To Screen or Not to Screen

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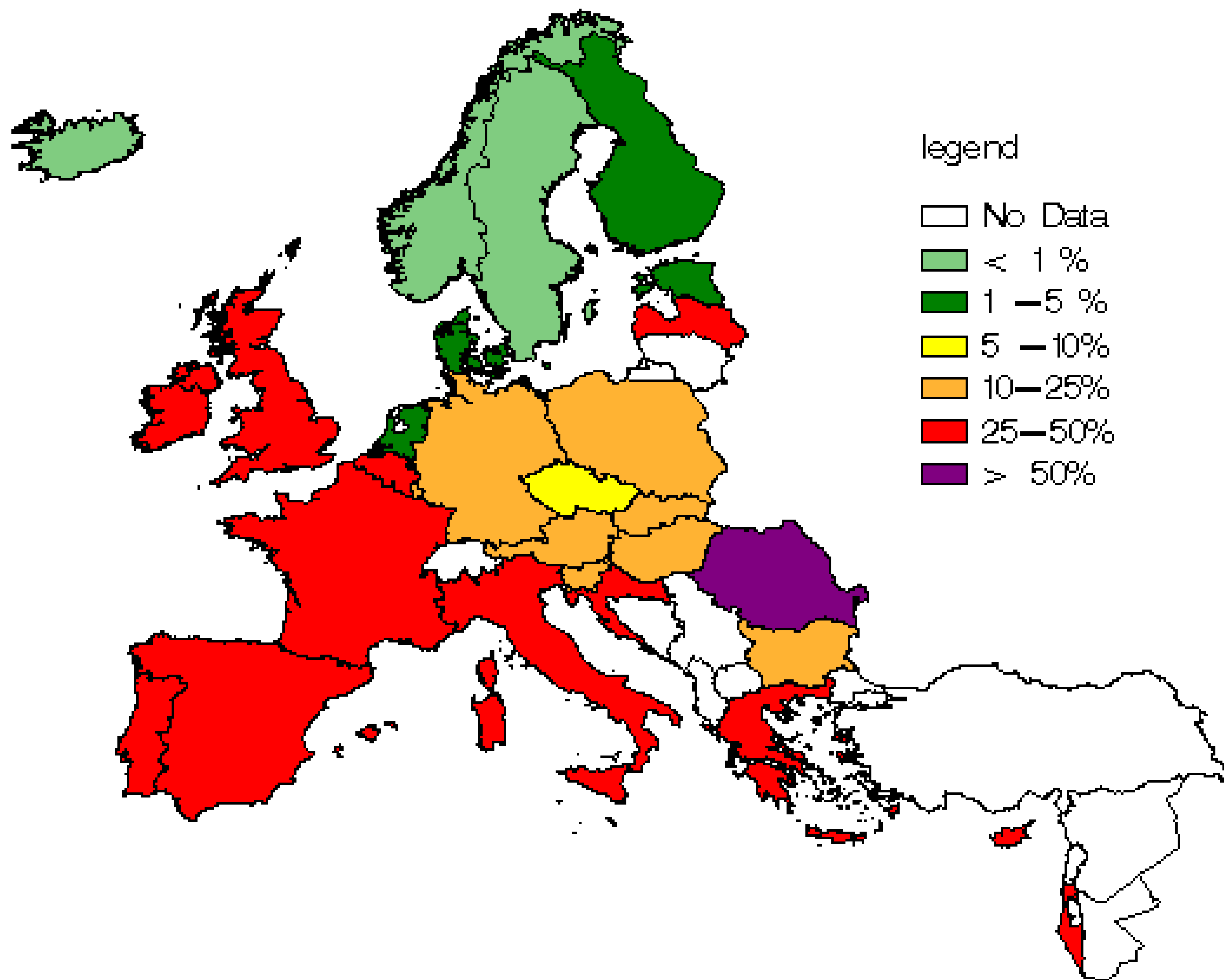
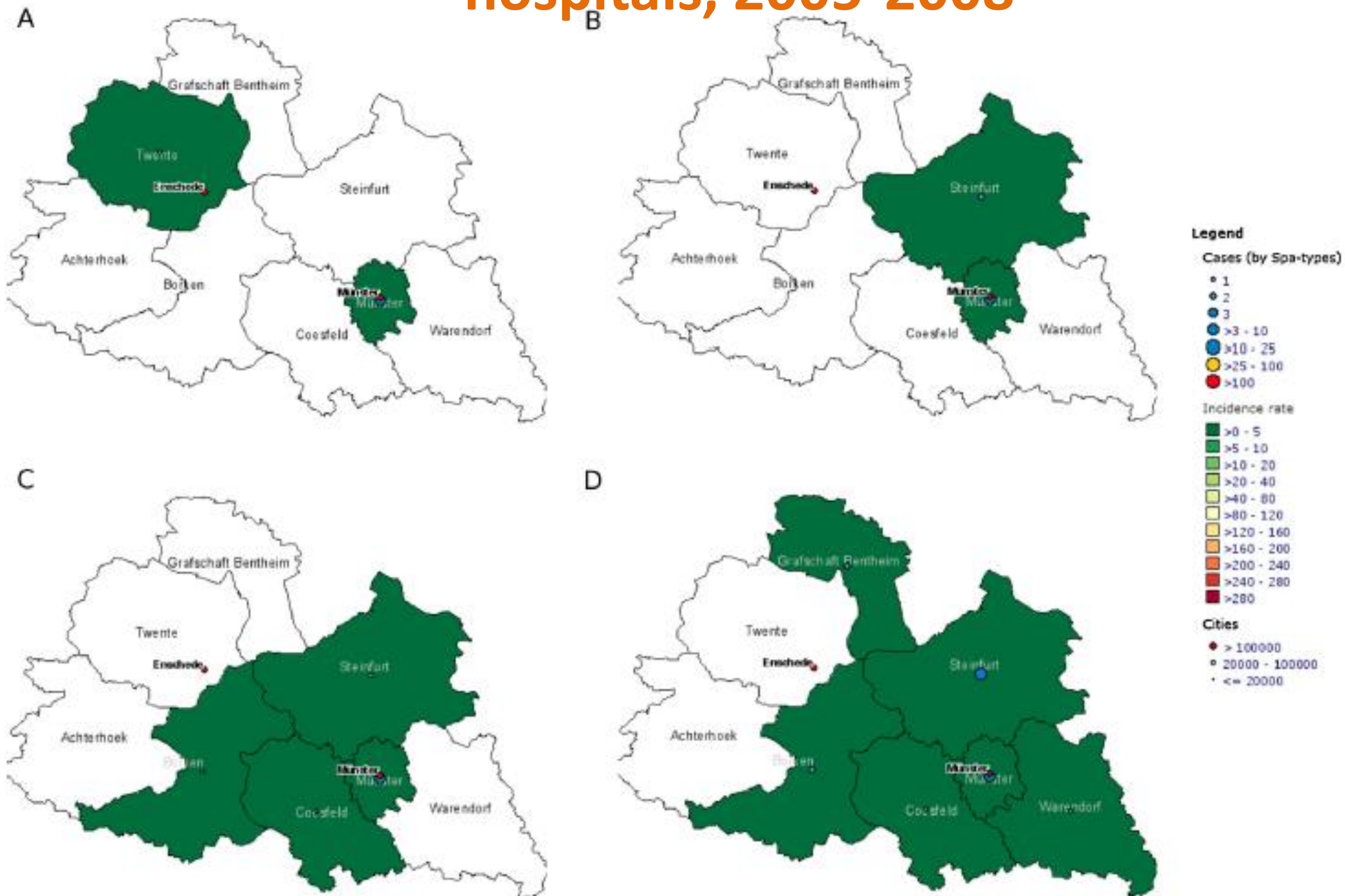
Proportion of MRSA isolates in participating countries in 2004

(c) EARSS

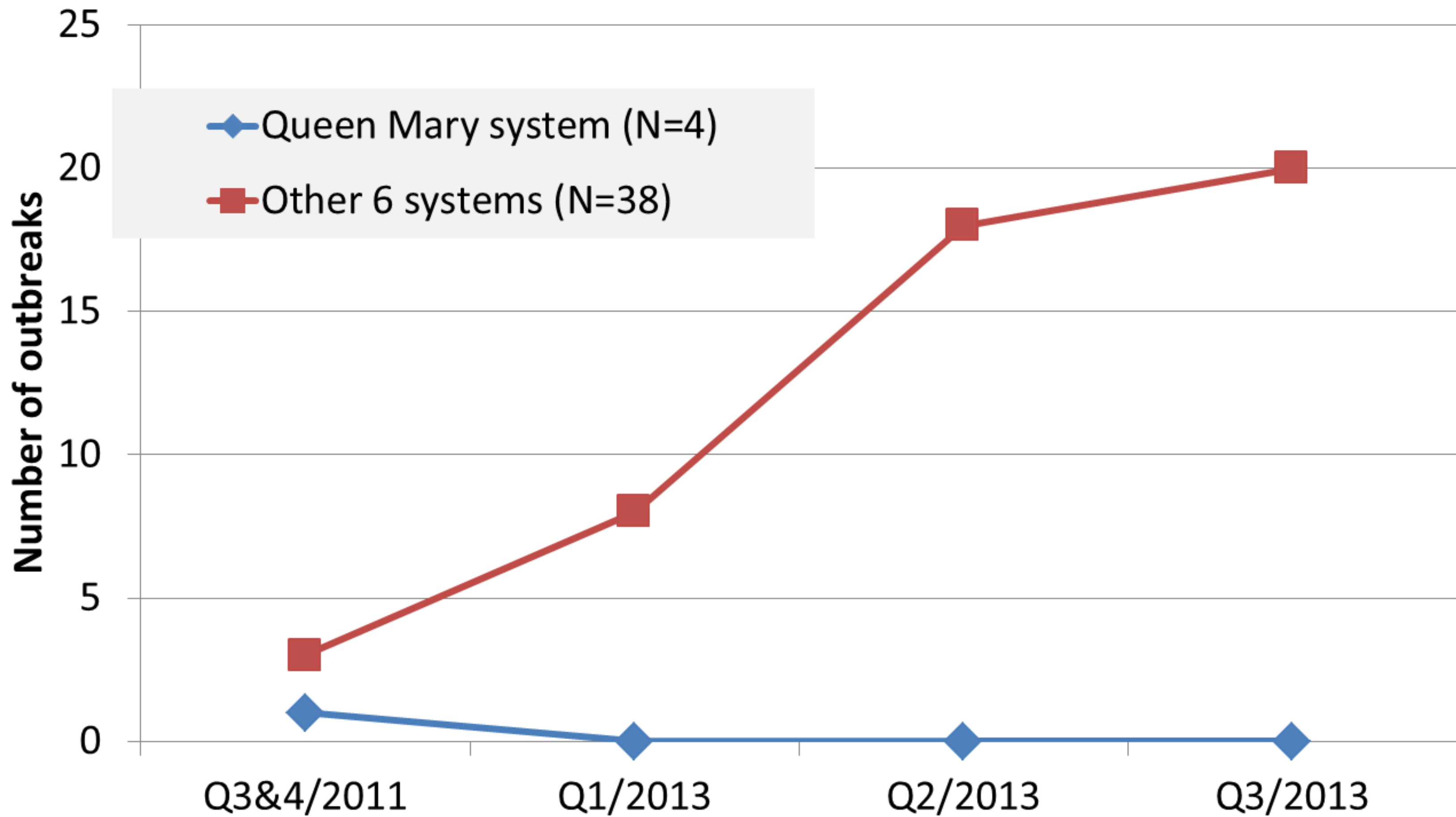


Dissemination of spa type t104 MRSA in Euregio hospitals, 2005-2008



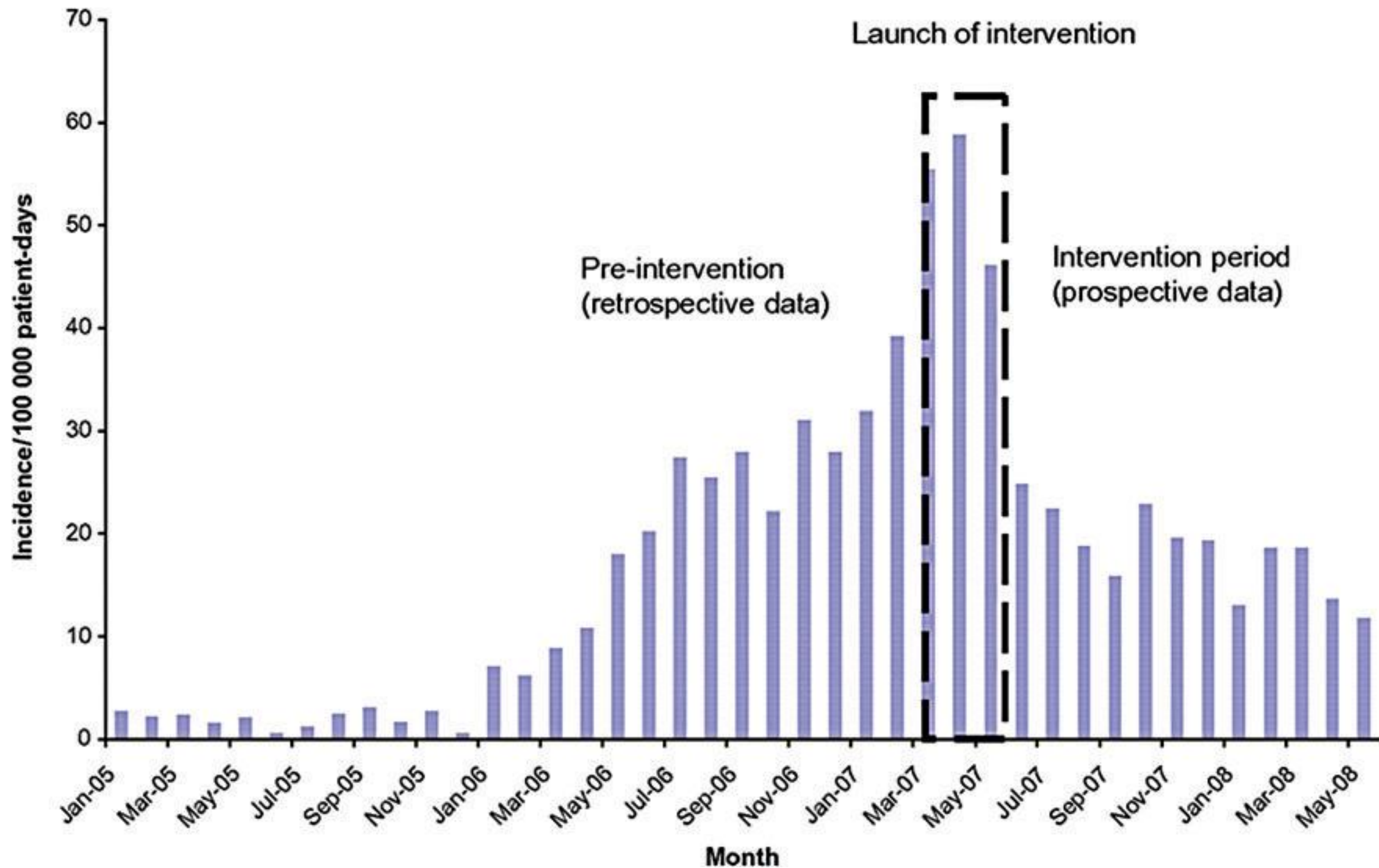
Ciccolini Int J Med Micro 2013; 303:380

VRE outbreaks in Hong Kong Hospitals, 2011-2013



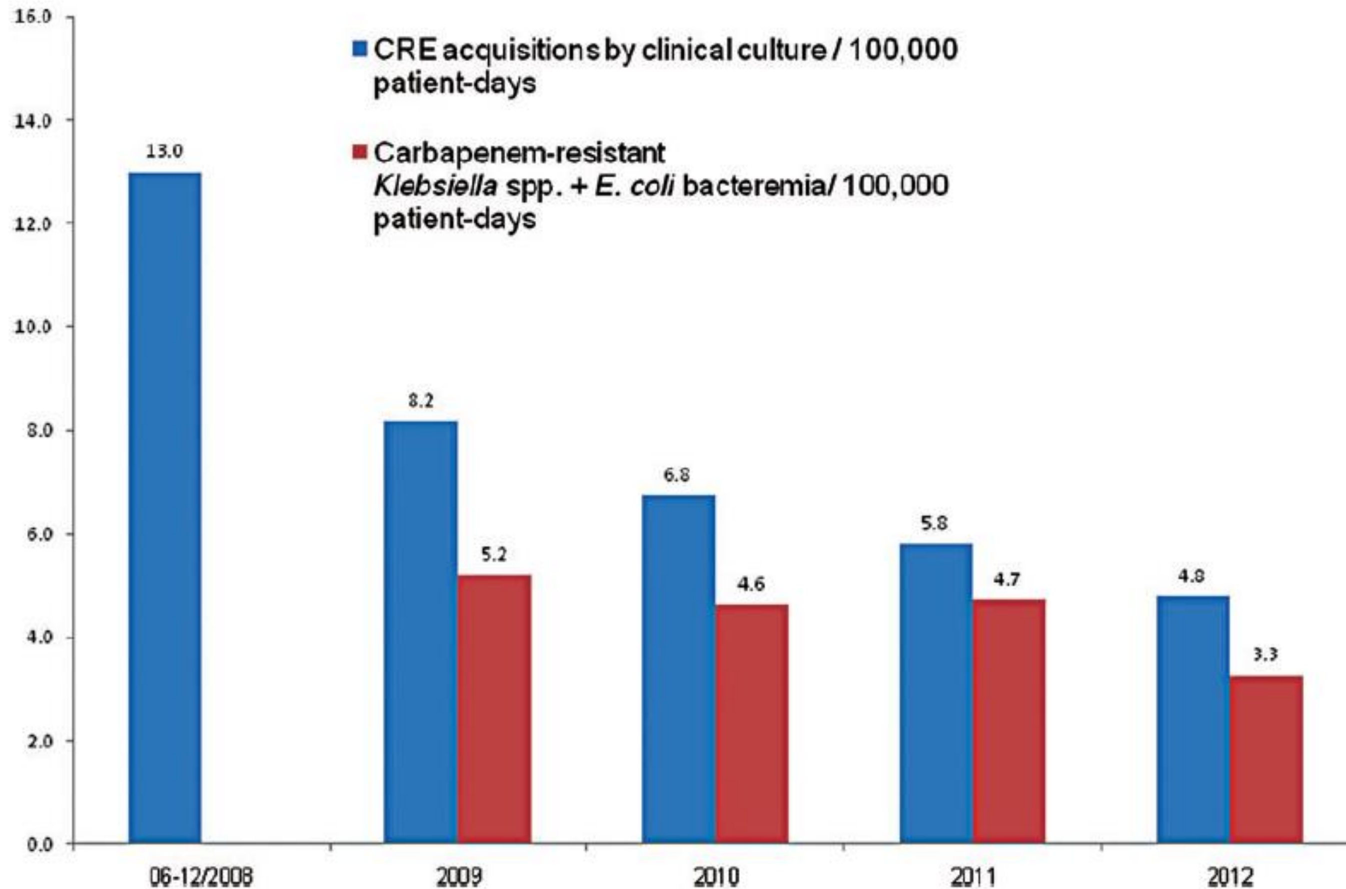
Cheng J Formos Med Assoc 2014 epub ahead of print

An Ongoing National Intervention to Contain the Spread of Carbapenem-Resistant Enterobacteriaceae



Schwaber CID Mar2014

An Ongoing National Intervention to Contain the Spread of Carbapenem-Resistant Enterobacteriaceae



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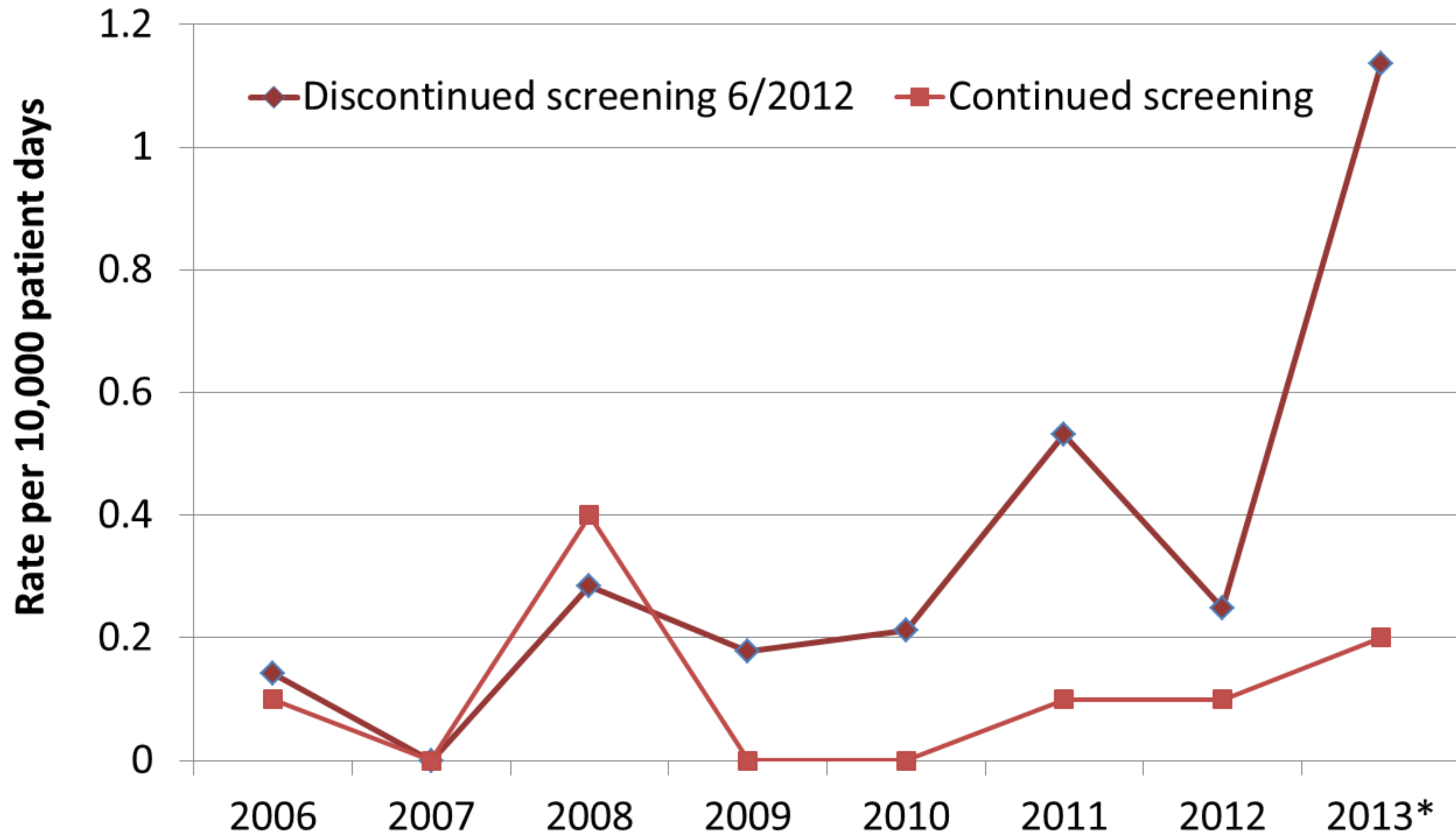
Multivariable analysis of risk factors for CRE colonization in residents of complex continuing/long term care, Israel

Risk factor	Odds Ratio (95% CI)
ABHR in each patient room	0.62 (0.44-0.93)
Appropriate use of gloves in standard precautions	0.74 (0.57-0.96)
Active admission screening policy in facility	0.69 (0.52-0.93)

BenDavid ICHE 2014:35:802

Incidence (per 10,000 patient days) of adult patients with positive sterile site, acute care tertiary hospitals



*to July 2013

Audience poll at AMMI meeting, 2014 (~160 voters, 80% microbiology/ID)

- 94% of voters said that their hospital should have a specific control program for at least one of MRSA, VRE, and CPE
  - 58% all three, 22% MRSA and CPE
- 90% of voters (N=160) said that ARO control programs should include patient screening (67% admission, contact and prevalence)

BUT

- **Only 51% are sure that without screening programs, more patients would suffer harm**

What is the problem? - 1

- We have been unable with RCTs to demonstrate an effect
  - Programs are difficult to implement well in the short term
  - Long term complications of colonization are important
  - Many hospitals are unwilling to forgo change to be part of RCTs
  - Programs are more likely to be effective early on in outbreaks
  - Programs are more likely to be effective when implemented in larger units/longer time frames

What is the problem? -2

- Uncertain data on the risk of harm to patients
  - Many case control studies of anxiety/ unhappiness
    - None of them adequately adjusted for other factors
  - Few studies of HCW visits and adverse events, and results are not consistent
  - ARO precautions result in private room accommodation
    - Good evidence that private rooms are associated with better outcomes (and private rooms are associated with fewer HCW visits)

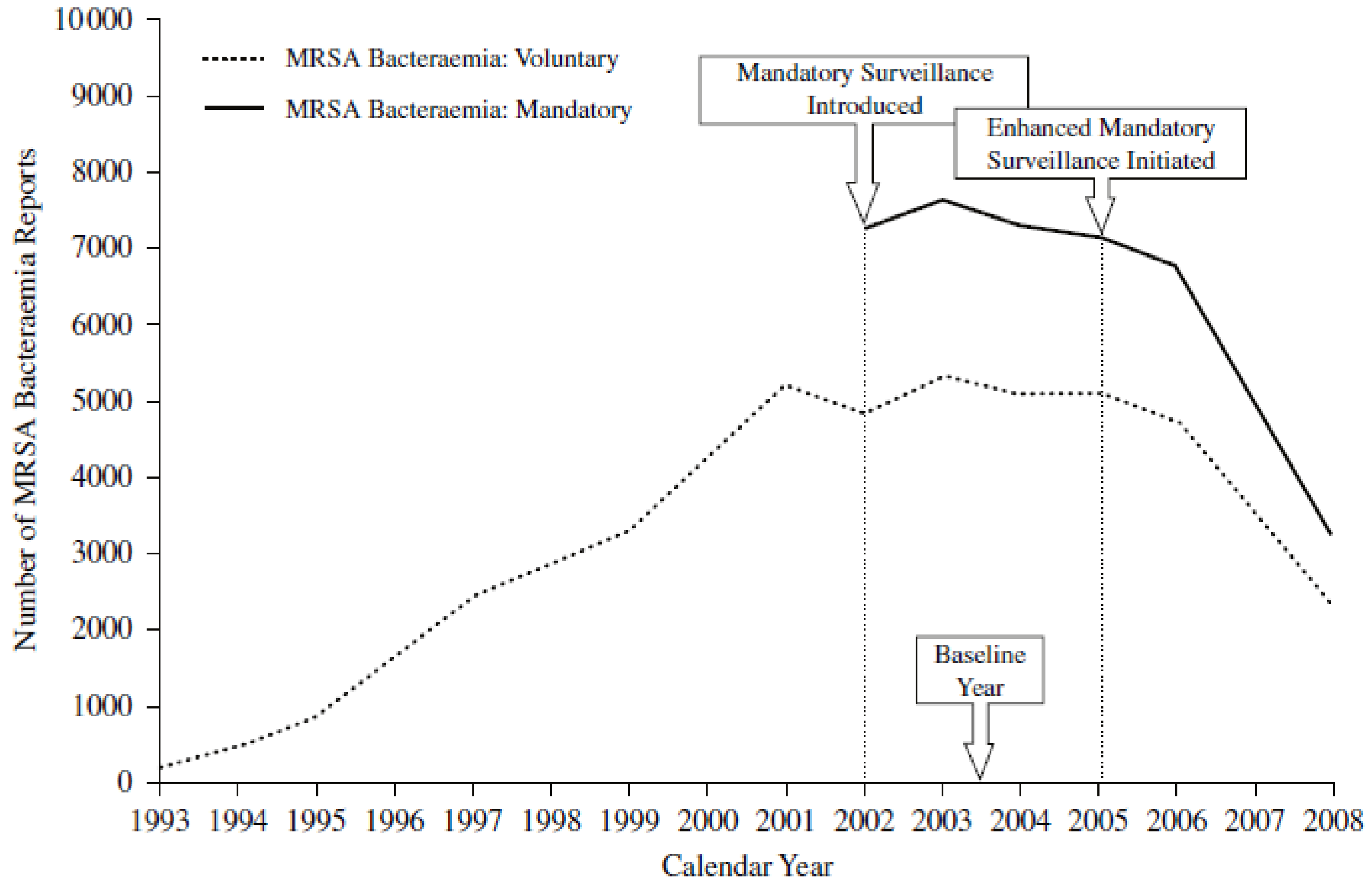
What is the problem? – 3

- Effective programs are not necessarily cost-effective, but assessing cost-effectiveness difficult
  - Ideally we should be funding programs that cost less than $130,000 per QALY
  - But we tend to ask if the programs are cost-saving for the hospital
  - Should the vagaries of our private insurance system drive our decisions about programs to prevent transmission of antimicrobial resistance?
  - Appropriate weighting of longer term selection for resistance very difficult to assess (e.g. impact of linezolid use due to VRE transmission)

So where do we go?

- The primary problem is underinvestment in patient safety related to infections
- At a system level, the evidence is better for achieving change with requirements for outcomes rather than surveillance

MRSA Bacteremia - England



Pearson, J Antimicrob Chemother 2009

So where do we go?

- The primary problem is underinvestment in patient safety related to infections
- At a system level, the evidence is better for achieving change with mandating outcomes to be achieve rather than surveillance or program structure
  - BUT, there is evidence that practice audits, and participating in surveillance systems work to improve patient safety

- I’m living for the day when my hospital’s infrastructure, hand hygiene, cleaning, and other prevention practice are sufficient that we won’t need screening programs

- Until then, ARO control programs (of which screening is a part) need to be judged based on best available evidence, and on estimated cost-effectiveness