National Institute for Health Research

Imperial College London

Orlin Pays de la Loire

IAS en Réanimation

Lu pour vous!

Par Gabriel Birgand

Blog: http://www.gabrielbirgand.fr/

@Gbirgand


INFECTION CONTROL &
HOSPITAL EPIDEMIOLOGY


Clinical
Infectious
Diseases


THE LANCET
Infectious Diseases


AJIC
American Journal of Infection Control


THE JOURNAL OF
HOSPITAL
INFECTION
The Official Journal of the Healthcare Infection Society


EMERGING
INFECTIOUS DISEASES
CDC


The Journal of
Infectious
Diseases


Eurosurveillance


PLOS


JAMA
The Journal of the American Medical Association


NEJM


THE LANCET


Journal of
Clinical Microbiology


BMJ


CMI
CLINICAL
MICROBIOLOGY
AND INFECTION


JAC
Antimicrobial
Chemotherapy


Critical Care
Medicine


ICM

Jan 2015 – Mars 2016

PAVM: 21

AMR: 19
Entérobactérie: 8
ABRI: 6
Autres: 5

CVC: 19

Sepsis: 9

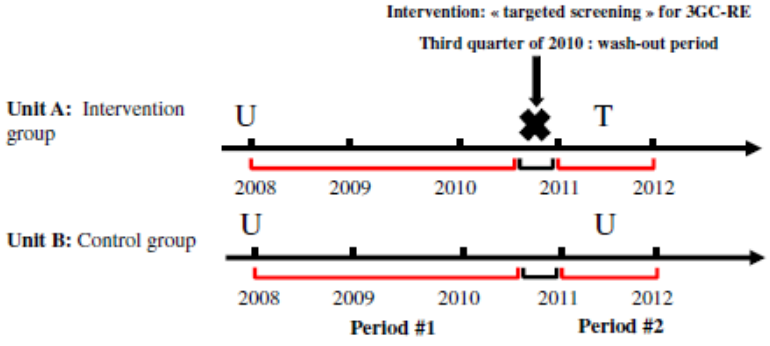
Décolonisation: 8

Environnement: 5

Antibiorésistance

Targeted screening for 3CG-R EB

- Quasi-experimental study of two ICUs
  - 2,558 patients > 149 (5.8%) EB HAIs > 86 (3.4%) 3CG-R HAIs
  - Universal: rectal swab ≤48h admission + CP
  - Targeted: patients transferred (Acute, LTC, NH) + CP



U: Universal screening for 3GC-RE

T: Targeted screening for 3GC-RE

Dananché et al CCM 2015

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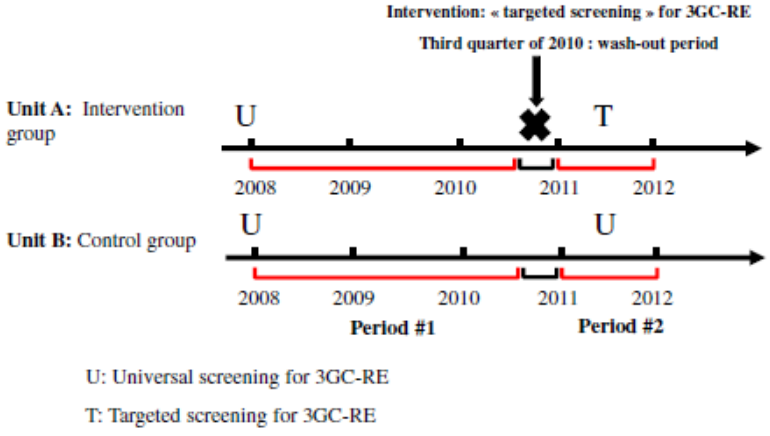

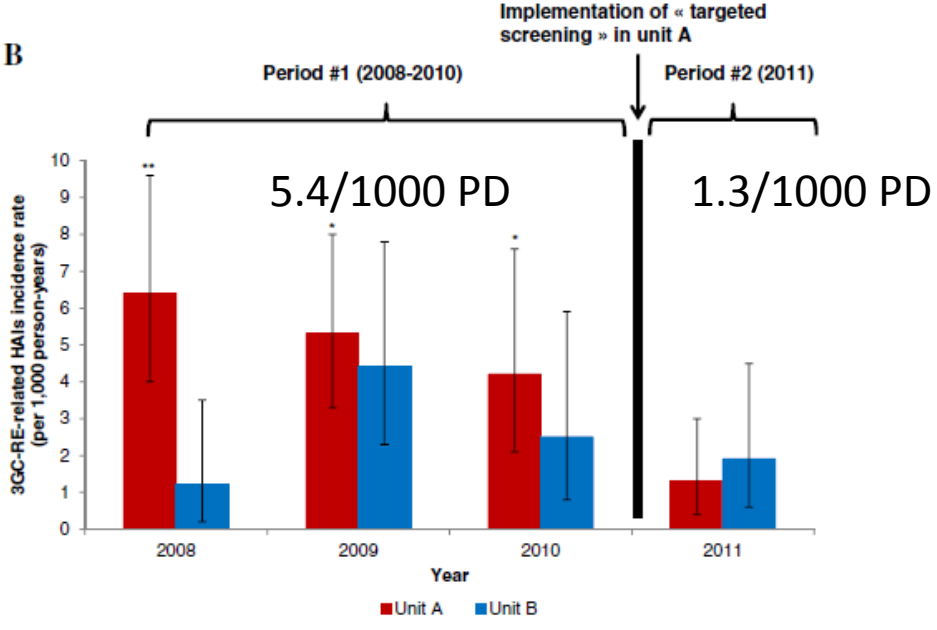

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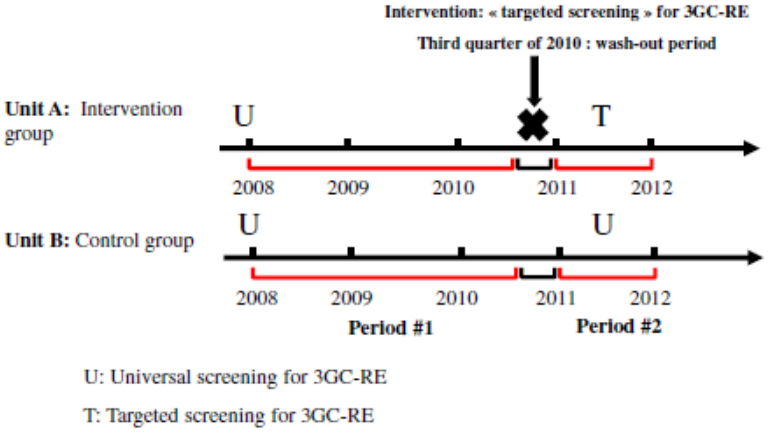
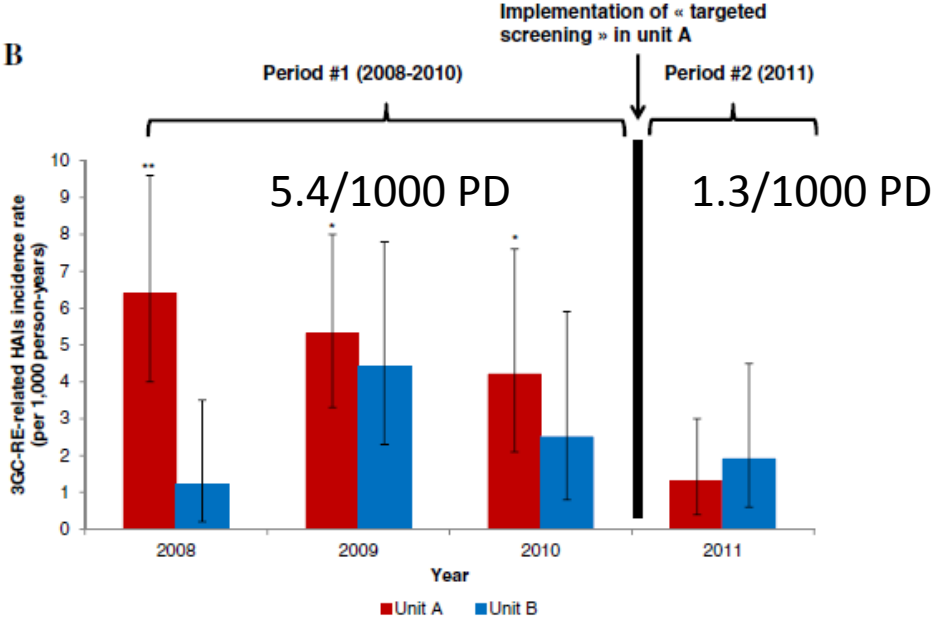


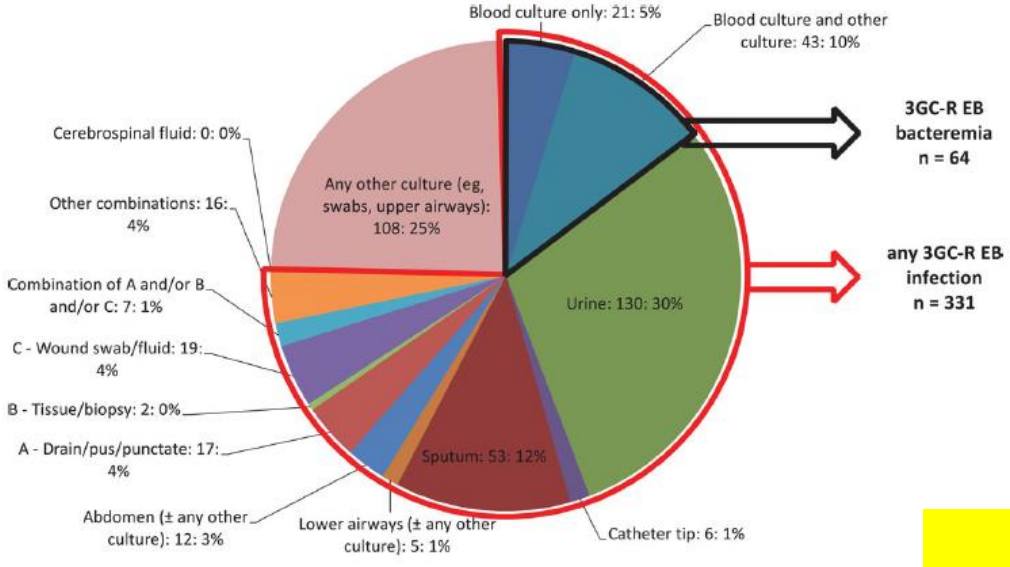
The total number of samples decreased by 84.7% in unit A



Dananché et al CCM 2015

Prior colonization and 3CG-R EB BSI

- Empiric ATB treatment in patients with BSI
  - PPV of 3GC-R EB colonization +/- recent cephalosporin (90 days) or fluoroquinolone usage (30 days)
  - Inclusion: blood cultures + β-lactam antibiotic and/or a fluoroquinolone and/or an aminoglycoside started
  - 9422 sepsis > 1657 BC pos > 773 EB > 64 3GC-R

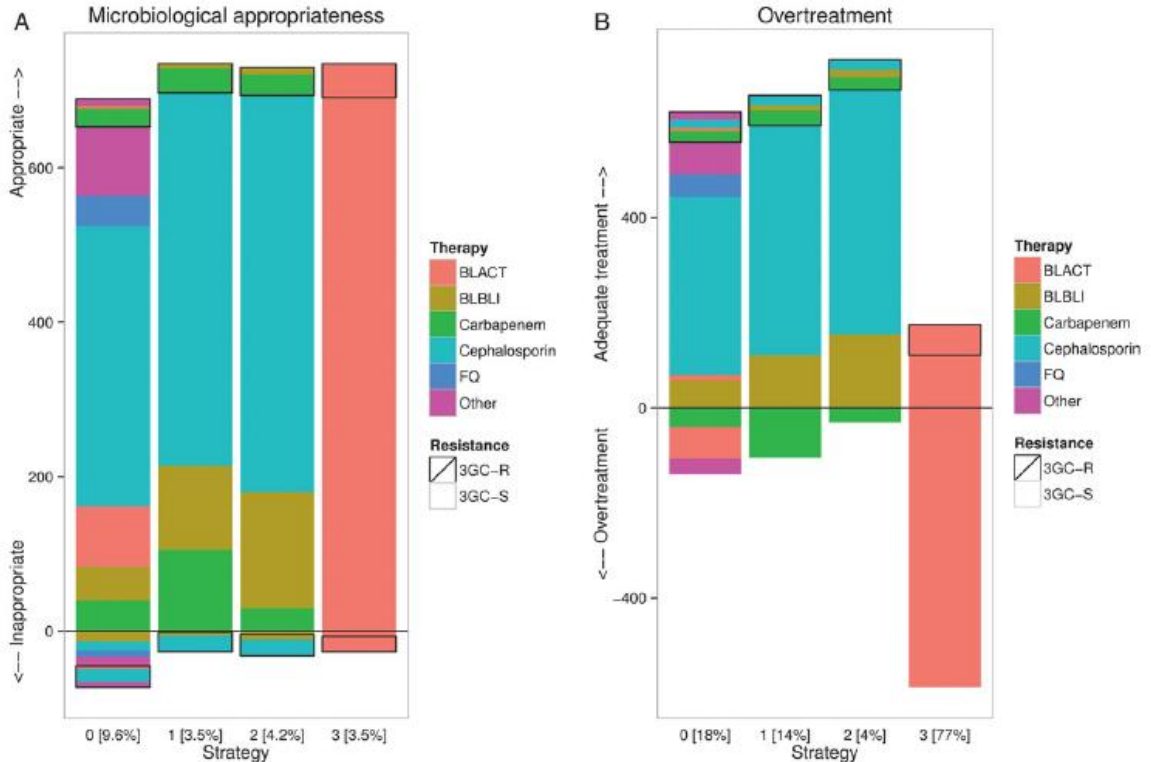


Rottier et al CID 2015

Prior colonization and 3CG-R EB BSI

	3GC-R EB Bacteremia (n = 64)	Any 3GC-R EB Infection (n = 331)
Prior colonization with 3GC-R EB: 90 d	42%, PPV: 7.4%	38%, PPV: 34.4%
Prior 2GC or 3GC use: 30 d	23%, PPV: 1.5%	26%, PPV: 8.5%
Prior FQ use: 30 d	16%, PPV: 1.2%	16%, PPV: 5.7%
Combined	50%, PPV: 1.8%	52%, PPV: 9.7%

<u>Appropriate:</u>
At least 1 ATB on susceptible patho



<u>Overtreatment:</u>
Carbapenem or (aminosiide or fluoroquinolone) + β-lactam if 3GC-S EB

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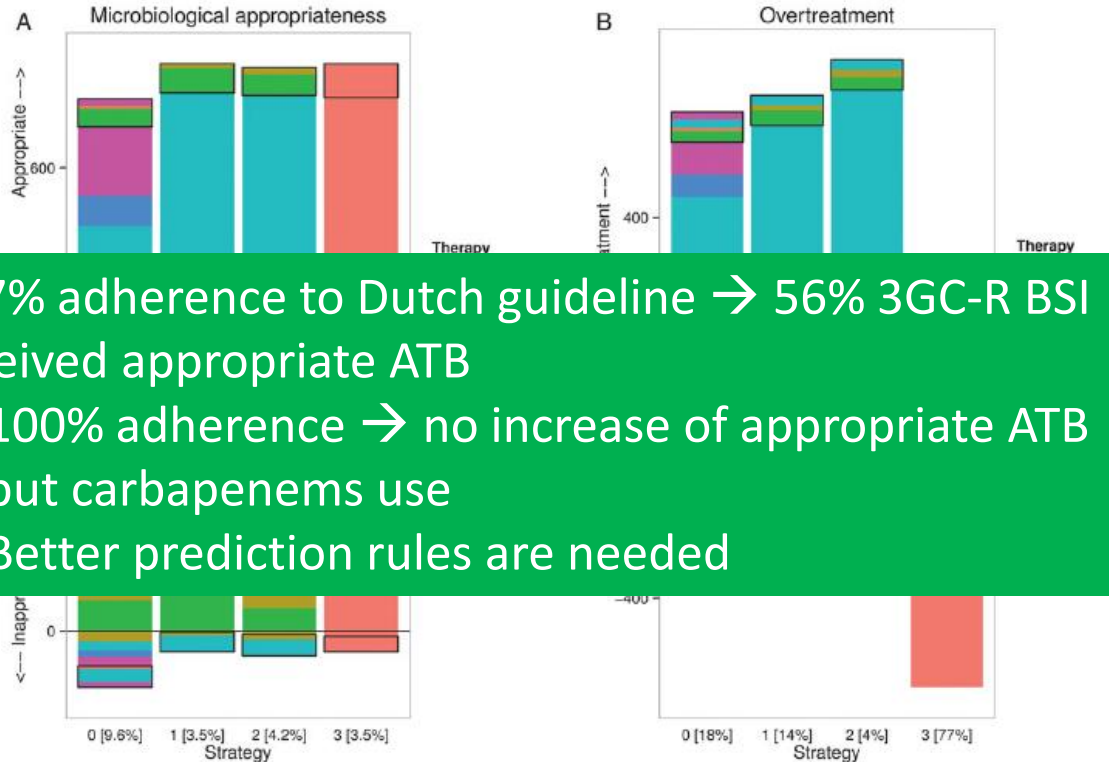


<u>Appropriate:</u>
At least 1 ATB or
susceptible path

- 27% adherence to Dutch guideline → 56% 3GC-R BSI received appropriate ATB
- 100% adherence → no increase of appropriate ATB but carbapenems use
- Better prediction rules are needed

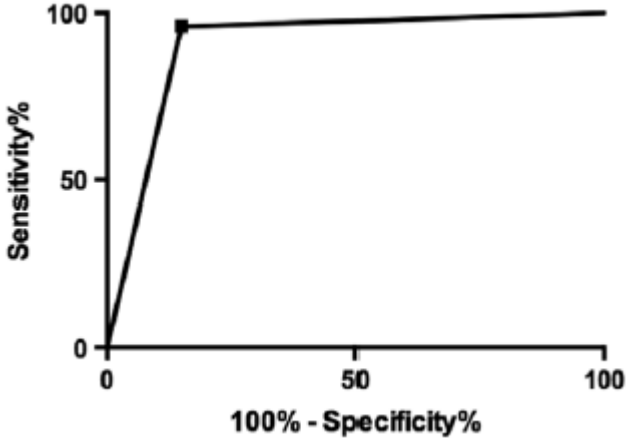
<u>Overtreatment:</u>
Carbapenem or
(aminosiide or
uoroquinolone) + β-
lactam if 3GC-S EB

Rottier et al CID 2015

Prior colonization & ESBLPE VAP

- Retrospective cohort 2006-2013 medical ICU
  - 587 pts suspected VAP > 40 (6.8%) colonized > 20 (3.4%) ESBLPE VAP (17 known colonized)

	ESBL-EB Colonization (n=40)	No ESBL-EB Colonization (n=547)	p
ESBL-EB causing VAP	17 (42.5)	3 (0.5)	< 0.01
Appropriate 1st-line ATB	20 (50.0)	364 (66.7)	0.03
Carbapenem 1st-line	92 (15.7)	13 (32.5)	< 0.01
ICU mortality	24 (60.0)	207 (37.8)	< 0.01

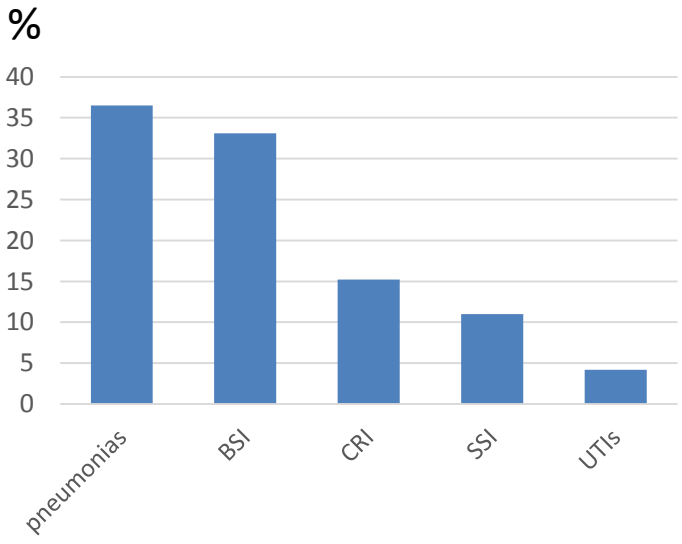


	Sens	Spe	PPV	NPV
All VAP	**85%**	**95%**	**41%**	**99%**

Bruyère et al CCM 2016

Impact of ESBL-PE col/inf on ICU patients

- 594 ESBL-PE carriers & 98 (16.4%) infected
  - 310 (52.2%) imported & 284 (47.8%) acquired
  - *E. coli* (48.7%), *K. pneu* (19.9%) *E.cloacae* (16.7%)



Barbier et al JAC 2016

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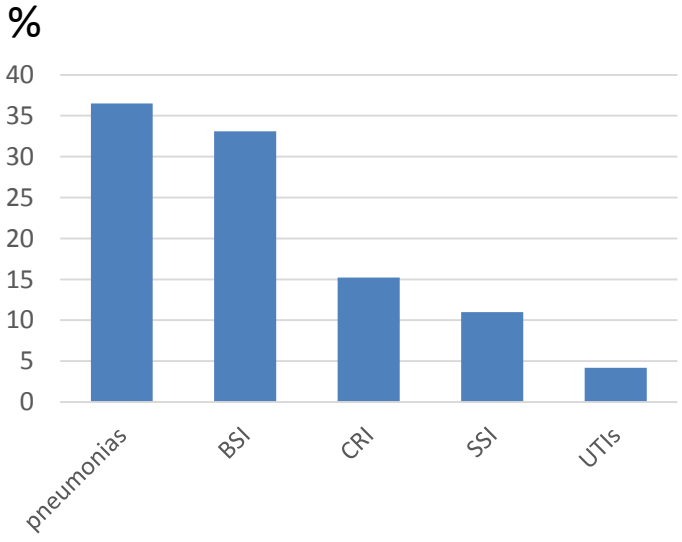

	Dead in the ICU at day 28		Discharged alive at day 28	
	aCSHR, 95% CI	p	aCSHR, 95% CI	p
Carriage without ESBL-PE infection	0.9 (0.7-1.1)	0.3	0.6 (0.5-0.7)	<0.01
Carriage with ≥1 ESBL-PE infection	1.8 (1.2-2.7)	<0.01	0.5 (0.4-0.7)	<0.01

Barbier et al JAC 2016

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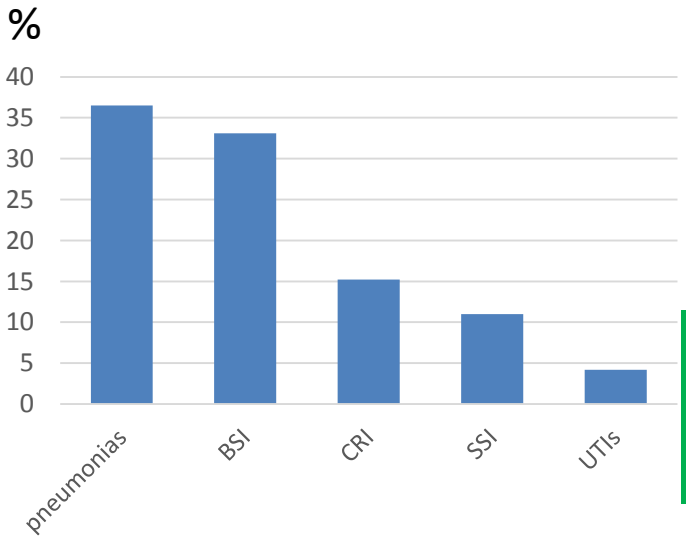

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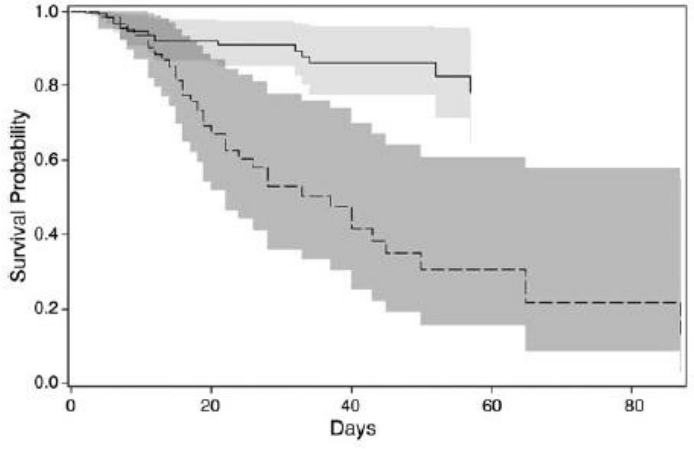
- 627 infected vs 69 non carriers carbapenem days/1000 pd (P<0.01)
- 241 carriers vs 69 non carriers carbapenem (idem BLBLI)

Barbier et al JAC 2016

Dépistage d'ABRI et infection

- Trauma ICU Florida from 2010 to 2011:
  - CRAB monthly acquired rate 56 cases per 10 000 pt-days
  - 364 patients screened > 49 (16%) ABRI > 60 infected (13%)
  - Among infected: 34 (56.7%) positive surveillance cultures.
  - Positive cultures 8.4 (5.6–12.7) time risk of AB infection
    - MV also associated on Log Bin Reg RR: 4.3 [1.03–18.2]

Variable	HR (95% CI)	P Value
Surveillance culture, positive	16.3 (9.1–29.1)	<.0001
Mechanical ventilation	3.4 (.8–14.6)	.09
Male sex	0.98 (.6–1.7)	.95
Exposure to cephalosporins	0.9 (.5–1.7)	.87



Latibeaudiere et al CID 2015

CPE colonization and mortality

- 2 Greek ICUs: screening admission and twice/week
  - 1007 patients with expected LOS ≥ 3 days + culture
    - 96 (9.5%) acquired and 40 deceased
    - 36 (3.6%) imported and 22 deceased
  - 125 (94.7%) were *K.pneumoniae* 56% KPC, 44% VIM
  - Competing risk models, CPE colonization time-dependent

Dautzenberg et al CCM 2015

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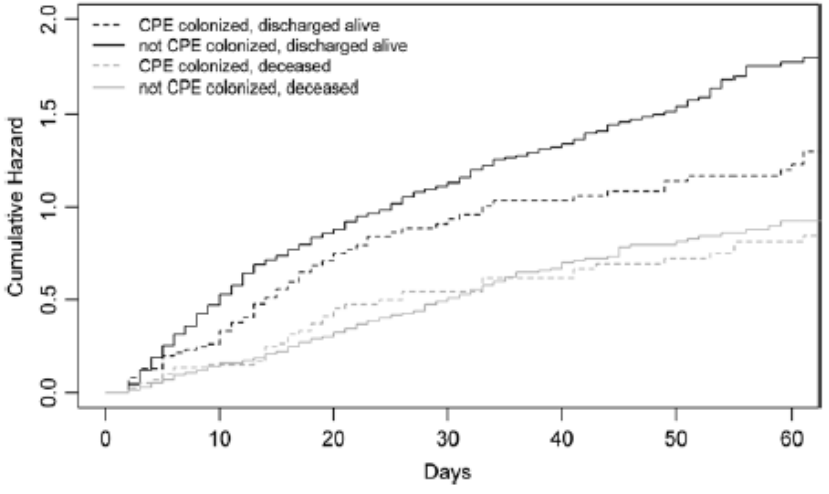
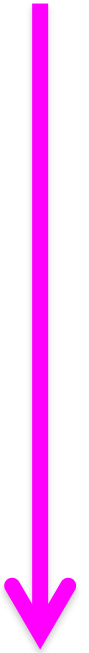


	Dead in the ICU at day 28		Discharged alive at day 28	
	aCSHR, 95% CI	**p**	**aCSHR, 95% CI**	**p**
CPE colo	1.02 (0.7–1.4)	0.9	0.7 (0.6–0.9)	0.01
	Subdistribution Hazard Ratio (95% CI)	**p**		
CPE colo	1.8 (1.3–2.4)	<0.01		

Dautzenberg et al CCM 2015

Spread of ESBL-PE *K. pneumoniae* in ICU

Intervention	Mean	Reduction (%)	Median duration
No intervention (baseline)	5.6	-	57
HH 2 (80% - 80%)	0.47	91.6	25
Hand hygiene 1+cohort nursing 2+ATB 1	0.44	92.1	24.25
Hand hygiene 2+ATB 1	0.40	92.9	23.99
Hand hygiene 1+cohort nursing 2+ATB 2	0.38	93.1	24.02
Hand hygiene 2+ATB 2	0.35	93.8	23.58
Hand hygiene 2+cohort nursing 1	0.26	95.4	23.18
Hand hygiene 2+cohort nursing 1+ATB 1	0.22	96	22.91
Hand hygiene 2+cohort nursing 1+ATB 2	0.19	96.6	22.67
Hand hygiene 2+cohort nursing 2	0.18	96.7	22.41
Hand hygiene 2+cohort nursing 2+ATB 1	0.16	97.07	22.63
Hand hygiene 2+cohort nursing 2+ATB 2	0.15	97.37	22.33



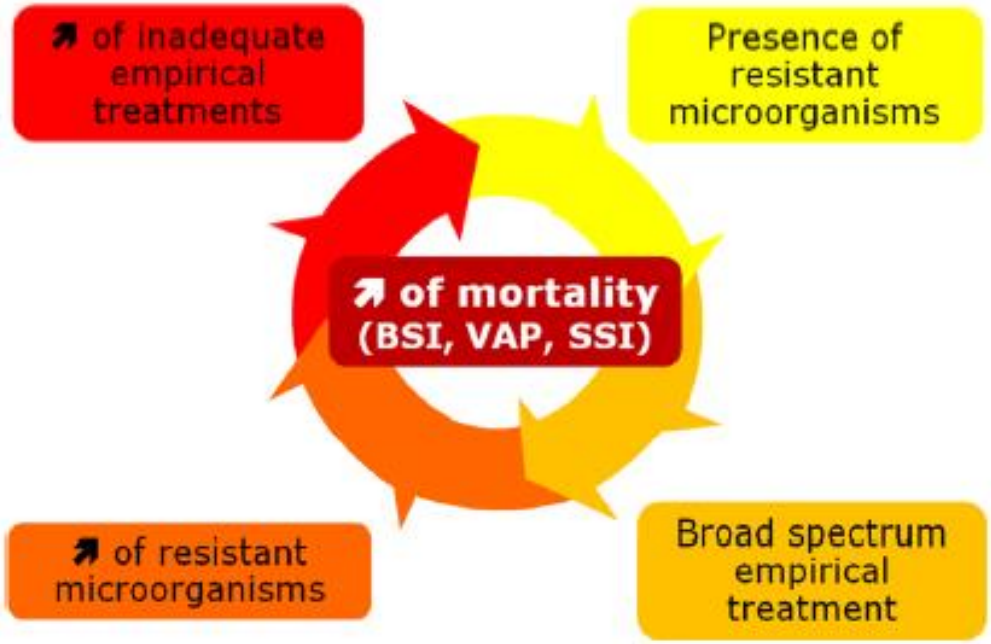
Pelat, ICHE 2015

Intensive Care Med
DOI 10.1007/s00134-015-3719-z

REVIEW

Matteo Bassetti
Jan J. De Waele
Philippe Eggimann
Josè Garnacho-Montero
Gunnar Kahlmeter
Francesco Menichetti
David P. Nicolau
Jose Arturo Paiva
Mario Tumbarello
Tobias Welte
Mark Wilcox
Jean Ralph Zahar
Garyphallia Poulakou

Preventive and therapeutic strategies in critically ill patients with highly resistant bacteria

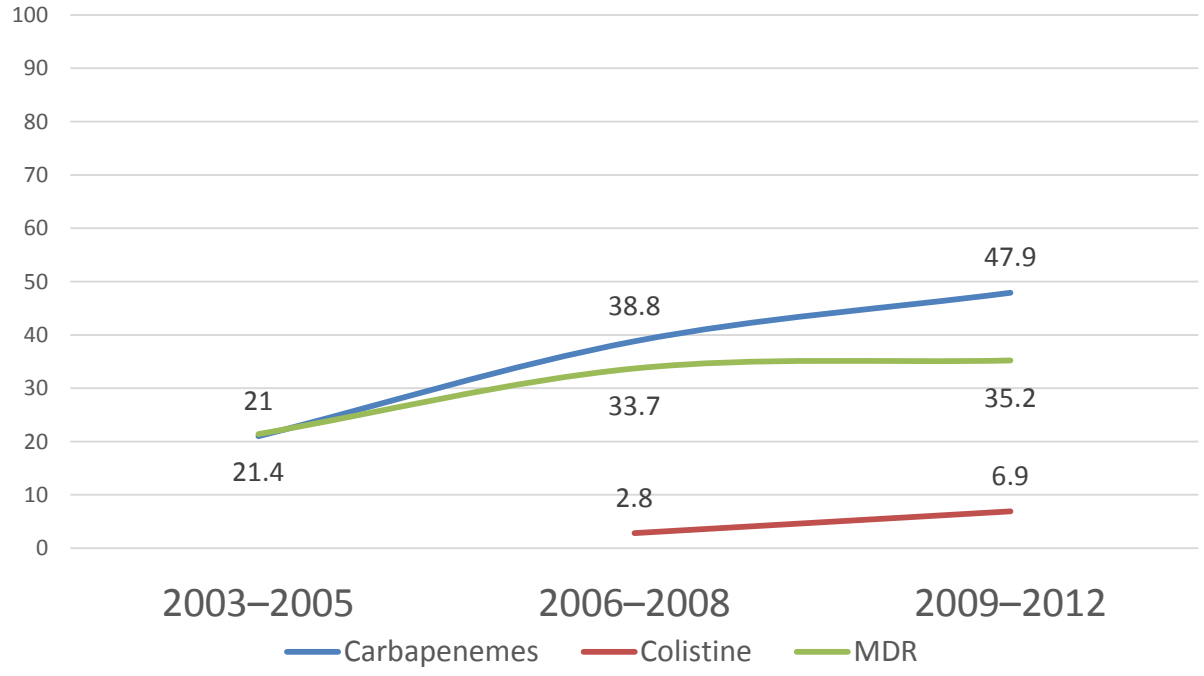


Published online: 20 March 2015

Acinetobacter baumannii

ABRI, Respiratoire et Hémocultures

- USA: 2003–2005, 2006–2008, 2009–2012
- 39,320 AB specimens: 81% respiratory, 19 % blood
  - Alarming increase rate of MDR AB to
  - Importance of nursing home as a reservoir



Zilberberg et al JHM 2015

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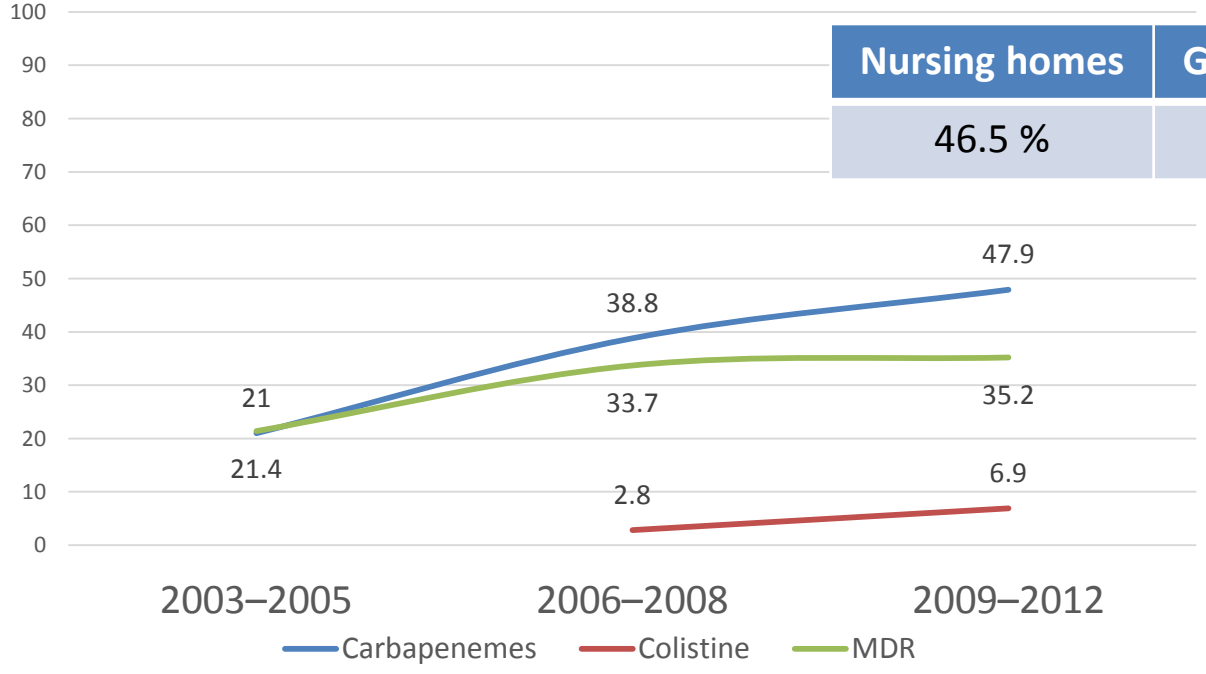
Nursing homes	General wards	ICUs	Outpatient
46.5 %	29.2 %	28.7 %	26.2 %



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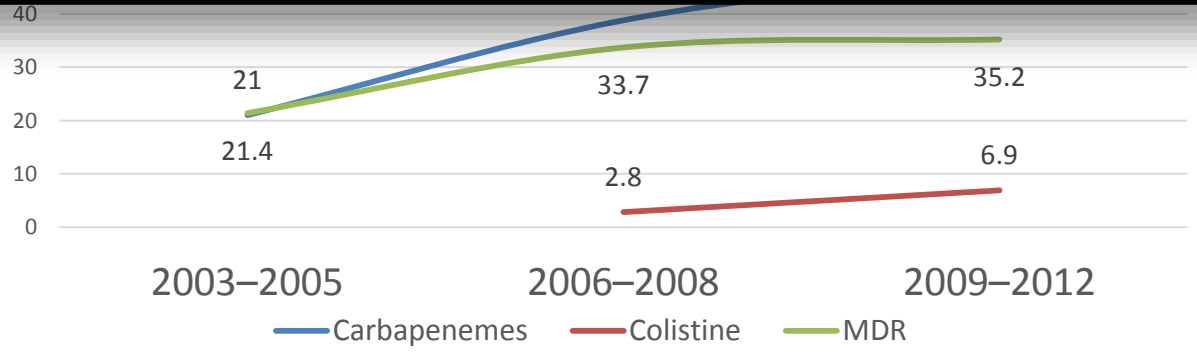
Intensive Care Med (2015) 41:2170–2172
DOI 10.1007/s00134-015-4096-3

WHAT'S NEW IN INTENSIVE CARE

Marin H. Kollef
Michael S. Niederman

Why is *Acinetobacter baumannii* a problem for critically ill patients?



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José Garnacho-Montero
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Murat Akova
José Miguel Cisneros
Jan De Waele
Nicola Petrosillo
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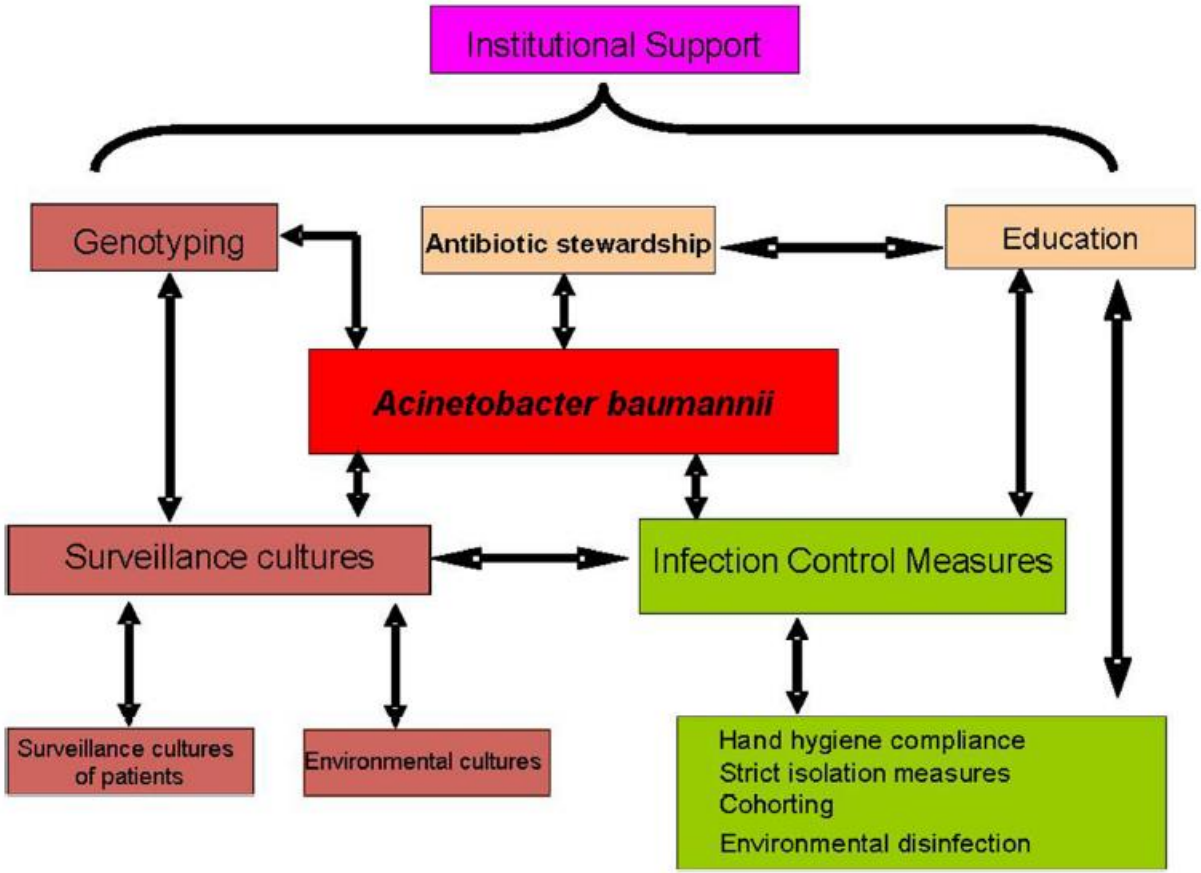
Jean François Timsit
Jordi Vila
Jean-Ralph Zahar
Matteo Bassetti

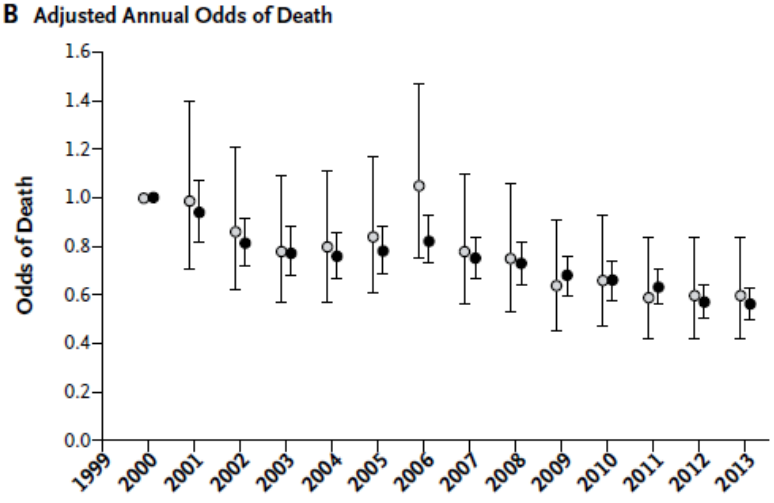
Task force on management and prevention of *Acinetobacter baumannii* infections in the ICU

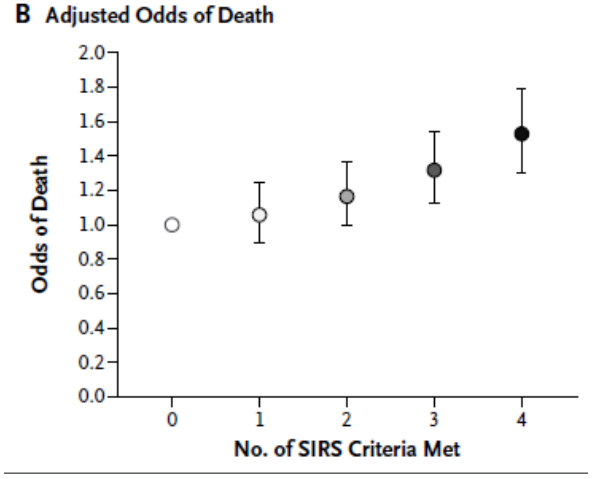


Sepsis

Definition of severe sepsis

- 172 intensive care units in Australia and New Zealand from 2000 through 2013
  - ≥ 2 vs 1 SIRS criteria: characteristics, outcomes and risk of death





- SIRS-criteria rule missed 1/8 patients with severe sepsis
- SIRS neg severe sepsis → still substantial mortality

Kaukonen et al NEJM 2015

Definition of severe sepsis

JAMA
The Journal of the American Medical Association

Original Investigation | CARING FOR THE CRITICALLY ILL PATIENT

Incidence, Risk Factors, and Attributable Mortality of Secondary Infections in the Intensive Care Unit After Admission for Sepsis

Original Investigation | CARING FOR THE CRITICALLY ILL PATIENT

Assessment of Clinical Criteria for Sepsis
For the Third International Consensus Definitions for Sepsis and Septic Shock (Sepsis-3)

Original Investigation | CARING FOR THE CRITICALLY ILL PATIENT

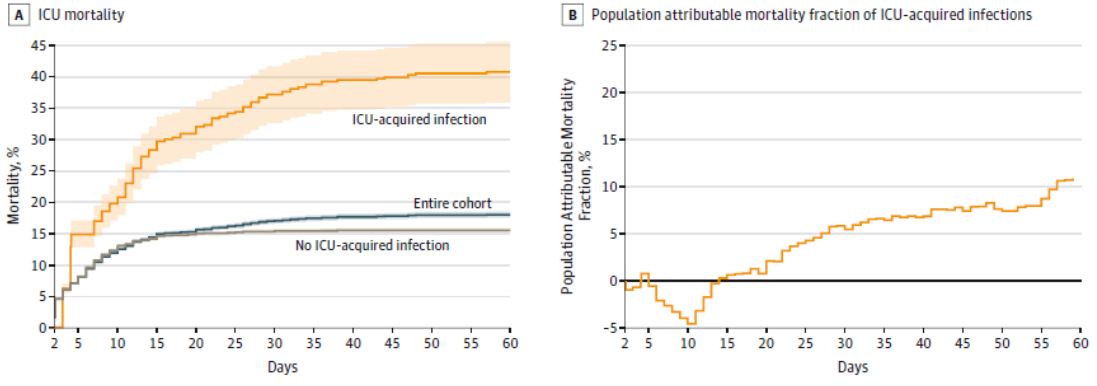
Developing a New Definition and Assessing New Clinical Criteria for Septic Shock
For the Third International Consensus Definitions for Sepsis and Septic Shock (Sepsis-3)

Special Communication | CARING FOR THE CRITICALLY ILL PATIENT

The Third International Consensus Definitions for Sepsis and Septic Shock (Sepsis-3)

Clinical and host genomic characteristics

- 2011-2013: Prospective observational study 2 ICUs in the Netherlands
  - Cohort 1: 1719 sepsis admissions, 13.5% ICU acquired inf
    - Association prior disease severity (APACHE) & ICU-AI
    - Sepsis + ICU-AI: higher LOS, complications, mortality
    - Reduced expression of gluconeogenesis/glycolysis
  - Cohort 2: 1921 admissions, 15.1% ICU acquired inf
    - Association prior disease severity (APACHE) & ICU-AI
    - Sepsis + ICU-AI: higher mortality (FRA: 10.9%)



van Vught et al JAMA 2016

New Definition and New Clinical Criteria

- Task force to revise current sepsis/septic shock definitions
  - Systematic review of 44 studies
    - Cutoffs/combinations: blood pressure (BP), fluid resuscitation, vasopressors, serum lactate level and base deficit
  - Delphi study:
    - hypotension, serum lactate level, and vasopressor therapy as variables to test using cohort studies
  - Cohort studies
    - maintain mean BP 65mmHg or greater and having a serum lactate level greater than 2 mmol/L (18mg/dL) after fluid resuscitation had a significantly higher mortality (42.3%[95%CI, 41.2%-43.3%])

van Vught et al JAMA 2016

Clinical Criteria for Sepsis

- Retrospective cohort study healthcare system USA
  - 7932 ICU encounters with suspected infection

EHR *electronic health record*

GCS *Glasgow Coma Scale*

ICU *intensive care unit*

LODS *Logistic Organ Dysfunction System*

qSOFA *quick Sequential [Sepsis-related] Organ Function Assessment*

SIRS *systemic inflammatory response syndrome*

SOFA *Sequential [Sepsis-related] Organ Function Assessment*

A ICU encounters (n = 7932)

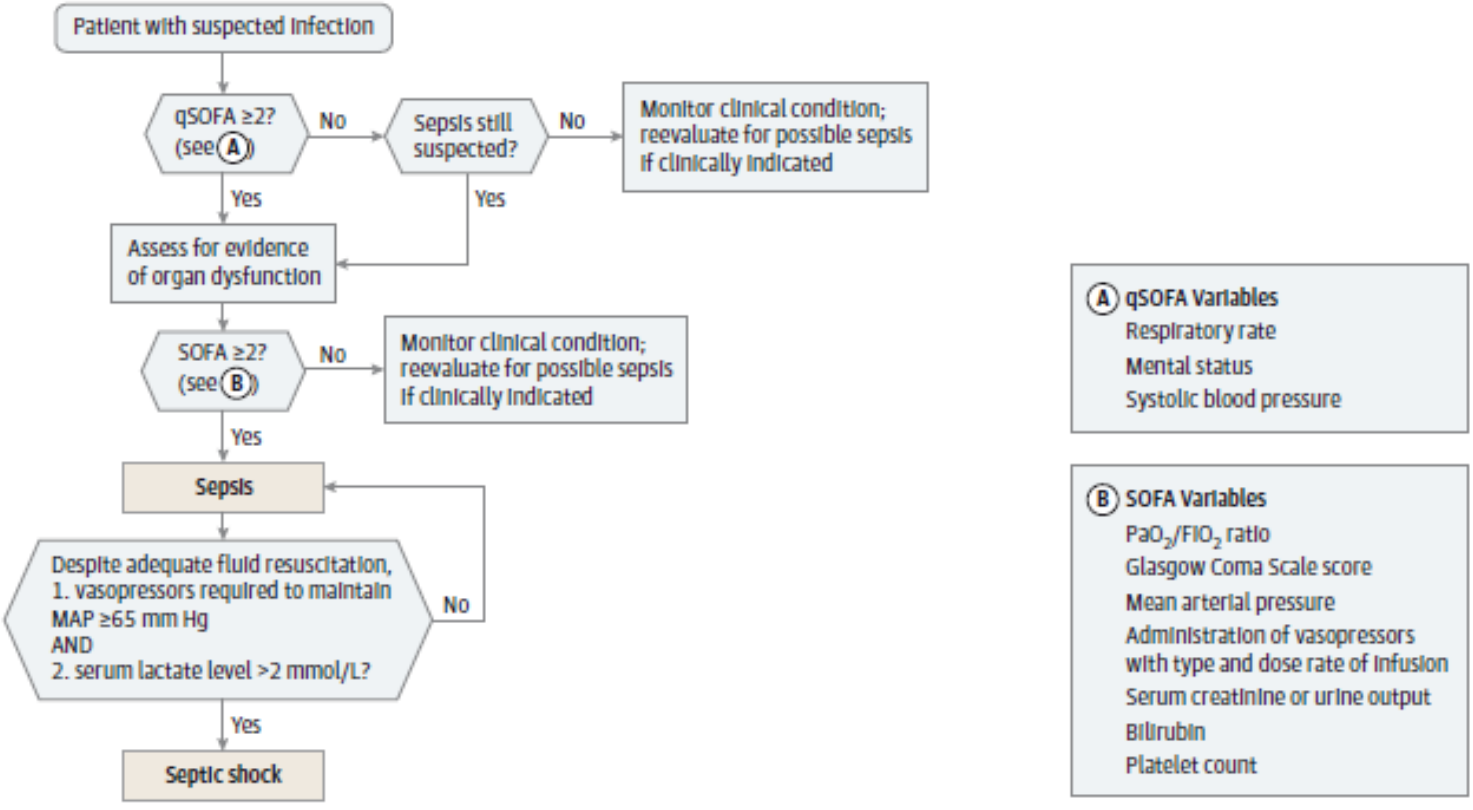
	SIRS	SOFA	LODS	qSOFA
SIRS	**0.64 (0.62-0.66)**	0.43 (0.41-0.46)	0.41 (0.38-0.43)	0.46 (0.43-0.48)
SOFA	<.001	**0.74 (0.73-0.76)**	0.87 (0.87-0.88)	0.65 (0.63-0.66)
LODS	<.001	0.20	**0.75 (0.73-0.76)**	0.76 (0.75-0.77)
qSOFA	.01	<.001	<.001	**0.66 (0.64-0.68)**

Predictive validity for in-hospital mortality:
SOFA = LODS
SOFA > SIRS and qSOFA
supporting its use in clinical criteria for sepsis

Seymour et al JAMA 2016

3rd International Consensus Definitions

Figure. Operationalization of Clinical Criteria Identifying Patients With Sepsis and Septic Shock



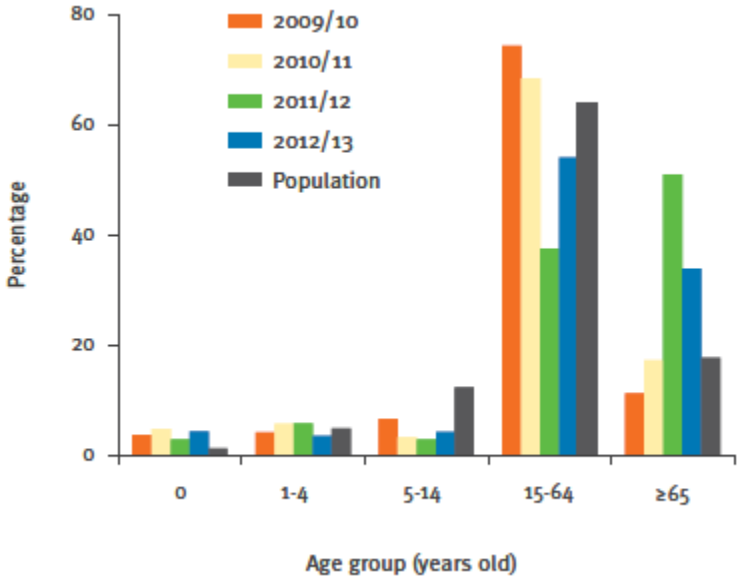
The baseline Sequential [Sepsis-related] Organ Failure Assessment (SOFA) score should be assumed to be zero unless the patient is known to have preexisting (acute or chronic) organ dysfunction before the onset of infection. qSOFA indicates quick SOFA; MAP, mean arterial pressure.

Singer et al JAMA 2016

Pneumopathies

ICU surveillance of Flu France

- 2009- 2012: 3,074 confirmed cases notified
- Virus A predominant among ICU cases
  - 100% during pandemic to 69% in 2012/13.

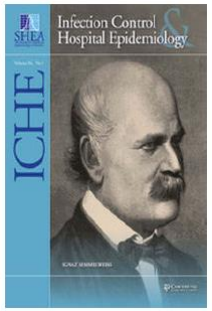


Risk of ARDS	OR [95% CI]
36–55 years	1.5 [1.2–2.0]
Female	0.8 [0.7–0.98]
Pregnancy with no other risk factor	3.0 [1.3–6.9]
Obesity with no other risk factor	1.8 [1.1–3.0]
Seasonal vaccination	0.7 [0.5–0.97]
A(H3N2) vs H1N1	0.5 [0.3–0.6]
B vs H1N1	0.5 [0.4–0.6]

Bonmarin et al Eurosurv 2015

The Clinical Impact and Preventability of Ventilator-Associated Conditions in Critically Ill Patients Who Are Mechanically Ventilated

CHEST



Preventable Proportion of Severe Infections Acquired in Intensive Care Units: Case-Mix Adjusted Estimations from Patient-Based Surveillance Data

Attributable mortality of ventilator-associated pneumonia: a meta-analysis of individual patient data from randomised prevention studies

THE LANCET
Infectious Diseases

Critical Care Medicine

Surveillance des PAVM

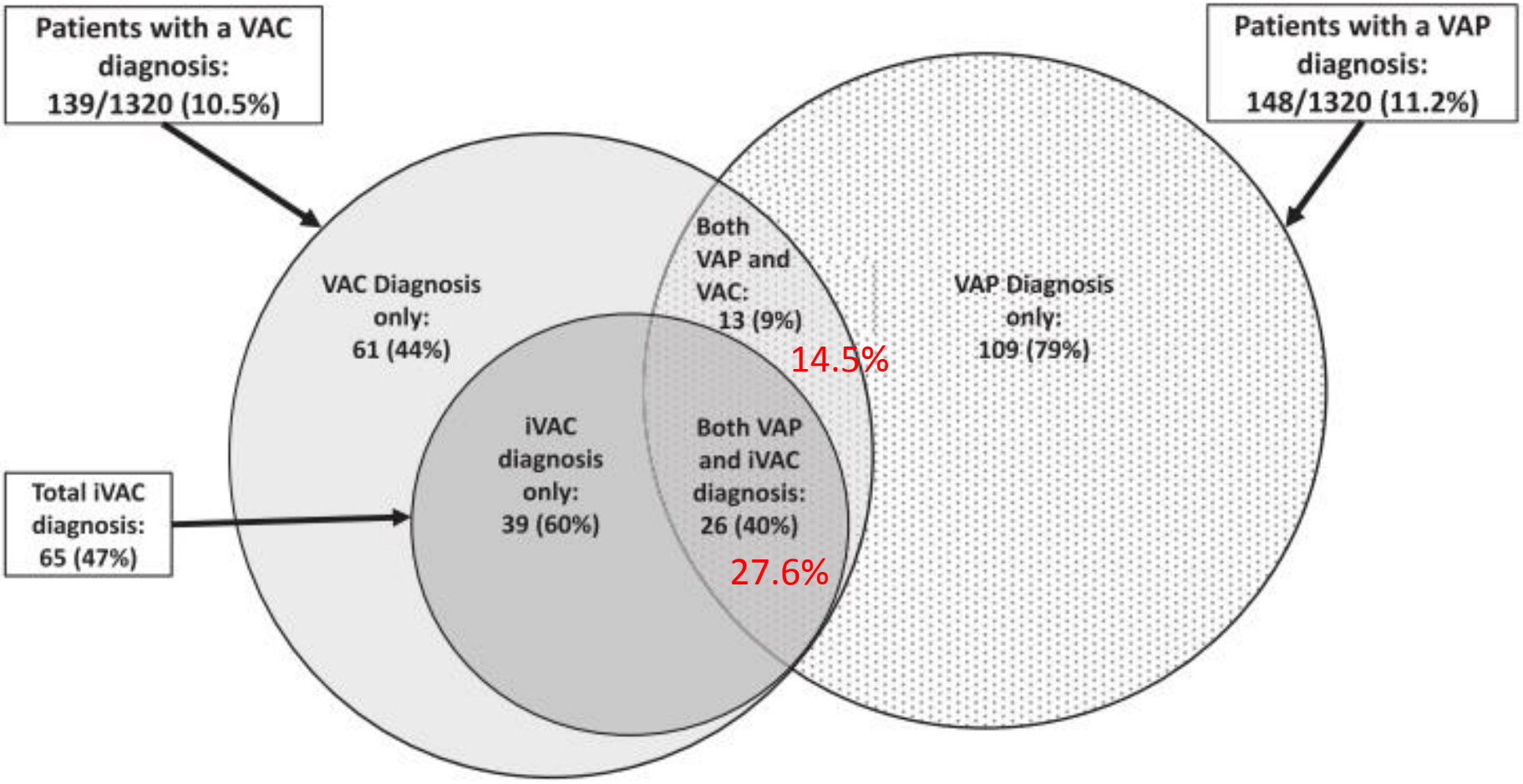
- Diagnostic PAVM subjectif: algorithm CDC
  - PAVM: Radio + Pus trachéale +/- T° +/- Leuco
  - Base OUTCOMEREA: Evènements associés à la ventilation

3028 pts ventilés	Condition associé à ventilation (VAC)	Infections liées complications de ventilation (iVAC)
Déterioration respi	77%	77%
Synd Rep Infl Sys		70%
ATB		29%
VPP	0.32 (0.30–0.34)	0.50 (0.47–0.53)
VPN	0.90 (0.88–0.92)	0.86 (0.84–0.87)

Indicateur de BU ATB = ↘ VAC et ↘ ATB
VAE = bon indicateur qualité mais prévention difficile à construire

Bouadma et al CCM 2015

Surveillance des PAVM

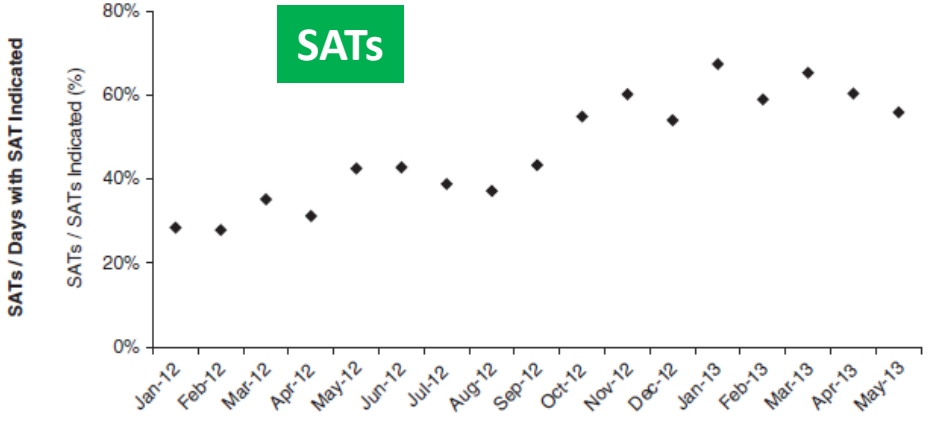


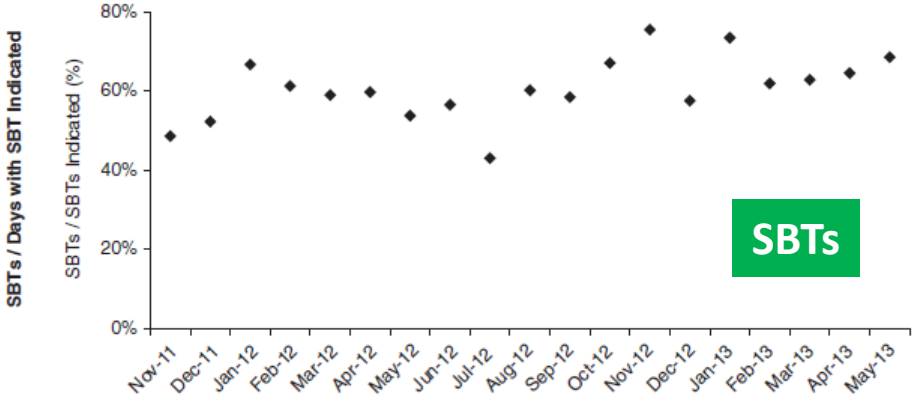
Mescudere et al CHEST 2013

Bouadma et al CCM 2015

The Preventability of VAE

- 12 ICUs: consensus protocol for daily SATs SBTs
  - CDC Wake Up and Breathe Collaborative
  - Daily screening of all patients eligibility for SATs and SBTs
  - Clinical champions: monthly reports & web conferences
  - 3,425 consecutive episodes of mechanical ventilation



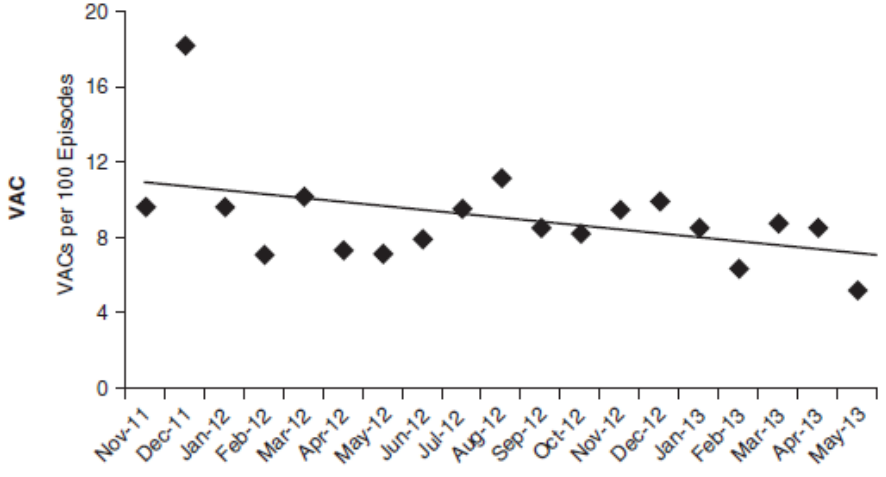


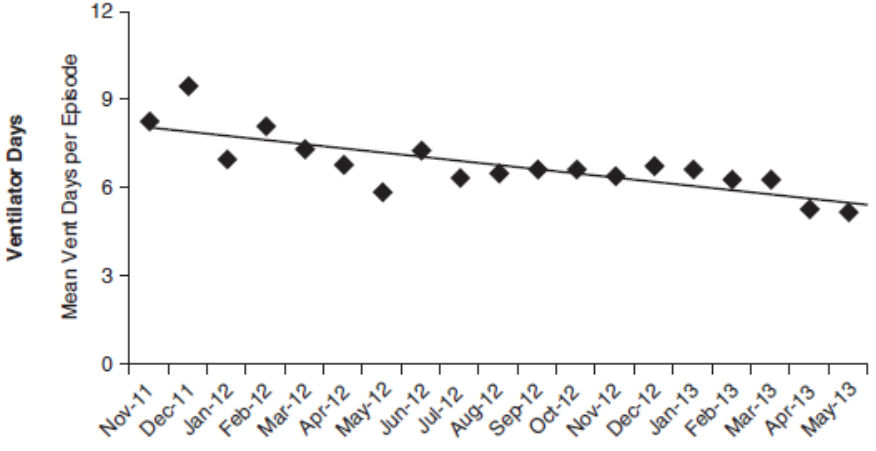
- SAT rates: 14% to 77% of days where indicated
- SBT rates: 5% to 21% of days where indicated

Klompas et al AJRCCM 2015

The Preventability of VAE

	Monthly Unit Level SAT Rate OR/RR (95% CI)	p	Monthly Unit Level SBT Rate OR/RR (95% CI)	p
VAC	0.20 (0.06–0.64)	<0.01	0.15 (0.06–0.38)	<0.01
Possible or probable pneumonias	0.03 (0.003–0.40)	<0.01	0.24 (0.03–1.92)	0.2
Duration of MV, d	0.32 (0.25–0.43)	<0.01	0.79 (0.63–0.99)	0.05
ICU length-of-stay, d	0.51 (0.40–0.66)	<0.01	1.01 (0.81–1.3)	0.9
Hospital mortality	0.32 (0.14–0.74)	<0.01	1.1 (0.60–1.9)	0.8



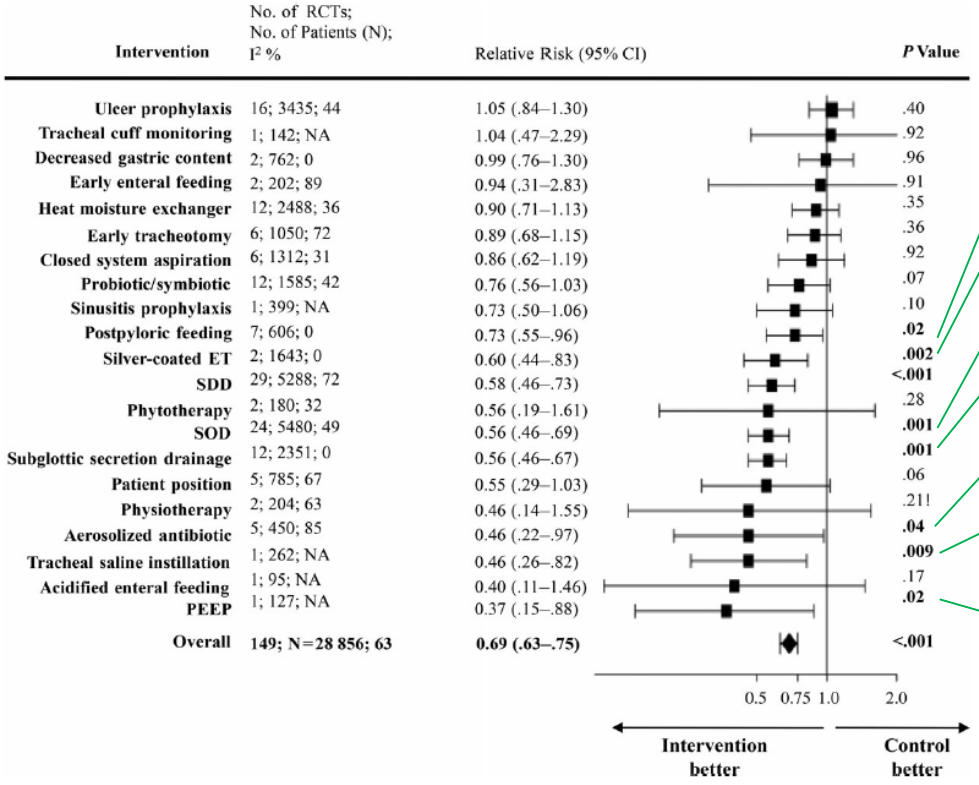


Klompas et al AJRCCM 2015

Clinical Infectious Diseases

La prévention des pneumopathies pour réduire la mortalité en réanimation

- Méta-analyse: 145 RCT (25856 patients)
  - PAS: 14.9% intervention vs 21.7% témoin



Intervention	No. of RCTs; No. of Patients (N); I^2 %	Relative Risk (95% CI)	*P* Value
Ulcer prophylaxis	16; 3435; 44	1.05 (.84–1.30)	.40
Tracheal cuff monitoring	1; 142; NA	1.04 (.47–2.29)	.92
Decreased gastric content	2; 762; 0	0.99 (.76–1.30)	.96
Early enteral feeding	2; 202; 89	0.94 (.31–2.83)	.91
Heat moisture exchanger	12; 2488; 36	0.90 (.71–1.13)	.35
Early tracheotomy	6; 1050; 72	0.89 (.68–1.15)	.36
Closed system aspiration	6; 1312; 31	0.86 (.62–1.19)	.92
Probiotic/symbiotic	12; 1585; 42	0.76 (.56–1.03)	.07
Sinusitis prophylaxis	1; 399; NA	0.73 (.50–1.06)	.10
Postpyloric feeding	7; 606; 0	0.73 (.55–.96)	**.02**
Silver-coated ET	2; 1643; 0	0.60 (.44–.83)	**.002**
SDD	29; 5288; 72	0.58 (.46–.73)	**<.001**
Phytotherapy	2; 180; 32	0.56 (.19–1.61)	.28
SOD	24; 5480; 49	0.56 (.46–.69)	**.001**
Subglottic secretion drainage	12; 2351; 0	0.56 (.46–.67)	**.001**
Patient position	5; 785; 67	0.55 (.29–1.03)	.06
Physiotherapy	2; 204; 63	0.46 (.14–1.55)	.21!
Aerosolized antibiotic	5; 450; 85	0.46 (.22–.97)	**.04**
Tracheal saline instillation	1; 262; NA	0.46 (.26–.82)	**.009**
Acidified enteral feeding	1; 95; NA	0.40 (.11–1.46)	.17
PEEP	1; 127; NA	0.37 (.15–.88)	**.02**
Overall	**149; N=28 856; 63**	**0.69 (.63–.75)**	**<.001**

Nutrition post-pylorique

Sonde imprégnée d'argent

Décolonisation digestive

Décolonisation oropharyngée

Drainage des sécrétion subglottiques

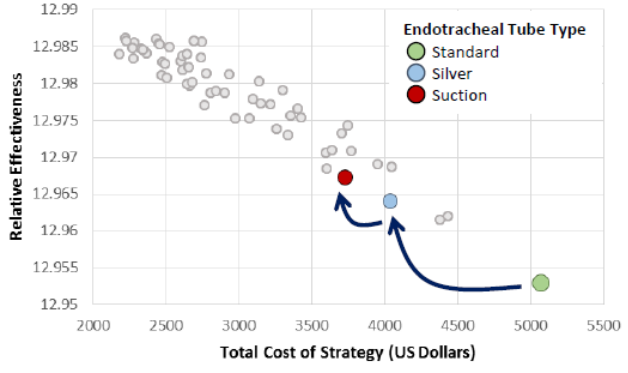
Aérosol d'ATB

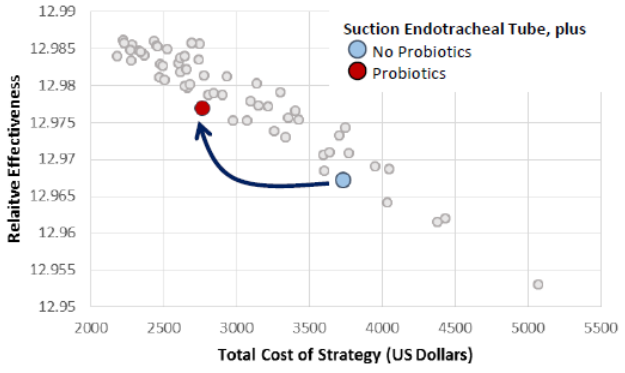
Pression expiratoire positive

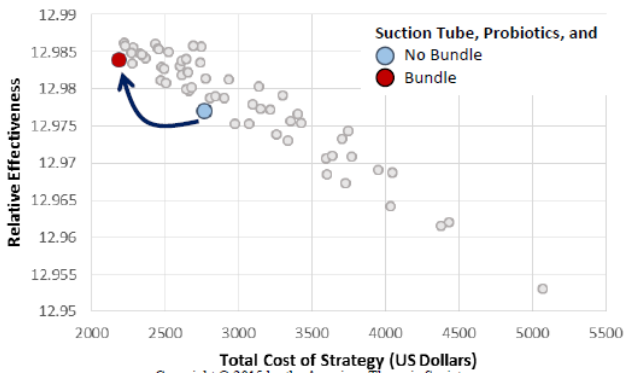
Roquilly et al CID 2015

Ideal Strategy for VAP Prevention

- A cost-benefit decision model with a Markov model
  - 120 unique combinations of VAP prevention strategies
    - IHI +/- CHG oral, SDD, SOD, probio, type of tube (silver, suction…)
  - total incidence of VAP was 9.8%,
  - Inputs: 9.8% incidence of VAP (8% day 1 to 18% day 7)







Endotracheal Tube Type

Probiotics + Suction Endotracheal Tube

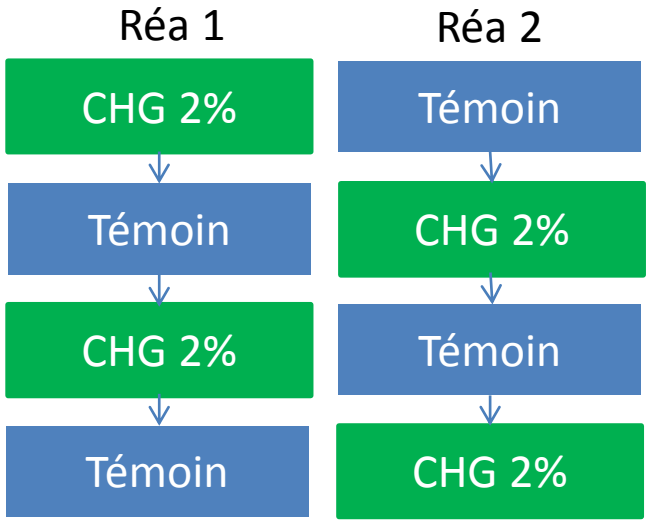
IHI Bundle + Suction Endotracheal Tube + Probiotics

Branch-Elliman et al AJRCCM 2015

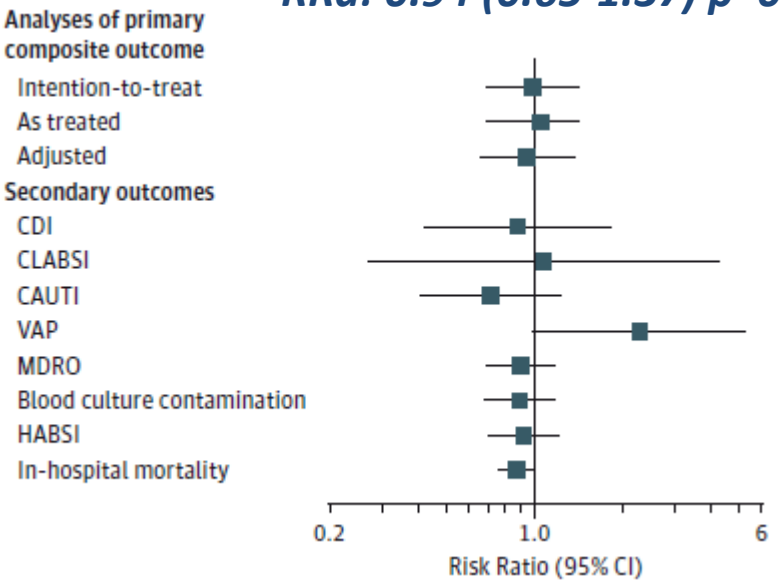
Décolonisation

Toilette à la chlorhexidine et IAS

- Essai randomisé en cluster cross-over
  - 5 Réanimations adultes (n=10783), Toilette quotidienne CHG 2%
  - Infections CVC (4/4), sonde urinaire (21/32), PAVM (17/8), *C.diff* (13/16)



RRa: 0.94 (0.65-1.37) p=0.83



Noto et al JAMA 2015

Body surface on bacteriuria & candiduria

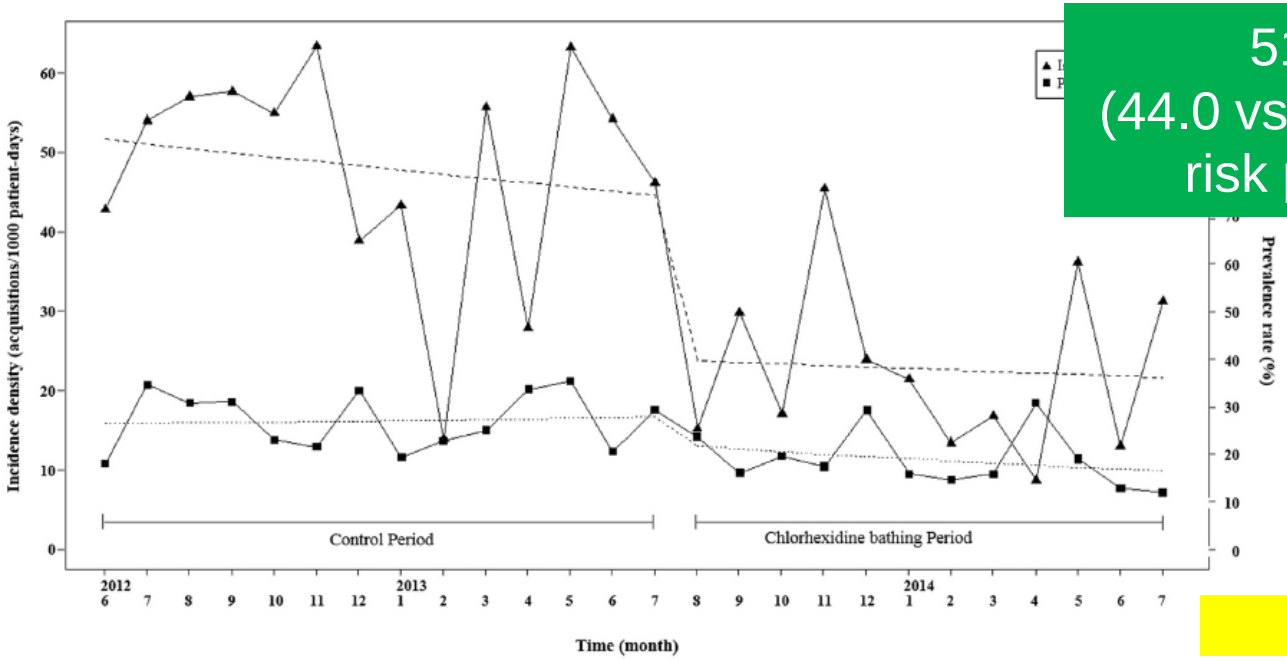
- 74 adult ICUs: secondary analysis of RCT
  - *Group 1:* screening and isolation
  - *Group 2:* targeted decolonization (CHG cleansing of perineum + proximal 15-24 cm of urinary catheters)
  - *Group 3:* universal decolonization
  - Outcomes: ≥50 000 CFU/mL bacteriuria and candiduria

	Group 1	Group 2	Group 3	p
Bacteriuria, all patients	1 (0.9–1.2)	0.9 (0.8–1)	0.9 (0.8–1)	0.26
Candiduria, all patients	1.1 (0.9–1.4)	0.9 (0.8–1.2)	0.8 (0.7–0.9)	0.05
Candiduria, men	1.2 (0.9–1.7)	1 (0.7–1.4)	0.6 (0.4–0.9)	0.02
Any bacteriuria, men	1 (0.8–1.2)	1 (0.8–1.3)	0.7 (0.6–0.9)	0.04

Huang et al LID 2016

Toilette CHG et CRAB

- Medical ICU of 16 beds: Etude quasi-exp
  - Baseline 14 mois: daily bed baths nonmedicated
  - Intervention 12 mois: Daily bathing no-rinse 2% CHG washcloths
  - Dépistage admission/Hebdo/sortie, Enhance cleaning

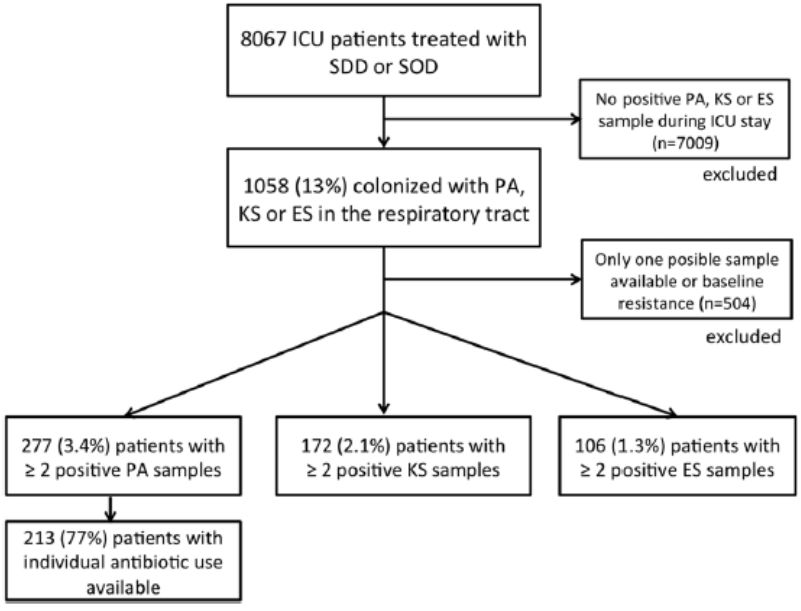


51.8% reduction
(44.0 vs 21.2 cases/1,000 at-risk pt days, P < .001)

Chung et al AJIC 2015

Within-Host R-GNB after SD

- Multicenter (16 ICUs) prospective cluster-randomized crossover study: effects of SDD & SOD
  - Lower respiratory tract samples at admission & 2 weekly
  - Acquired AMR in *P.aeruginosa*, KS, and ES



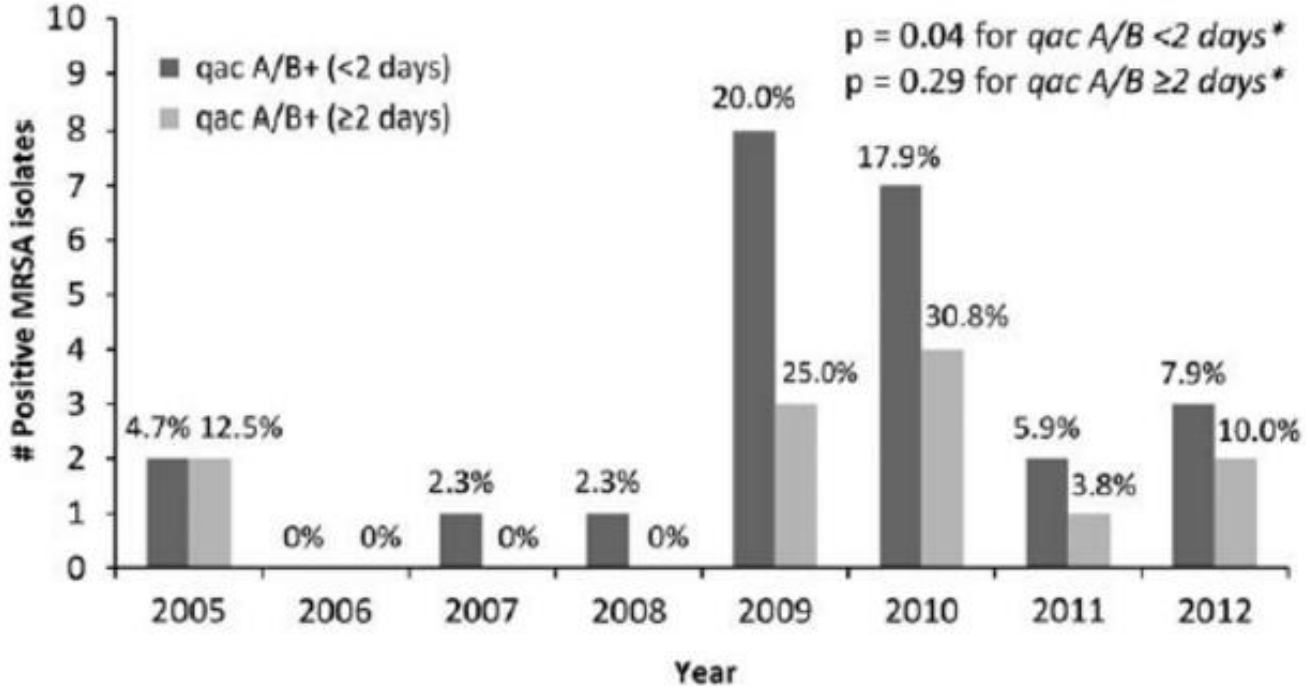
34 *P.aeruginosa*	AB aHR
Ceftazidime	1.7 (0.8–3.9)
Ciprofloxacin	2.7 (1.2–6.2)
Colistin	3.3 (0.8–14.1)
Aminoglycoside	1.7 (0.6–4.5)
Carbapenem	3.5 (1.0–12.7)
Piperacillin-tazobactam	1.7 (0.7–2.8)

Noteboom et al CCM 2015

Tuesday, February 9, 2016

Eli Perencevich

Is it time to ditch CHG bathing in ICUs and get back to basic infection control?



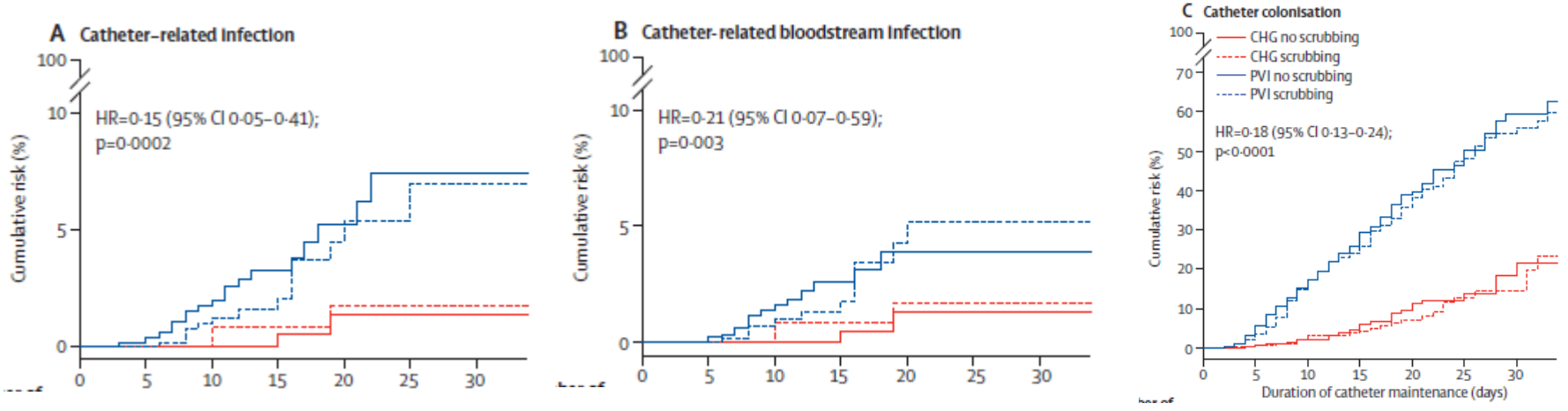
So where do these findings leave us? Yes, more studies, larger studies, bigger and better studies - $6 million dollar man studies. But pending those dream-like studies, can we state at what level of CHG resistance we should ditch universal CHG bathing? Are we compromising the effectiveness of CHG in preoperative settings like those supported by STOP-SSI? And when can we get back to basic infection control? To my knowledge hand hygiene and gowns/gloves don't drive resistance like CHG. Well, except resistance from my esteemed co-bloggers and colleagues. ¯_(ツ)_/¯

Warren et al ICHE 2016

CVC

Skin antisepsis and scrubbing CVC

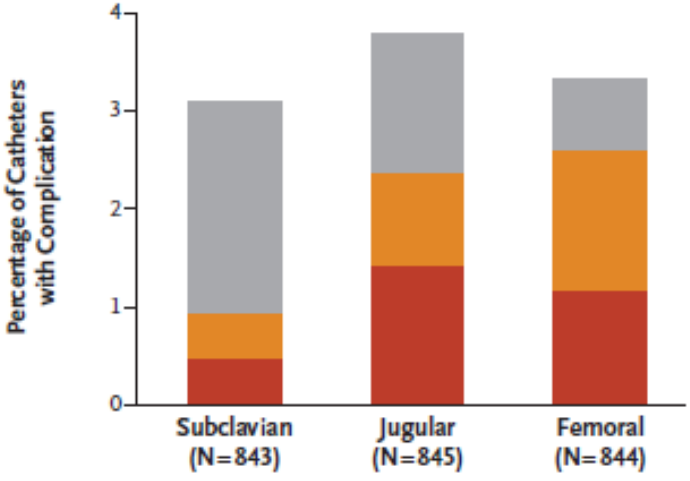
- RCT 11 ICU: arterial, haemodialysis, CVC > 48 h
  - Chlorhexidine 2%–alcohol or PVI–alcohol
  - Skin scrubbing vs no scrubbing
  - Catheter related infections: HR 0.15 (0.05–0.41, p=0.0002)
  - CR-BSIs: HR 0.21 (0.07–0.59, p=0.003)



Mimoz et al Lancet 2015

Complications of CVC by Insertion Site

- Multicenter trial: nontunneled CVC to the subclavian, jugular, or femoral vein
  - Outcomes: CLABSI & symptomatic deep-vein thrombosis
  - 3471 catheters inserted in 3027 patients



Mechanical (grade ≥3)	18 (2.1%)	12 (1.4%)	6 (0.7%)
Symptomatic deep-vein thrombosis	4 (0.5%)	8 (0.9%)	12 (1.4%)
Bloodstream infection	4 (0.5%)	12 (1.4%)	10 (1.2%)

Risk of CLABSI or thrombosis:

femoral > subclavian (HR: 3.5, 1.5-7.8)
Jugular > subclavian (HR: 2.1, 1.0 t-4.3)
Femoral = jugular (HR: 1.3, 0.8- 2.1)

Parienti et al NEJM 2015

Frequency of dressing changes for CVC

Cochrane Library

Cochrane Database of Systematic Reviews

Frequency of dressing changes for central venous access devices on catheter-related infections (Review)

Gavin NC, Webster J, Chan RJ, Rickard CM

Authors' conclusions

The best available evidence is currently inconclusive regarding whether longer intervals between CVAD dressing changes are associated with more or less catheter-related infection, mortality or pain than shorter intervals.

Gavin et al Cochrane 2016

Ethanol Lock and Risk of Hemodialysis Catheter Infection in Critically Ill Patients
A Randomized Controlled Trial

AMERICAN JOURNAL OF
Respiratory and Critical Care Medicine

Clinical Infectious Diseases

Antimicrobial Lock Solutions as a Method to Prevent Central Line–Associated Bloodstream Infections: A Meta-analysis of Randomized Controlled Trials

Adjunctive management of central line-associated bloodstream infections with 70% ethanol-lock therapy

Journal of Antimicrobial Chemotherapy

JAMA
Internal Medicine

Central Catheter–Associated Bloodstream Infection Reduction With Ethanol Lock Prophylaxis in Pediatric Intestinal Failure

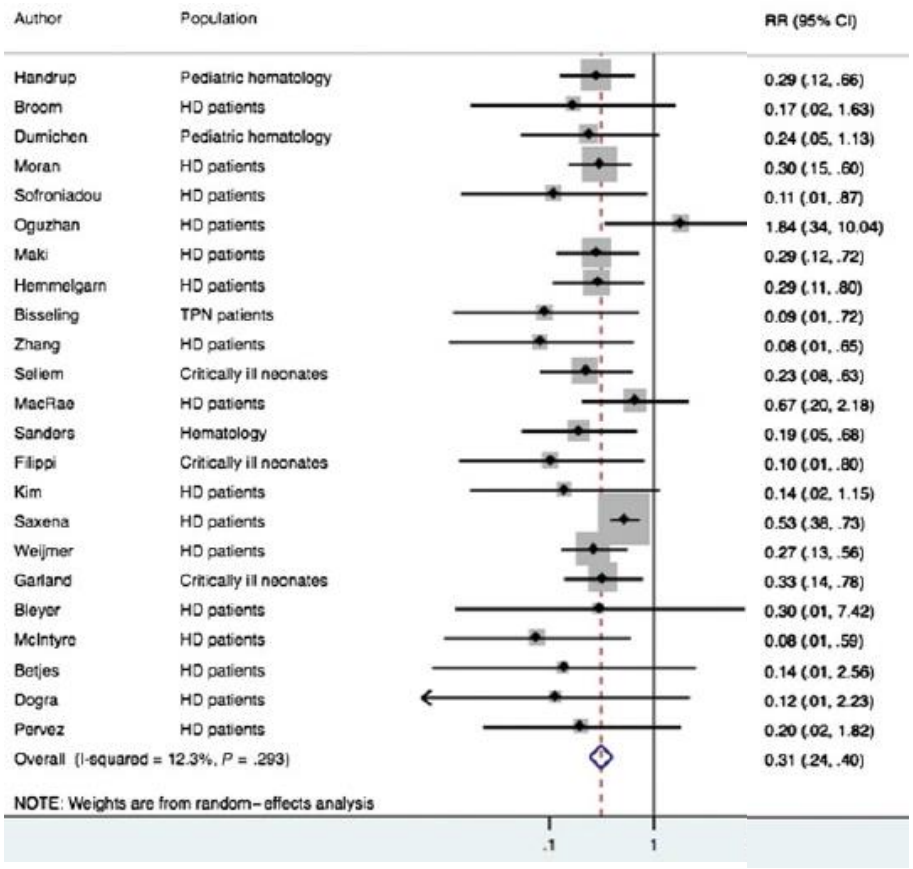
Taurolidine Lock Is Superior to Heparin Lock in the Prevention of Catheter Related Bloodstream Infections and Occlusions

PLOS | ONE

Clinical Infectious Diseases

Verrou antibiotiques prophylactique

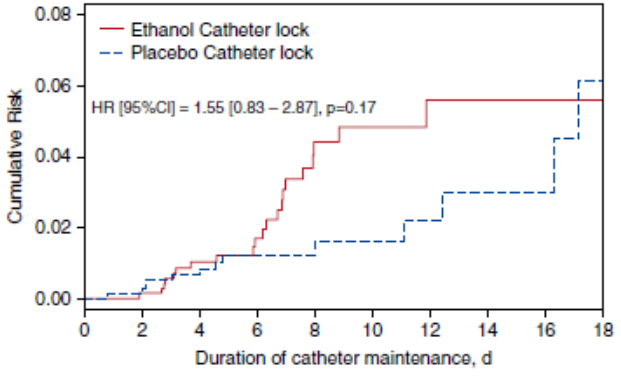
- Méta-analyse de 23 RCT et 2896 patients
  - Genta (5), Vanco (2),Cefotax, Mino, Amik…
  - Taurolidine (4), Ethanol (2), Citrate (2)
  - ATB vs heparine
    - 69% réduction CLABSI
    - 32% réduction d'infect. locales
  - Pas d'impact sur mortalité et complications



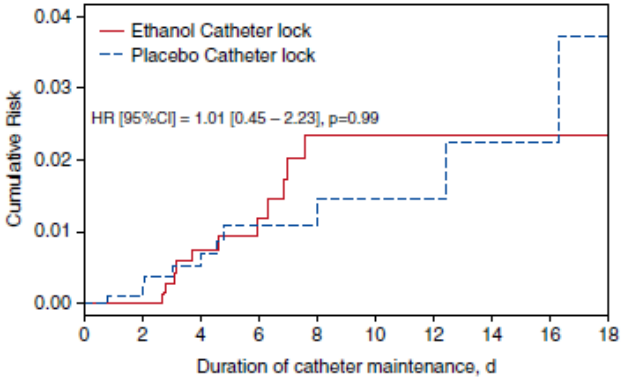
Zacharioudakis et al CID 2014

Ethanol Lock & Hemodialysis Catheter

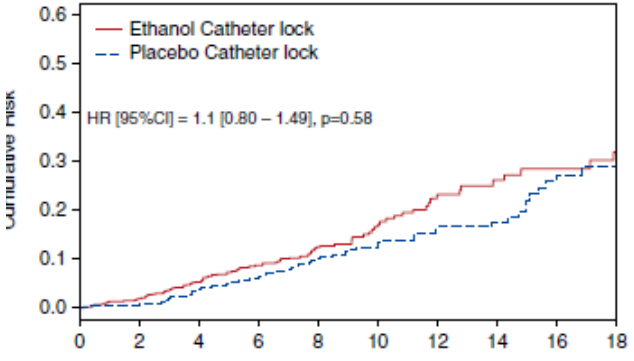
- Randomized, double-blind, placebo-controlled trial in 16 ICUs: 1,460 patients, 2172 catheters
  - Nontunneled, nonantimicrobial-impregnated double-lumen DC >48h
  - 2-minute lock 60% ethanol vs 0.9% saline at the end of DC insertion and after each renal-replacement therapy



Major catheter related infections
HR: 1.55 (0.83–2.87)



CLABSI
HR: 1.01 (0.45–2.23)



Colonisation
HR 1.10 (0.80–1.49)

Souweine et al AJRCCM 2015

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Taurolidine Lock Is Superior to Heparin Lock in the Prevention of Catheter Related Bloodstream Infections and Occlusions

PLOS ONE

Environnement

Major article

A pilot study into locating the bad bugs in a busy intensive care unit

Greg S. Whiteley BAppSc, MSafetySc, Dip AICD [a,b,*],
Jessica L. Knight DipSc, BSc(Hons) [c,d,e], Chris W. Derry BSc(Med)Hons, MSc(Med), PhD [a],
Slade O. Jensen BSc(Hons), PhD [c,d,e], Karen Vickery BVSc(Hons), MSc, PhD [f],
Iain B. Gosbell MBBS, MD, FRACP [c,d,e,g]

AJIC
American Journal of Infection Control

REVIEW Open Access

Bacterial contamination of inanimate surfaces and equipment in the intensive care unit

Vincenzo Russotto*, Andrea Cortegiani, Santi Maurizio Raineri and Antonino Giarratano

Journal of Intensive Care

Healthcare-Associated Outbreaks Associated with a Water Reservoir and Infection Prevention Strategies

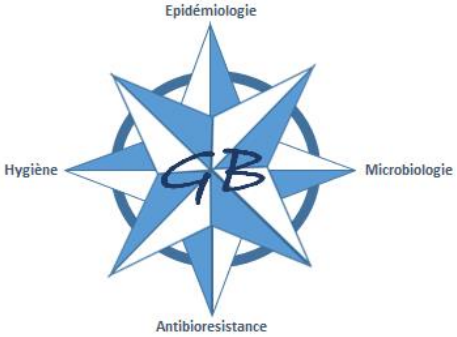
Hajime Kanamori[1,2,*], David J. Weber[1,2], William A. Rutala[1,2]

Clinical Infectious Diseases

Review

Risk of organism acquisition from prior room occupants: a systematic review and meta-analysis

B.G. Mitchell [a,b,*], S.J. Dancer [c], M. Anderson [a], E. Dehn [a]

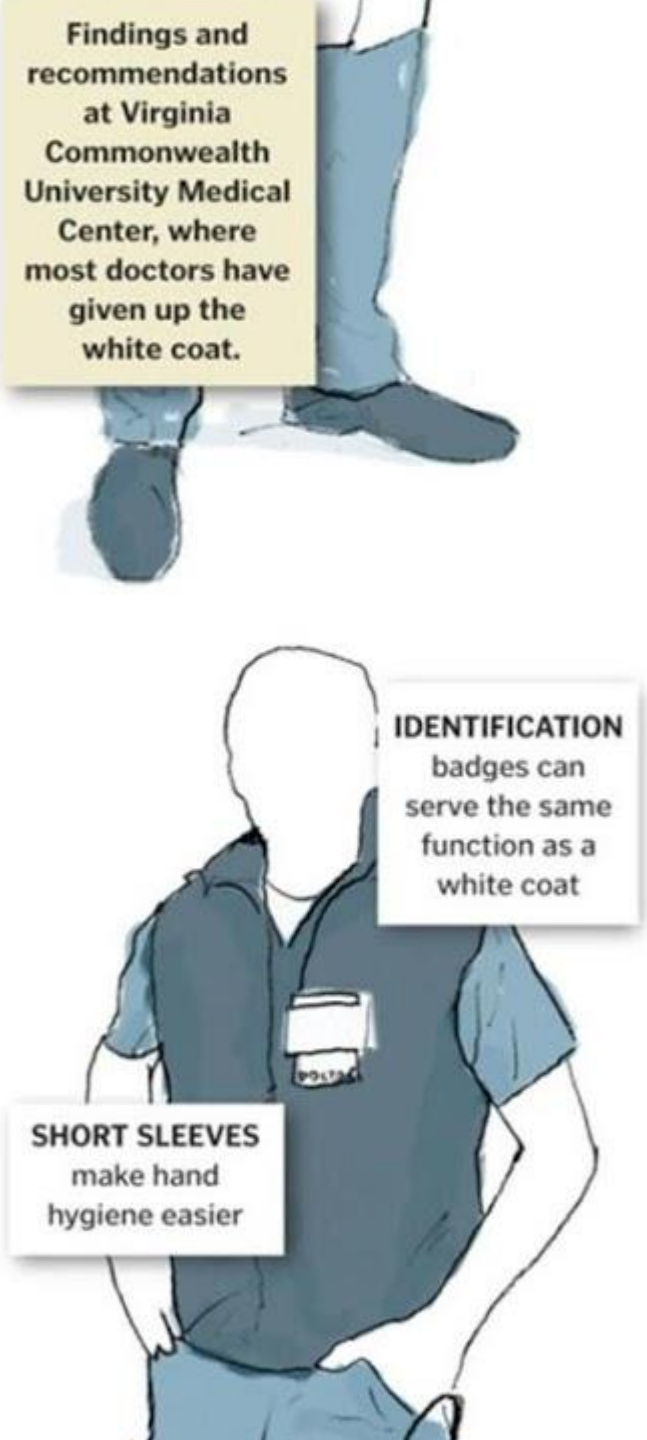


Merci pour votre attention

Blog: http://www.gabrielbirgand.fr/

@Gbirgand

- http://haicontroversies.blogspot.fr/2016/02/is-it-time-to-ditch-chg-bathing-in-icus.html?utm_source=feedburner&utm_medium=email&utm_campaign=Feed:+blogspot/vutUL+(Controversies+in+Hospital+Infection+Prevention)


Findings and recommendations at Virginia Commonwealth University Medical Center, where most doctors have given up the white coat.
IDENTIFICATION badges can serve the same function as a white coat
SHORT SLEEVES make hand hygiene easier

- http://haicontroversies.blogspot.fr/2015/10/denominators-matter.html?utm_source=feedburner&utm_medium=email&utm_campaign=Feed:+blogspot/vutUL+(Controversies+in+Hospital+Infection+Prevention)