

Convegno Nazionale
**La Gestione Appropriata
delle Infezioni in Riabilitazione:
indicazioni strategiche**



Cona (Fe) 20 Giugno 2019

Aula Congressuale

Nuovo Arcispedale S. Anna, Via A. Moro n. 8

Ferrara 20 giugno 2019

Epidemiologia generale

Angelo Pan

UO di Malattie Infettive



Sistema Socio Sanitario



Regione
Lombardia

ASST Cremona

Disclosure of speaker's interests

(Potential) conflict of interest

None

Potentially relevant company relationships in connection with event ¹

None

- Sponsorship or research funding²
- Fee or other (financial) payment³
- Shareholder⁴
- Other relationship, i.e. ...⁵

Ministry of health: research funding

Abbvie: speaker fee
BD: invitation to conference

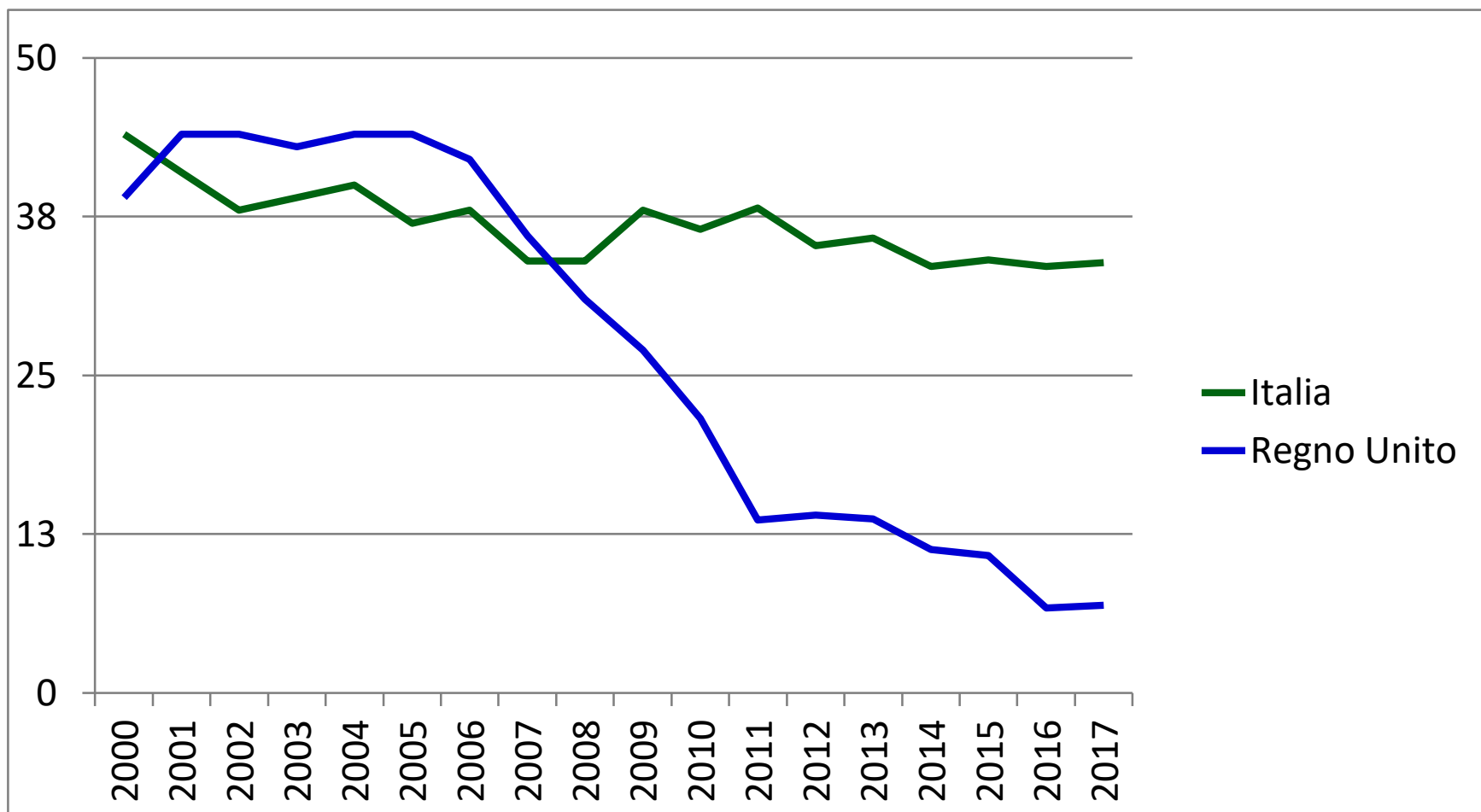
Shionogi: fee for scientific project

παντα
ρει



Heraclito

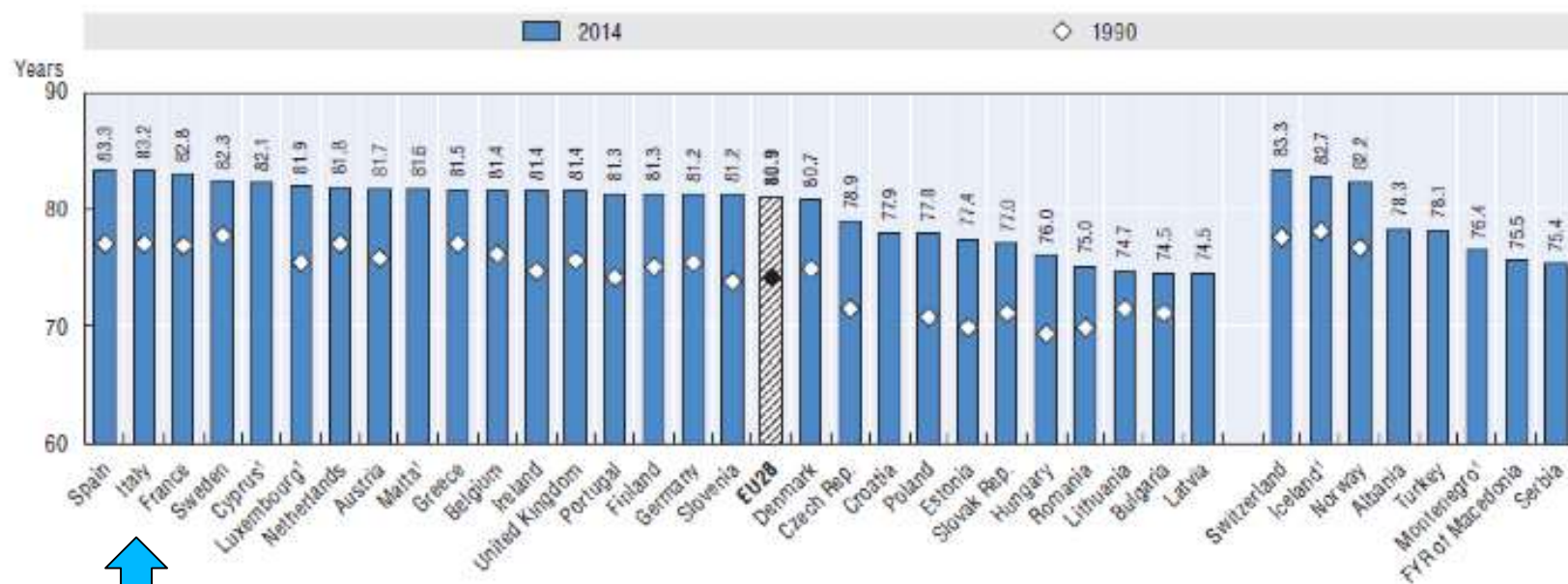
MRSA % 2000 - 2017



1. La nostra popolazione

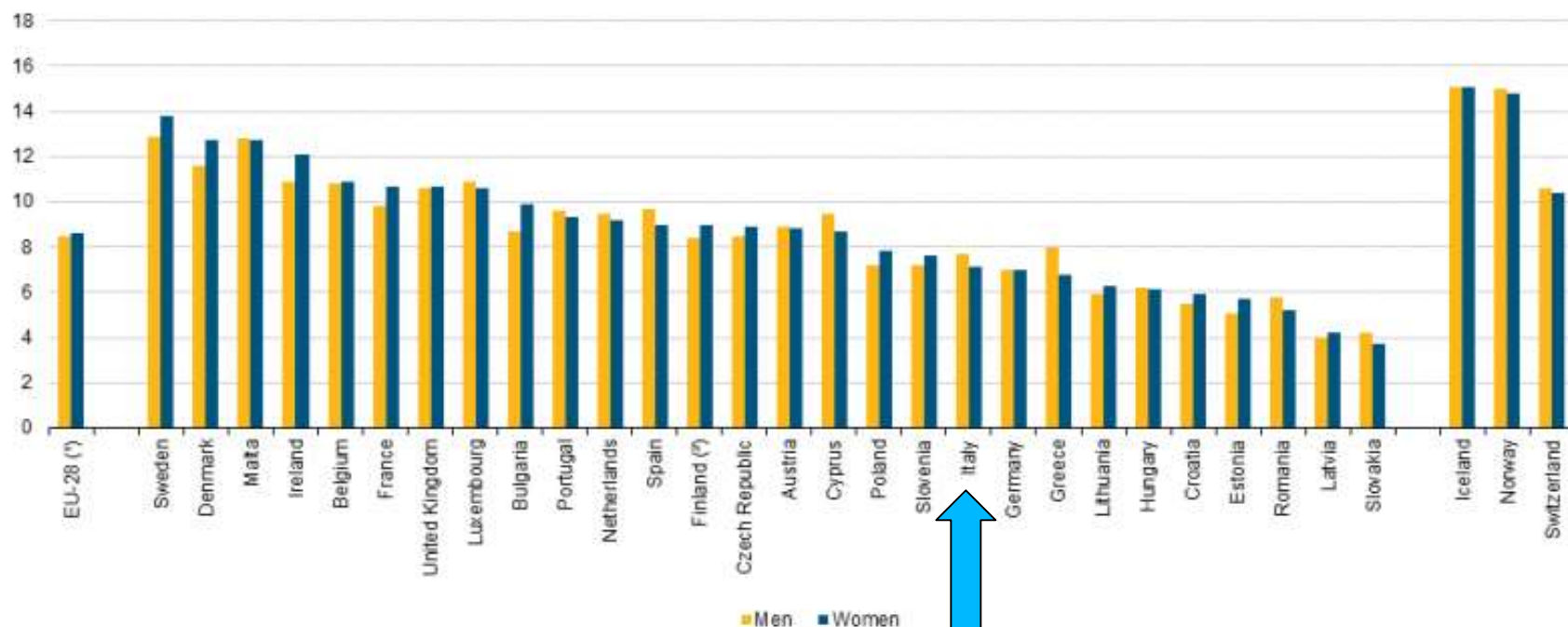
Speranza di vita alla nascita

Europa 1990 - 2014



Aspettativa di vita in salute a 65 anni

Europa 2012



(*) Estimates.

(*) 2012.

Source: Eurostat (online data code: hlth_hlye)

Anni di vita in salute
(Healthy life years – HLY)

2. Il servizio sanitario

Dati generali

	Francia	Germania	Italia	Olanda	Polonia	Spagna
Abitanti (Milioni)	67	83	60	17	38	47
N. letti acuti occupati (x1000)	160	400	168	24	120	84
N. letti LTCF (x1000)	688	853	187	92	17	372
Totale letti (x1000)	848	1253	355	116	137	456
Totale letti/1000 abitanti	13	15	6	7	4	10

Farmaci



Selezione

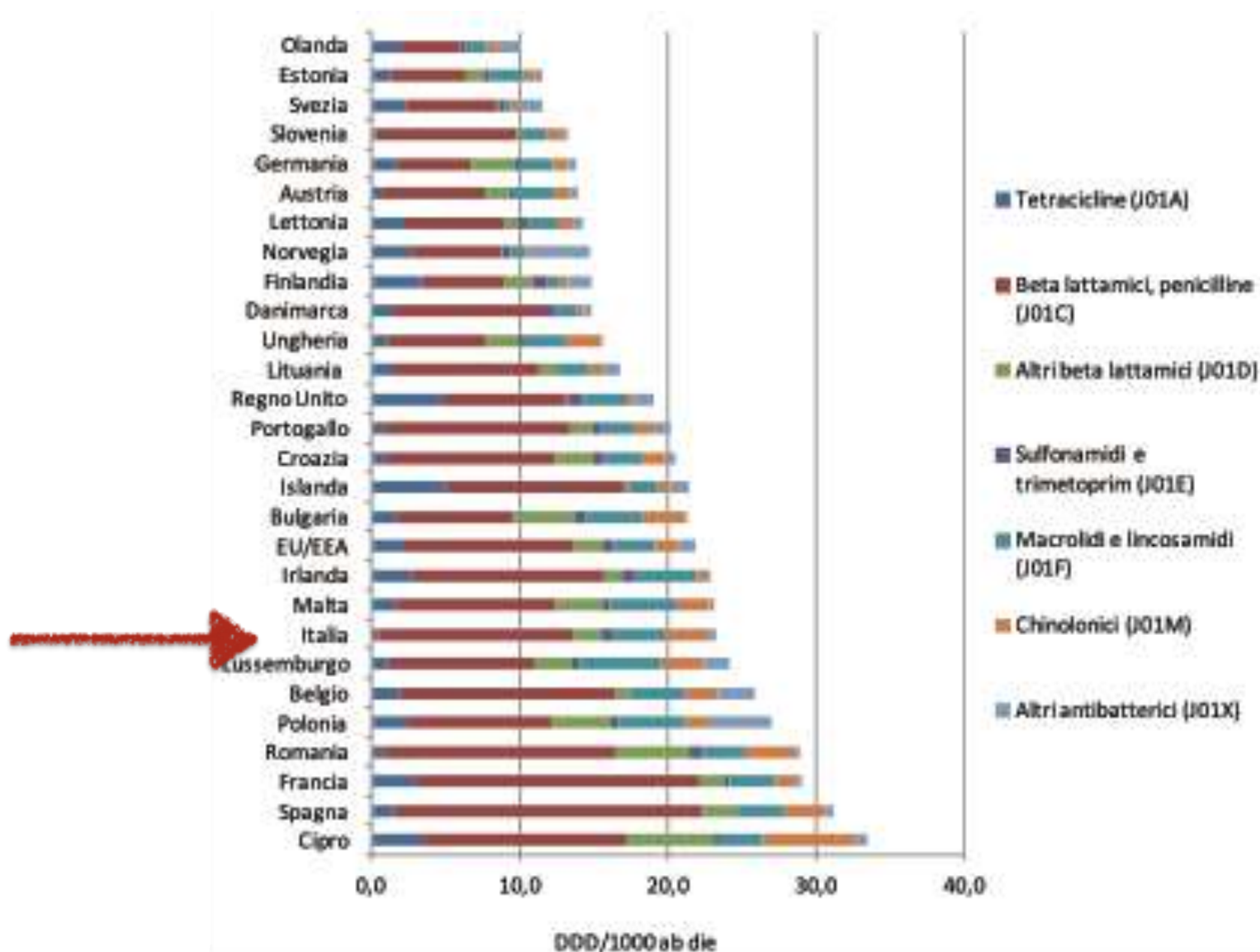
Mani



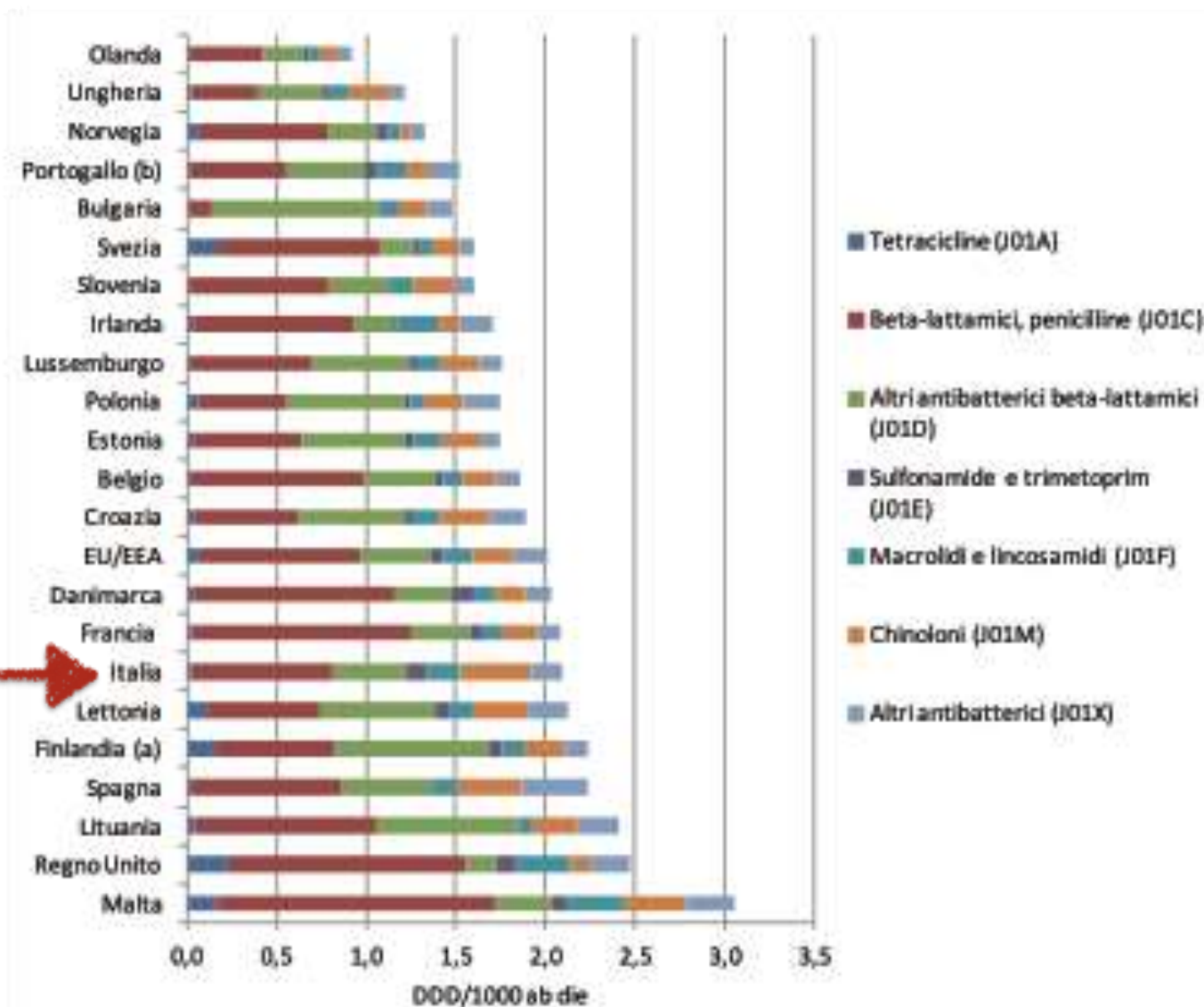
Trasmissione

3. Il consumo di antibiotici

Consumo di antibiotici in comunità - 2017

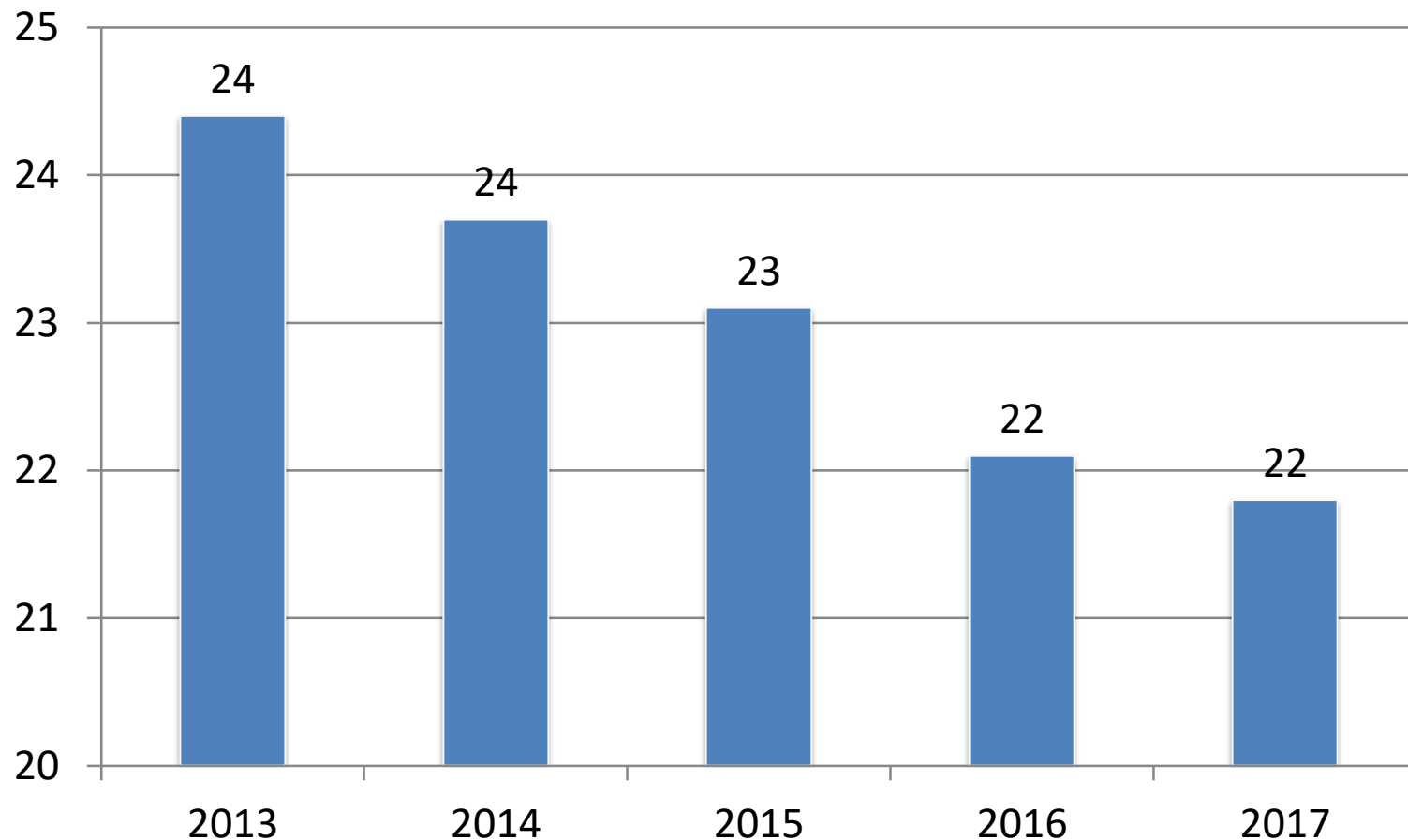


Consumo di antibiotici in ospedale - 2017



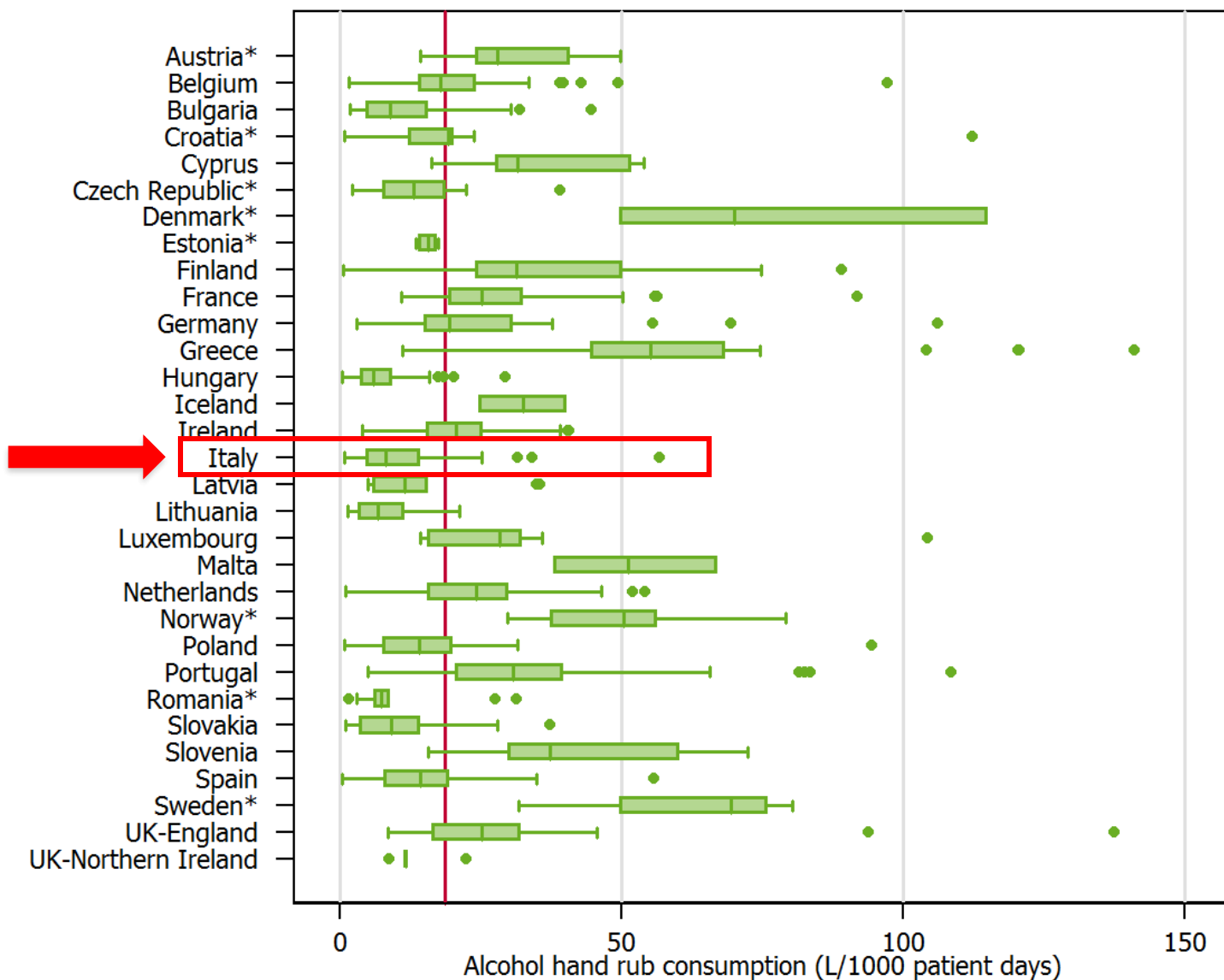
Consumo di antibiotici in Italia

Convenzionata e acquisti strutture sanitarie pubbliche
DDD/1000 abitante die



4. L'igiene delle mani

Consumo di soluzioni idroalcoliche



Consumo di soluzioni idro-alcoliche

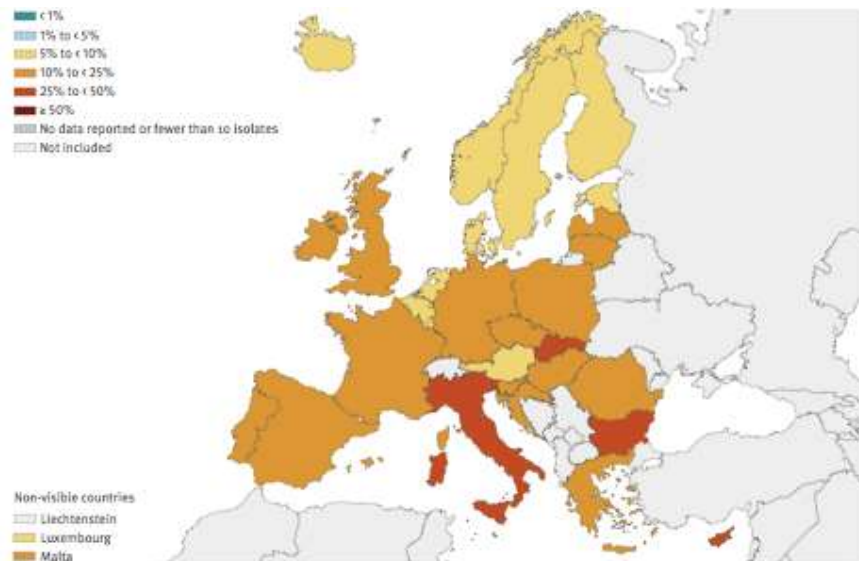
PPS 2016-2017

	<200 letti	201-500 letti	>500 letti	Totale
Media	13 $\pm$ 20	11 $\pm$ 9	23 $\pm$ 27	15 $\pm$ 20
Mediana	6,3 (3,7- 10,0)	10,5 (4,5- 14,2)	14,9 (9,3- 20,9)	9,2 (4,7- 17,6)

5. Le resistenze agli antibiotici

SORVEGLIANZA EUROPEA ECDC 2017 - EARSNET

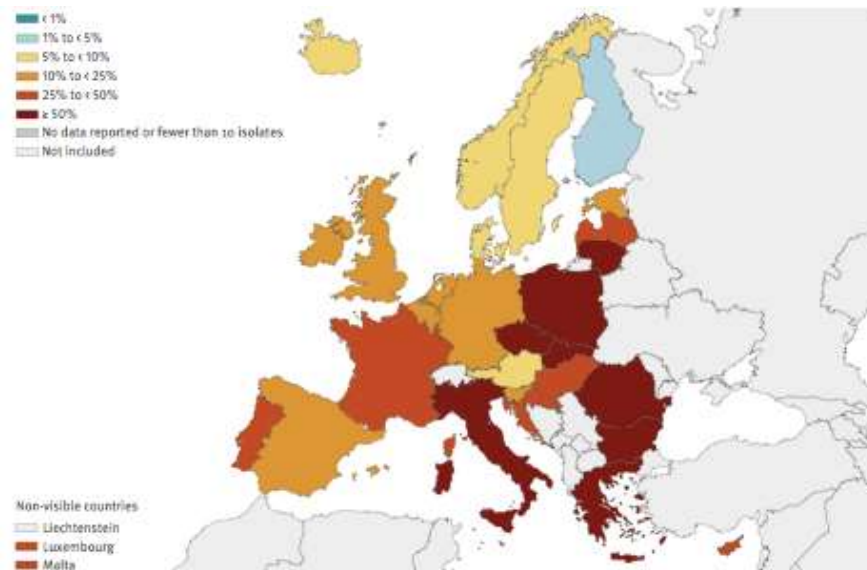
Escherichia coli R C3G



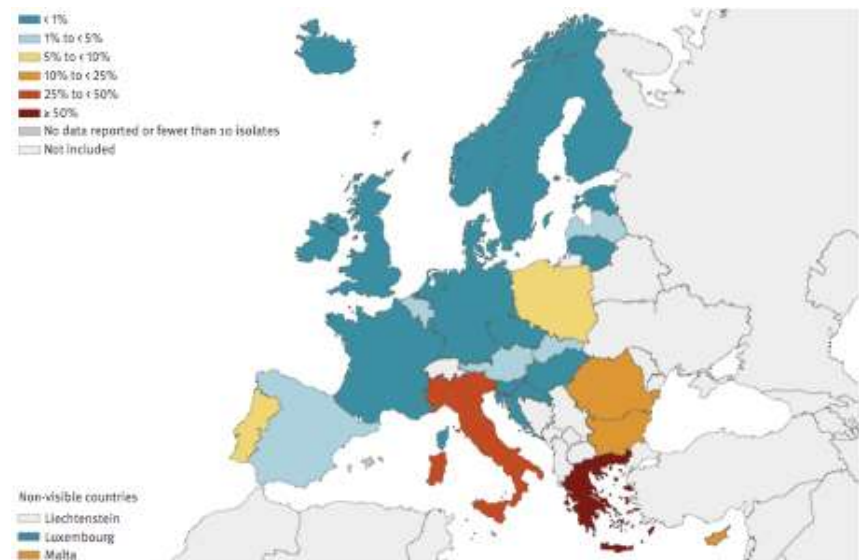
Escherichia coli R FQ



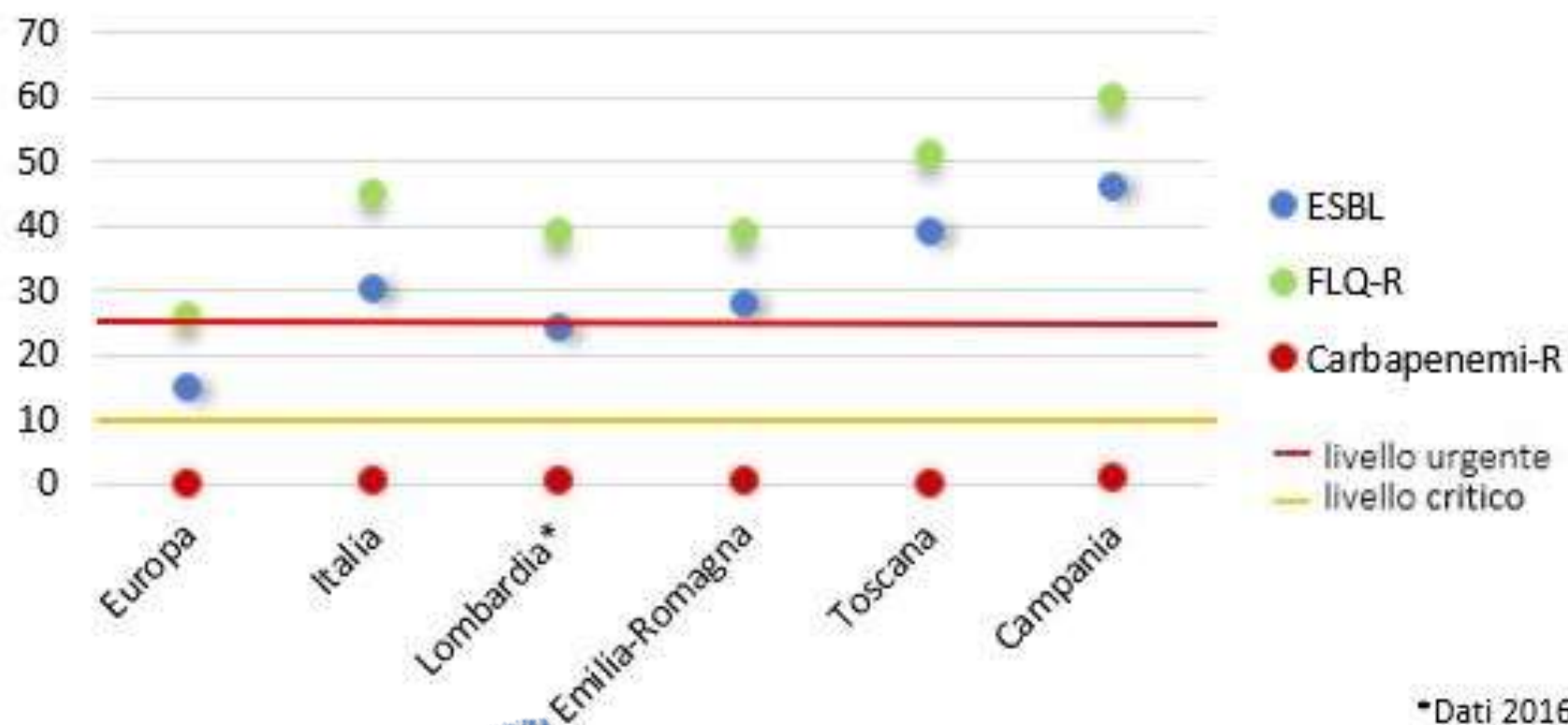
Klebsiella pneumoniae R FQ



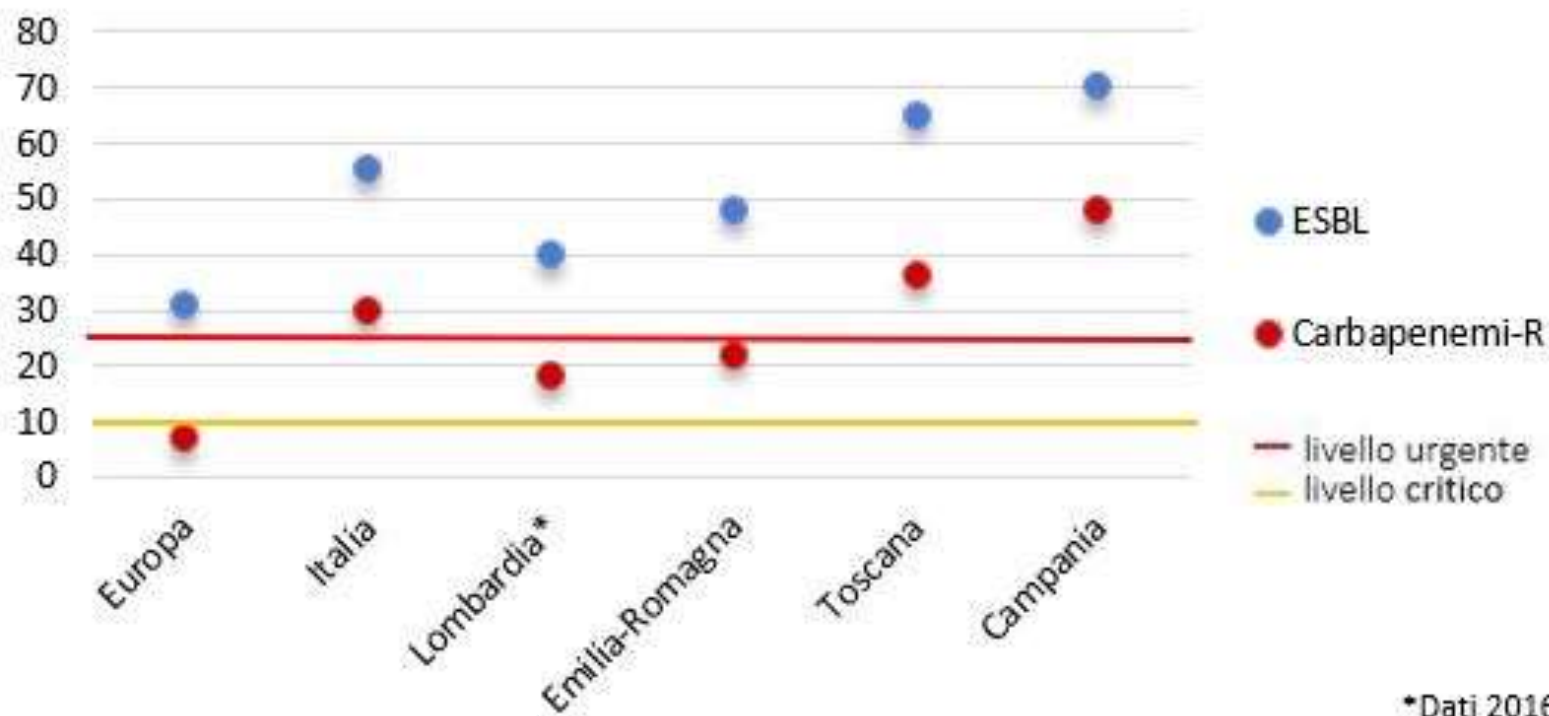
Klebsiella pneumoniae R Carba



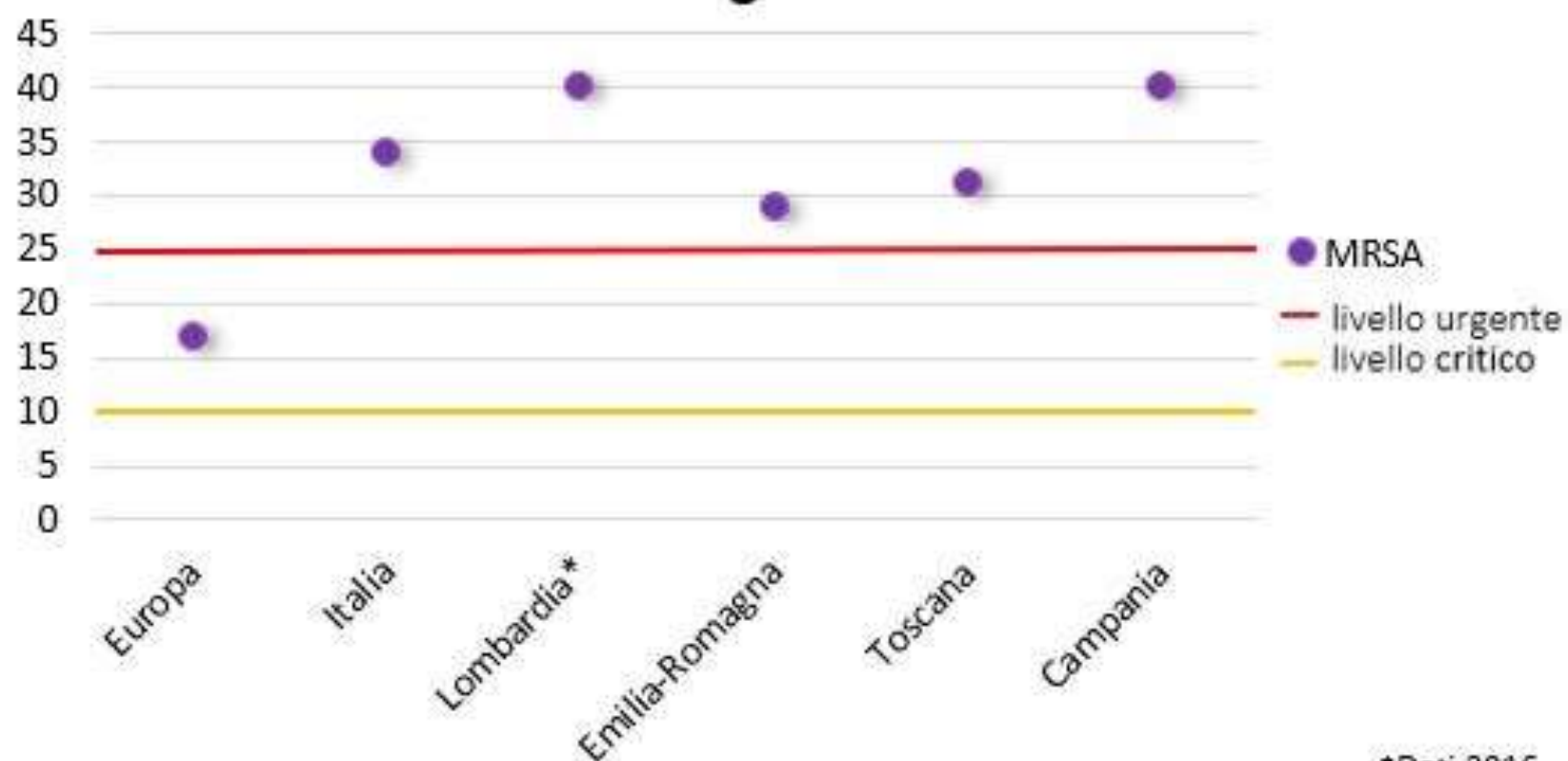
Prevalenza di antibioticoresistenza in E.coli - dati regionali 2017 -



Prevalenza di antibioticoresistenza in K.pneumoniae - dati regionali 2017



Prevalenza di MRSA -dati regionali 2017-



*Dati 2016

6. Capacità di reazione

Klebsiella pneumoniae: resistenza ai carbapenemi 2009

Figure 5.25: *Klebsiella pneumoniae*: proportion of invasive isolates resistant to carbapenems in 2009

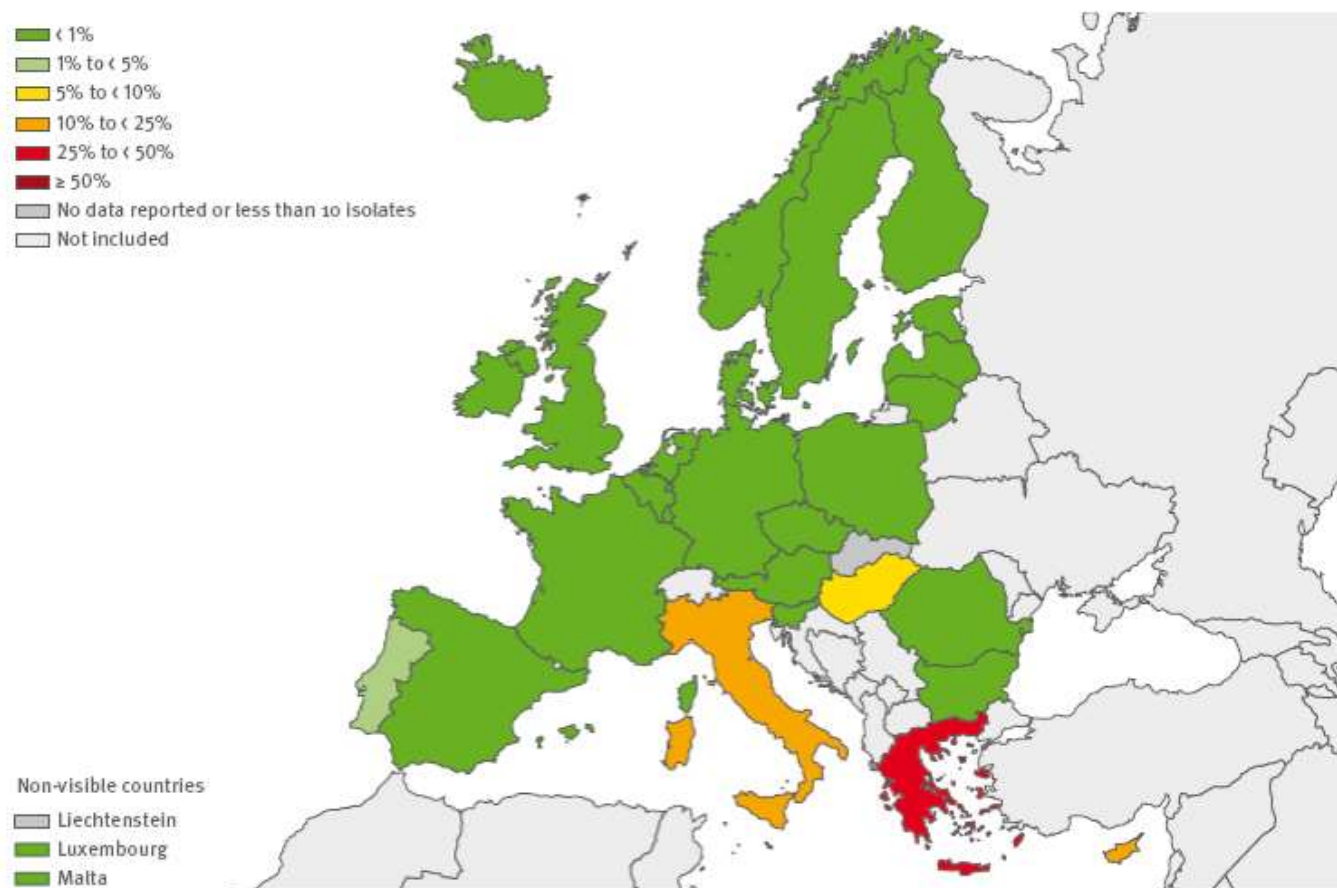


1,2%

EARS-Net 2009

Klebsiella pneumoniae: resistenza ai carbapenemi 2010

Figure 5.25: *Klebsiella pneumoniae*: proportion of invasive isolates resistant to carbapenems in 2010



15,2%

EARS-Net 2010

Klebsiella pneumoniae: resistenza ai carbapenemi 2011



26,7%

EARS-Net 2011

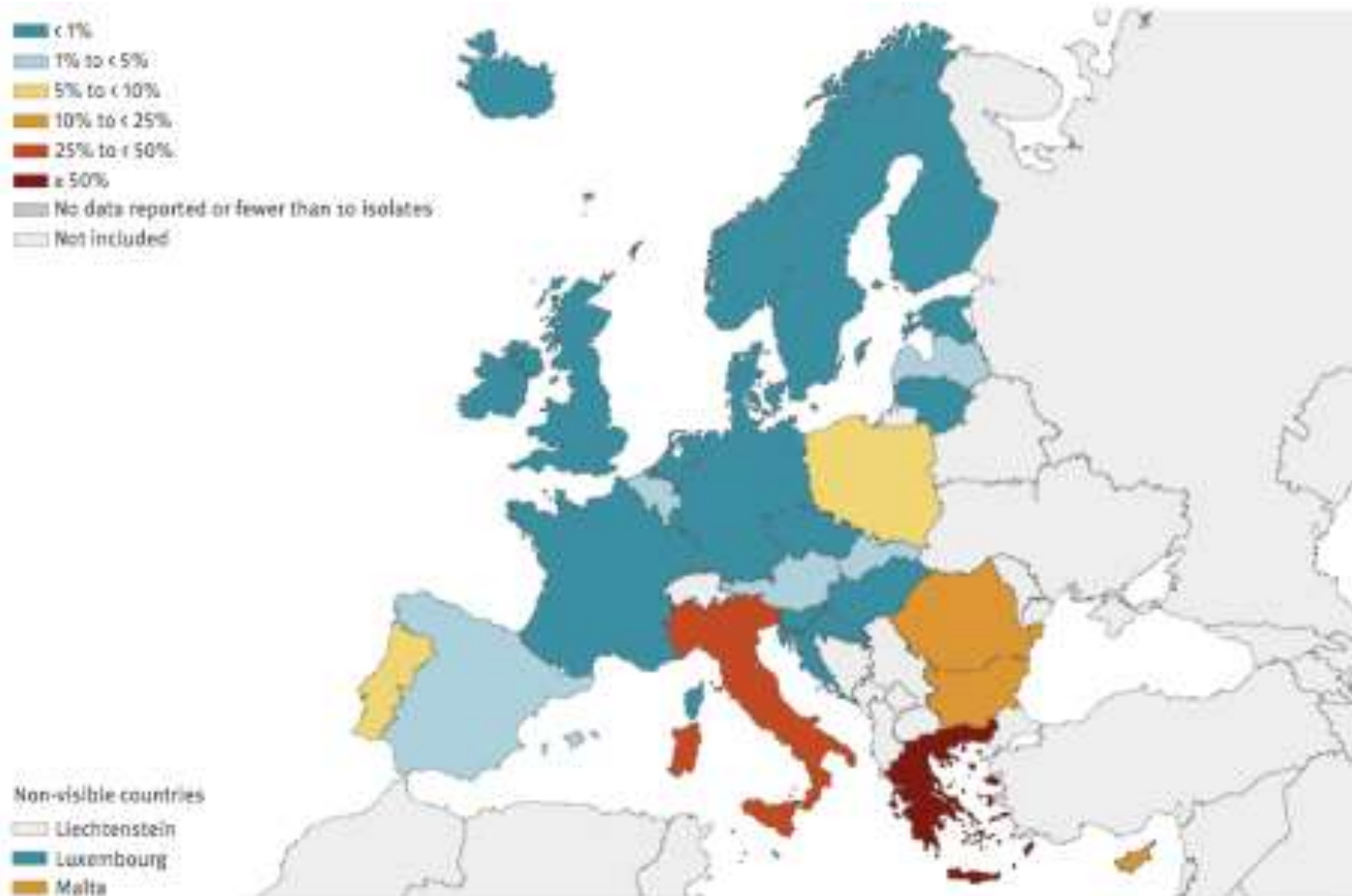
Klebsiella pneumoniae: resistenza ai carbapenemi 2013



34,3%

EARS-Net 2013

Klebsiella pneumoniae: resistenza ai carbapenemi 2017



29,7%

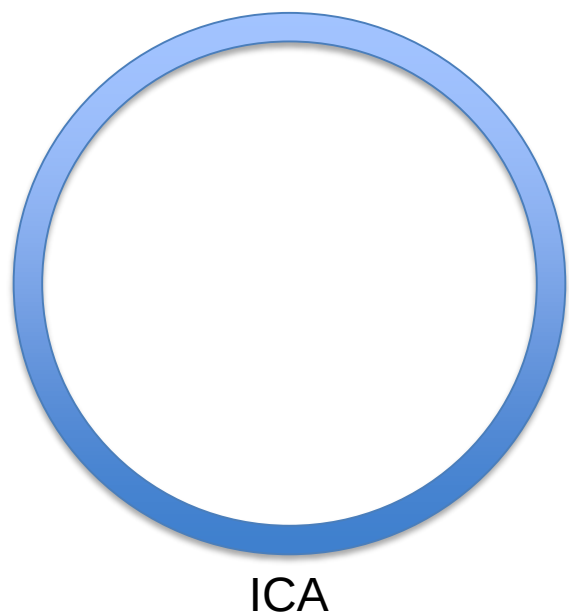
EARS-Net 2016

7. Le infezioni correlate all'assistenza

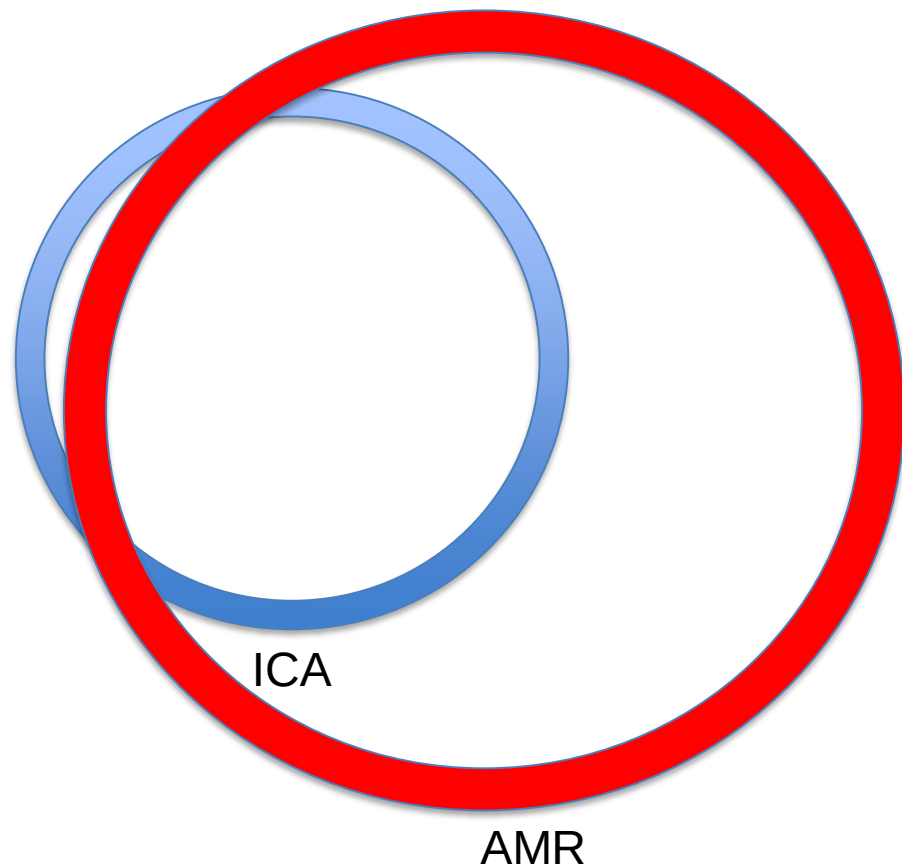
Infezioni correlate all'assistenza e antibiotico-resistenza

Fino al 1942

2018



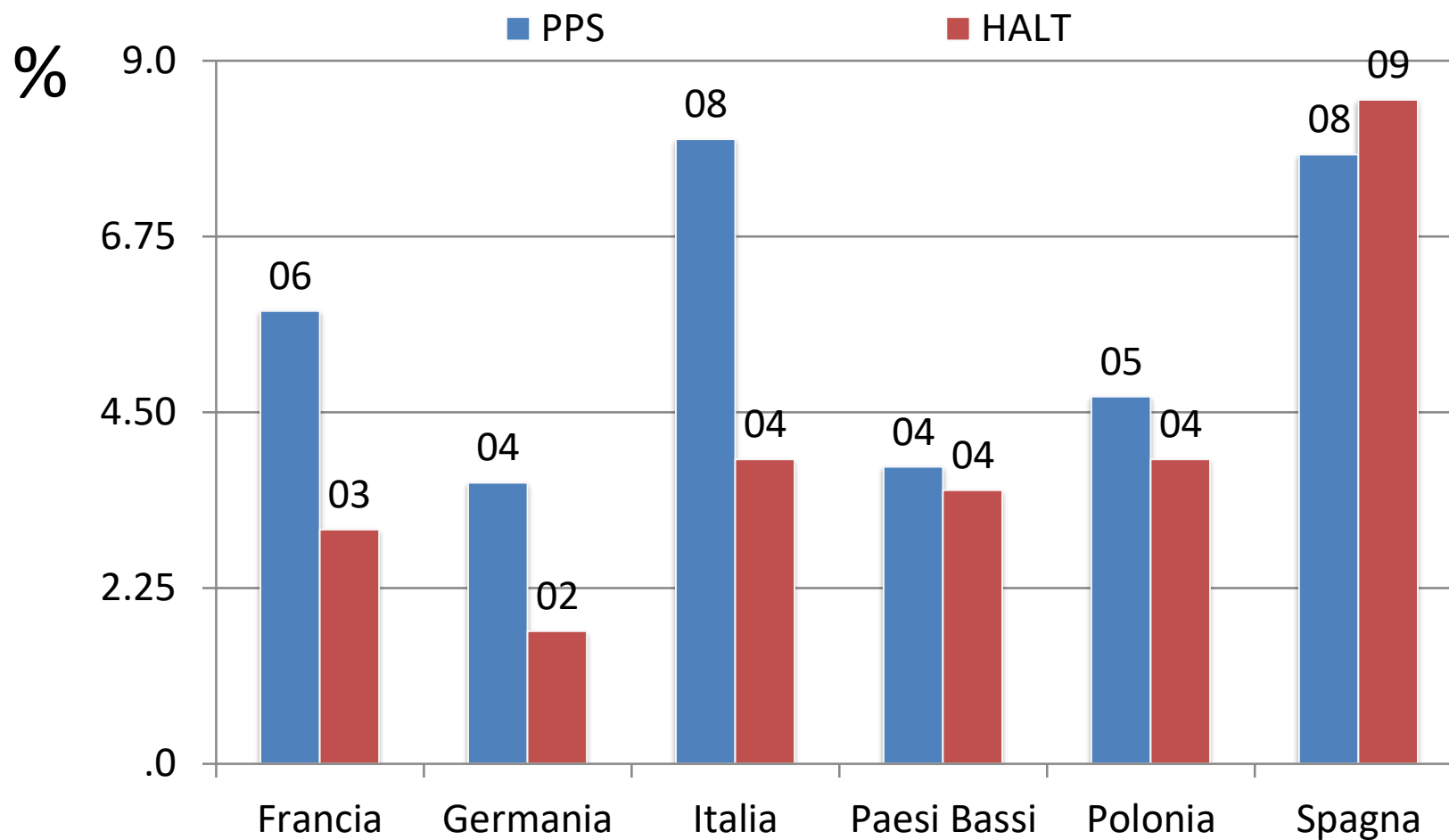
AMR





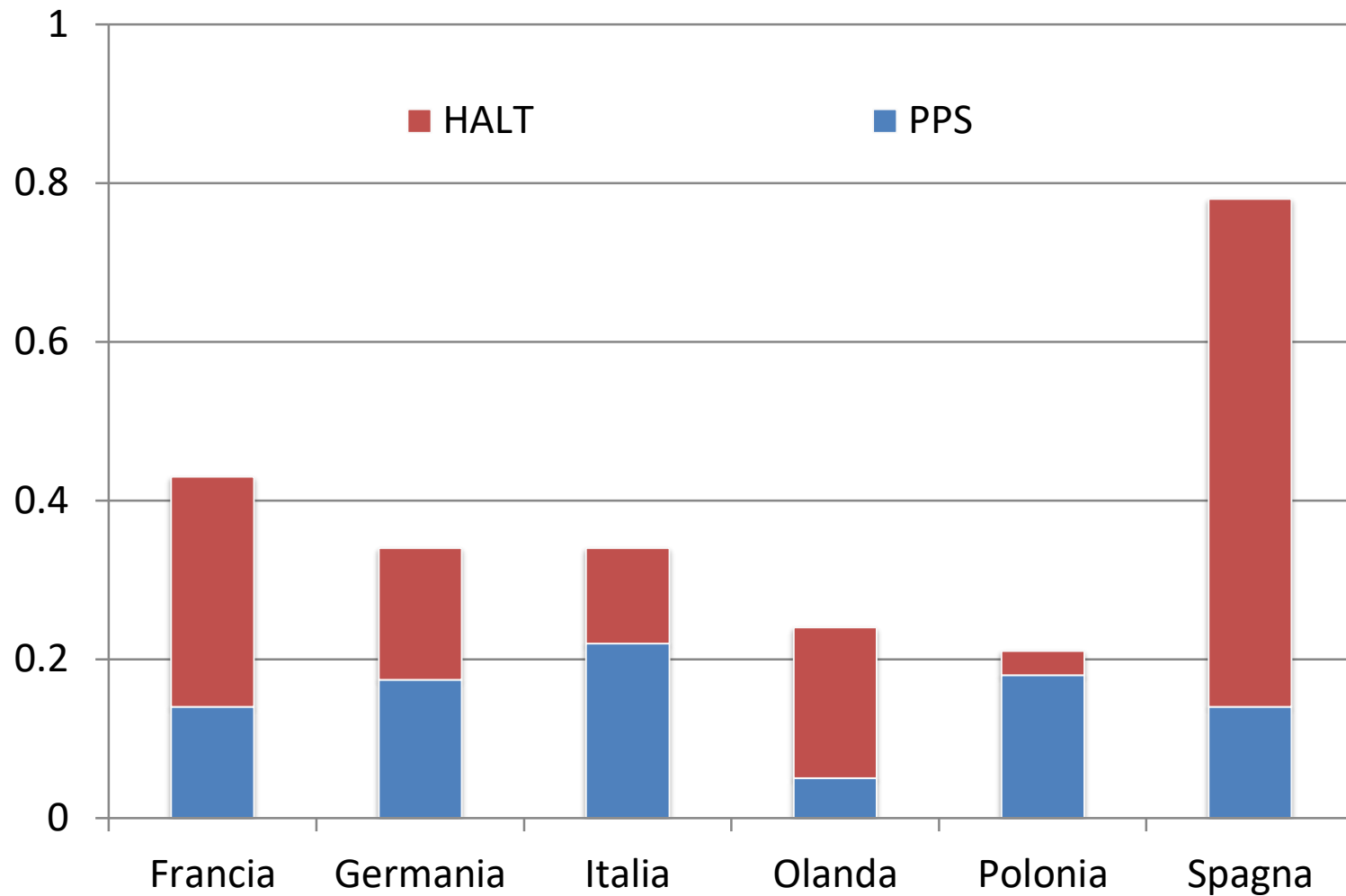
Confronto con l'Europa

Prevalenza e incidenza stimata di ICA - e PPS e HALT

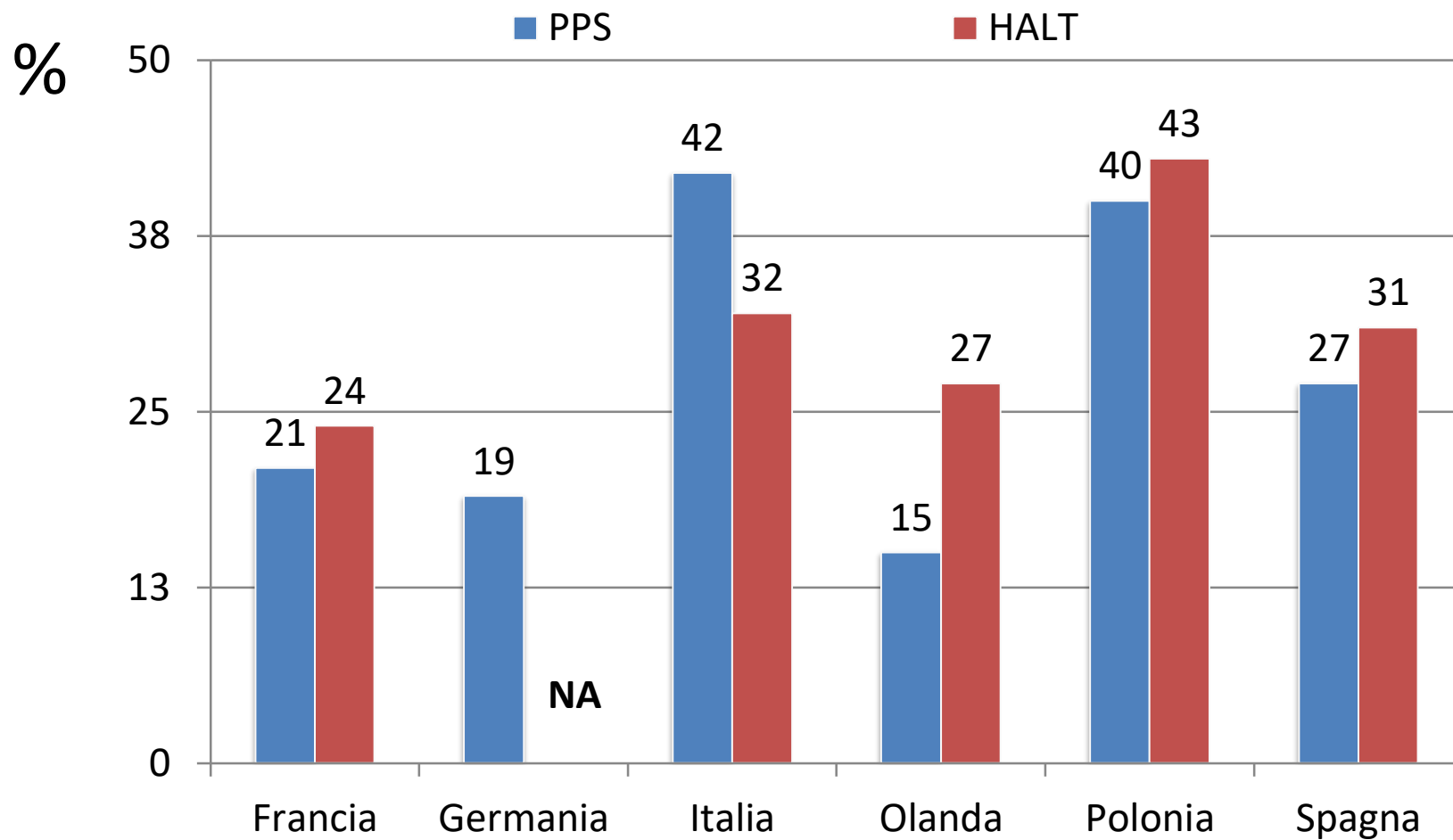


Prevalenza di ICA

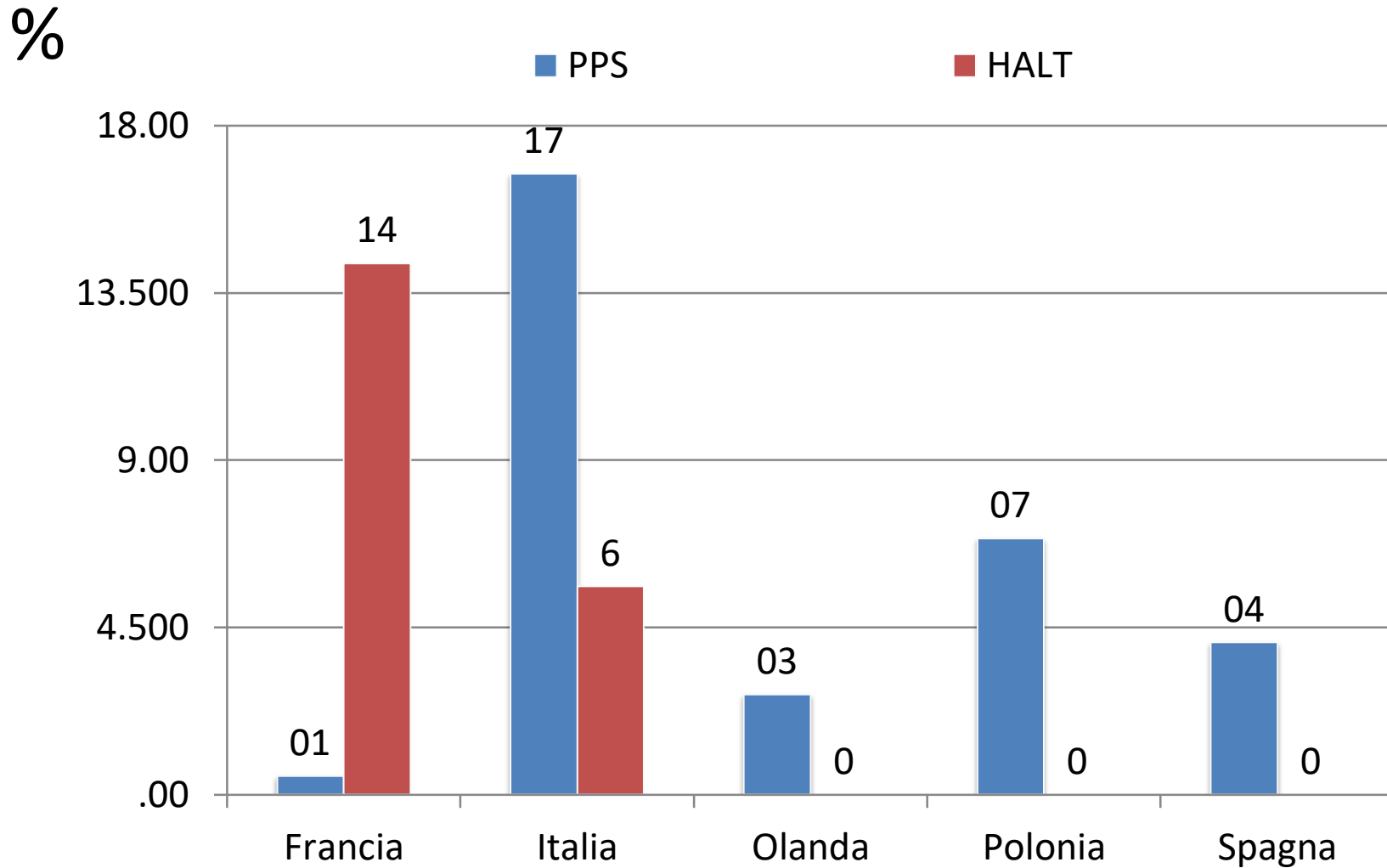
PPS & HALT - Stima casi prevalenti giornalieri/1000 abitanti



Indice composito di AMR



Enterobacteriaceae resistenti ai carbapenemi



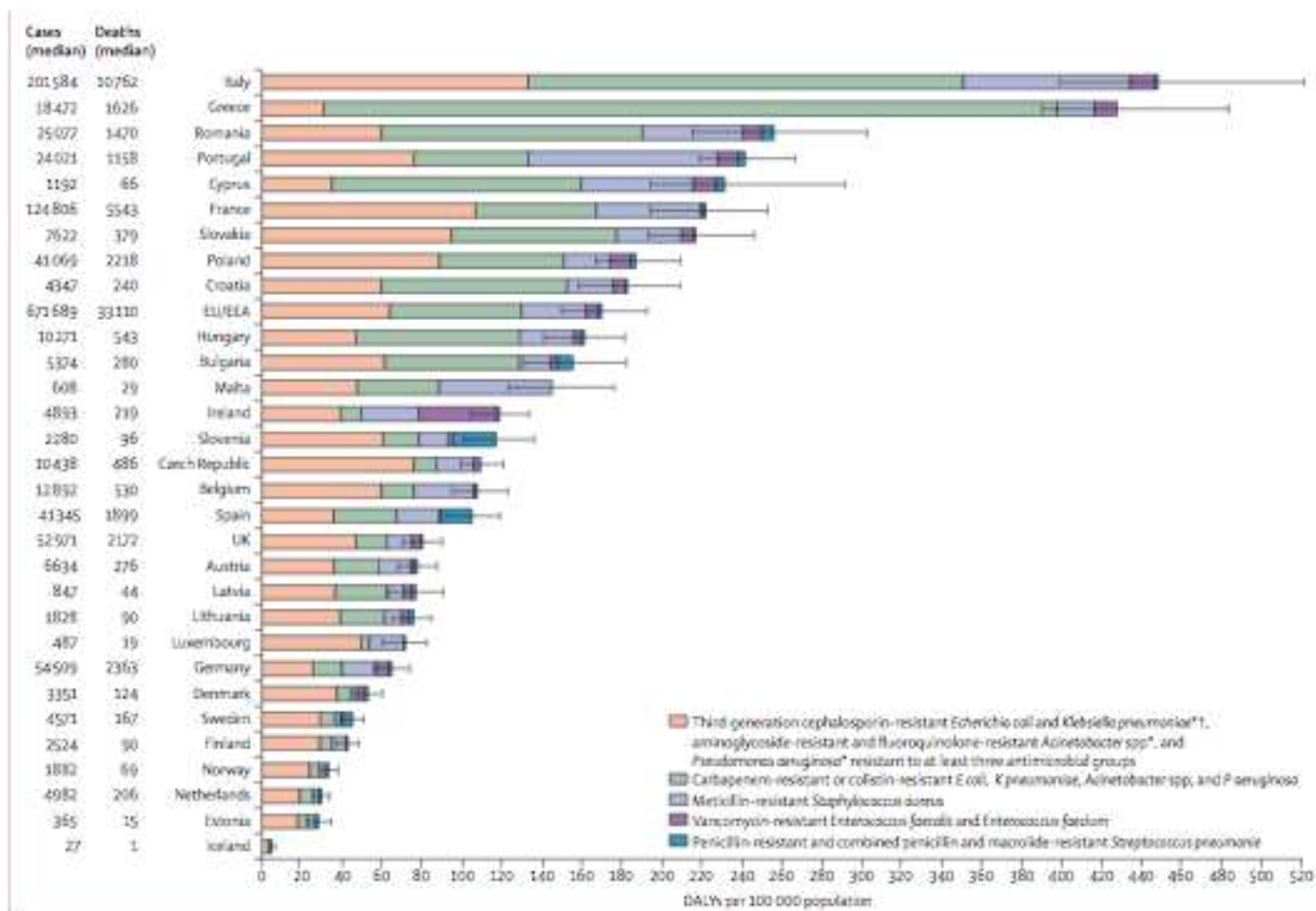
Infezioni correlate all'assistenza nel SSN

Tipo di struttura	N. strutture	N. Pazienti	N. ICA. (prev.)	MDR %	CPE %
Acuti	1134	167.000	13.500	42	17
Cronici	3219	187.000	6.900	32	6
TOTALE	4353	354.000	20.400	37	13

8. La sintesi

Attributable deaths and disability-adjusted life-years caused by infections with antibiotic-resistant bacteria in the EU and the European Economic Area in 2015: a population-level modelling analysis

Alessandro Cassini, Liselotte Diaz Högberg, Diamantis Pliachouras, Annalisa Quattrocchi, Ana Haxha, Gunnar Skov Simonsen, Melanie Colomb-Cotinat, Mirjam E Kretzschmar, Brecht Devleesschauwer, Michele Cecchini, Driss Ait Ouakrim, Tiago Cravo Oliveira, Marc J Struelens, Carl Suetens, Dominique L Monnet, and the Burden of AMR Collaborative Group*



9. La sintesi della sintesi



Piero Manzoni, 1961

10. Il piano nazionale

PNICAR

PIANO NAZIONALE DI CONTRASTO DELL'ANTIMICROBICO-RESISTENZA

2017
2020



Ministero della Salute

11. Le riabilitazioni

Vasi comunicanti



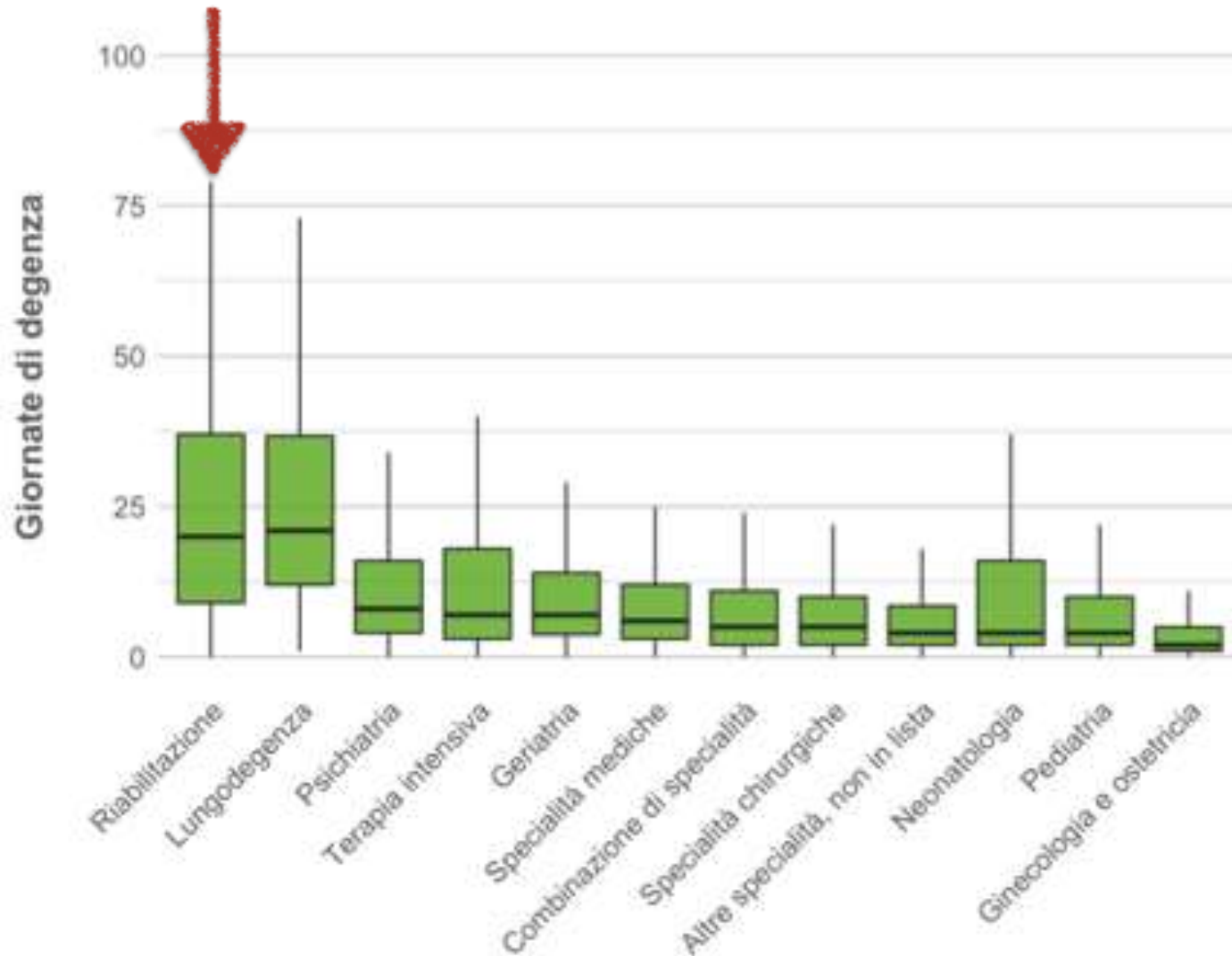
Le riabilitazioni

- Riabilitazione negli ospedali per acuti: in Italia
3,8% dei pazienti (PPS 2016-17)
- Riabilitazioni in strutture per cronici
- Riabilitazioni singole (stendelon)

Le riabilitazioni

- Unità spinale - codice 28
- Recupero e riabilitazione funzionale - codice 56
- Neuroriabilitazione - codice 75
- Medicina post-acuzie - codice 60

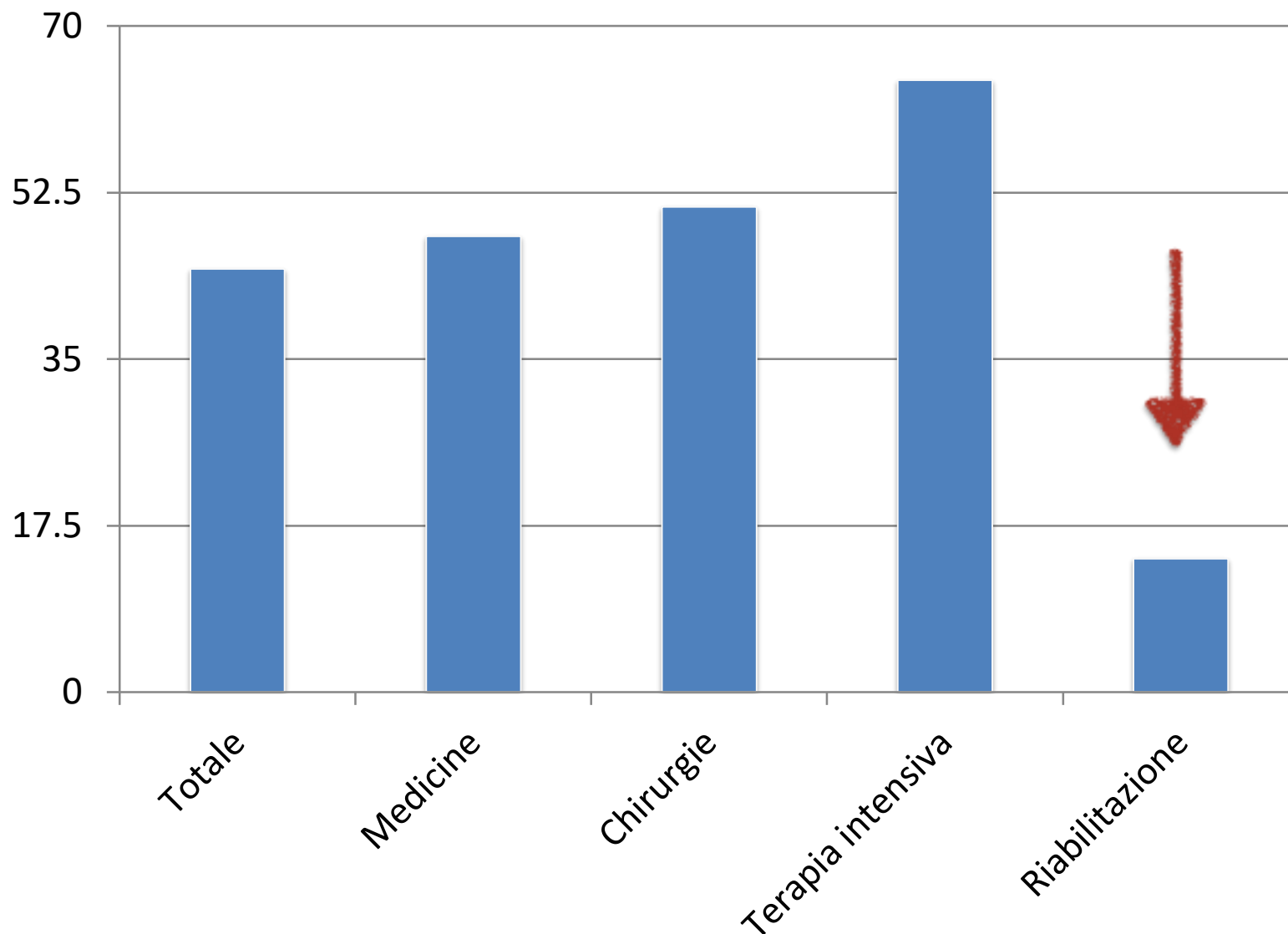
Durata della degenza



Prevalenza d'uso dei dispositivi

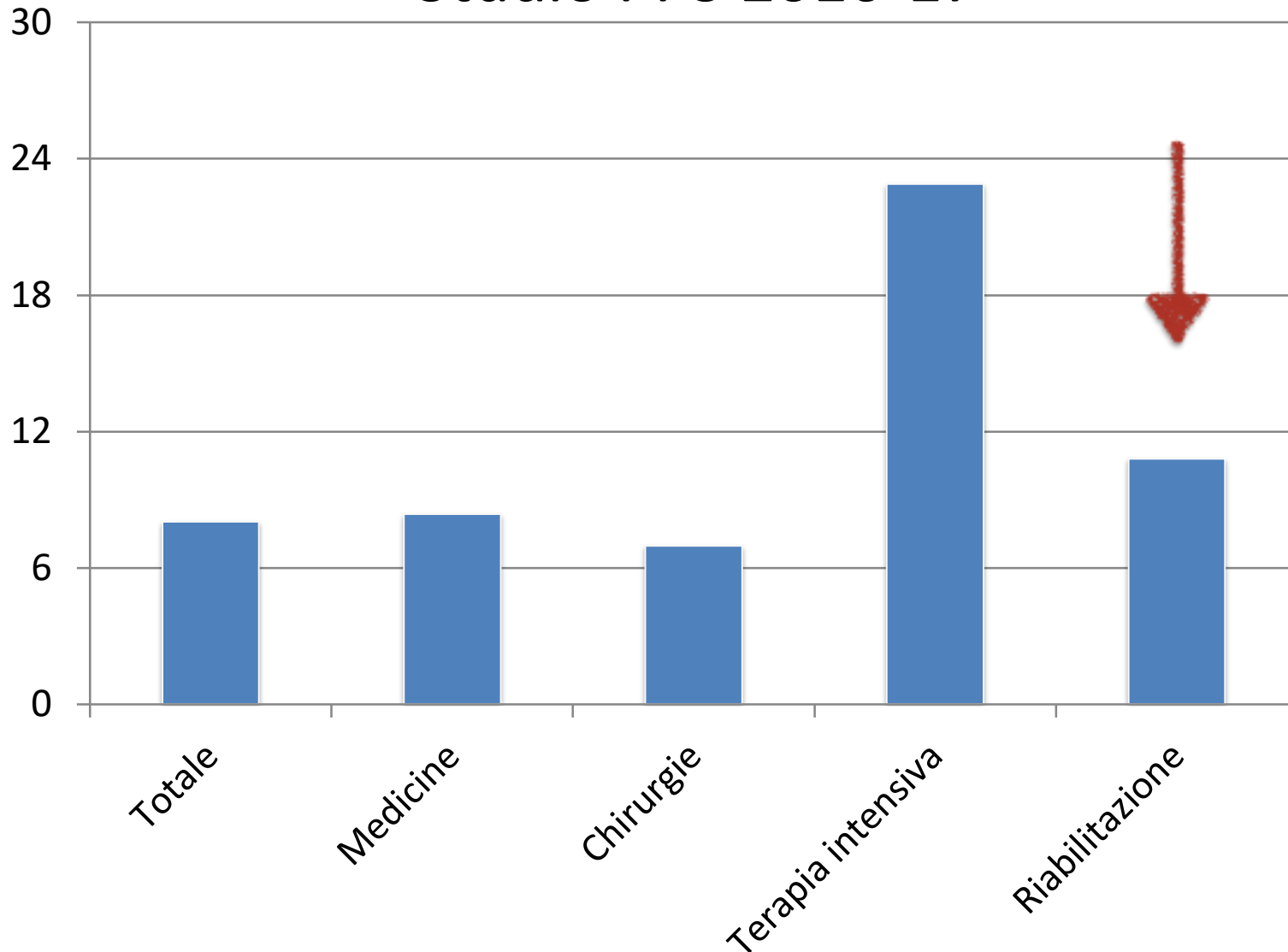
Dispositivo	PPS 2016	PPS Riab	HALT 2017
Catetere vascolare periferico	64%	29%	3%
Catetere urinario	29%	13%	9%
Catetere venoso centrale	15%	4%	0%
Intubato	3%	13%	0%

Prevalenza d'uso di antibiotici

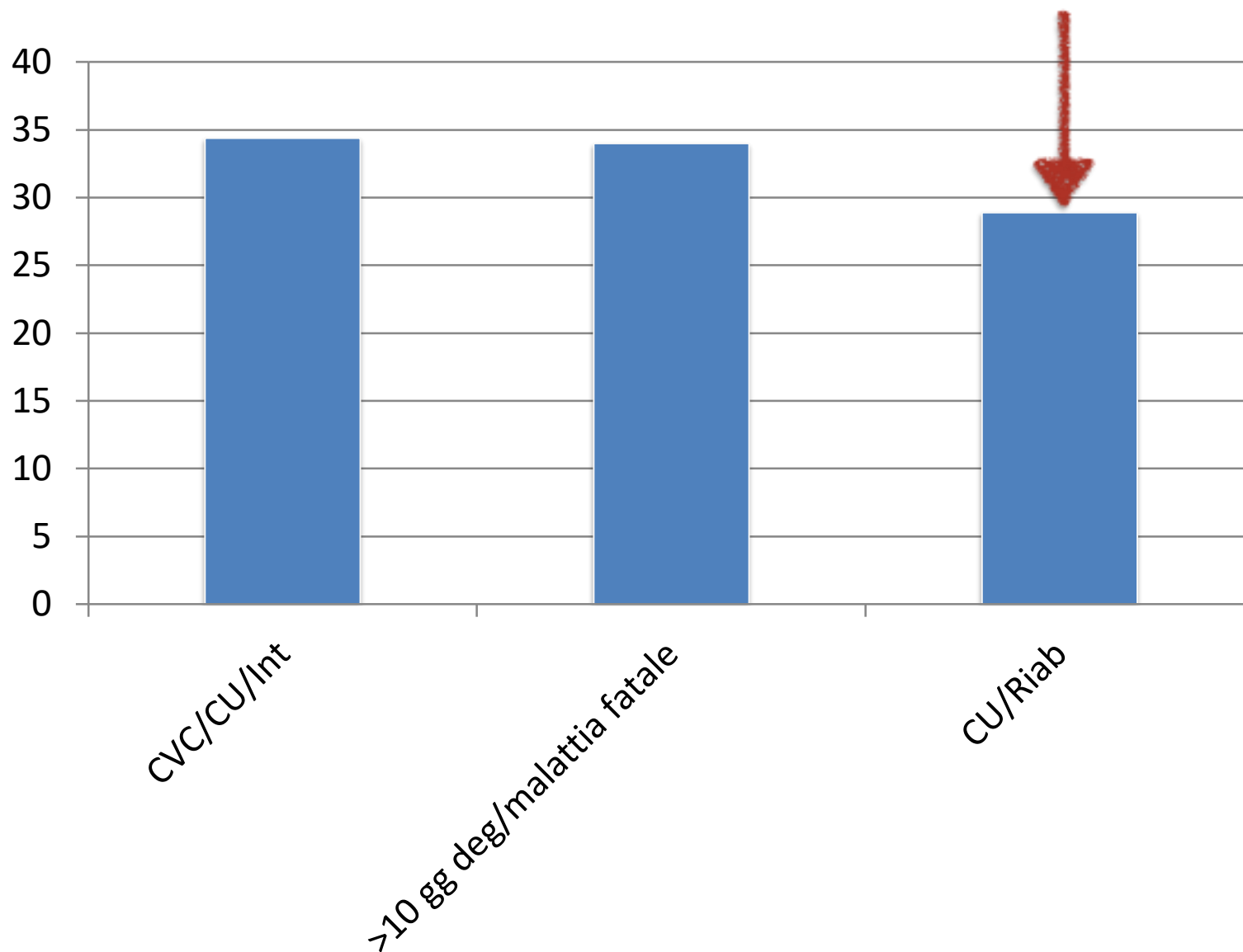


Prevalenza di infezioni

Studio PPS 2016-17



Rischio di infezione



Studi PPS 2016 e HALT 2017

INFEZIONI CORRELATE ALL'ASSISTENZA

Infezioni	PPS 2016	HALT 2017
Respiratorie	23%	46%
Batteriemie	18%	<1%
Urinarie	18%	21%
Infezioni del Sito Chirurgico, Cute, Ferite	16%	17%

Zotti, PPS 2016-17

Ricchizzi, ASSR Emilia-Romagna 2018

Studio HALT 2017

Regione Emilia-Romagna

Resistenze antibiotiche in campioni clinici di urine

(Dati Regione Emilia-Romagna 2017)

Escherichia coli 48% Cefalosporine III gen.
66% Fluorochinoloni
0% Carbapenemi

Proteus mirabilis 44% Cefalosporine III gen.
84% Fluorochinoloni

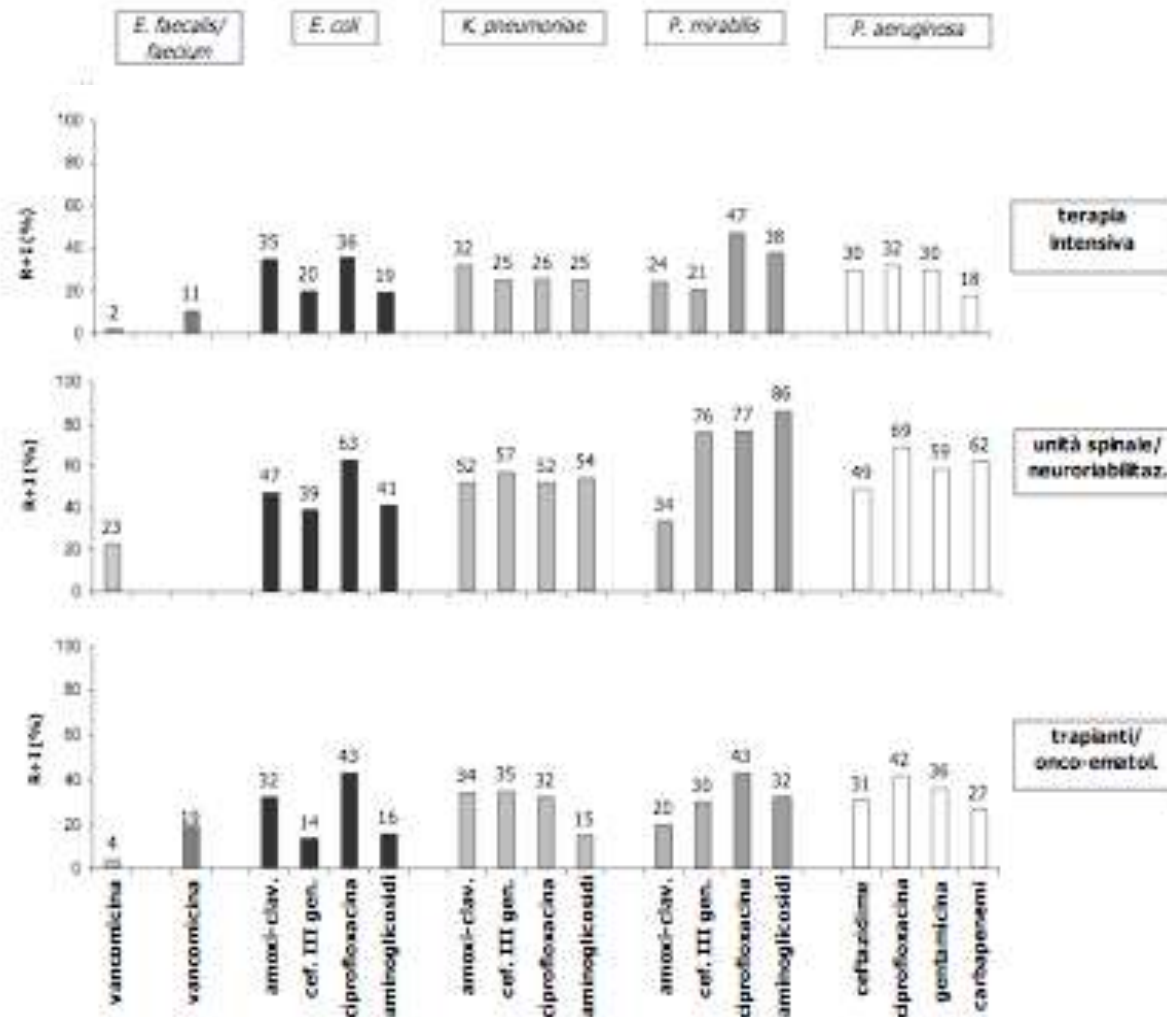
Klebsiella pneumoniae 41% Cefalosporine III gen.
54% Fluorochinoloni
11% Carbapenemi

Pseudomonas aeruginosa 15% Carbapenemi

Enterococcus faecalis 1% Glicopeptidi

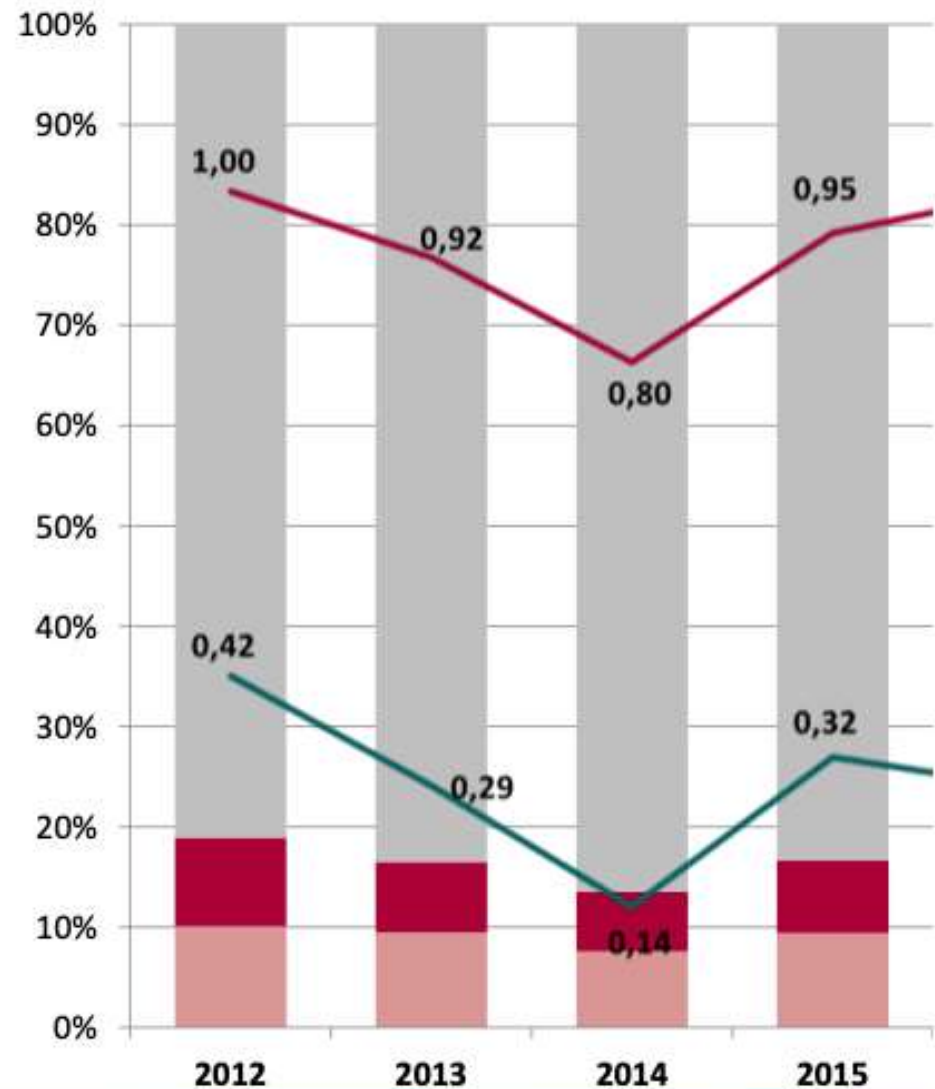
10.722 ospiti

Dati Emilia-Romagna 2008



INCIDENCE OF CPE COLONIZATION AND BSI

■ CPE -
■ CPE+ acquired during hospitalization
■ CPE+ on admission



ALMA MATER STUDIORUM - UNIVERSITÀ DI BOLOGNA

Conclusioni

1. Consumo discretamente elevato di antibiotici
2. Igiene delle mani bassa
3. Capacità di intervento non tempestiva

Coordinated approach needed

“Although improvements within independent facilities are necessary, they might not be sufficient to reduce spread” *CDC, MMWR 2015*

FIGURE 2. Projected regional prevalence of carbapenem-resistant *Enterobacteriaceae* (CRE) over a 5-year period under three different intervention scenarios — 10-facility model, United States*

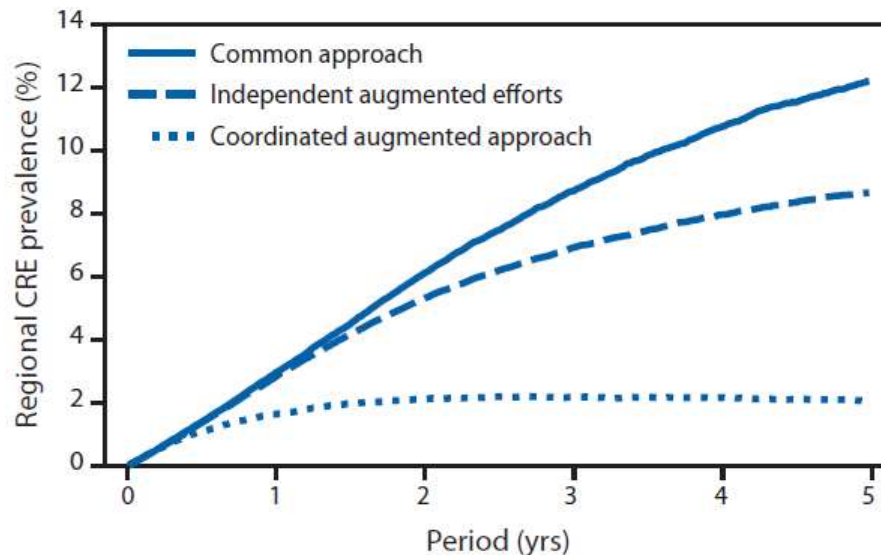
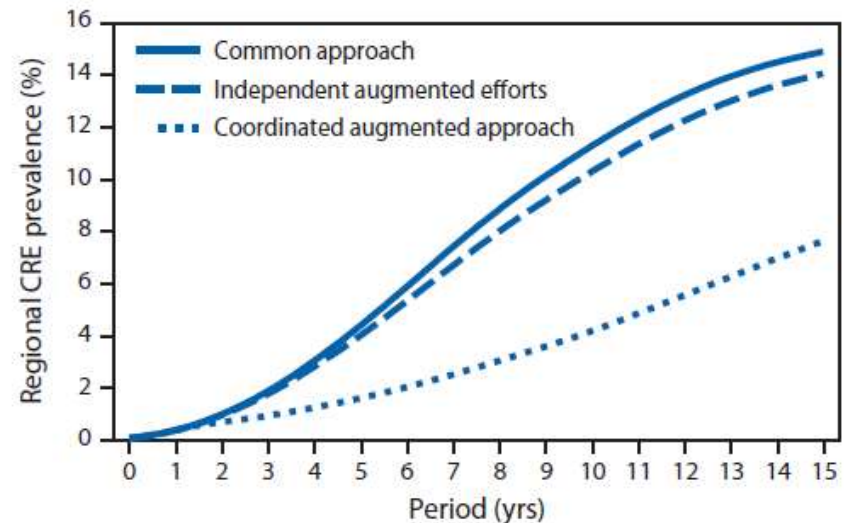
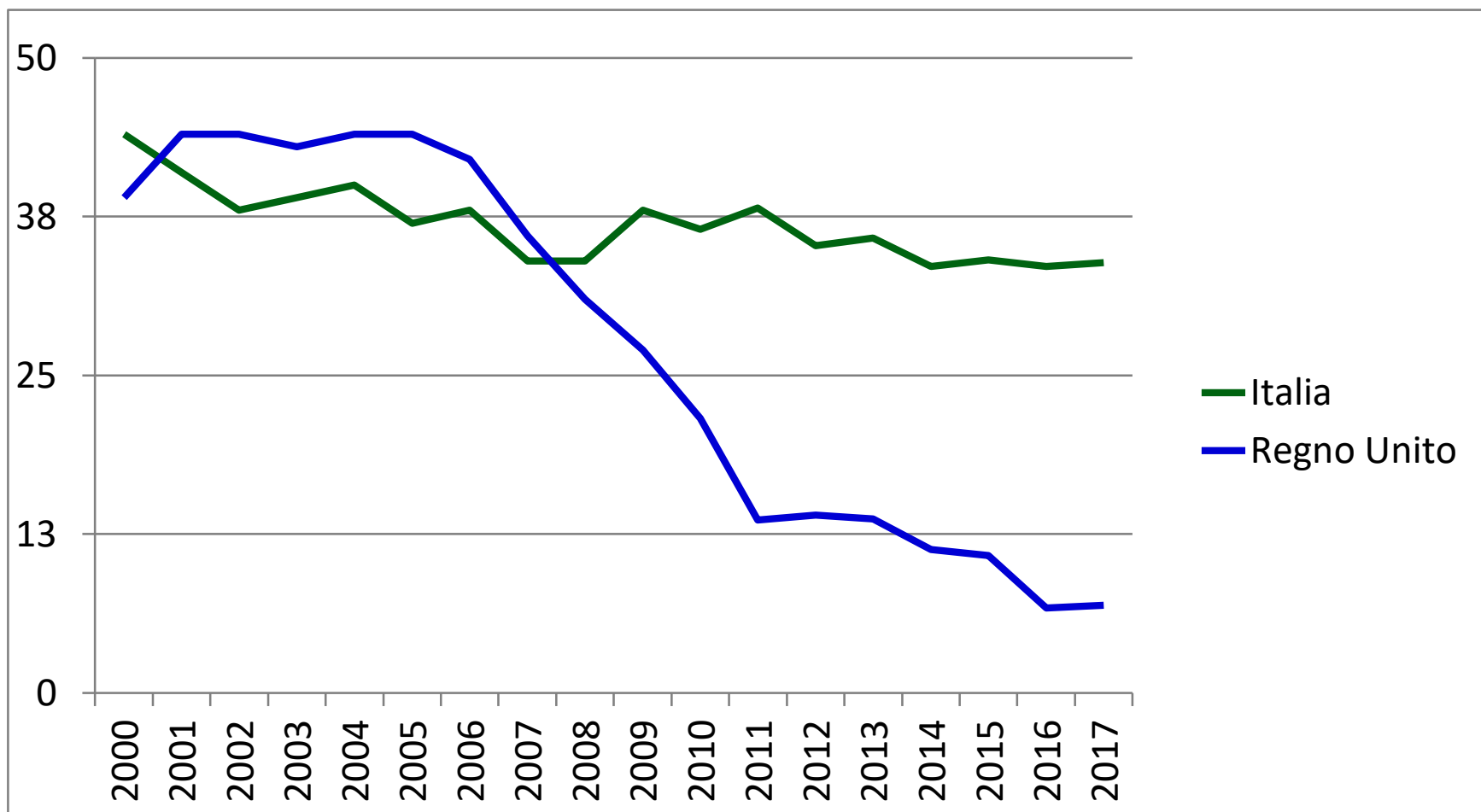


FIGURE 3. Projected countywide prevalence of carbapenem-resistant *Enterobacteriaceae* (CRE) over a 15-year period under three different intervention scenarios — 102-facility model, Orange County, California*



* Additional information available at <http://www.cdc.gov/drugresistance/resources/publications.html>. A video of the model simulations is available at <http://www.cdc.gov/drugresistance/resources/videos.html>.

MRSA % 2000 - 2017



Containment of a Country-wide Outbreak of Carbapenem-Resistant *Klebsiella pneumoniae* in Israeli Hospitals via a Nationally Implemented Intervention

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

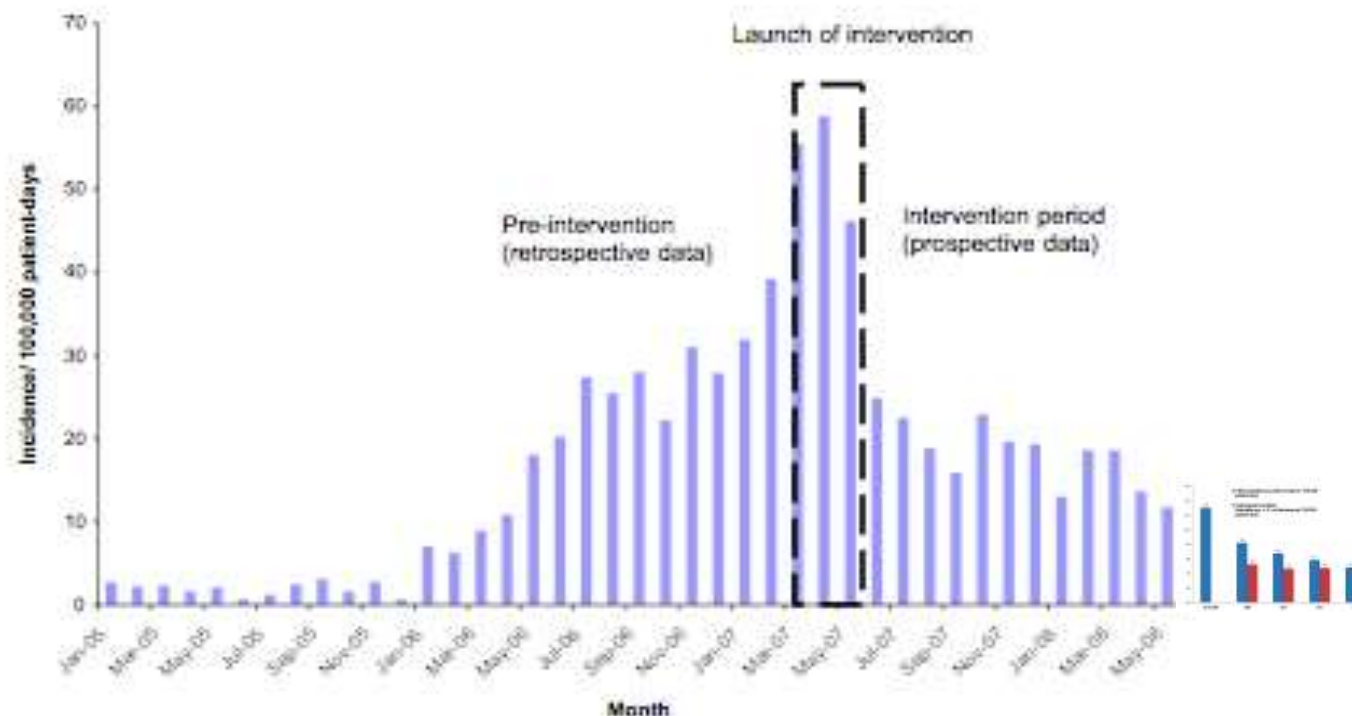
Mitchell J. Schwaber and Yehuda Carmeli

National Center for Infection Control, Tel Aviv, Israel

Mitchell J. Schwaber,¹ Boaz Lev,² Avi Israeli,² Ester Solter,¹ Gill Smollan,¹ Bina Rubinovitch,¹ Itamar Shalit,¹ Yehuda Carmeli,¹ and the Israel Carbapenem-Resistant Enterobacteriaceae Working Group^{*}

¹National Center for Infection Control, Israel Ministry of Health, Tel Aviv, and ²Israel Ministry of Health, Jerusalem, Israel

2007 – 2012: -91,3%



Cambio di mentalità

During conversations in Italy, ECDC often gained the impression that these high levels of AMR appear to be accepted by stakeholders throughout the healthcare system, as if they were an **unavoidable state of affairs**.

ECDC Country visit report 2017

Igiene delle mani



Il sanitario moderno

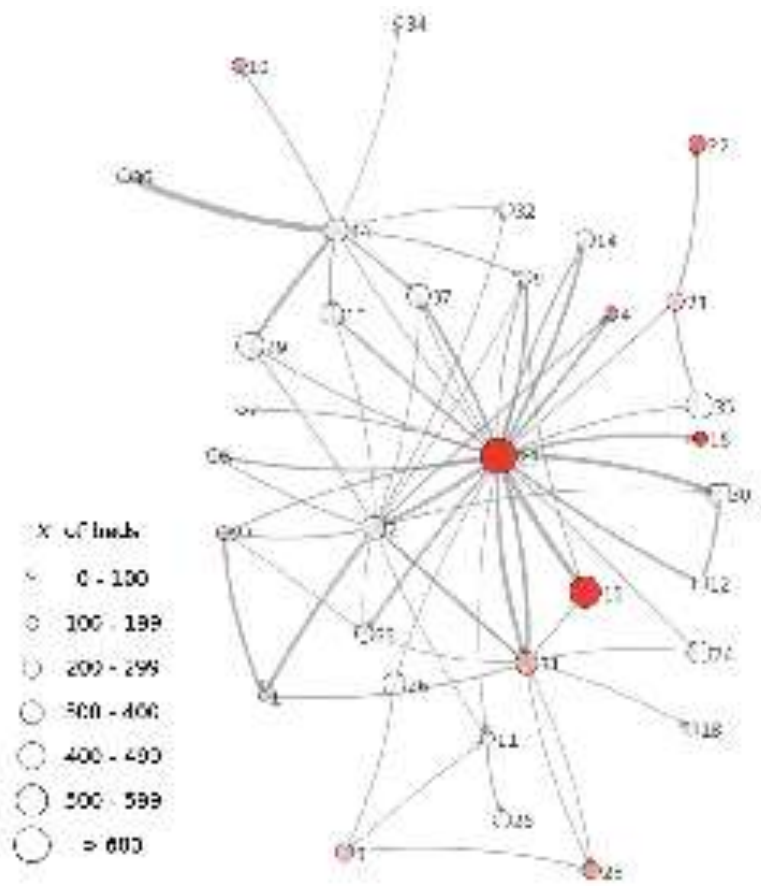


Acquisizione di metacompetenze

Infection prevention in a connected world: The case for a regional approach

Mariano Ciccolini^a, Tjibbe Donker^a, Robin Köck^b, Martin Mielke^c, Ron Hendrix^d, Annette Jurke^e, Janette Rahamat-Langendoen^a, Karsten Becker^f, Hubert G.M. Niesters^a, Hajo Grundmann^a, Alexander W. Friedrich^{a,*}

Epidemiologia di rete



Region	Centrality	Region	Centrality	Region	Centrality	Region	Centrality
1	18.53	12	1	13	120.57	14	1
2	1.68	15	2.9	16	1	17	1
3	56.02	18	0	19	1	20	1
4	117.82	21	101.1	22	1	23	1
5	12.18	24	127.84	25	52.5	26	1
6	16.89	27	11	28	95.68	29	1
7	0	30	12.21	31	1	32	1
8	128.17	33	102.89	34	1	35	1
9	0	36	21.57	37	62.13	38	1
10	90.71	39	21.9	40	1	41	1
11	0	42	121.24	43	1	-	-

Grazie



Grazie mille