Surveillance in Europa - wo stehen wir?

13. Symposium zum Internationalen Tag der Händehygiene | 05. Mai 2026

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Nationales Referenzzentrum für Surveillance nosokomialer Infektionen

Keine Interessenskonflikte

1 Hintergrund

Was bedeutet Surveillance nosokomialer Infektionen?

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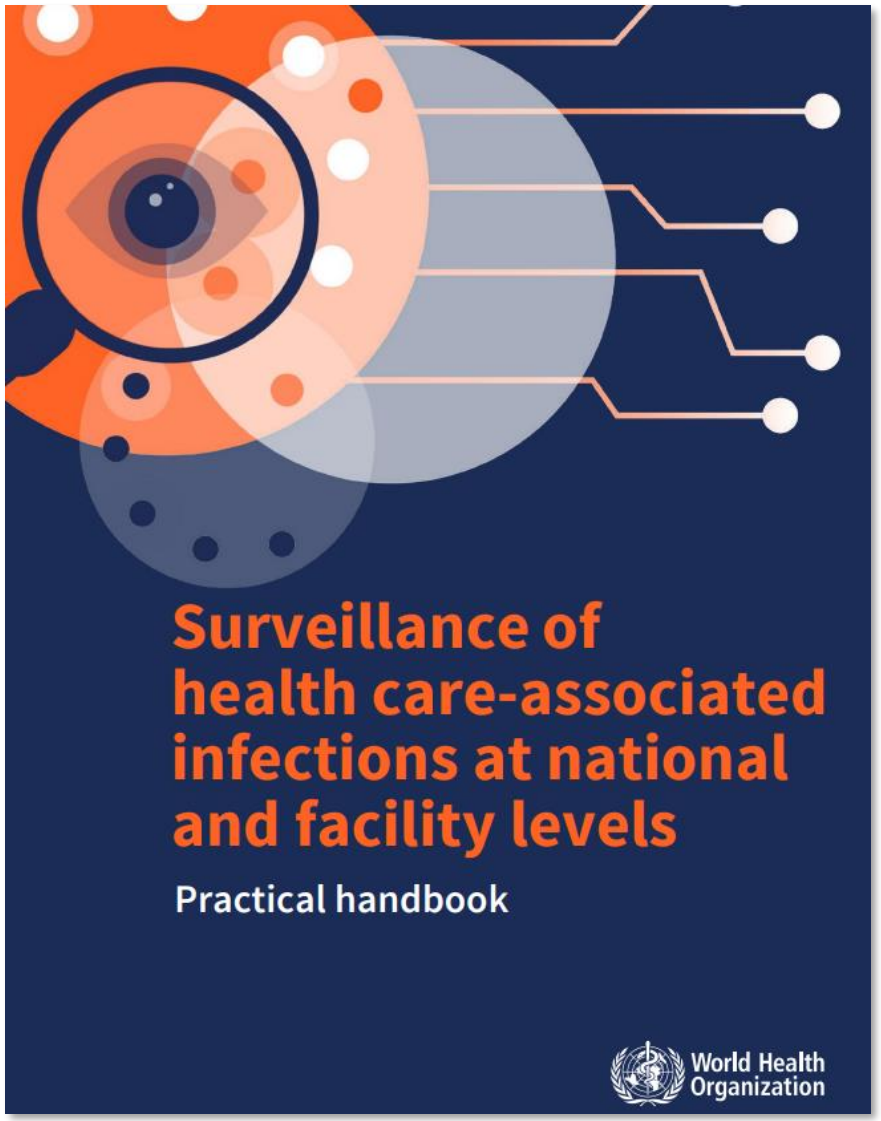
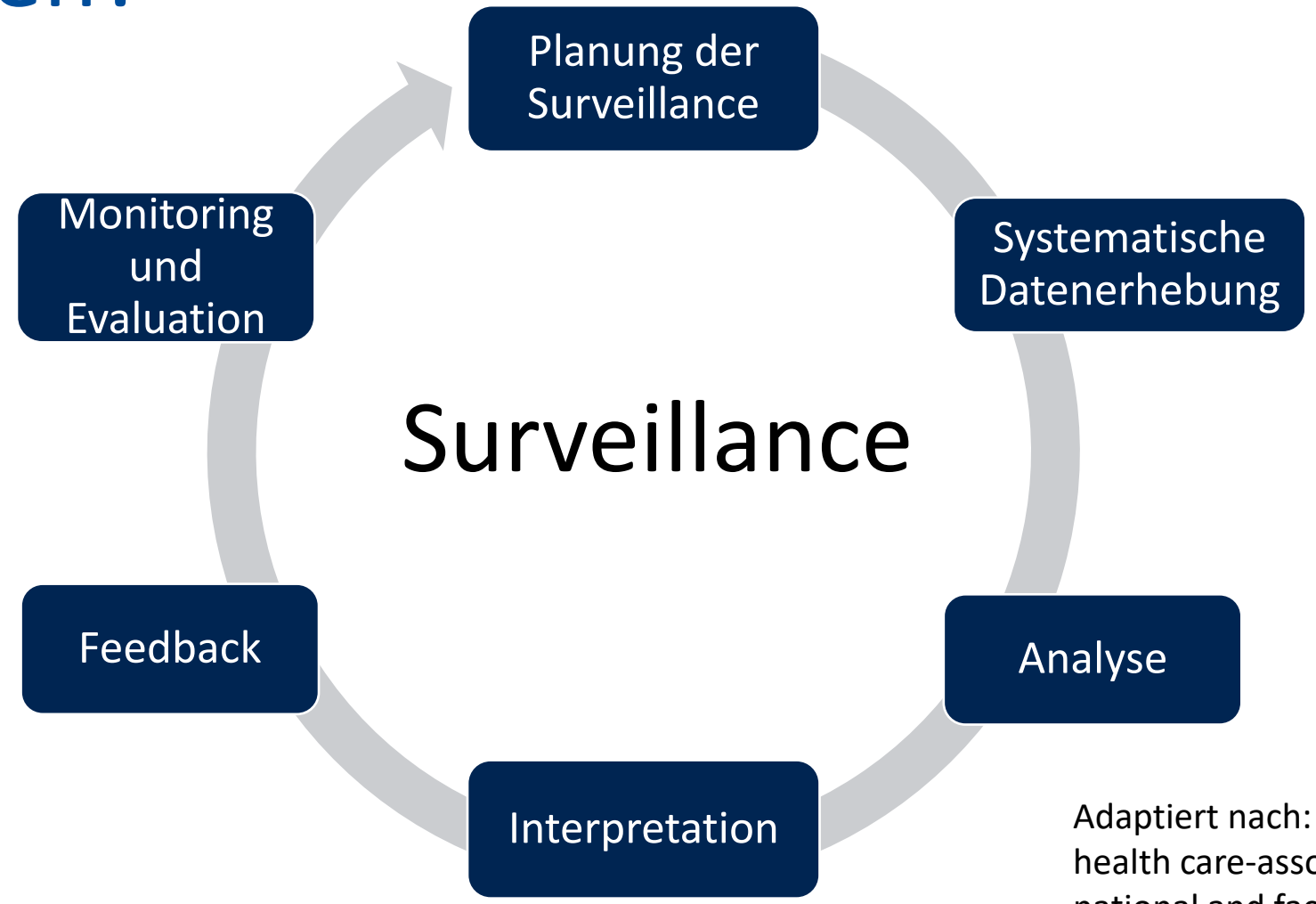
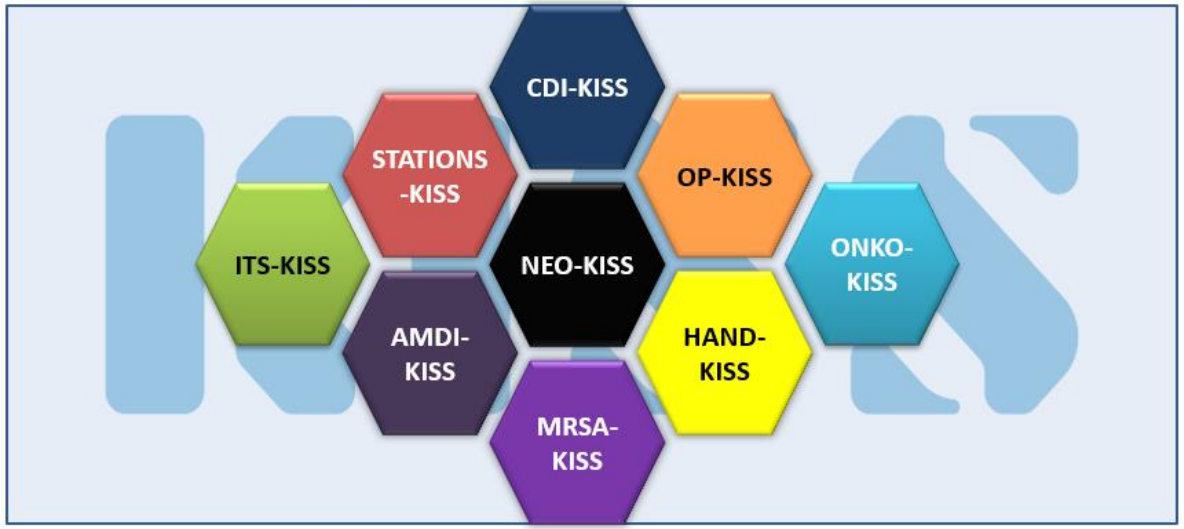


Was bedeutet Surveillance nosokomialer Infektionen?



Adaptiert nach: WHO. Surveillance of health care-associated infections at national and facility level

Ist-Zustand der Infektionssurveillance



National im Krankenhaus-Infektions-Surveillance-System (KISS) weit verbreitet (>1.000 teilnehmende Krankenhäuser)

…aber

Manueller Prozess

Hohe Bindung von Personal/Arbeitszeit

Ist-Zustand der Infektionssurveillance

Infection, Disease & Health (2016) 21, 36–40

Available online at www.sciencedirect.com

ScienceDirect

journal homepage: http://www.journals.elsevier.com/infection-disease-and-health/

RESEARCH PAPER

Time spent by infection control professionals undertaking healthcare associated infection surveillance: A multi-centred cross sectional study

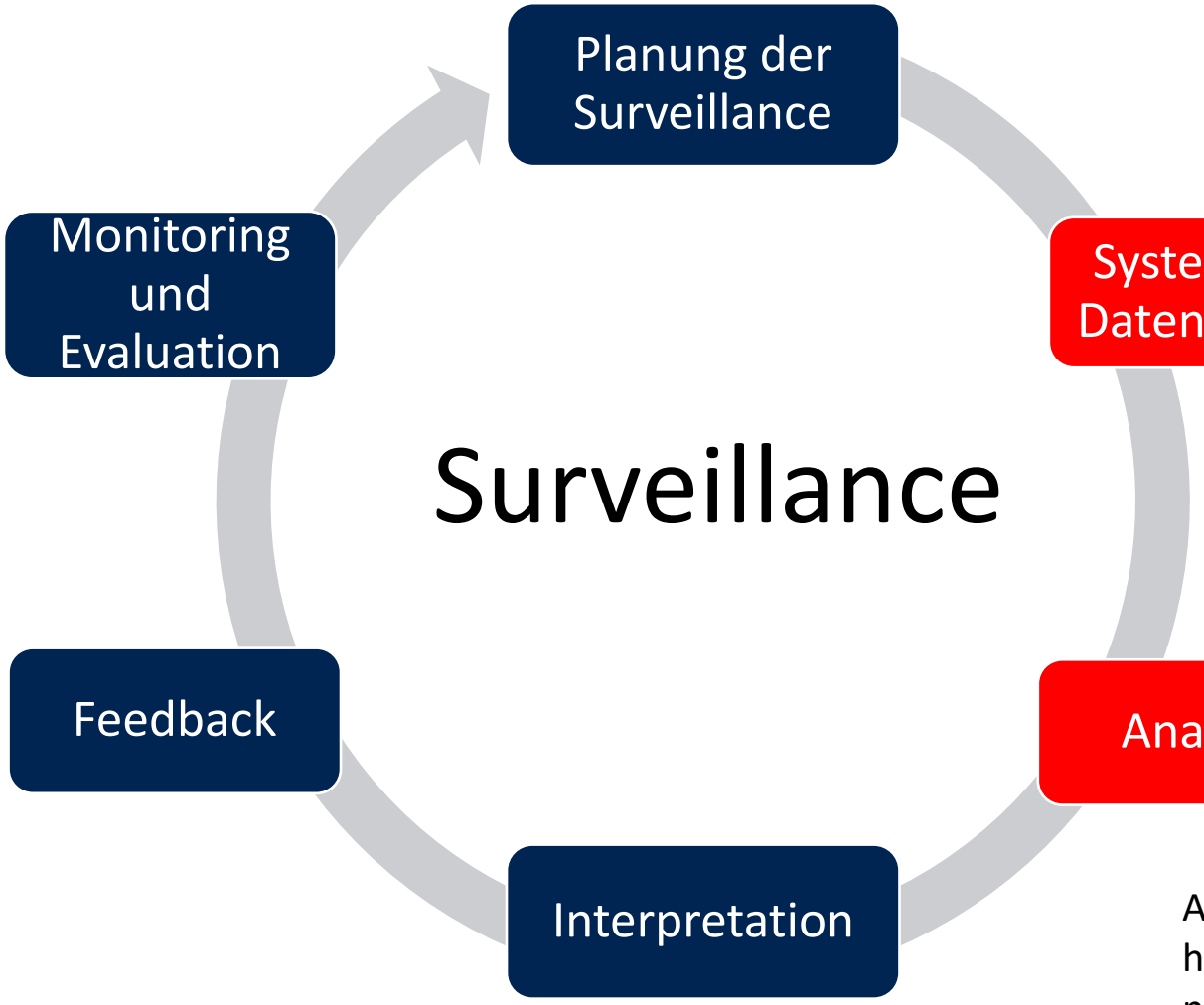
Brett G. Mitchell [a,b,*], Lisa Hall [c], Kate Halton [c], Deborough MacBeth [d], Anne Gardner [a]

Umfrage in 138 australischen Krankenhäusern

- 36% der Arbeitszeit von Hygienefachkräften für Surveillance benötigt

- Davon 56% zum Sammeln der Daten

Was bedeutet „automatische“ Surveillance?



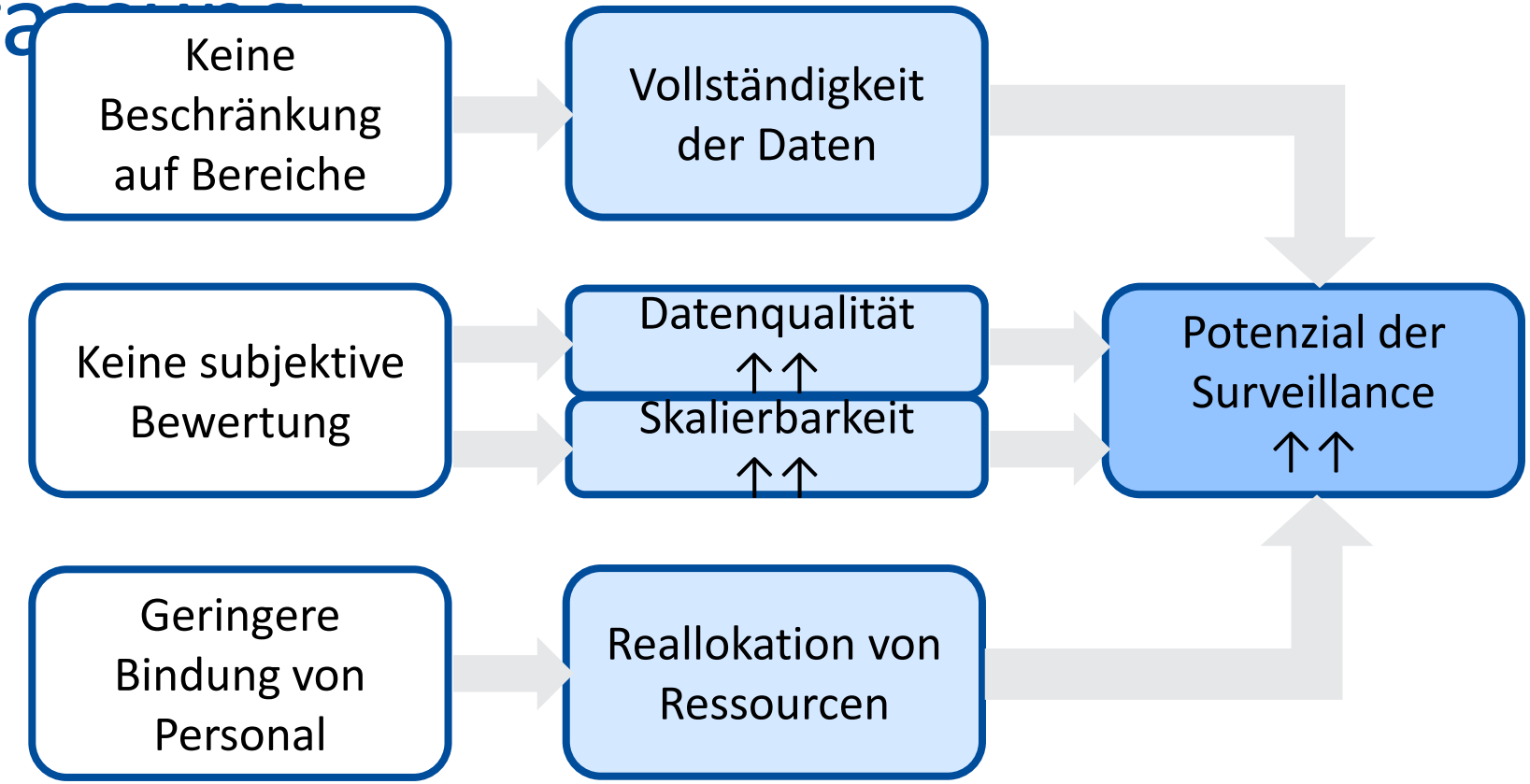
(Bisher) Fokus auf Teilaspekte der Surveillance

Adaptiert nach: WHO. Surveillance of health care-associated infections at national and facility level

Ausprägungen von Automatisierung

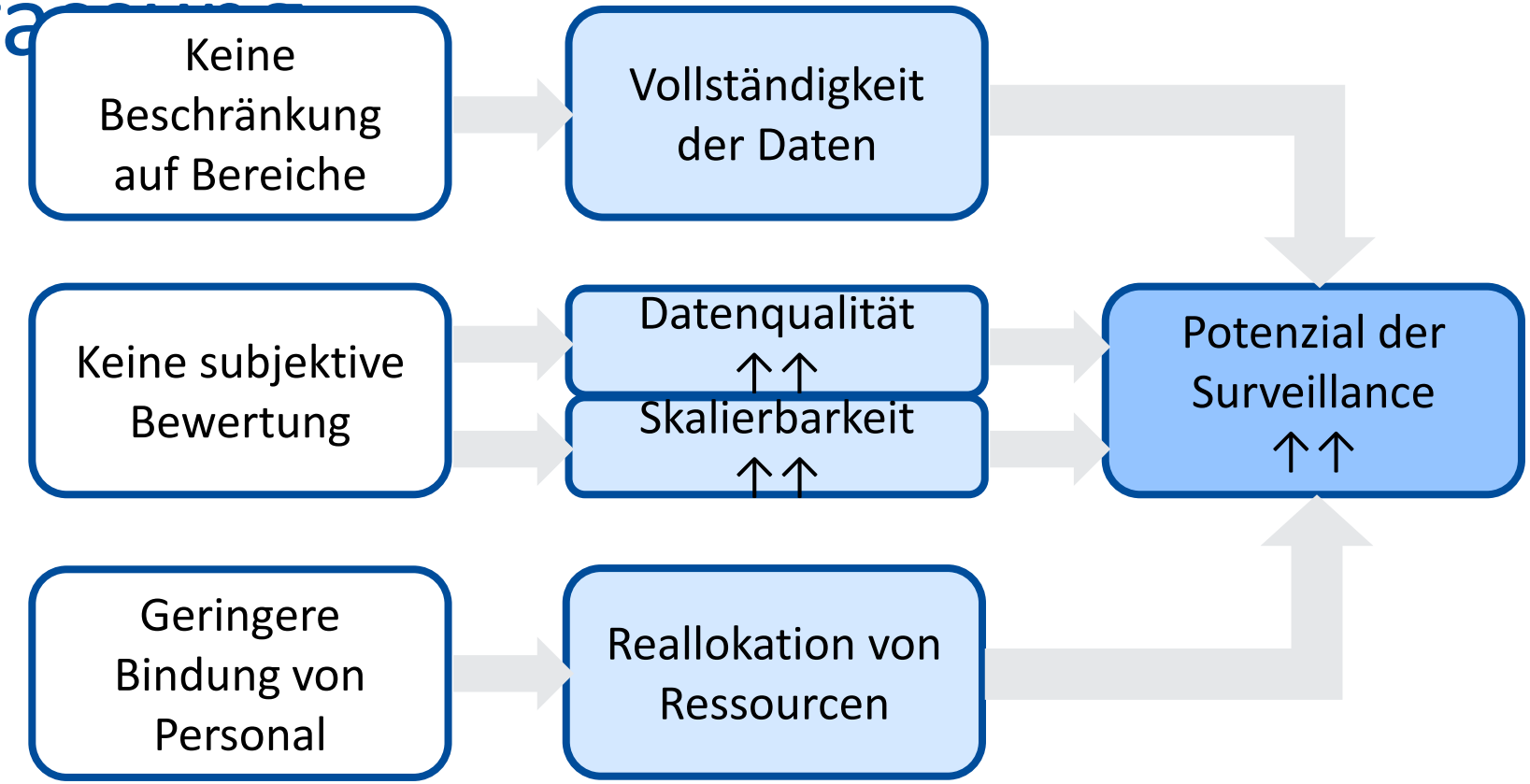
- **Voll automatisch:** Umfasst alle Schritte der HAI-Identifikation (Datenerhebung und –bewertung, inkl. Feststellung einer HAI)
- **Semi-automatisch:** Datenerhebung und –bewertung bis hin zur Einschätzung möglicher HAIs, finale Festlegung bleibt menschliche Aufgabe
- **Automatische Zählung der Nenner**
- **Manuell**

Mögliche Vorteile automatisierter Datenerfassung



Fazit Automatisierung: eröffnet bisher ungenutztes Surveillancepotenzial

Mögliche Vorteile automatisierter Datenerfassung



ABER: Benötigt digital verfügbare Daten, Standardisierung und IT-Personalncepotenzial

2 Status Quo

Status quo und Machbarkeit automatischer Surveillance

- Bisher nur in kleinen Stichproben oder für einzelne HAI / einzelne Länder erhoben

Journal of Hospital Infection 122 (2022) 35–43

Available online at www.sciencedirect.com

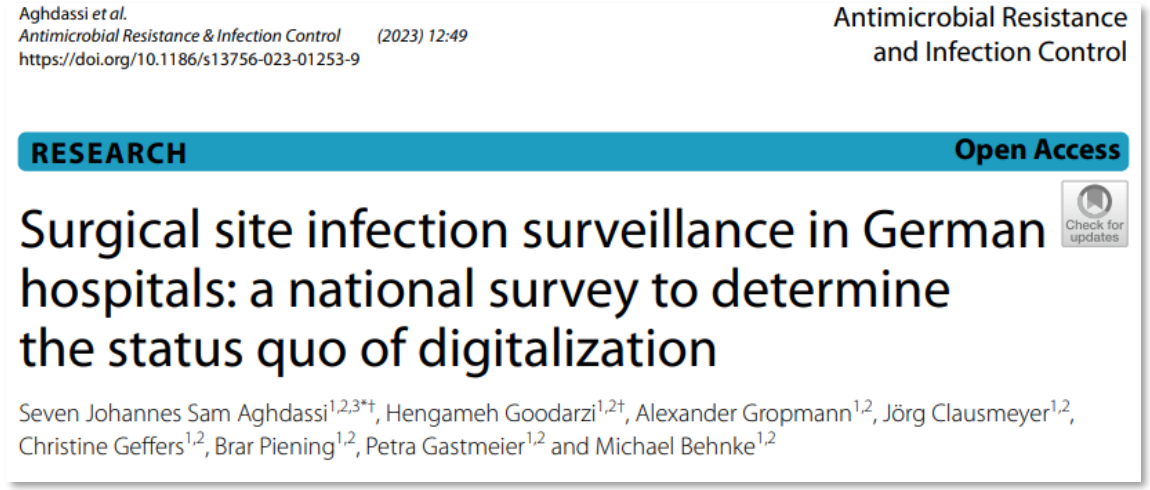
Journal of Hospital Infection

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

Automated surveillance systems for healthcare-associated infections: results from a European survey and experiences from real-life utilization

J.D.M. Verberk[a,b,c,*,†], S.J.S. Aghdassi[d,e,†], M. Abbas[f], P. Nauclér[g,h], S. Gubbels[i], N. Maldonado[j], Z.R. Palacios-Baena[j], A.F. Johansson[k], P. Gastmeier[d], M. Behnke[d], S.M. van Rooden[b,c], M.S.M. van Mourik[a]

[a] *Department of Medical Microbiology and Infection Prevention, University Medical Centre Utrecht, Utrecht, the Netherlands*
[b] *Julius Centre for Health Sciences and Primary Care, University Medical Centre Utrecht, Utrecht, the Netherlands*
[c] *Department of Epidemiology and Surveillance, Centre for Infectious Diseases Control, National Institute for Public Health and the Environment, Bilthoven, the Netherlands*



Aghdassi *et al.*
Antimicrobial Resistance & Infection Control (2023) 12:49
https://doi.org/10.1186/s13756-023-01253-9

Antimicrobial Resistance and Infection Control

RESEARCH Open Access

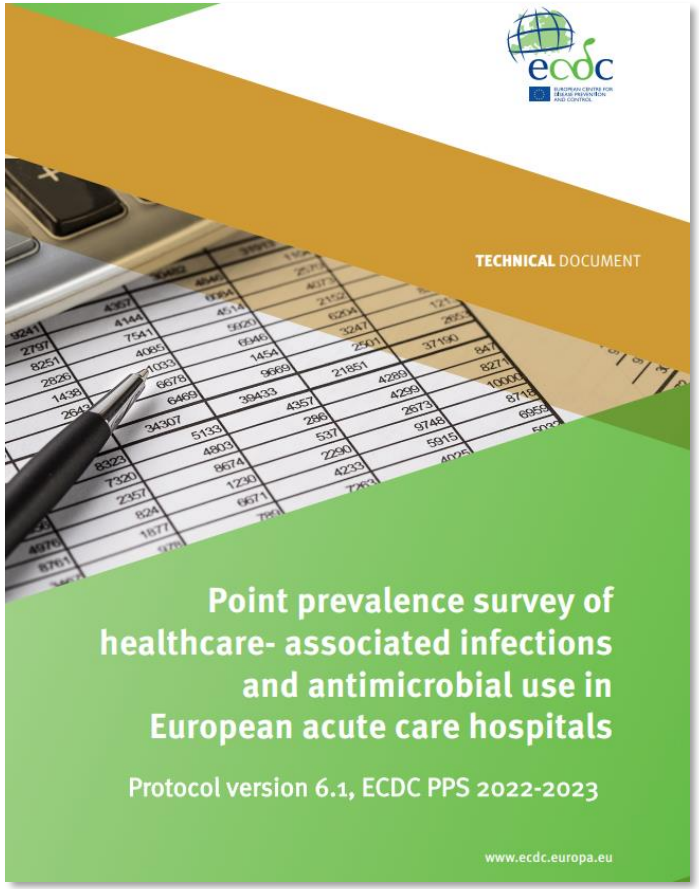
Surgical site infection surveillance in German hospitals: a national survey to determine the status quo of digitalization

Seven Johannes Sam Aghdassi[1,2,3*†], Hengameh Goodarzi[1,2†], Alexander Gropmann[1,2], Jörg Clausmeyer[1,2], Christine Geffers[1,2], Brar Piening[1,2], Petra Gastmeier[1,2] and Michael Behnke[1,2]

Status quo und Machbarkeit automatischer Surveillance

- Wie europaweite Erhebung möglich?

→ **Punktprävalenzstudie (PPS) der ECDC**



2. 1 Methoden

Methoden

- Zusammenstellung eines Fragenkatalogs durch das PRAISE*-Netzwerk zum aktuellen Grad der Automatisierung und der Machbarkeit
- Integration der Fragen in die PPS 2022/23
- Freiwillige Übernahme der Fragen ins länderspezifische PPS-Protokoll

*PRAISE: Providing a Roadmap for Automated Infection Surveillance in Europe

Methoden

- **Deskriptive Analyse** der Antworten (gesamt und aggregiert nach geografischen Regionen)
- Vergleiche der aktuellen Automatisierung bzw. der Machbarkeit durch **Berechnung zusammenfassender Levels**

Current degree of automation of surveillance of HAIs:

	0.Fully manual	1.Automated denominator	2.Semi - automated	3.Fully automated	4. other	9. Not performed
Surgical site infection*						
Healthcare -associated BSI						
Central line -associated BSI						
Catheter -associated UTI						
Healthcare -associated pneumonia						
Ventilator -associated pneumonia						
Clostridoides difficile infection						

Feasibility of automated HAI surveillance:

Data source	Data are stored digitally (a)	Data are structured and well-defined (b)
Surgical procedures (procedure code such as ICD -10, date of surgery)		
Admission and discharge dates, hospital level		
Admission and discharge dates, unit level		
Use of central lines (date of insertion/extraction, type)		
Use of mechanical ventilation (start date, end date)		
Use of urinary catheters* (date of insertion/extraction)		
Microbiology culture results (culture result, date, specimen type)		
Antimicrobial prescriptions (ATC code, start date, end date)		

2.2 Ergebnisse

Ergebnisse aus der PPS-2022/23

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Ergebnisse aus der PPS-2022/23

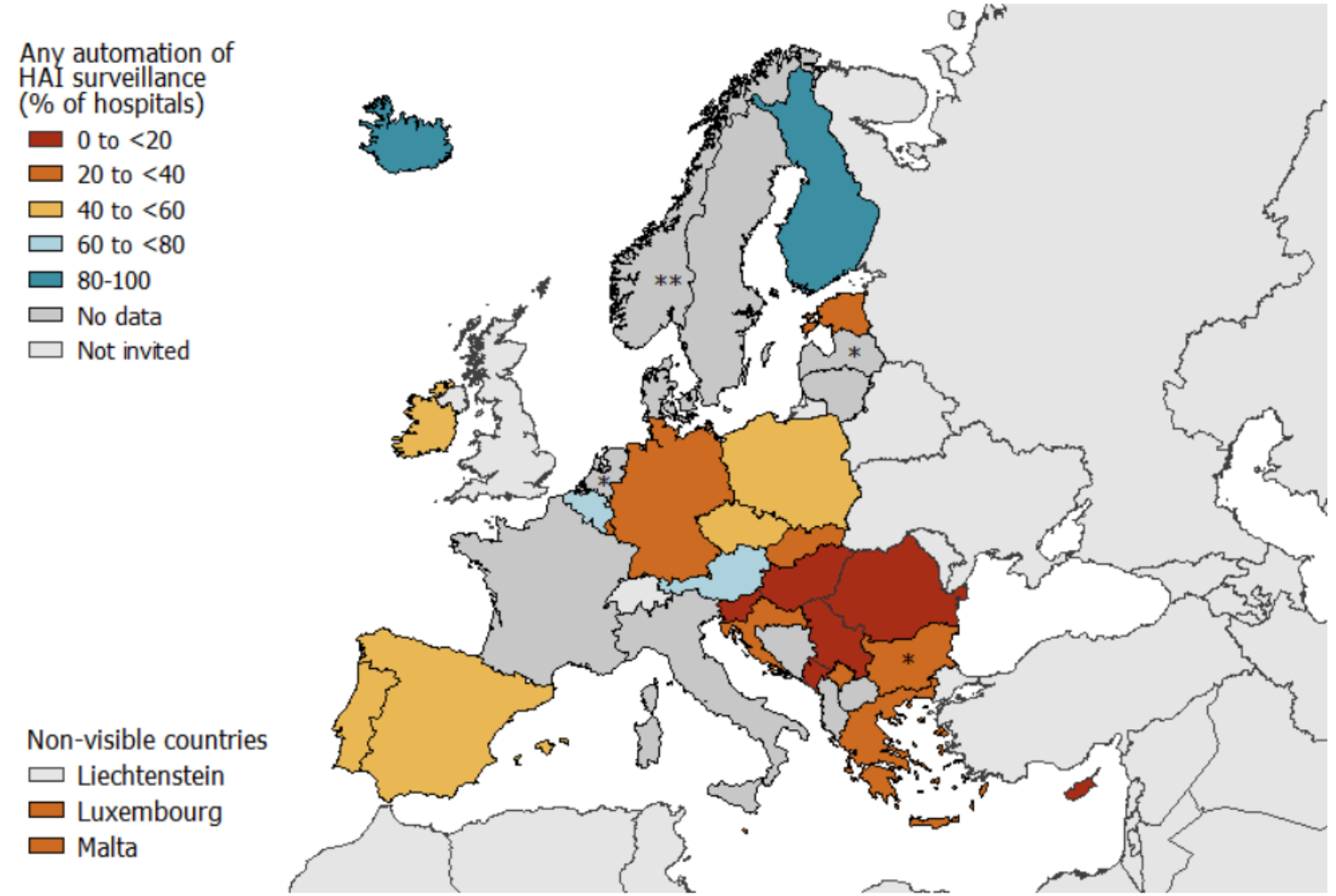
Table 34. Current degree of automation of surveillance of HAIs in acute care hospitals (n=907), ECDC PPS 2022–2023

Type of HAI	No. of hospitals replying	% Surveillance not performed	No. of hospitals with surveillance	% Fully manual	% Use of electronic data without automation	% Automated denominator (a)	% Semi-automated (b)	% Fully automated (c)	% Any automation
Surgical site infection	900	20.6	715	54.4	9.9	12.0	21.1	2.5	35.7
Hospital-onset BSI	902	14.5	771	51.8	11.5	12.7	21.1	2.9	36.7
Central line-associated BSI	900	15.2	763	54.3	11.5	11.5	19.7	3.0	34.2
Catheter-associated UTI	901	24.5	680	56.5	11.2	8.7	20.9	2.8	32.4
Hospital-acquired pneumonia	895	32.4	605	58.0	11.6	8.4	19.2	2.8	30.4
Ventilator-associated pneumonia	894	29.2	633	56.2	11.5	8.8	20.5	2.8	32.2
C. difficile infection	900	12.2	790	52.4	11.3	13.8	19.0	3.5	36.3

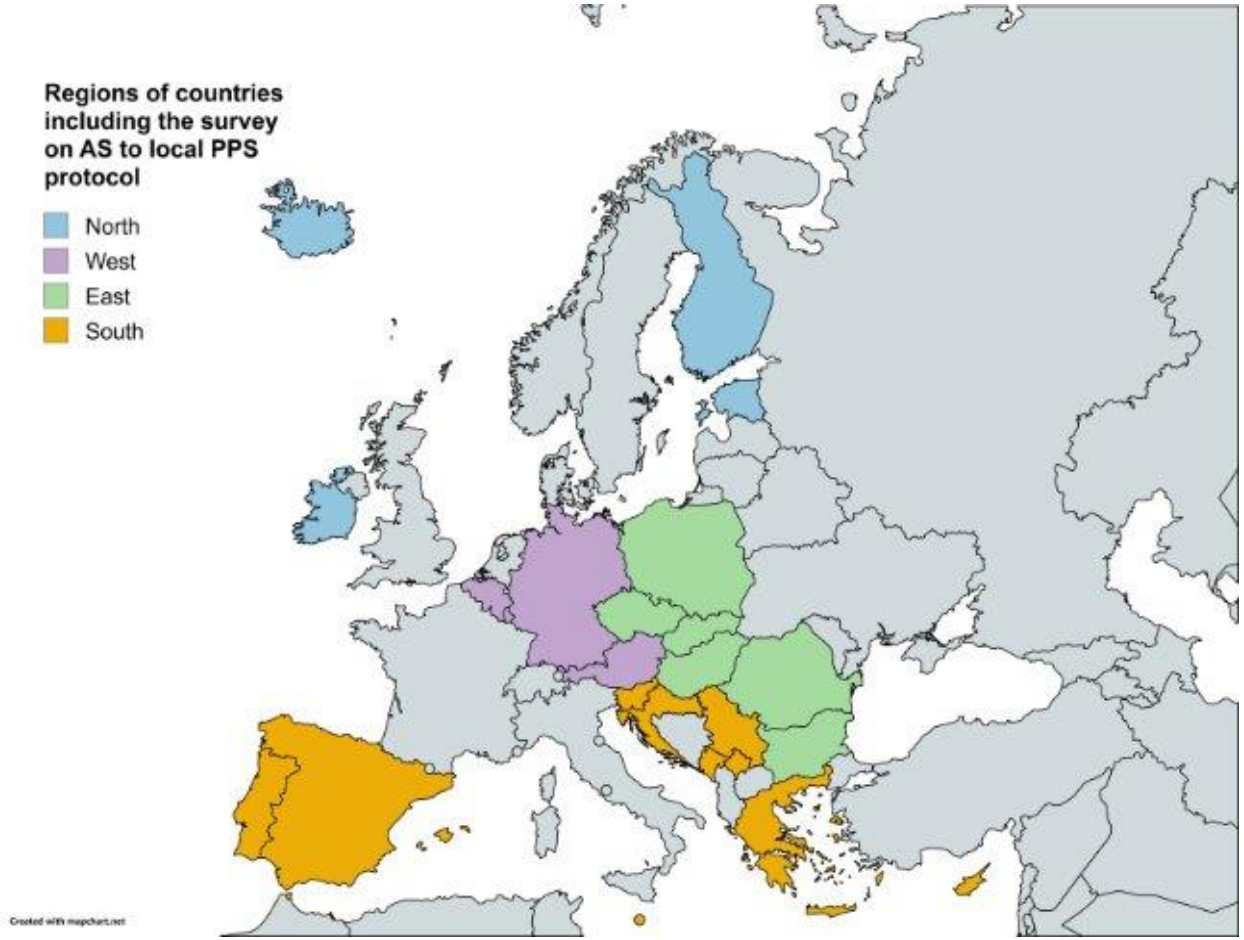
(a) Automated denominator collection: Automated rule-based routine selection of procedures or patient- days to be included in the surveillance, e.g. based on admission to specific wards, surgical procedures or use of devices such as central lines; Codes are selected without manual steps and directly linked to a digital record for surveillance purposes. Subsequently charts are manually reviewed to detect HAI in the selected patients.

Ergebnisse aus der PPS-2022/23

Figure 97. Percentage of hospitals reporting any automation of HAI surveillance by country, ECDC PPS 2022–2023



Ergebnisse aus Sekundäranalyse



Hospitals (from 31 participating countries) included in final PPS analysis

n = 1332

Hospitals in countries including AS questions in national PPS protocol (24 of 31 countries)

n = 1040

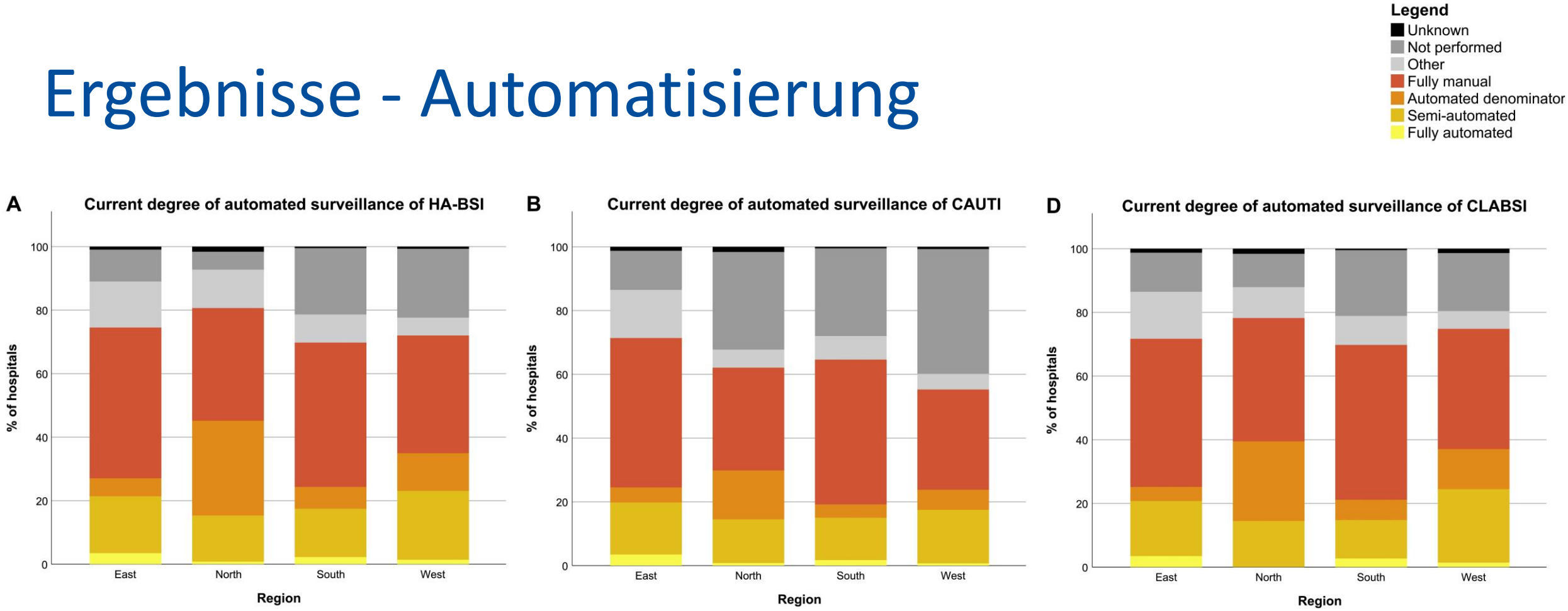
Hospitals responding to AS questions

n = 992
(Complete response: n=680)

Eurosurveillance, in press

Wie hoch ist der Grad der Automatisierung der CLABSI-Surveillance an Ihrem Krankenhaus

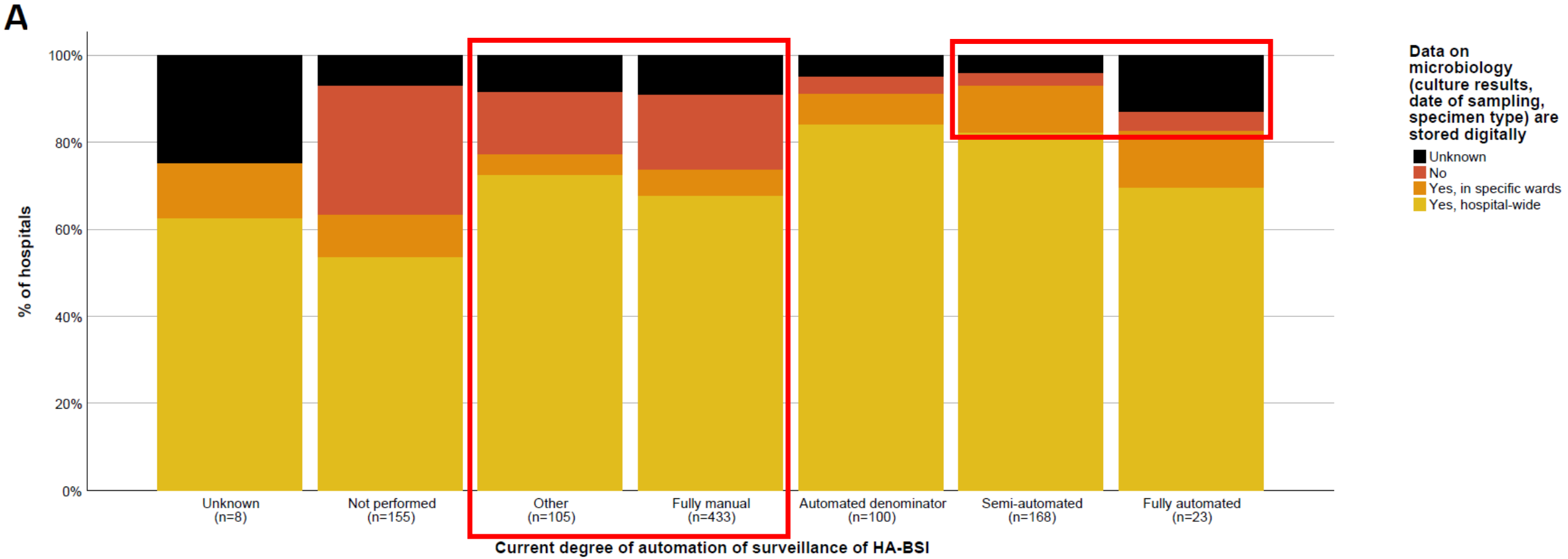
Ergebnisse - Automatisierung



Fazit: 70-80% aller Krankenhäuser entweder keine Surveillance oder rein manuell

Eurosurveillance, in press

Ergebnisse - Machbarkeit



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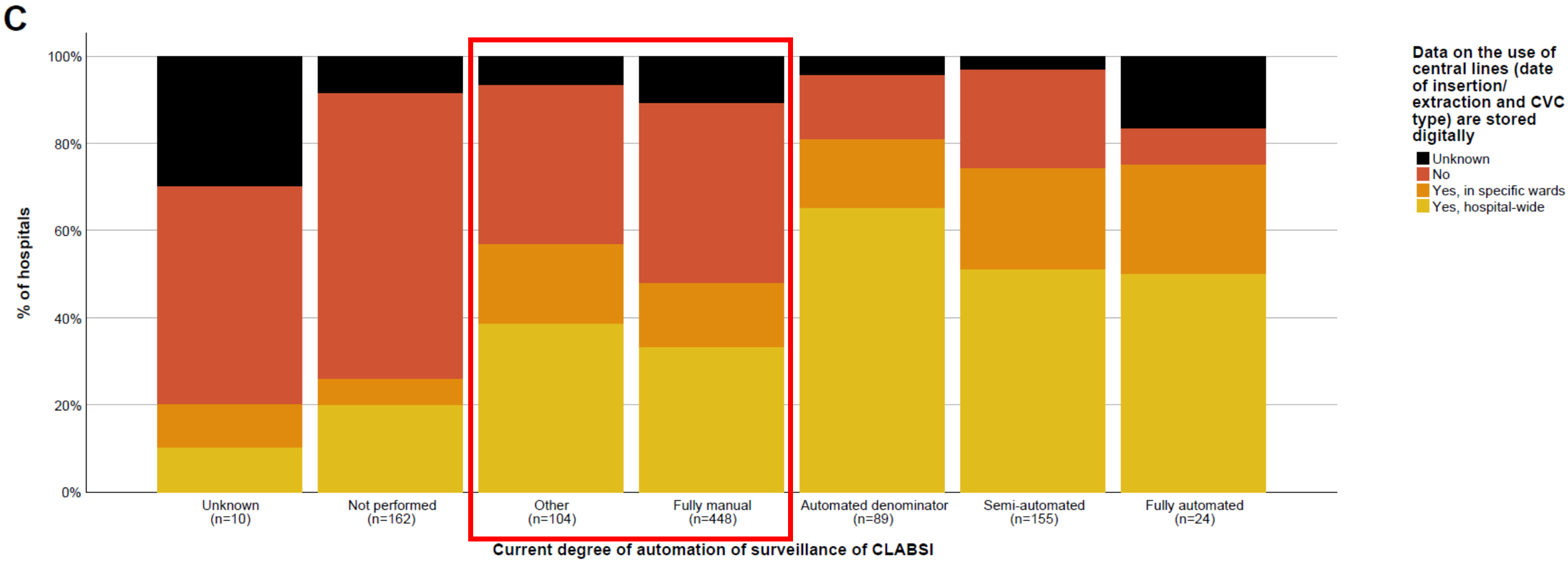
Eurosurveillance, in press

Ergebnisse - Machbarkeit



Fazit: In ca. 50% der Krankenhäuser mit aktuell vor allem manueller Surveillance liegen notwendige Daten bereits digital vor

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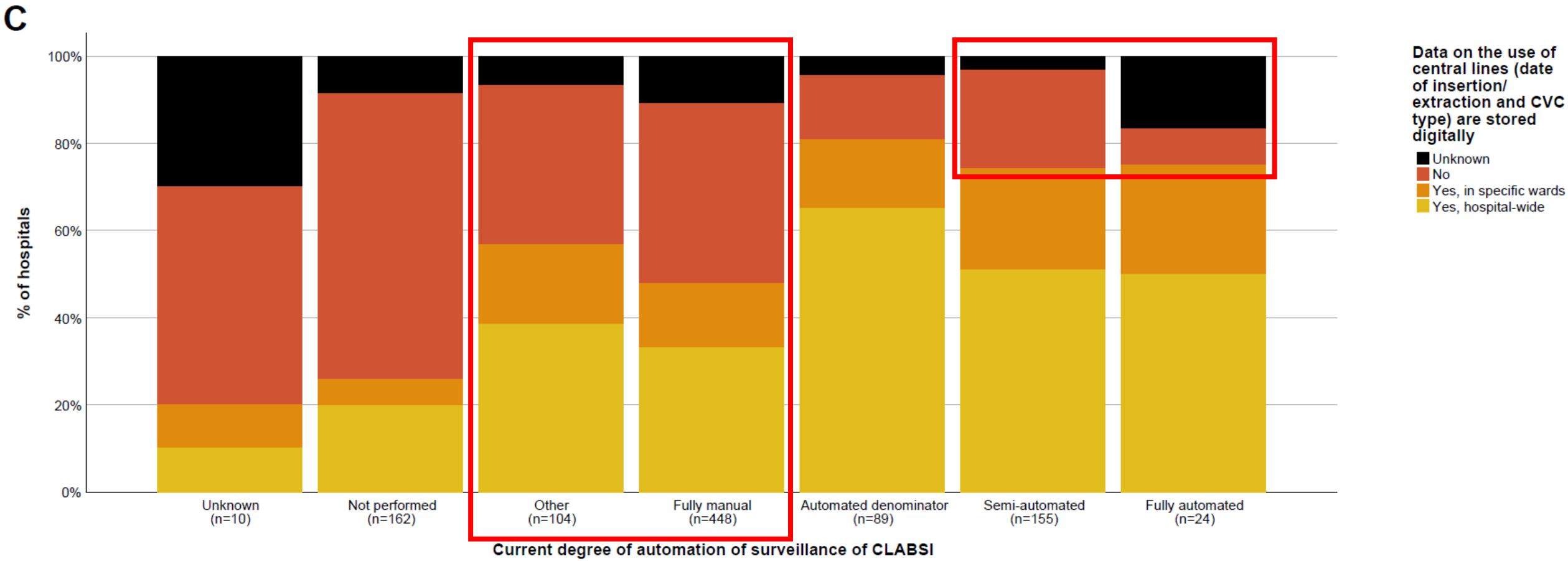
Eurosurveillance, in press

Ergebnisse - Plausibilität



Fazit: Einige (wenige) Krankenhäuser mit vermeintlich voll automatischer Surveillance haben notwendige Datenelemente nicht digitalisiert

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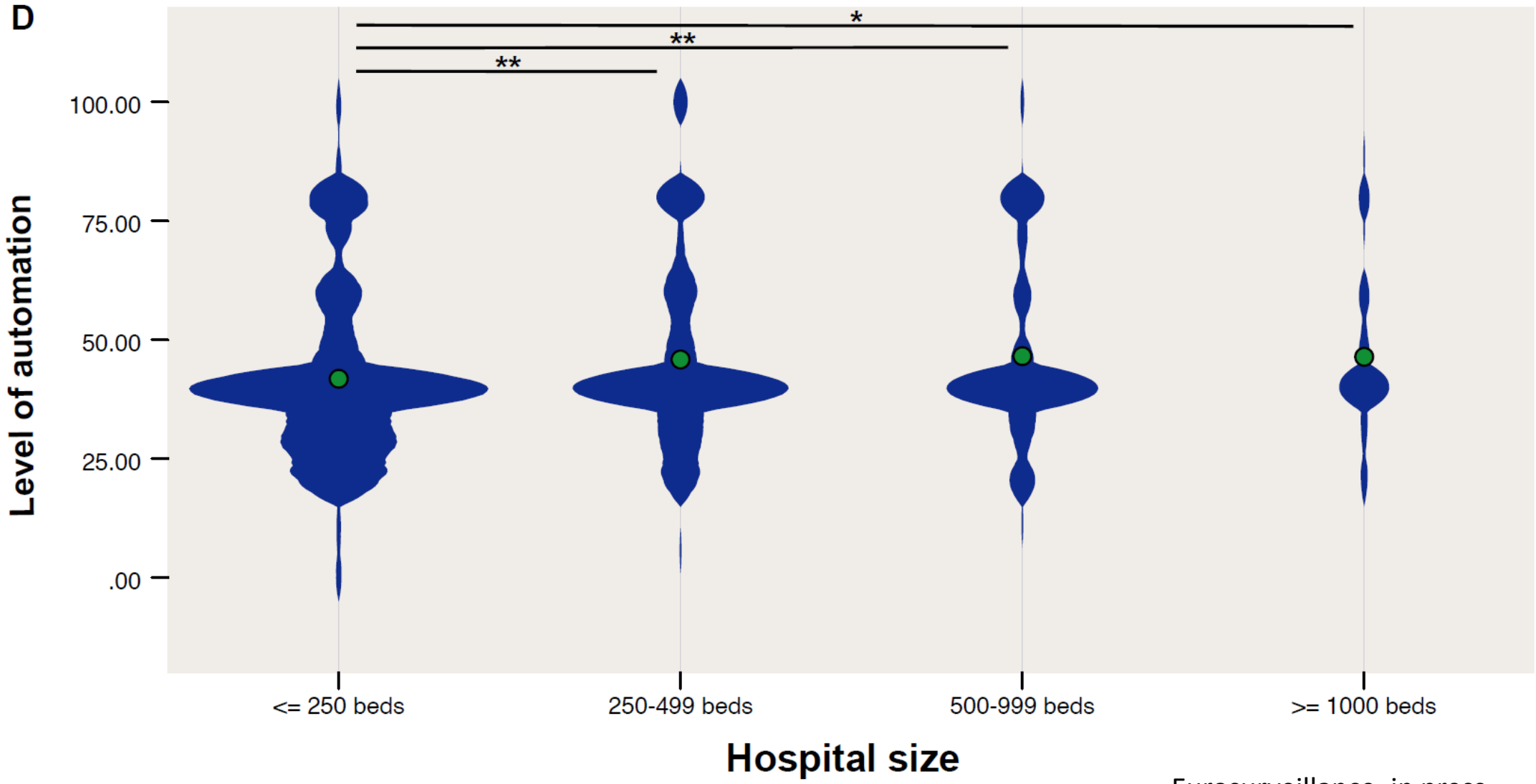
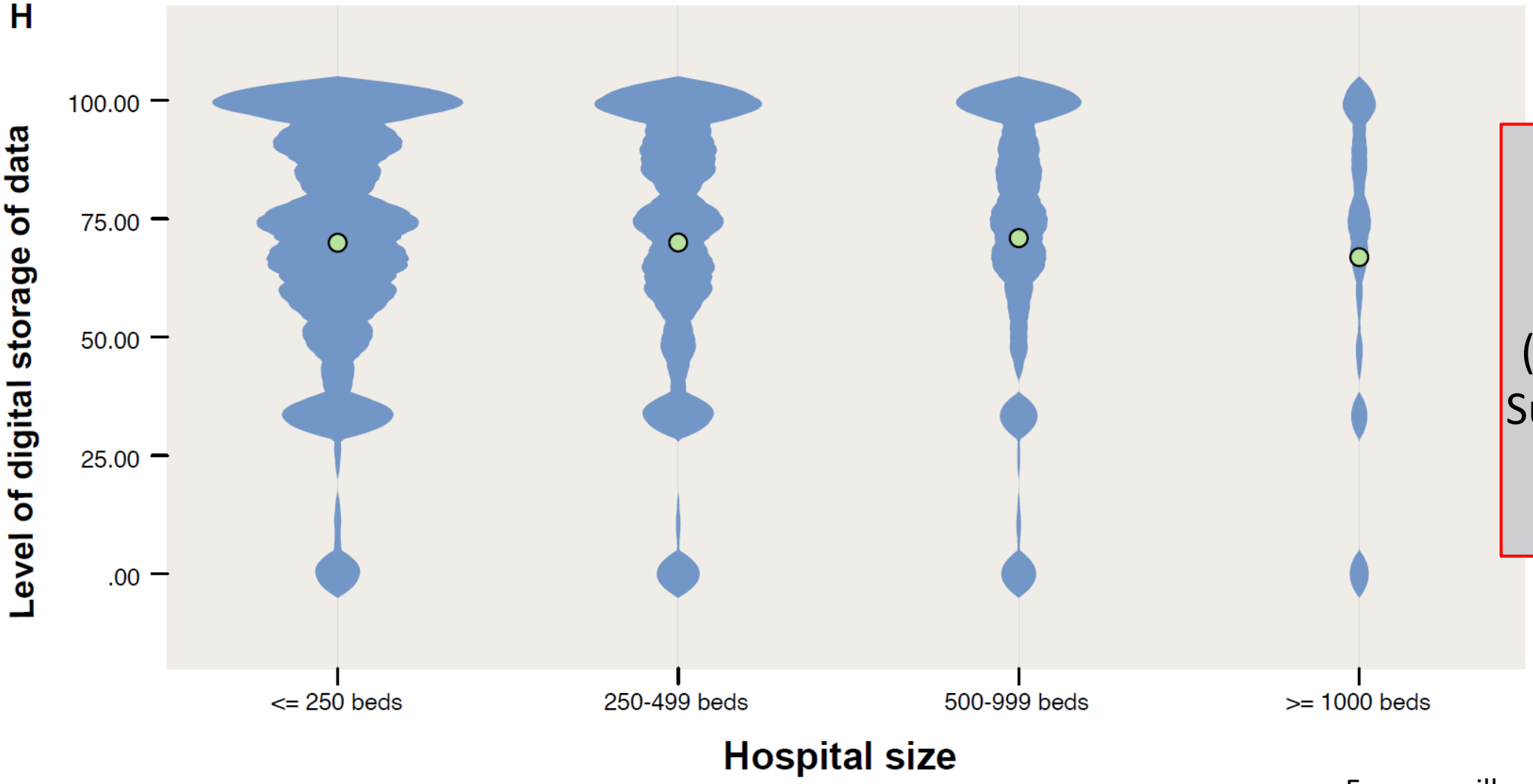
Eurosurveillance, in press

Ergebnisse - Level der Automatisierung



Eurosurveillance, in press

Ergebnisse - Level der Digitalisierung



Fazit:

kleinere KH weniger (automatisierte) Surveillance, aber nicht weniger digital?

Eurosurveillance, in press

2.3 Diskussion & Limitationen

Limitationen

1. **Eingeschränkte Repräsentativität**

   →Nur 24 von 31 Ländern der PPS

   →Self-Selection Bias

2. **Einige unplausible Antwortmuster** → fehlende Kenntnis von den Konzepten automatisierter Surveillance?
3. Variable “unbekannt” kann auch missing value bedeuten
4. Nicht validiertes Verfahren zur Berechnung der Level

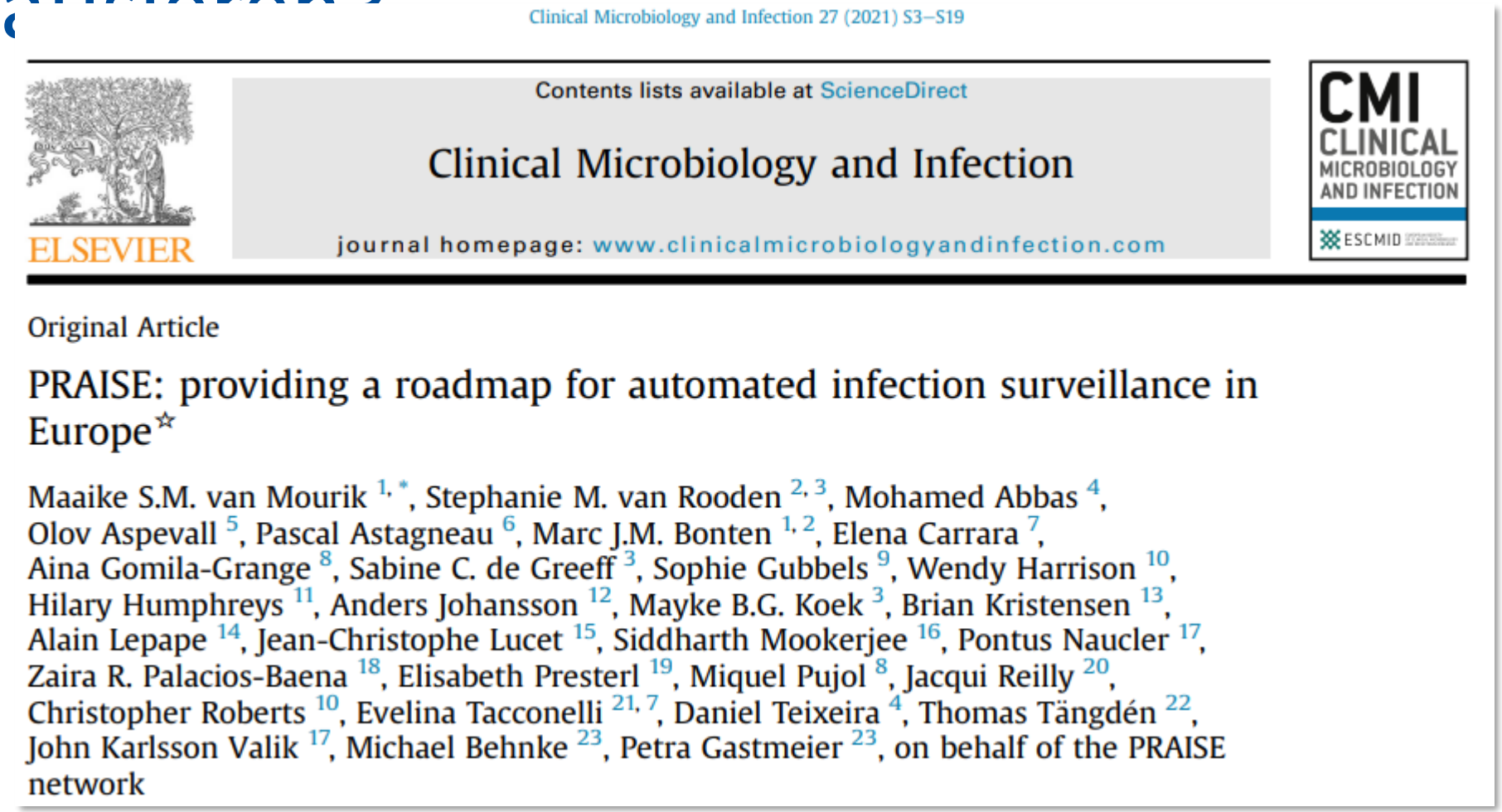
Diskussion

1. Mehrheit aller Krankenhäuser in Europa entweder **keine oder ausschließlich manuelle Surveillance** nosokomialer Infektionen
2. Grad der Digitalisierung stark abhängig vom Datentyp
3. **Potenzial zur Automatisierung** in vielen Krankenhäusern mit keiner oder ausschließlich manueller Surveillance gegeben
4. Weniger (automatisierte) Surveillance in **kleinen Krankenhäusern** trotz gleicher Digitalisierung

3

Wie Surveillance automatisieren ?

Wie kann man Surveillance automatisieren?



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Contents lists available at ScienceDirect

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journal homepage: www.clinicalmicrobiologyandinfection.com

Original Article

PRAISE: providing a roadmap for automated infection surveillance in Europe☆

Maaike S.M. van Mourik [1,*], Stephanie M. van Rooden [2,3], Mohamed Abbas [4], Olov Aspevall [5], Pascal Astagneau [6], Marc J.M. Bonten [1,2], Elena Carrara [7], Aina Gomila-Grange [8], Sabine C. de Greeff [3], Sophie Gubbels [9], Wendy Harrison [10], Hilary Humphreys [11], Anders Johansson [12], Mayke B.G. Koek [3], Brian Kristensen [13], Alain Lepape [14], Jean-Christophe Lucet [15], Siddharth Mookerjee [16], Pontus Naucler [17], Zaira R. Palacios-Baena [18], Elisabeth Presterl [19], Miquel Pujol [8], Jacqui Reilly [20], Christopher Roberts [10], Evelina Tacconelli [21,7], Daniel Teixeira [4], Thomas Tängdén [22], John Karlsson Valik [17], Michael Behnke [23], Petra Gastmeier [23], on behalf of the PRAISE network

Wie kann man Surveillance automatisieren?

Box 2
Key points regarding targets and approaches to automated surveillance (AS)

- Use the most appropriate AS targets in terms of type of healthcare-associated infection (HAI) and/or patient population for your purposes and/or needs.
- Choose between semi- or fully automated surveillance on the basis of the intended use of the surveillance data, the target of AS, the case definition, stakeholder preferences and feasibility.
- Choose between centrally or locally implemented AS. Also consider existing legal regulations for surveillance or national e-health policies (if any), stakeholder preferences and feasibility in the setting where surveillance will be implemented.

Box 3
Key points regarding the design of automated surveillance

- Identify and involve relevant stakeholders in the design phase.
- Formulate required features of automated surveillance (AS).
- AS, in particular when fully automated, requires reconsideration of healthcare-associated infection (HAI) case definitions to address limitations in data availability and methodologic aspects of case ascertainment.

Table 3
Features required from automated surveillance

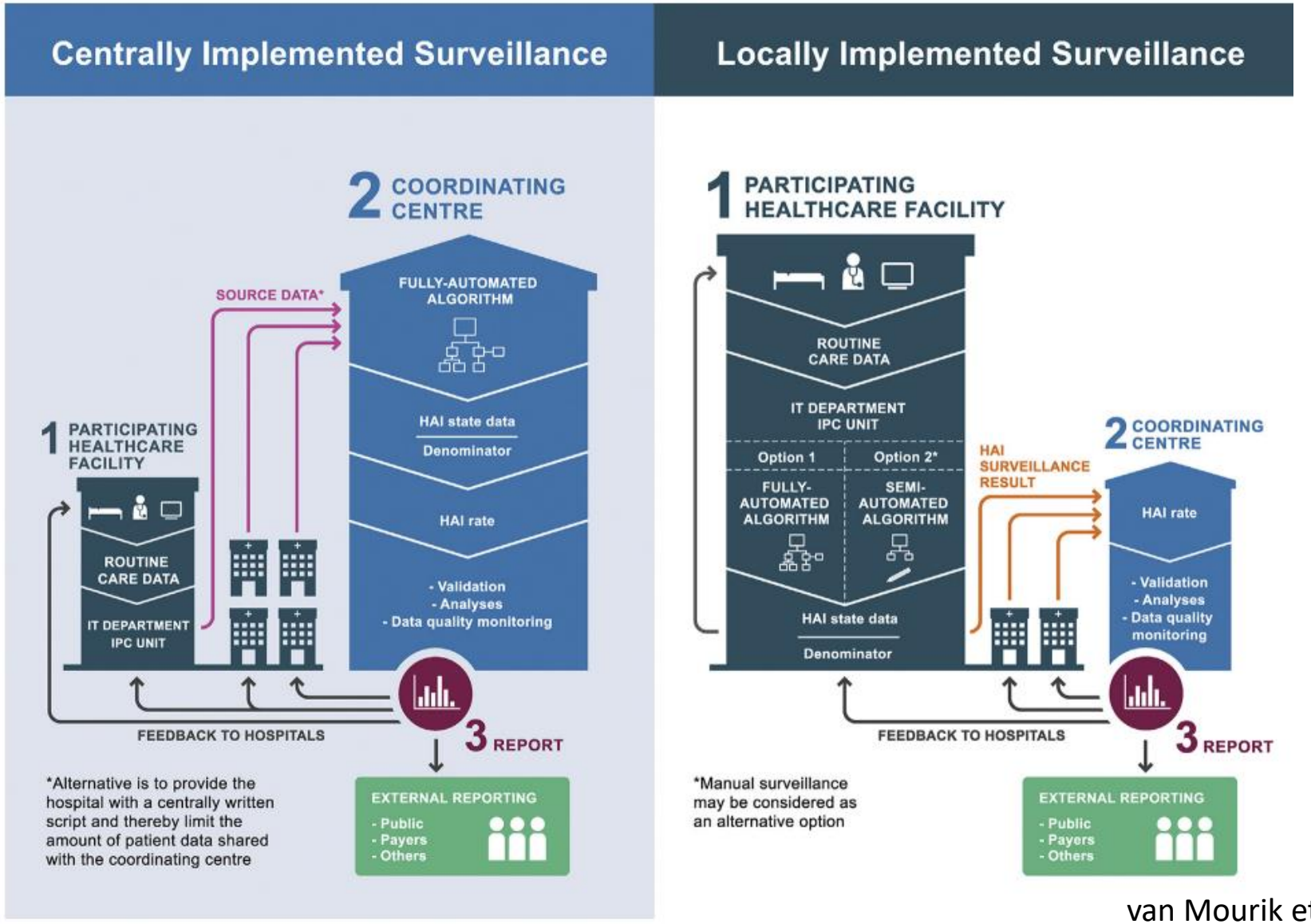
Feature
Stakeholder support and endorsement by clinicians
Secured resources
Sufficient number of participating healthcare facilities
Adequate validity and standardization of methods

Box 4
Aspects that need to be taken into account when selecting definitions for automated surveillance

- Endorsement of healthcare-associated infection rates by clinicians and other stakeholders.
- Sufficiently clear criteria with minor subjectivity.
- Availability of source data.
- Length of follow-up and need for postdischarge surveillance.
- Vulnerability to variation in clinical practice (e.g. sampling frequency, treatment regimens) and documentation.
- Comparability across surveillance networks or over time.
- Purpose of surveillance activity (e.g. quality improvement, public reporting).

van Mourik et al., CMI 2021

Wie kann man Surveillance autom



van Mourik et al., CMI 2021

Fazit

Automatisierte Surveillance bietet großes Potenzial

und ist möglich!

Surveillance in Europa - wo stehen wir?

13. Symposium zum Internationalen Tag der Händehygiene | 05. Mai 2026

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