Prévention des infections nosocomiales en réanimation

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Service de Médecine Intensive Adulte
www.soins-intensifs-chuv.ch

UNIL | Université de Lausanne
Switzerland


Après son accident de moto, Guilla
Depardieu a dû subir 17 opération
L'acteur contract
un staphylocoq
à la jambe dro
Ne supportant
la douleur, il
l'amputation
mieux répertoriées, sa
CHU accueillent
LES BONS RÉSEAUX DE FABIUS | COMMENT SAUVER FRANCE 3 | HABERMAS
L'EXPRESS
L'EXPRESS
N° 3306 semaine du 12 au 18 novembre 2014
LEXPRESS.fr
EXCLUSIF LE PALMARÈS 2015 DES
HÔPITAUX
ET CLINIQUES
880
établissements
passés au crible
Les 50 meilleurs
dans 30 spécialités
La vérité sur les
tarifs dans le public
BELGIQUE : 5 €
M 01722 - 3306 - F: 3,90 €
L'équipe de la clinique Sourdille
à Nantes, n°1 pour la chirurgie
de la rétine et de la cataracte.
spitalières
miales,
an
icine 1999
PITAUX D'ÎLE-DE-FRANCE
oint
eptembre 2010 n° 1984
taux
Aurélie Janet-Vendroux,
externe en chirurgie
thoracique à
l'Hôtel-Dieu, à Paris.
onflits d'intérêts » : Martin Hirsch accuse

Le monde des infections nosocomiales

SwissDRG SA
Haslerstrasse 21
CH-3008 Berne
Tél. ++41 31 310 05 50
Fax ++41 31 310 05 57
E-Mail info@swissdrg.org

Exigences SwissDRG :
- SwissDRG SA se fonde sur les recommandations de H+ concernant les clés d'imputations des coûts indirects. L'hôpital doit respecter au moins le critère minimal REKOLE.

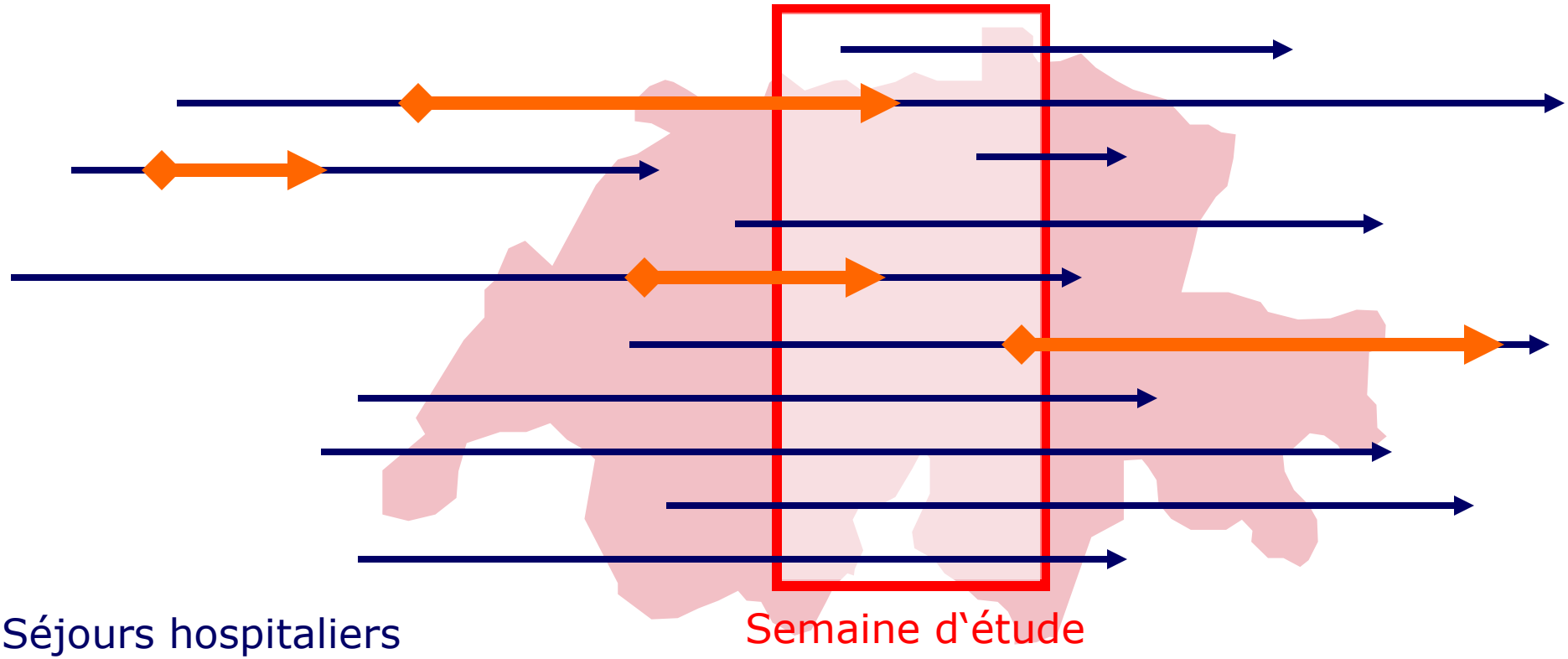
Le tableau ci-dessous liste les principaux centres de charges. Suivez-vous au minimum la clé minimale recommandée par REKOLE ? Si oui, cochez les cases qui conviennent :

Centre de charges obligatoire	Bloc de coûts	Clé minimale
26 Procédé d'imagerie médicale	Coûts primaires et secondaires	☐ Point de taxe ou Minute
31 Corps médicaux	Domaines d'activités 1 à 5[3] (Coûts primaires et secondaires)	☐ Point de taxe (TARMED: PM et PT) ou Minut
	Domaines d' activités 6[3] (Coûts primaires et secondaires)	☐ Point de taxe (TARMED: PM uniquement) o Minute
39 Services de soins	Coûts primaires et secondaires	☐ Minute
41 Hôtellerie - chambres	Coûts primaires et secondaires	☐ Journée d'hospitalisation
1 Administration des patients	Coûts primaires et secondaires	☐ Cas administratif

Pas de compensation pour les infections nosocomiales

Le monde des infections nosocomiales

Prévalence: méthodologie



Séjours hospitaliers

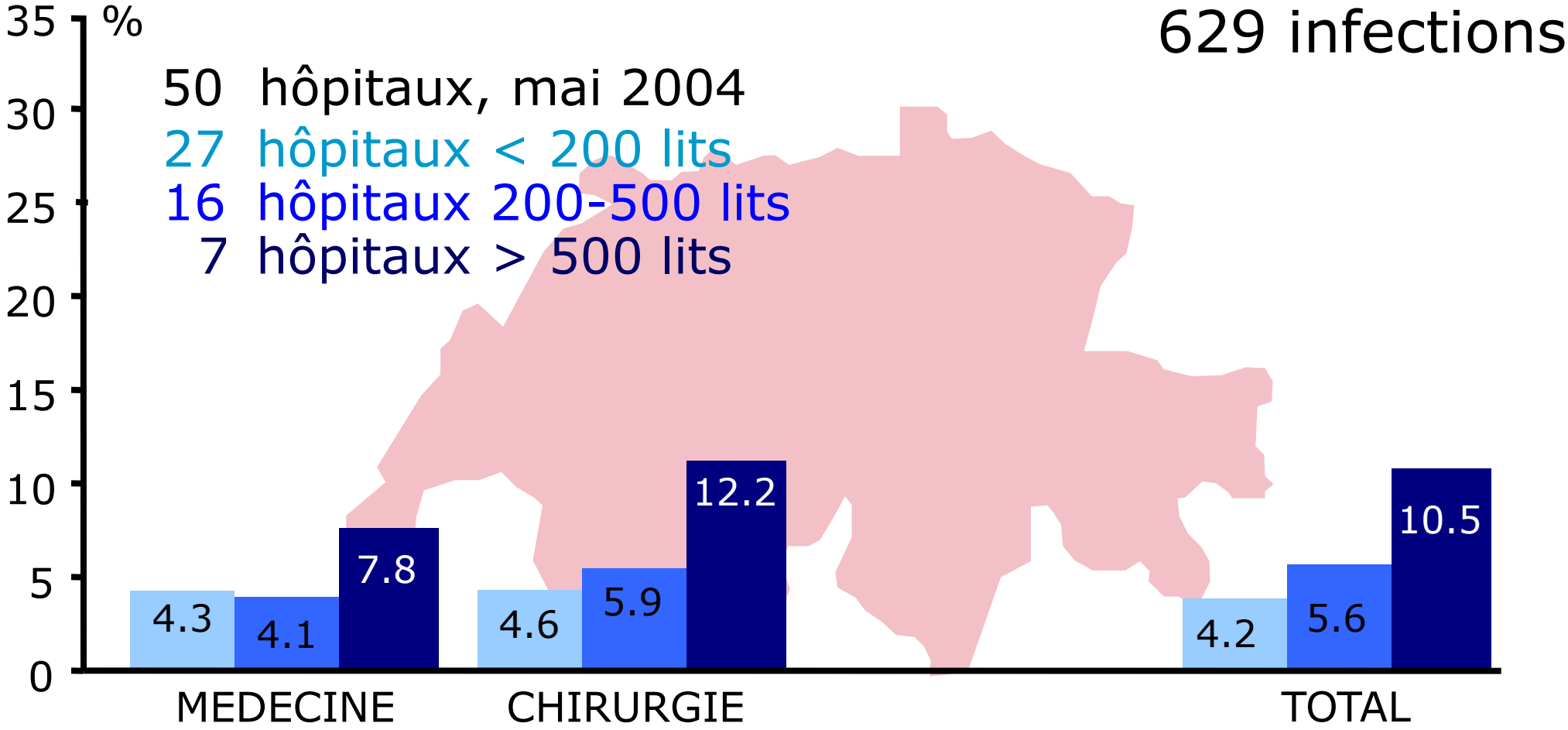
Infections nosocomiales

Sax et al. for SwissNoso. Arch Intern Med 02

Le monde des infections nosocomiales

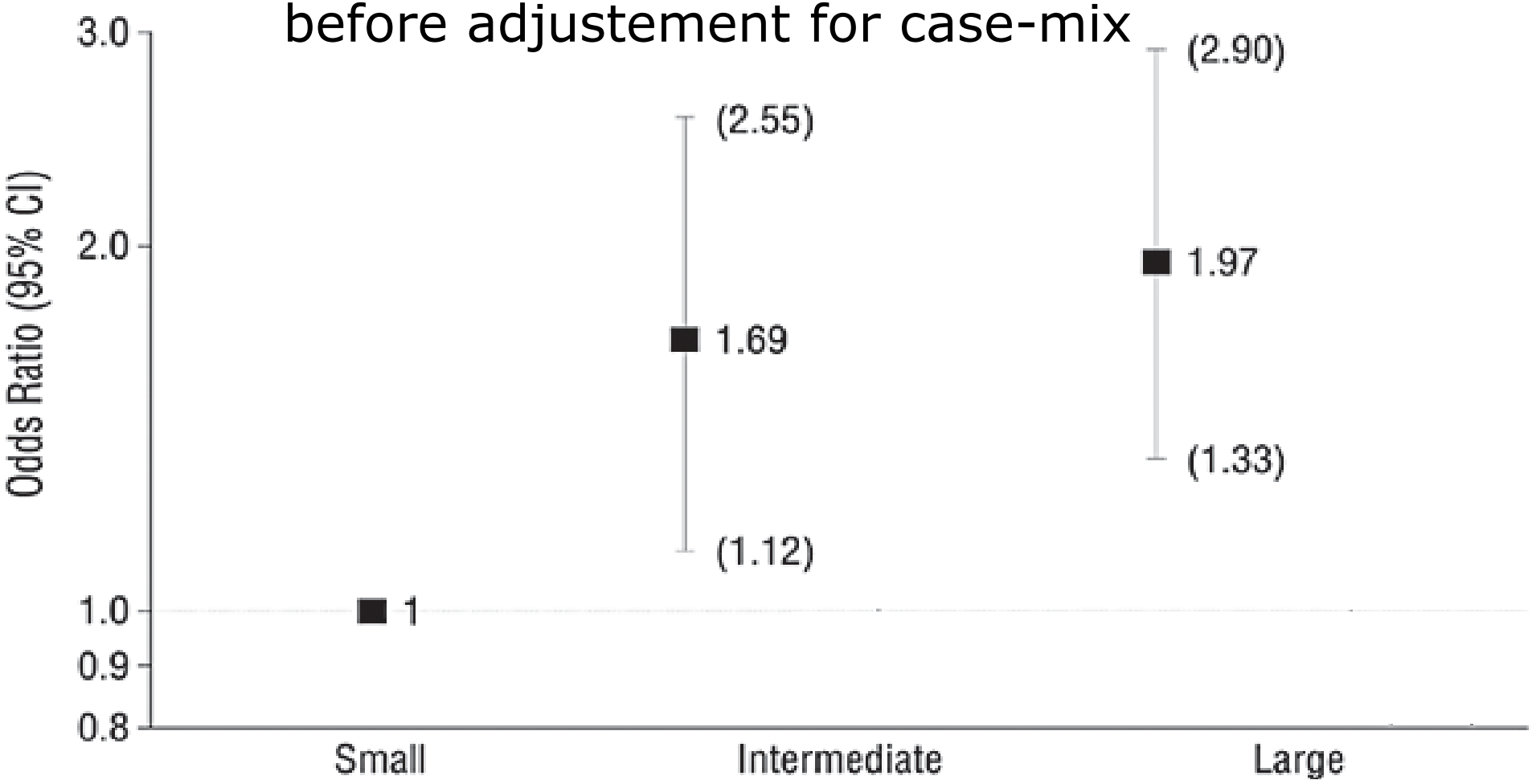
Prévalence 7.2% (4.2%-10.5%)

7783 patients
629 infections



Enquête nationale suisse (SNIP 04). Sax et al. SwissNoso 2005;12:1-6

The world of nosocomial infections

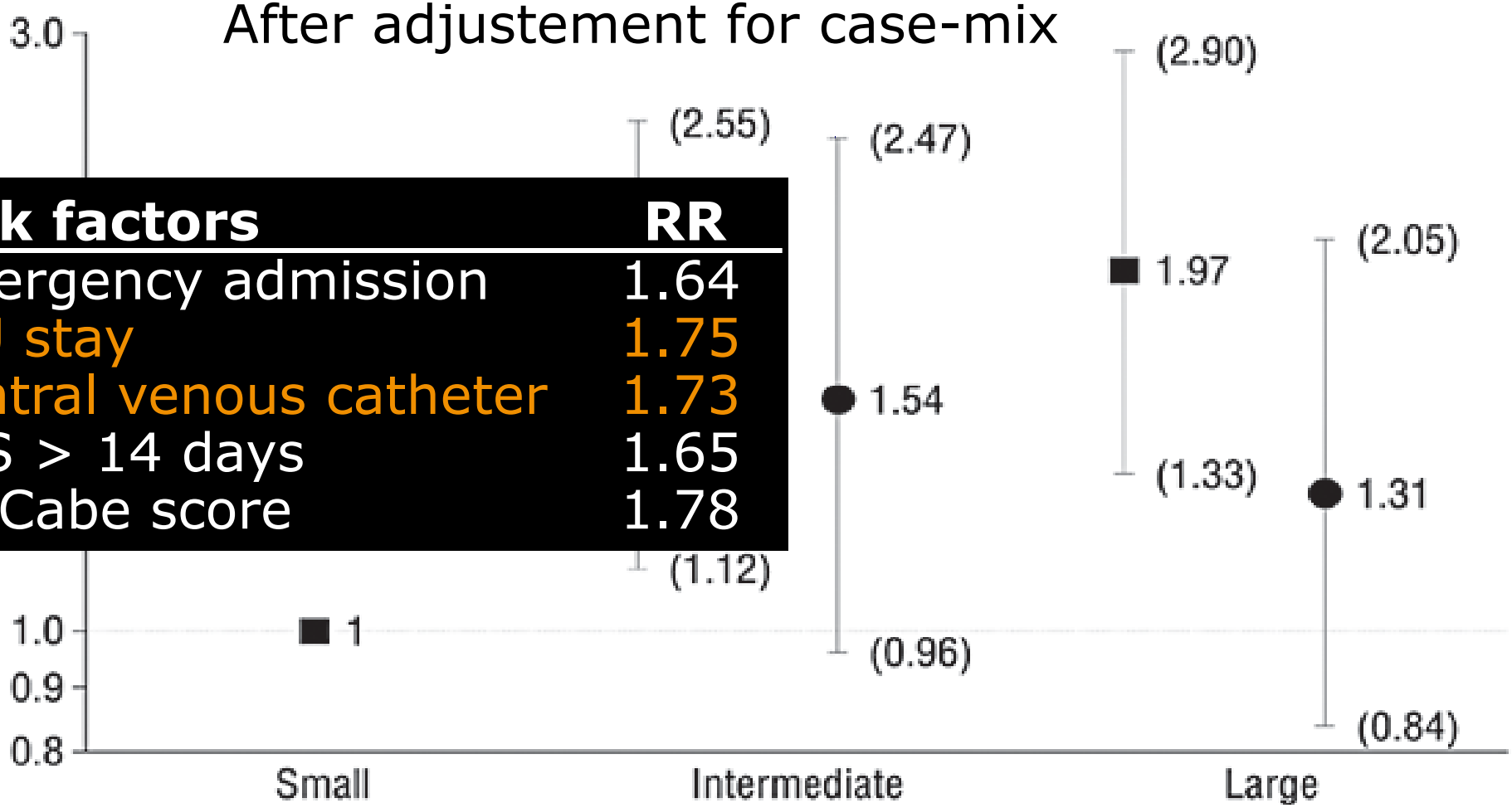


Sax, H. et al. Arch Intern Med 2002;162:2437-2442.

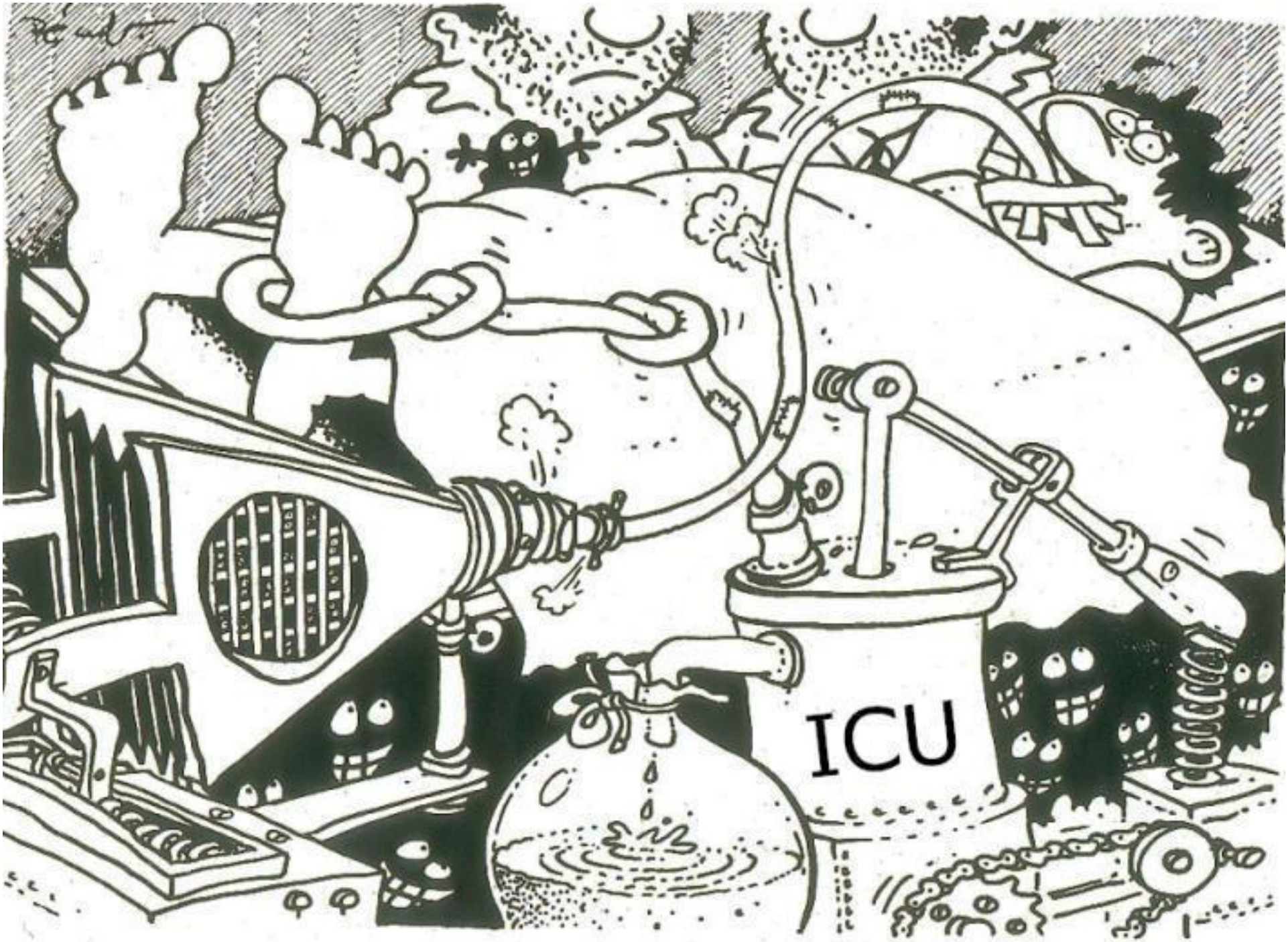
The world of nosocomial infections

After adjustement for case-mix

Risk factors	RR
Emergency admission	1.64
ICU stay	1.75
Central venous catheter	1.73
LOS > 14 days	1.65
Mc Cabe score	1.78

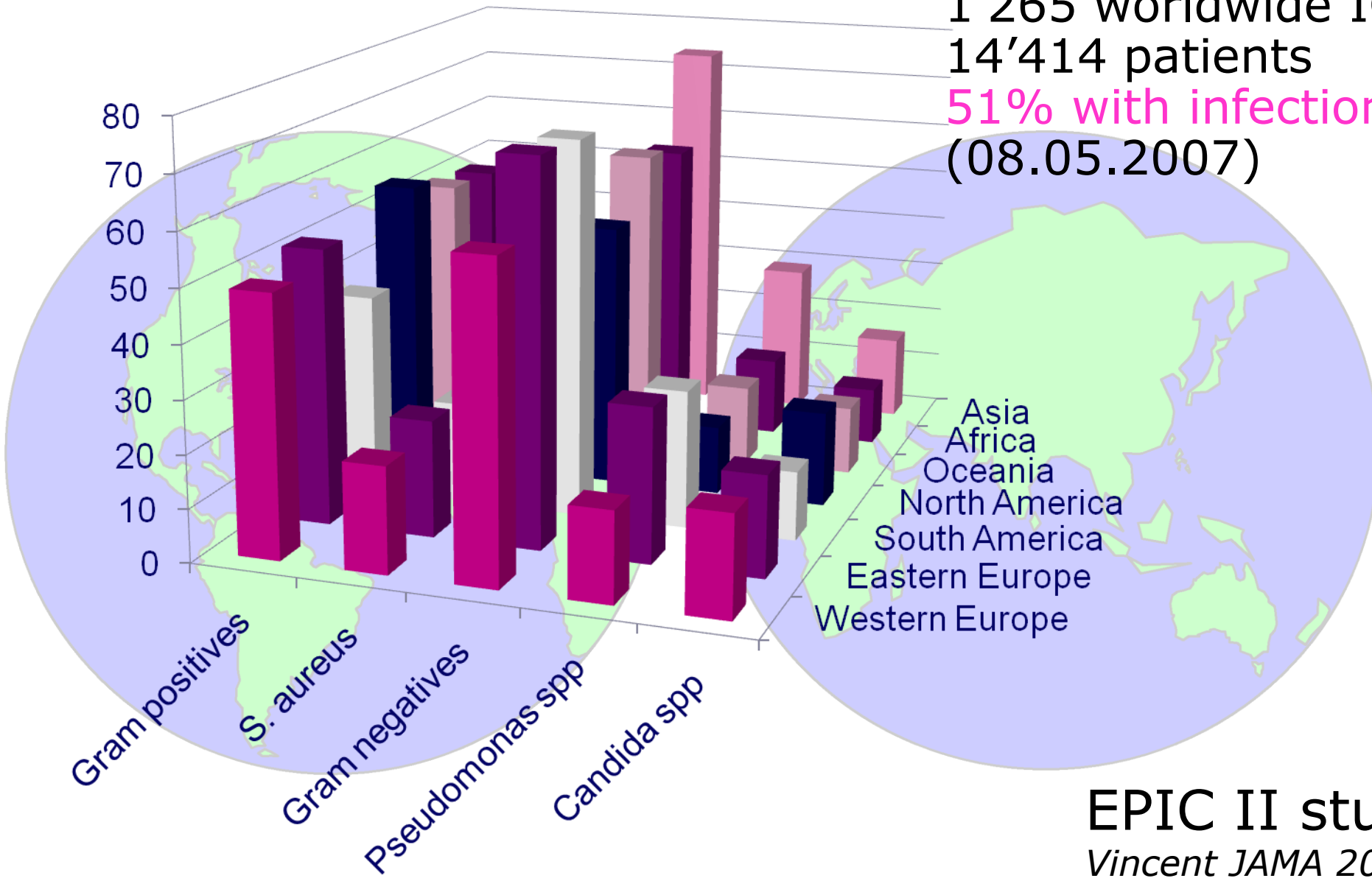


Sax, H. et al. Arch Intern Med 2002;162:2437-2442.


ICU

The world of infections

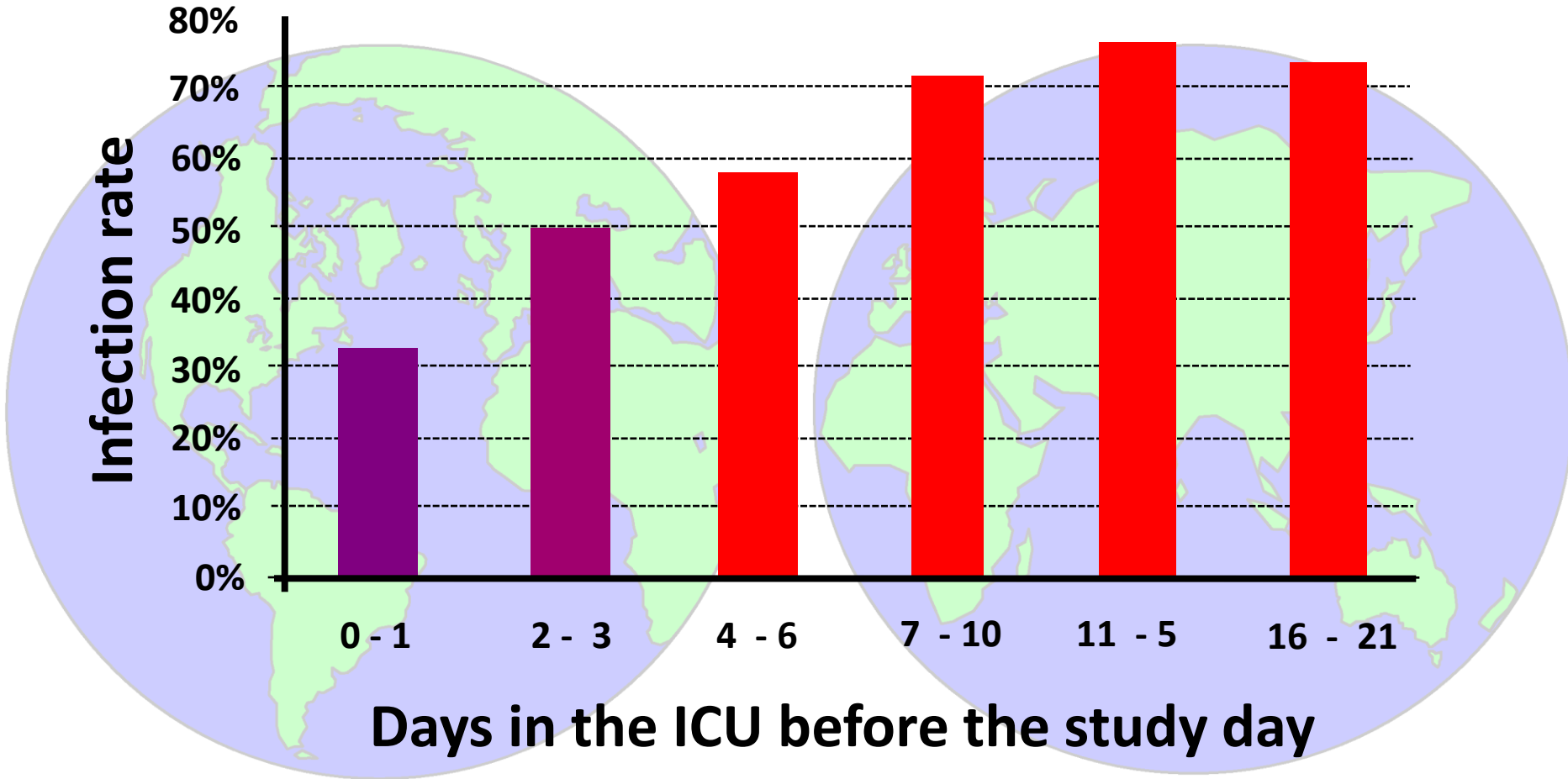
1’265 worldwide ICU
14’414 patients
51% with infection
(08.05.2007)



EPIC II study
Vincent JAMA 2009

The world of nosocomial infections

1’265 worldwide ICU
14’414 patients



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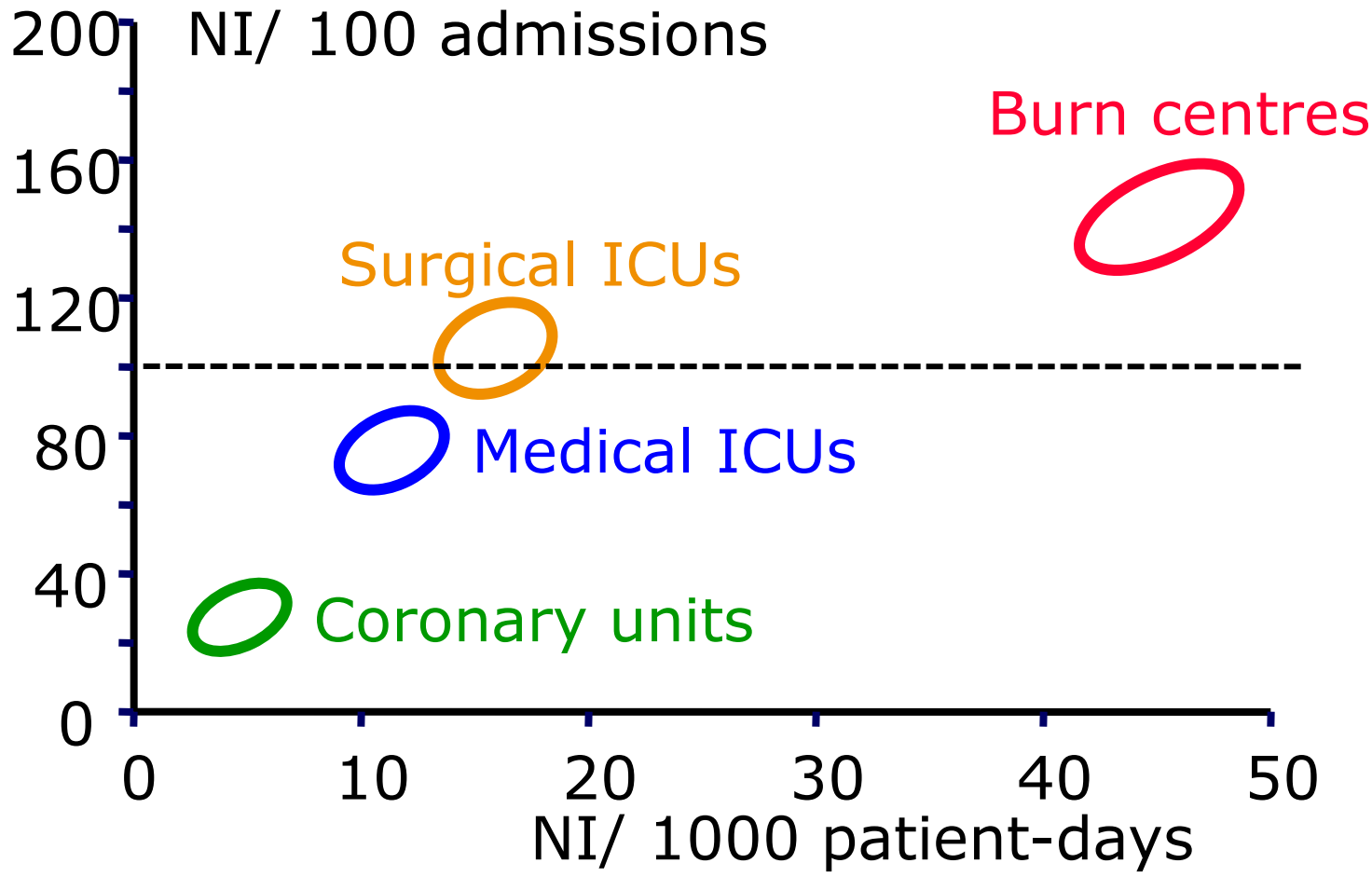
The world of nosocomial infections

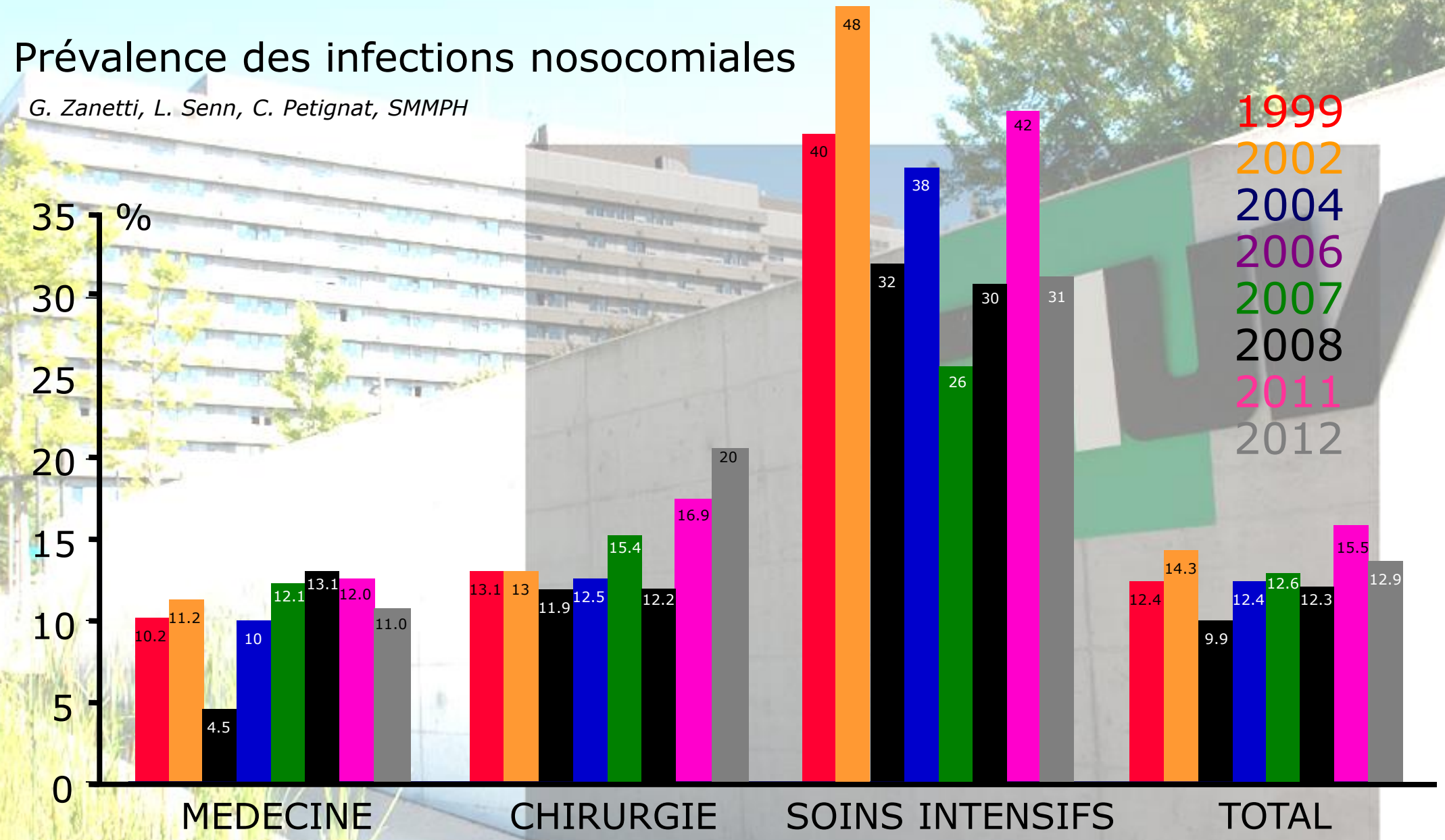


Adapted from: Richards CCM 1999; Eggimann Chest 2001; Chim Burns 2007

Le monde des infections nosocomiales

Prévalence des infections nosocomiales

G. Zanetti, L. Senn, C. Petignat, SMMPH



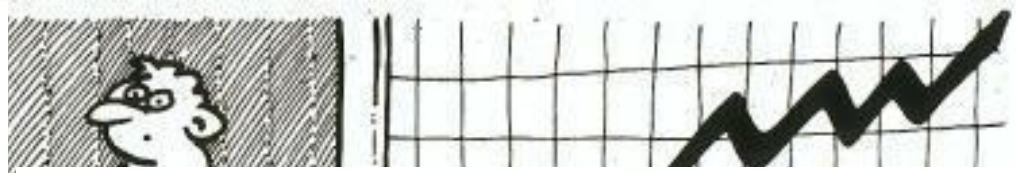
Impact of nosocomial infections

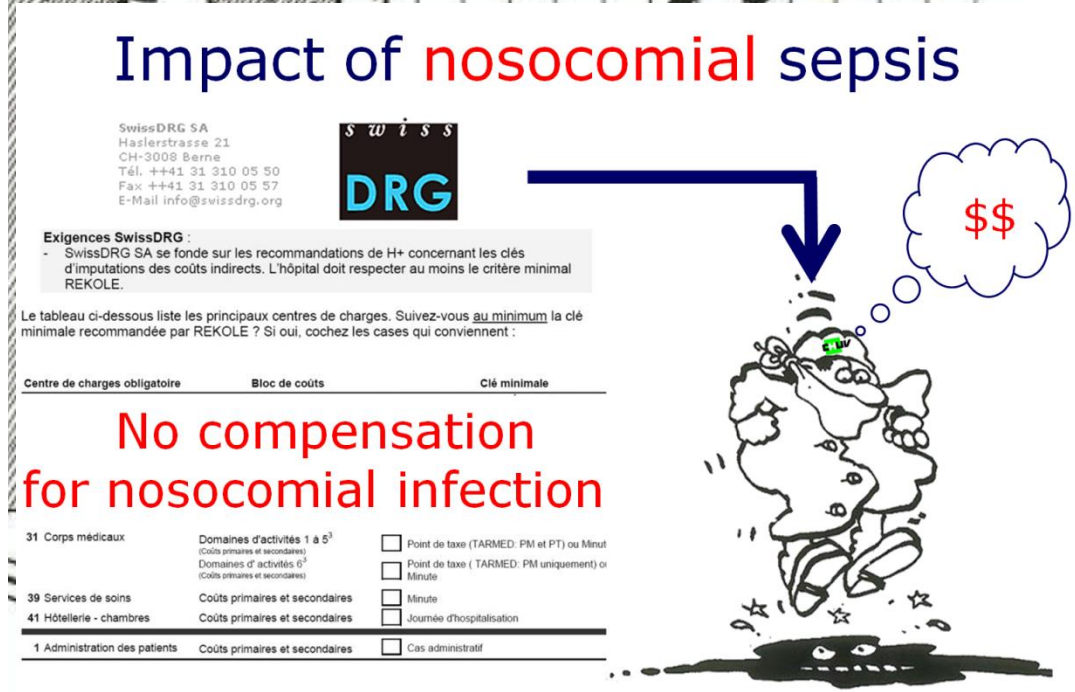
Crude mortality
30% to 60%

Attributable mortality
0% to 40%

Prolongation of length of stay
5 to 25 days

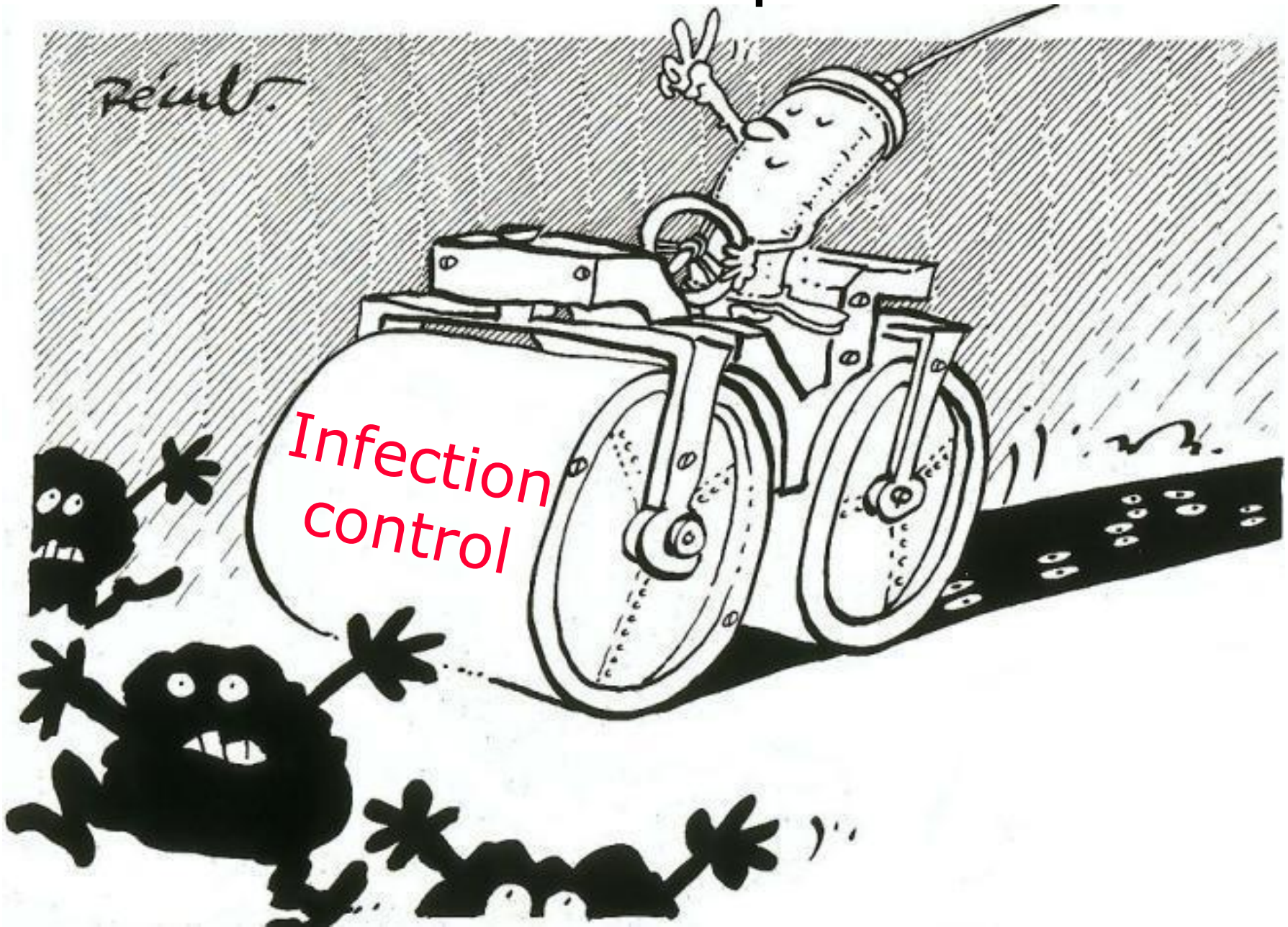
Increase of costs
5,000 to 40,000 euros





Wey et al. Arch Intern Med 1988; Voss et al. Infection 1997
Eggimann et al. Chest 2001; Blot et al. Am J Med 2002

Nous devons les prévenir !!

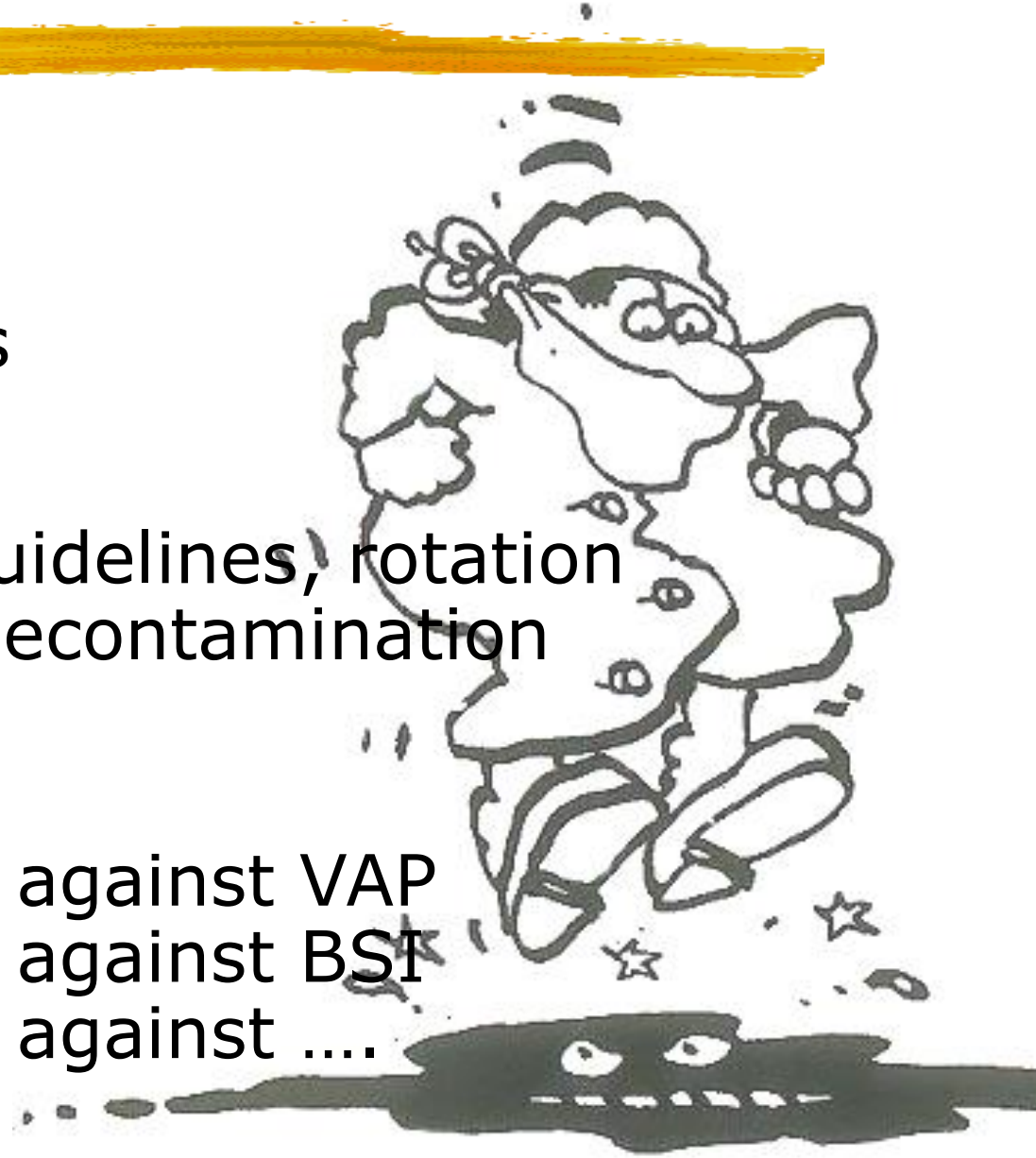


Strategies for infection control

General measures
Surveillance
Isolation precautions

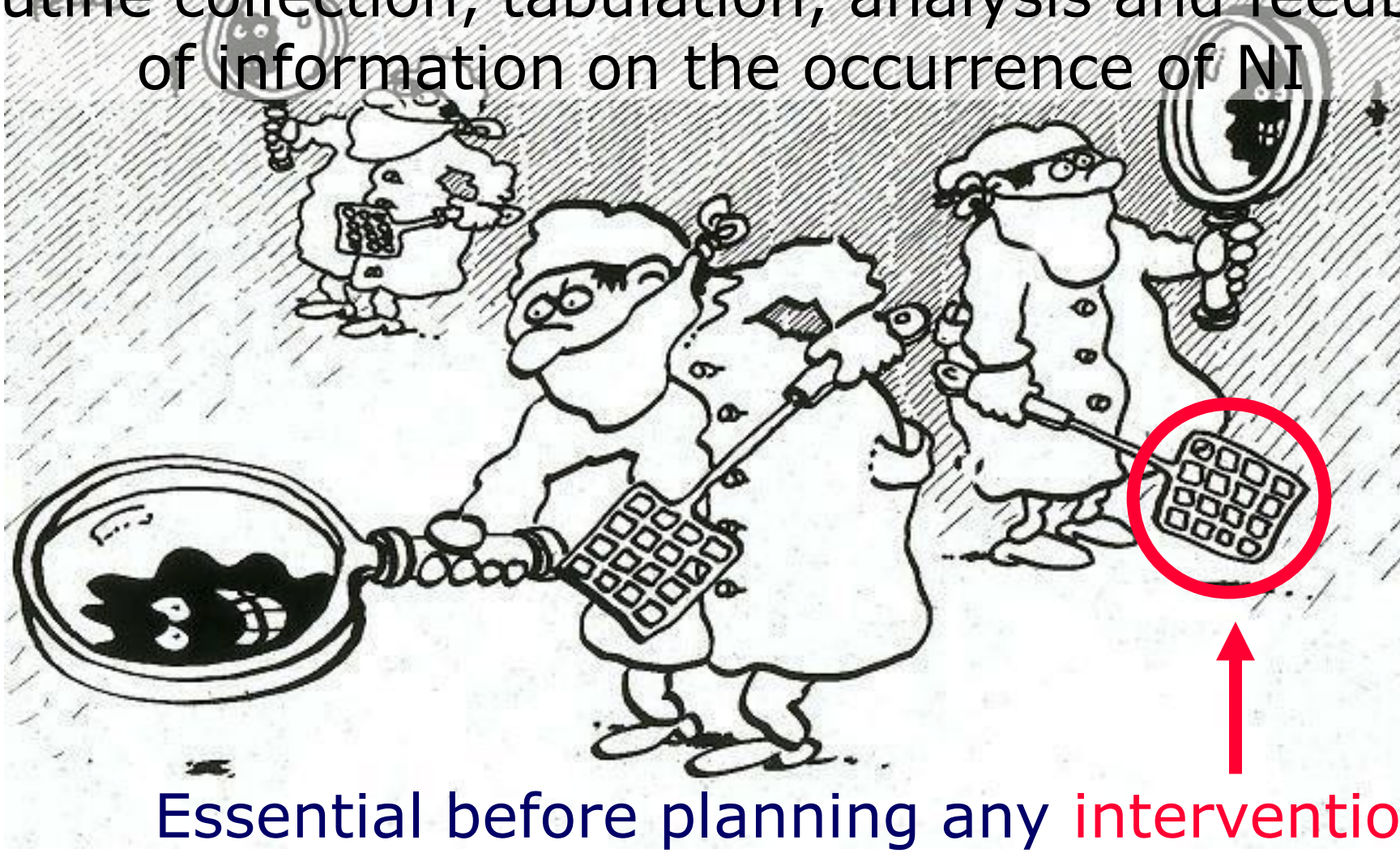
Antibiotic control
Restriction of use, guidelines, rotation
Selective digestive decontamination

Specific measures
Specifically targeted against VAP
Specifically targeted against BSI
Specifically targeted against ….



Caveats for surveillance of NI in the ICU

Routine collection, tabulation, analysis and feedback of information on the occurrence of NI



Essential before planning any intervention

Strategies for infection control

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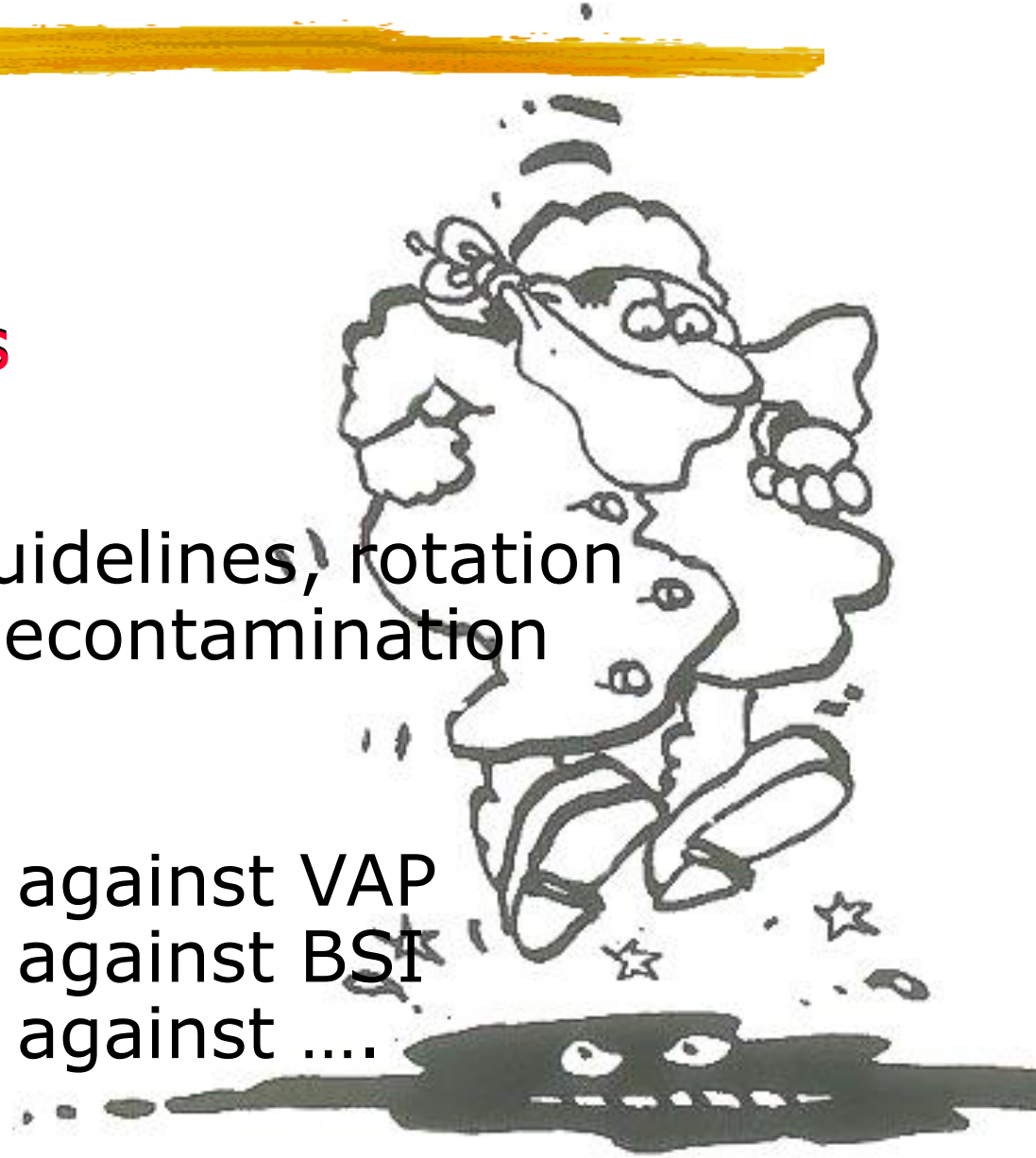
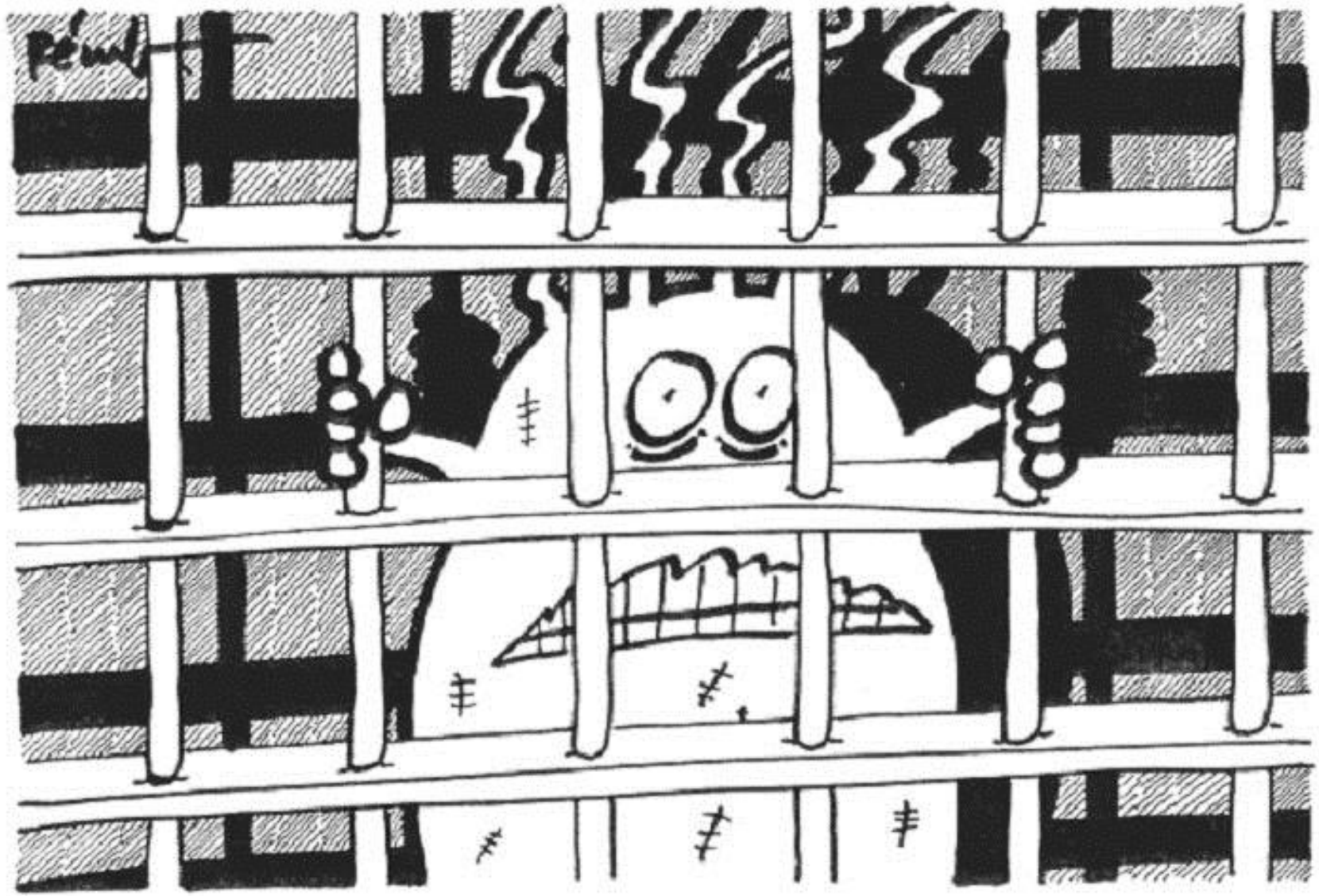


Principles of isolation precautions



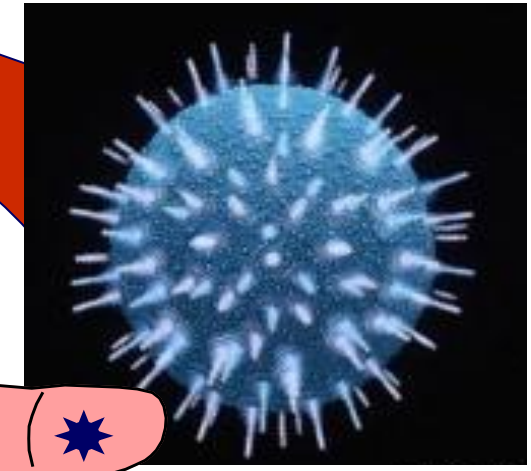
Principles of isolation precautions

The objective is not to isolate but to prevent the TRANSMISSION of microorganisms

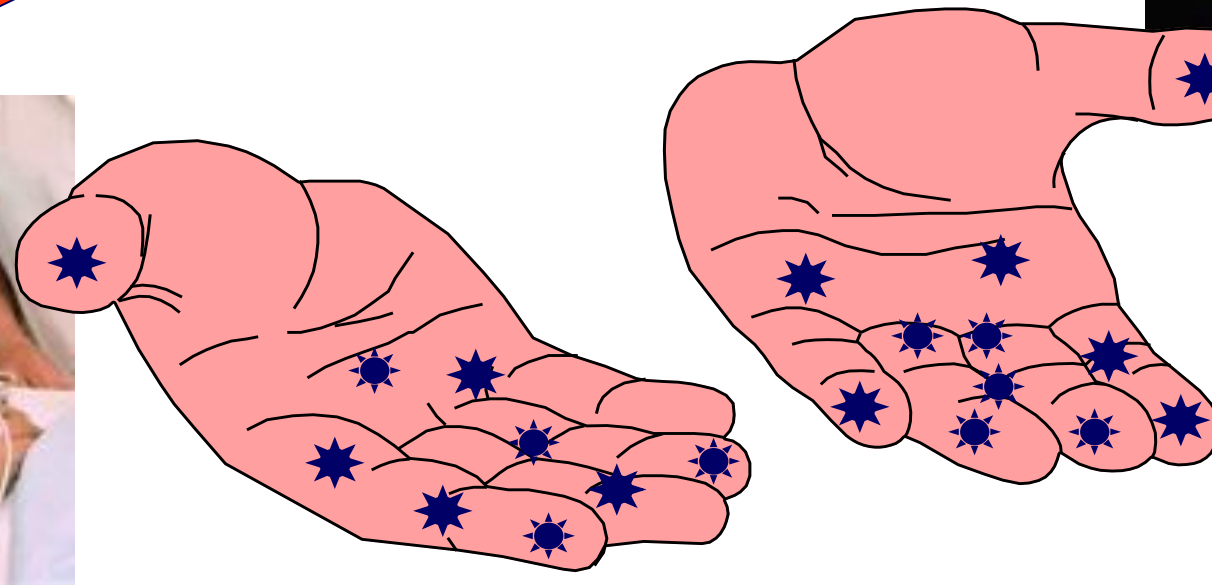
Physiopathologie des infections nosocomiales

contact

TRANSMISSION



Patient



Flore hospitalière

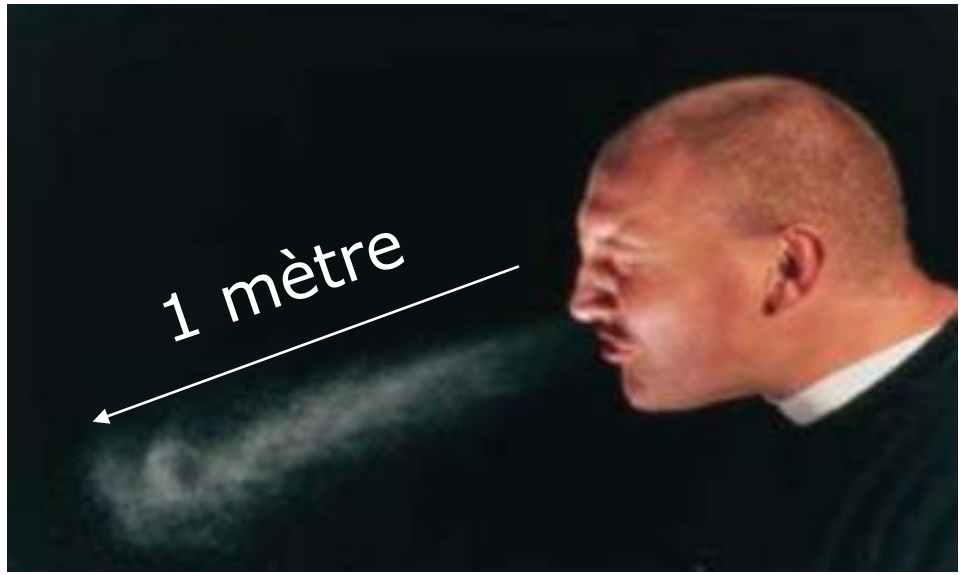
Physiopathologie des infections nosocomiales

gouttelettes

TRANSMISSION

Flore hospitalière

Patient



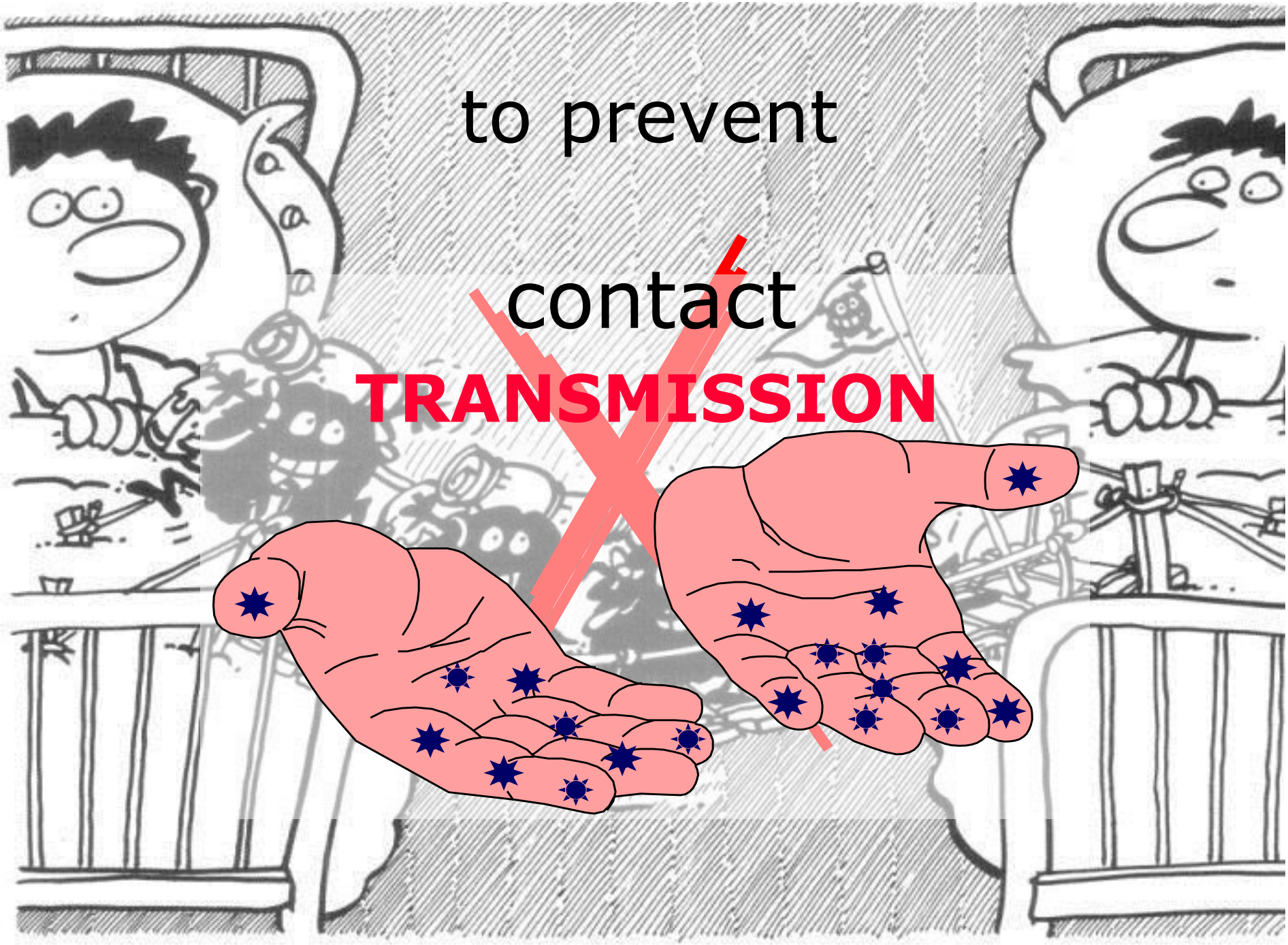
Physiopathologie des infections nosocomiales

aéroportée

TRANSMISSION

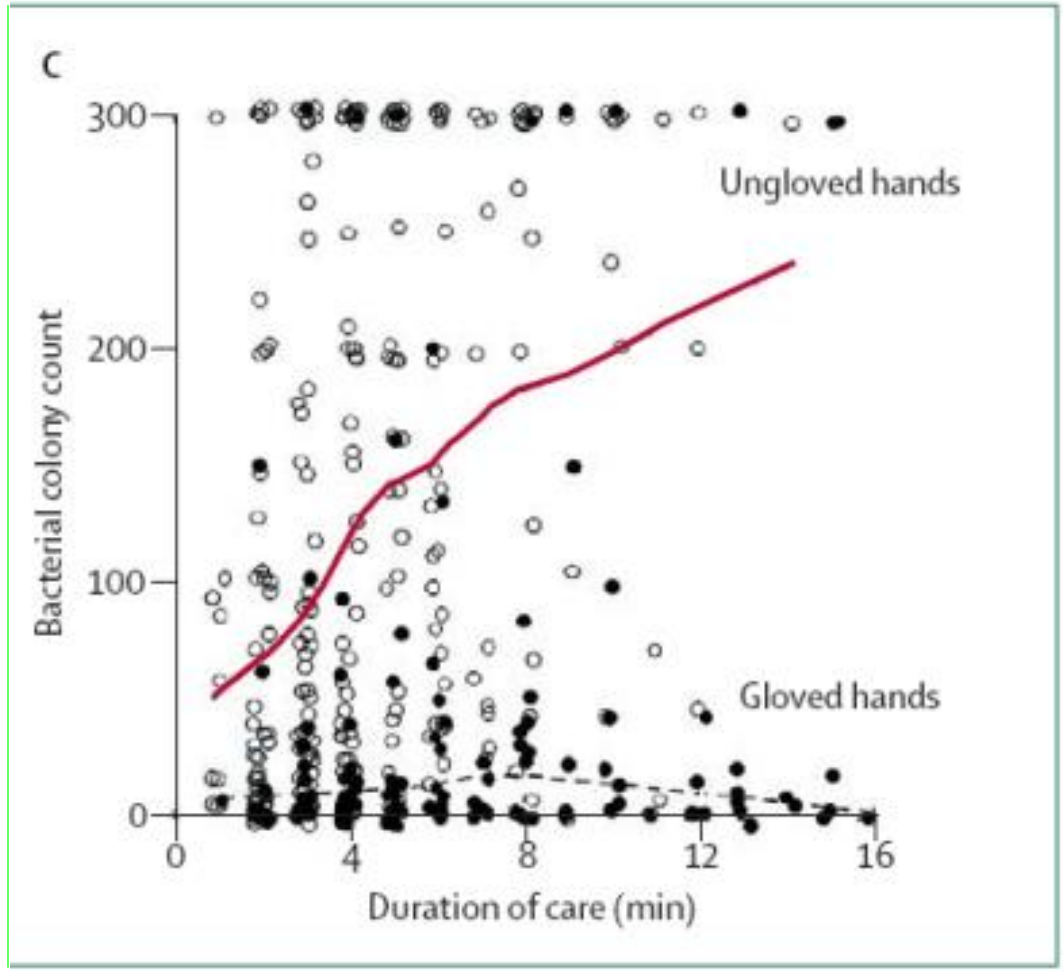
Flore hospitalière

Patient


to prevent
contact
TRANSMISSION

Evidence-based model for hand transmission during patient care and the role of improved practices

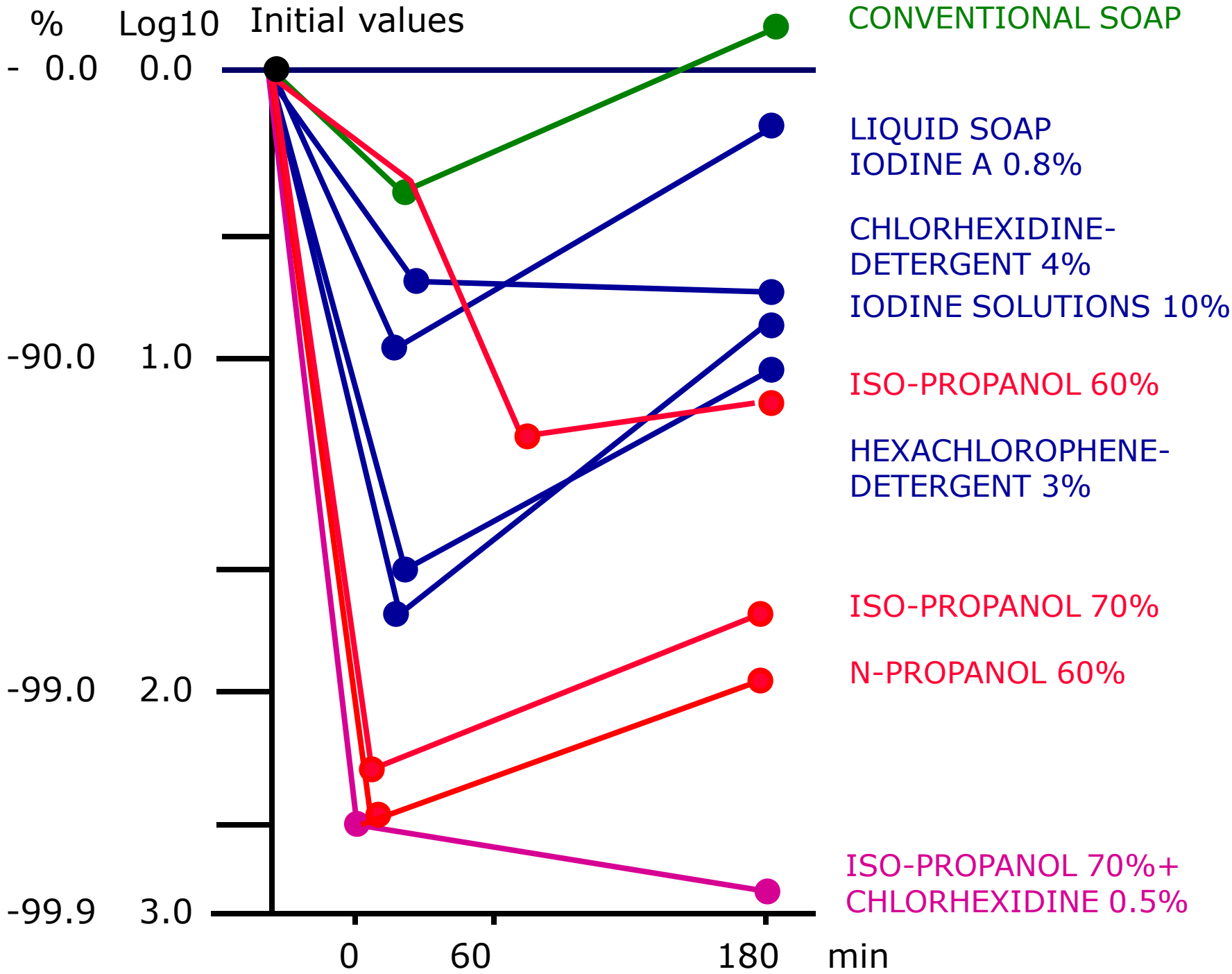
Didier Pittet, Benedetta Allegranzi, Hugo Sax, Sasi Dharan, Carmem Lúcia Pessoa-Silva, Liam Donaldson, John M Boyce; on behalf of the WHO Global Patient Safety Challenge, World Alliance for Patient Safety



Lancet Infect Dis 2006; 6: 641–52

to prevent

swisshandhygiene.campaign


% Log10 Initial values
- 0.0 0.0
-90.0 1.0
-99.0 2.0
-99.9 3.0
0
60
180
min
CONVENTIONAL SOAP
LIQUID SOAP
IODINE A 0.8%
CHLORHEXIDINE-
DETERGENT 4%
IODINE SOLUTIONS 10%
ISO-PROPANOL 60%
HEXACHLOROPHENE-
DETERGENT 3%
ISO-PROPANOL 70%
N-PROPANOL 60%
ISO-PROPANOL 70%+
CHLORHEXIDINE 0.5%

Compliance to Hand Hygiene

Time constraint = major obstacle for hand hygiene

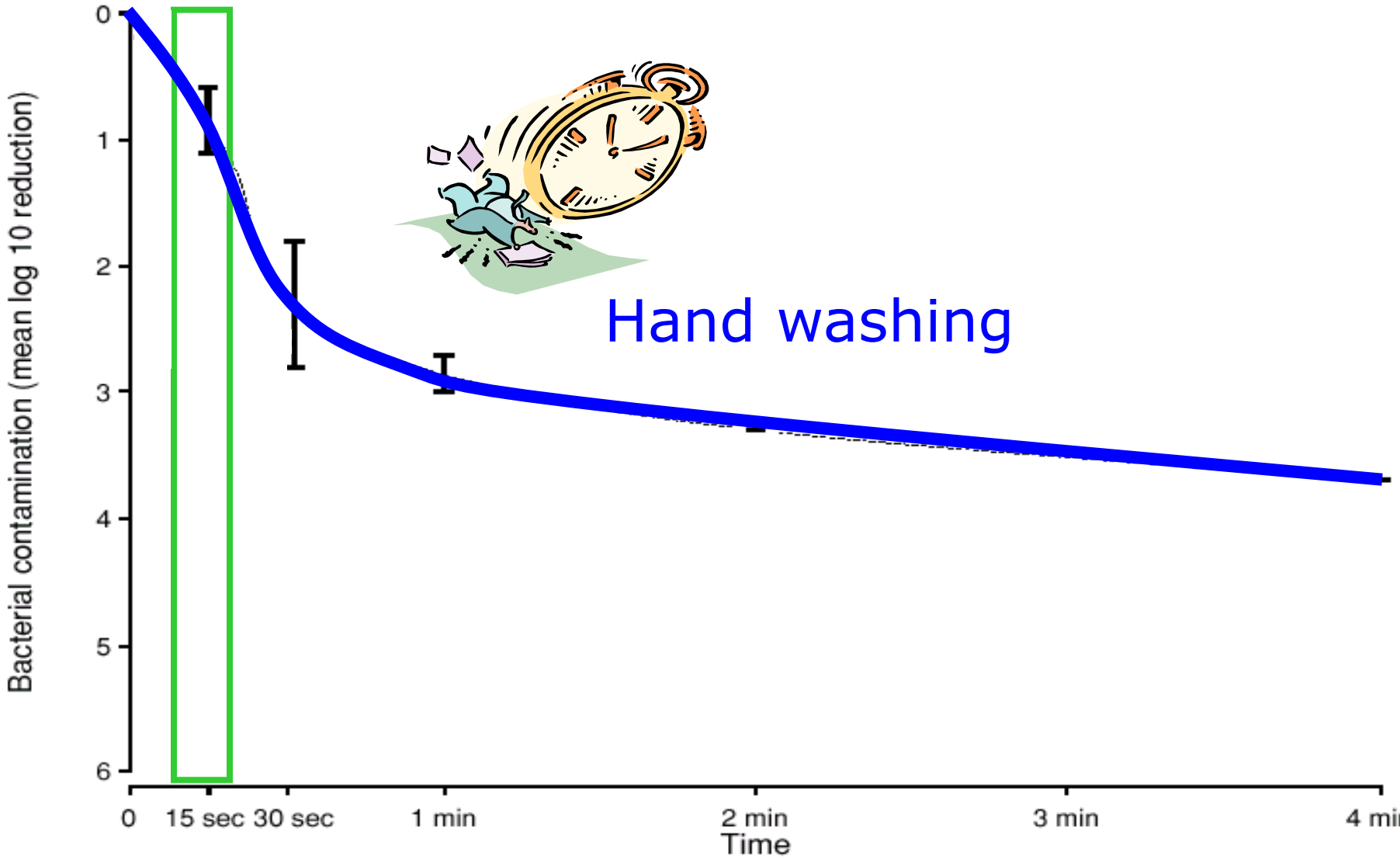
handwashing

1 to 1.5 min

alcohol-based hand rub

15 to 20 sec

Average duration of hand hygiene by HCW



Pittet and Boyce, Lancet Infectious Diseases 2001

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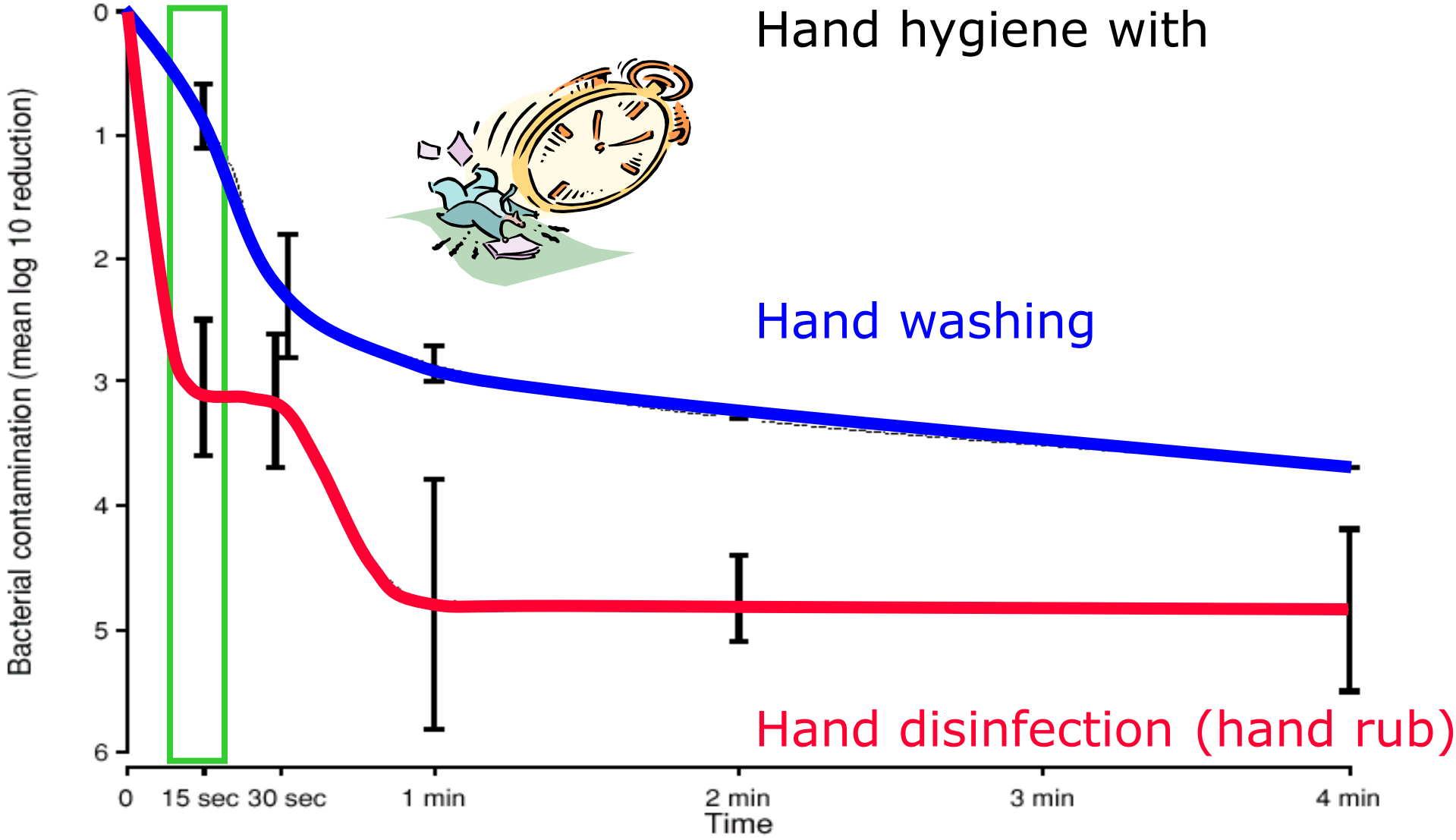

Pittet and Boyce, Lancet Infectious Diseases 2001

Hygiène en réanimation

Service de
Médecine Intensive

CHUV

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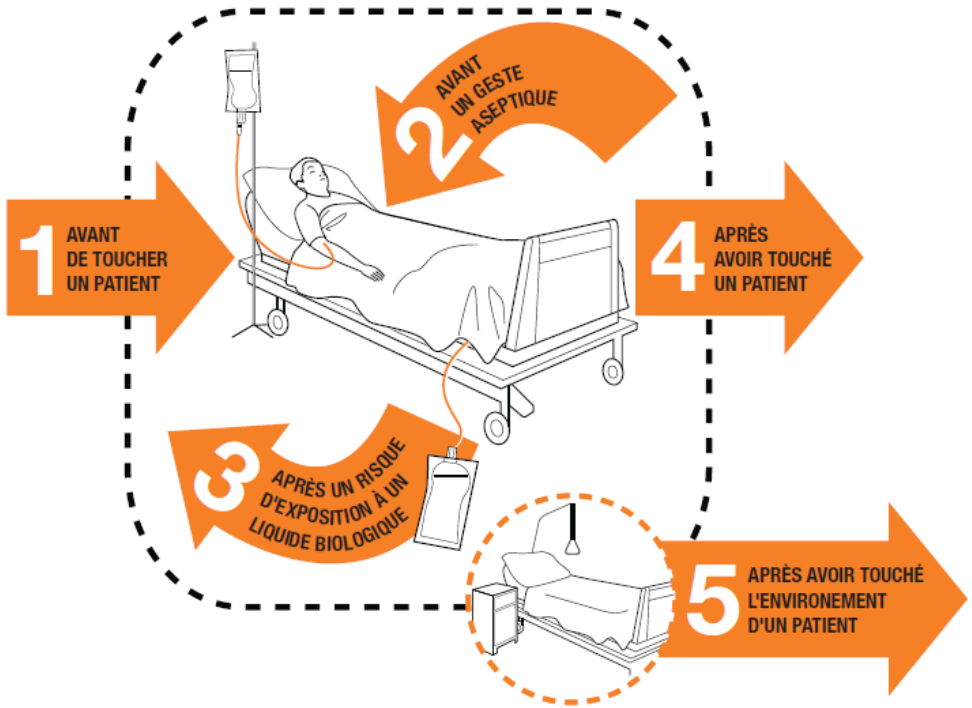
Home « Enseignement

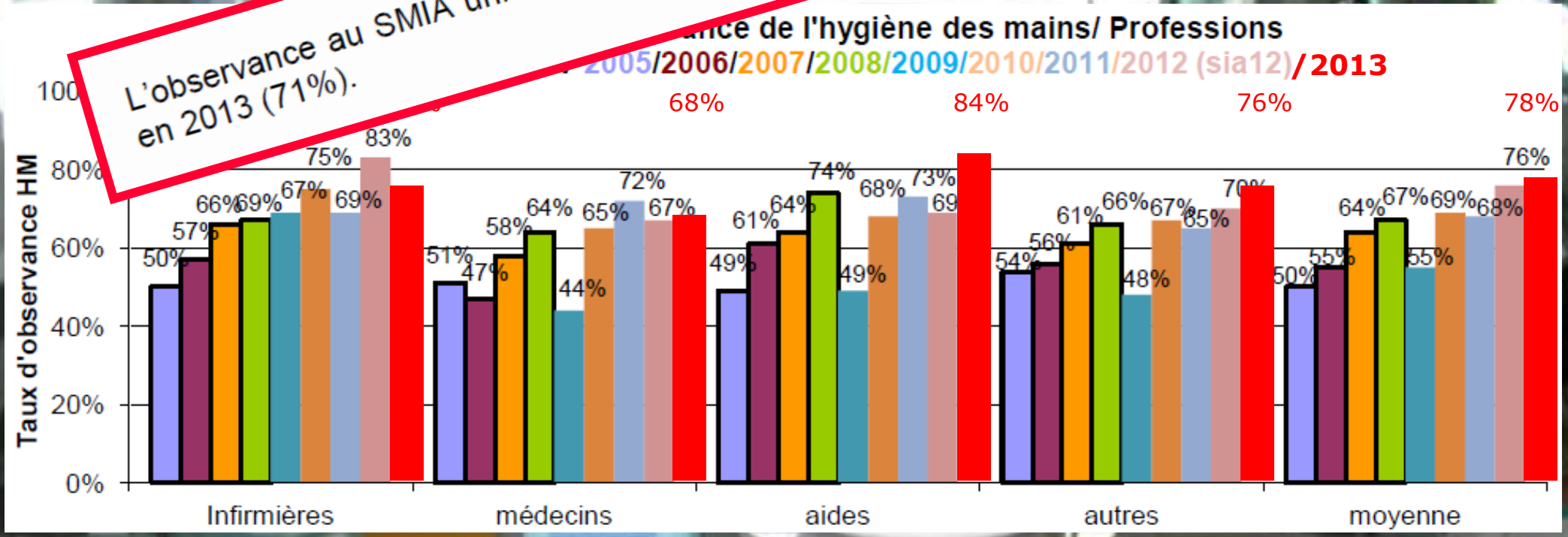
Les 5 indications de l'hygiène des mains



Au 12: 53 distributeurs pour 14 lits !

Hygiène en ré

L'observance au SMIA unités 1 et 2 (78%) est supérieure à l'observance globale du CHUV en 2013 (71%).



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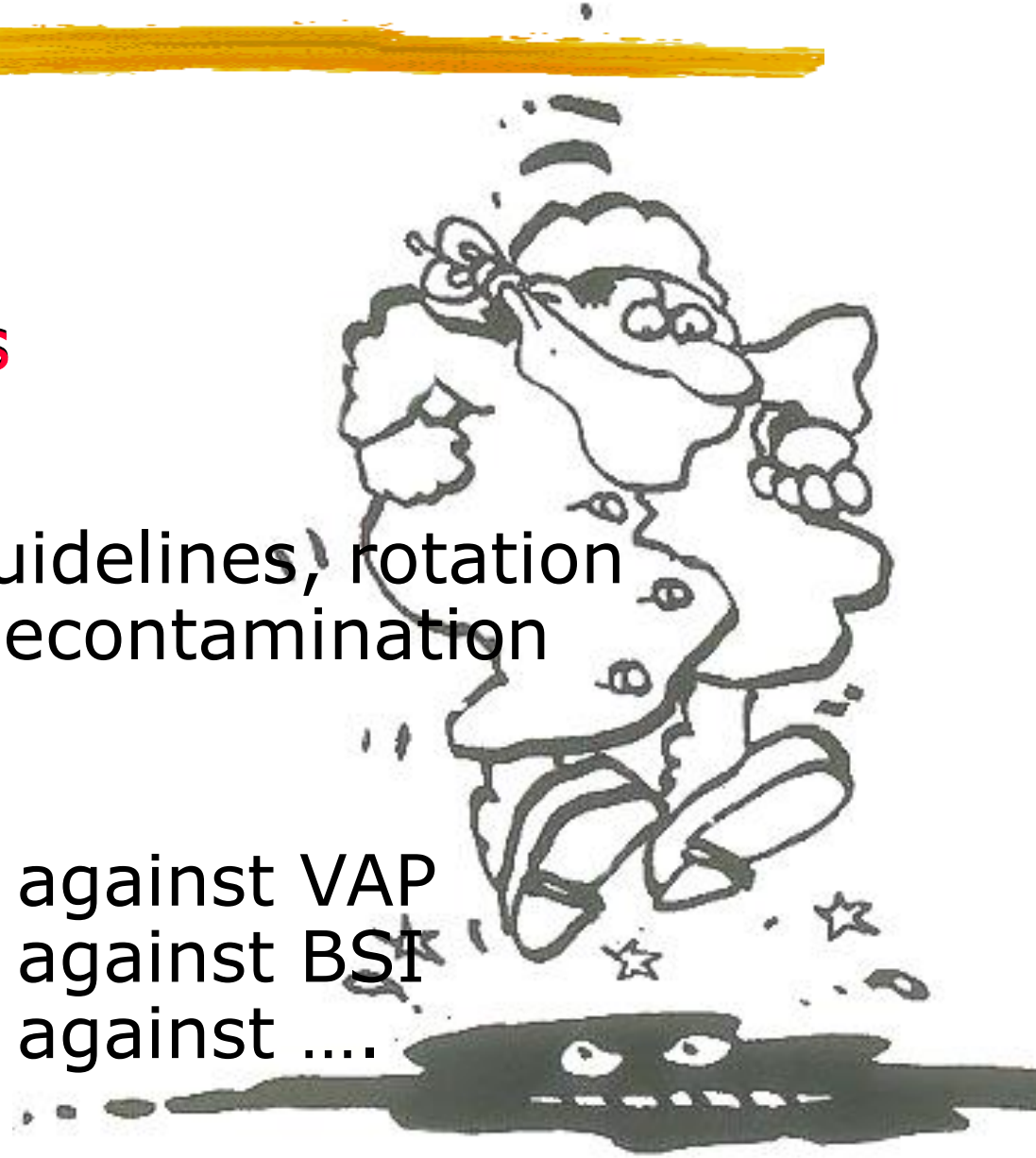
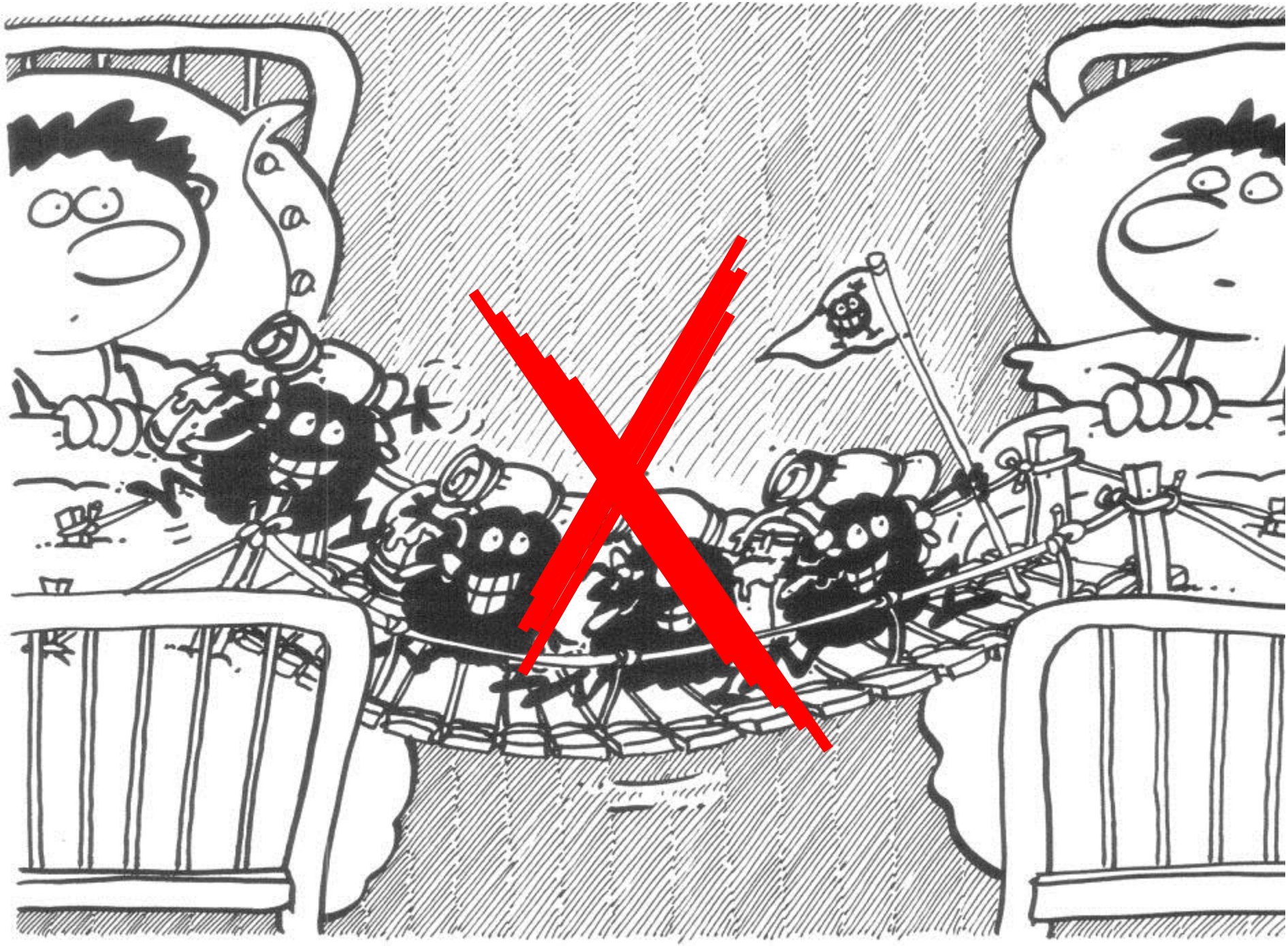
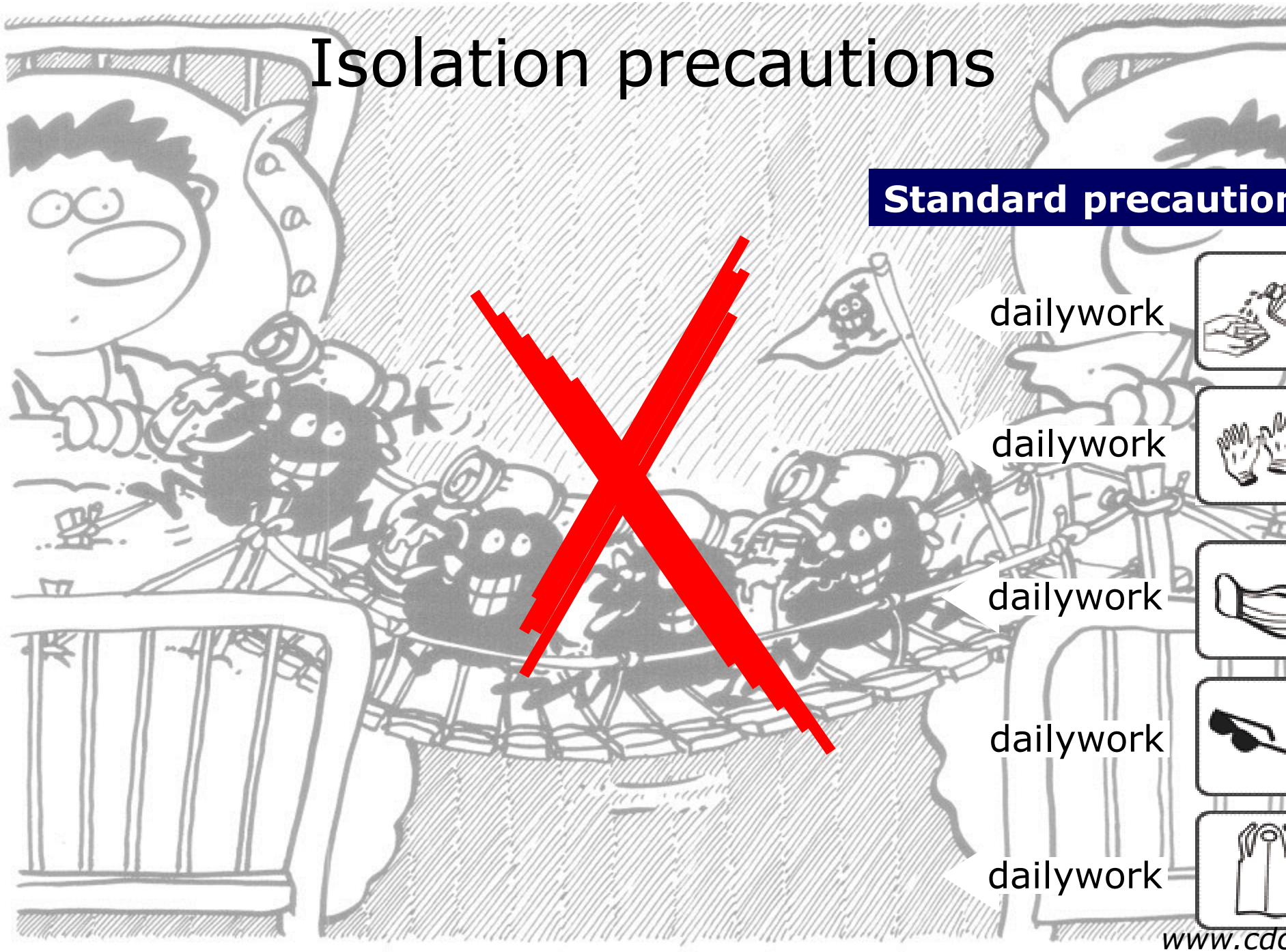




Isolation precautions



Standard precautions

dailywork 

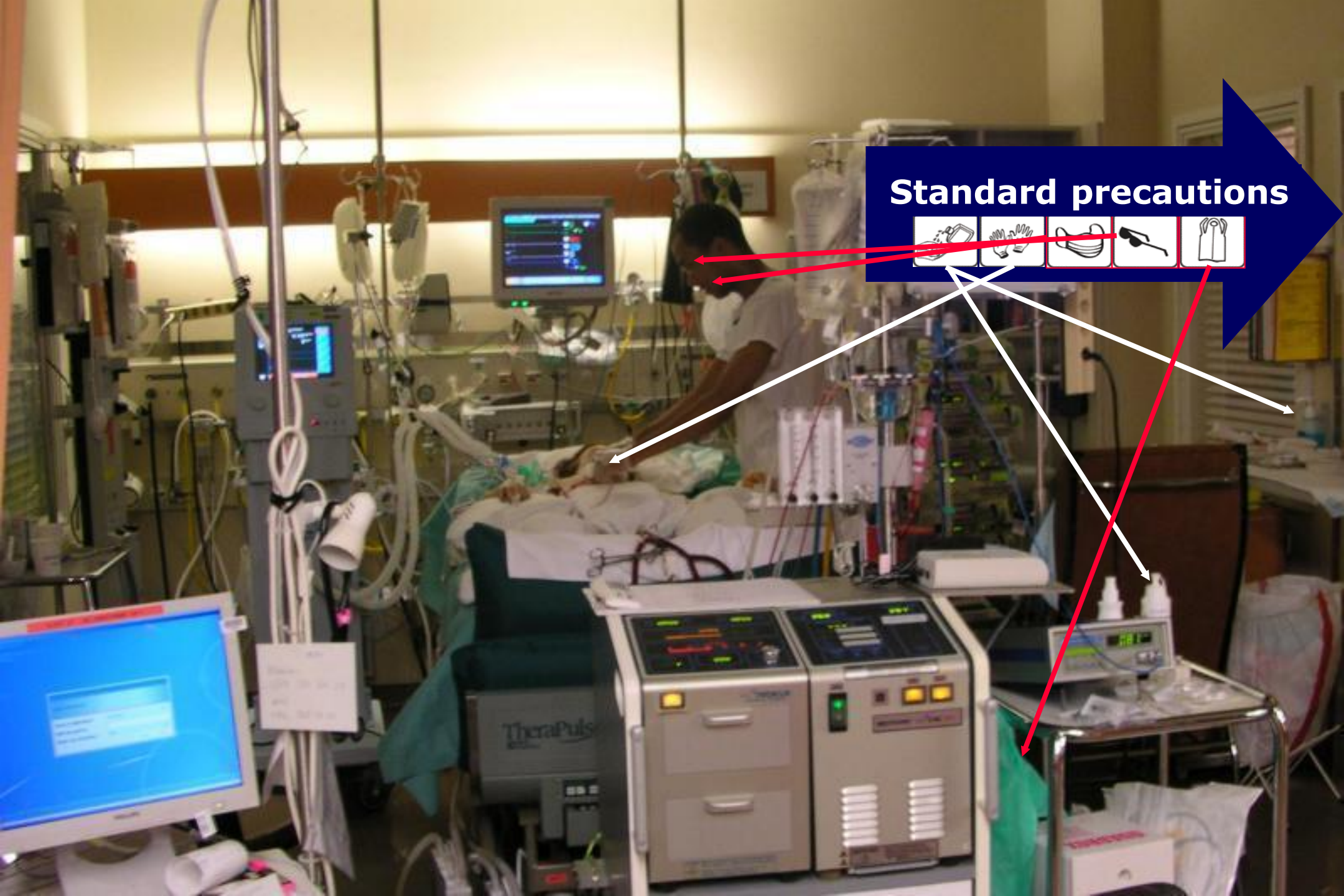
dailywork 

dailywork 

dailywork 

dailywork 

www.cdc.gov


Standard precautions

Isolation precautions

Transmission-based precautions

exceptions

FOR MRSA

MRSA au CHUV
Objectif
zéro transmission
à l'hôpital!

En savoir plus >

Standard precautions

dailywork 

dailywork 

dailywork 

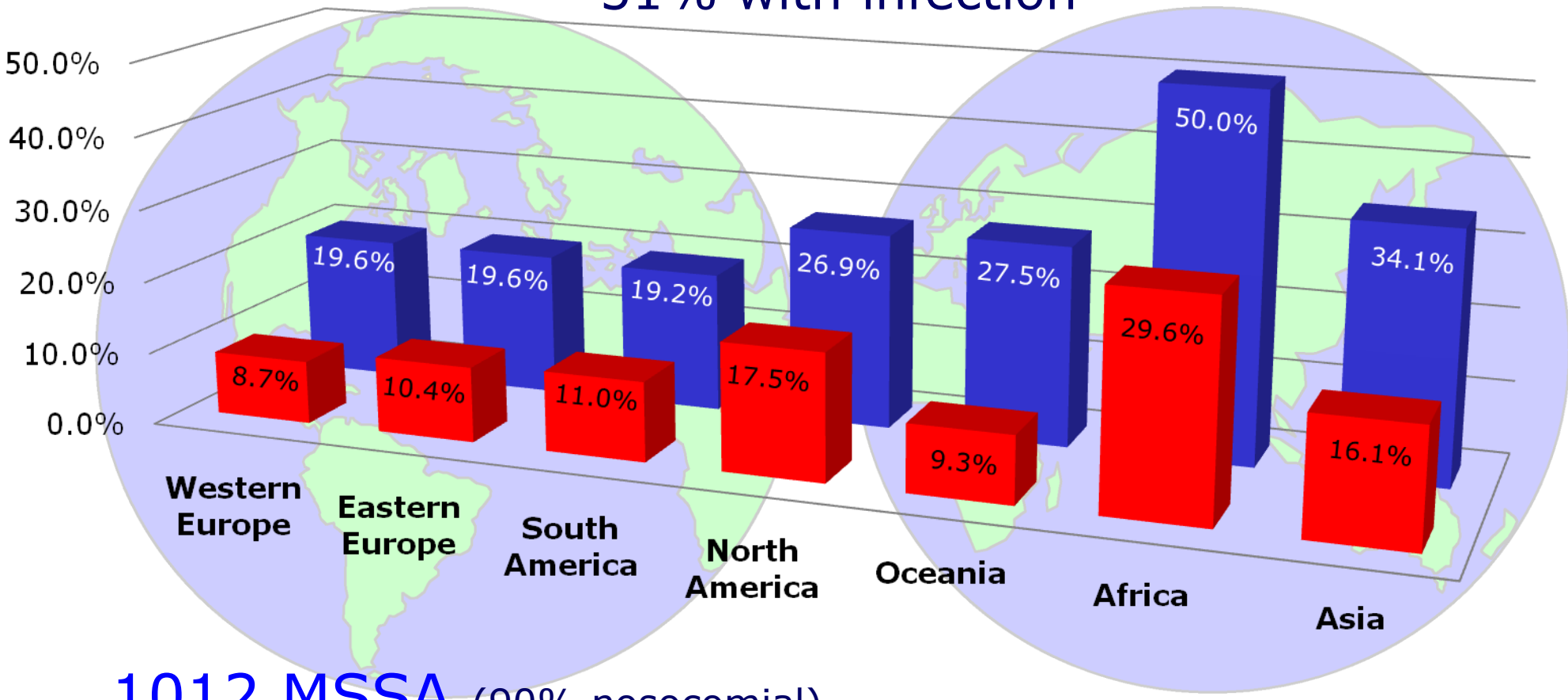
dailywork 

dailywork 

www.cdc.gov

Worldwide leader of nosocomial infection

1’265 worldwide ICU - 14’414 patients (08.05.2007)
51% with infection



1012 MSSA (90% nosocomial)

507 MRSA (95% nosocomial)

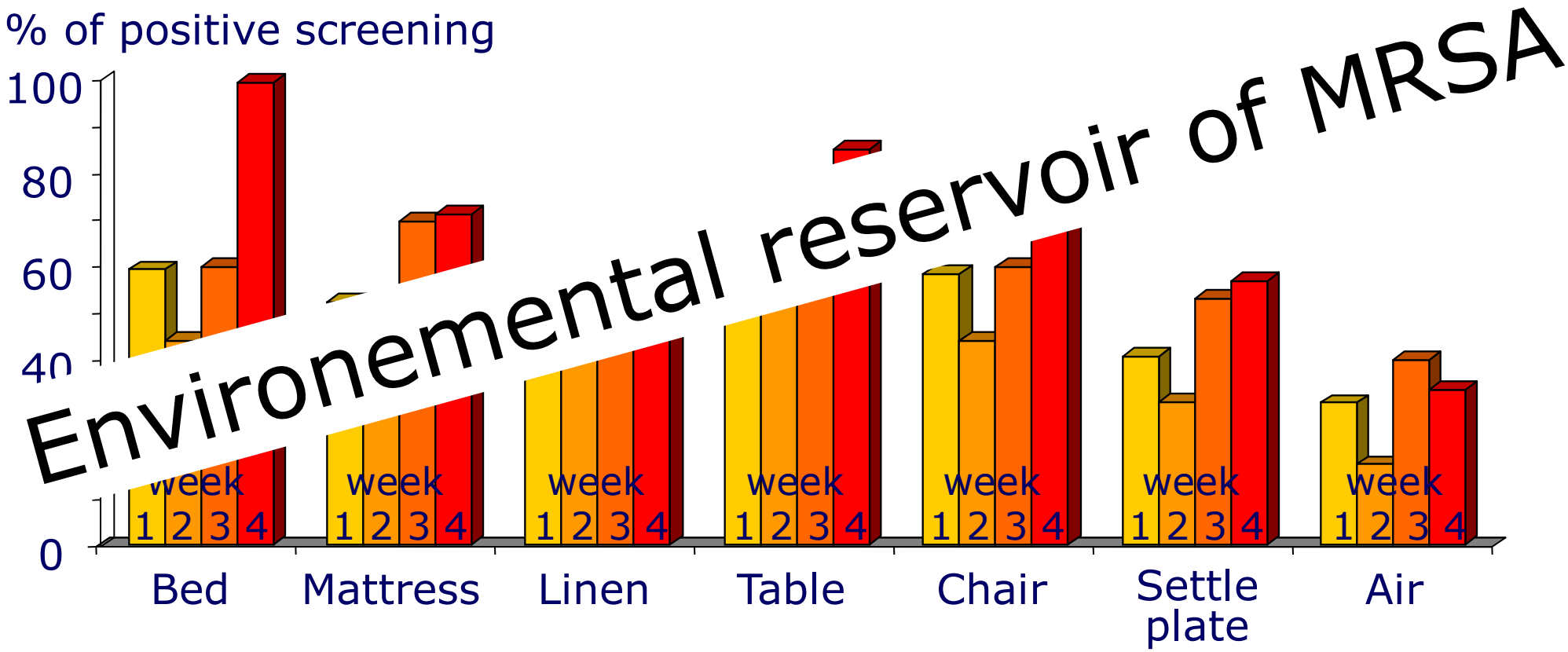
EPIC II study

Vincent JAMA 2009

MRSA is everywhere !!!

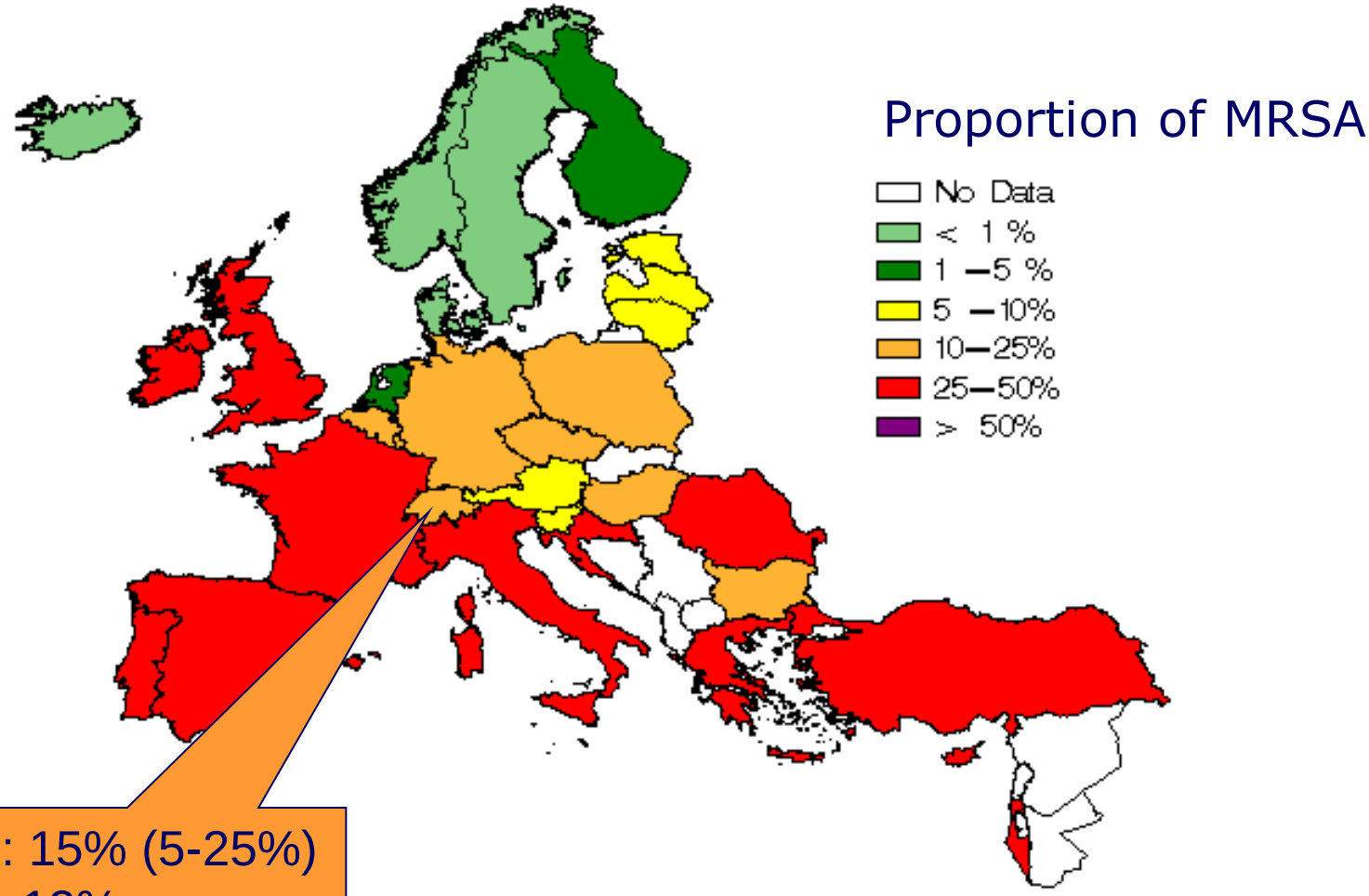
MRSA is everywhere !!!

25 MRSA positive patients isolated in single-rooms



Sexton T et al. J Hosp Infect 06; 62:187-94

MRSA is everywhere !!!



Suisse : 15% (5-25%)
CHUV : 12%

2009

www.earss.rivm.nl

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Médecine Intensive

CHUV

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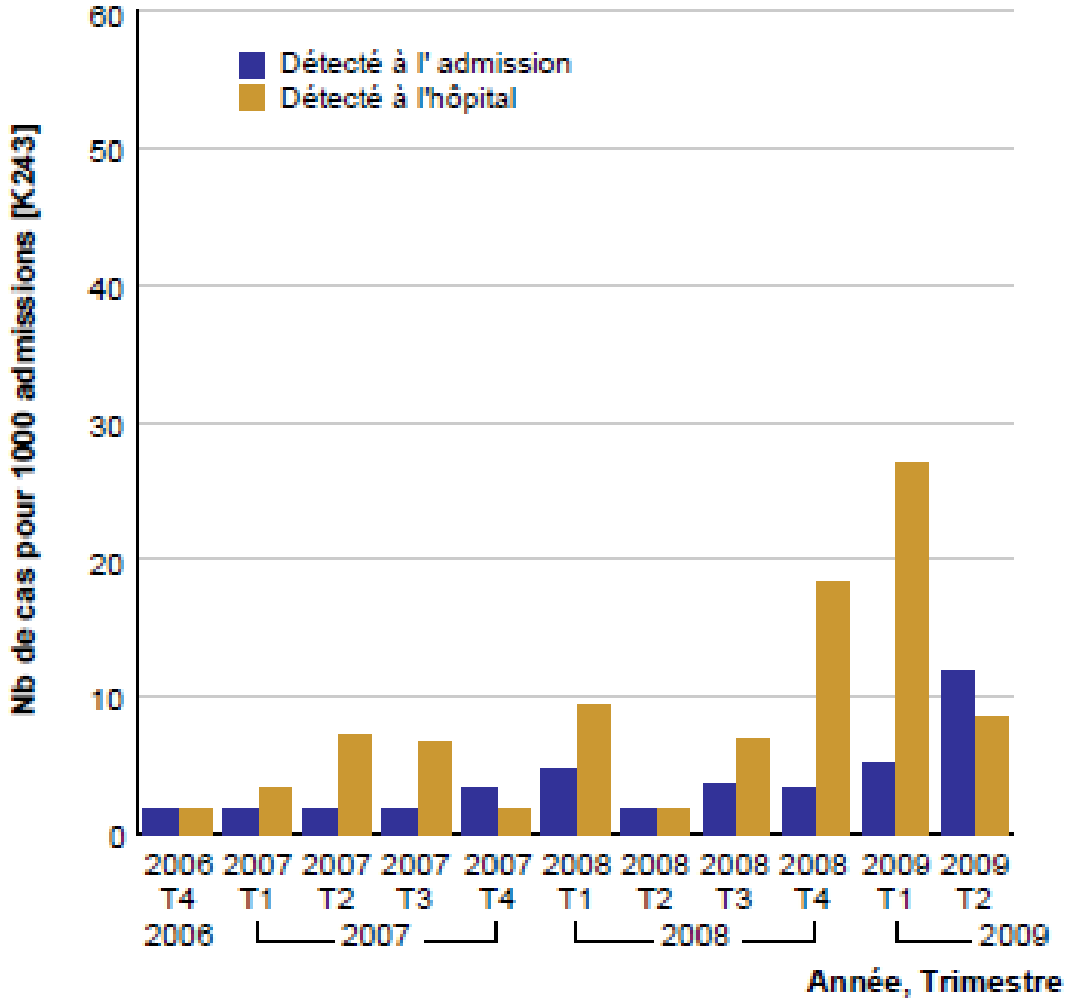
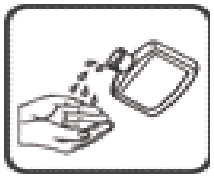
MRSA au SMIA

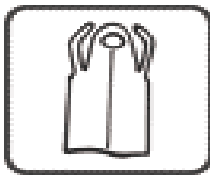
Service de détection: SIA - Médecine intensive adulte (SMIA)



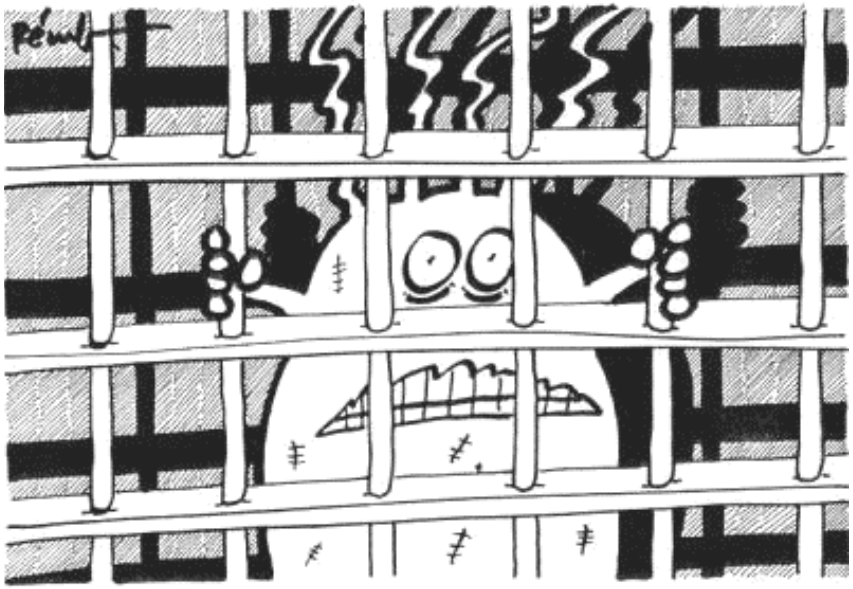
Tissot F.
SMPH

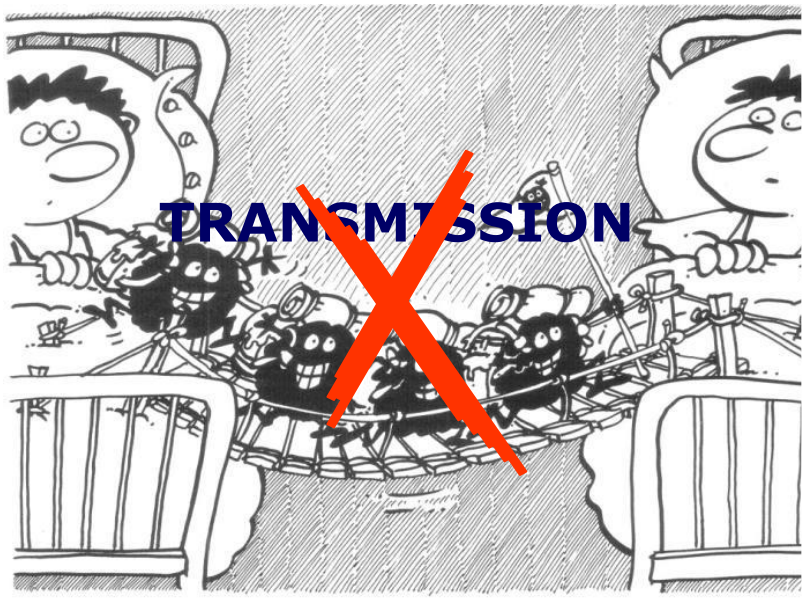
MRSA au SMIA





L'objectif n'est pas d'isoler !

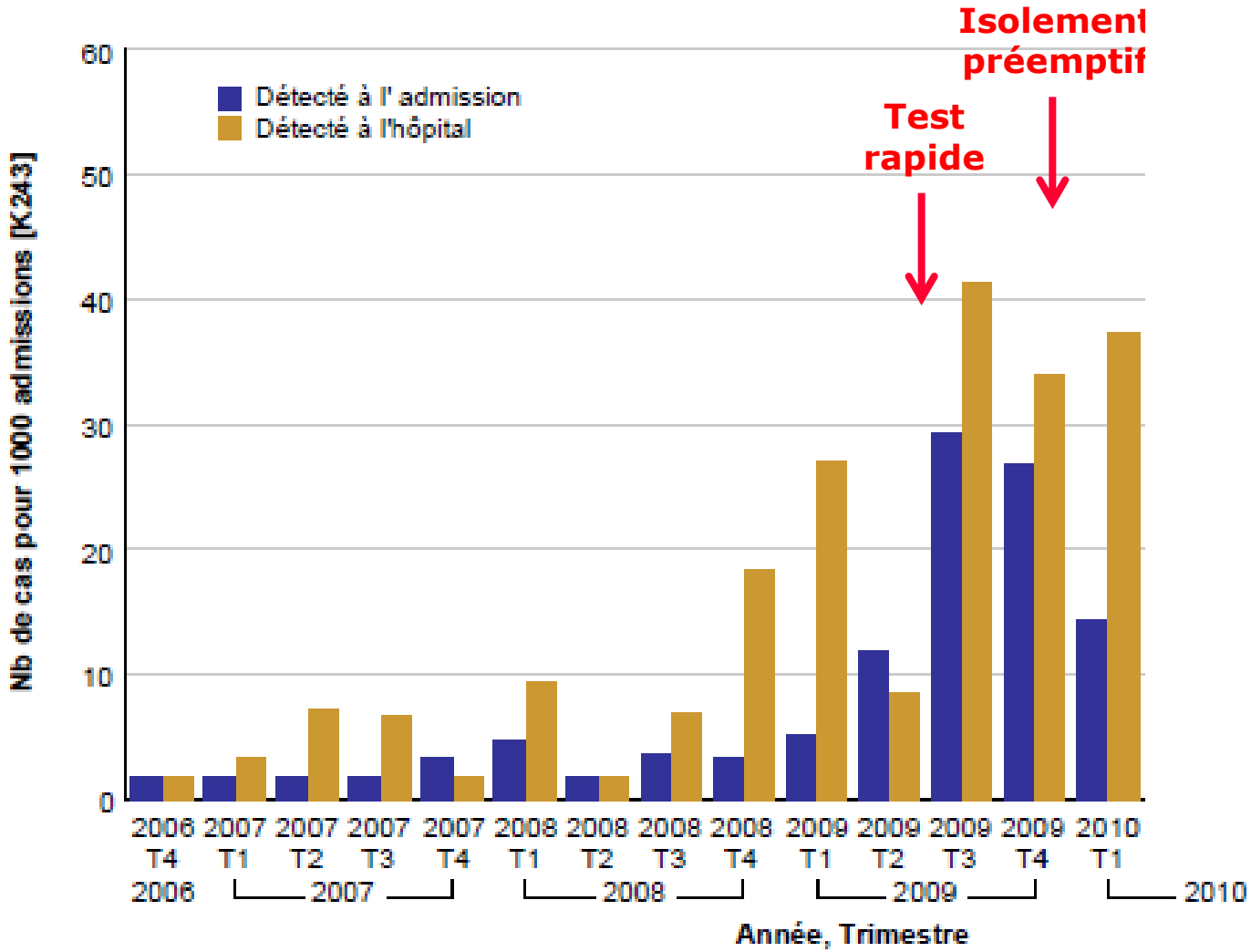




Mais de prévenir la transmission des microorganismes

MRSA au SMIA

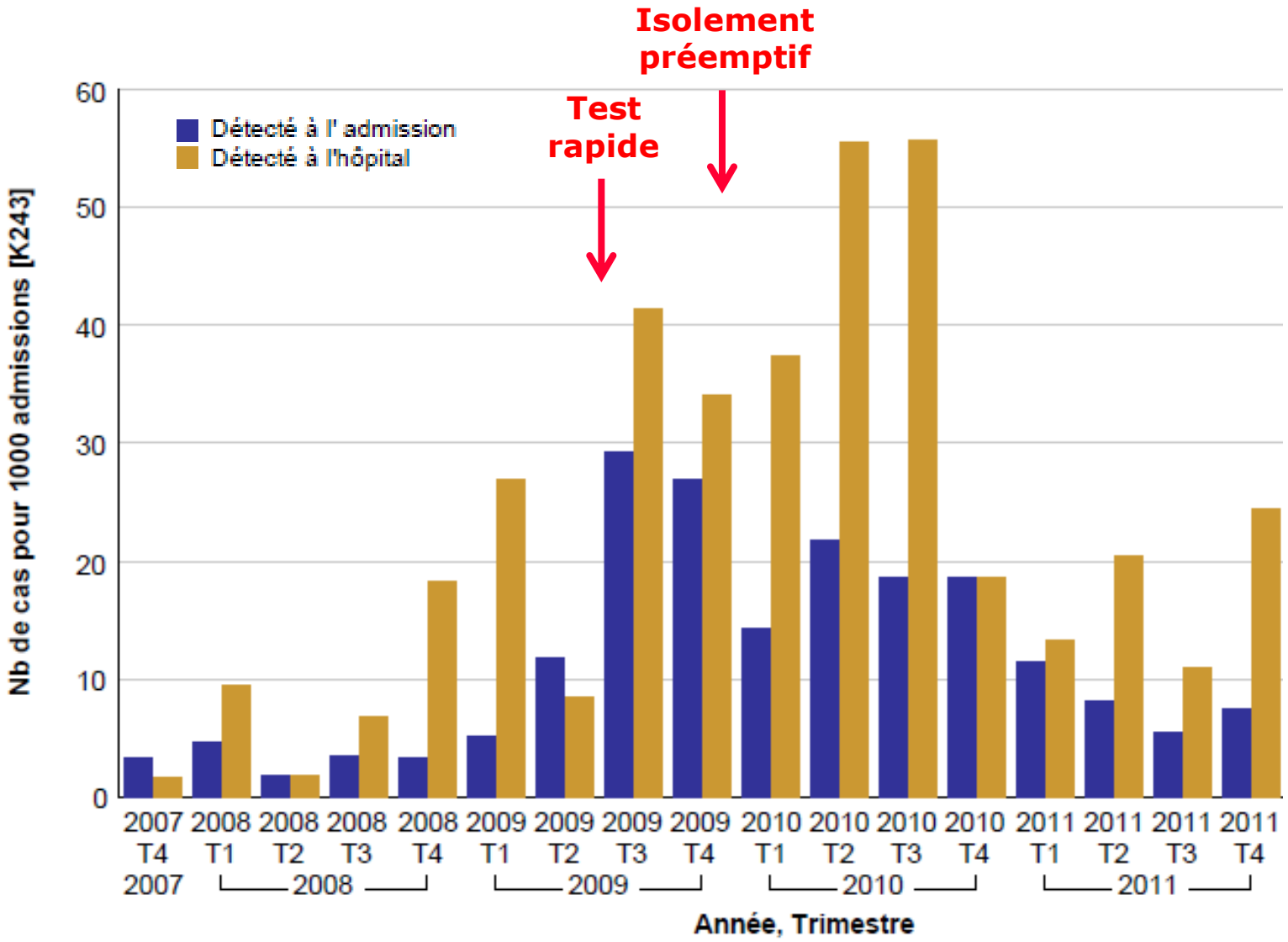
Service de détection: SIA - Médecine intensive adulte (SMIA)



Tissot F.
SMPH

Screening + preemptive isolation + decolonization may control MRSA

MRSA au SMIA

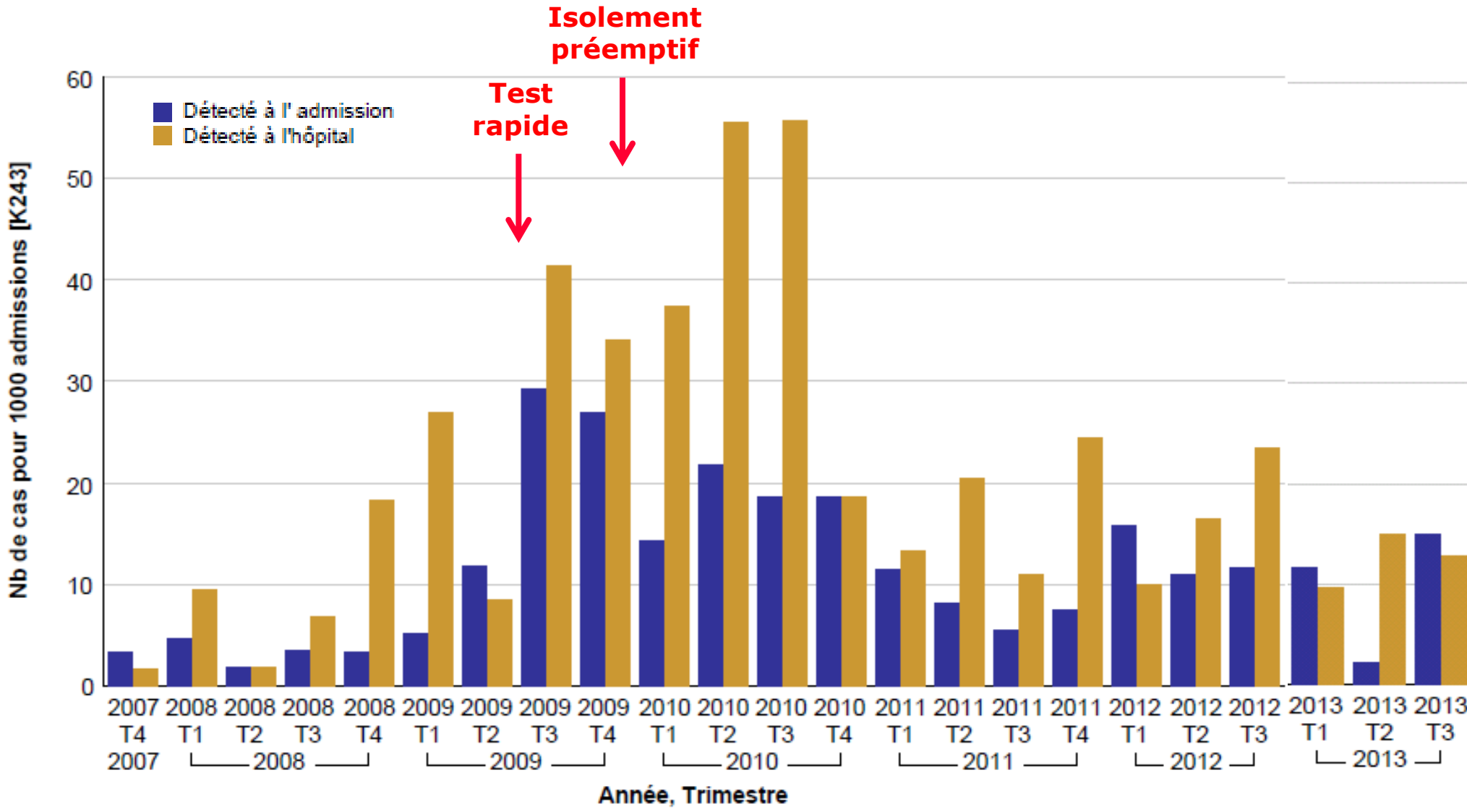

Isolement préemptif
Test rapide
Détecté à l' admission
Détecté à l'hôpital
Nb de cas pour 1000 admissions [K243]
0
10
20
30
40
50
60
2007 T4
2008 T1
2008 T2
2008 T3
2008 T4
2009 T1
2009 T2
2009 T3
2009 T4
2010 T1
2010 T2
2010 T3
2010 T4
2011 T1
2011 T2
2011 T3
2011 T4
2007
2008
2009
2010
2011
Année, Trimestre

Service de
Médecine Intensive

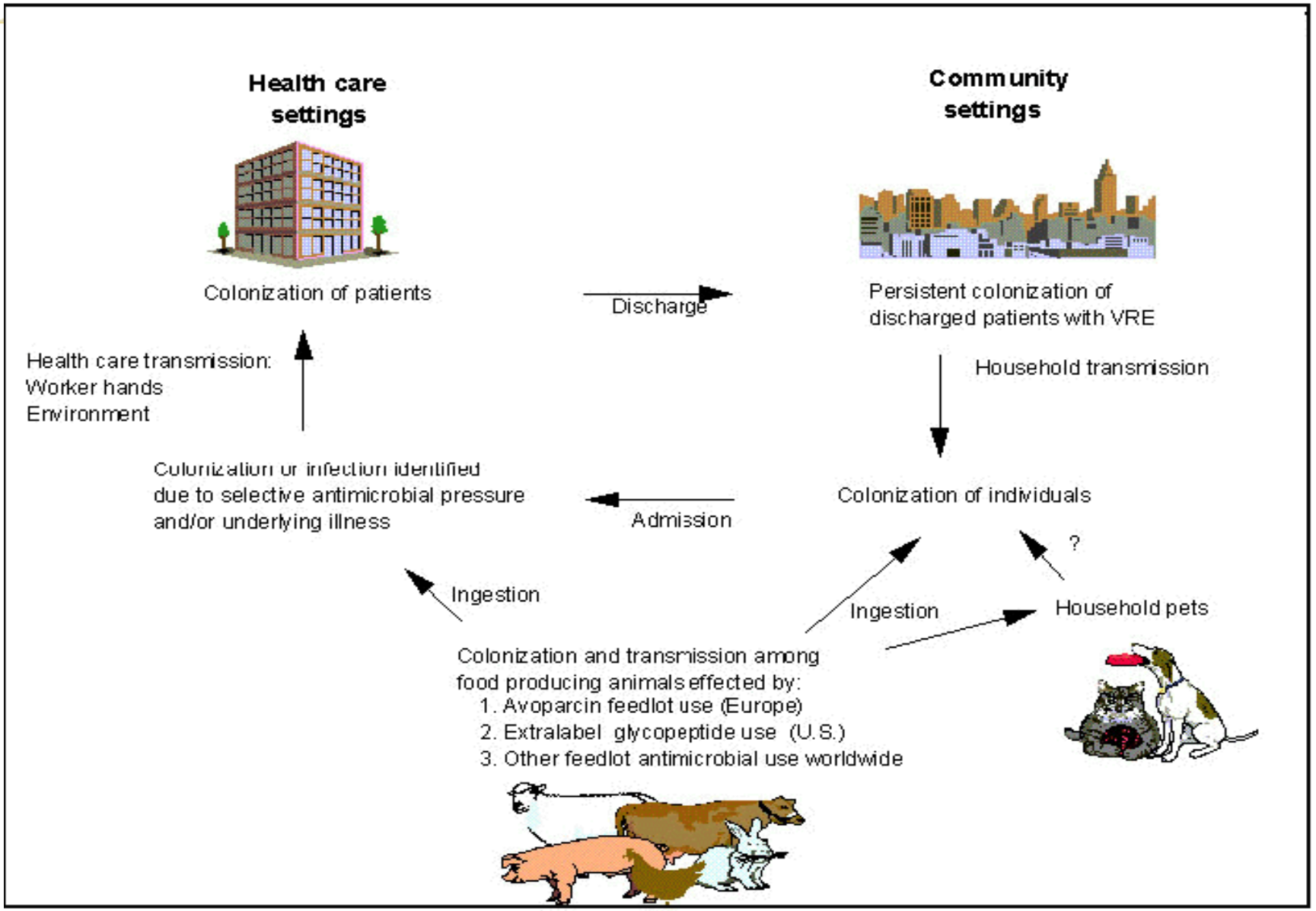
CHUV

SERVICE PATIENTS ENSEIGNEMENT RECHERCHE EMPLOI SOUTENIR LA RECHERCHE

MRSA au SMIA



Vancomycin-resistant enterococci (VRE)



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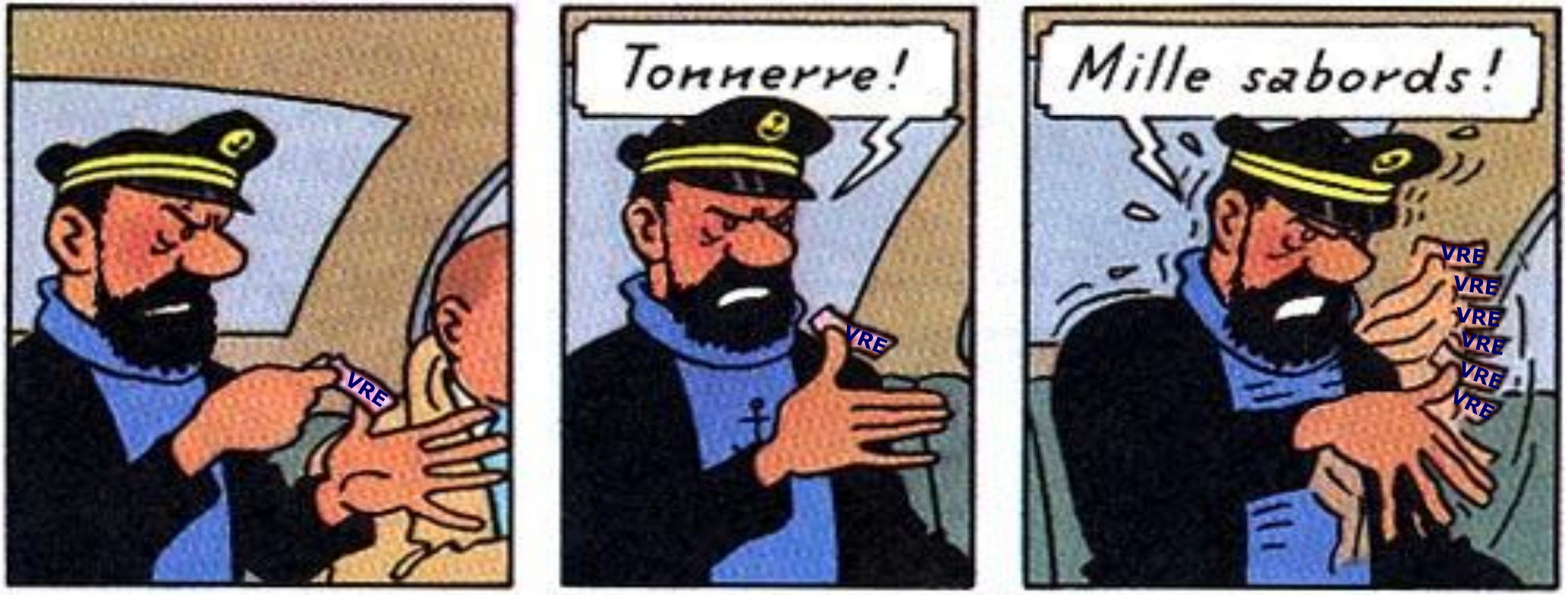


Transfer of Vancomycin-Resistant Enterococci via Health Care Worker Hands

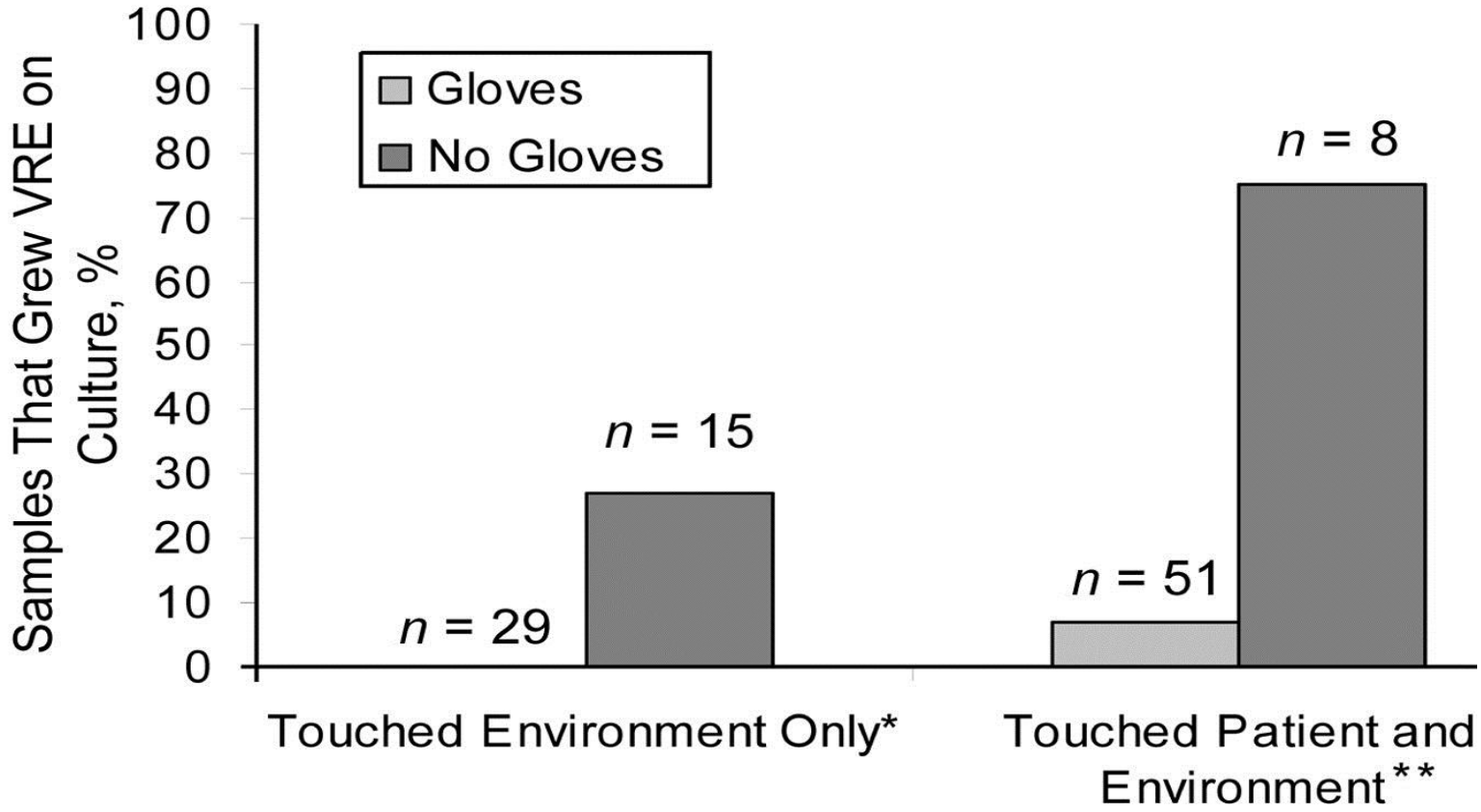
Amy N. Duckro, DO; Donald W. Blom, RN; Elizabeth A. Lyle, AB; Robert A. Weinstein, MD; Mary K. Hayden, MD

Arch Intern Med. 2005;165:302-307

INFECTION CONTROL AND HOSPITAL EPIDEMIOLOGY FEBRUARY 2008, VOL. 29, NO. 2

Risk of Hand or Glove Contamination After Contact With Patients Colonized With Vancomycin-Resistant *Enterococcus* or the Colonized Patients' Environment

Mary K. Hayden, MD; Donald W. Blom, BSN; Elizabeth A. Lyle, AB; Charity G. Moore, PhD; Robert A. Weinstein, MD



A PROSPECTIVE STUDY TO DETERMINE WHETHER COVER GOWNS IN ADDITION TO GLOVES DECREASE NOSOCOMIAL TRANSMISSION OF VANCOMYCIN-RESISTANT ENTEROCOCCI IN AN INTENSIVE CARE UNIT

Arjun Srinivasan, MD; Xiaoyan Song, MD, MS; Tracy Ross, BSc; William Merz, PhD; Roy Brower, MD; Trish M. Perl, MD, MSc

VRE acquisition rate cases/100 days at risk		
Gloves + gown	1.8	OR 2.5 (1.2-5.3)
Gloves alone	3.8	

Recherche intranet
Annuaire téléphonique
Organigramme et unités
Applications sécurisées
Directives institutionnelles
Risques et accidents

Actualités

[voir toutes les actualités] - [soumettre]

FBM
Vous avez dit OGM? Tentez votre chance au QUIZ FBM de novembre
Publié le 05.11.2013
Concours est ouvert aux communautés UNIL et CHUV

Formation
Formation continue: CAS en Santé publique
Publié le 05.11.2013
Délai d'inscription au 15 décembre 2013. Inscrivez-vous!

Formation
Introduction à la transplantation d'organes
Publié le 05.11.2013
Cours post-gradué du 5 novembre 2013

Vie au CHUV
Recherche volontaires pour la JOM (14 novembre après-midi)
Publié le 05.11.2013
Le jeudi 14 novembre (après-midi) aura lieu la JOM. Nous recherchons des volontaires pour accompagner les groupes d'enfants dans les

Agenda

Exposition
Exposition Sandrine Pelletier, Bourse Alice Bailly
02.10.2013 | 18h30
Espace CHUV Hall principal

Exposition
Valérie Masson « Peintures et dessins »
31.10.2013 | 17h00
Galerie ERGASIA

Exposition
Art à la Maternité - Exposition
01.11.2013 | 17h30
Hall de la maternité du CHUV

Colloque
Colloque de médecine d'urgence
06.11.2013 | 13h00
Salle BH05-1120.

Liste des intranets
Liste des internets

Je suis...
...un nouveau collaborateur

Accès rapides
Prise en charge du patient
Techniques de soins
Messagerie Outlook
Disponibilité des applications
Direction générale

Vie pratique

Ressources pour le personn


TheraPulse II
GORE-TEX


MAQUET
SECHRIST
MAQUET
TOTAL-CARE 7

Grippe et toutes autres infections respiratoires

Mesures de base

et

Gouttelettes plus

\+

Masque (FFP 2)

Car risque élevé d'aérosolisation lors des soins tels que:

aspirations, intubation, bronchoscopie, VNI, RCP, frottis naso-pharyngés, nébulisations, ventilation au masque, soins de bouche, extubation, …

Dans la mesure du possible:

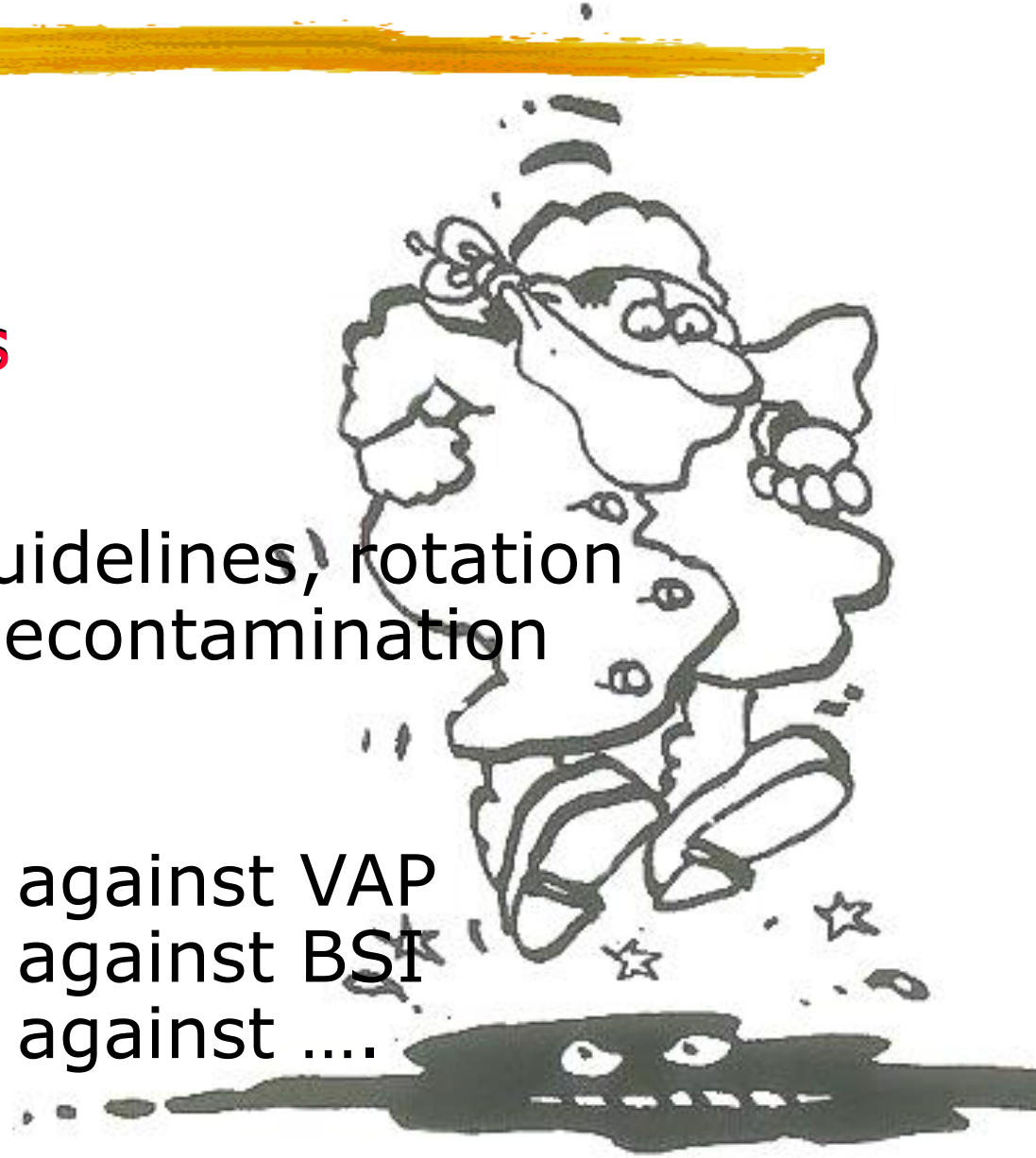
Box seul + pression négative > Box seul > Cohortage

Strategies for infection control

General measures
Surveillance
Isolation precautions

Antibiotic control
Restriction of use, guidelines, rotation
Selective digestive decontamination

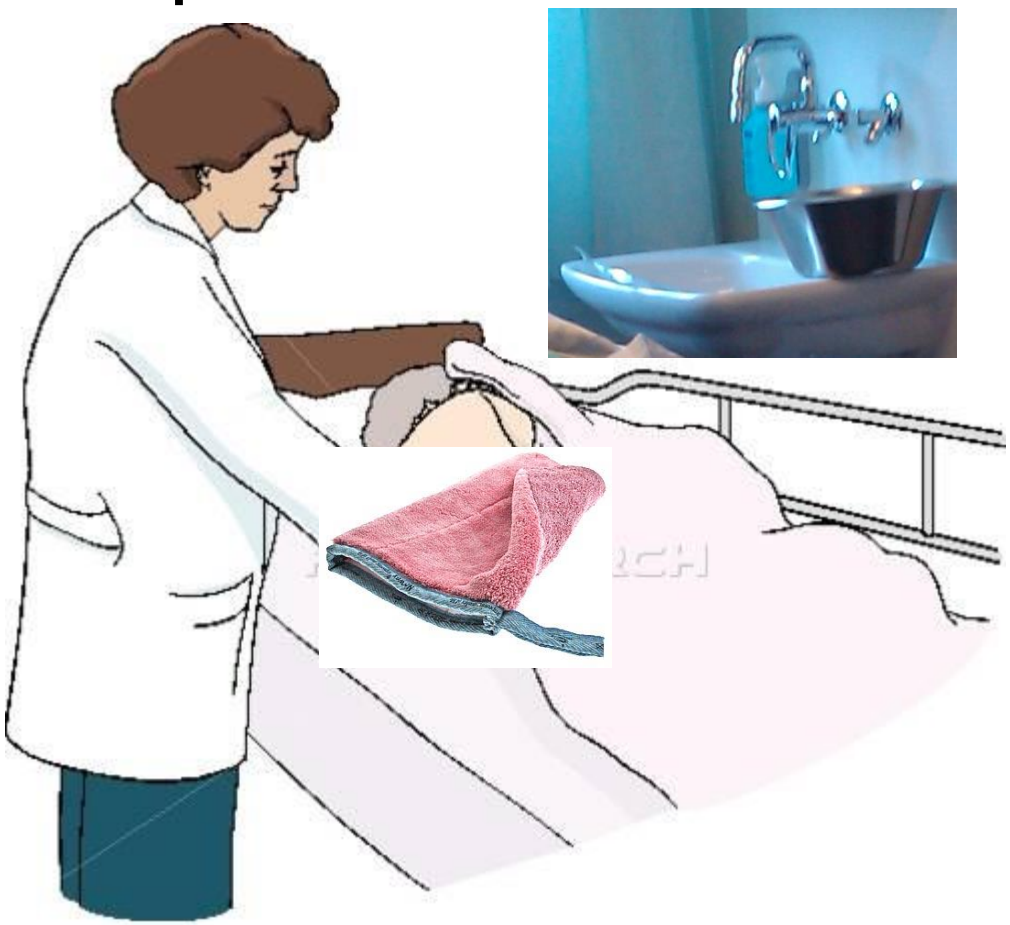
Specific measures
Specifically targeted against VAP
Specifically targeted against BSI
Specifically targeted against ….



Source control ?

From traditional soap and cloathes

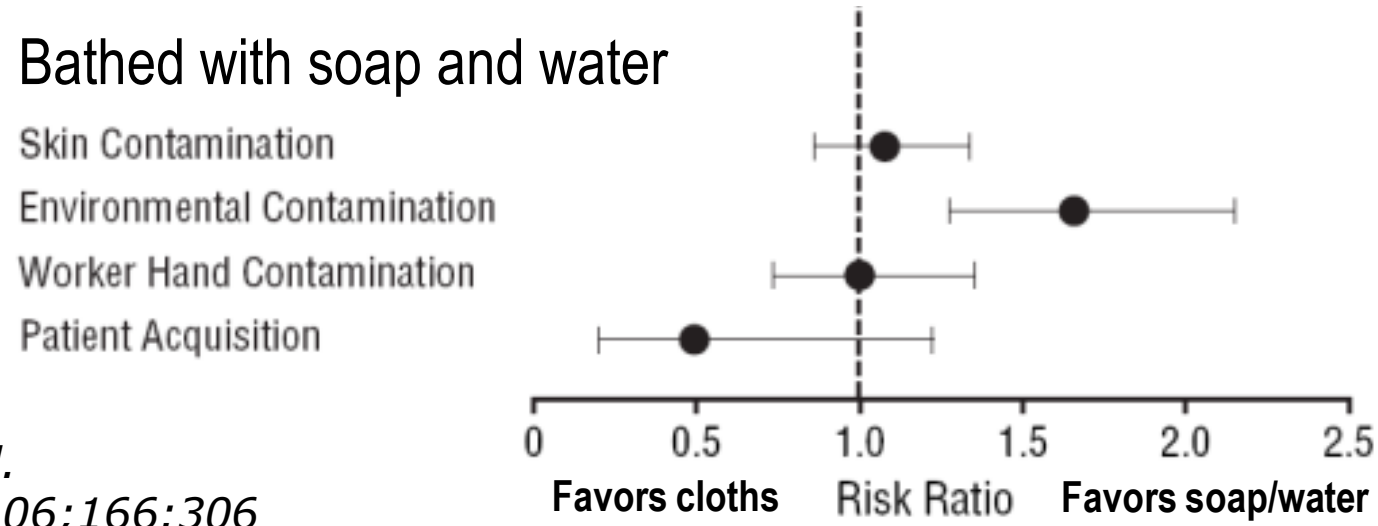
To disposable wipes



Source control ?

Chlorhexidine Gluconate to Cleanse Patients in a Medical Intensive Care Unit

Source Control to Reduce the Bioburden of Vancomycin-Resistant Enterococci



Vernon MO et al.
Arch Intern Med 06;166:306

Source control ?

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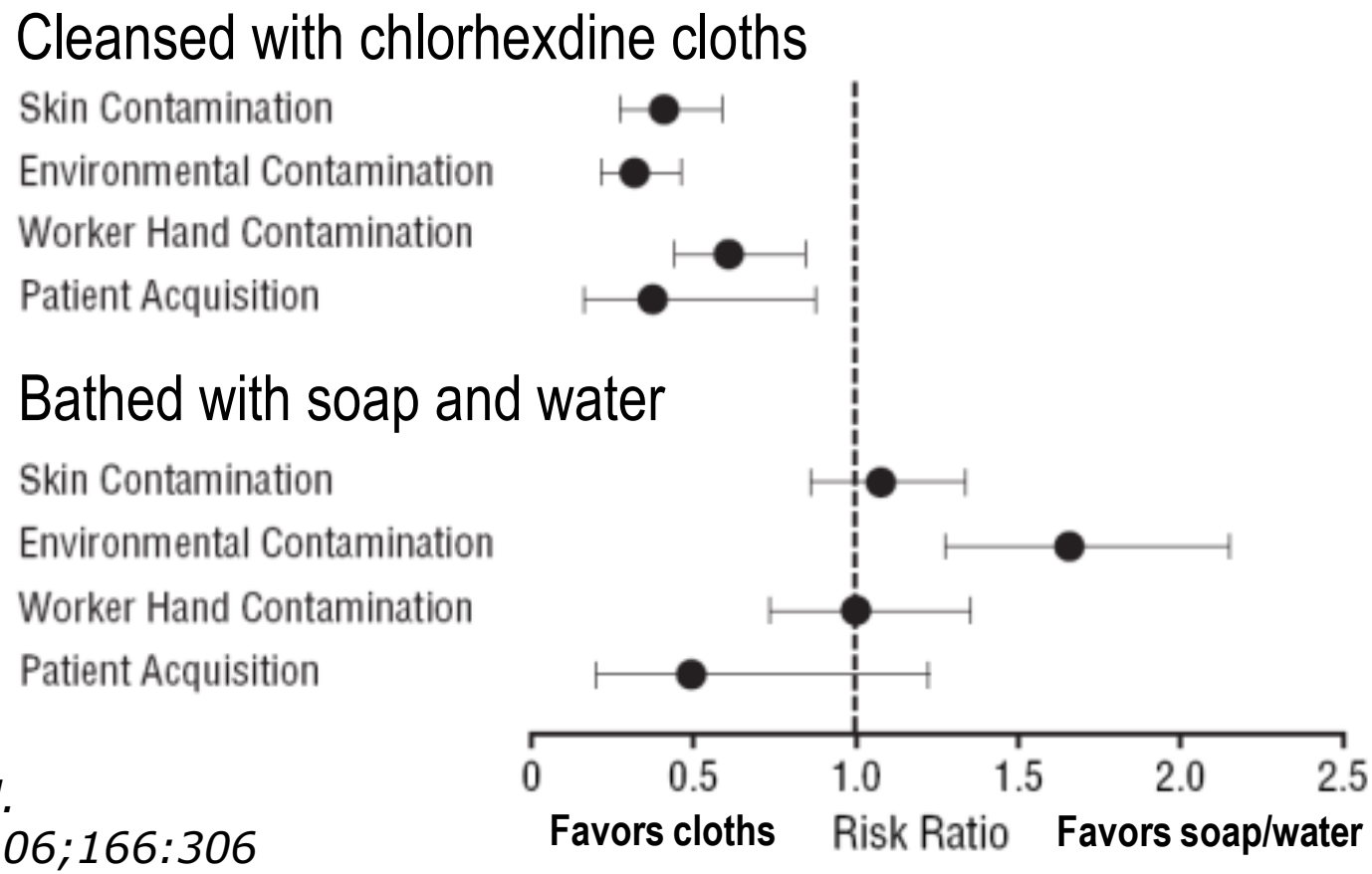
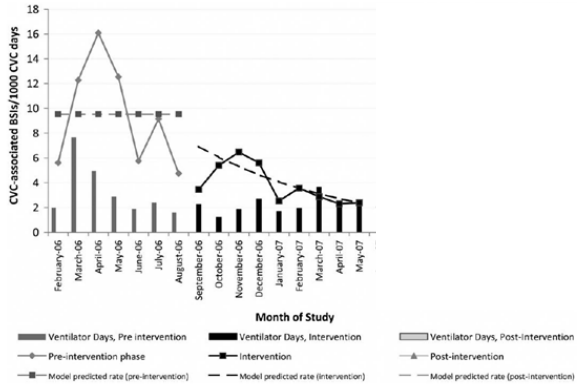


Vernon MO et al.
Arch Intern Med 06;166:306

Source control ?

Prevention of Bloodstream Infections by Use of Daily Chlorhexidine Baths for Patients at a Long-Term Acute Care Hospital

L. Silvia Munoz-Price, MD; Bala Hota, MD, MPH; Alexander Stemer, MD; Robert A. Weinstein, MD

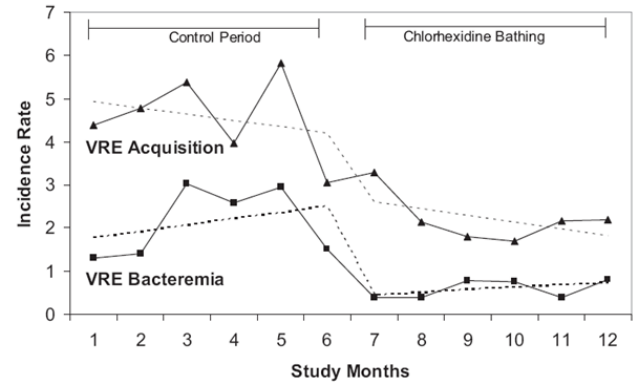


INFECTION CONTROL AND HOSPITAL EPIDEMIOLOGY NOVEMBER 2009, VOL. 30, NO. 11

The effect of daily bathing with chlorhexidine on the acquisition of methicillin-resistant *Staphylococcus aureus*, vancomycin-resistant *Enterococcus*, and healthcare-associated bloodstream infections: Results of a quasi-experimental multicenter trial*

(Crit Care Med 2009; 37:1858–1865)

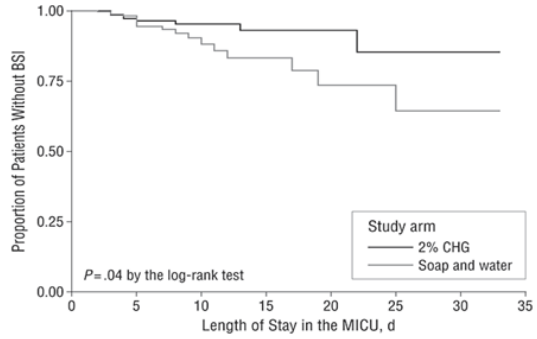
Michael W. Climo, MD; Kent A. Sepkowitz, MD; Gianna Zuccotti, MD, MPH; Victoria J. Fraser, MD; David K. Warren, MD; Trish M. Perl, MD, MSc; Kathleen Speck; John A. Jernigan, MD; Jaime R. Robles, PhD; Edward S. Wong, MD



Effectiveness of Chlorhexidine Bathing to Reduce Catheter-Associated Bloodstream Infections in Medical Intensive Care Unit Patients

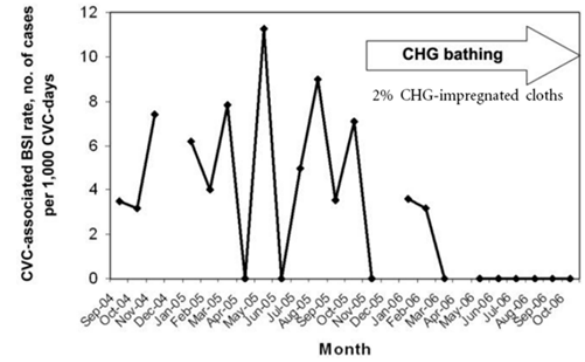
Susan C. Bleasdale, MD; William E. Trick, MD; Ines M. Gonzalez, MD; Rosie D. Lyles, MD; Mary K. Hayden, MD; Robert A. Weinstein, MD

Arch Intern Med. 2007;167(19):2073-2079



Effectiveness of Routine Patient Cleansing with Chlorhexidine Gluconate for Infection Prevention in the Medical Intensive Care Unit

Kyle J. Popovich, MD; Bala Hota, MD, MPH; Robert Hayes, BA; Robert A. Weinstein, MD; Mary K. Hayden, MD

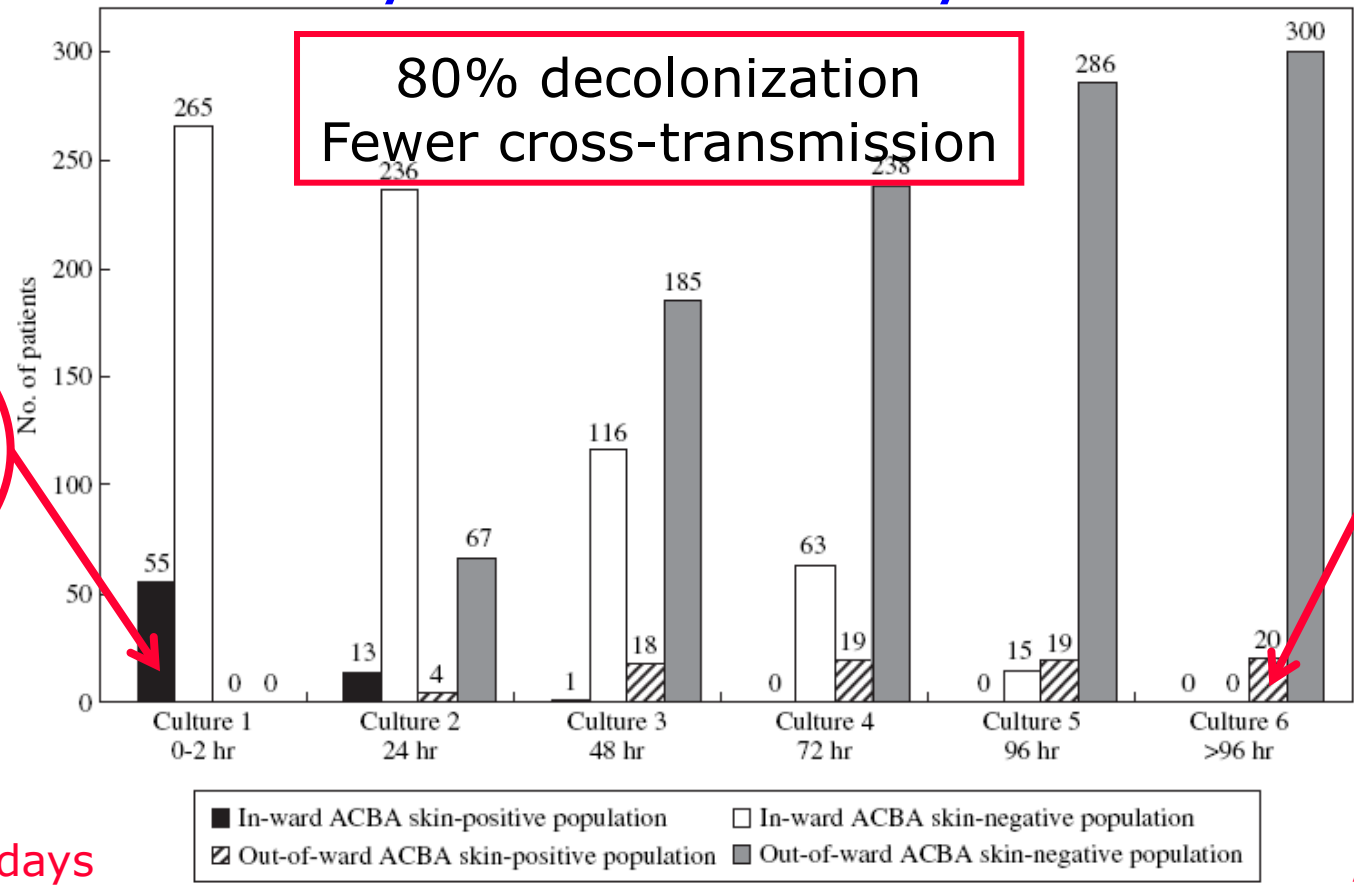


INFECTION CONTROL AND HOSPITAL EPIDEMIOLOGY OCTOBER 2009, VOL. 30, NO. 10

Source control ?

MICU patients colonized by *Acinetobacter baumani*

daily 4%-CHX body wash



17% of pts admitted colonized

BSI 7.28 /1000 patients-days

6% of pts discharged colonized

BSI 7.28 /1000 patients-days

Borer A et al. J Hosp Infect 07:67:149-55

Quand l'ergonomie joue un tour à la toilette !

C. Joseph[1], V. Plouhinec[1], MJ. Thévenin[2], Ph. Maravic[1], Ph. Eggimann[1] (christine.joseph@chuv.ch)
Service de Médecine Intensive Adulte[1], Service Médecine Préventive Hospitalière[2] CHUV, Lausanne, Suisse.

INTRODUCTION

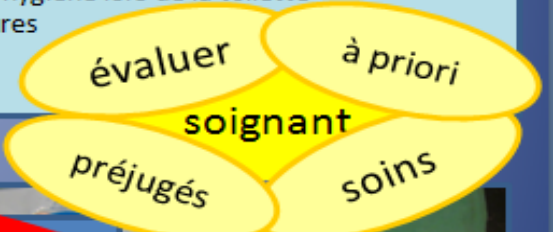
La toilette : Un moment privilégié entre le patient et le soignant (détente, rafraîchissement), d'observation (état de la peau), d'évaluation sensitivomoteur (perception, toucher, stimuler), de communication et d'échange (ressenti, douleur, angoisse). Une configuration architecturale (1 lavabo par chambre de 2 à 3 lits) complique sa réalisation et favorise le risque de transmission de germes.

METHODE

Test de 4 types de lingettes (incontinence) et de gants (toilette) à usage unique. Questionnaire unique. Nombre de toilettes avec chaque produit.

RESULTATS

1) UN SEUL GESTE: lave, hydrate, et stimule
2) GAIN DE TEMPS: 10 min/toilette (équivalent à 1 EPT/an)
3) Observation continue du patient, sans interruptions
4) Gain de temps (pas de rinçage, ni de séchage, produit hydratant)
5) Meilleur respect des principes d'hygiène lors de la toilette
6) ↓ dangers: glissade, éclaboussures
7) Amélioration de nos pratiques
8) Diminution des trajets au lavabo



Evaluation de 4 lingettes et gants à usage unique au SMIA

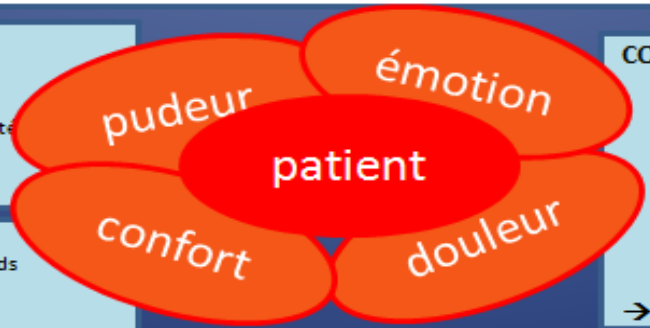
	Produit 1 (n=61)	Produit 2 (n=56)	Produit 3 (n=34)	Produit 4 (n=14)	Total (n=165)
Satisfaction globale					
+++	51 (84%)	25 (45%)	9 (27%)	11 (79%)	96 (58%)
+	3 (5%)	26 (46%)	24 (70%)	3 (21%)	56 (34%)
-	6 (10%)	5 (9%)	1 (3%)	0	12 (7%)
---	1 (1%)	0	0	0	1 (0.5%)
Confort du soignant					
+++	47 (77%)	31 (55%)	6 (18%)	8 (56%)	92 (55%)
+	8 (14%)	24 (43%)	28 (82%)	5 (37%)	65 (38%)
-	5 (8%)	1 (2%)	0	1 (7%)	7 (7%)
---	1 (1%)	0	0	0	1 (0.5%)
Confort du patient					
Non évalué (sédaté)	13	36	31	5	85
+++	17 (36%)	5 (25%)	0	5 (56%)	27 (34%)
+	16 (34%)	10 (50%)	3 (100%)	4 (44%)	33 (42%)
-	13 (29%)	5 (25%)	0	0	18 (23%)
---	1 (1%)	0	0	0	1 (1%)
Odeur du produit					
Non évalué (sédaté)	9	0	0	2	11
+++	22 (42%)	52 (93%)	13 (38%)	10 (84%)	97 (63%)
+	24 (46%)	4 (7%)	21 (62%)	1 (8%)	50 (32%)
-	6 (12%)	0	0	1 (8%)	7 (5%)
---	0	0	0	0	0
Réaction cutanée					
Oui	0	0	0	0	0
non	61 (100%)	56 (100%)	34 (100%)	14 (100%)	165 (100%)

AVANTAGES : Gain ergonomique majeur (rapide et simple)

- Gain de temps : 10 min/toilette → 1 EPT/an
- Gain d'hygiène: ↓ opportunités de transmission des germes
- Gain d'efficacité: ↓ de va et vient, réduction du bruit, intimité
- Gain en confort: odeur et texture agréables
- Gain en sécurité: ↓ glissade, éclaboussure des pansements

INCONVENIENTS

- Température: malgré microonde, les derniers gants sont froids
- Pas possible de réchauffer un paquet utilisé (hygiène)
- Gants parfois pas assez humides. Gaspillage ?



CONCLUSIONS:

Satisfaction des soignants

Disparition des préjugés sur la « toilette sans eau »

Satisfaction des patients

Patients conscients apprécient: (toucher et odeur agréable), diminution des douleurs et des éclaboussures. long terme ?

Satisfaction de l'administrateur ?

Moins cher et plus efficace !

→ **NOUS INTRODUISONS LES LINGETTES A USAGE UNIQUE**

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

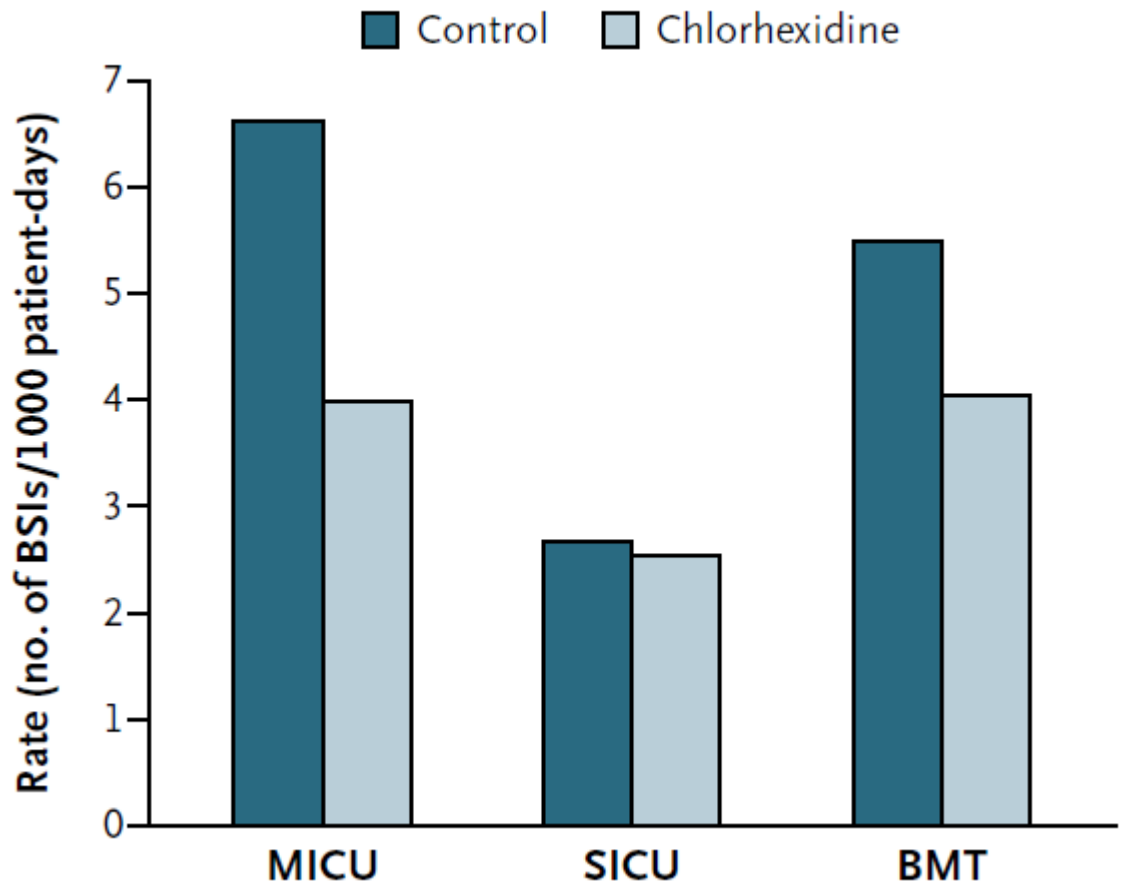
Effect of Daily Chlorhexidine Bathing on Hospital-Acquired Infection

Michael W. Climo, M.D., Deborah S. Yokoe, M.D., M.P.H., David K. Warren, M.D., Trish M. Perl, M.D., Maureen Bolon, M.D., Loreen A. Herwaldt, M.D., Robert A. Weinstein, M.D., Kent A. Sepkowitz, M.D., John A. Jernigan, M.D., Kakotan Sanogo, M.S., and Edward S. Wong, M.D.

CONCLUSIONS

Daily bathing with chlorhexidine-impregnated washcloths significantly reduced the risks of acquisition of MDROs and development of hospital-acquired bloodstream infections.

Effect of Daily Chlorhexidine Bathing on Hospital-Acquired Infection



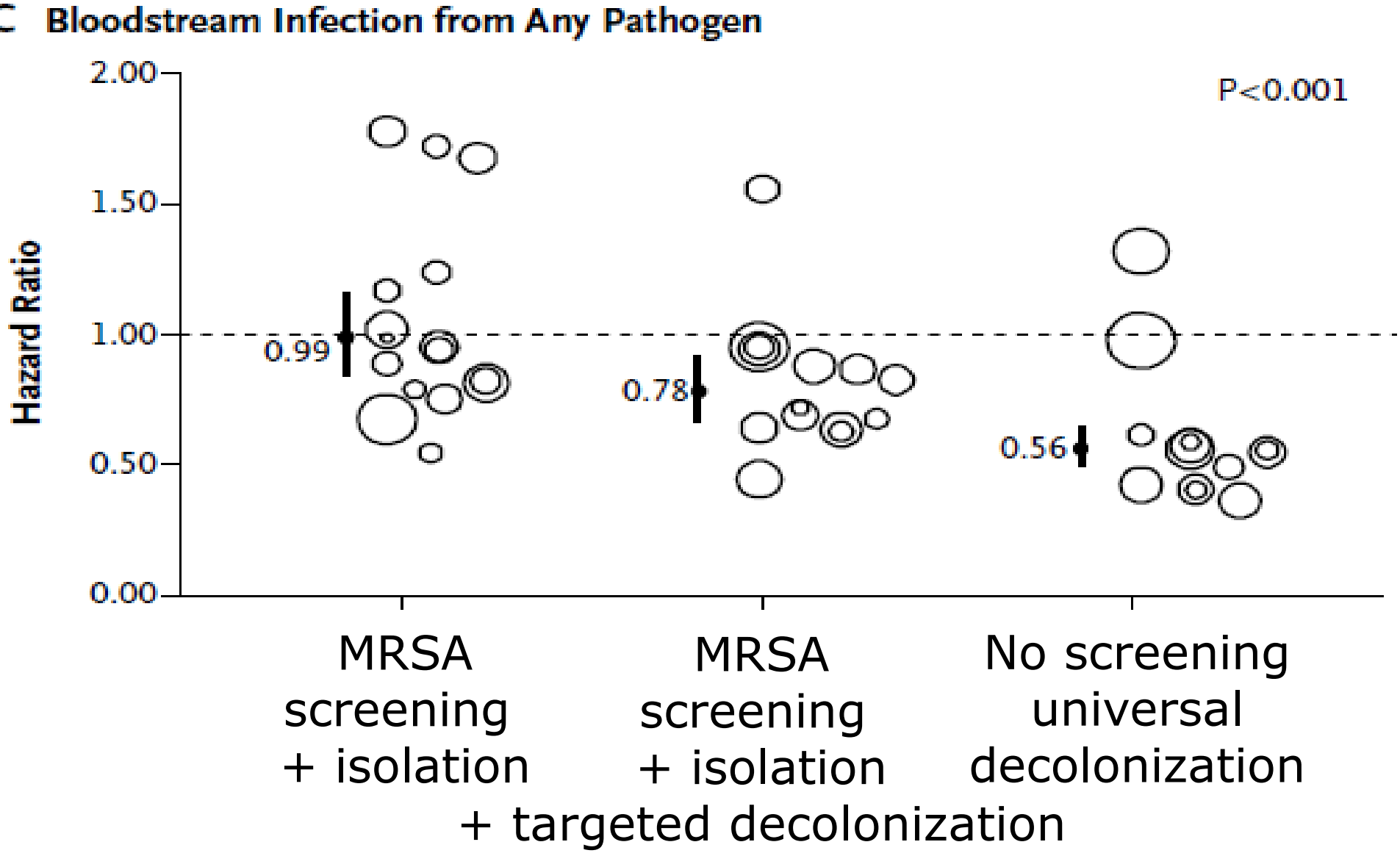
The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Targeted versus Universal Decolonization to Prevent ICU Infection

Susan S. Huang, M.D., M.P.H., Edward Septimus, M.D., Ken Kleinman, Sc.D., Julia Moody, M.S., Jason Hickok, M.B.A., R.N., Taliser R. Avery, M.S., Julie Lankiewicz, M.P.H., Adrijana Gombosev, B.S., Leah Terpstra, B.A., Fallon Hartford, M.S., Mary K. Hayden, M.D., John A. Jernigan, M.D., Robert A. Weinstein, M.D., Victoria J. Fraser, M.D., Katherine Haffenreffer, B.S., Eric Cui, B.S., Rebecca E. Kaganov, B.A., Karen Lolans, B.S., Jonathan B. Perlin, M.D., Ph.D., and Richard Platt, M.D., for the CDC Prevention Epicenters Program and the AHRQ DECIDE Network and Healthcare-Associated Infections Program*

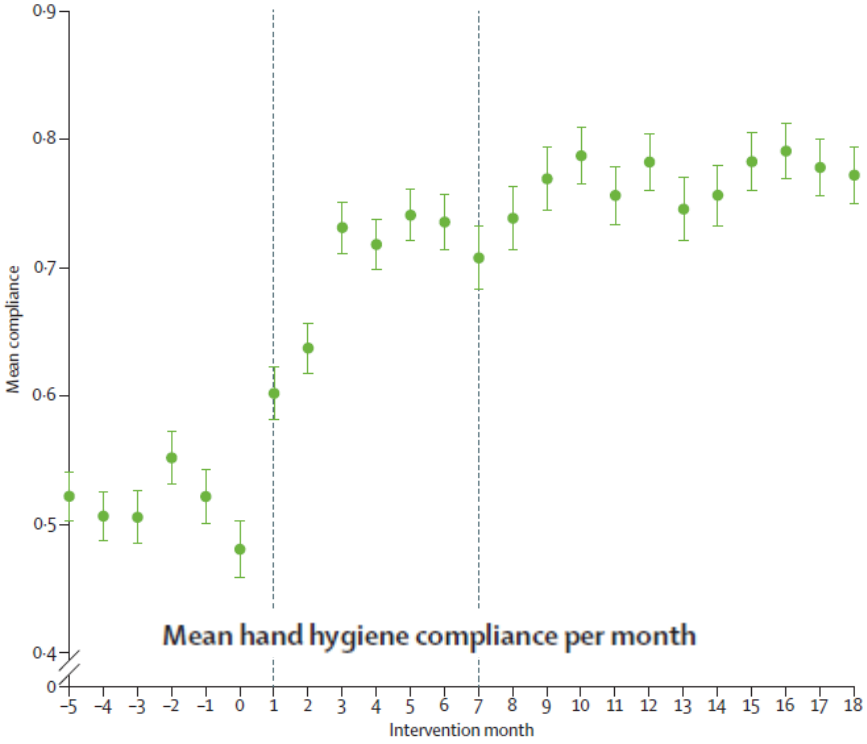
This article was published on May 29, 2013, at NEJM.org.

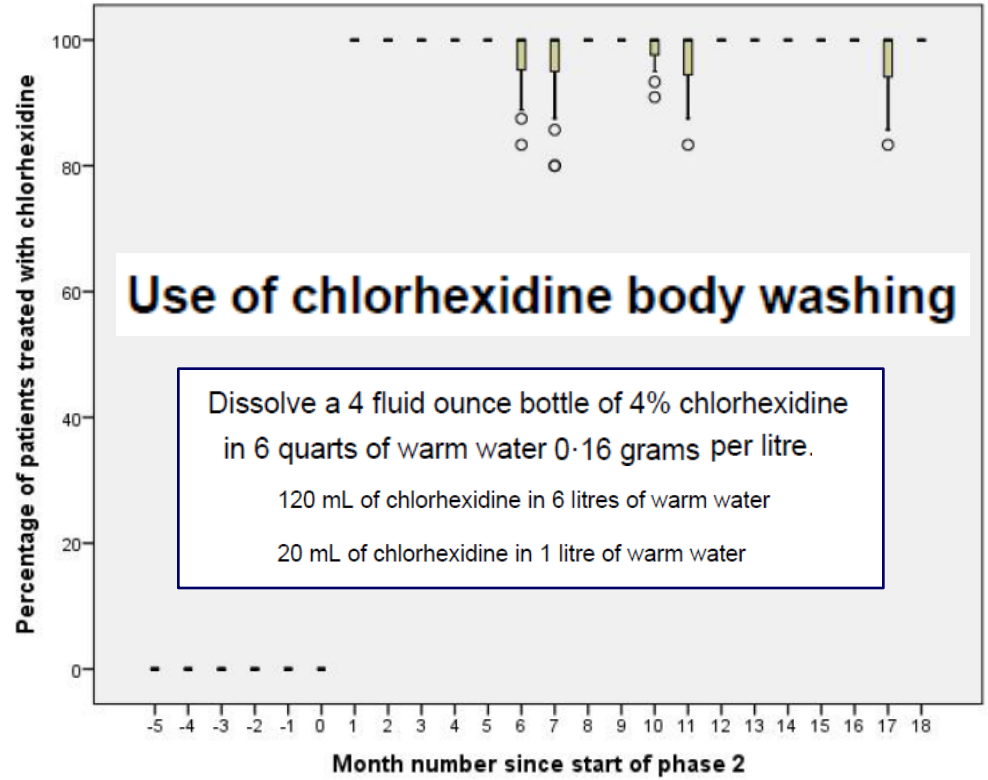


N Engl J Med 2013.

Interventions to reduce colonisation and transmission of antimicrobial-resistant bacteria in intensive care units: an interrupted time series study and cluster randomised trial

Lennie P G Derde, Ben S Cooper, Herman Goossens, Surbhi Malhotra-Kumar, Rob J L Willems, Marek Gniadkowski, Waleria Hryniewicz, Joanna Empel, Mirjam J D Dautzenberg, Djillali Annane, Irene Aragão, Annie Chalfine, Uga Dumpis, Francisco Esteves, Helen Giamarellou, Igor Muzlovic, Giuseppe Nardi, George L Petrikkos, Viktorija Tomic, Antonio Torres Martí, Pascal Stammet, Christian Brun-Buisson, Marc J M Bonten*, on behalf of the MOSAR WP3 Study Team*





Lancet Infect Dis 2014; 14: 31–39