

Addressing the challenge of healthcare associated infections in the Mediterranean region

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Infection Control (IFIC)

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IFIC

- Umbrella worldwide organisation for societies, associations who are involved in the prevention and control of healthcare infections (IPC)
 - UK Registered Charity (No 1072681)
 - Also encompasses individuals who work in or have an interest in IPC
- Mission statement:
 - To facilitate international networking in order to improve the prevention and control of healthcare associated infections worldwide

www.theifc.org



**international federation
of infection control**





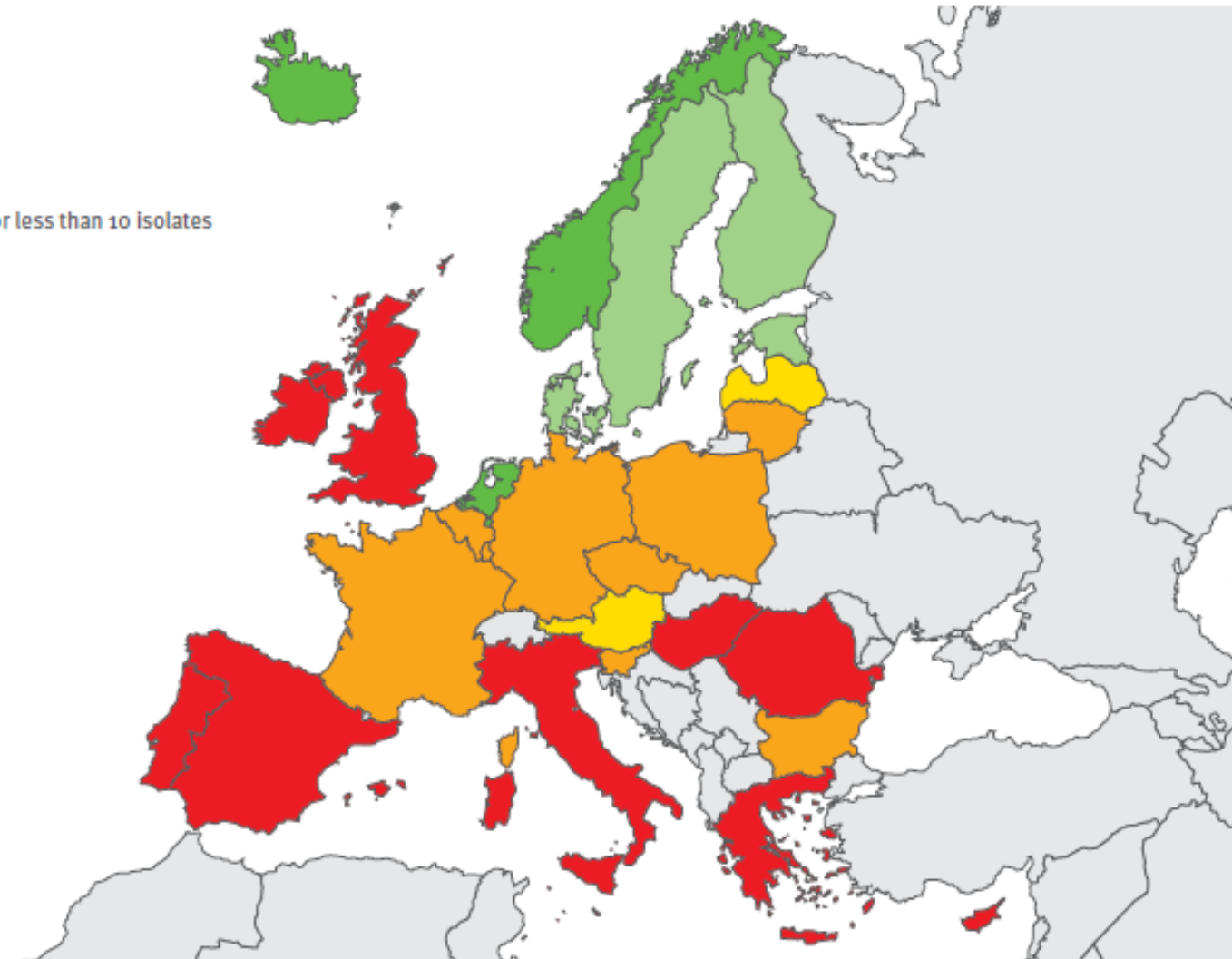


MRSA proportions 2008/9



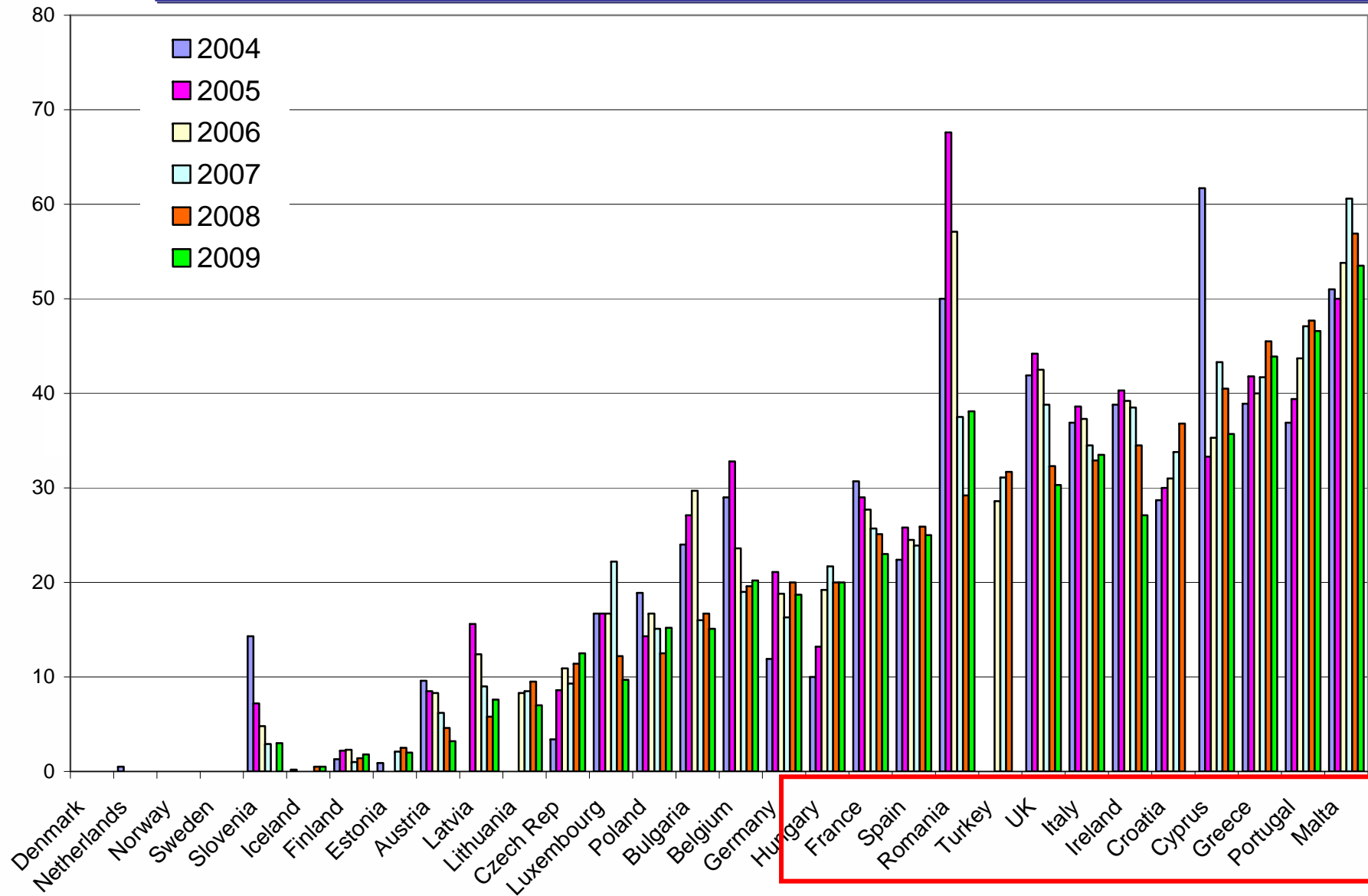
Non-visible countries

- Luxembourg
- Malta



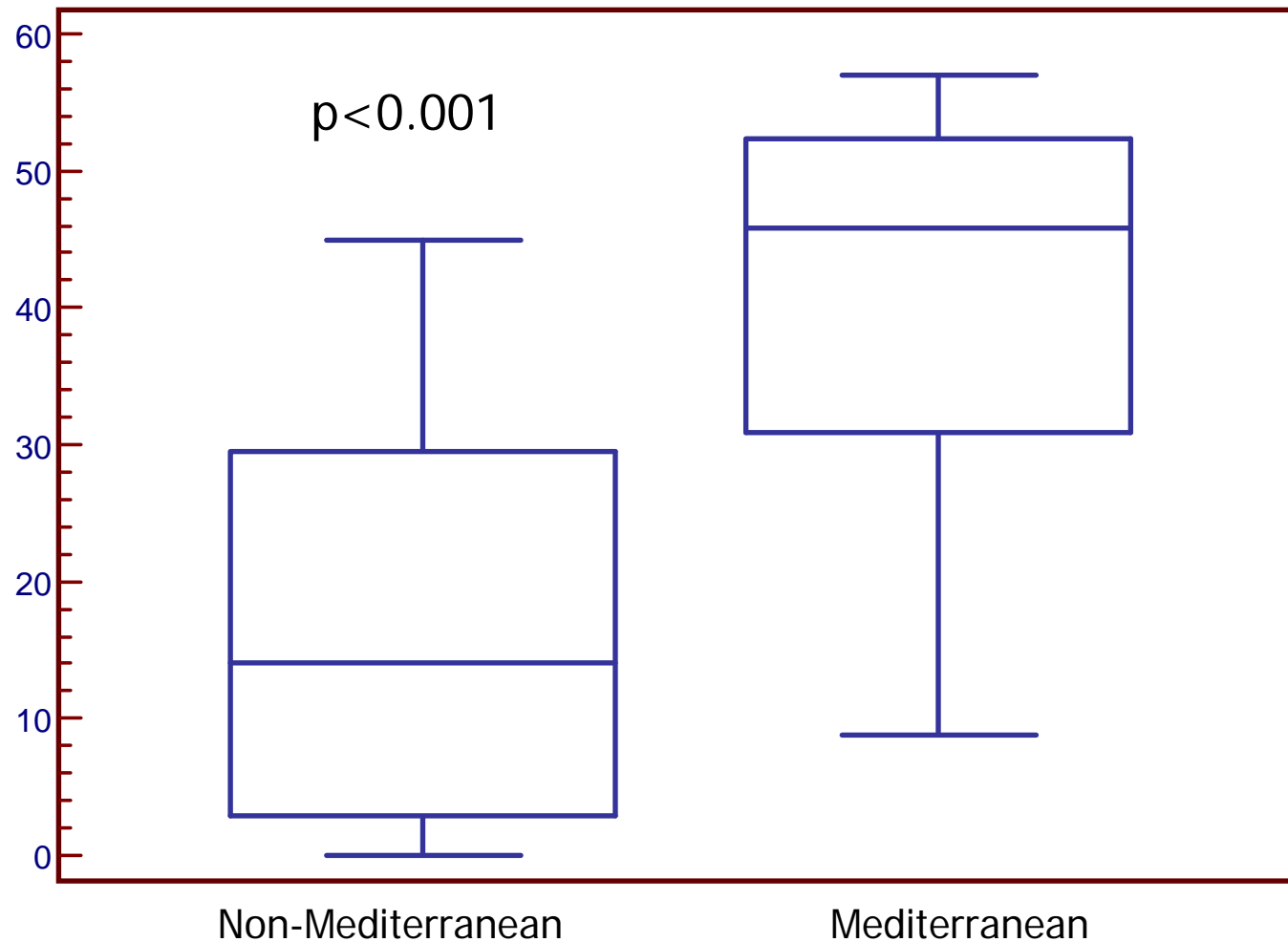


Median MRSA proportions in EARSS hospitals 2004-9



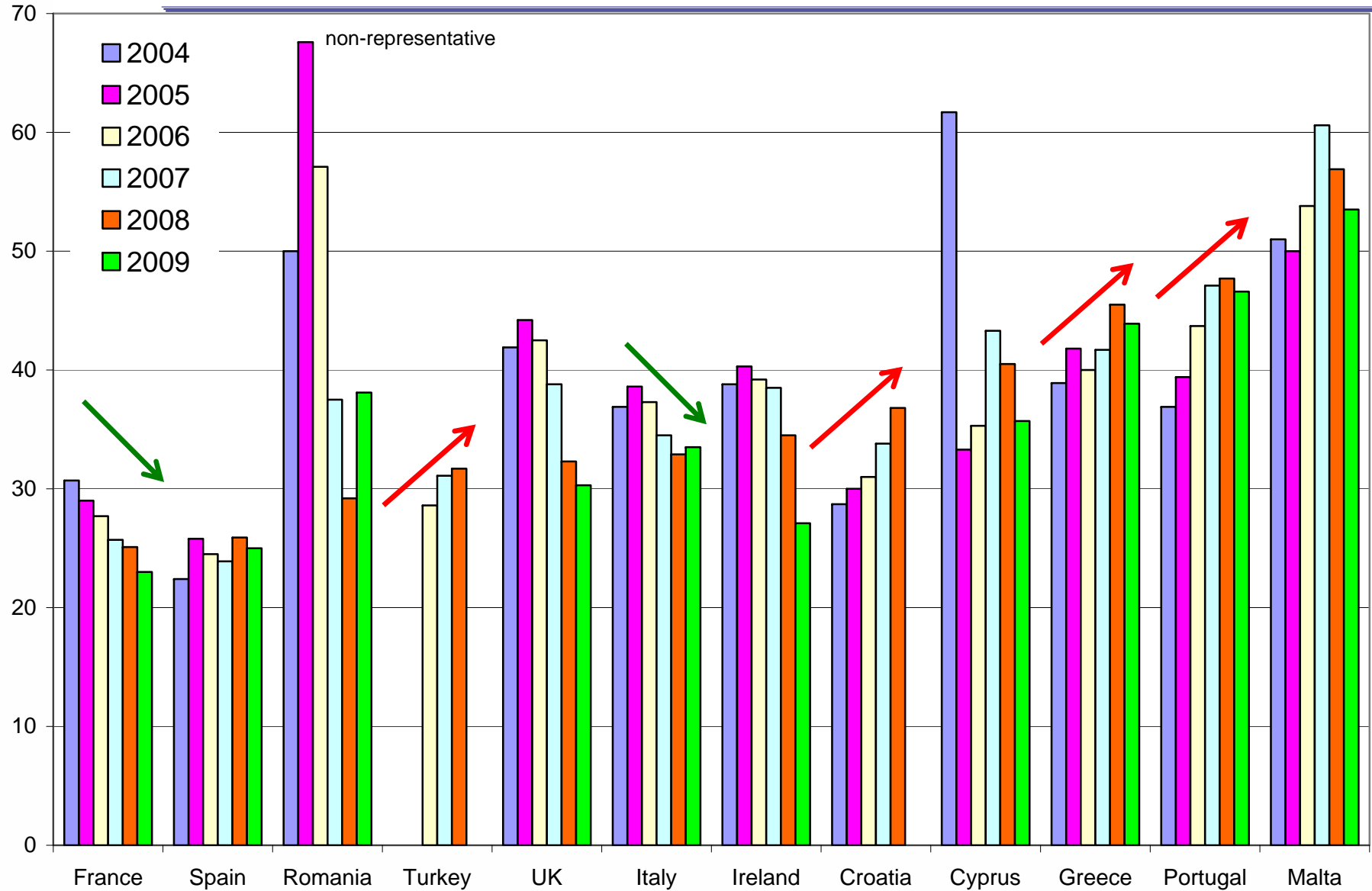


MRSA proportions in European countries

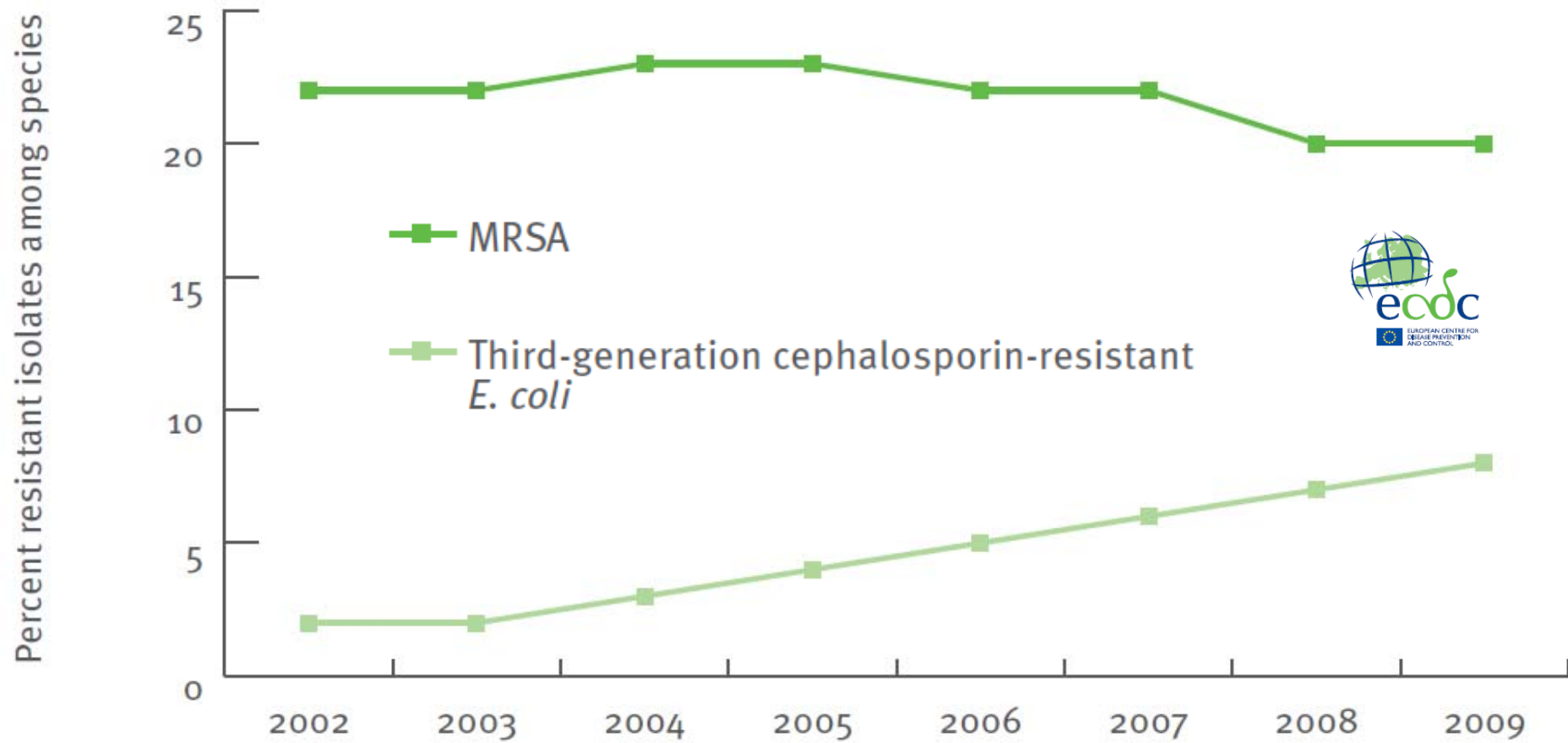




MRSA proportions

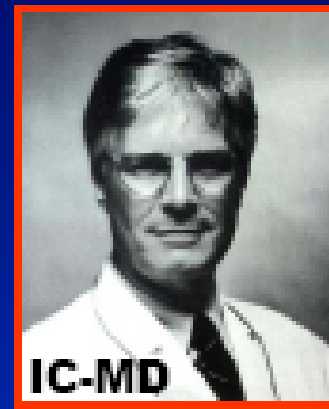


European trends 2002-9



Infection control staffing: Southern Europe

Presence of trained IC staff



N	90
S	82
W	100

74
69
83

P<0,01



Infection control policies: Southern Europe



Presence of Alert System (1)

	N	SE	S	W	CE
%					
Yes	100	77*	67*	95	91
MRSA	100	85*	64*	100	93
GRE	74	31*	67	62	51

* significantly lower



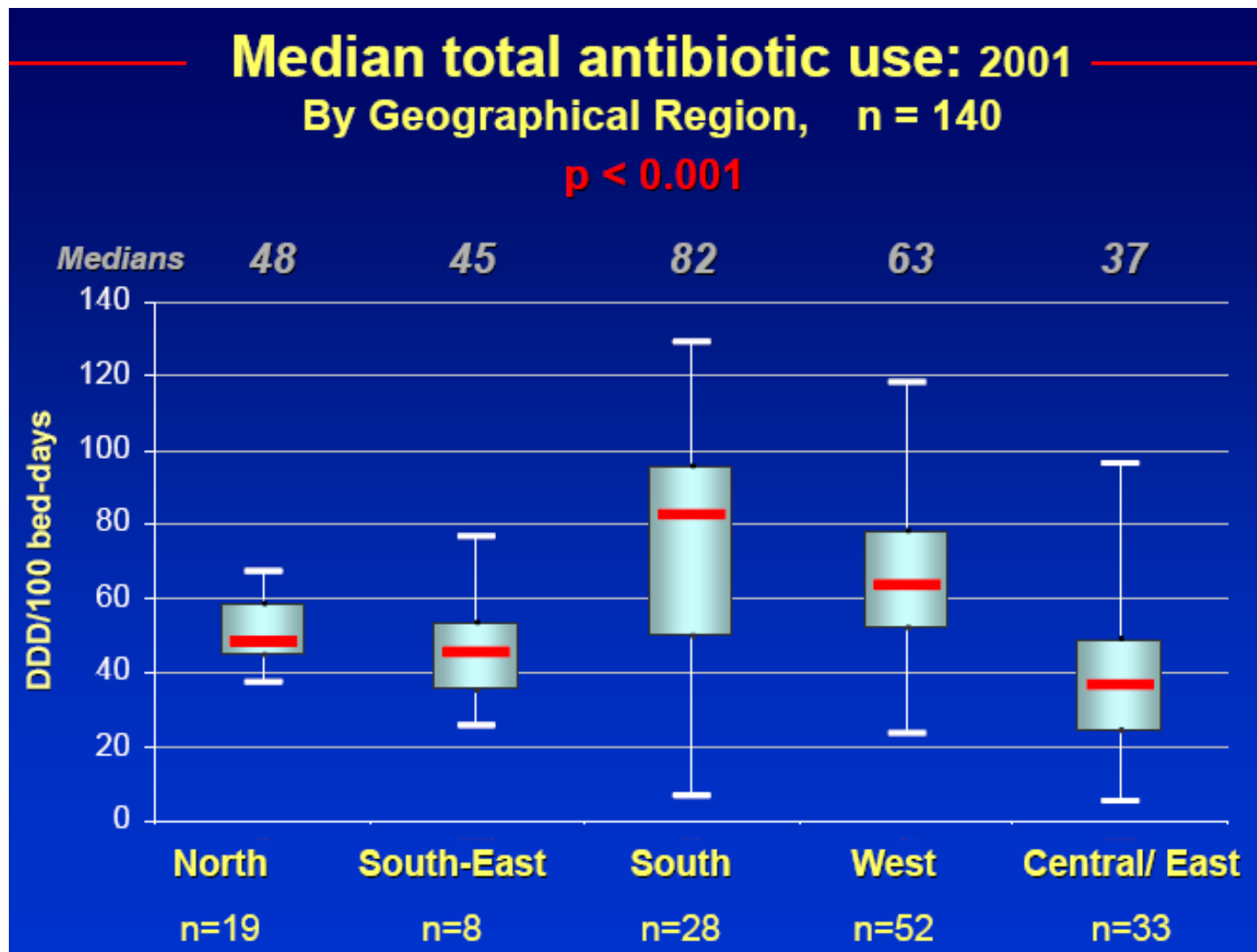
Hand hygiene

Literature is very poor..

Italy	19.6%	2007	Pan et al
Italy	17.5%	2008	Pan et al
Italy	Nurses: 31.5%	2008	Saint et al
	Doctors: 27.5%		
Spain	20.0%	2007	Nuvoa et al
Greece	26.5%	2009	Giannitsioti et al
Malta	18.0%	2008	Borg et al

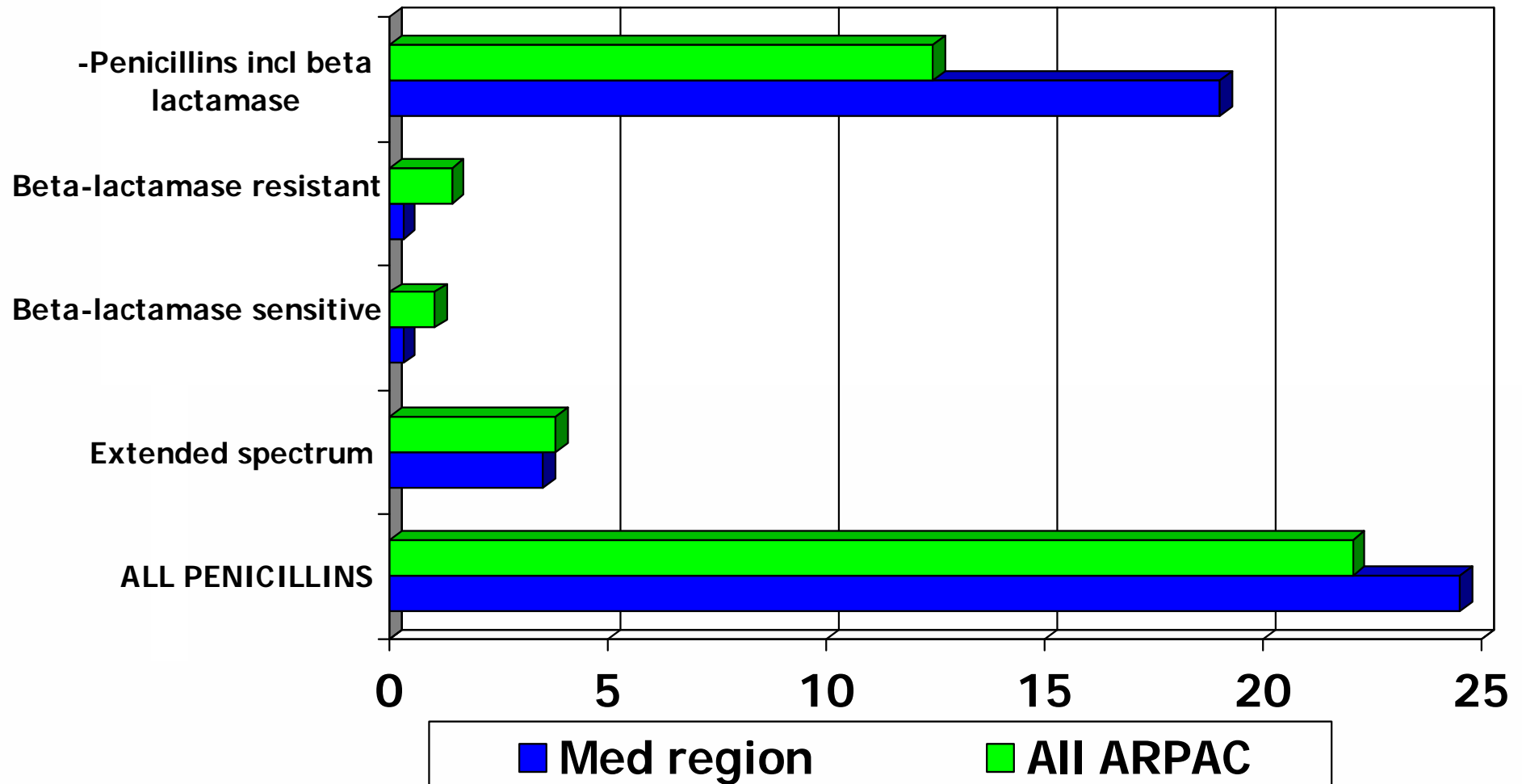


North vs South Europe: Hospital consumption

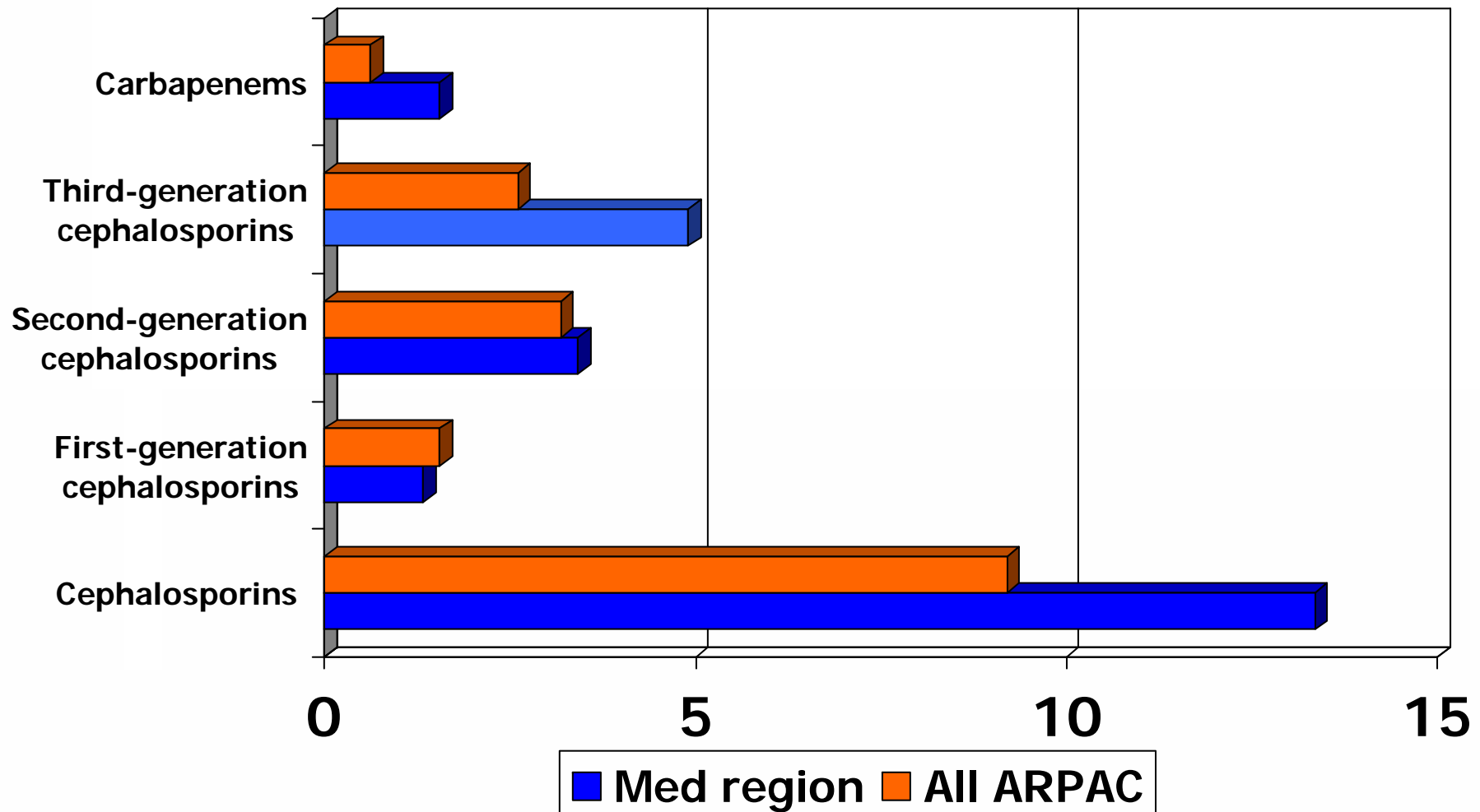


MacKenzie: Clin Microbiol Infect. 2007 Mar;13(3):269-76.

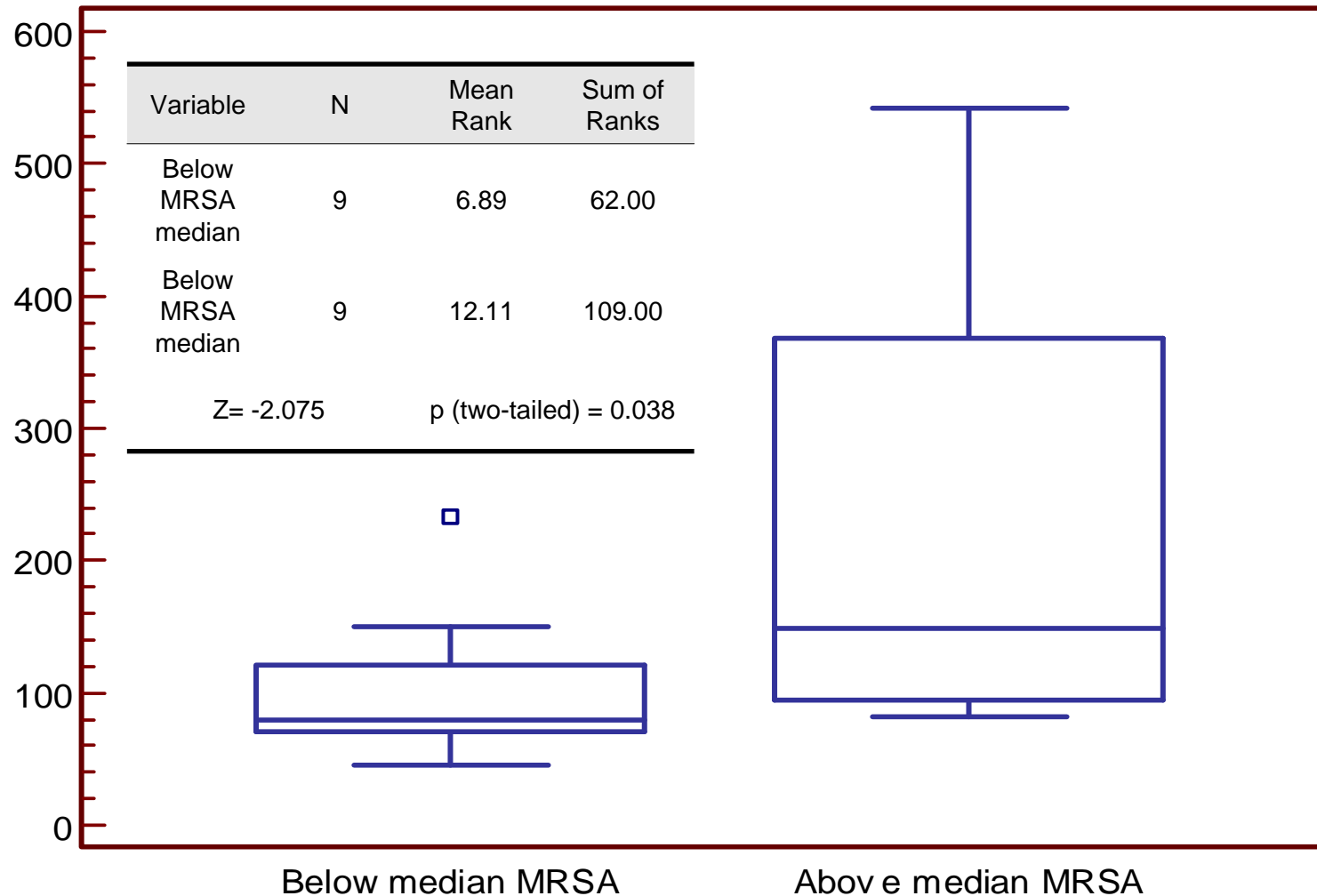
Penicillins



Other B-lactams

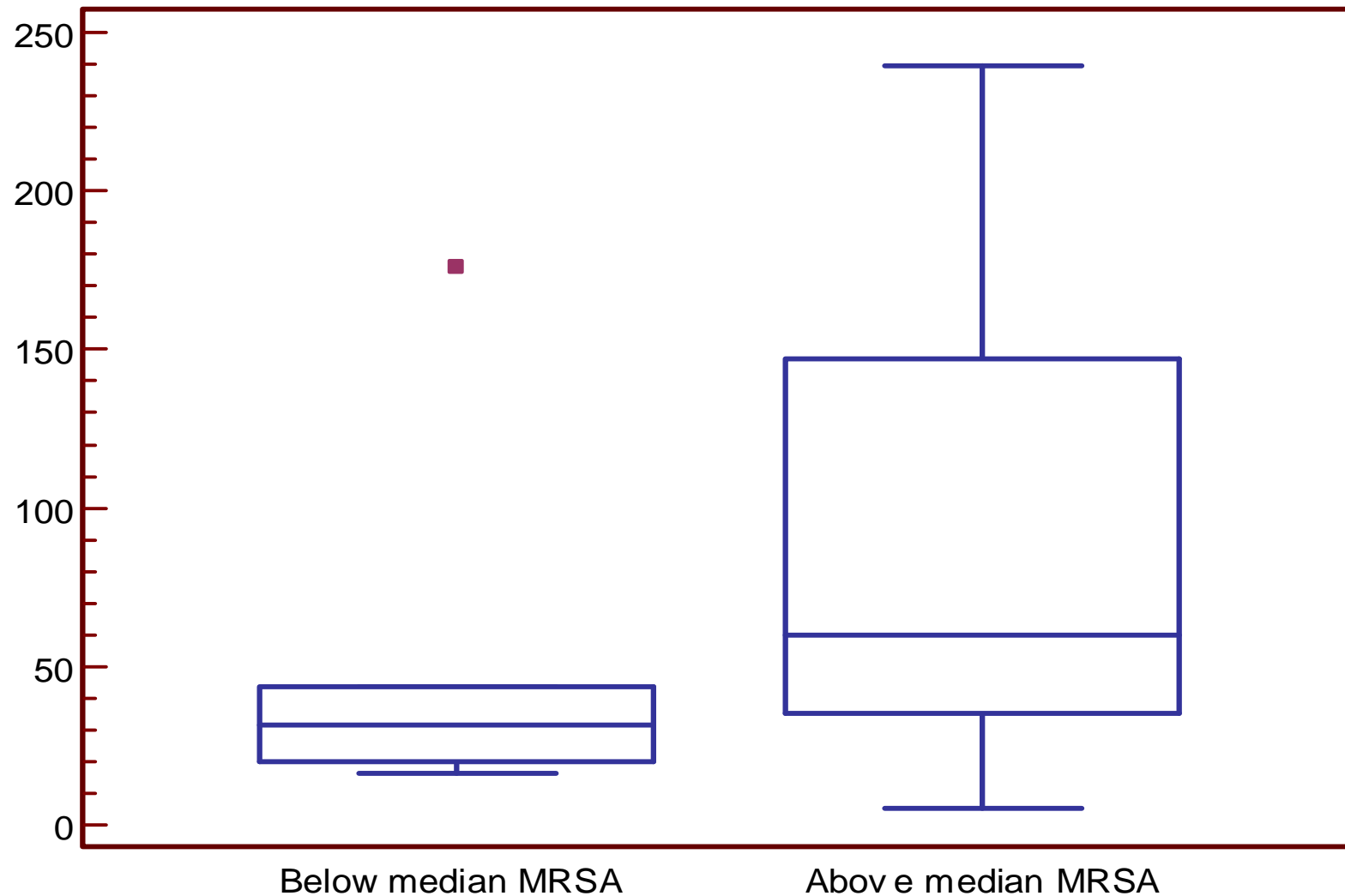


Correlation analysis: MRSA – total antibiotic use





Correlation analysis: MRSA – total B-lactam use





Multiple regression analysis

- MRSA proportion showed positive correlation with use of:
 - carbapenems ($p=0.002$),
 - combination penicillins ($p=0.018$),
- 3GCREC proportion showed
 - positive correlation with use of:
 - Third generation cephalosporins ($p=0.005$),
 - negative association with use of:
 - beta-lactamase-resistant penicillins ($p=0.010$)
 - first-generation cephalosporins ($p=0.012$).



BMC Health Services Research



Research article

Open Access

Are cultural dimensions relevant for explaining cross-national differences in antibiotic use in Europe?

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Uncertainty Avoidance: Reaction to ambiguous events

Defined as *the extent to which people feel threatened by uncertainty and ambiguity and try to avoid these situations*

HIGH UA countries

- Rigid management and bureaucratic procedures
- Show strong resistance to change
 - Change needs to be introduced gradually

LOW UA countries

- Rely on informal norms for most matters.
- Are less calculating when taking risks.
- More open to change.



Uncertainty avoidance is not risk avoidance

- UA tries to eliminate ambiguity not risk
- **UA cultures accept “familiar” risk**
- Emphasis on interventions rather than prevention
 - Crisis management
- Greater sense of urgency
 - “I need to do the task at hand even if I take unnecessary risks”



UA in medical practice

- UA would explain practices that are known to be drivers of HAI
 - Excessive dependence on antibiotic prescribing
 - Emphasis on wide spectrum formulations
 - Reluctance to de-escalate when lab results known
 - Suspicion on evidence based preferring to act on personal experience
 - Reduced impact of policies and guidelines
 - Attachment to rituals and dogma

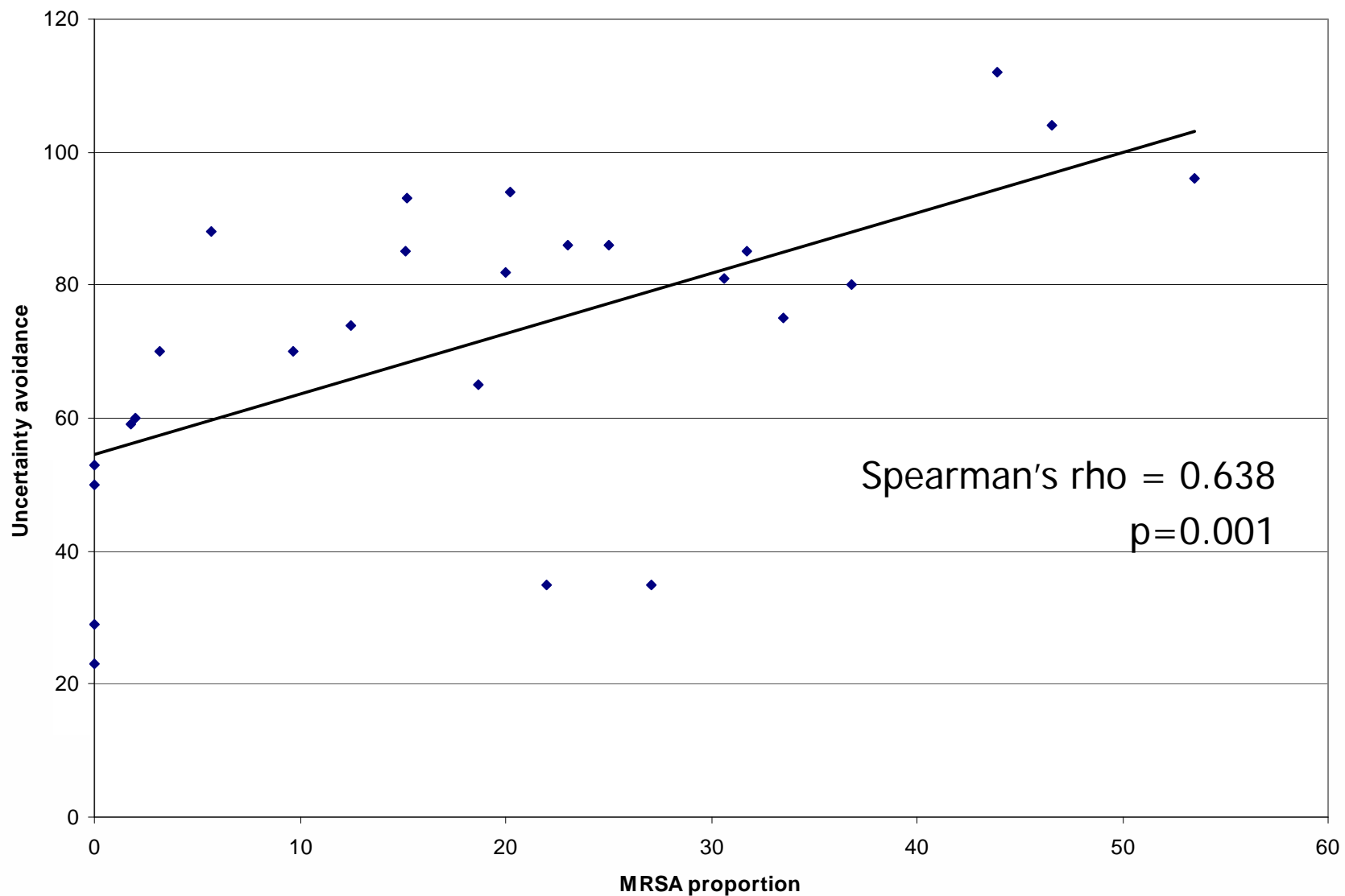


UA in medical practice

- The familiar risk of HAI is accepted as part of hospital care
- Administrators are less conducive to support & fund preventative IC interventions
- More difficult to convince healthcare workers on importance of hand hygiene & other IP interventions
- Ownership of the problem is resisted

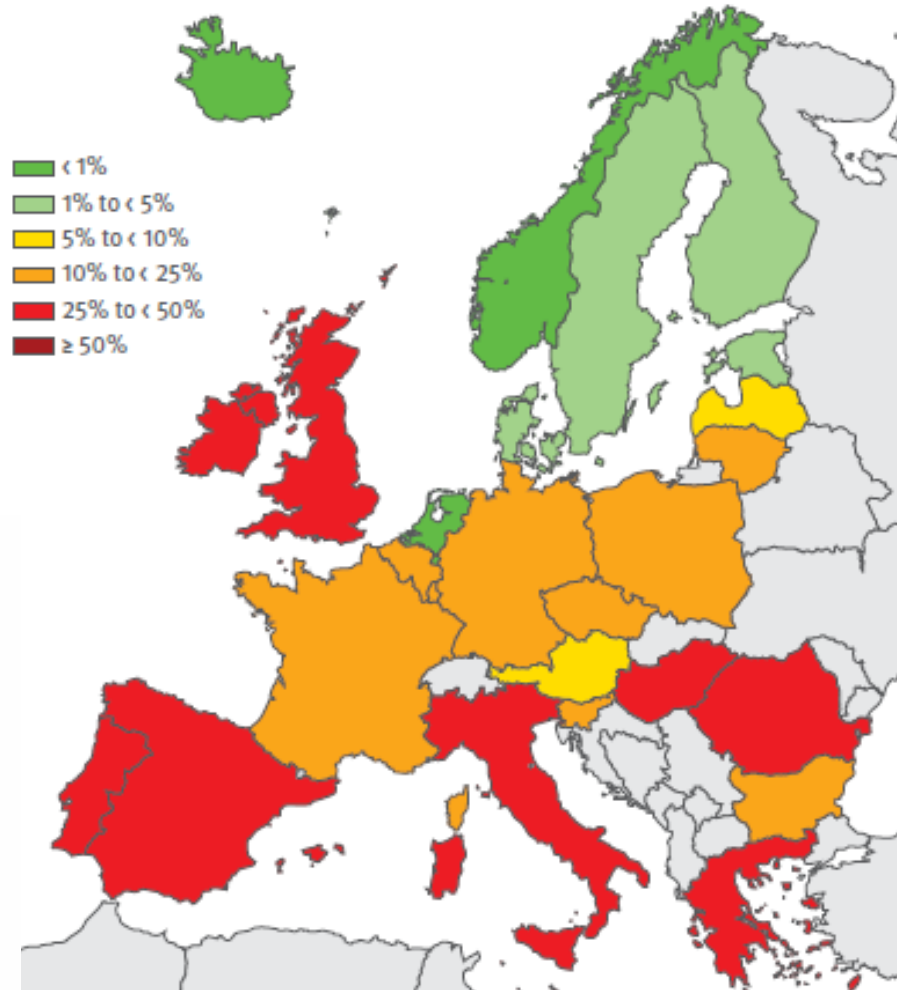
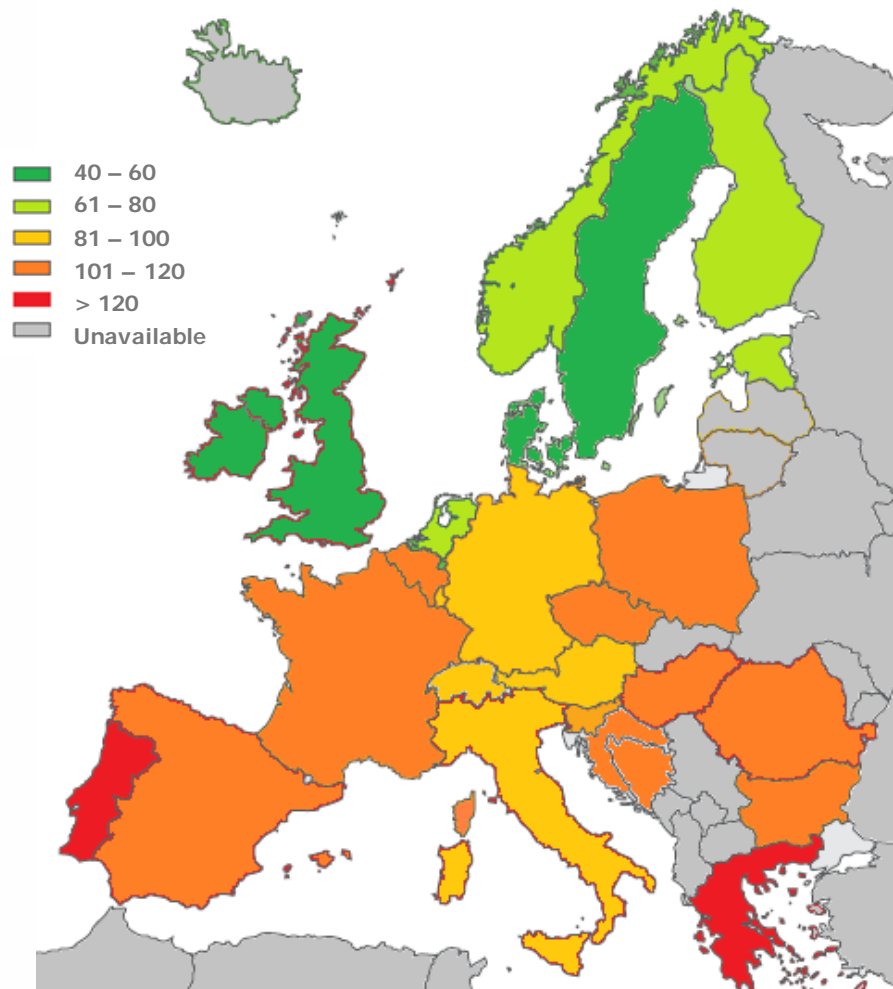


Correlation of AU with MRSA proportions reported by EARSS

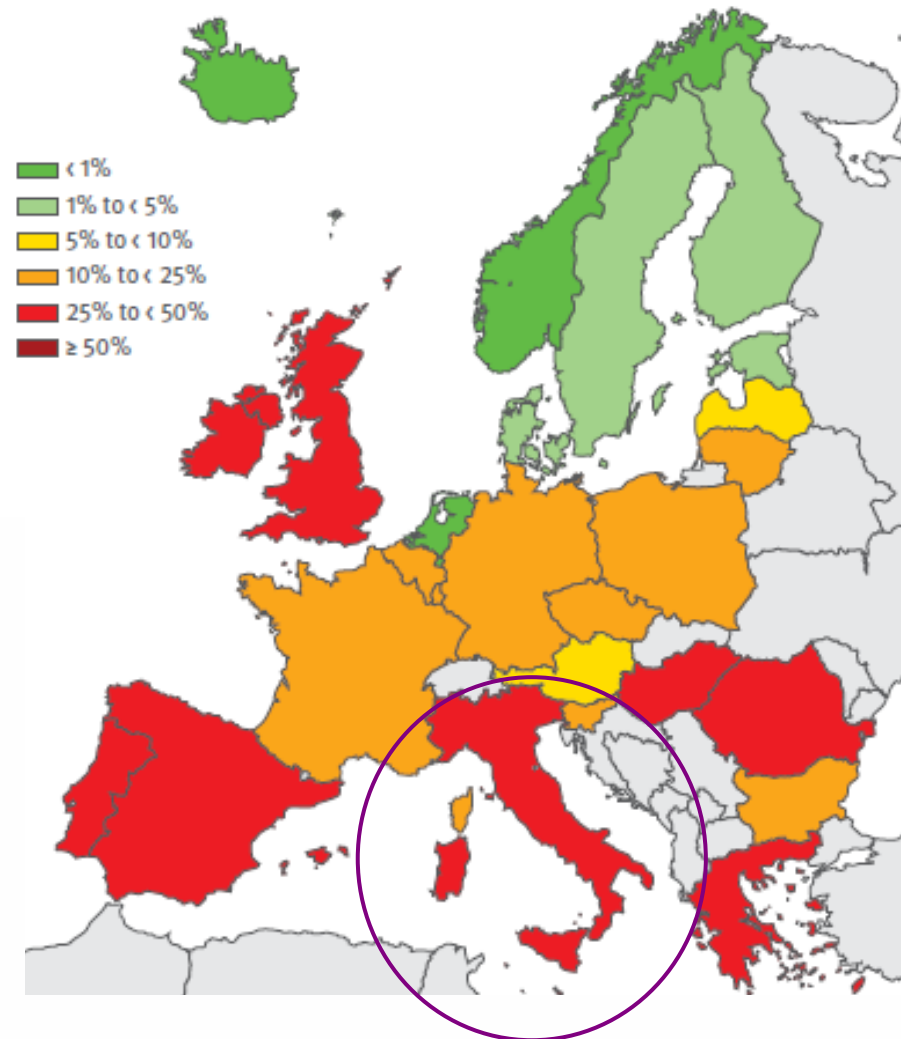
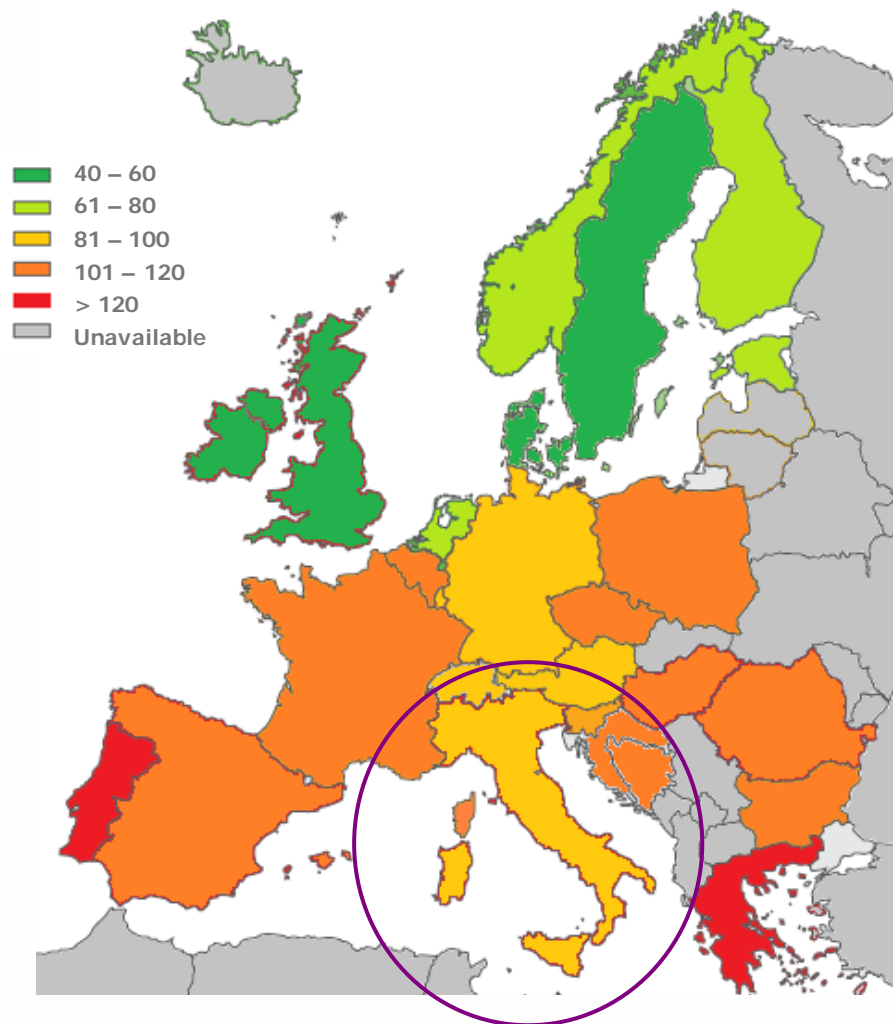




Uncertainty avoidance vs MRSA



Uncertainty avoidance vs MRSA





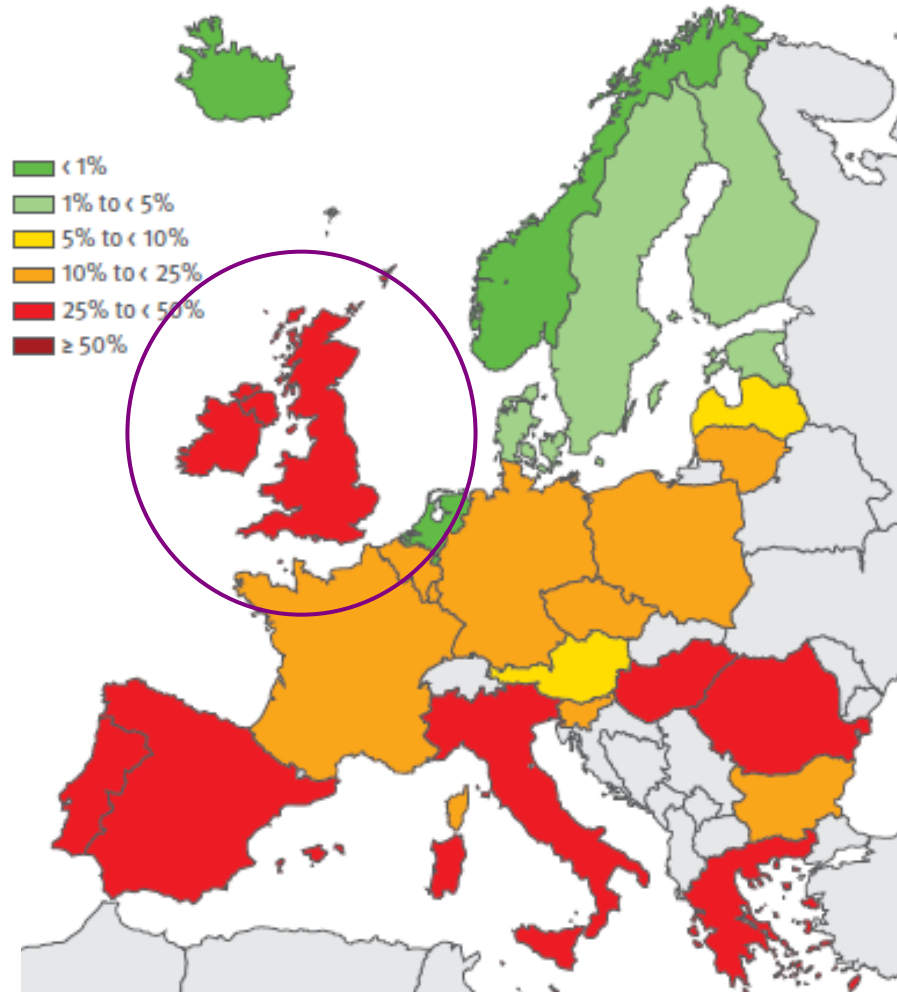
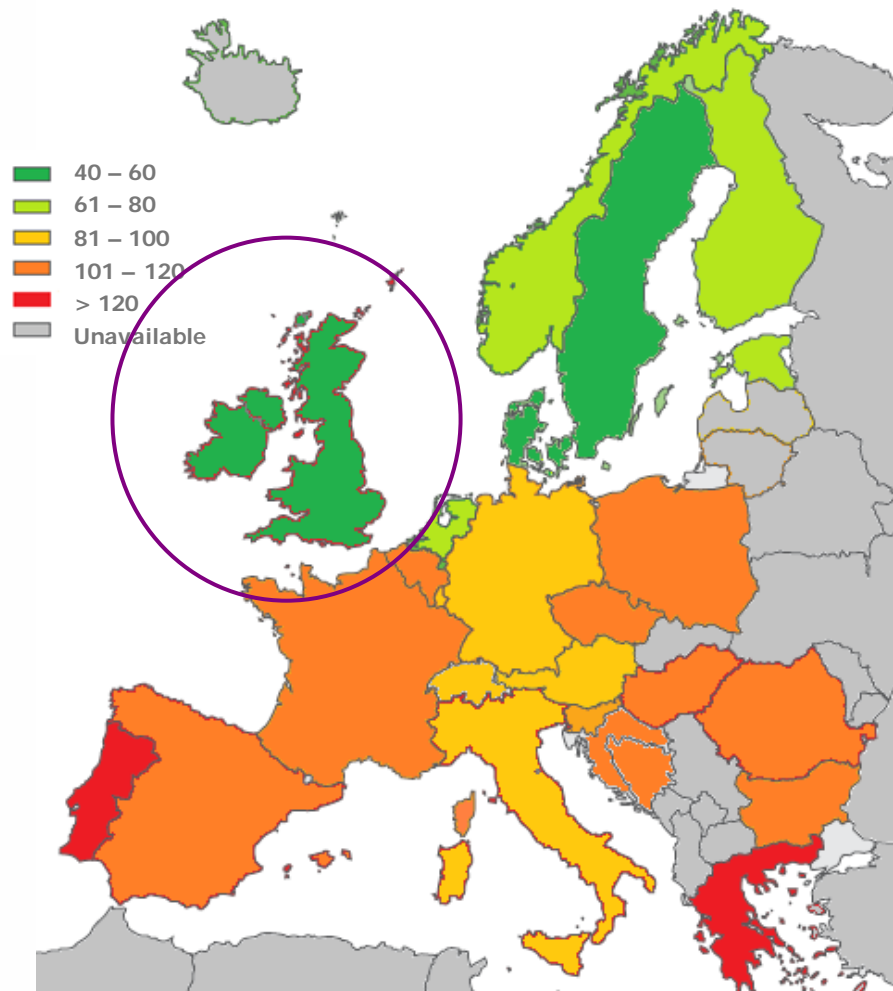
Active IC programmes in Italian hospitals

Table II. Factors associated with the infection control score (univariate and multivariate analysis)

	Univariate analysis	Linear regression multivariate analysis
(Intercept)		77.2 (72.9/81.5)***
Public health trust type		
AOs	69.4 (65.8/72.9)	–
ASLs	–16.4 (–20.7/–12.1)***	–11.5 (–15.6/–7.4)***
IRCCSs	–6.8 (–15.0/+1.4)	–10.2 (–17.4/–3.1)**
Geographical area		
North	71.4 (68.9/+73.9)	–
Centre	–18.9 (–23.4/–14.2)***	–16.1 (–20.8/–11.5)***
South & Islands	–29.3 (–33.3/–25.4)***	–27.4 (–31.4/–23.4)***
No. of hospital beds		
≤150	54.8 (52.5–57.2)	–
151–300	+5.0 (+0.9/+9.1)*	+3.1 (–1.0/+7.2)
301–500	+11.1 (+5.6/+16.6)***	+2.5 (–2.8/+7.7)
501–1000	+9.9 (+3.6/+16.2)**	+1.8 (–4.0/+7.7)
>1000	+3.1 (–9.4/+15.6)	–8.7 (–20.0/+2.6)

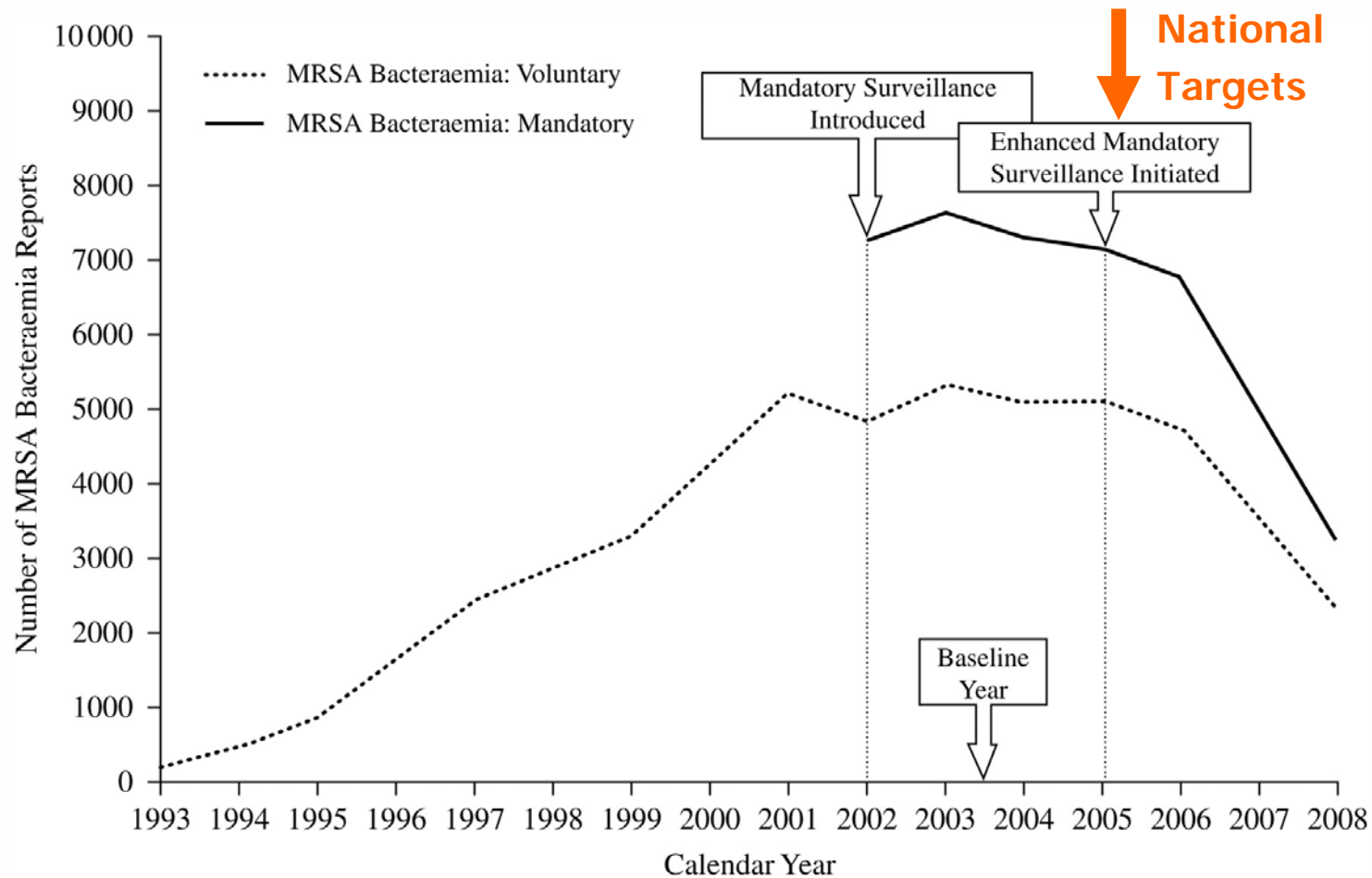


Uncertainty avoidance vs MRSA





UK MRSA trends

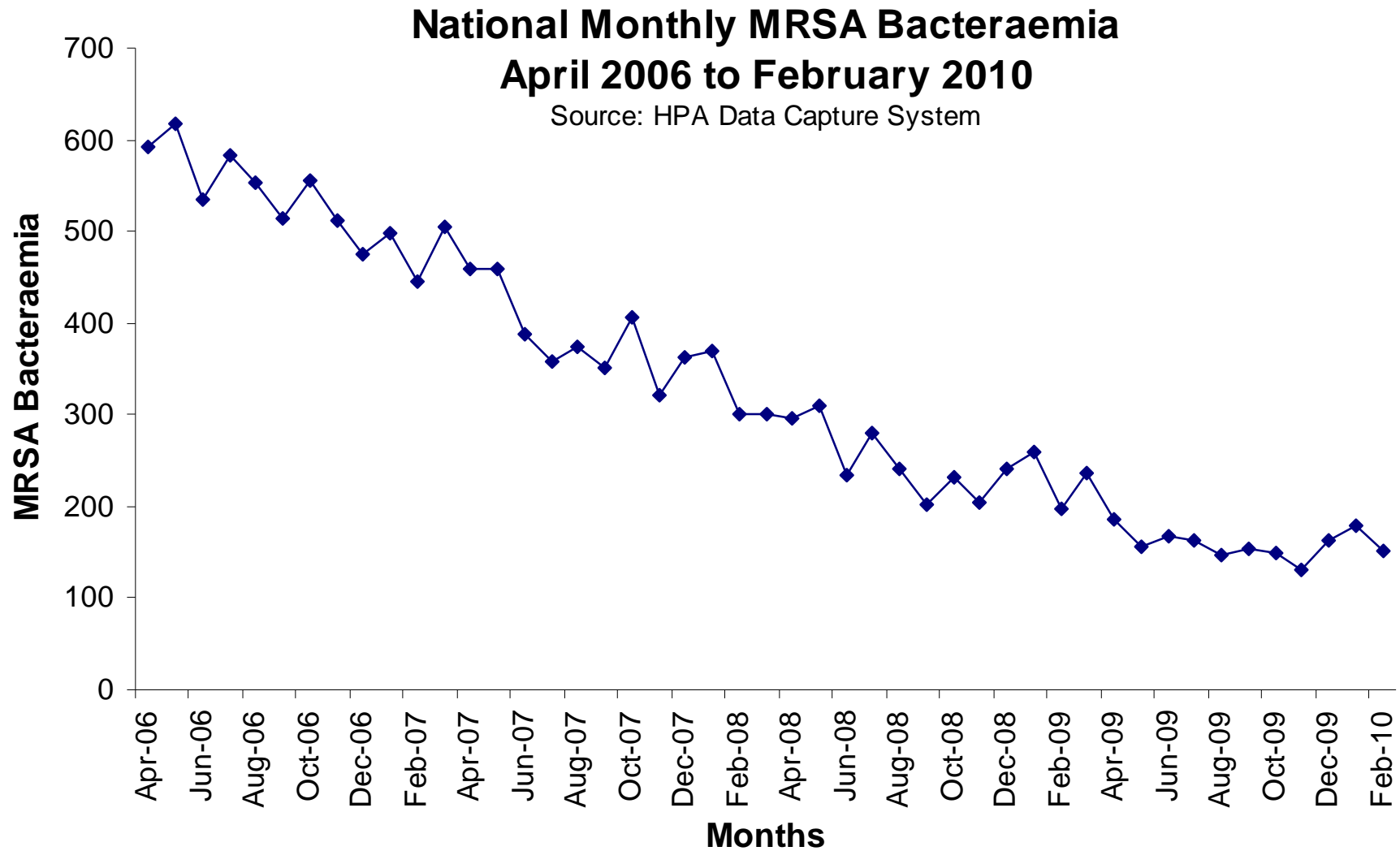


MRSA bacteraemia reports via mandatory and voluntary surveillance: England 1993–2008.

Pearson A et al. *J. Antimicrob. Chemother.* 2009;64:i11-i17

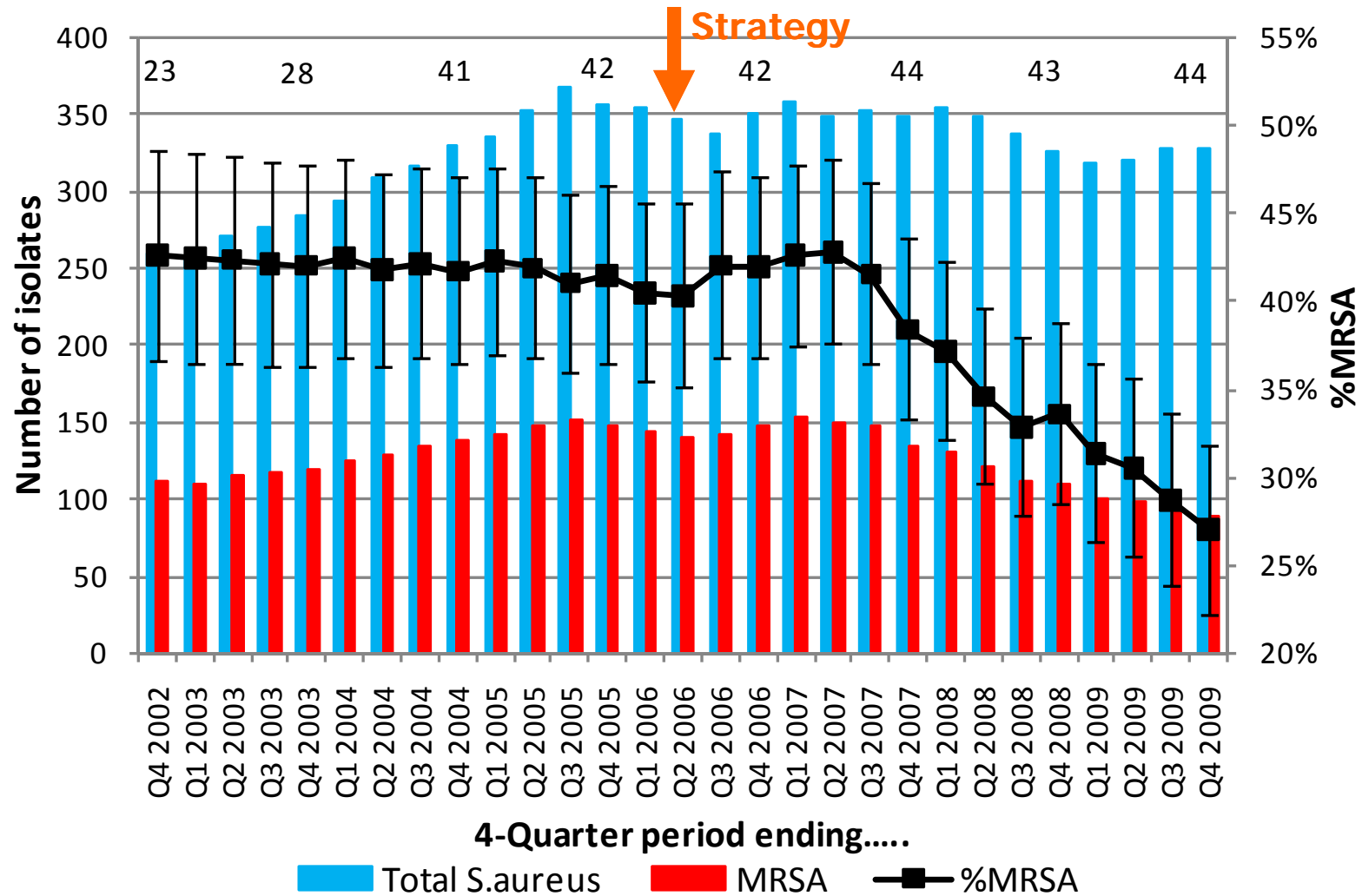


UK success





S. aureus/MRSA bacteraemia trends, 2002-2009: Ireland



Number of laboratories participating by year-end indicated above the Q4 bars

Curbing Methicillin-Resistant *Staphylococcus aureus* in 38 French Hospitals Through a 15-Year Institutional Control Program

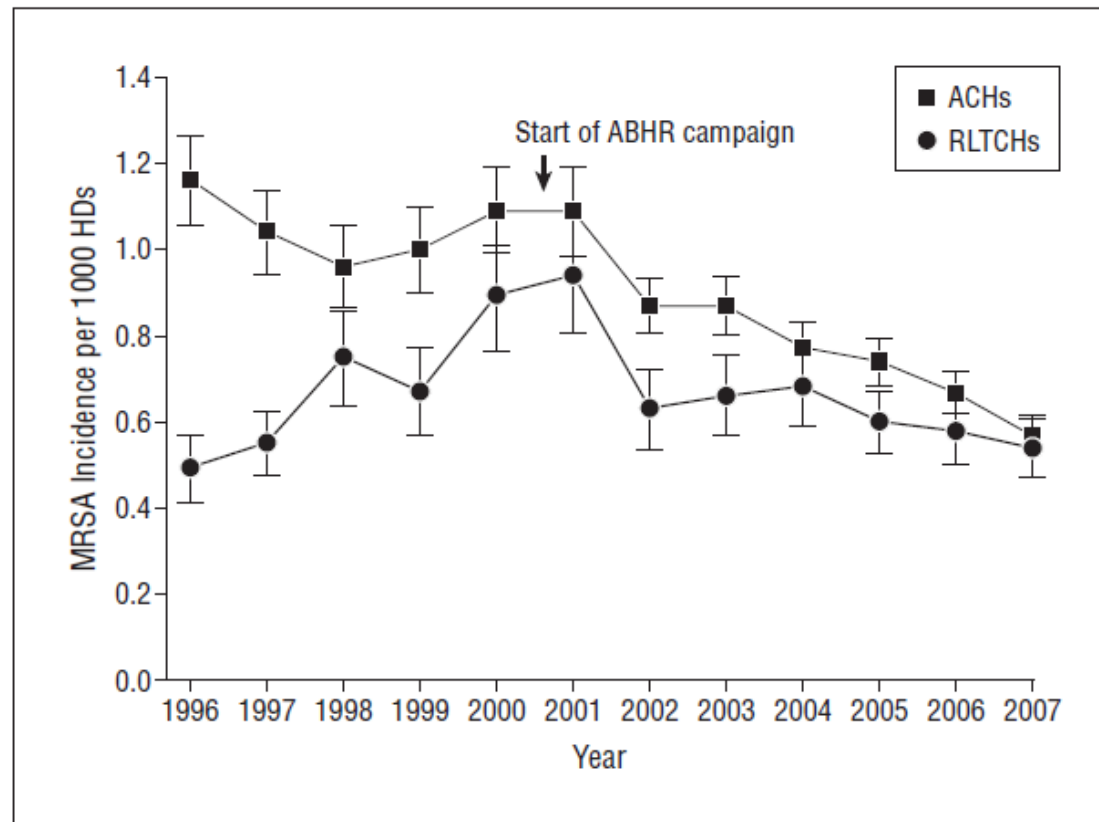


Figure 4. Change in MRSA incidence per 1000 HDs in ACHs and RLTHs from 1996 to 2006. ABHR indicates alcohol-based hand rub; ACHs, acute care hospitals; HDs, hospital days; MRSA, methicillin-resistant *Staphylococcus aureus*; and RLTHs, rehabilitation and long-term care hospitals. Error bars represent 95% confidence intervals.

Curbing Methicillin-Resistant *Staphylococcus aureus* in 38 French Hospitals Through a 15-Year Institutional Control Program

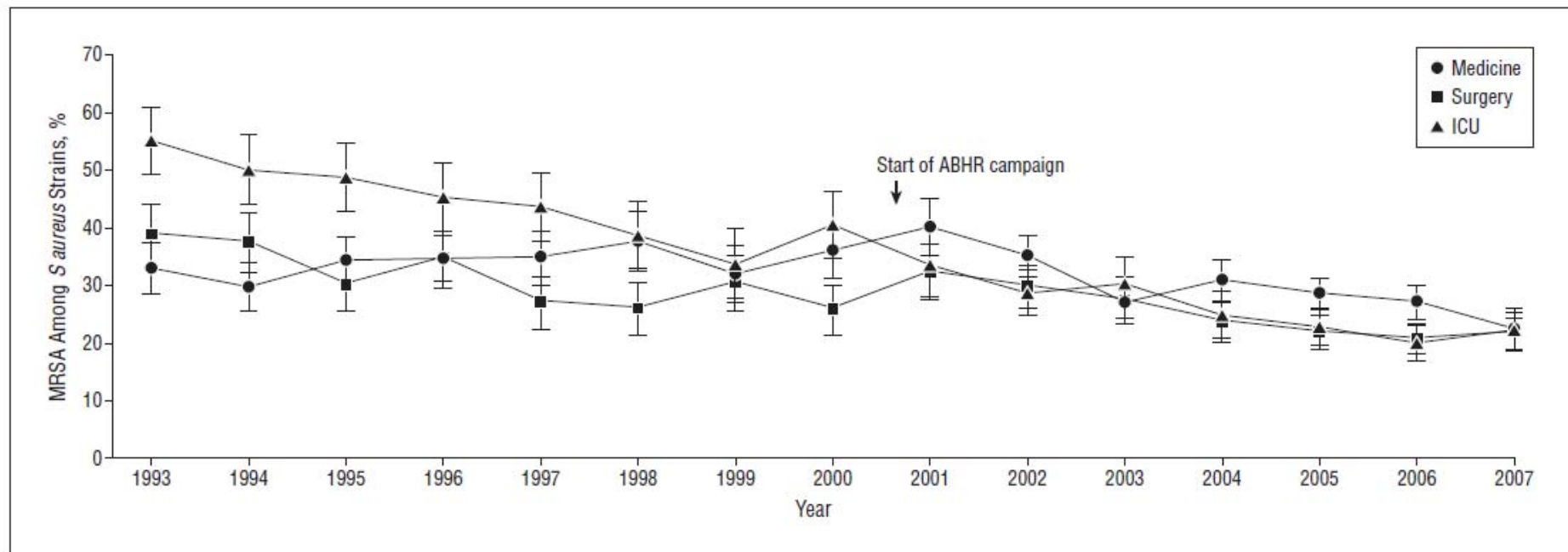


Figure 3. Change in the proportion (percentage) of MRSA strains in ICUs, surgery units, and medicine units from 1993 to 2007. ABHR indicates alcohol-based hand rub; ICUs intensive care units; and MRSA, methicillin-resistant *Staphylococcus aureus*. Error bars represent 95% confidence intervals.

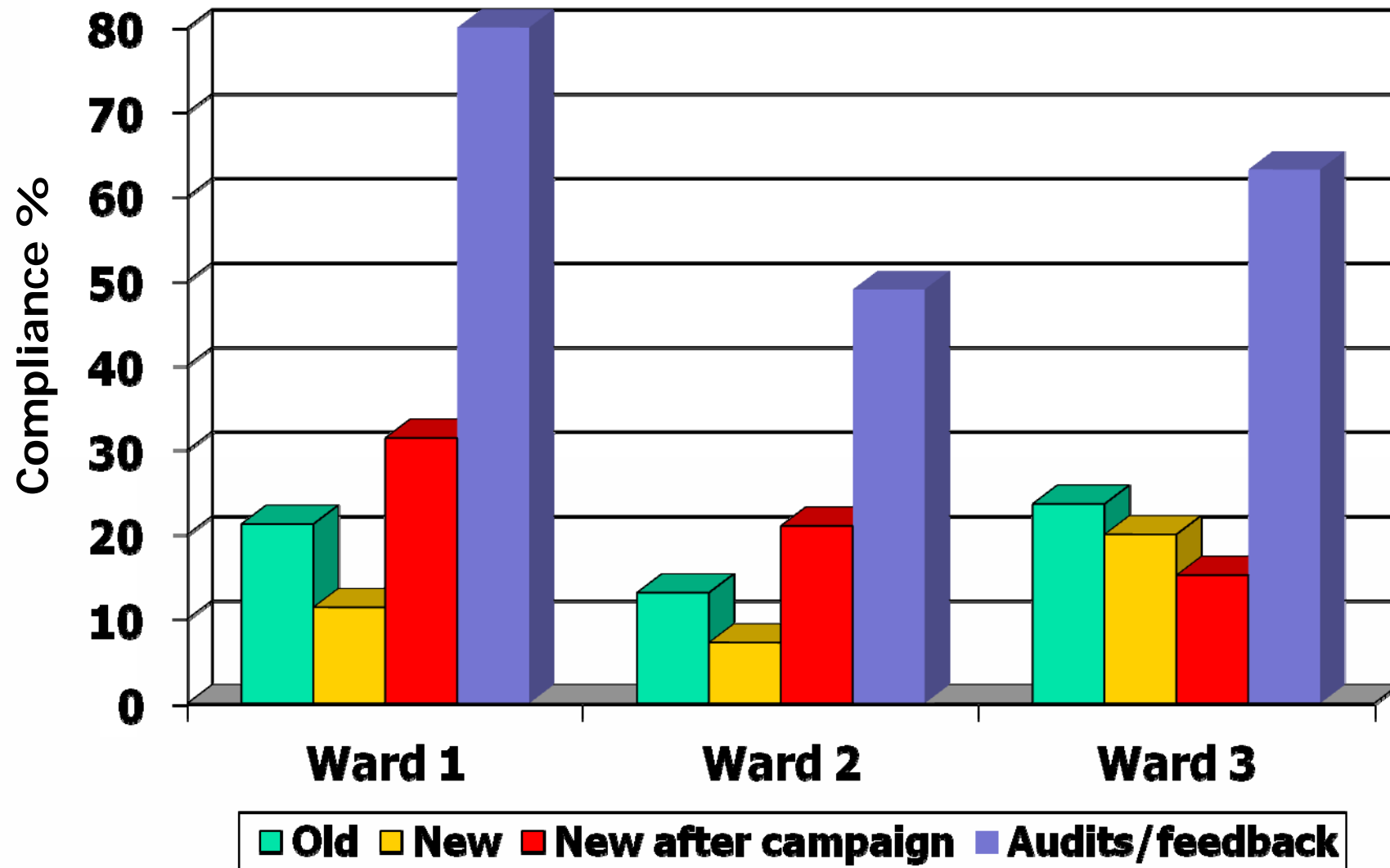


Take home messages

- Mediterranean countries need to adapt our strategies to be relevant to our high avoidance uncertainty cultures
 - UK, USA and Switzerland have very low UA



Hand hygiene compliance - Malta





Take home messages

- Mediterranean countries need to adapt our strategies to be relevant to our high avoidance uncertainty cultures
 - UK, USA and Switzerland have very low UA
 - Passive initiatives may have poor outcome
- We need to patient
 - Change in UA countries takes longer



Thank you



12 – 15 October 2011