Enquêtes de cohorte et Infections Nosocomiales

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Monaco

Place des enquêtes de cohorte dans la littérature dédiée aux Infections nosocomiales

- 3 journaux majeurs
- 2 derniers mois
- Grande proportion des études de cohorte
  - Surveillance
  - Facteurs de risque


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AJIC major articles

Comparisons of health care–associated infections identification using two mechanisms for public reporting

Patricia W. Stone, PhD, RN,[a] Teresa C. Horan, MPH,[b] Huai-Che Shih, MS,[c] Cathy Mooney-Kane, MPH,[c] and Elaine Larson, PhD[a]
Rochester, New York, Atlanta, Georgia, New York, New York

Surgical site infection surveillance for neurosurgical procedures: A comparison of passive surveillance by surgeons to active surveillance by infection control professionals

Diane Heipel, RN, BSN, CIC,[a] Janis P. Ober, RN, BSN, CIC,[a] Michael B. Edmond, MD, MPH, MPA,[a,b] and Gonzalo M. L. Bearman, MD, MPH[a,b]
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Risk factors for late-onset health care–associated bloodstream infections in patients in neonatal intensive care units

Sharon E. Perlman, MPH,[a] Lisa Saiman, MD, MPH,[b,c] and Elaine L. Larson, RN, PhD[a,d]
New York, New York

A 10-year prospective surveillance of nosocomial infections in neonatal intensive care units

Renato C. Couto, MD, PhD,[a] Elaine A. A. Carvalho, MD, MSc,[a] Tânia M. G. Pedrosa, MD, MSc,[a] Ênio R. Pedroso, MD, PhD,[a] Mozar C. Neto, MD,[b] and Fernando M. Biscione, MD[a]
Minas Gerais, Brazil

Validation of surgical site infection surveillance in orthopedic procedures

Kaisa Huotari, MD,[a,b] Niina Agthe, RN,[a] and Outi Lyytikäinen, MD, PhD[a]
Helsinki, Finland

Surveillance of multidrug-resistant gram-negative bacilli in a neonatal intensive care unit: prominent role of cross transmission

Caterina Mammina, MD,[a] Paola Di Carlo, MD,[b] Domenico Cipolla, MD,[c] Mario Giuffrè, MD,[c] Alessandra Casuccio, BSc,[a] Vincenzo Di Gaetano, MD,[a] Maria Rosa Anna Plano, MD,[a] Emma D'Angelo, MD,[a] Lucina Titone, MD,[b] and Giovanni Corsello, MD[b]
Palermo, Italy

Screening for pulmonary tuberculosis using chest radiography in new employees in an industrial park in Taiwan

Shih-Bin Su, MD, MS,[a,b] Chien-Fang Chiu, MD,[a] Cheng-Ta Chang, MD,[c] Kow-Tong Chen, MD, PhD,[d] Ching-Yih Lin, MD,[e] and How-Ran Guo, MD, MPH, ScD[b,f]
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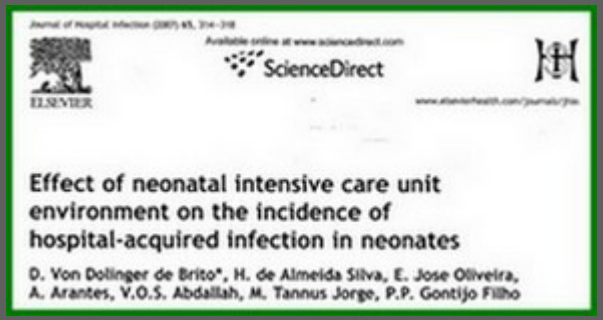
Monitoring the occurrence of wound infections after cardiac surgery
C. Sherlaw-Johnson a,*, A.P.R. Wilson b, B. Keogh b, S. Gallivan a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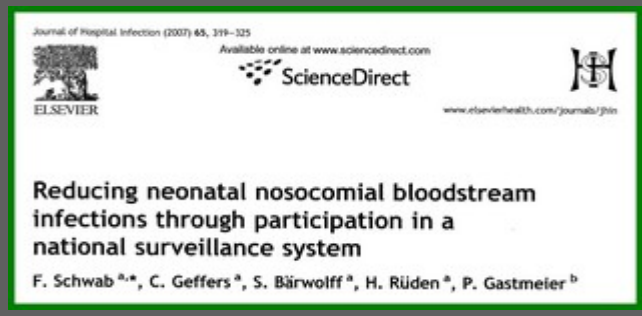
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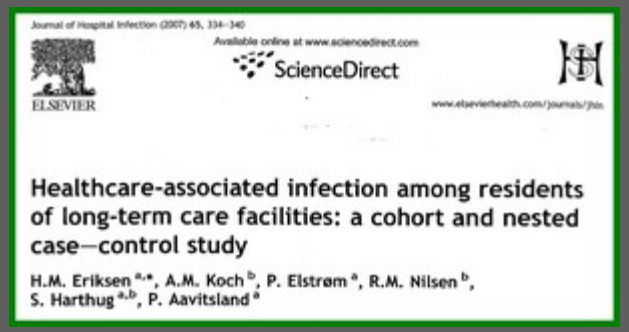
F. Schwab a,*, C. Geffers a, S. Bärwolff a, H. Rüden a, P. Gastmeier b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Healthcare-associated infection among residents of long-term care facilities: a cohort and nested case–control study
H.M. Eriksen a,*, A.M. Koch b, P. Elstrøm a, R.M. Nilsen b, S. Harthug a,b, P. Aavitsland a


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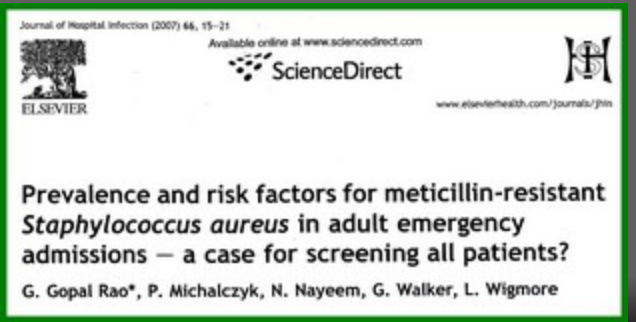
Inadequate treatment of ventilator-associated pneumonia: risk factors and impact on outcomes
P.J.Z. Teixeira a,b,c,*, R. Seligman b, F.T. Hertz a, D.B. Cruz a, J.M.G. Fachel b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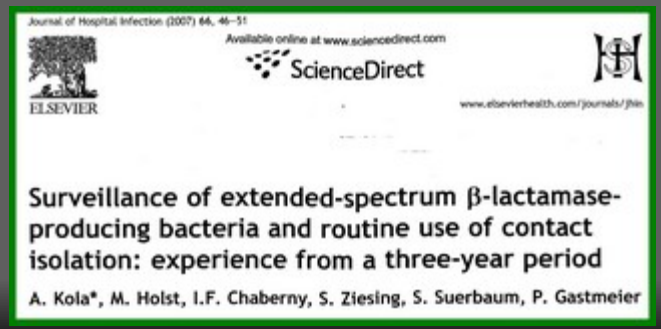
Prevalence and risk factors for meticillin-resistant *Staphylococcus aureus* in adult emergency admissions — a case for screening all patients?
G. Gopal Rao*, P. Michalczyk, N. Nayeem, G. Walker, L. Wigmore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Surveillance of extended-spectrum β-lactamase-producing bacteria and routine use of contact isolation: experience from a three-year period
A. Kola*, M. Holst, I.F. Chaberny, S. Ziesing, S. Suerbaum, P. Gastmeier


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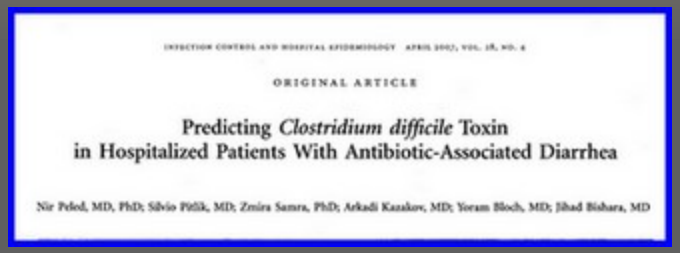
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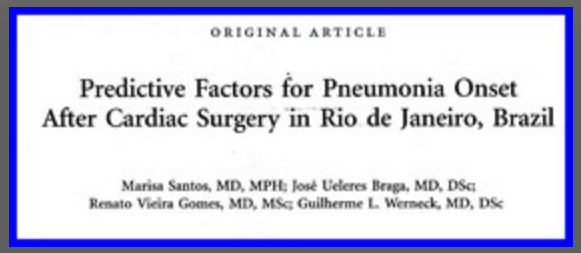
Predicting *Clostridium difficile* Toxin in Hospitalized Patients With Antibiotic-Associated Diarrhea

Nir Peled, MD, PhD; Silvio Pitlik, MD; Zmira Samra, PhD; Arkadi Kazakov, MD; Yoram Bloch, MD; Jihad Bishara, MD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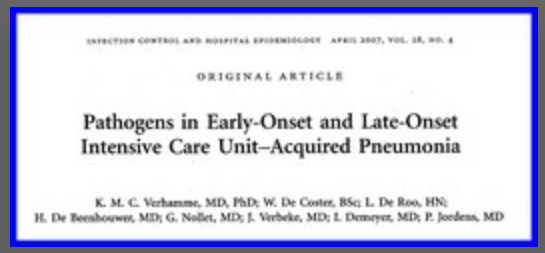
Predictive Factors for Pneumonia Onset After Cardiac Surgery in Rio de Janeiro, Brazil

Marisa Santos, MD, MPH; José Ueleres Braga, MD, DSc; Renato Vieira Gomes, MD, MSc; Guilherme L. Werneck, MD, DSc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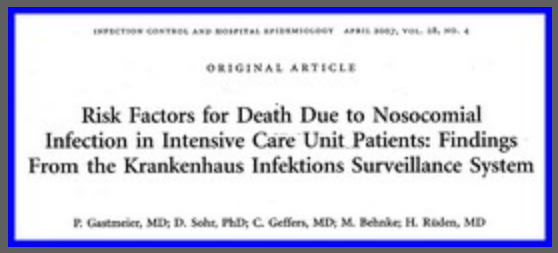
Pathogens in Early-Onset and Late-Onset Intensive Care Unit–Acquired Pneumonia

K. M. C. Verhamme, MD, PhD; W. De Coster, BSc; L. De Roo, HN; H. De Beenhouwer, MD; G. Nollet, MD; J. Verbeke, MD; I. Demeyer, MD; P. Jordens, MD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Risk Factors for Death Due to Nosocomial Infection in Intensive Care Unit Patients: Findings From the Krankenhaus Infektions Surveillance System

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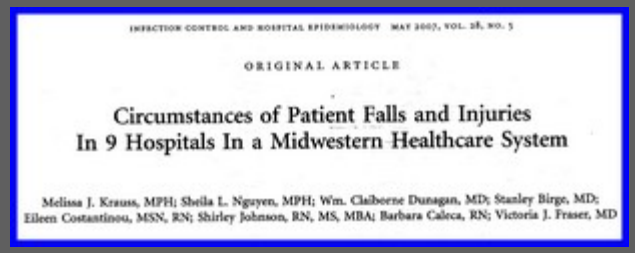
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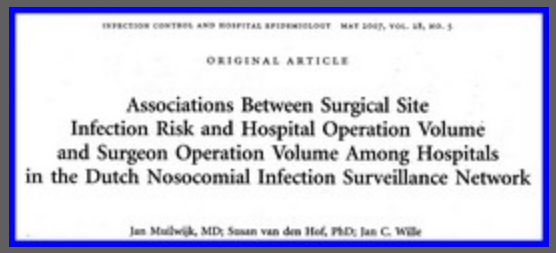
Lori Ann LaRosa, PharmD; Neil O. Fishman, MD; Ebbing Lautenbach, MD, MPH, MSCE; Ross J. Koppel, PhD; Knashawn H. Morales, ScD; Darren R. Linkin, MD, MSCE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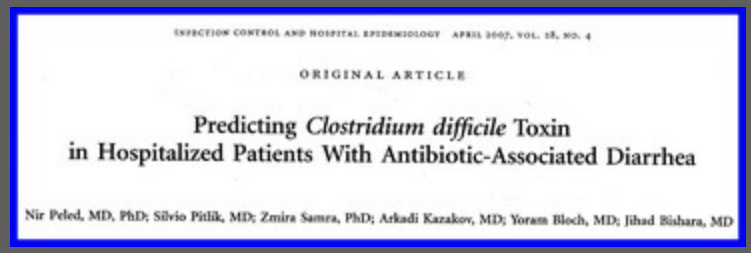
Associations Between Surgical Site Infection Risk and Hospital Operation Volume and Surgeon Operation Volume Among Hospitals in the Dutch Nosocomial Infection Surveillance Network

Jan Mulwijk, MD; Susan van den Hof, PhD; Jan C. Wille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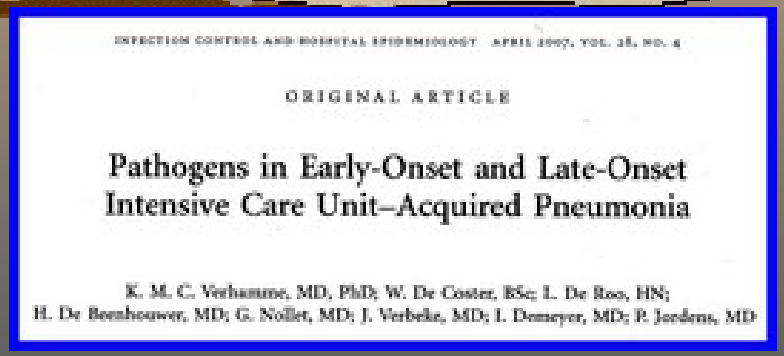

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INFECTION CONTROL & HOSPITAL EPIDEMIOLOGY

- Objectif de l'étude: comparer les pathogènes isolés lors de pneumopathies nosocomiales selon leur survenue précoce ou tardive
- Design: Etude de cohorte prospective
- Méthode:
  - patients admis en Unité de soins intensifs dans un hôpital de 700 lits
  - 4 groupes: Pneumopathie précoce: ≤ 7 j traitée/pas traitée, Tardive: > 7 j traitée/pas traitée
  - Régression logistique

La cohorte (prospective)

- Système de surveillance HELICS* depuis 2000
- Surveillance des infections en USI (24 lits, 2000 patients/an): chaque patient hospitalisé inclus,
- Données
  - Administratives
  - Score de gravité, co-morbidités, matériel invasif
  - Infections: bactériémies et pneumopathies (données cliniques, RX et microbiologiques)
- Patients inclus du 1er Janvier 1997 au 31 Décembre 2002

*Hospitals in Europe Link for Infection Control through Surveillance

Les cas (analyse rétrospective)

- Définition précise
- Inclusion des patients avec culture positive d'aspiration trachéale ou bronchique (non ventilés: LBA)
- 4 groupes de pneumopathies
- Autres données: retour sur les dossiers ou sur les registres de prescription informatisée de la pharmacie

Résultats

- 4200 patients en USI (>48h)
- 498 pneumonies (12%), 298 pneumonies acquises en USI, 90% de VAP
- Pneumopathies du groupe 1(< 7 jours, pas d'ABQ préalables)
  - P. aeruginosa: 11%
  - Enterobacter sp: 10%
  - S. marcescens: 15%

Résultats

TABLE 2. Microorganisms Isolated During 330 Episodes of Intensive Care Unit (ICU)–Acquired Pneumonia, According to Time of Pneumonia Onset and History of Systemic Antibiotic Therapy

Microorganism	No. (%) of episodes, by time of onset and history of therapy			
	Onset <7 days after ICU admission		Onset ⩾7 days after ICU admission	
	No antibiotic therapy (n = 141)	Antibiotic therapy (n = 53)	No antibiotic therapy (n = 43)	Antibiotic therapy (n = 93)
Acinetobacter species	0	2 (4)	0	1 (1)
Alcaligenes species	0	0	0	1 (1)
Aspergillus fumigatus	0	1 (2)	0	4 (4)
Burkholderia species	0	1 (2)	0	0
Candida albicans	1 (0.5)	4 (8)	0	1 (1)
Citrobacter species	4 (3)	0	0	2 (2)
Comamonas acidovorans	0	0	0	1 (1)
Enterobacter species	14 (10)	8 (15)	3 (7)	17 (18)
Escherichia coli	22 (16)	2 (4)	8 (19)	19 (20)
Haemophilus influenza	35 (25)	4 (8)	12 (28)	1 (1)
Klebsiella pneumoniae	19 (13)	2 (4)	6 (14)	13 (14)
Morganella morganii	5 (4)	3 (6)	2 (5)	3 (3)
Moraxella and *Neisseria* species	4 (3)	1 (2)	1 (2)	2 (2)
Proteus species	19 (13)	4 (8)	6 (14)	4 (4)
Pseudomonas aeruginosa	16 (11)	10 (19)	10 (23)	18 (19)
Serratia marcescens	21 (15)	15 (28)	1 (2)	11 (12)
Stenotrophomonas maltophilia	0	1 (2)	0	1 (1)
Streptococcus pneumoniae	9 (6)	3 (6)	3 (7)	4 (4)
MSSA	22 (16)	5 (9)	9 (21)	15 (16)
MRSA	2 (1)	3 (6)	0	2 (2)
ESBL-producing pathogens				
Enterobacter species	2 (1)	0	0	1 (1)
K. pneumoniae	0	0	0	2 (2)

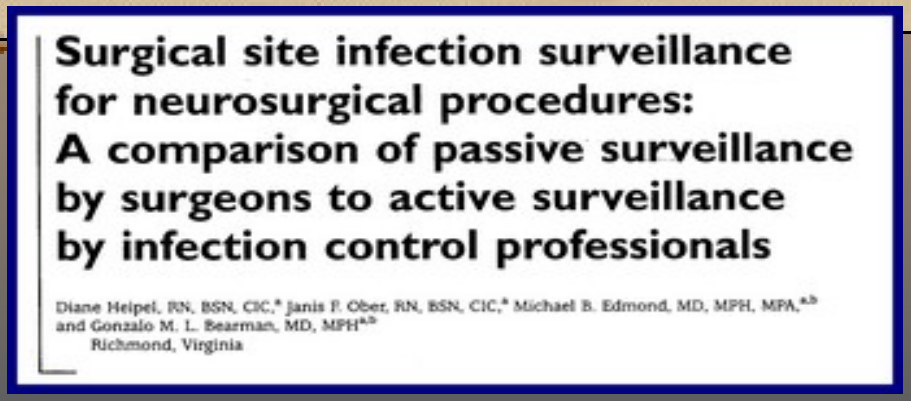
NOTE. ESBL, extended-spectrum β-lactamase; MRSA, methicillin-resistant *Staphylococcus aureus*; MSSA, methicillin-susceptible *S. aureus*.

Résultats (2)

- 2ème analyse en tenant compte de la durée d'hospitalisation: mêmes résultats
- Mortalité: 32% (35% pour les pneumonies avec *P. aeruginosa*, Serratia, Enterobacter, MRSA vs 28% pour les autres)
- Après analyse multivariée, les FdR pour retrouver *P. aeruginosa* ou bactéries BLSE: âge, ABQ préalables (C3G, Aminosides, Imipenem)

Résultats/conclusion

- Agents pathogènes multi résistants isolés y compris chez des patients faisant des pneumopathies précoces
- Pose le problème de l'inadéquation avec les ABQ probabilistes de première intention chez ces patients (Amox clav ou C2G)
- **Consensus thérapeutiques locaux doivent être basés à la fois sur les recommandations internationales mais aussi sur les données locales de surveillance**



- Objectif de l'étude: comparer la performance des neurochirurgiens dans la détection d'ISO à celle des épidémiologistes/hygiénistes dans le cadre d'une surveillance active
- Contexte: perception par les neurochirurgiens d'une ↑ des taux d'ISO
- Design: Données de surveillance active vs Etude longitudinale ad'hoc
  - Surveillance active (CDC)
  - Liste des ISO identifiées par les chirurgiens

Résultats

Table 1. Surgical site infections identified in neurosurgical patients stratified by procedure and surveyor

Procedure	Number performed	Number of infections identified	
		Neurosurgeons	ICP
Craniotomy	221	1	3
Spinal fusion	230	4	4
Laminectomy	237	4	8
Ventricular shunt	78	2	2
Total	766	11	17

- 1483 interventions sur la période concernée (2004)
- 35% des infections non identifiées par les neurochirurgiens
- Craniotomies: 3 cas identifiés par les chirurgiens ne répondaient pas aux définitions
  - 1 infection chronique récurrente non liée à la chirurgie
  - Suspicion d'abcès (hématome)
  - ISO mais survenue 30 j après l'intervention sans implant

Résultats

Détection des ISO par les chirurgiens:

- Sensibilité 64%
- Spécificité 99.6%
- VPP 78.6%
- VPN 99.2%

Conclusion sur la méthodologie

Avantages	Désavantages
➲Mesure directe du taux d'attaque ou du (des) facteurs de risque ➲Expositions rares (professionnelles) ➲Histoire naturelle peut être explorée avec possibilité d'étudier plusieurs outcomes ➲💣 biais (confusion) si la définition n'est pas précise ou la sélection des groupes à comparer (mais moins qu'enquêtes cas-témoins)	➲Logistique, coût ➲Attention si expositions multiples

Conclusion: un peu de prosélytisme !

Conditions absolues de réussite d'une enquête de cohorte (et d'une surveillance) :

- Surveillance suffisamment « légère »
- Exhaustivité des données
- Equipes motivées et connaissant chacune le travail de l'autre