

İnfeksiyon Kontrolünde Rehberler

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İnfeksiyon Hastalıkları ve Klinik Mikrobiyoloji Anabilim Dalı

6. USBİS, 16 Kasım 2019

Sunum Planı

- ESCMID rehberleri
 - 2014: infeksiyon kontrolü
 - 2018: C.difficile infeksiyonu
 - 2019: dekolonizasyon
- Ulusal rehberimiz?
 - Olmalı mı?
 - Nasıl olmalı?

İnfeksiyon Kontrolünde Uygulama aşamaları

- Temas önlemleri, kişisel koruyucu malzeme kullanımı
- izolasyon
- Aktif sürveyans
- El yıkama ve gözlemi
- Düzenli çevresel temizlik
- Temizliğin izlenmesi
- Yönetim desteği
- İletişim: hastalar, sağlık çalışanları
- Kaynak arama
- Yeniden kullanılan malzemelerin izlenmesi
- Eğitim programı
- Antimikrobiyal yönetim
- Altyapı

ESCMID guidelines for the management of the infection control measures to reduce transmission of multidrug-resistant Gram-negative bacteria in hospitalized patients

E. Tacconelli¹, M. A. Cataldo², S. J. Dancer³, G. De Angelis⁴, M. Falcone⁵, U. Frank⁶, G. Kahlmeter⁷, A. Pan^{8,9}, N. Petrosillo², J. Rodríguez-Baño^{10,11,12}, N. Singh¹³, M. Venditti⁵, D. S. Yokoe¹⁴ and B. Cookson¹⁵

Acinetobacter,
Burkholderia,
Enterobacteriaceae,
extended-spectrum b-lactamase,
multidrug-resistant Gram-negative, outbreak,
Pseudomonas,
Stenotrophomonas

Tacconelli E, et al. CMI, 2014

El Yıkamanın Önemi

Epidemik kurumlar

Güçlü öneri: El yıkama programları uygulanmalı

Orta düzeyde kanıt: ESBL- producing Enterobacteriaceae. MDR-A. baumannii, Stenotrophomonas maltophilia

Çok zayıf kanıt: MDR-K. pneumoniae, MDR-P. aeruginosa and Burkholderia cepacia

Endemik kurumlar

Güçlü öneri: El yıkama programları uygulanmalı

Orta düzeyde kanıt: ESBL-producing Enterobacteriaceae, multidrug-resistant (MDR)- Klebsiella pneumoniae, MDR-Pseudomonas aeruginosa, MDR-Acinetobacter baumannii

Çok zayıf kanıt: Stenotrophomonas maltophilia and Burkholderia cepacia

Temas Önlemlerinin Rolü

Epidemik kurumlar

Güçlü öneri: Kolonize ve infekte olan tüm hastalar için temas önlemleri

Orta düzeyde kanıt: extended-spectrum b-lactamase (ESBL)-producing Enterobacteriaceae, multidrug-resistant (MDR)-Klebsiella pneumoniae, MDR-Acinetobacter baumannii

Çok zayıf kanıt: Pseudomonas aeruginosa

Güçlü öneri: Kolonize olan hastalar için uyarıcı kodu uygula

Orta düzeyde kanıt: Hastaneye kabulde, ESBL-producing Enterobacteriaceae and MDR-K. pneumoniae (ayrıca tarama)

Güçlü öneri: Isolate colonized and infected patients in a single room to reduce the risk of acquisition of

Orta düzeyde kanıt: ESBL-producing Enterobacteriaceae, MDR-K. pneumoniae

Çok zayıf kanıt: MDR-A. baumannii and MDR-P. aeruginosa

Güçlü öneri: Gruplama (kohort)

Orta düzeyde kanıt: MDR-K. pneumoniae varlığında gruplama (kohort)

Aktif Tarama Kùltürlerinin Rolü

Epidemik kurum

Güçlü öneri: Aktif tarama kùltürlerinin alınması ve takibi

Orta düzey kanıt: Extended- spectrum b-lactamase-producing Enterobacteriaceae, multidrug-resistant (MDR)-Klebsiella pneumoniae, MDR-Acinetobacter baumannii

Çok düşük düzeyde kanıt: MDR-Pseudomonas aeruginosa

Çevresel Temizliğin Rolü

Epidemik kurumlar

Güçlü öneri: çevre temizliğinin yakın ve sıkı takibi

Orta düzeyde kanıt: extended-spectrum b-lactamase
Enterobacteriaceae and multidrug-resistant-Acinetobacter
baumannii

Endemik kurumlar

Güçlü öneri, orta düzeyde kanıt
multidrug-resistant- Acinetobacter baumannii

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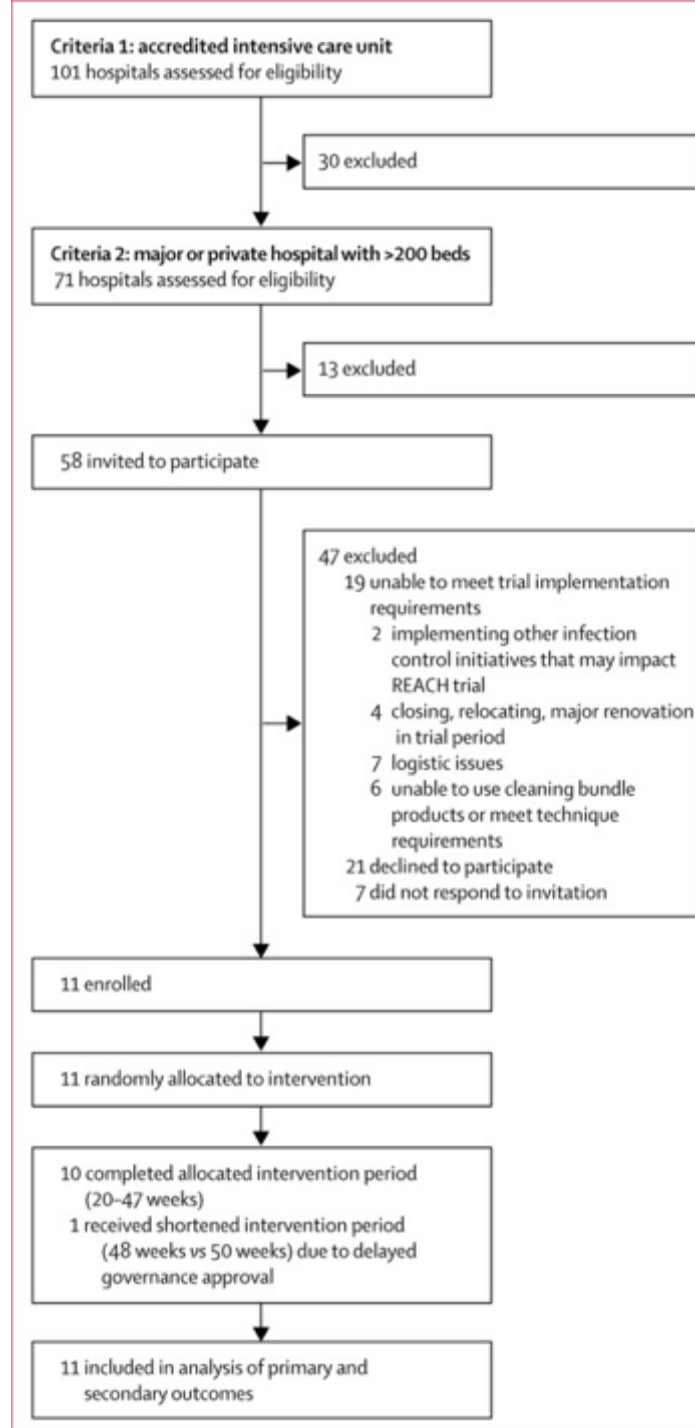


Articles

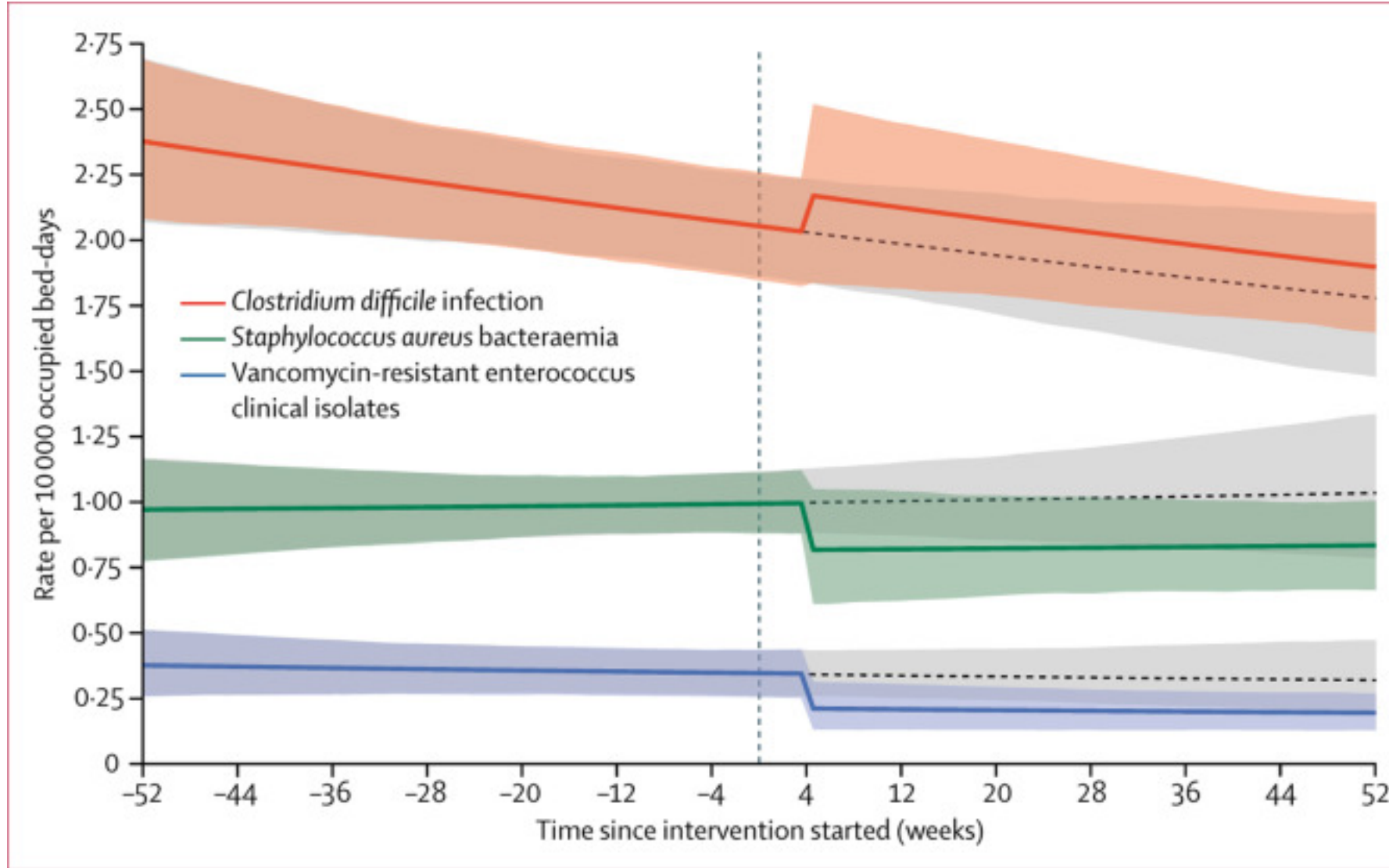
An environmental cleaning bundle and health-care-associated infections in hospitals (REACH): a multicentre, randomised trial

Prof Brett G Mitchell PhD ^{a, b, c, d, e}, Lisa Hall PhD ^{c, e, †}, Nicole White PhD ^{d, e}, Prof Adrian G Barnett PhD ^{d, e}, Kate Halton PhD ^e, Prof David L Paterson PhD ^f, Prof Thomas V Riley PhD ^{g, h, i, j}, Prof Anne Gardner PhD ^e, Katie Page PhD ^e, Alison Farrington M.EdT ^{d, e}, Prof Christian A Gericke PhD ^{k, l}, Prof Nicholas Graves PhD ^{d, e}

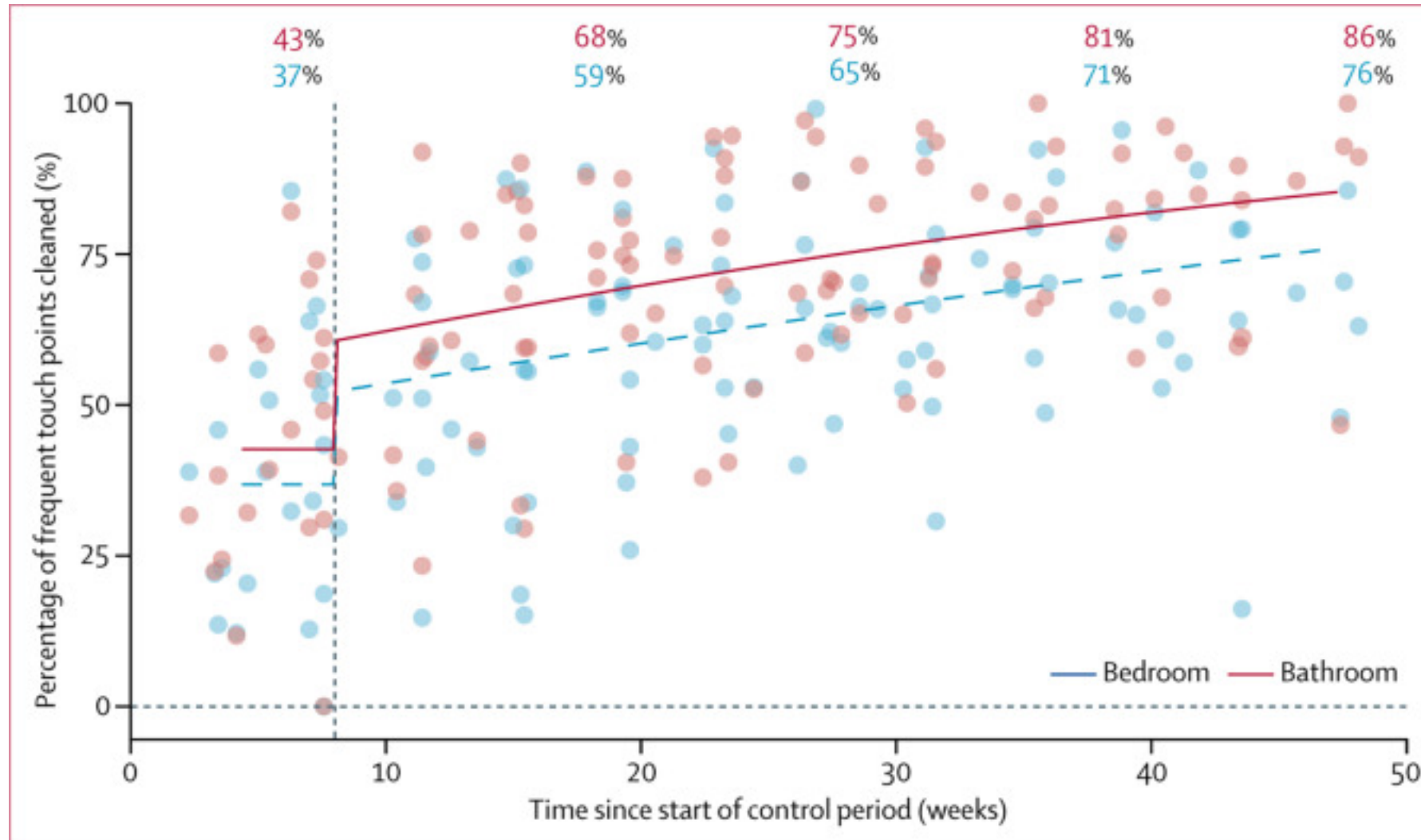
Mithcell BG, et al. Lancet ID 2019



Müdahale Öncesi ve Sonrası Sağlık Bakımıyla ilişkili enfeksiyonların Değişimi



Hasta odaları ve banyoda sık dokunulan yerlerin temizliği



Eğitimin Rolü

Epidemik kurumlar

Güçlü öneri, orta düzeyde kanıt

extended-spectrum b-lactamase- Enterobacteriaceae

Endemik kurumlar

Güçlü öneri, orta düzeyde kanıt

Multidrug-resistant-Acinetobacter baumannii

TABLE 4. Quality of studies by intervention. Basic measures to reduce the spread of multidrug-resistant (MDR)-*Klebsiella pneumoniae* and extended-spectrum β -lactamase (ESBL)-producing Enterobacteriaceae in hospitalized adult patients: recommended for all acute-care facilities in endemic setting

Microorganism	MDR-K. pneumoniae				ESBL-producing Enterobacteriaceae			
	Quality of studies [ref.]			Overall quality of evidence	Quality of studies [ref.]			Overall quality of evidence
	Moderate	Low	Very low		Moderate	Low	Very low	
Hand hygiene	2 [122,265]	–	–	Moderate	2 [137,266]	1 [267]	–	Moderate
Education	1 [122]	–	–	Moderate	1 [266]	1 [267]	–	Moderate
Contact precautions	2 [122,265]	–	–	Moderate	3 [136,137,266]	1 [267]	–	Moderate
Isolation room	1 [265]	–	–	Moderate	1 [137]	1 [267]	–	Moderate
Environmental cleaning	2 [122,265]	–	–	Moderate	1 [137]	–	–	Moderate
Antimicrobial stewardship	1 [268]	1 [269]	–	Moderate	4 [136,268,270,271]	2 [267,272]	1 [273]	Moderate

TABLE 5. Quality of studies by intervention. Basic measures to reduce the spread of multidrug-resistant (MDR)-*Acinetobacter baumannii* and MDR-*Pseudomonas aeruginosa* in hospitalized adult patients: recommended for all acute-care facilities in endemic setting

Microorganism	MDR- <i>A. baumannii</i>				MDR- <i>P. aeruginosa</i>			
	Quality of studies			Overall quality of evidence	Quality of studies			Overall quality of evidence
Intervention	Moderate	Low	Very low		Moderate	Low	Very low	
Hand hygiene	4 [81,122,153,157]	1 [274]	–	Moderate	2 [122,275]	1 [274]	–	Moderate
Education	4 [81,122,153,157]	1 [274]	–	Moderate	1 [122]	1 [274]	–	Moderate
Contact precautions	4 [81,122,153,157]	–	–	Moderate	1 [122]	–	–	Moderate
Isolation room	1 [81]	–	–	Moderate	–	–	–	Insufficient
Environmental cleaning	4 [81,122,153,157]	–	–	Moderate	1 [122]	–	–	Moderate
Antimicrobial stewardship	1 [268]	2 [269,272]	–	Moderate	2 [268,275]	2 [269,272]	–	Moderate



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Contents lists available at ScienceDirect

Clinical Microbiology and Infection

journal homepage: www.clinicalmicrobiologyandinfection.com

Guidelines

ESCMID-EUCIC clinical guidelines on decolonization of multidrug-resistant Gram-negative bacteria carriers

E. Tacconelli ^{1,2,*}, F. Mazzaferri ², A.M. de Smet ³, D. Bragantini ², P. Eggimann ⁴, B.D. Huttner ^{5,6}, E.J. Kuijper ⁷, J.-C. Lucet ^{8,9}, N.T. Mutters ^{10,11}, M. Sanguinetti ¹², M.J. Schwaber ^{13,14}, M. Souli ^{15,16}, J. Torre-Cisneros ¹⁷, J.R. Price ¹⁸, J. Rodríguez-Baño ¹⁹

Key points

- The panel does not recommend routine decolonization of MDR-GNB carriers.
- The effectiveness and long-term side effects of decolonization of 3GCephRE and CRE in high-risk populations (e.g. ICU, neutropenic and transplant populations) needs to be evaluated with RCTs with proper design and sample size calculation.

Standart Olmayan Uygulamalar

- Taramalar
 - Burun: MRSA
 - Cilt ve rektum: Acinetobacter, karbapenemaz üreten Klebsiella
- Temas önlemleri
 - Çok ilaç dirençli Acinetobacter, Klebsiella
- Yönetim desteği
- El yıkama
- Çevre temizliği
 - Gram pozitifler
 - Gram negatifler
- Salgın analizinde moleküler yöntemlerin kullanımı
- Antibiyotik kullanımı
 - Tüketimin hesaplanması
 - Otomatize sistemler



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Guidelines

Guidance document for prevention of *Clostridium difficile* infection in acute healthcare settings

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C. Eckert ⁴, F. Fitzpatrick ⁵, M. Hell ⁶, T. Norèn ⁷, J. O'Driscoll ⁸, J. Coia ⁹, P. Gastmeier ¹⁰,
L. von Müller ¹¹, M.H. Wilcox ¹², A.F. Widmer ¹ on behalf of the Committee†

1. **İki aşamalı Tanı** (NAAT ve GDH için ELISA)
2. **İzlem ve geri bildirim**: Salgın veya endemik durumda(güçlü öneri, çok düşük kanıt düzeyi)
3. **Asemptomatik hastaların ve sağlık çalışanlarının izlenmesi** önerilmez (duruma göre öneri, düşük kanıt düzeyi)
4. **El yıkama**: Sadece salgın durumunda alkol bazlı el antiseptiği yerine sabunla el yıkama.
5. **Kişisel Koruyucu Malzeme Kullanım**: salgında(güçlü öneri, çok düşük düzeyde kanıt)
6. **Çevresel temizlik**: Salgında günlük temizlik (güçlü öneri, zayıf kanıt)
7. **Altyapısal**: Özel bir öneri yok
8. **Antibiyotik Yönetimi**: Antibiyotik kısıtlama, süreyi kısaltma (güçlü öneri, zayıf kanıt)
9. **Erken tedavi** (güçlü öneri, zayıf kanıt)
10. **Eğitim**: Salgında ve endemik durumda güçlü öneri, zayıf kanıt.



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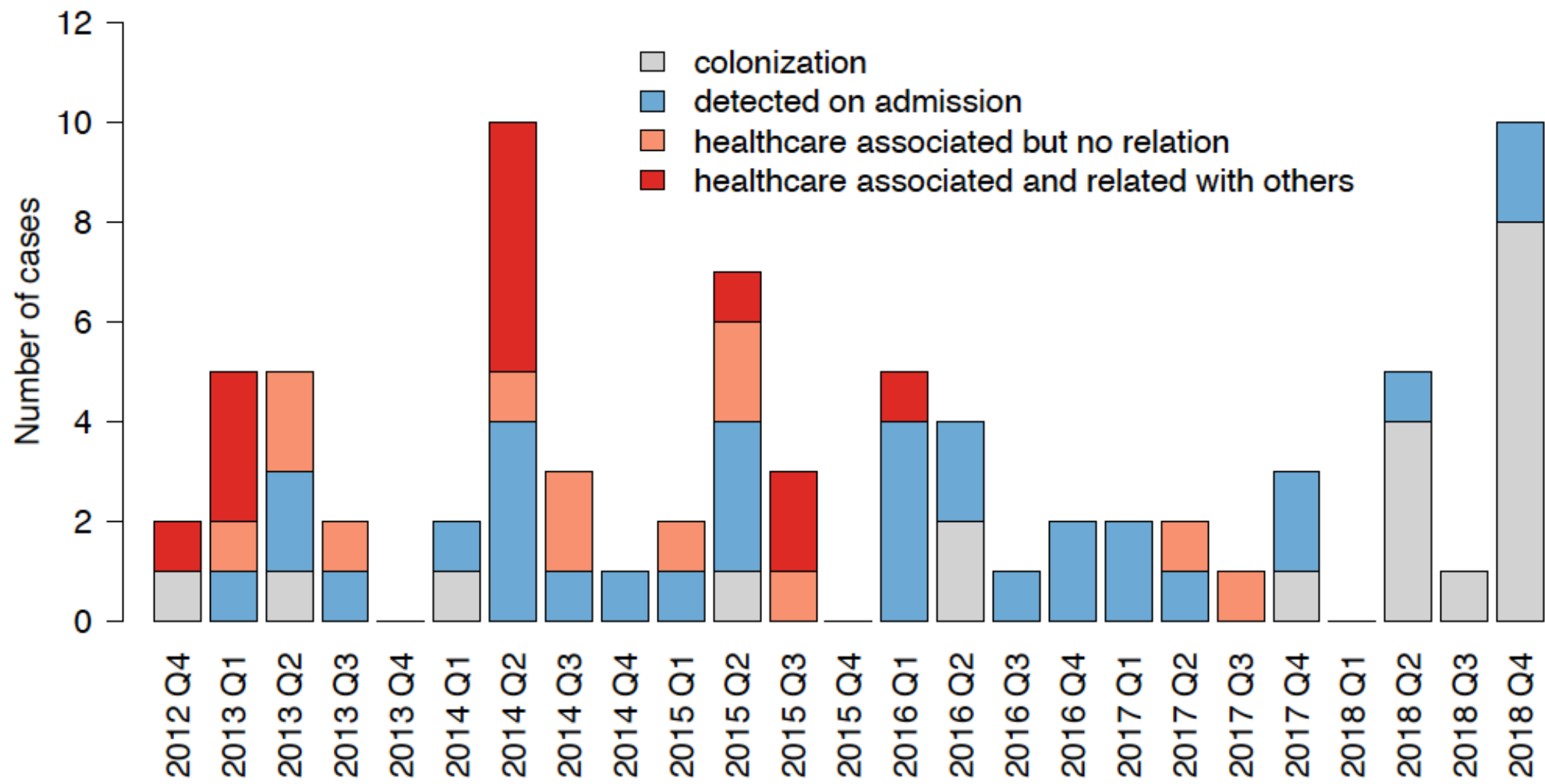
Narrative review

How to: molecular investigation of a hospital outbreak

A. Nutman^{1,2}, D. Marchaim^{2,3,*}

Selected studies of outbreaks caused by epidemiologically significant nosocomial pathogens for which various typing methodologies have been implemented as part of outbreak investigation

Pathogen group	PFGE	Rep-PCR	MLST	WGS
ESBL	[71]	[72,73]	[74]	[75,76]
CRE	[77]	[78]	[34]	[35,38]
<i>Acinetobacter baumannii</i>	[49]	[52]	[5]	[50]
<i>Pseudomonas aeruginosa</i>	[79]	[80]	[81]	[82]
MRSA ^a	[53,54]		[83]	[57]
VRE	[59,84]			[60,61]
<i>Clostridium difficile</i>	[65]			[67]
	[66]			





Hospital organisation, management, and structure for prevention of health-care-associated infection: a systematic review and expert consensus

*Walter Zingg, Alison Holmes, Markus Dettenkofer, Tim Goetting, Federica Secci, Lauren Clack, Benedetta Allegranzi, Anna-Pelagia Magiorakos, Didier Pittet, for the systematic review and evidence-based guidance on organization of hospital infection control programmes (SIGHT) study group**

Lancet Infect Dis 2015;
15: 212–24

Published Online

November 11, 2014

[http://dx.doi.org/10.1016/S1473-3099\(14\)70854-0](http://dx.doi.org/10.1016/S1473-3099(14)70854-0)

*Further contributors are listed in the Acknowledgments section

Infection Control Programme,
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Despite control efforts, the burden of health-care-associated infections in Europe is high and leads to around 37 000 deaths each year. We did a systematic review to identify crucial elements for the organisation of effective infection-prevention programmes in hospitals and key components for implementation of monitoring. 92 studies published from 1996 to 2012 were assessed and ten key components identified: organisation of infection control at the hospital level; bed occupancy, staffing, workload, and employment of pool or agency nurses; availability of and ease of access to materials and equipment and optimum ergonomics; appropriate use of guidelines; education and training; auditing; surveillance and feedback; multimodal and multidisciplinary prevention programmes that include behavioural change; engagement of champions; and positive organisational culture. These components comprise manageable and widely applicable ways to reduce health-care-associated infections and improve patients' safety.

Key component	Indicators	Quality of evidence*	Ease of implementation	EU-wide applicability
1 An effective infection-control programme in an acute-care hospital must include as a minimum standard at least one full-time specifically trained infection-control nurse per up to 250 beds, a dedicated physician trained in infection control, microbiological support, and data management support ¹⁷	Continuous review of surveillance and prevention programmes, outbreaks, and audits; infection-control committee in place, inclusion of infection control on the hospital administration agenda, and defined goals (eg, HAI rates); and appropriate staffing and budget for infection control	2	3	3
2 Ward occupancy must not exceed the capacity for which it is designed and staffed; staffing and workload of frontline HCWs must be adapted to acuity of care, and the number of pool or agency nurses and physicians used kept to a minimum ^{11,32,75,76,77-84,100,112,113}	Average bed occupancy at midnight, average numbers of frontline workers, and the average proportion of pool or agency professionals	2	2	2
3 Sufficient availability of and easy access to materials and equipment, and optimisation of ergonomics ^{34,48,50,51,52,56,61,64,82,102}	Availability of alcohol-based hand rub at the point of care and sinks stocked with soap and single-use towels	2	2	2
4 Use of guidelines in combination with practical education and training ^{52,58,60,101,102,114}	Adaptation of guidelines to local situation, number of new staff trained with the local guidelines, teaching programmes are based on local guidelines	2	3	3
5 Education and training involves frontline staff and is team and task oriented ^{22,28,62,65,91,101,105,106,111}	Education and training programmes should be audited and combined with knowledge and competency assessments	3	2	3
6 Organising audits as a standardised (scored) and systematic review of practice with timely feedback ^{75,76,79,83,89}	Measurement of the number of audits (overall, and stratified by departments/units and topics) for specified time periods	2	2	3
7 Participating in prospective surveillance and offering active feedback, preferably as part of a network ^{19,41,44-47,54,58,61,66,69,108}	Participation in national and international surveillance initiatives, number and type of wards with a surveillance, regular review of the feedback strategy	2	2	2
8 Implementing infection-control programmes following a multimodal strategy, including tools such as bundles and checklists developed by multidisciplinary teams, and taking into account local conditions ^{15,16,36,39,113,114,48,61,51,53,55-52,65,62,68,70,71,86,88,89-91,91,96,102,95,109,111}	Verification that programmes are multimodal; measurement of process indicators (eg, hand hygiene, care procedures); measurement of outcome indicators (eg, HAI rates, MDRO infections and transmission)	2	3	3
9 Identifying and engaging champions in the promotion of intervention strategies ^{70,91,91,94,110}	Interviews with frontline staff and infection-control professionals	3	2	2
10 A positive organisational culture by fostering working relationships and communication across units and staff groups ^{82,39,85,81,95,98,103,104}	Questionnaires about work satisfaction, crisis management, and human resource assessments of absenteeism and HCW turnover	3	2	3

See the appendix for detailed information about the studies and comments on the rating of evidence, ease of implementation and EU-wide applicability. HCW=health-care worker. HAI=health-care-associated infections. MDRO=multidrug-resistant organisms. *Median score is used.

Table 2: Key components and indicators identified by the systematic review

RESEARCH

Open Access

Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015 statement

David Moher^{1*}, Larissa Shamseer¹, Mike Clarke², Davina Gherzi³, Alessandro Liberati⁴, Mark Petticrew⁴, Paul Shekelle⁵, Lesley A Stewart⁶ and PRISMA-P Group