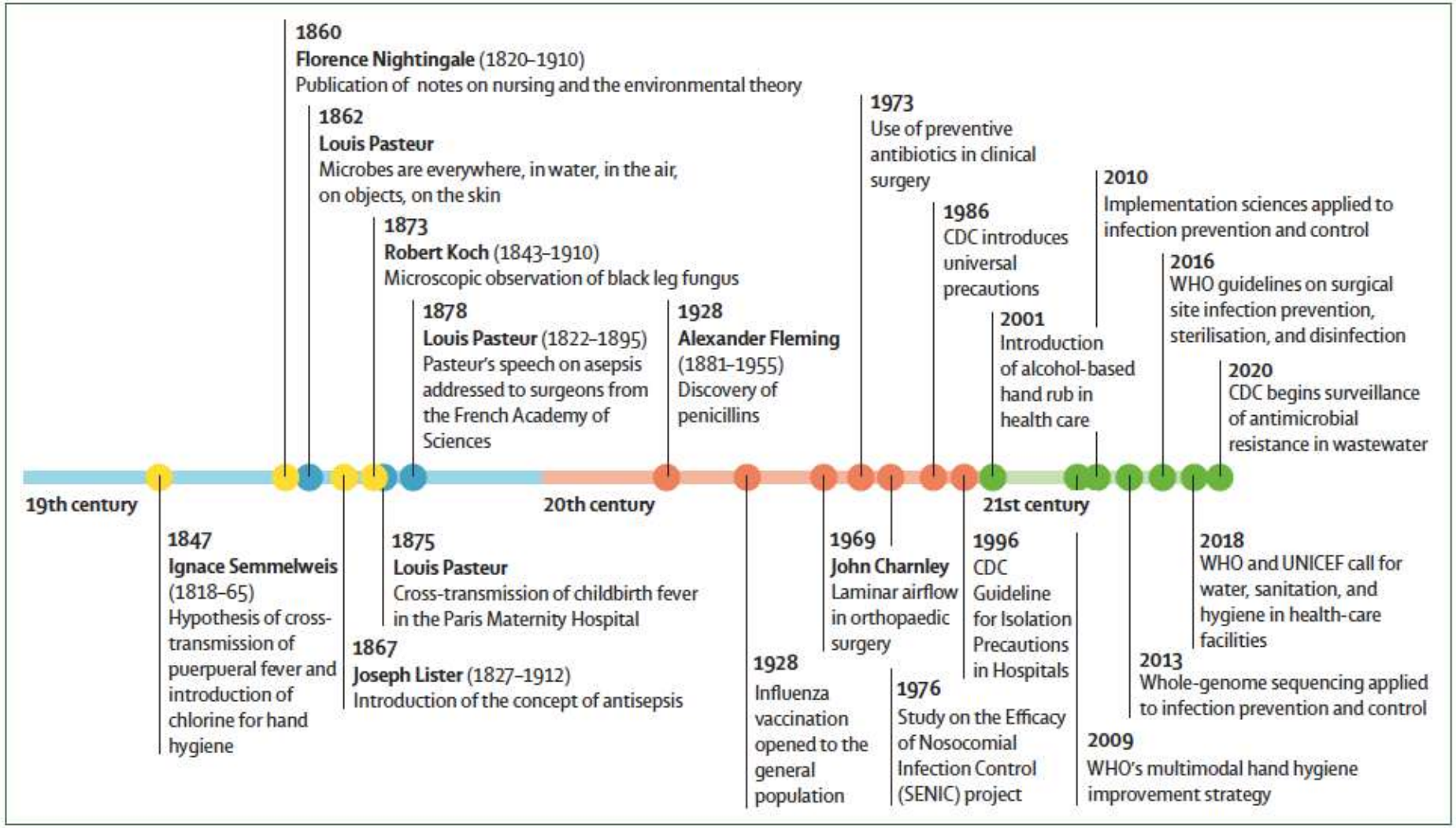


Figure 2: **Timeline of selected innovations related to Pasteur's vision**

"*Permettez-moi de vous révéler le secret qui m'a conduit à atteindre mon but. Ma force repose uniquement sur ma ténacité.*"

"Size hedefime götüren sırrı söyleyeyim. Gücüm sadece azmimde yatıyor."

Louis Pasteur

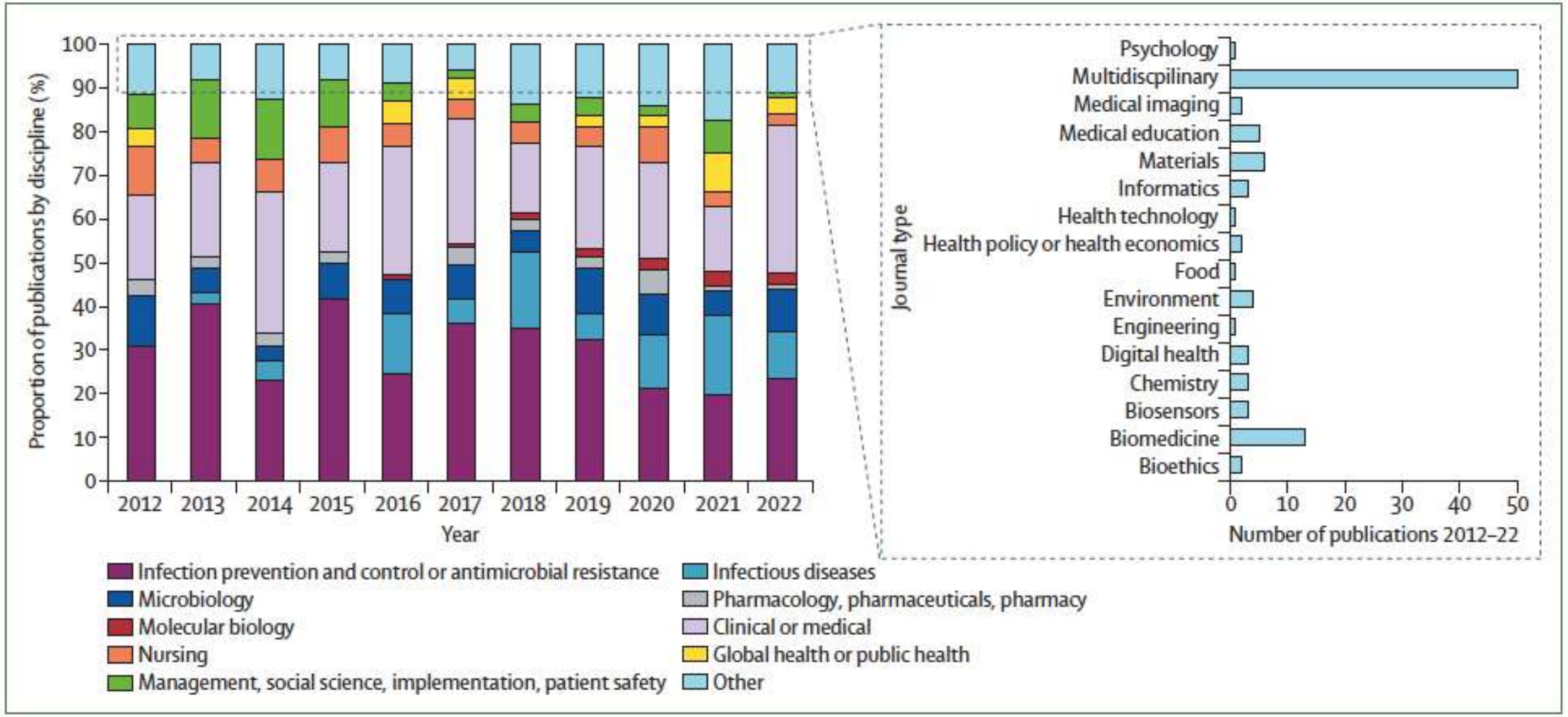


***Figure 3*: Dissemination of innovation development and implementation**

The data show a positive trajectory to wider clinical speciality audiences but restricted learning in management and social science outputs.

İnovasyon nedir?

Global burden of bacterial antimicrobial resistance in 2019: a systematic analysis

*Antimicrobial Resistance Collaborators**

Summary

Background Antimicrobial resistance (AMR) poses a major threat to human health around the world. Previous publications have estimated the effect of AMR on incidence, deaths, hospital length of stay, and health-care costs for specific pathogen–drug combinations in select locations. To our knowledge, this study presents the most comprehensive estimates of AMR burden to date.

Lancet 2022; 399: 629–55

Published Online
January 20, 2022
https://doi.org/10.1016/
S0140-6736(21)02724-0

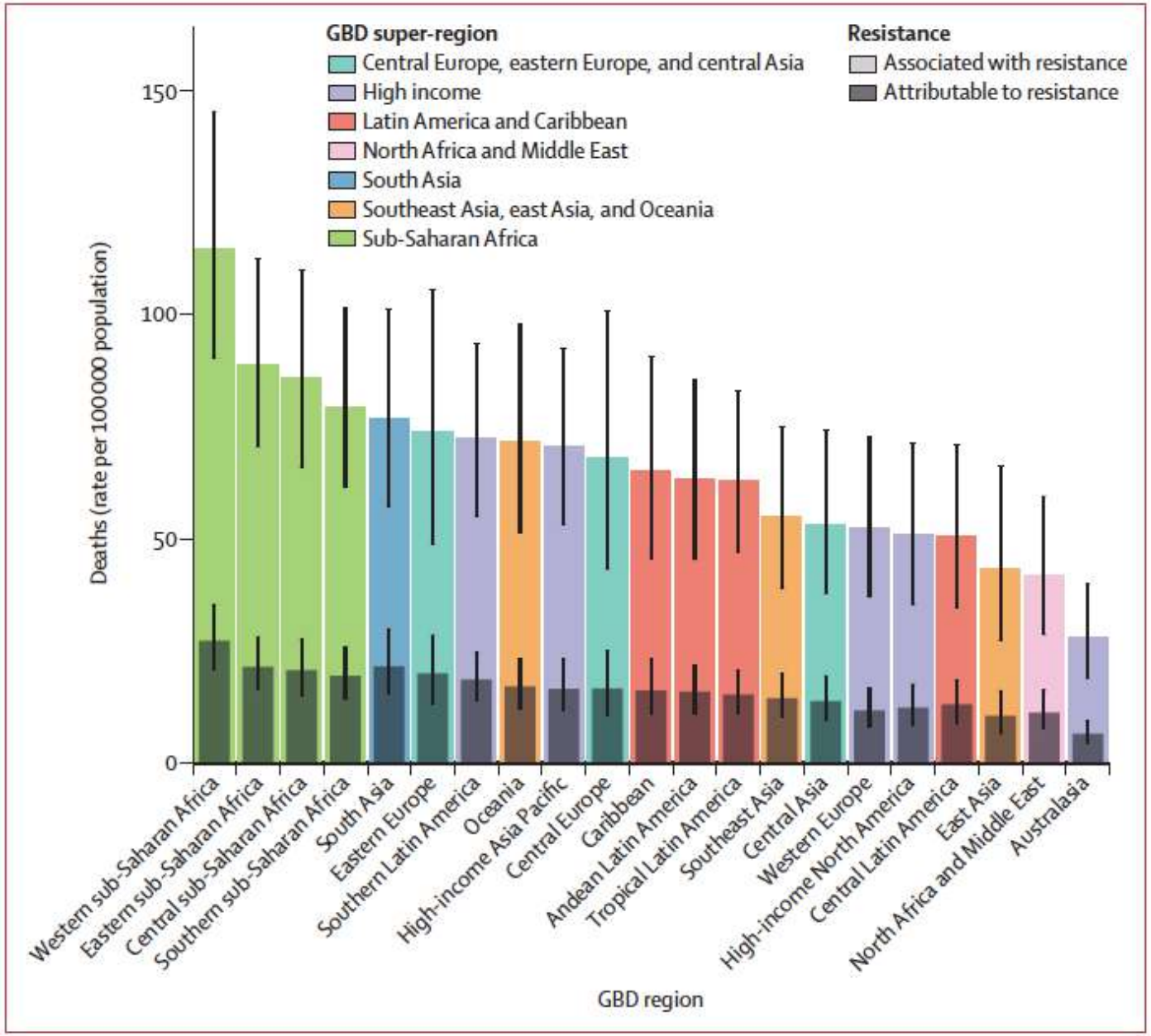


Figure 2: **All-age rate of deaths attributable to and associated with bacterial antimicrobial resistance by GBD region, 2019**

Estimates were aggregated across drugs, accounting for the co-occurrence of resistance to multiple drugs. Error bars show 95% uncertainty intervals. GBD=Global Burden of Diseases, Injuries, and Risk Factors Study.

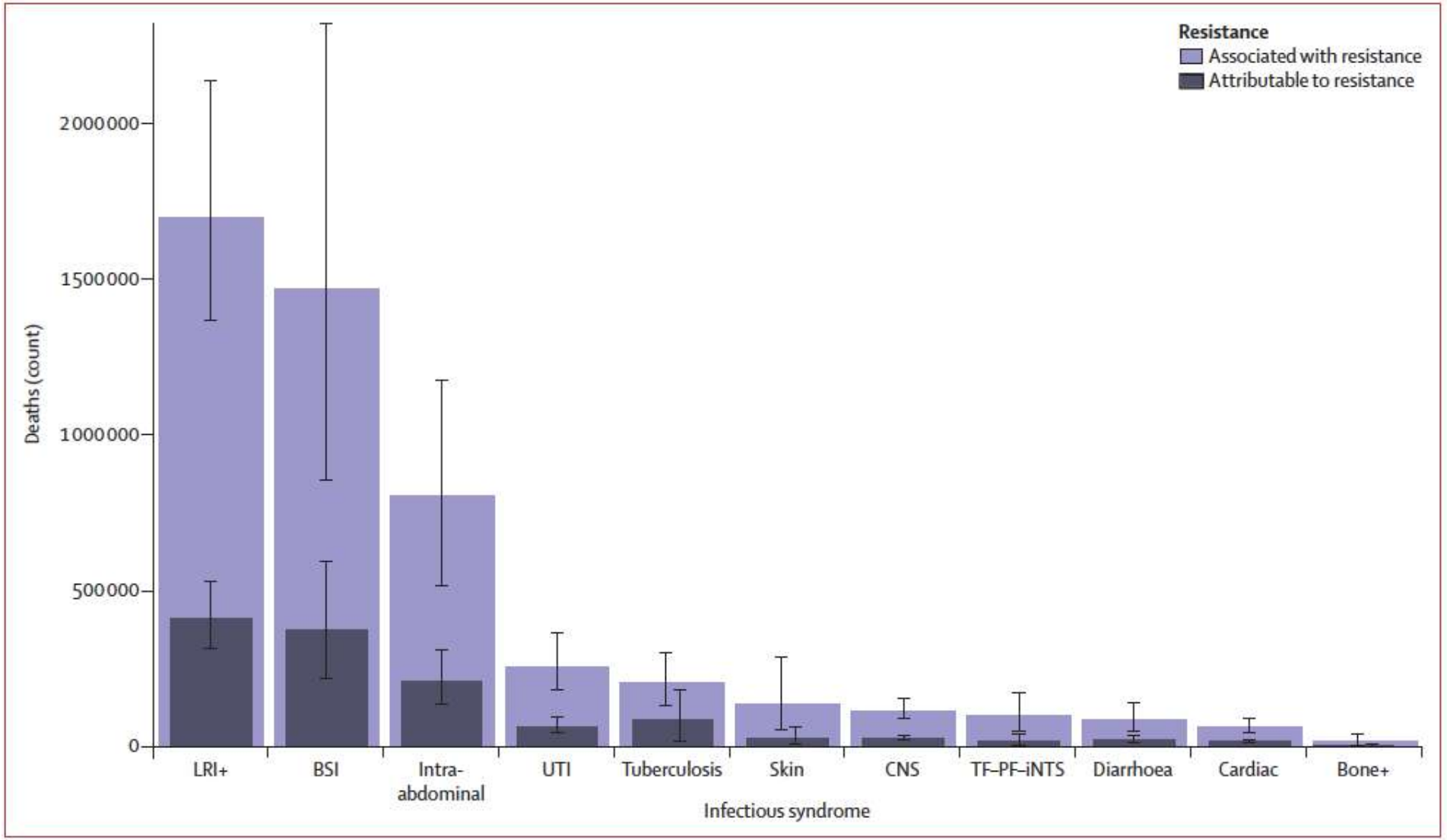


Figure 3: **Global deaths (counts) attributable to and associated with bacterial antimicrobial resistance by infectious syndrome, 2019**
Estimates were aggregated across drugs, accounting for the co-occurrence of resistance to multiple drugs. Error bars show 95% uncertainty intervals. Does not include gonorrhoea and chlamydia because we did not estimate the fatal burden of this infectious syndrome. Bone+=infections of bones, joints, and related organs. BSI=bloodstream infections. Cardiac=endocarditis and other cardiac infections. CNS=meningitis and other bacterial CNS infections. Intra-abdominal=peritoneal and intra-abdominal infections. LRI+=lower respiratory infections and all related infections in the thorax. Skin=bacterial infections of the skin and subcutaneous systems. TF–PF–iNTS= typhoid fever, paratyphoid fever, and invasive non-typhoidal *Salmonella* spp. UTI=urinary tract infections and pyelonephritis.

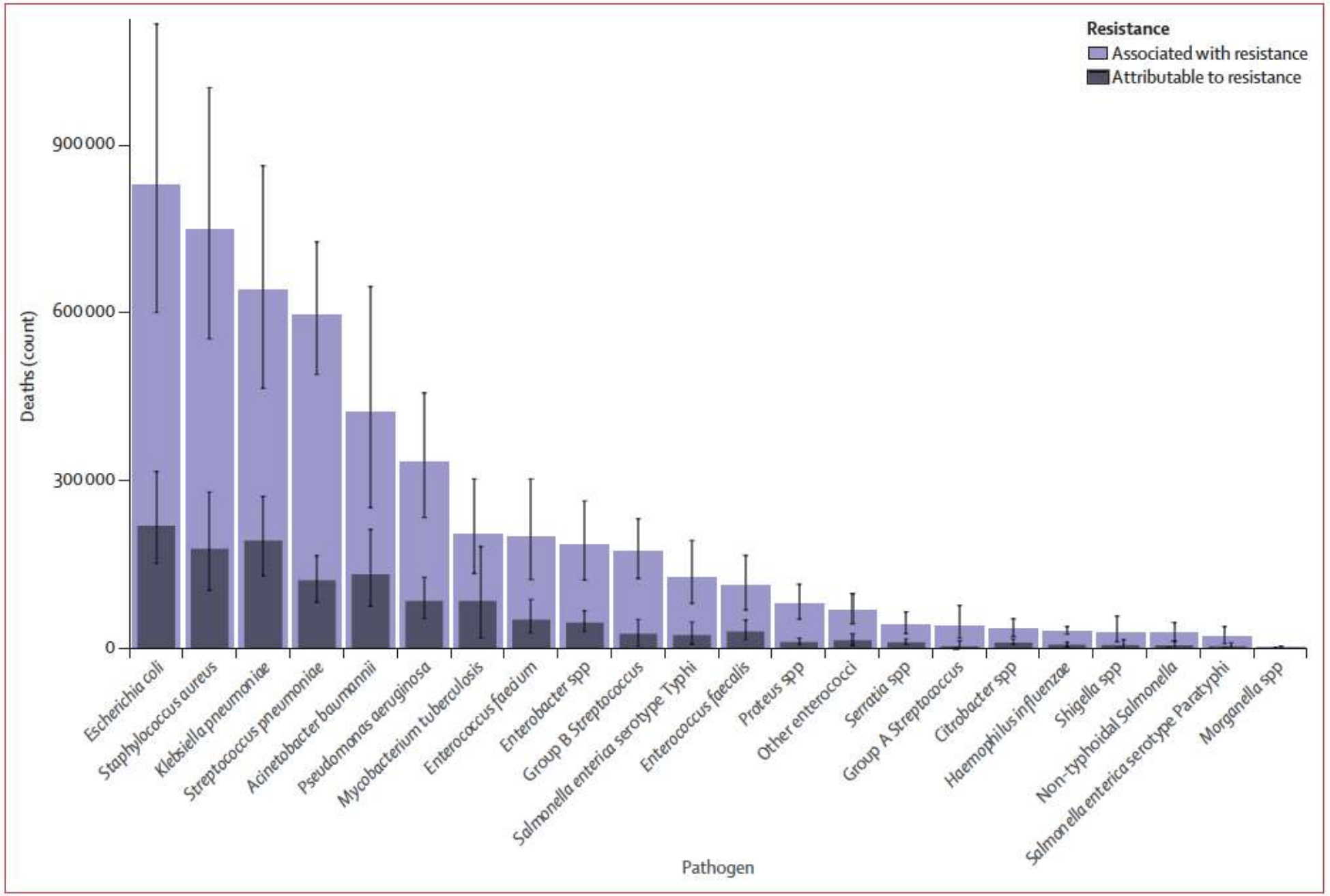


Figure 4: **Global deaths (counts) attributable to and associated with bacterial antimicrobial resistance by pathogen, 2019**
Estimates were aggregated across drugs, accounting for the co-occurrence of resistance to multiple drugs. Error bars show 95% uncertainty intervals.

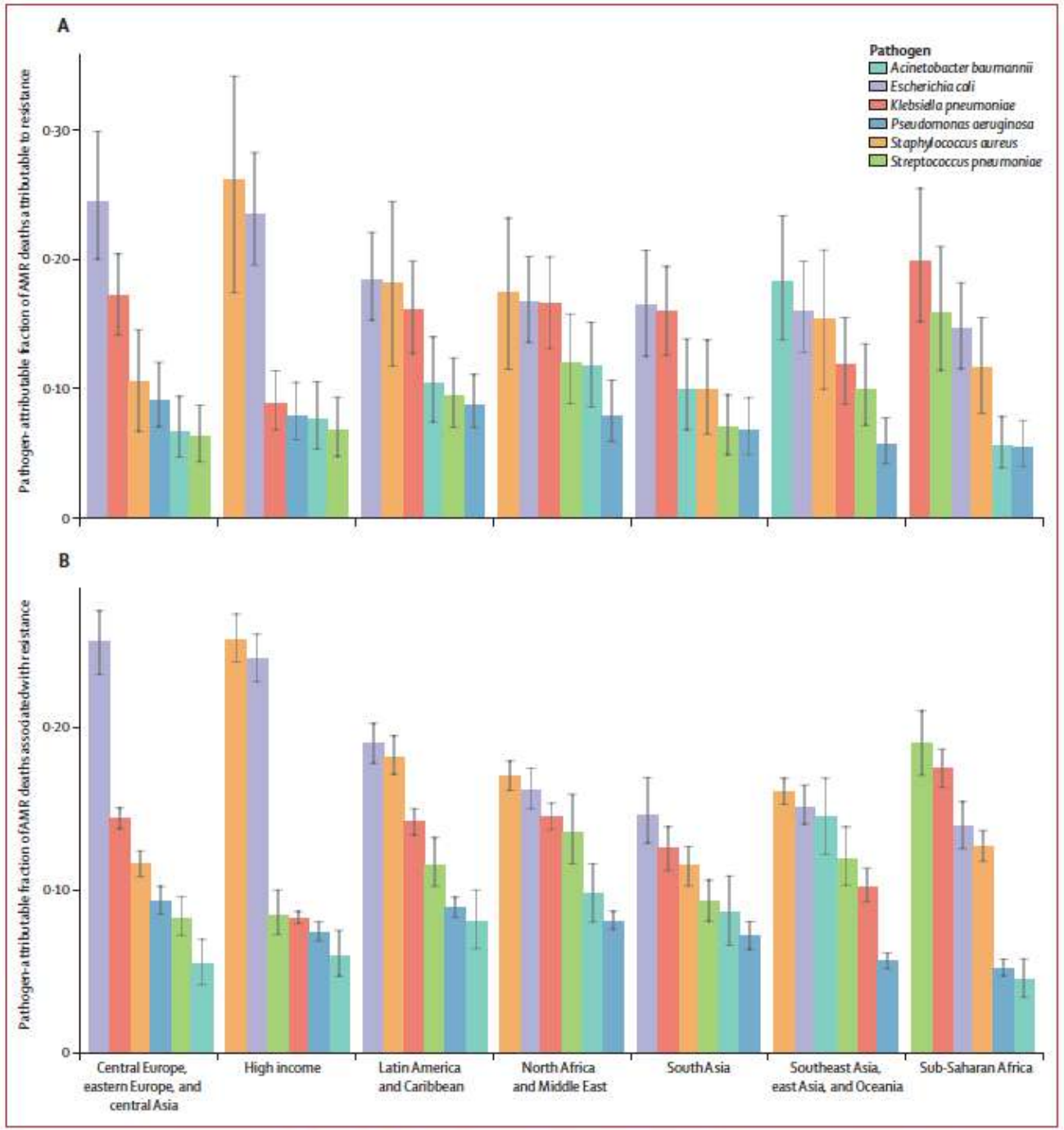
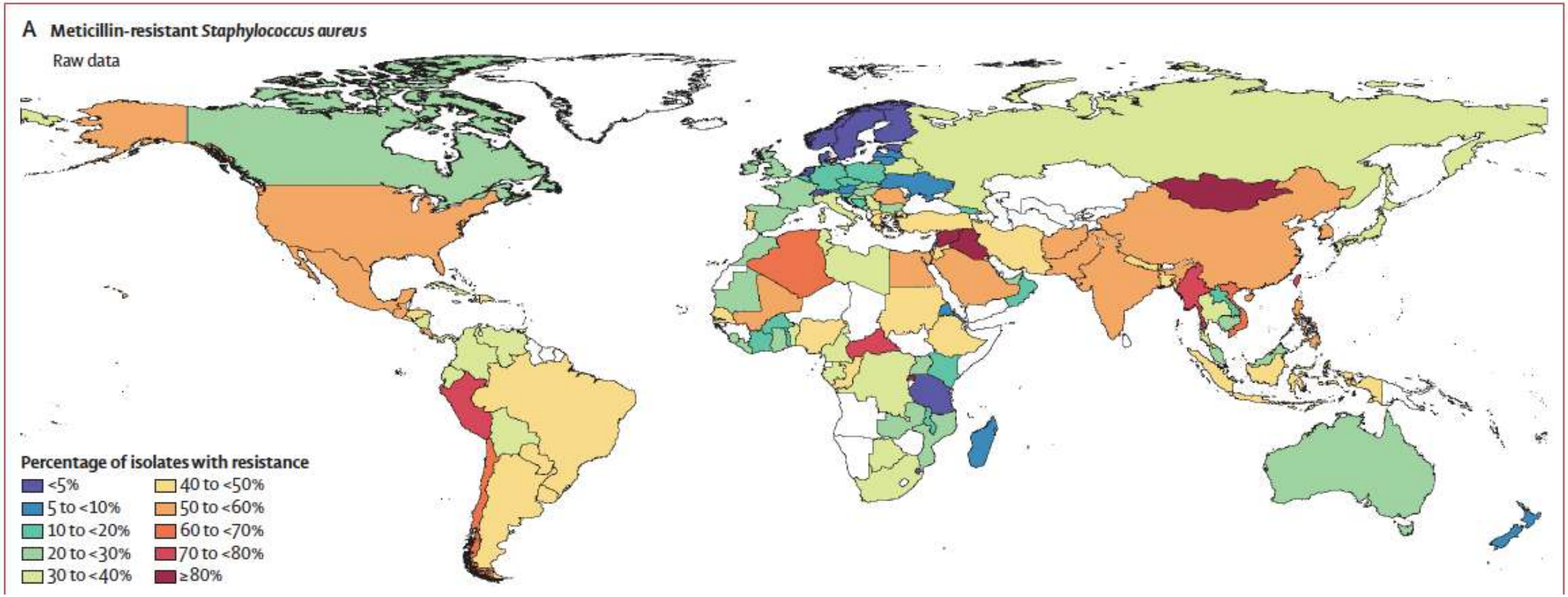
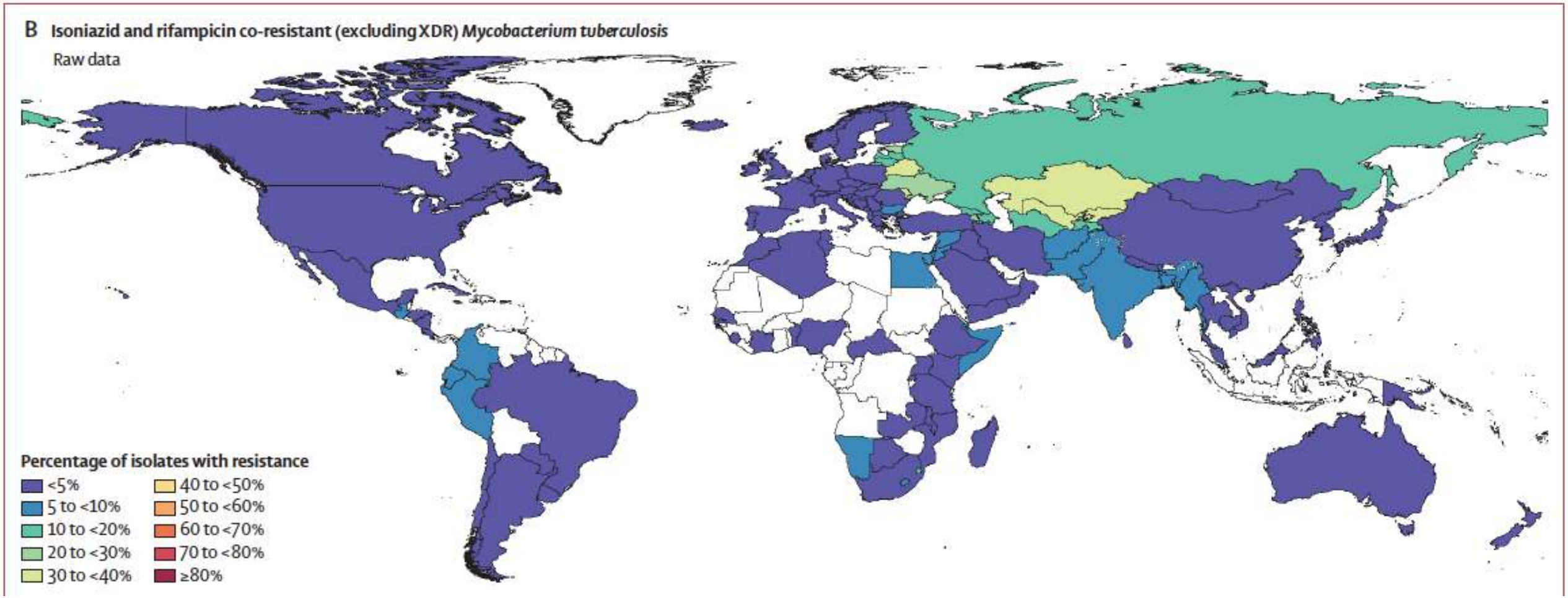
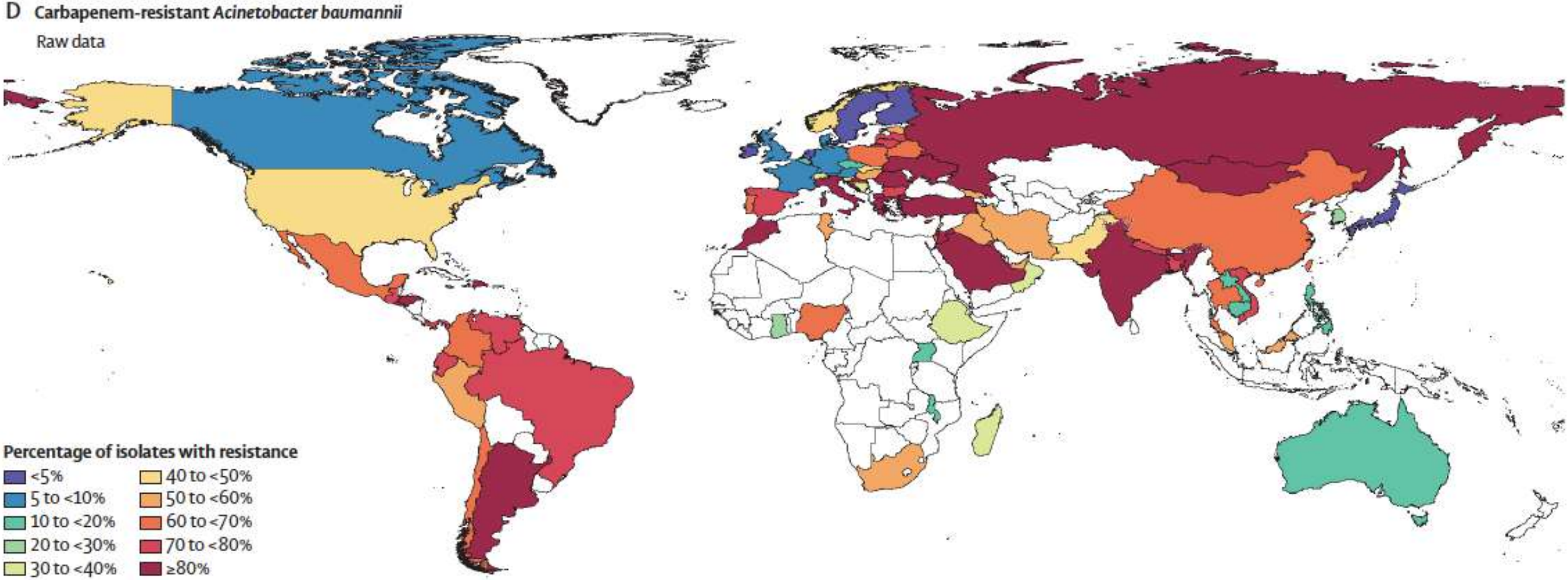


Figure 5: Pathogen-attributable fraction of deaths attributable to (A) and associated with (B) bacterial AMR for the six leading pathogens by GBD super-region, 2019

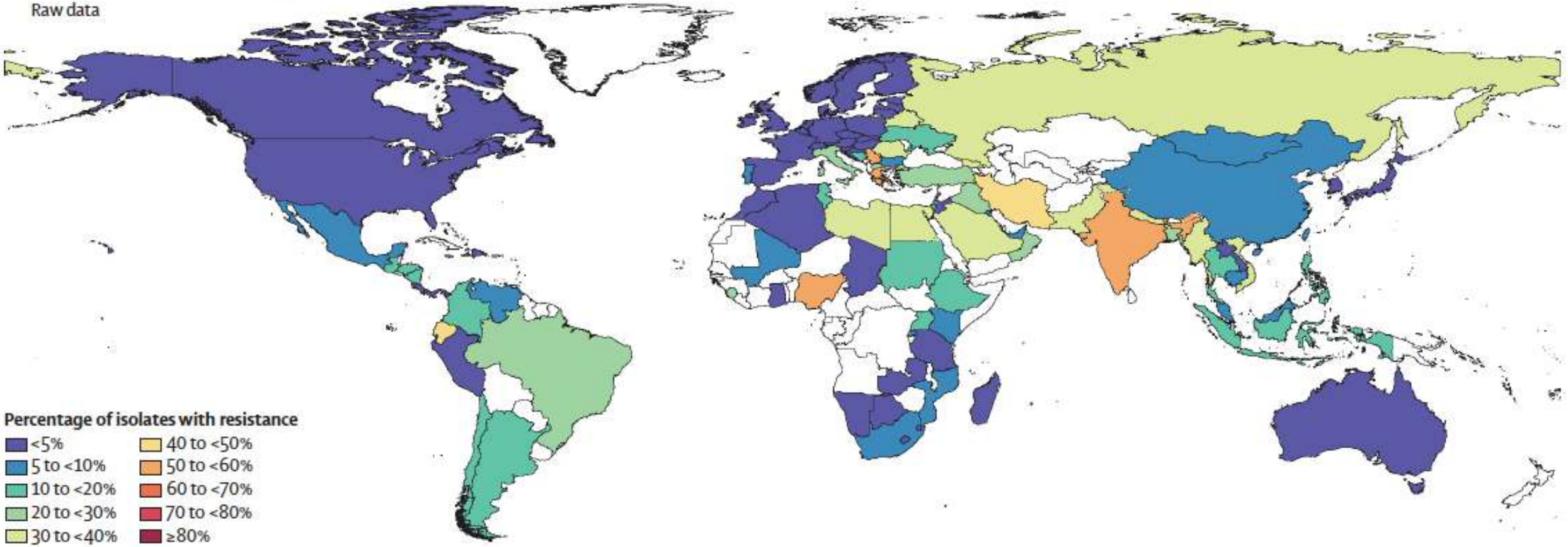

A Meticillin-resistant Staphylococcus aureus
Raw data
Percentage of isolates with resistance
<5%
5 to <10%
10 to <20%
20 to <30%
30 to <40%
40 to <50%
50 to <60%
60 to <70%
70 to <80%
≥80%


B Isoniazid and rifampicin co-resistant (excluding XDR) Mycobacterium tuberculosis
Raw data
Percentage of isolates with resistance
<5%
5 to <10%
10 to <20%
20 to <30%
30 to <40%
40 to <50%
50 to <60%
60 to <70%
70 to <80%
≥80%


D Carbapenem-resistant Acinetobacter baumannii
Raw data
Percentage of isolates with resistance
<5%
5 to <10%
10 to <20%
20 to <30%
30 to <40%
40 to <50%
50 to <60%
60 to <70%
70 to <80%
≥80%

F Carbapenem-resistant *Klebsiella pneumoniae*

Raw data



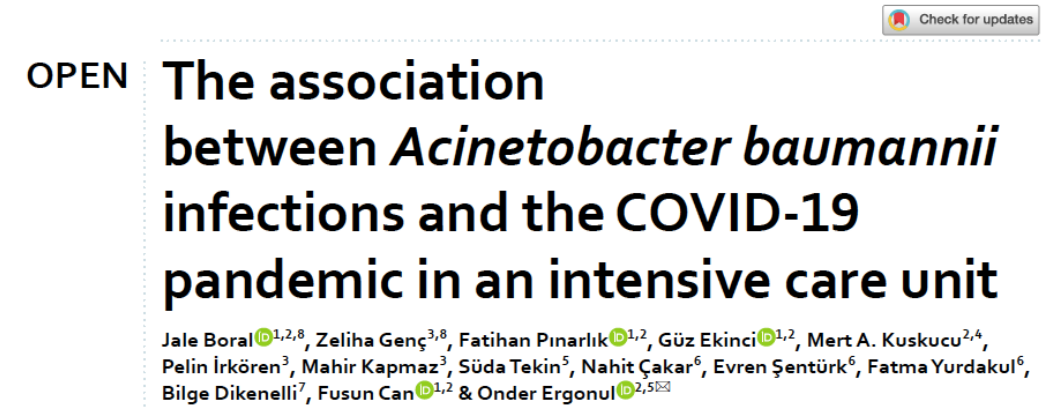
scientific reports

OPEN

The association between *Acinetobacter baumannii* infections and the COVID-19 pandemic in an intensive care unit

Jale Boral[1,2,8], Zeliha Genç[3,8], Fatihan Pınarlık[1,2], Güz Ekinci[1,2], Mert A. Kuskucu[2,4], Pelin İrkören[3], Mahir Kapmaz[3], Süda Tekin[5], Nahit Çakar[6], Evren Şentürk[6], Fatma Yurdakul[6], Bilge Dikenelli[7], Fusun Can[1,2] & Onder Ergonul[2,5]✉

scientific reports



Check for updates

OPEN

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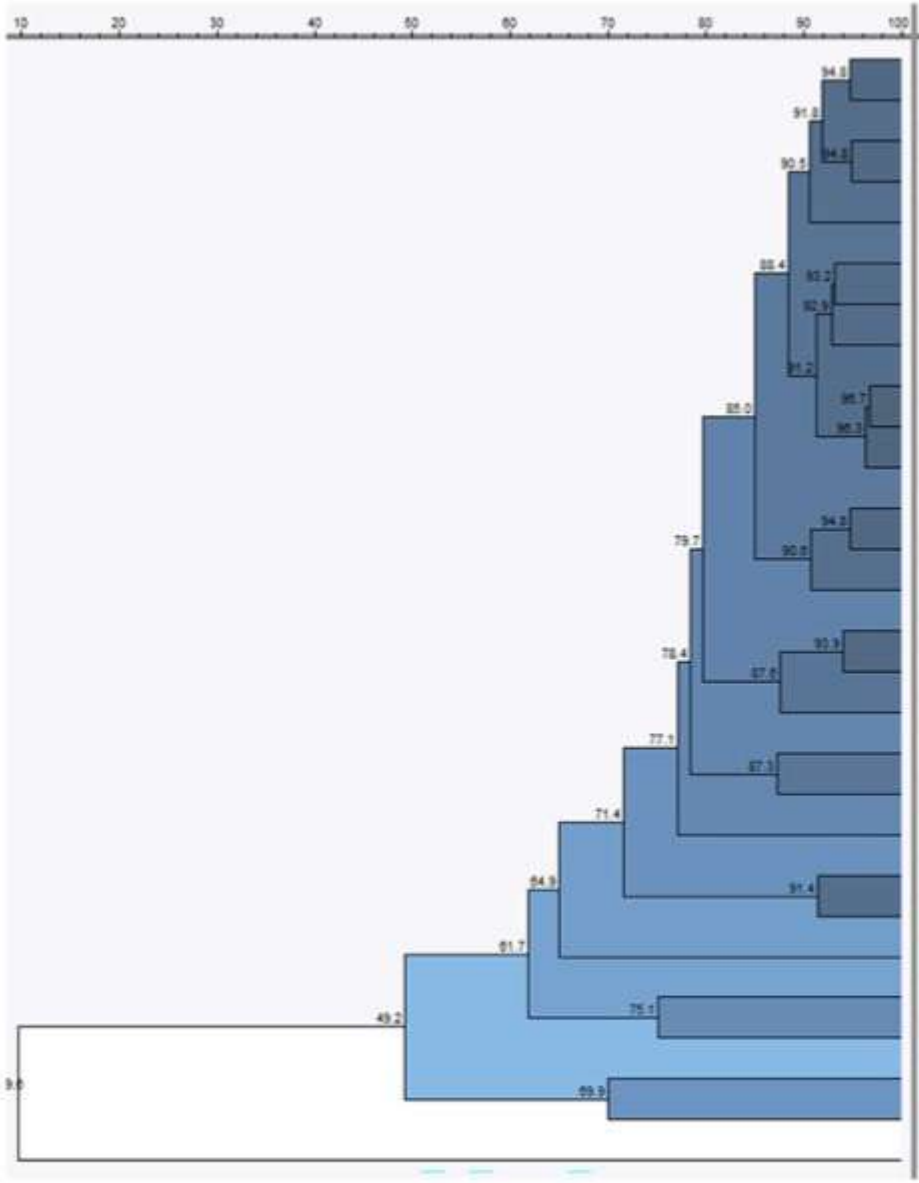
- 1 Ocak 2018- 30 haziran 2022 arası.
- 5718 YBÜ hastası.
- 81 hastada *Acinetobacter baumannii* saptanmış.
- Pandemi döneminde önceki dönemi göre 1.9 kat artış var.
- Öncesi sonrası arasında mortalite farkı yok.

	Before *A. baumannii* outbreak	During *A. baumannii* outbreak
Training of healthcare workers		
PPE training	After recruitment	On daily basis
Preparation of cleaning solutions	After recruitment	On daily basis
Hand hygiene score	70%	97%
Glove usage	Double glove	Single glove
Cleaning procedures		
Types of cleaning solutions	Peracetic acid solution (2.0%) or chloride solution (0.1%)	Only chloride solution (0.1%)
Aspiration jars	Cleaned with surface wiping	Soaked in chloride solution
Cleaning routine	Single cleaning	Double cleaning
Ventilator related precautions		
Appropriate ventilator cleaning procedures	Standard cleaning procedures for ventilators	Separate procedures for each device
Ventilator cleaning	Ventilator cleaning	Ventilator disinfection
Transport ventilator filters	Inhalation port filter was changed	Filters for both inhalation and exhalation ports were changed
Environmental measures		
Environmental screening	None	*A. baumannii* infected rooms
Clonality surveillance	None	PFGE
Isolation of COVID-19 patients in rooms 1–8	Yes	Yes

Table 1. Infection control measures before and after *A. baumannii* outbreak.



No.	Cluster	Isolation Date	Room No	COVID-19	IMP	AK	Col	CAZ	CIP	MEM	GN	TOB
1	A	10.01.2022	10	Negative	R	R	S	R	R	R	R	R
2	A	11.01.2022	15	Negative	R	R	S	R	R	R	R	R
3	A	19.05.2021	01	Positive	R	R	S	R	R	R	R	R
4	A	23.09.2021	01	Positive	R	R	S	R	R	R	R	R
5	A	17.04.2021	02	Positive	R	R	S	R	R	R	R	R
6	A	17.03.2021	06	Positive	R	R	S	R	R	R	R	R
7	A	05.01.2022	08	Positive	R	S	S	R	R	R	R	R
8	A	25.12.2021	04	Positive	R	R	S	R	R	R	R	R
9	A	28.01.2022	04	Negative	R	R	S	R	R	R	R	R
10	A	07.01.2022	02	Positive	R	R	S	R	R	R	R	R
11	A	05.01.2022	01	Positive	R	S	S	R	R	R	R	R
12	A	10.05.2021	08	Positive	R	R	S	R	R	R	R	R
13	A	09.03.2021	02	Positive	R	R	S	R	R	R	R	R
14	A	07.02.2022	10	Positive	R	R	S	R	R	R	R	R
15	B	07.09.2021	03	Positive	R	R	S	R	R	R	R	R
16	B	03.09.2021	02	Positive	R	R	S	R	R	R	S	R
17	B	08.05.2021	07	Positive	R	R	S	R	R	R	R	R
18	C	13.04.2021	01	Positive	R	R	S	R	R	R	R	R
19	C	08.05.2021	05	Positive	R	R	S	R	R	R	R	R
20	D	18.08.2021	02	Positive	R	R	S	R	R	R	S	R
21	E	30.04.2021	03	Positive	R	R	S	R	R	R	R	R
22	E	25.01.2022	06	Positive	R	R	S	R	R	R	R	R
23	F	21.10.2021	02	Positive	R	R	S	R	R	R	R	R
24	G	29.09.2021	06	Positive	R	R	S	R	R	R	R	R
25	G	29.06.2021	10	Negative	R	R	S	R	R	R	R	R
26	H	14.06.2021	03	Positive	R	R	S	R	R	R	R	R
27	H	18.03.2021	01	Positive	R	R	S	R	R	R	R	R
28	I	ATCC 17978			S	S	S	S	S	S	S	S

Figure 1. Cluster analysis of *A. baumannii* samples using PFGE results. Each color represents a different cluster of isolates. IMP, imipenem; AK, amikacin; Col, colistin; CAZ, ceftazidime; CIP, ciprofloxacin; MEM, meropenem; GN, gentamicin; TOB, tobramycin; R, resistant; S, susceptible.

Antimicrobial	Range	MIC50	MIC90	Susceptible (%)	Intermediate (%)	Resistant (%)
Amikacin	≤2 to ≥64	≥64	≥64	16 (19.75)	0.00	65 (80.25)
Gentamicin	≤1 to ≥16	≥16	≥16	16 (19.75)	0.00	65 (80.25)
Meropenem	≤0.25 to ≥16	≥16	≥16	8 (9.88)	0.00	73 (90.12)
Imipenem	≤0.25 to ≥16	≥16	≥16	8 (9.88)	0.00	73 (90.12)
Ceftazidime	2 to ≥64	≥64	≥64	7 (8.64)	0.00	74 (91.36)
Ciprofloxacin	≤0.25 to ≥4	≥4	≥4	3 (3.70)	5 (6.17)	73 (90.12)
Colistin	≤0.5 to 1	≤0.5	≤0.5	81 (100.00)	0.00	0.00
Piperacillin Tazobactam	≤4 to ≥128	≥128	≥128	7 (8.64)	0.00	74 (91.36)

Table 3. MIC50 and MIC90 distributions of all isolates with resistance characteristics.

Journal of Hospital Infection 130 (2022) 34–43

Available online at www.sciencedirect.com

Journal of Hospital Infection

journal homepage: www.elsevier.com/locate/jhin

Explosive COVID-19 outbreak in a German nursing home and the possible role of the air ventilation system

J. Hurraß [a,*], R. Golmohammadi [a], S. Bujok [a], M. Bork [a], F. Thelen [a], P. Wagner [a], D. Exner [b], C. Schönfeld [c], B. Hornei [c], G. Kampf [d], M. Exner [e]

[a] *Public Health Department Cologne, Department of Infection Control and Environmental Hygiene, Köln, Germany*
[b] *General, Visceral-, Thoracic and Vascular Surgery, University Hospital Bonn, Germany*
[c] *EKO, Institute for Laboratory Medicine and Clinical Microbiology, Oberhausen, Germany*
[d] *University Medicine Greifswald, Greifswald, Germany*
[e] *Institute for Hygiene and Public Health, University Bonn, Bonn, Germany*

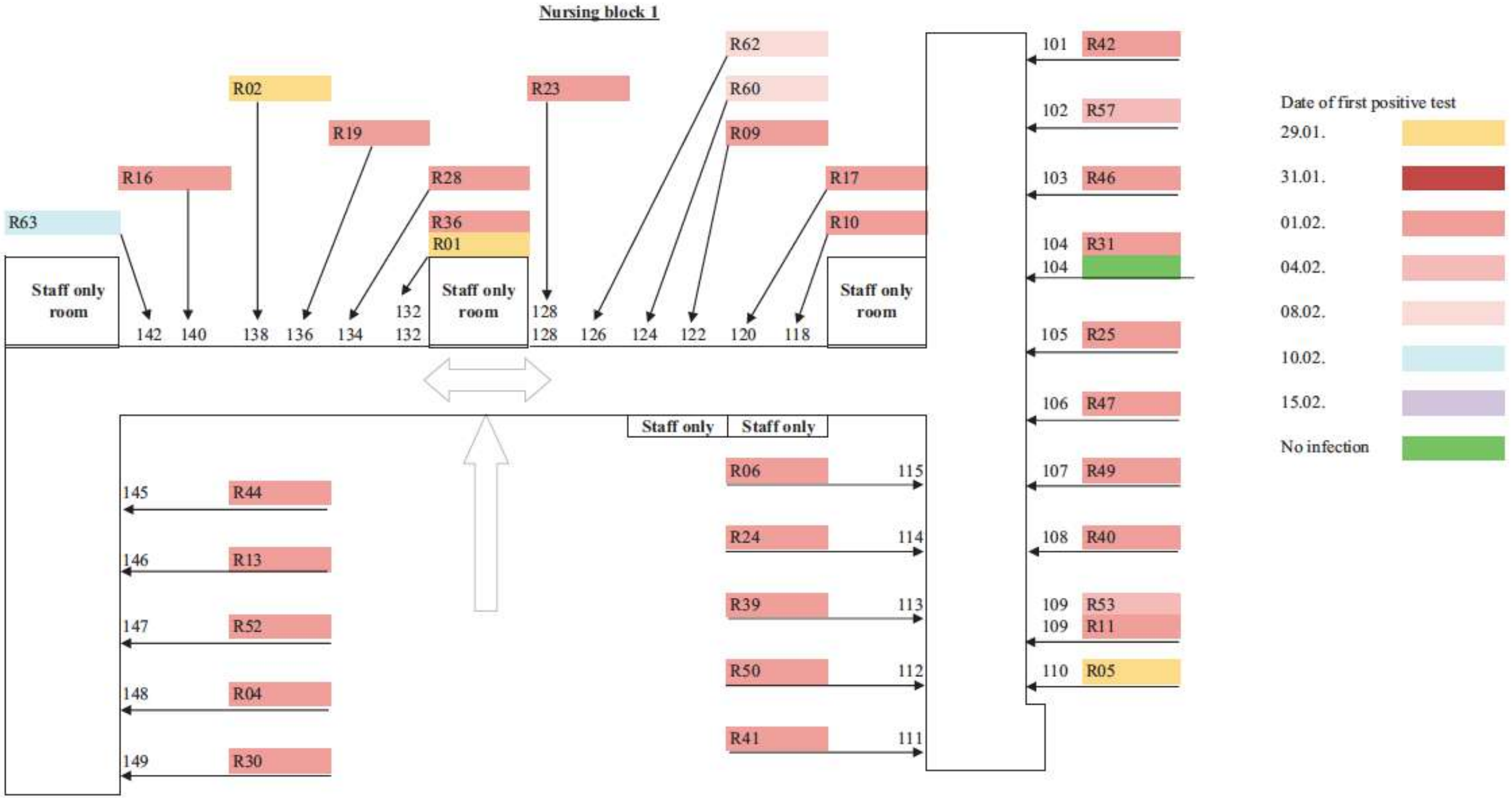


Figure 1. Floor plan of nursing block 1 with rooms 101—149; dates of COVID-19 detection are provided for each resident. R, resident.

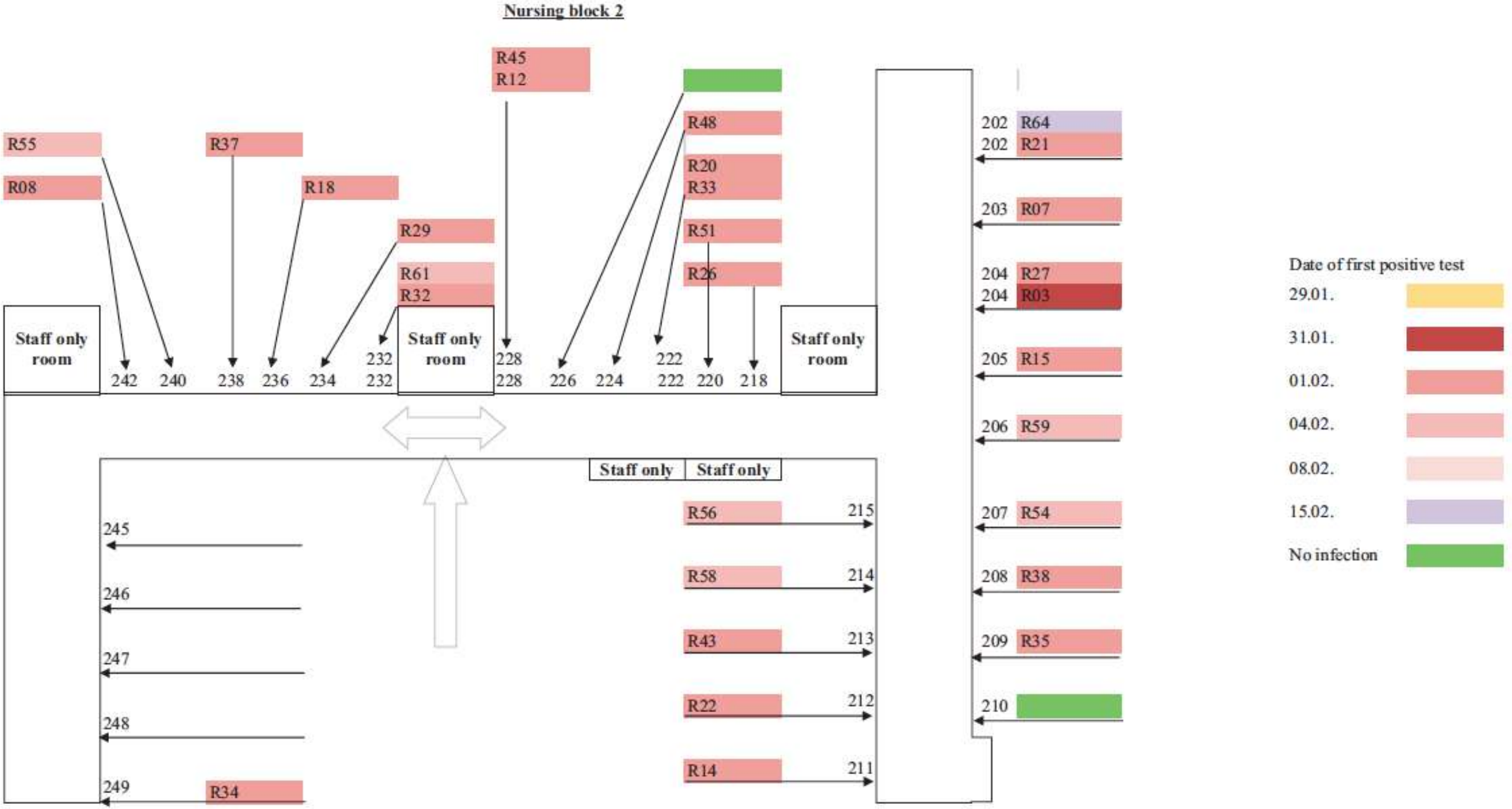
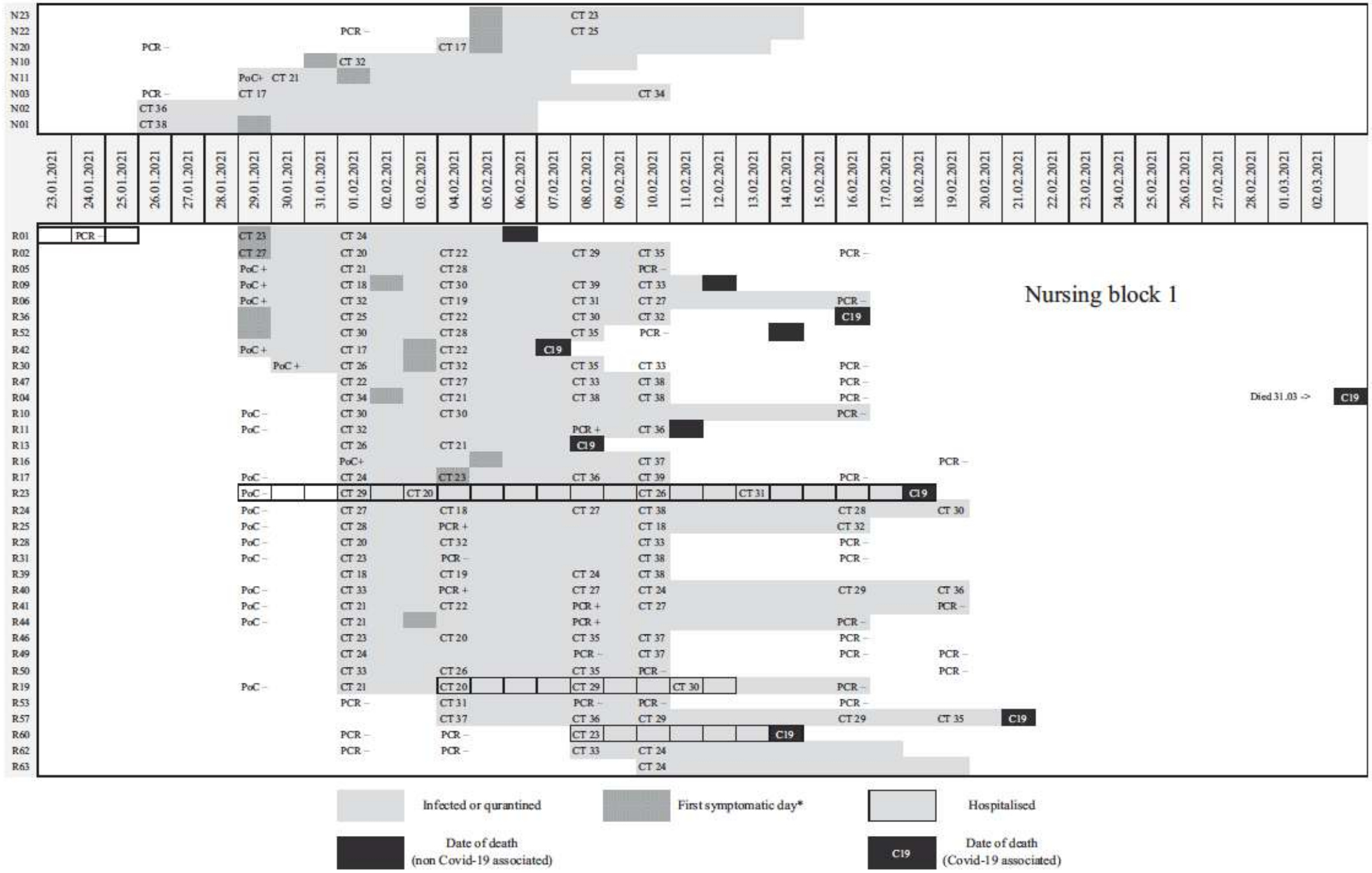
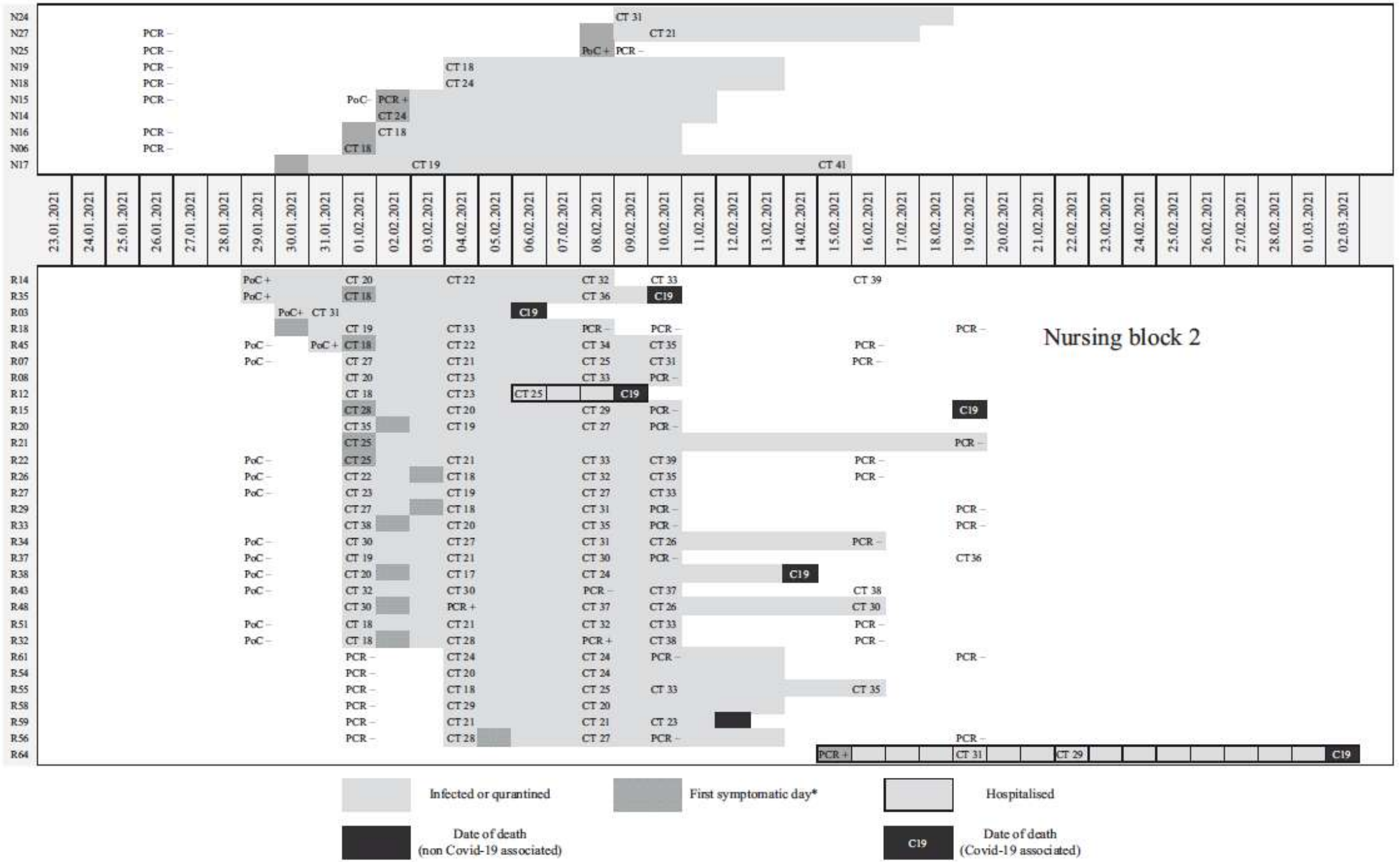


Figure 2. Floor plan of nursing block 2 with rooms 202–249; dates of COVID-19 detection are provided for each resident. R, resident.



*The first symptomatic day was not recorded for all residents



*The first symptomatic day was not recorded for all residents

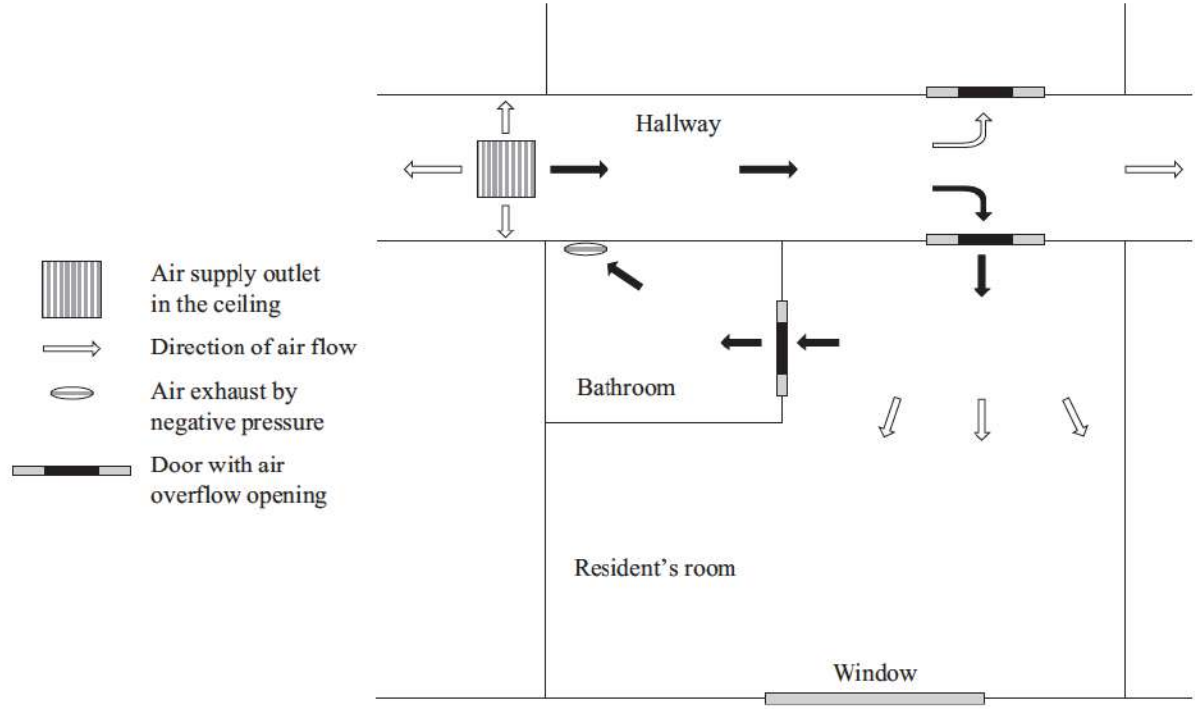


Figure 3. Schematic drawing of the air flow in the residential home; black arrows indicate the shortest possible air circulation from the air supply outlet in the ceiling of the corridor to the air exhaust in the bathroom of the resident's room (negative pressure); white arrows indicate additional directions of air flow.

Figure 4. Exhaust air opening in the tower at the highest point of the roof building of the nursing home as well as the location of the supply air opening (red arrow).

Figure 5. Grids between the air ducts and the air outlets.

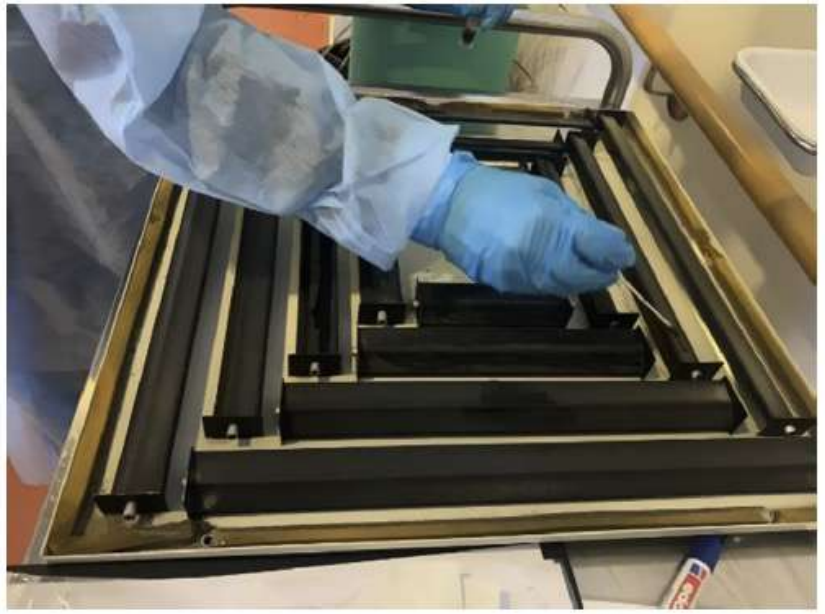
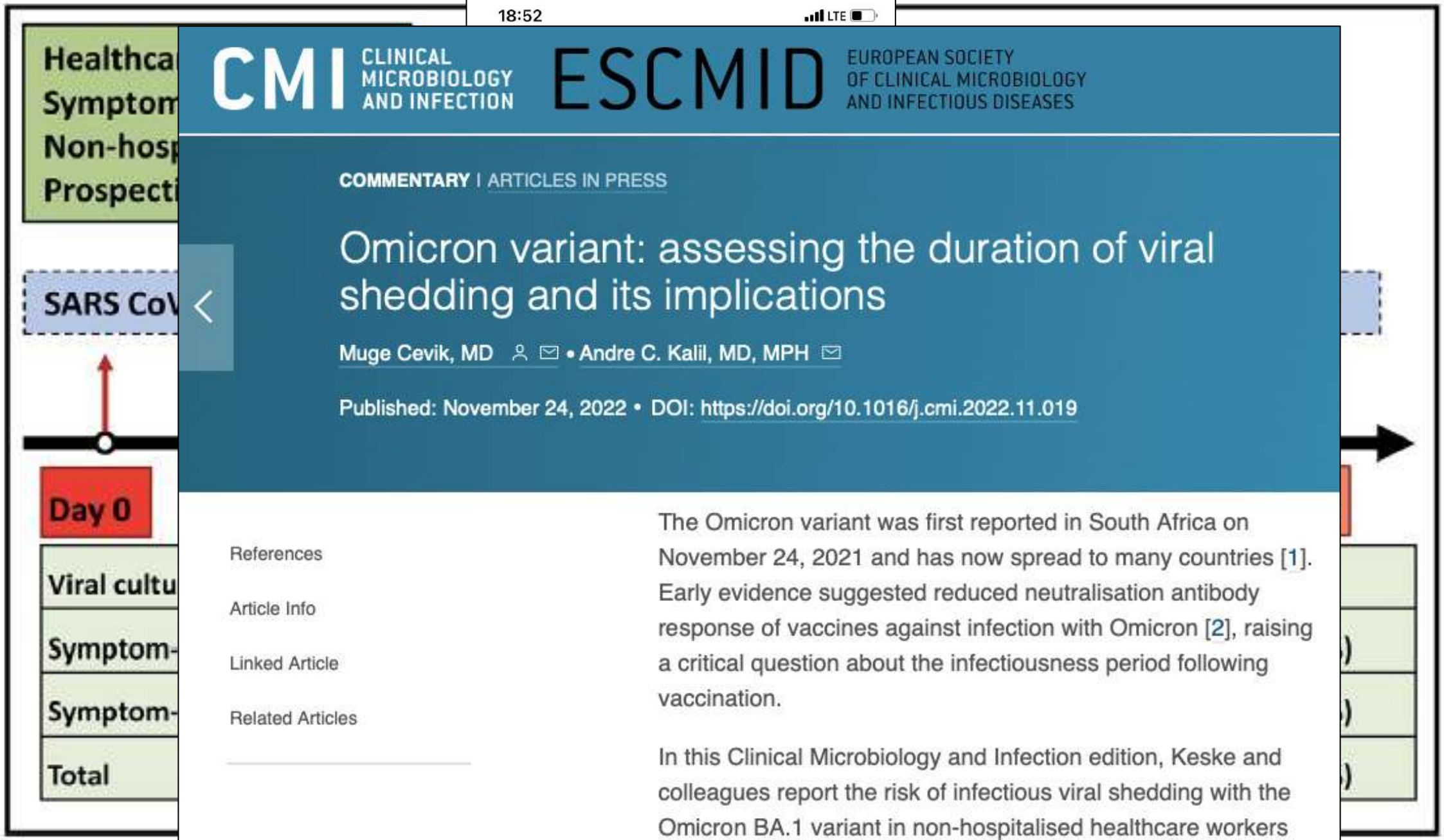


Figure 6. Sampling of the back of the air outlet.



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CMI CLINICAL MICROBIOLOGY AND INFECTION ESCMID EUROPEAN SOCIETY OF CLINICAL MICROBIOLOGY AND INFECTIOUS DISEASES

COMMENTARY | ARTICLES IN PRESS

Omicron variant: assessing the duration of viral shedding and its implications

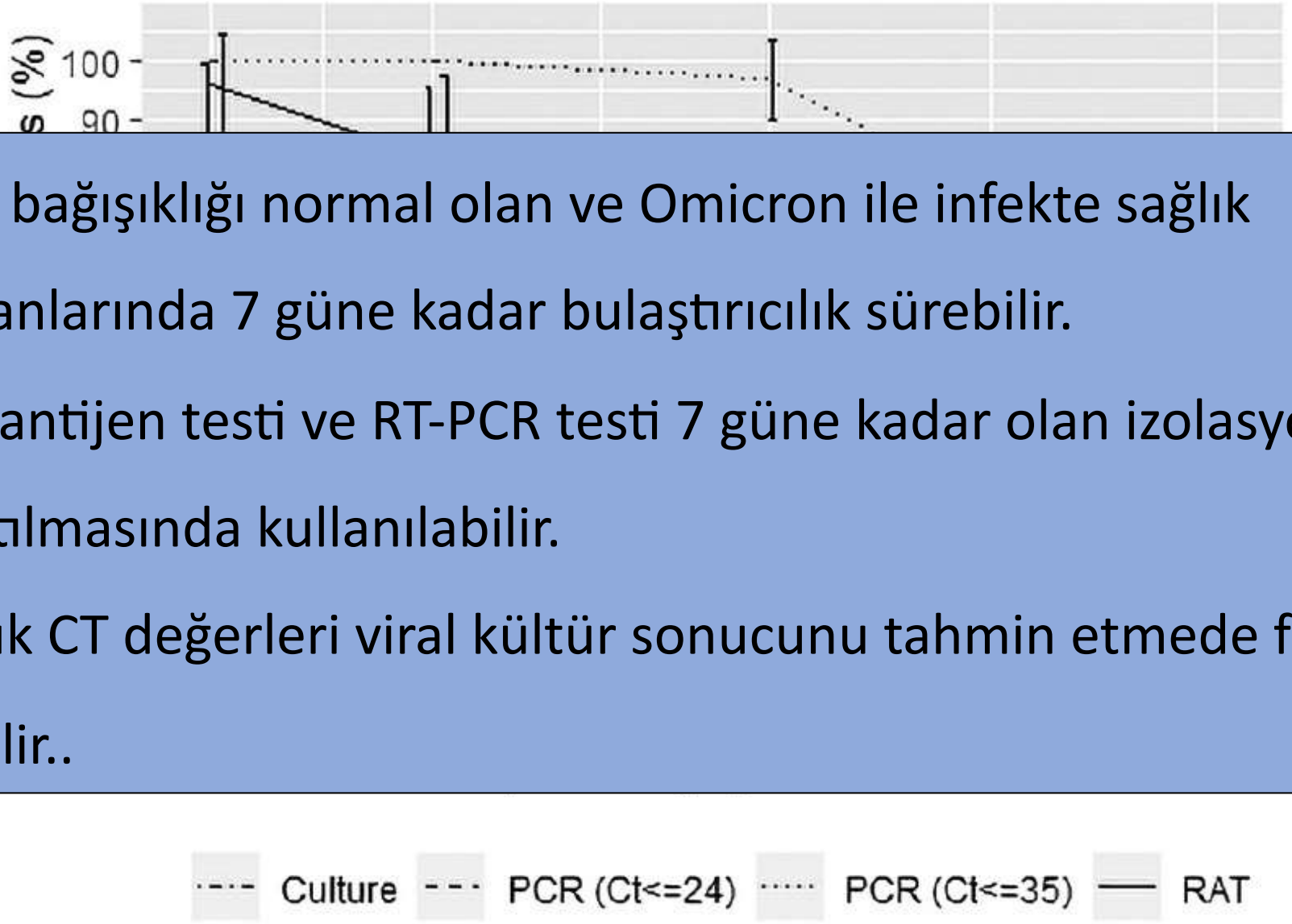
Muge Cevik, MD • Andre C. Kalil, MD, MPH

Published: November 24, 2022 • DOI: https://doi.org/10.1016/j.cmi.2022.11.019

The Omicron variant was first reported in South Africa on November 24, 2021 and has now spread to many countries [1]. Early evidence suggested reduced neutralisation antibody response of vaccines against infection with Omicron [2], raising a critical question about the infectiousness period following vaccination.

In this Clinical Microbiology and Infection edition, Keske and colleagues report the risk of infectious viral shedding with the Omicron BA.1 variant in non-hospitalised healthcare workers (HCW) in Turkey [3]. For this single-centre observational study,

Fig. 2. SARS-CoV-2 cultur ...h the presence of the symptom.



- Aşılı, bağışıklığı normal olan ve Omicron ile infekte sağlık çalışanlarında 7 güne kadar bulaştırıcılık sürebilir.
- Hızlı antijen testi ve RT-PCR testi 7 güne kadar olan izolasyonun kısaltılmasında kullanılabilir.
- Düşük CT değerleri viral kültür sonucunu tahmin etmede faydalı olabilir..

Figure 2. Real-time reverse-transcription polymerase chain reaction, rapid antigen test, and viral culture positivity (with 95% confidence interval) by days since symptom onset in persons infected with severe acute respiratory syndrome coronavirus 2 Omicron variant. Abbreviations: Ct, cycle threshold; RAT, rapid antigen test; RT-PCR, real-time reverse-transcription polymerase chain reaction.

Incidence, Risk Factors, and Prognosis of Bloodstream Infections in COVID-19 Patients in Intensive Care: A Single-Center Observational Study

Journal of Intensive Care Medicine
2022, Vol. 37(10) 1353-1362
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SAGE

Ahmet Furkan Ku
Oktay Demirkiran
Olcay Dilken, MD
Nese Saltoğlu, MD

Table 4. Univariable and Multivariable Analyses of Risk Factors for BSIs in COVID-I

Risk factors	Unadjusted HR (95
Length of stay before ICU admission (day)	0.93 (0.90-0.97
CRRT	2.55 (1.90-3.42
ECMO	2.05 (0.96-4.37
MP and TCZ	2.10 (1.04-4.24

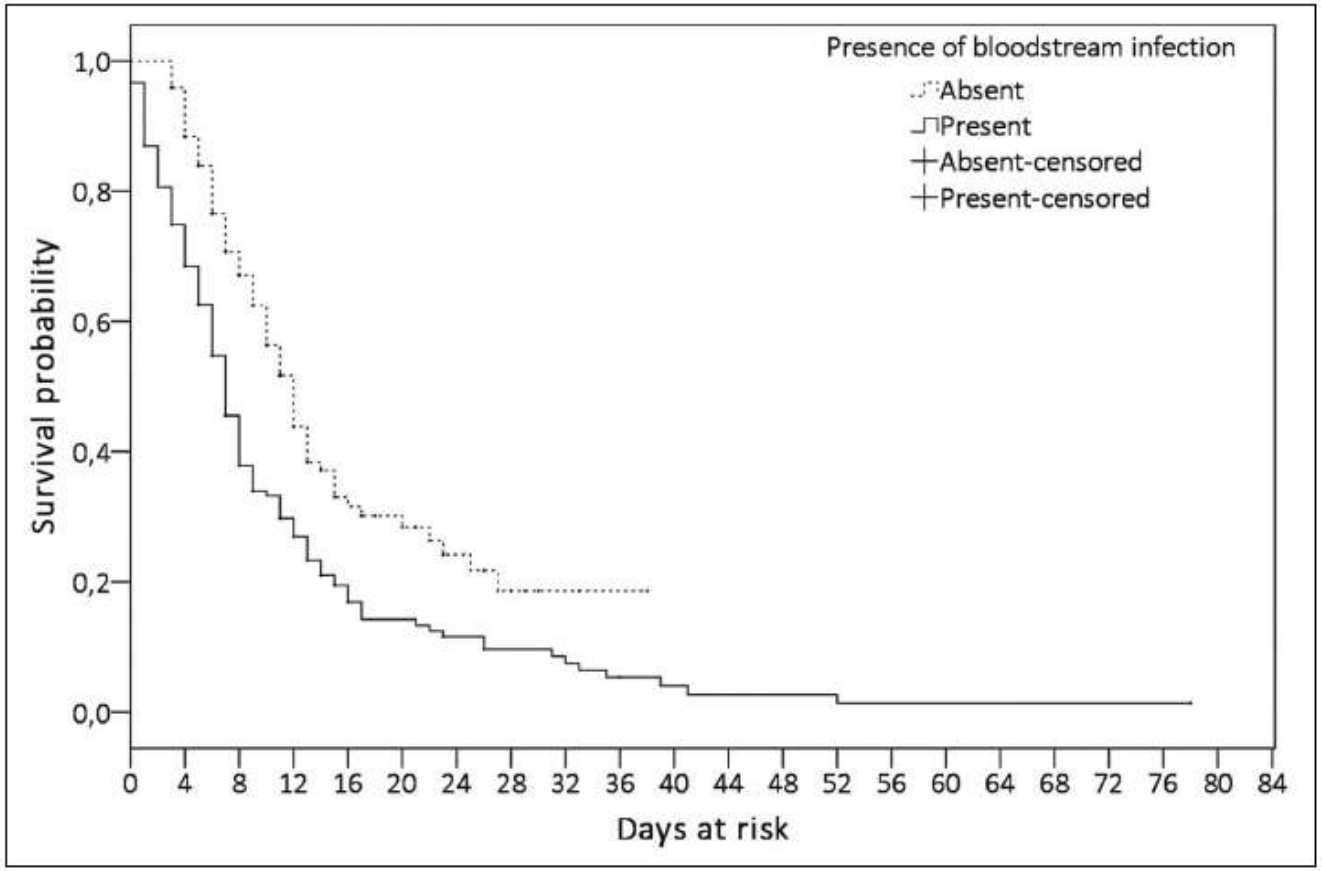

Figure 2. Comparison of the survival of the patients in terms of the presence of ICU-acquired BSI. Survival of the ICU patients with COVID-19 was analyzed via the Kaplan-Meier method. Solid line presents the survival of the patients with ICU-acquired BSI, and dotted line presents those without ICU acquired BSI. Right censoring was the discharge from the ICU. The maximum follow-up period was 38 days in the patients with ICU-acquired BSI and 78 days in the patients without ICU-acquired BSI. The origin of follow-up period started on the first day of ICU admission for the patients did not develop ICU-acquired BSI, and the first day of the first ICU-acquired BSI episode for the patients developed ICU-acquired BSI.

Contents lists available at ScienceDirect

American Journal of Infection Control

journal homepage: www.ajicjournal.org

Major Article

A long-lasting *Sphingomonas paucimobilis* outbreak: A potential pathogens to persist on environmental devices despite disinfect measures

ay MD [c], Halide Oğuş M
e Çelik RN [a], Barış Otlu

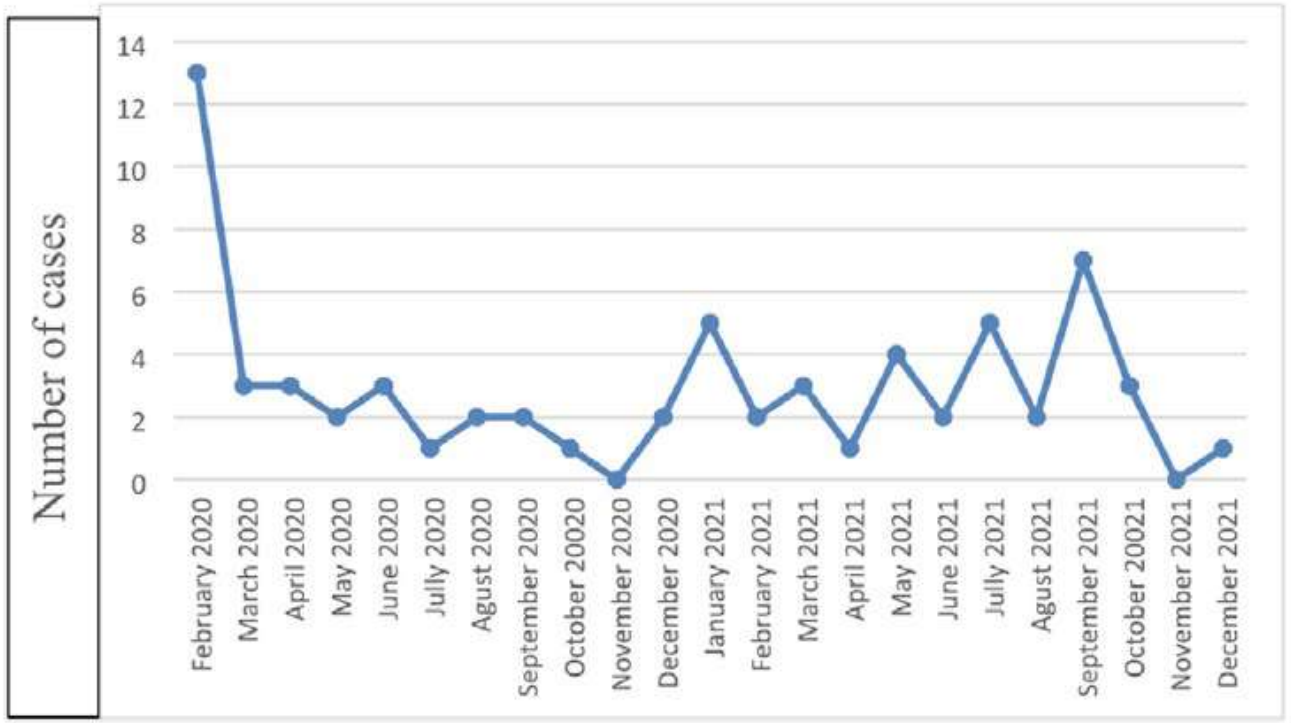

Fig 1. Distribution of *Sphingomonas paucimobilis* strains.

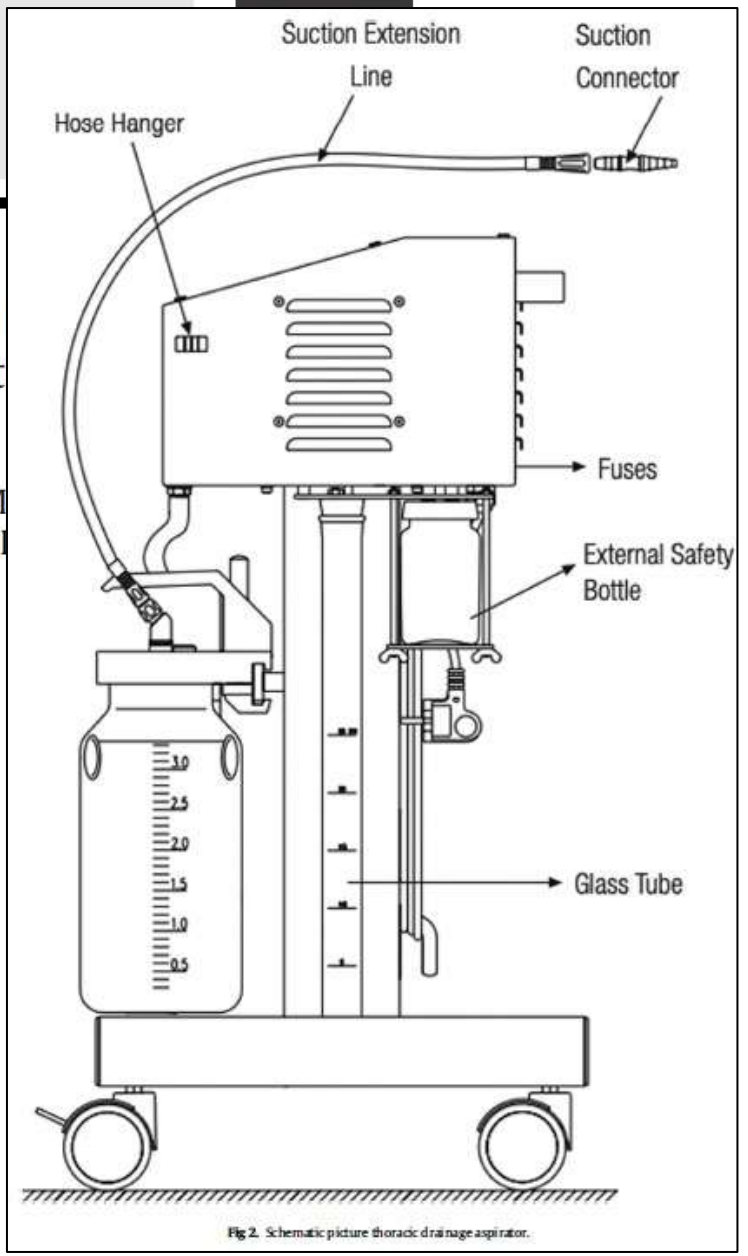

Fig 2. Schematic picture thoracic drainage aspirator.

American Journal of Infection Control 000 (2022) 1–6

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Major Article

Stenotrophomonas maltophilia outbreak with a commercial blood gas injector as the culprit and interventions for source and prevention: A

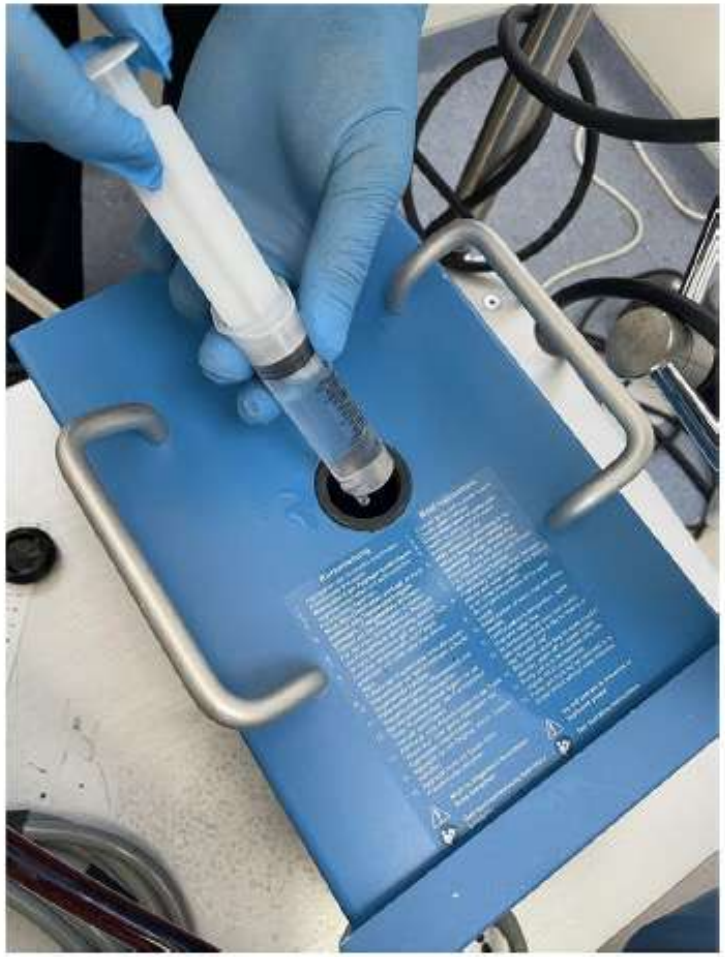


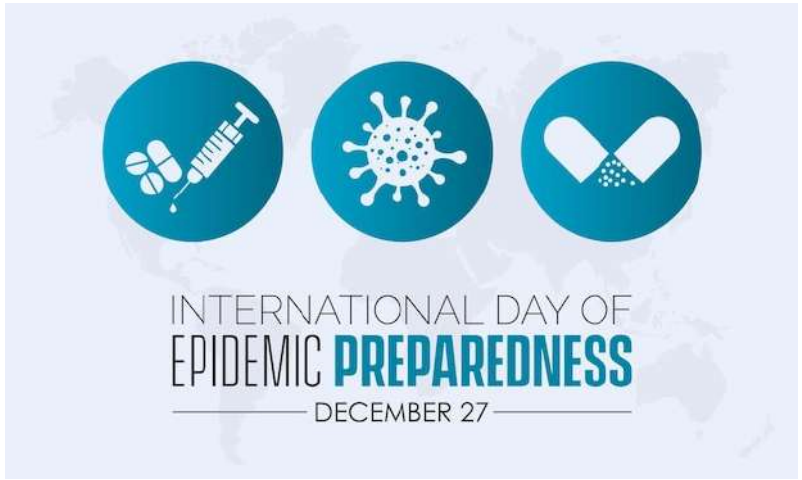
Fig 1. ECMO water heater and sampling.

Fig 2. An unused blood gas injector.

(a)

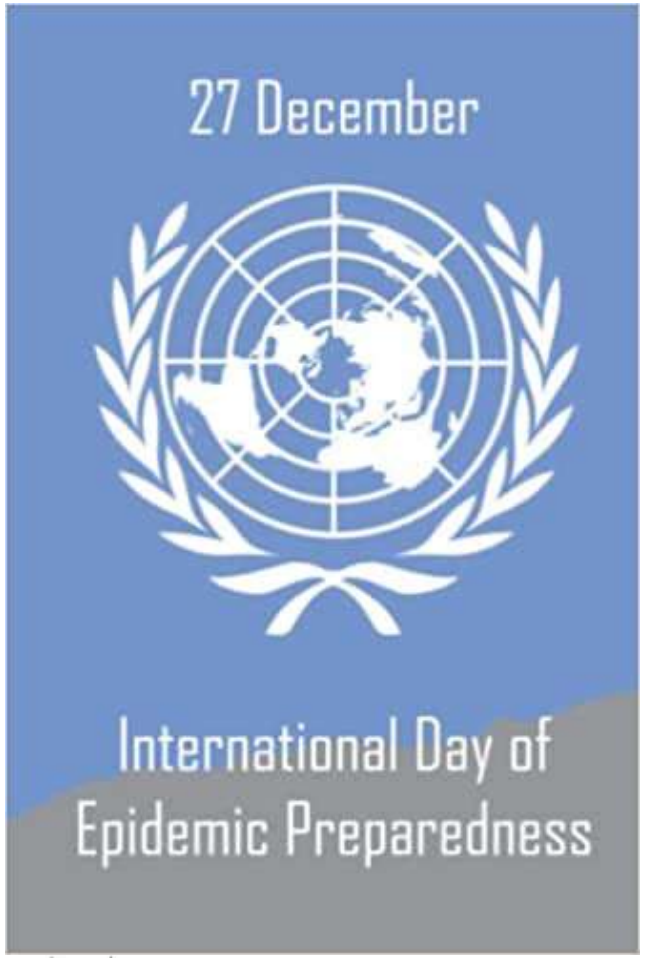
(b)

Sampling from the (a) outlet and (b) inlet lines of the ECMO oxygenator.


INTERNATIONAL DAY OF
EPIDEMIC PREPAREDNESS
DECEMBER 27


UNWTO
World Tourism Organization
International Day
of Epidemic Preparedness


INTERNATIONAL
DAY OF
EPIDEMIC
PREPAREDNESS
27 of December


27 December
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