Multiresistente Erreger
Epidemiologie (in Deutschland)-
Hat sie sich während der Coronapandemie verändert

Simone Scheithauer
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Conflict of Interest:

- **research-grants:**

BMBF: B-FAST / NUM; Medizininformatikinitiative (HiGHmed, Use Case Infection Control); BMBF Professorinnenprogramm; VW Vorab/MWK Niedersachsen (MRE-TRAVIK); BMG Innovationsfond INSIST / RetoCdiff / InnoBri; UMG Nachlaß Grun; MWK: EdUMG, Opti-ITS; MWK: PraeInfekt

- **lecture/advisory/review:**

KRINKO (RKI); Aufsichtsrat HZI Braunschweig; Wissenschaftlicher Beirat Medizinische Fakultät Uni Bielefeld, DFG Gutachter Forschungscampus und Nachwuchsgruppen, Expertengremium postoperative Wundinfektionen IQTIG; MWK Bayern u. Baden Würtemberg, Astellas, **Braun, Brill, 3M,** MSD, **Pfizer**, Ophardt

During last 5 y indicated in bold

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MRE- Epidemiologie

AMR
1
Die schleichende Pandemie

AMR
2
Während der SARS-CoV-2 Pandemie

AMR
3
Bei COVID-19 Patienten

Ausblick
4
?

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The Guardian

Opinion
Infectious diseases

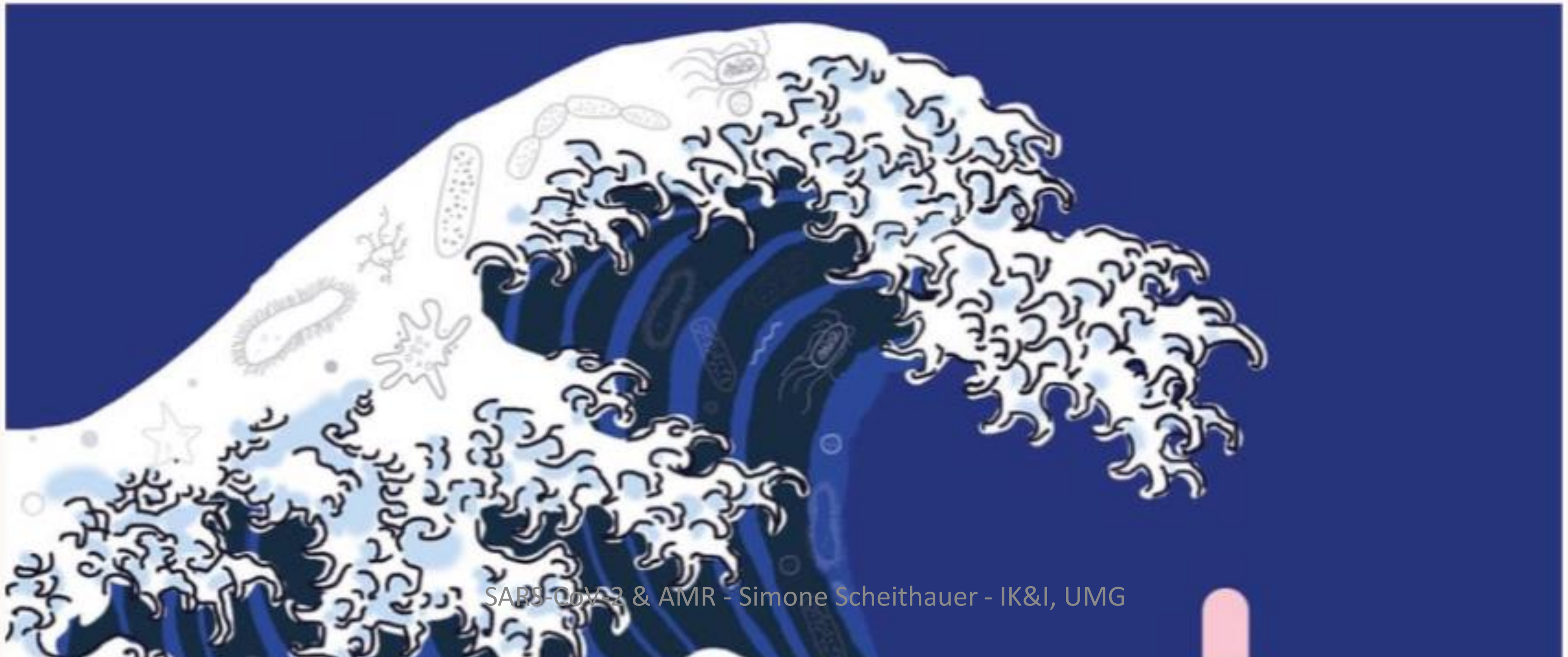
This article is more than **6 months old**

The next pandemic? It may already be upon us

Laura Spinney

Antimicrobial resistance won't race across the world like Covid-19, but its effects will be devastating. Thankfully, we already know what we need to do to defeat it

- Coronavirus - latest updates
- See all our coronavirus coverage



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Fragestellung(en)

Beeinflusst die SARS-CoV-2 Pandemie die AMR Pandemie?

- Ja/nein?
- Wenn ja, in welche Richtung? „positiv“ oder „negativ“?
- Unterschiede zwischen Spezies ?
- *Clostridioides difficile*?
- Outbreaks?
- Endpunkt Kolonisationen / Endpunkt Infektionen?
- 1. Welle versus alles weitere?
- Unterschiede zwischen Ländern, Systemen, etc.
- …..

Letter to the Editor

Journal of Hospital Infection 106 (2020) 198e199

Multi-drug-resistant infections in the COVID-19 era: a framework for considering the potential impact

Potential impact of coronavirus disease 2019 (COVID-19) on hospital transmission of multi-drug-resistant organisms (MDROs)

	Factors that may favour MDRO transmission	Factors that may prevent MDRO transmission
Infection prevention and control practices and use of PPE	Shortage of PPE due to the rapid increase in people admitted with COVID-19 [3–5]	Isolation of patients with COVID-19, application of enhanced standard precautions (hand hygiene policy and respiratory hygiene), use of PPE (when available) and appropriate environmental disinfection procedures [3–5]
Hospital overcrowding	The need for large-scale medical assistance exceeds the availability of hospital beds, resulting in overcrowded facilities [3,6]	Lack of beds in ICUs has led to new facilities being developed both within and outside current hospital ICU settings, many with existing colonization with MDROs [3,5]
HCWs	High rates of staff sickness and nosocomial acquisition of COVID-19, leading to low HCW:patient ratios [3,5,6]	COVID-19-designed ICUs with dedicated HCWs may have decreased cross-transmission of nosocomial infections [3,4]
Demographic features of patients affected by COVID-19	Elderly patients with comorbidities require prolonged hospitalization with mechanical ventilation support with high use of broad-spectrum antibiotics [2–4]	Lower rates of admission to hospital from long-term care facilities may lead to fewer transmission cycles between long-term care facilities and hospitals [2–4]

PPE, personal protective equipment; HCW, healthcare worker; ICU, intensive care unit.

Antimicrobial resistance in ICUs: an update in the light of the COVID-19 pandemic

Curr Opin Crit Care 2020, 26:433–441
DOI:10.1097/MCC.0000000000000755

Rafael Cantón[a,b], Desirèe Gijón[a,b], and Patricia Ruiz-Garbajosa[a,b]

Antimicrobial resistance in ICUs: an update in the light of the COVID-19 pandemic

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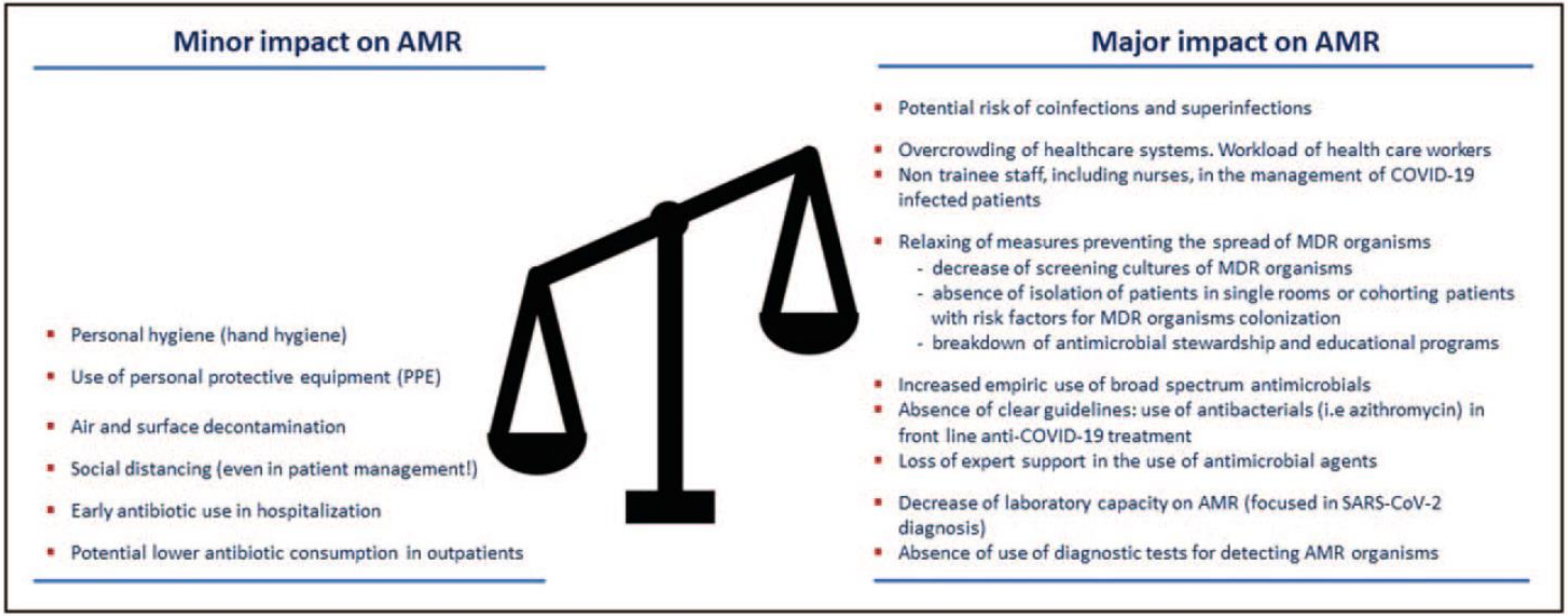
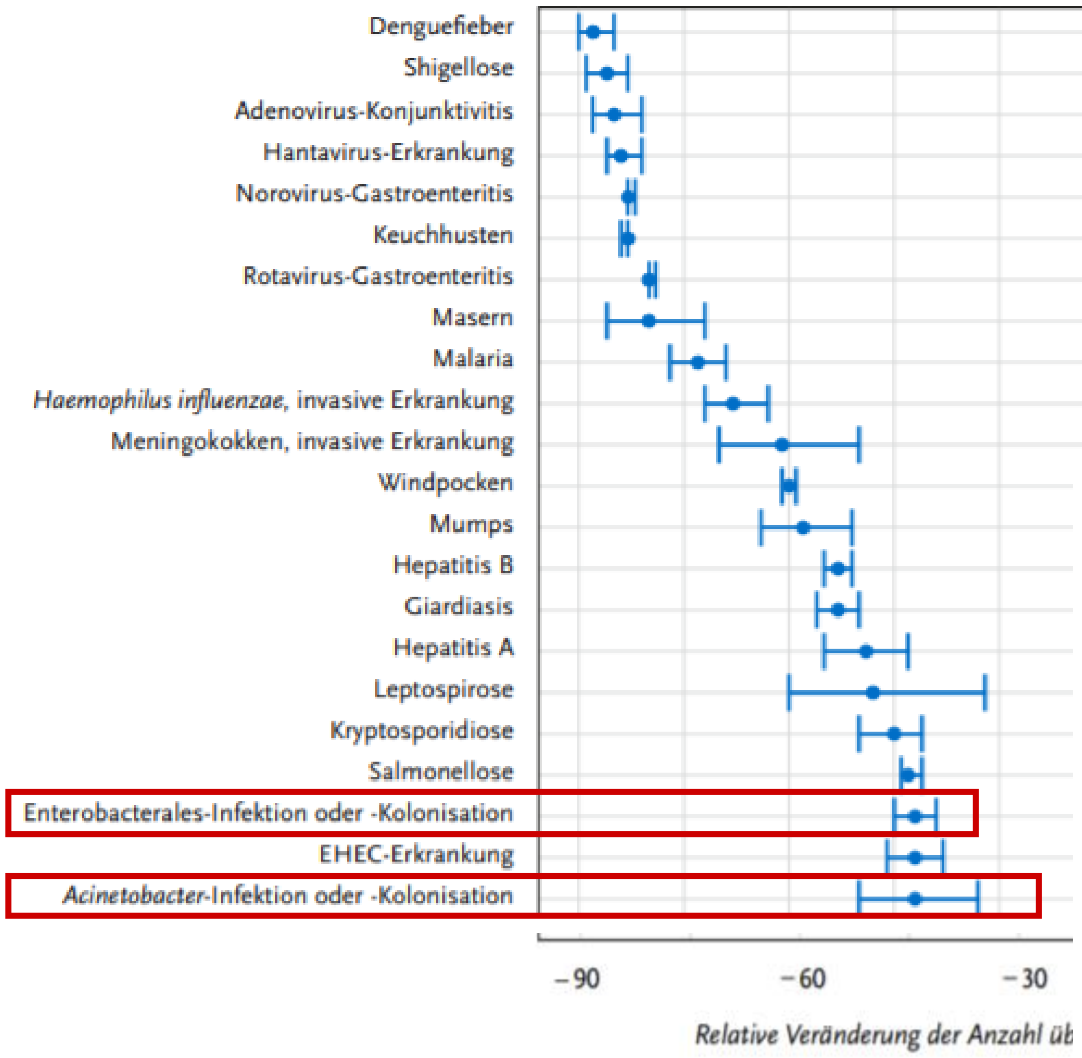
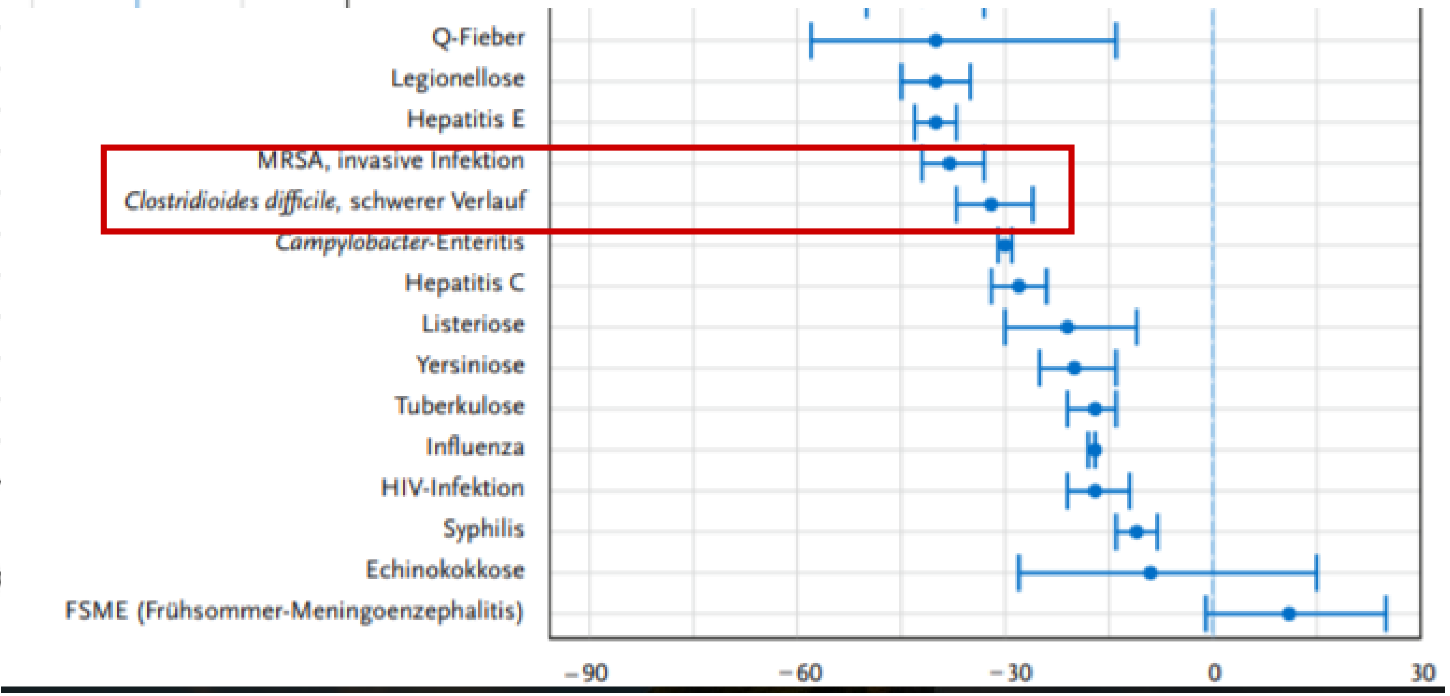


FIGURE 2. Pro and con reasons of the potential increase of antimicrobial resistance in ICUs due to the COVID-19 pandemics.

Reduktion der meldepflichtigen Erkrankungen

Relative Veränderung in %
zu Erwartungswert
(Prognose basierend auf 5 Vorjahren)





RKI: Infektionsepidemiologisches Jahrbuch 2020

Anzahl übermittelter meldepflichtiger Krankheiten, Deutschland 2020, im Vergleich zu den Meldedaten der 5 Vorjahre, 5-Jahres-Median, prozentualer Differenz und modellbasierter Differenz

Krankheit	2020	5-Jahres-Median (Minimum und Maximum)	% Differenz (Median)	% Differenz Modell (95 %-Konfidenzintervall)
Acinetobacter-Infektion oder -Kolonisation	481	780 (711–788)	–38	–42 (–50; –33)
Enterobacterales-Infektion oder -Kolonisation	3.533	3.938 (3.441–4.683)	–10	–42 (–45; –39)
MRSA, invasive Infektion	1.126	2.832 (1.810–3.600)	–60	–38 (–42; –33)
Clostridioides-difficile-Erkrankung, schwere Verlaufsform	1.595	2.329 (2.152–2.827)	–32	–32 (–37; –26)

- Multifaktoriell, Unterschiede zwischen Erkrankungen
- Veränderungen der Inanspruchnahme/Zugang zu gesundheitlichen Versorgungsleistungen
- Public-Health Maßnahmen, z. B. Kontaktbeschränkungen, Abstandsregeln u.ä.
- Schul- und Kita-Schließungen sowie Reisebeschränkungen
- Ursachenanalyse auf Grundlage alleine der Meldedaten nicht möglich

RKI: Infektionsepidemiologisches Jahrbuch für 2020; www.rki.de

Erreger		Anzahl der Ausbrüche	Anzahl Fälle im Ausbruch
Bakterien	*Clostridioides difficile*	9	37
	Staphylococcus aureus	5	21
	Acinetobacter baumannii	4	35
	Klebsiella pneumoniae	3	16
	Serratia marcescens	3	14
	Escherichia coli	2	19
	Mycobacterium tuberculosis	2	5
	Streptococcus pyogenes	2	7
	Campylobacter spp.	1	2
	Leginonella spp.	1	7
	Listeria spp.	1	2
	Gesamt Bakterien	**33**	**165**
Parasiten	*Sarcoptes scabiei*	10	51

Erreger		Anzahl der Ausbrüche	Anzahl Fälle im Ausbruch
Bakterien	*Clostridioides difficile*	28	107
	Klebsiella spp.	12	106
	Enterococcus spp.	10	54
	Bordetella pertussis	8	23
	Staphylococcus spp.	7	61
	Streptococcus pyogenes	7	25
	Acinetobacter spp.	5	30
	Salmonella spp.	4	9
	Serratia spp.	3	27
	Escherichia coli	3	11
	Mycobacterium spp.	3	6
	Pseudomonas spp.	2	5
	Clostridium perfringens	1	2
	mehrere/sonstige	6	20
	Gesamt	**99**	**486**
Parasiten	*Sarcoptes scabiei* (Scabies)	19	131

Erreger		Anzahl der Ausbrüche	Anzahl Fälle im Ausbruch
Viren	SARS-CoV-2	1.532	23.562
	Norovirus	419	4.067
	Influenza virus	156	1.191
	Rotavirus	6	26
	Varicella-Zoster-Virus	5	14
	mehrere/sonstige	4	159
	Enteroviren	2	22
	Masernvirus	1	16
	Respiratorisches Synzytial-Virus	1	2
	Gesamt Viren	**2.126**	**29.059**
Bakterien	*Clostridioides difficile*	9	37
	Staphylococcus aureus	5	21
	Acinetobacter baumannii	4	35
	Klebsiella pneumoniae	3	16
	Serratia marcescens	3	14
	Escherichia coli	2	19
	Mycobacterium tuberculosis	2	5
	Streptococcus pyogenes	2	7
	Campylobacter spp.	1	2
	Leginonella spp.	1	7
	Listeria spp.	1	2
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Erreger		Anzahl der Ausbrüche	Anzahl Fälle im Ausbruch
Viren	Norovirus	1.268	13.398
	Influenzavirus	326	2.264
	Rotavirus	200	2.033
	Varicella-Zoster-Virus	10	106
	Respiratory-Syncytial-Virus	5	21
	Masernvirus	2	10
	mehrere/sonstige	9	74
	Gesamt	**1.820**	**17.906**
Bakterien	*Clostridioides difficile*	28	107
	Klebsiella spp.	12	106
	Enterococcus spp.	10	54
	Bordetella pertussis	8	23
	Staphylococcus spp.	7	61
	Streptococcus pyogenes	7	25
	Acinetobacter spp.	5	30
	Salmonella spp.	4	9
	Serratia spp.	3	27
	Escherichia coli	3	11
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Grobe Idee: MRSA/CDAD-KISS (www.nrz-hygiene.de)

Jahr	KRH *1	Patienten-tage	MRSA-Patienten-tage	MRSA-Fälle	Gesamt-prävalenz *2	Inzidenz-dichte d. noso. MRSA-Fälle *2	Mittl. tägl. MRSA-Last *2	Anzahl Nasen-abstriche pro 100 Patienten *2
2018	622	58.521.171	827.273	76.646	0,84	0,09	1,41	43,16
2019	603	57.135.715	679.518	64.508	0,72	0,07	1,19	43,52
2020	529	44.571.463	468.294	45.220	0,64	0,06	1,05	43,59

Jahr	KRH	Patienten	Patienten-tage	CDAD-Fälle	Gesamt-prävalenz *1	Inzidenz-dichte der nosok. Fälle *1	Inzidenz-dichte der schweren Fälle *1	Präval. bei Aufnahme *1
2018	621	9.747.591	64.305.091	35.872	0,37	0,31	0,05	0,16
2019	594	9.333.520	61.103.447	27.615	0,28	0,24	0,05	0,12
2020	525	7.265.281	46.883.386	22.426	0,29	0,25	0,06	0,13

1. Zwischenfazit: Deutschland

- Die Hypothese ist zweiseitig mit guten Argumenten auf beiden Seiten
- Die in D „öffentlichen“ Zahlen lassen eher eine Reduktion vermuten
- Auswertung ausschließlich 2020
- Es gibt auch andere Erklärungen für niedrigere Werte…

Eigene Daten auf Anfrage

Increase in Healthcare-Onset MRSA Bacteremia SIR in 2020: Quarter 2

		2019 Q2	2020 Q2	Difference in Pooled Values (2020-2019) N (%)
	# Hospitals	3,039	3,039	
	# Hospitals with ≥ 1 HO event	890	882	-8 (-0.9%)
	HO MRSA Events	1,690	1,704	14 (0.8%)
	# Predicted HO MRSA	2,064.55	1,813.43	-251.12 (-12.2%)
	Patient Days	32,937,724	28,058,539	-4,879,185 (-14.8%)
>	Inpatient HO MRSA Rate	5.1	6.1	0.9 (18.4%)
	SIR	0.82	0.94	0.12 (14.8%)
	Inpatient CO MRSA Events	4,119	3,737	-382 (-9.3%)
	Admissions	7,719,330	6,368,916	-1,350,414 (-17.5%)
>	Inpatient CO MRSA Rate	5.3	5.9	0.5 (10.0%)
	Outpatient MRSA Events	10,615	10,463	-152 (-1.4%)
	Outpatient Encounters	28,792,424	19,056,924	-9,735,500 (-33.8%)
>	Outpatient MRSA Rate	3.7	5.5	1.8 (48.9%)

Source: National Healthcare Safety Network (NHSN)

Larger Increases in Healthcare-Onset MRSA Bacteremia in 2020: Quarter 3

	2019 Q3	2020 Q3	Difference in Pooled Values (2020-2019) N (%)
# Hospitals	3,157	3,157	
# Hospitals with ≥ 1 HO event	929	1,082	153 (16.5%)
HO MRSA Events	1,873	2,364	491 (26.2%)
# Predicted HO MRSA	2,339.17	2,359.80	20.63 (0.9%)
Patient Days	37,062,230	36,285,640	-776,590 (-2.1%)
> Inpatient HO MRSA Rate	5.1	6.5	1.5 (28.9%)
SIR	0.80	1.00	0.20 (25.1%)
Inpatient CO MRSA Events	4,620	4,399	-221 (-4.8%)
Admissions	8,747,884	8,157,200	-590,684 (-6.8%)
> Inpatient CO MRSA Rate	5.3	5.4	0.1 (2.1%)
Outpatient MRSA Events	12,277	12,919	642 (5.2%)
Outpatient Encounters	31,896,130	25,779,810	-6,116,320 (-19.2%)
> Outpatient MRSA Rate	3.8	5.0	1.2 (30.2%)

Source: National Healthcare Safety Network (NHSN)

The New York Times

By Matt Richtel Sept. 2, 2021

At the height of the pandemic, doctors and nurses made furious efforts to protect **themselves** with gowns and masks and scrambled to save the lives of the severely ill Covid-19 patients with ventilators. But these efforts, among other life saving measures, had a **side effect: drug-resistant infections have increased in hospitals**.

The development, reported on Thursday by the **Centers for Disease Control and Prevention**, came about in part because drug-resistant bacteria thrived on reused protective equipment, intravenous lines and medical equipment like ventilators.

In the second half of 2020, though, “sometimes these efforts went terribly wrong,” with **so much focus on stopping transmission of Covid-19**, according to a commentary that accompanies the new study by the C.D.C. The authors wrote that the **practices best known to stop the spread of drug-resistant infections were ignored or subverted in the face of a larger threat. Drug-resistant bloodstream infections at hospitals rose 47 percent in the last three months of 2020 compared to the same period a year earlier. In the first three months of 2020, such infections had fallen nearly 12 percent compared to the same period a year earlier,** reflecting heightened efforts at the time to stop the spread. **Similar trends showed up with regard to infections traced to ventilators, which rose 45 percent in the fourth quarter of 2020 over the previous year. During the same period, infections from one bacterium — methicillin-resistant Staphylococcus aureus, or MRSA —rose 34 percent after having fallen in the first quarter of 2020 as compared to the same period a year earlier.**

Ausbrüche (MDRO) und COVID-19 (Bsp.)

1) New Jersey: 34 cases of carbapenem-resistant Acinetobacter baumannii attributed to „changes“ in infection prevention and control practices

2) Florida: 39 cases of Candida auris attributed to „unconventional“ PPE practices and environmental contamination

3) Ihre Erfahrungen…(natürlich aus den benachbarten Kliniken ;-))

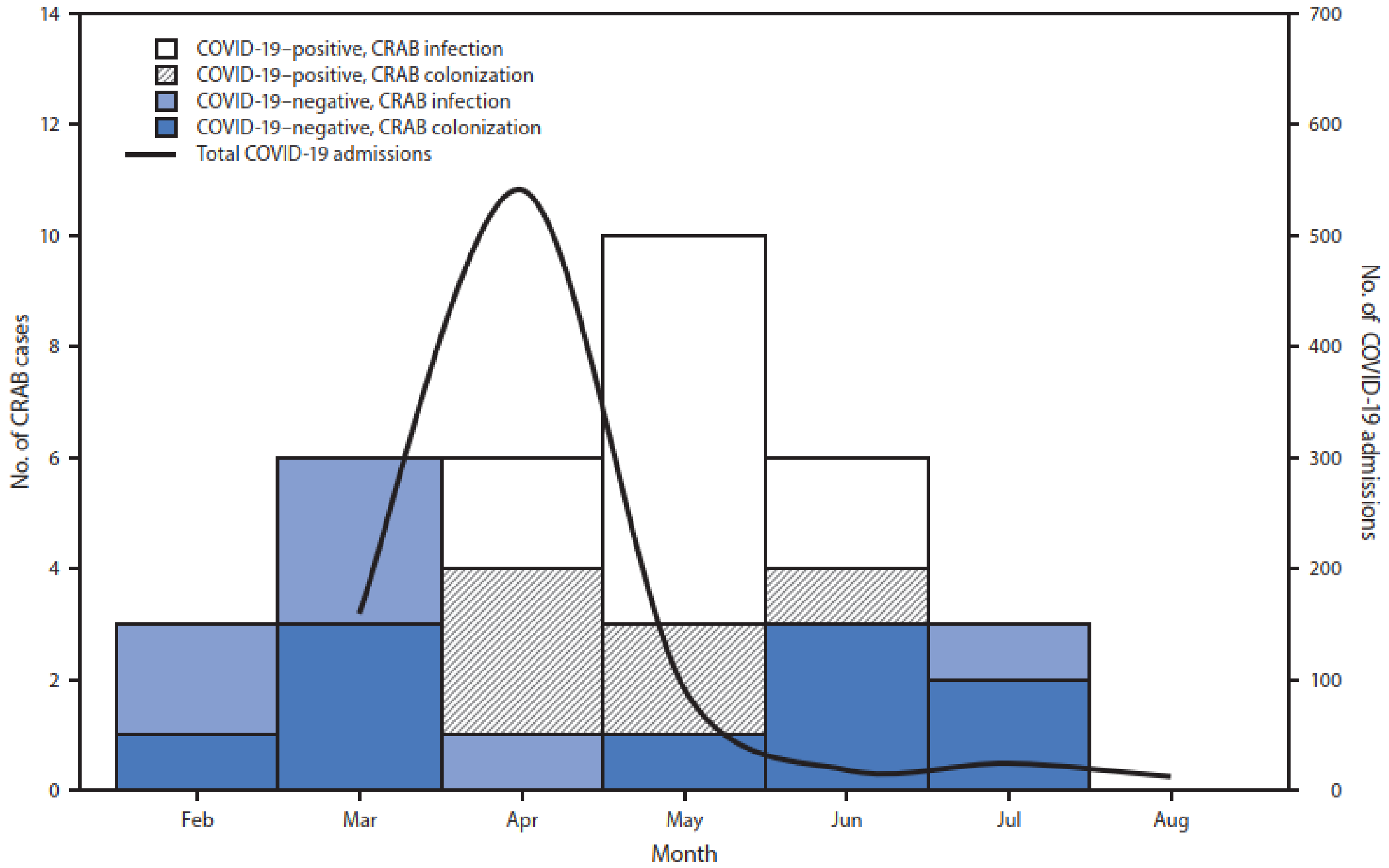
Perez S, Innes GK, Walters MS, et al. Increase in Hospital-Acquired Carbapenem-Resistant Acinetobacter baumannii Infection and Colonization in an Acute Care Hospital During a Surge in COVID-19 Admissions —New Jersey, February–July 2020. MMWR Morb Mortal Wkly Rep 2020;69:1827–1831.
Prestel C, Anderson E, Forsberg K, et al. Candida auris Outbreak in a COVID-19 Specialty Care Unit — Florida, July–August 2020. MMWR Morb Mortal Wkly Rep 2020; 70;56–57.

Increase in Hospital-Acquired Carbapenem-Resistant *Acinetobacter baumannii* Infection and Colonization in an Acute Care Hospital During a Surge in COVID-19 Admissions — New Jersey, February–July 2020

MMWR / December 4, 2020 / Vol. 69 / No. 48

Stephen Perez, PhD[1,2]; Gabriel K. Innes, VMD, PhD[2]; Maroya Spalding Walters, PhD[3]; Jason Mehr, MPH[2]; Jessica Arias[2]; Rebecca Greeley, MPH[2]; Debra Chew, MD[4]

FIGURE. Number of admitted patients with COVID-19 (N = 846) and hospital-acquired carbapenem-resistant *Acinetobacter baumannii* (CRAB)* (N = 34), by month — hospital A, New Jersey, February–July 2020



Abbreviation: COVID-19 = coronavirus disease 2019.
* CRAB infection or colonization.

Increase in Hospital-Acquired Carbapenem-Resistant *Acinetobacter baumannii* Infection and Colonization in an Acute Care Hospital During a Surge in COVID-19 Admissions — New Jersey, February–July 2020

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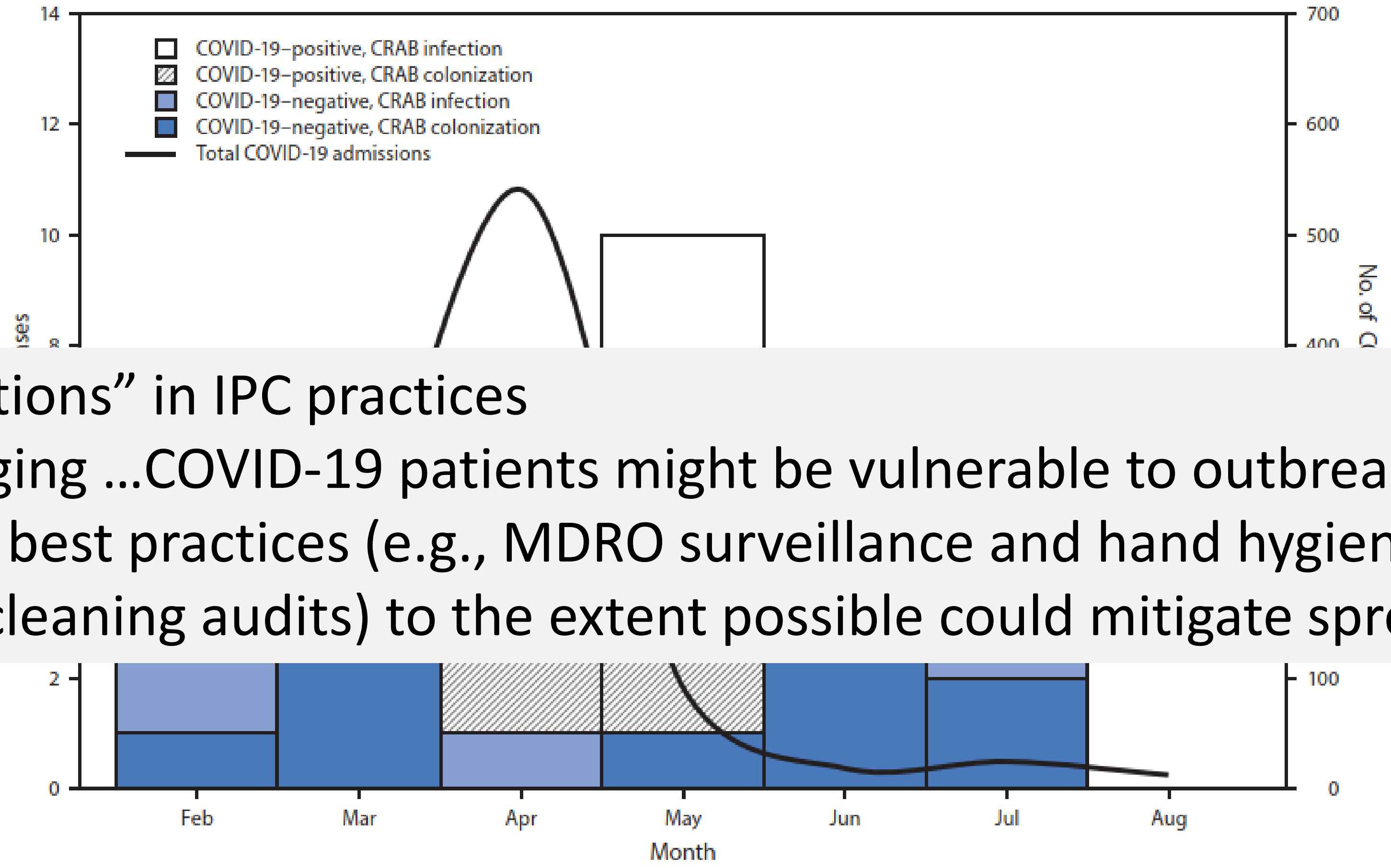

Ursache: “deviations” in IPC practices

Hospitals managing …COVID-19 patients might be vulnerable to outbreaks of MDRO

Maintaining IPC best practices (e.g., MDRO surveillance and hand hygiene and environmental cleaning audits) to the extent possible could mitigate spread.

Abbreviation: COVID-19 = coronavirus disease 2019.
* CRAB infection or colonization.

Did *Clostridioides difficile* testing and infection rates change during the COVID-19 pandemic?

Anaerobe 70 (2021) 102384

Armani Minasian Hawes [a,*], Angel Desai [b], Payal K. Patel [c]

- Single center descriptive investigation
- Comparison before and during the 1. wave
- Incidence of CDI remained stable
- Testing statistically significantly decreased
- Antibiotic use increased
- No new CDI-focused antimicrobial stewardship interventions

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Impact of the coronavirus disease 2019 (COVID-19) pandemic on nosocomial *Clostridioides difficile* infection

Infection Control & Hospital Epidemiology (2020), 1–5
doi:10.1017/ice.2020.454

- Retrospektiver Vergleich der Inzidenzdichten, single center, Spanien
- Vergleich Peak COVID (11.03.-11.05.2020) mit analogen Zeitspannen der Vorjahre
- Aggregierte AB Daten und Patienten"mobilität"
- 2,337 COVID Patienten
- CDI Inzidenzdichte: 2.68 vs. 8.54/10,000 PT
- AB: 89.73 vs. 79.16 DDD/ pro 100 belegte Betten
- Patientenverlegungen: 300.86 vs. 587.61 /1000 Patiententage
- ....supports the importance of reducing nosocomial transmission by healthcare workers and asymptomatic colonized patients, reinforcing cleaning procedures and reducing patient mobility in the epidemiological control of CDI

Increased antimicrobial resistance during the COVID-19 pandemic

Chih-Cheng Lai[a], Shey-Ying Chen[b,c], Wen-Chien Ko[d], Po-Ren Hsueh[e,f,*]

[a] *Department of Internal Medicine, Kaohsiung Veterans General Hospital, Tainan Branch, Tainan, Taiwan*

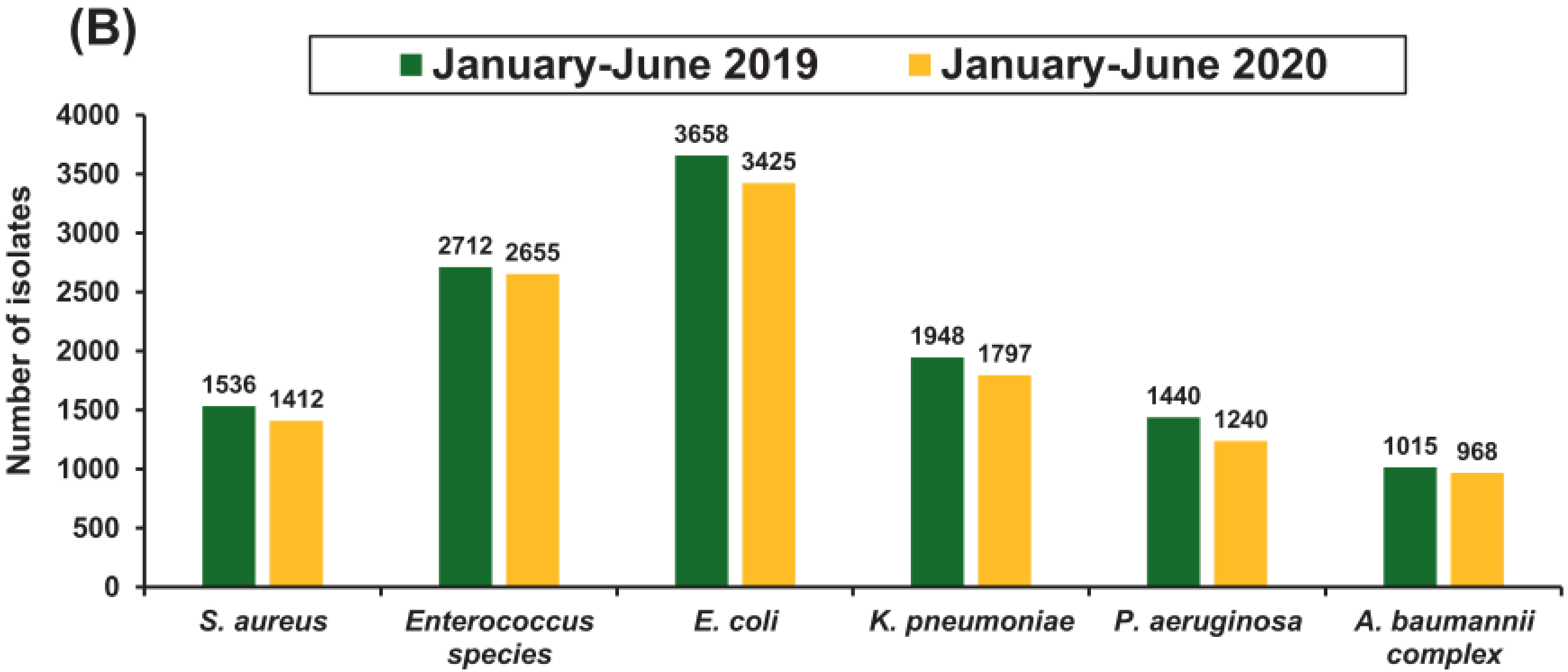
International Journal of Antimicrobial Agents 57 (2021) 106324

Increased antimicrobial resistance during the COVID-19 pandemic

Chih-C

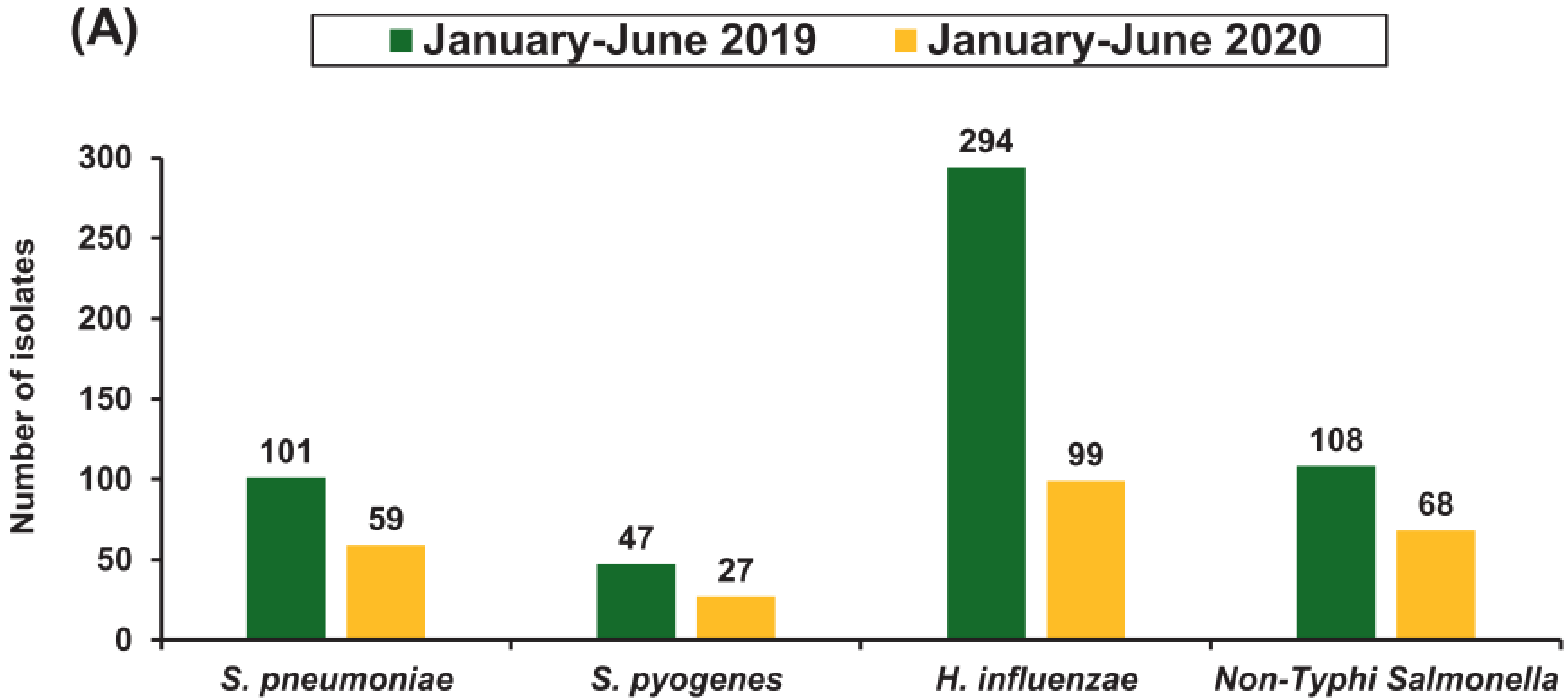
[a] Departme

)6324



R	2019	2020	R	2019	2020	R	2019	2020	R	2019	2020	R	2019	2020	R	2019	2020
OX	37	38	VAN	20	21	CTX	33	31	CTX	25	27	CAZ	13	12	SAM	**25**	**34**
-	-	-	-	-	-	IMP	1	1	IMP	7	8	IMP	14	13	IMP	**34**	**41**
-	-	-	-	-	-	LVX	34	35	LVX	15	16	LVX	14	11	LVX	**28**	**36**

Fig. 2. Comparison of the number and rate of antimicrobial-resistant infections of clinically important bacterial species recovered from various clinical sources of patients treated at National Taiwan University Hospital (NTUH) between January–June 2019 and January–June 2020: (A) *Streptococcus pneumoniae*, *Streptococcus pyogenes*, *Haemophilus influenzae* and non-Typhi *Salmonella* spp. (predominantly associated with community-acquired infections); and (B) *Staphylococcus aureus*, *Enterococcus* spp., *Escherichia coli*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa* and *Acinetobacter baumannii* complex (causing community- and hospital-acquired infections). R, resistant to the indicated antibiotic; PCN, penicillin; EM, erythromycin; LVX, levofloxacin; TC, tetracycline; AMP, ampicillin; AMC, amoxicillin/clavulanate; SXT, trimethoprim/sulfamethoxazole; CTX, cefotaxime; CIP, ciprofloxacin; OX, oxacillin; VAN, vancomycin; IMP, imipenem; CAZ, ceftazidime; SAM, ampicillin/sulbactam. Differences in rates of resistance >5% between two time periods are indicated in boldface.



R	2019	2020	R	2019	2020	R	2019	2020	R	2019	2020
PCN	18	14	TC	57	52	AMP	**72**	**57**	CTX	19	16
EM	94	91	EM	53	54	AMC	3	4	CIP	**16**	**23**
LVX	1	3	LVX	**8**	**23**	SXT	**64**	**56**	SXT	36	35

International Journal of Antimicrobial Agents 57 (2021) 106324

Table 1

Consumptions of broad-spectrum antimicrobial agents at National Taiwan University Hospital during two time periods: January–June 2019 and January–June 2020

Antibiotic	Antibiotic consumption (DDDs/1000 patient-days) by indicated time period		% change
	January–June 2019	January–June 2020	
β-Lactam/β-lactamase inhibitor combinations [a]	372.3	387.6	4.1
Extended-spectrum cephalosporins [b]	763.5	763.7	0.0
Quinolones [c]	182.3	201.8	10.7
Carbapenems [d]	330.4	376	13.8
Aminoglycosides [e]	237	221.3	–6.6
Colistin	63.3	78.4	23.9
Tigecycline	56.3	89.7	59.3
Fosfomycin	23.7	41.4	74.7
Glycopeptides [f]	340.1	384	12.9
Linezolid	12.1	15.4	27.3
Daptomycin	77.3	95.1	23.0

DDD, defined daily doses.

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Fragestellung(en)

Haben COVID-19 Patienten ein höheres Risiko für AMR?

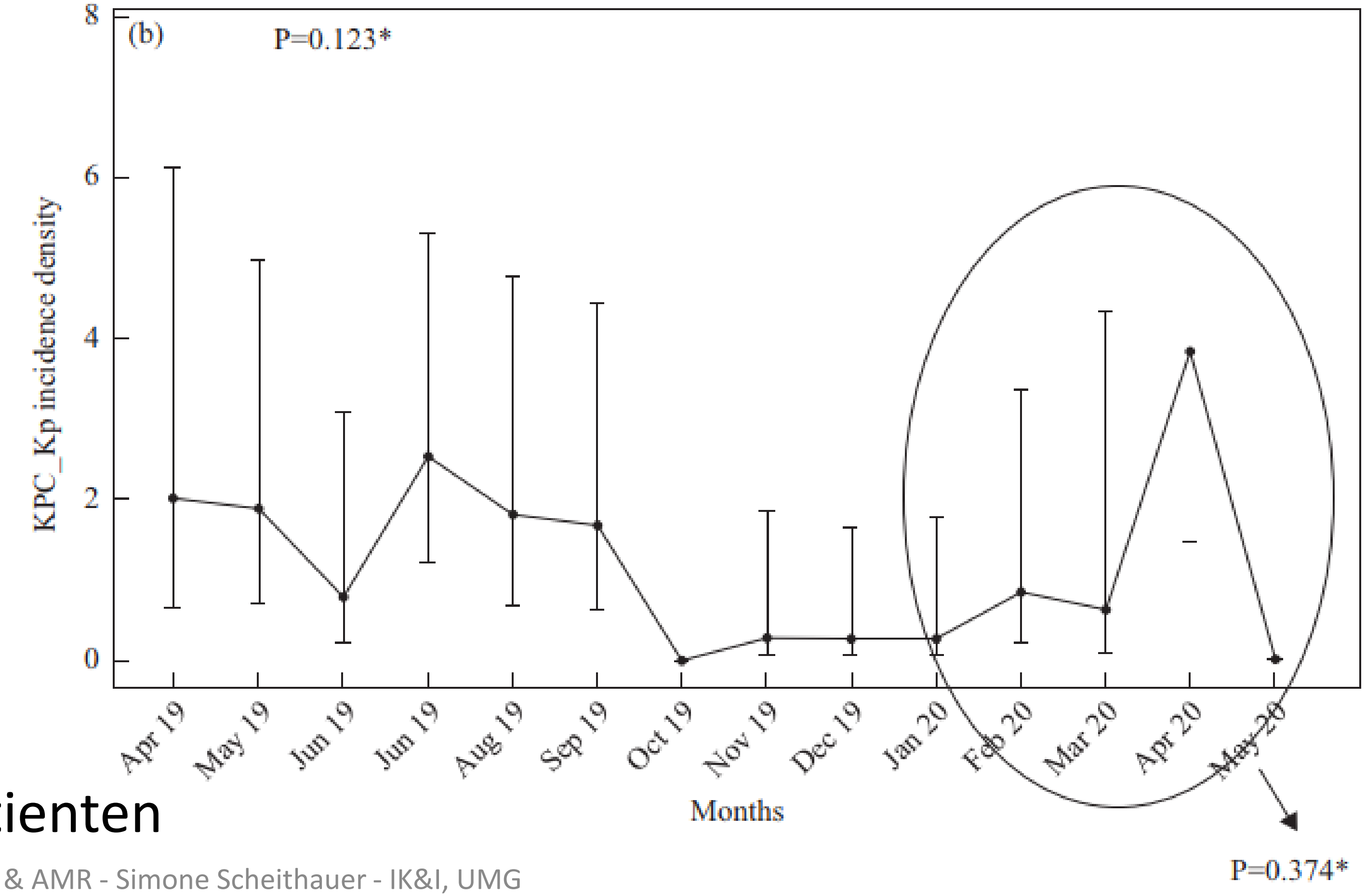
- Ja/nein?
- Kolonisation vs. Infektion?

Practice Points

Journal of Hospital Infection 109 (2021) 29–31

Impact of SARS CoV-2 pandemic on carbapenemase-producing *Klebsiella pneumoniae* prevention and control programme: convergent or divergent action?

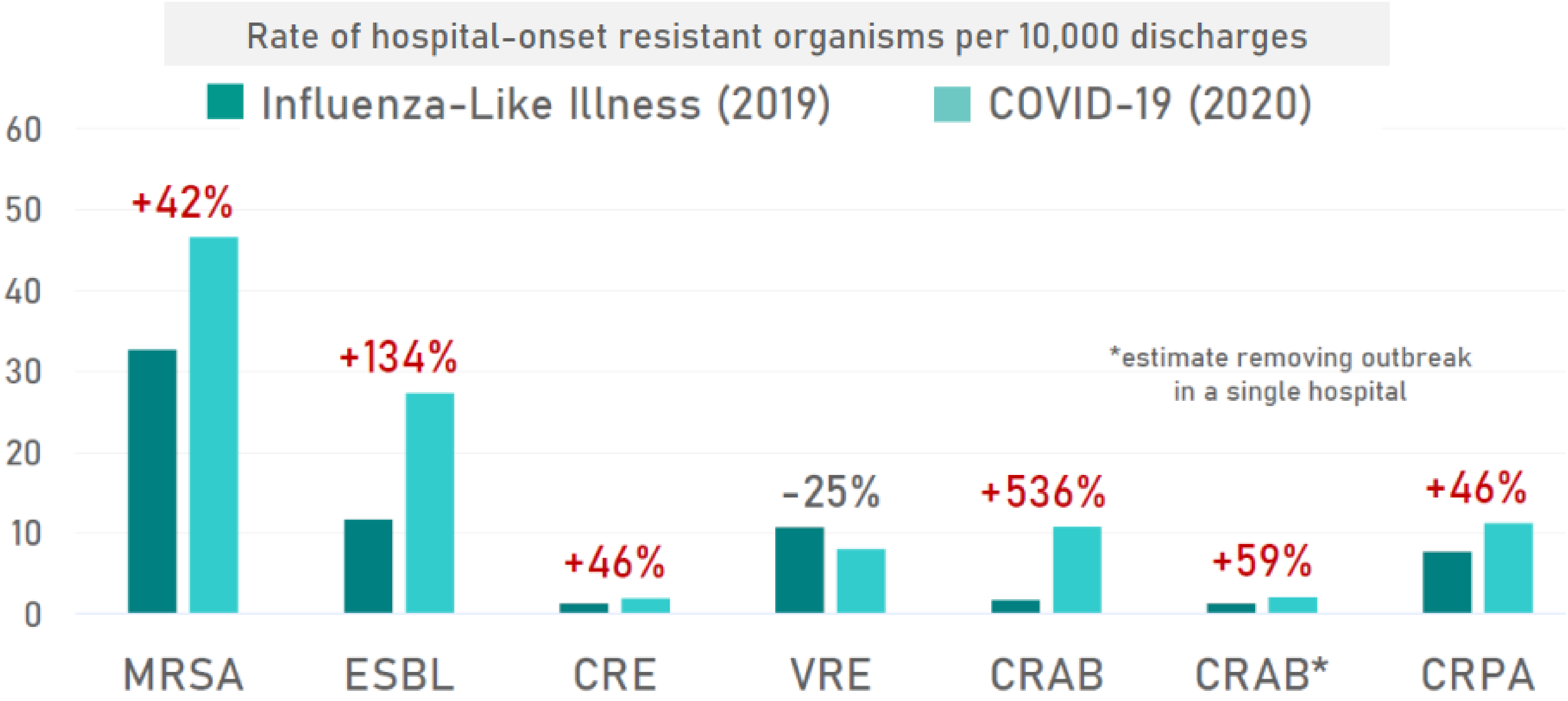
V. Belvisi [a,*], C. Del Borgo [a], S. Vita [b,c], P. Redaelli [b], P. Dolce [d], D. Pacella [d],
B. Kertusha [a,b], A. Carraro [b], R. Marocco [a], M. De Masi
M. Lichtner [a,b], for IPC Program Working Group[†]



- Italy, single center
- First wave
- Endpunkt: Kolonisation
- Result: sharp increase
- N.B.: ICU war COVID-ICU

d.h. Anstieg = Inzidenz in COVID-19 Patienten

AR Pathogens in Hospitalized Patients:
Hospital-Onset Infections Only



Source: Premier Healthcare Database

Preliminary unpublished analysis, please do n

Zweites Zwischenfazit: Welt

THE INTERSECTION OF

Antibiotic Resistance (AR), Antibiotic Use (AU), and COVID-19

for the Presidential Advisory Council on Combating Antibiotic-Resistant Bacteria

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February 10, 2021

Zweites Zwischenfazit: Welt

- Healthcare infection control is critical to fight AR and COVID-19.
  - No clear evidence that patients with COVID-19 are more susceptible to bacterial/fungal infections—similar frequency as patients with influenza-like illness (ILI). However, sporadic outbreaks of AR infections in COVID-19 units & higher rates of hospital-onset infections are being reported.
  - COVID-19 can create a perfect storm for AR infections in healthcare settings: increased length of stay, increased number of patients, staffing shortages, sick patients, antibiotic use, challenges implementing infection prevention and control.
- Some preliminary analyses have identified increases in hospital-onset resistant infections (e.g., MRSA) and potential changes for community-onset infections.
  - Given the significant changes in healthcare utilizations and, possibly, lab testing (due to supply issues) during the pandemic, additional analyses are needed to assess the net impacts on AR threat pathogens.
- Findings highlight continued importance of healthcare infection control as one of the foremost tools needed to address emerging infectious diseases.

Preliminary unpublished analysis, please do not reproduce without permission

MRE- Epidemiologie

AMR
1
Die schleichende Pandemie

AMR
2
Während der SARS-CoV-2 Pandemie

AMR
3
Bei COVID-19 Patienten

Ausblick
4
?

Trends of Multidrug-Resistant Pathogens, Difficult to Treat Bloodstream Infections, and Antimicrobial Consumption at a Tertiary Care Center in Lebanon from 2015–2020: COVID-19 Aftermath

Amanda Chamieh [1,2,3], Rita Zgheib [3,4], Sabah El-Sawalhi [2,3], Laure Yammine [1], Gerard El-Hajj [5], Omar Zmerli [1], Claude Afif [1], Jean-Marc Rolain [2,3,*] and Eid Azar [1,*]

- Libanon, tertiary care center
- 1614 BK eingeschlossen
- Reduktion der BK Positivitätsrate um 16% (2019 auf 03-12/2020)
- Reduktion der CRE BSI/1000 PT um 64% (2019 auf 03-12/2020)
- Reduktion der VRE Efm BSI um 34% (2019 auf 03-12/2020)
- Reduktion der AB resistenten BK Isolate um 80% ($p<0.001$)
- Reduktion des Verbrauchs an „indizierten“ AB auf 175 DDD/ 1000 Patiententage ($p<0.001$)
- Carbapenemreduktion von 108 DDD/1000PD (2015-19) auf 31 DDD/1000 PT in 03-12/2020
- Optimierte Zusammenarbeit aller Infektionsmedizinisch Tätigen

International Journal of *Environmental Research and Public Health*

MDPI

Article

Reduction of Multidrug-Resistant (MDR) Bacterial Infections during the COVID-19 Pandemic: A Retrospective Study

Enrico Bentivegna [1,*], Michelangelo Luciani [1], Luca Arcari [2], Iolanda Santino [3,4], Maurizio Simmaco [3,4] and Paolo Martelletti [1,4]

- Case–control study to identify if the incidence of MDR bacterial infections
- IPC measures have been adopted to reduce nosocomial microorganism transmission
- 2017-2020, discharges over a four-month period (1.3.-30.06.), single center, Italy Rome.
- 1617 discharges: Significant reduction in the incidence of total MDR bacterial infections was observed during the pandemic compared to in prepandemic years ($p < 0.05$).
- Significant higher incidence of MDR bacterial infections in COVID-19 departments compared with other medical departments (29% vs 19%), with ESßL+ Klebsiella pneumoniaeas presenting the highest increase.
- This study demonstrates that maintaining a high level of preventive measurescould help tackle an important health problem such as that of the spread of MDR bacteria.

J Antimicrob Chemother
doi:10.1093/jac/dkab300
Online 02 September 2021
Antimicrobial Chemotherapy

Impact of the COVID-19 pandemic on the surveillance, prevention and control of antimicrobial resistance: a global survey

Sara Tomczyk[1]*, Angelina Taylor[1], Allison Brown[2], Marlieke E. A. de Kraker[3], Aiman El-Saed[4],

- The WHO Antimicrobial Resistance (AMR) Surveillance and Quality Assessment Collaborating Centres Network conducted a survey to assess the effects of COVID-19 on AMR surveillance, prevention and control.
- 10-12/2020, WHO Global Antimicrobial Resistance and Use Surveillance System (GLASS) national focal points completed a questionnaire, including Likert scales and open-ended questions. Seventy-three countries across income levels participated.
- Reduced availability of nursing, medical and public health staff for AMR was reported by 71%, 69% and 64%, respectively, whereas 67% reported stable cleaning staff availability.

Trans R Soc Trop Med Hyg 2021; **0**: 1–8
doi:10.1093/trstmh/trab048 Advance Access publication 0 2021

EW ARTICLE

Key considerations on the potential impacts of the COVID-19 pandemic on antimicrobial resistance research and surveillance

Jesús Rodríguez-Baño[a,b,c], Gian Maria Rossolini[d,e], Constance Schultsz[f], Evelina Tacconelli[g], Srinivas Murthy[h],

Hypothese: Antibiotic use in SARS-CoV-2 patients has exceeded the incidence of bacterial coinfections suggesting inappropriate and excessive prescribing.

Even in settings with established AMS programmes, there were weaknesses….
AMR surveillance and AMS have been deprioritised …..
….highlights deficiencies in AMR containment and mitigation strategies …..
….the need to implement diagnostic stewardship to assess the global incidence of coinfections …
….supply chains and preventing drug shortages and stock outs.
….making a case for implementation research on AMR

CDC & AR experts discussed addressing AR after COVID-19 (July 2021)

Steve Morrison* says that to address antibiotic resistance in a post-pandemic world, the U.S. **needs strong and adaptive leadership, data and accountability to prove successes, sustained yearly funding** through bipartisan support from Congress, and a strong coalition of external partners to make change.

Dawn Sievert** reported rising infection rates of pathogens that were stable before the COVID-19 pandemic. This rise highlights the plight of healthcare facilities in the U.S., where healthcare staff and standard IPC practices were strained—and as vulnerable patients were placed in **overcrowded** units—allowing for opportunistic healthcare-associated pathogens, such as carbapenem-resistant *Acinetobacter baumannii* and *Candida auris,* to spread.

Ben Park*** underscored that **IPC is the cornerstone of a resilient healthcare system**, but these programs **take years of work and dedication** by healthcare workers to establish. The pandemic overwhelmed health systems domestically and internationally, so many **IPC programs lost progress as they lost workers**. Park emphasized **that IPC is a best buy for public health**– an infection prevented is a live saved. That is why CDC is building the upcoming **Global Action in Healthcare Network (**Global Antimicrobial Resistance Laboratory & Response Network), which will focus on prevention, detection, and response to break the chain of transmission of antibiotic-resistant pathogens and emerging threats in healthcare facilities around the world.

Senior Vice President, Center for Strategic and International Studies **Lead Science Advisor for the Antibiotic Resistance Coordination and Strategy Unit at CDC

*** Director of the International Infection Prevention and Control Program at CDC

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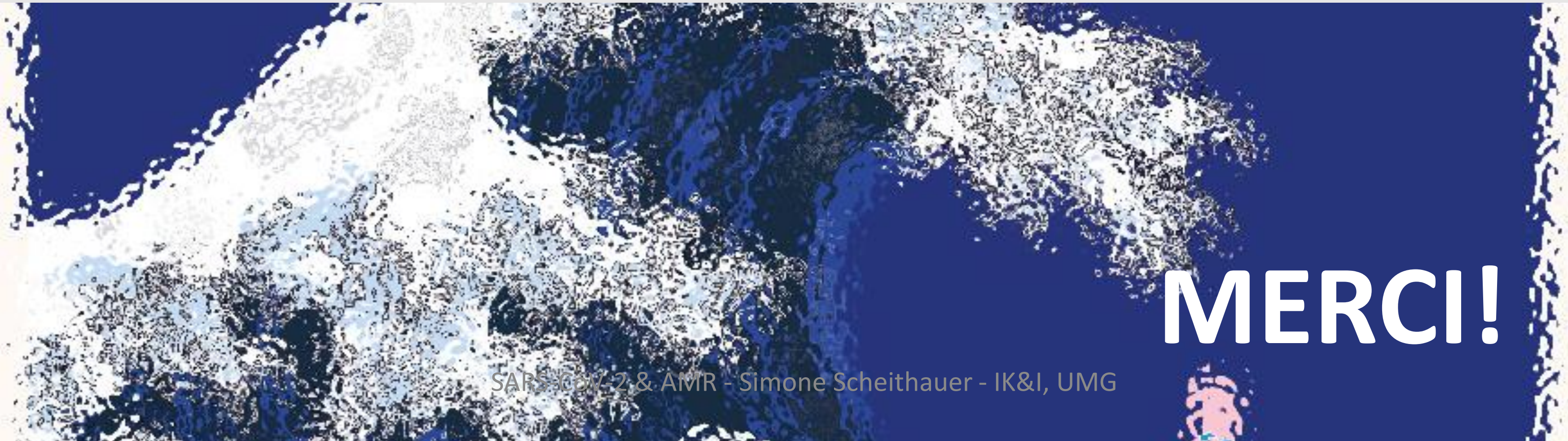
*** Director of the International Infection Prevention and Control Program at CDC

FAZIT

- Zusammenhänge sind komplex, Einflußfaktoren vielfältig
- Infection control ≠ Infection Control
- Aussagekraft kleiner oder sehr grober Auswertungen begrenzt
- Vorbereitung einer resilienteren Strategie auf dem Boden kollaborativer Analysen



MERCI!