ORDINE
MEDICI CHIRURGHI
E ODONTOIATRI
DELLA PROVINCIA
DI BRESCIA

COMMISSIONE CULTURA
Coordinatore: Dott. Germano Bettoncelli

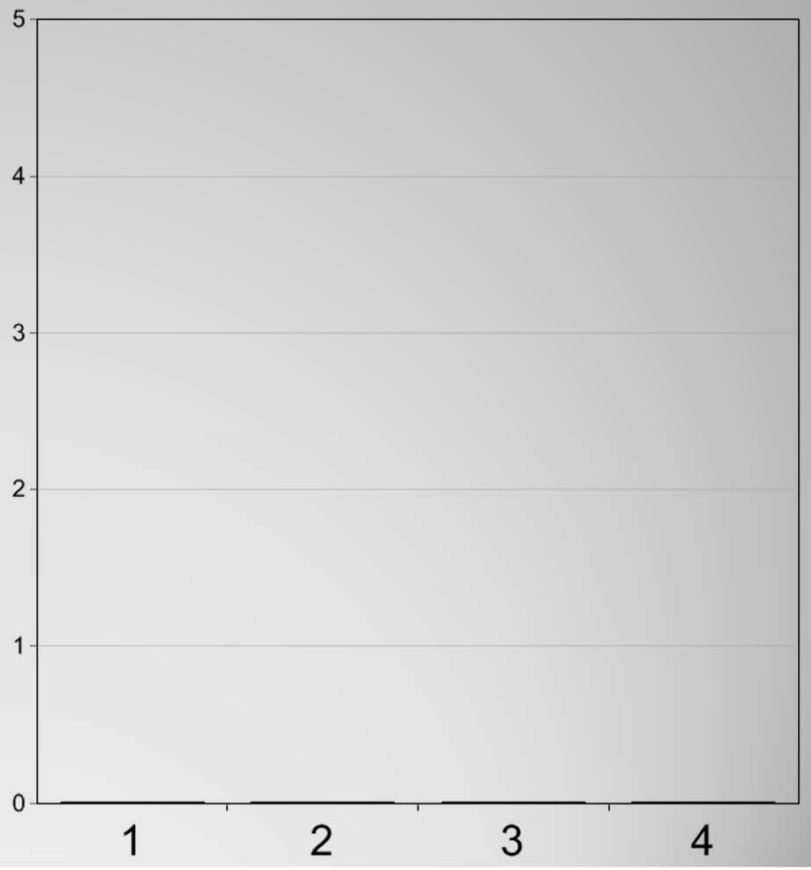
Corso di Aggiornamento
ANTIBIOTICI NEWS

La prescrizione degli antibiotici nella pratica clinica: conflitto paziente e medico

Germano Bettoncelli

Nella prescrizione di un antibiotico quale tra le seguenti rappresenta nella tua routine la maggiore criticità?

1. incertezza tra eziologia virale o batterica
2. pressioni del paziente per la prescrizione anche quando non indicato antibiotico
3. dubbi sull'aderenza del paziente a dosi e tempi di trattamento
4. fallimento terapeutico per resistenza all'antibiotico



OSSERVATORIO NAZIONALE
SULLA SALUTE NELLE REGIONI ITALIANE

un progetto di UNIVERSITÀ CATTOLICA del Sacro Cuore

Istituto di Sanità Pubblica - Sezione di Igiene

Rapporto Osservasalute 2016

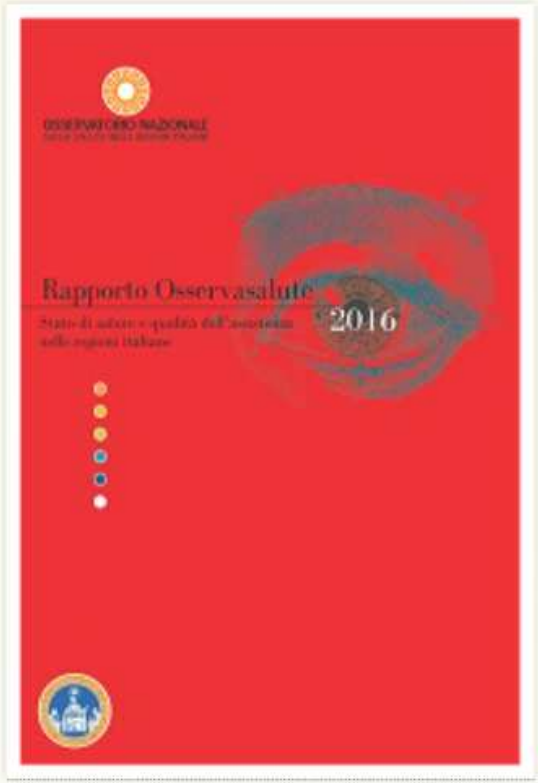


Tabella 6 - *Tasso (specifico e standardizzato per 10.000) di mortalità per alcune malattie infettive e parassitarie. Maschi - Anni 2003-2014*

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Totale	**1,6**	**1,5**	**1,5**	**1,6**	**1,7**	**1,7**	**1,8**	**1,8**	**2,0**	**2,3**	**2,3**	**2,3**

Tabella 7 - *Tasso (specifico e standardizzato per 10.000) di mortalità per alcune malattie infettive e parassitarie. Femmine - Anni 2003-2014*

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Totale	**1,0**	**0,9**	**1,0**	**1,0**	**1,0**	**1,1**	**1,2**	**1,2**	**1,4**	**1,5**	**1,5**	**1,6**

Tabella 8 - *Tasso (standardizzato per 10.000) di mortalità nella popolazione di età 75 anni ed oltre per alcune malattie infettive e parassitarie. Maschi Anni 2003-2014*

Alcune malattie infettive e parassitarie	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Alcune malattie infettive e parassitarie di cui	8,1	7,6	8,2	8,5	9,6	10,4	11,5	12,0	13,9	15,6	15,8	16,5
- Tubercolosi	*0,9*	*0,8*	*0,7*	*0,7*	*0,7*	*0,8*	*0,7*	*0,7*	*0,7*	*0,6*	*0,4*	*0,4*
- Acquired Immune Deficiency Syndrome-AIDS (malattia da Human Immunodeficiency Virus-HIV)	*0,1*	*0,1*	*0,1*	*0,1*	*0,1*	*0,1*	*0,1*	*0,1*	*0,1*	*0,1*	*0,1*	*0,1*
- Epatite virale	*2,0*	*2,4*	*2,3*	*2,3*	*2,7*	*2,5*	*2,5*	*2,6*	*2,8*	*2,8*	*2,5*	*2,4*
Altre malattie infettive e parassitarie di cui	5,1	4,3	5,1	5,4	6,2	7,0	8,3	8,6	10,3	12,1	12,8	13,6
- Setticemia	*4,0*	*3,4*	*4,0*	*4,3*	*4,9*	*5,7*	*6,5*	*6,9*	*8,4*	*10,1*	*10,7*	*11,3*

Tabella 8 - Tasso (standardizzato per 10.000) di mortalità nella popolazione di età 75 anni ed oltre per alcune malattie infettive e parassitarie. Femmine Anni 2003-2014

Alcune malattie infettive e parassitarie	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Alcune malattie infettive e parassitarie di cui	6,7	5,6	6,4	6,8	7,1	7,9	8,3	9,4	11,0	12,1	12,5	12,5
- Tubercolosi	*0,4*	*0,3*	*0,4*	*0,4*	*0,3*	*0,3*	*0,3*	*0,3*	*0,3*	*0,3*	*0,2*	*0,2*
- Acquired Immune Deficiency Syndrome-AIDS (malattia da Human Immunodeficiency Virus-HIV)	*0,0*	*0,0*	*0,0*	*0,0*	*0,0*	*0,0*	*0,0*	*0,0*	*0,0*	*0,0*	*0,0*	*0,0*
- Epatite virale	*2,0*	*2,0*	*2,1*	*2,2*	*2,4*	*2,6*	*2,5*	*2,6*	*3,0*	*2,9*	*2,8*	*2,6*
Altre malattie infettive e parassitarie di cui	4,2	3,3	3,9	4,2	4,4	4,9	5,5	6,5	7,7	8,9	9,5	9,6
- Setticemia	*3,3*	*2,5*	*2,9*	*3,4*	*3,5*	*3,8*	*4,3*	*5,1*	*6,3*	*7,2*	*7,8*	*7,9*

Fonte dei dati: Istat. “Indagine sui decessi e cause di morte”. Anni vari.

Mortalità in aumento

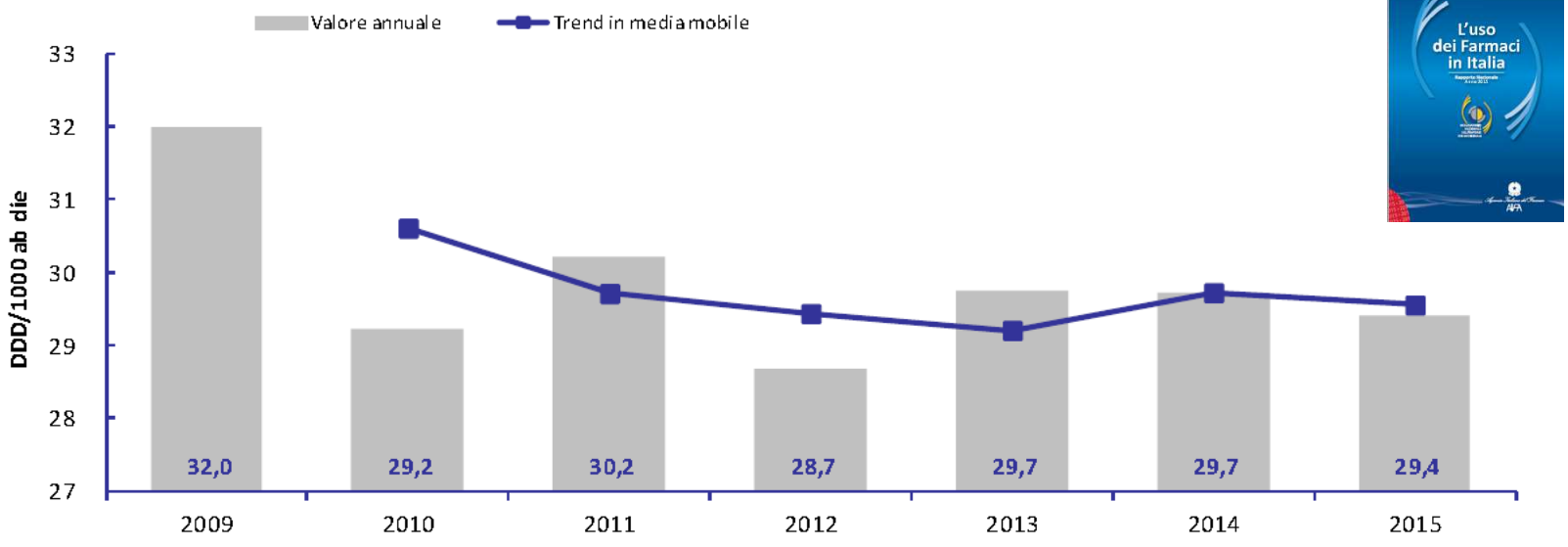
Nel 2015 i farmaci antomicrobici generali per uso sistemico hanno rappresentato la **prima categoria in termini di spesa** (era la quinta nel 2014) e **l'undicesima in termini di consumo**, con 4.402 milioni di euro e 37,8 DDD / 1000 abitanti die.

L'uso dei farmaci in Italia
Rapporto Nazionale
Anno 2015

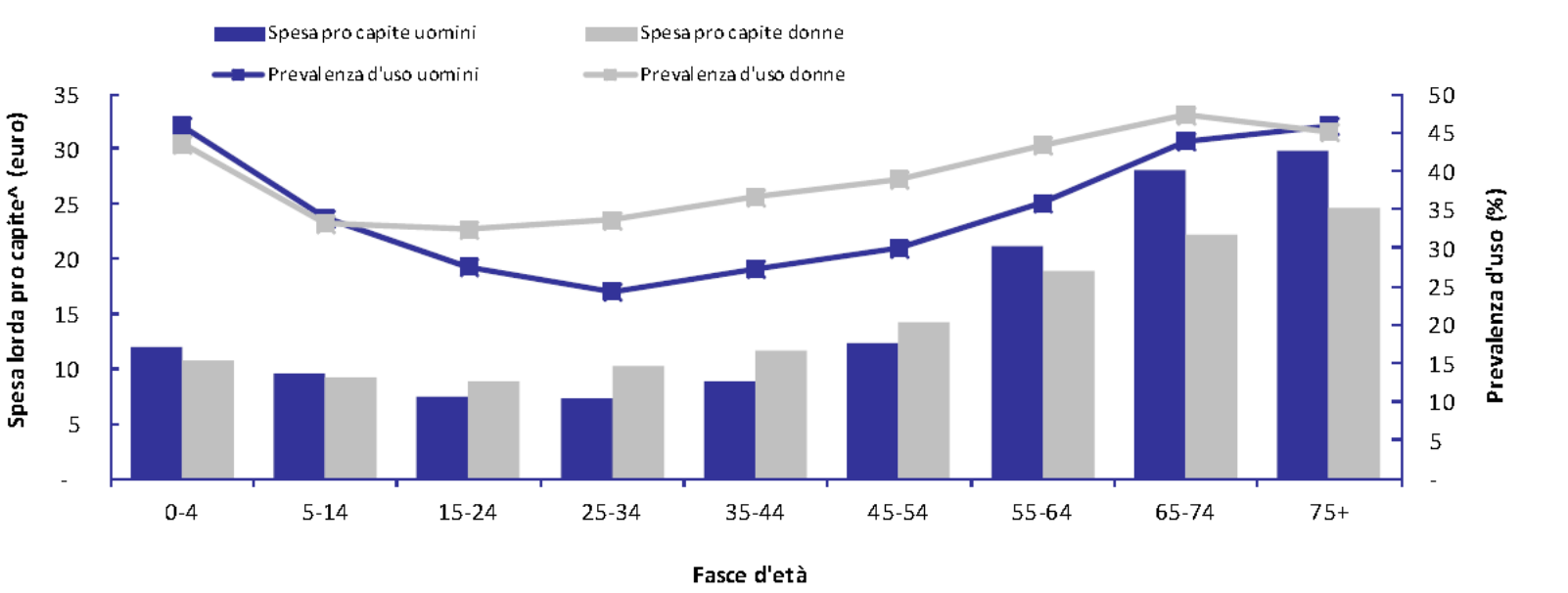
PRINCIPALI INDICI DI SPESA, DI CONSUMO E DI ESPOSIZIONE
ANTIMICROBICI GENERALI PER USO SISTEMICO

Spesa pubblica* in milioni di € (% sul totale)	**4.154,0**	**(18,8)**
Δ % 2015/2014		68,8
Range regionale spesa lorda pro capite (€):	44,2	88,7
DDD/1000 ab die (% sul totale)	**29,4**	**(2,3)**
Δ % 2015/2014		-1,0
Range regionale DDD/1000 ab die:	21,7	38,6

*Spesa convenzionata e spesa per farmaci acquistati dalle strutture sanitarie pubbliche


Valore annuale
Trend in media mobile
DDD/1000 ab die
33
32
31
30
29
28
27
32,0
29,2
30,2
28,7
29,7
29,7
29,4
2009
2010
2011
2012
2013
2014
2015

L'uso
dei Farmaci
in Italia

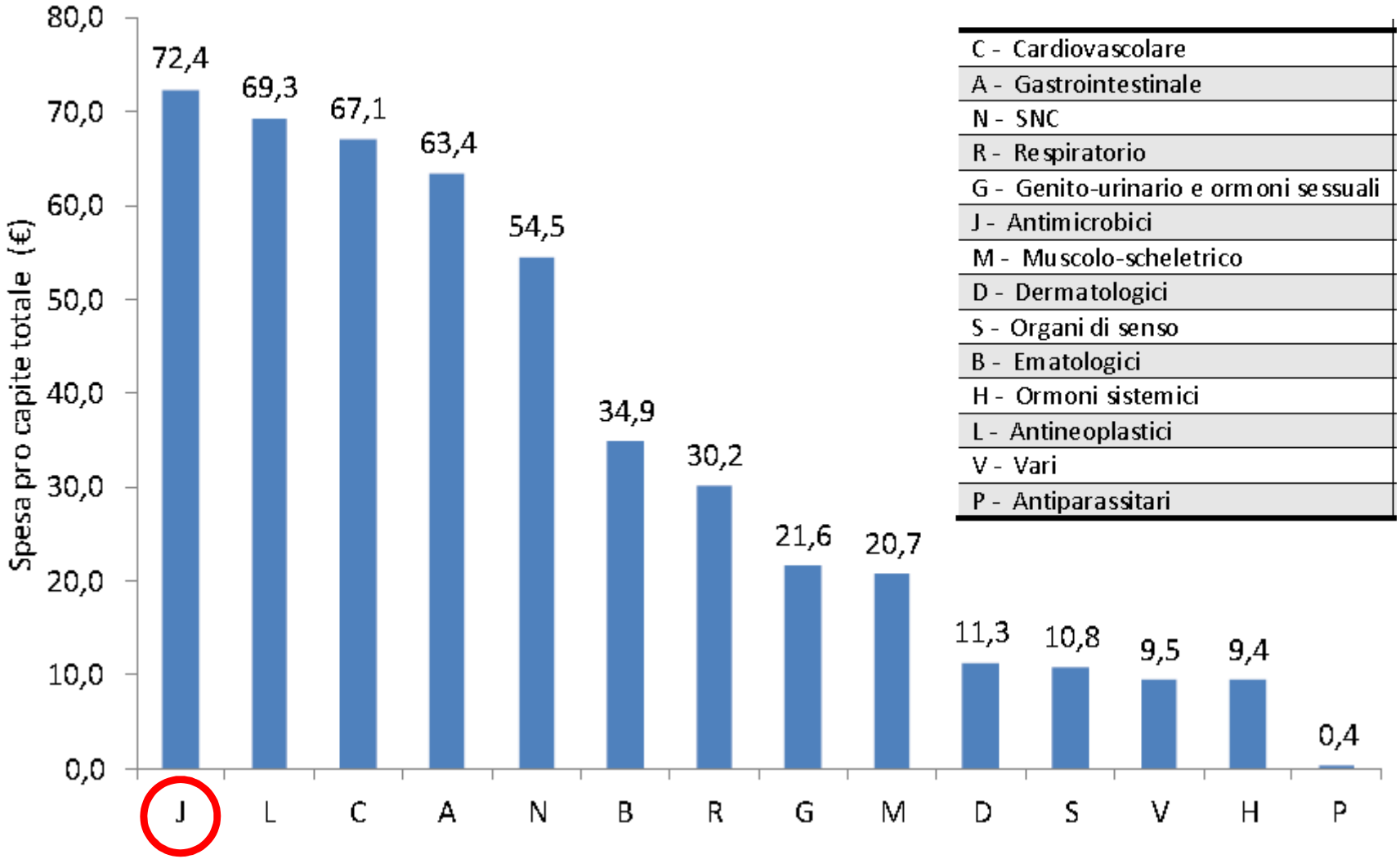

Spesa pro capite uomini
Spesa pro capite donne
Prevalenza d'uso uomini
Prevalenza d'uso donne
Spesa lorda pro capite^ (euro)
35
30
25
20
15
10
5
-
50
45
40
35
30
25
20
15
10
5
-
Prevalenza d'uso (%)
0-4
5-14
15-24
25-34
35-44
45-54
55-64
65-74
75+
Fasce d'età

Composizione della spesa farmaceutica 2015 per I livello ATC e classe di rimborsabilità (ordine decrescente per spesa totale)

Categoria Terapeutica	Classe A-SSN^		Acquisto privato di classe A		Classe C con ricetta		Automedicazione SOP e OTC		Strutture Pubbliche		Totale
	€°	%*	€°	%*	€°	%*	€°	%*	€°	%*	€°
J- Antimicrobici	862	19,6	167	3,8	82	1,9			3.292	74,8	4.402
L- Antineoplastici e immunomodulatori	253	6,0	27	0,6	11	0,3			3.923	93,1	4.213
C- Cardiovascolare	3.384	83,0	264	6,5	46	1,1	148	3,6	237	5,8	4.079
A-Gastrointestinale e metabolismo	2.004	52,0	287	7,4	245	6,4	657	17,0	664	17,2	3.856
N- Sistema nervoso	1.375	41,5	173	5,2	987	29,8	269	8,1	508	15,3	3.313
B- Sangue e organi emopoietici	527	24,9	105	4,9	92	4,3	5	0,2	1.393	65,6	2.122
R- Respiratorio	1.045	56,8	142	7,7	173	9,4	399	21,7	79	4,3	1.838
G- Genito-urinario e ormoni sessuali	427	32,6	39	3,0	641	48,9	82	6,3	121	9,2	1.311
M- Muscolo-scheletrico	423	33,6	170	13,5	188	15,0	413	32,9	63	5,0	1.257
D- Dermatologici	57	8,4	27	4,0	267	39,0	312	45,6	21	3,1	684
S- Organi di senso	228	34,8	20	3,1	196	29,9	87	13,3	124	18,9	656
V- Vari	65	11,2	5	0,9	36	6,3	0	0,0	473	81,6	580
H- Ormoni sistemici	177	31,1	57	10,0	31	5,4			304	53,5	569
P- Antiparassitari	12	57,4	4	16,8	2	10,2	2	8,4	2	7,1	22
TOTALE	**10.840**	**37,5**	**1.487**	**5,1**	**2.997**	**10,4**	**2.375**	**8,2**	**11.203**	**38,8**	**28.902**

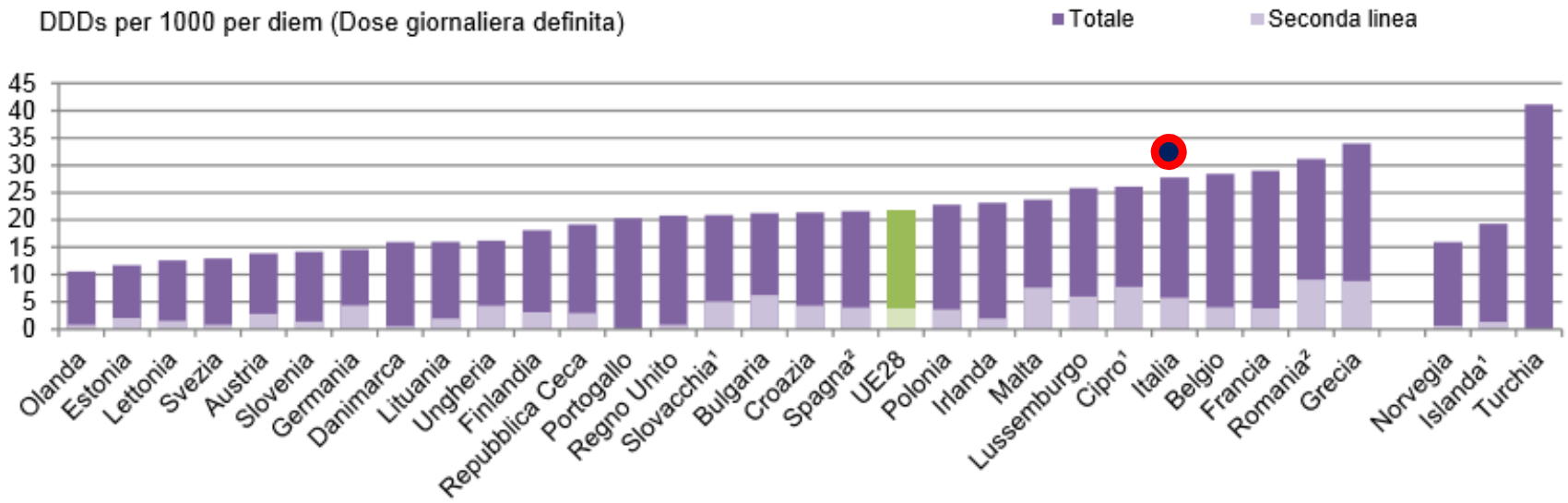
^Spesa di fascia A al netto della fascia C rimborsata per i titolari di pensione di guerra diretta vitalizia ai sensi della Legge n. 203 del 19 luglio 2000 (23 milioni di euro) ° Lorda in milioni di euro; *Calcolata sulla categoria. Fonte: OsMed, Tracciabilità del farmaco ed elaborazione OsMed su dati IMS Health

Spesa farmaceutica totale procapite 2015 per I livello ATC



BETTER POLICIES FOR BETTER LIVES

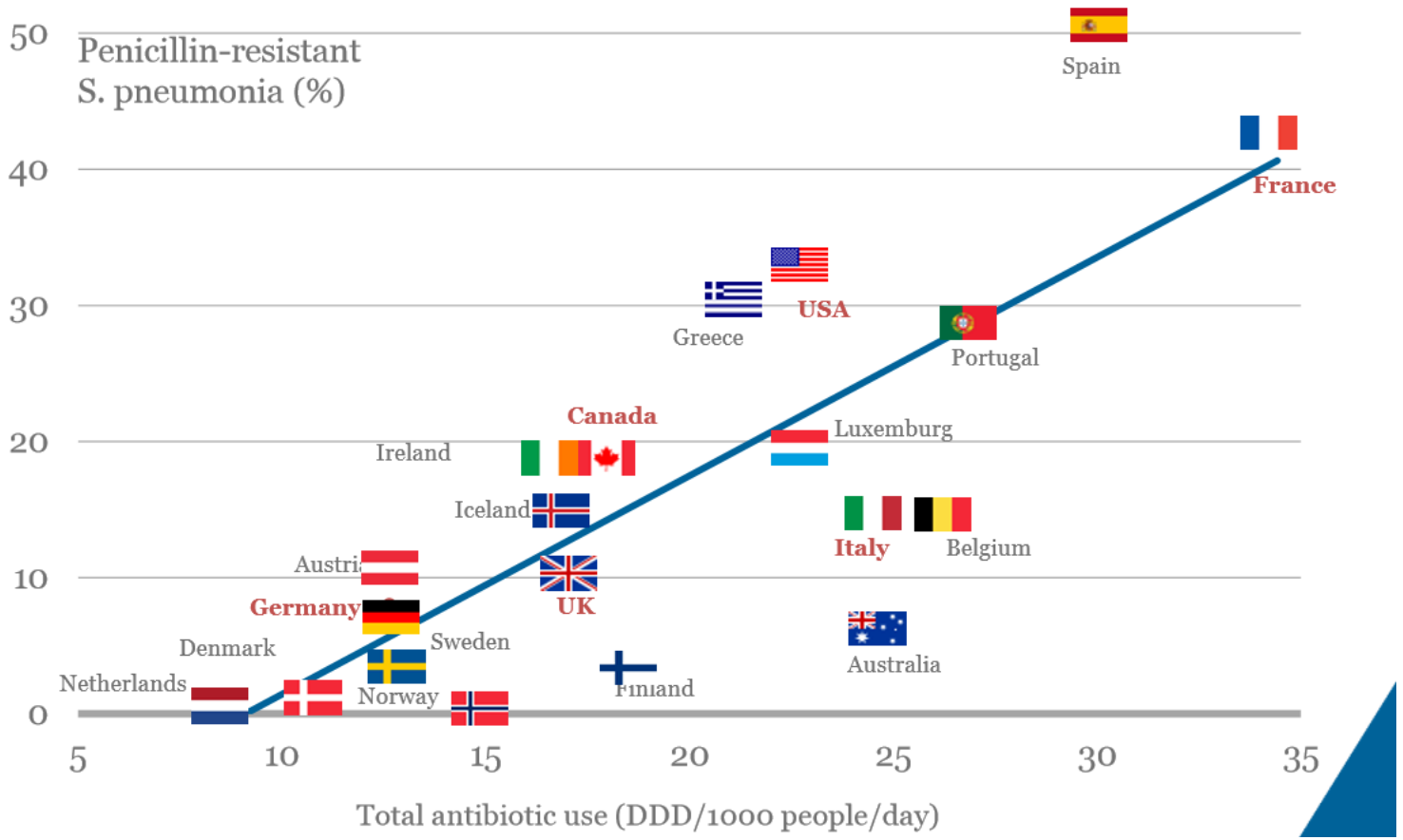
Volume totale di antibiotici prescritti, 2014



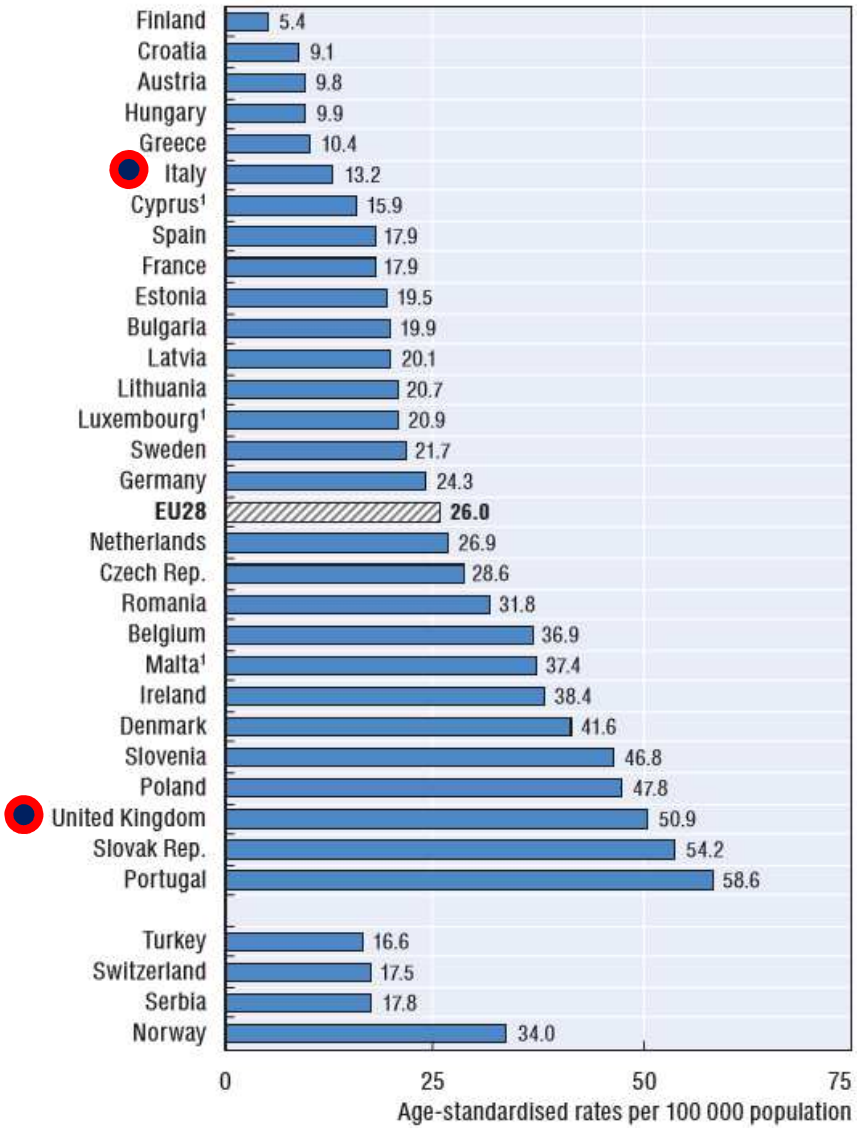
1. I dati si riferiscono a tutti i settori (non solo assistenza primaria).
2. Dati sui rimborsi (escludendo consumo senza ricetta medica e altri antibiotici non rimborsabili).

Fonte: European Centre for Disease Prevention and Control 2016; OECD Health Statistics 2016.

Higher Use of Antibiotics Drives Resistance



Pneumonia mortality rates, 2013 (or nearest year)



1. Three-year average (2011-13).

Source: Eurostat Database.

StatLink http://dx.doi.org/10.1787/888933428650

Prevalenza di pazienti con patologie infettive nella popolazione assistibile

	Influenza	Raffreddore comune	Laringotracheite	Faringite Tonsillite	Bronchite acuta°	Cistite non complicata ‡
	Prevalenza (%)					
ANALISI GEOGRAFICA						
Nord	3,2	0,8	1,5	2,4	1,3	2,9
Centro	2,5	0,7	1,4	2,6	1,1	3,7
Sud e isole	1,6	0,7	1,9	2,5	1,1	4,7
ANALISI PER GENERE						
Maschi	2,5	0,7	1,2	2,2	1,1	
Femmine	2,5	0,8	2,0	2,7	1,3	3,0
ANALISI PER ETA'						
≤45	2,7	0,7	1,3	3,1	0,7	2,3
46-65	3,2	0,8	1,9	2,2	1,3	2,9
66-75	1,3	0,8	2,0	1,9	1,9	
>75	0,9	0,6	1,5	1,3	2,1	
Totale	2,5	0,7	1,6	2,5	1,2	3,7

°senza diagnosi di BPCO/asma registrata nel periodo precedente alla diagnosi di bronchite acuta

‡ solo donne età <65 anni e senza diabete mellito tipo 2

Prevalenza d'uso inappropriato di antibiotici tra i soggetti affetti da patologie infettive

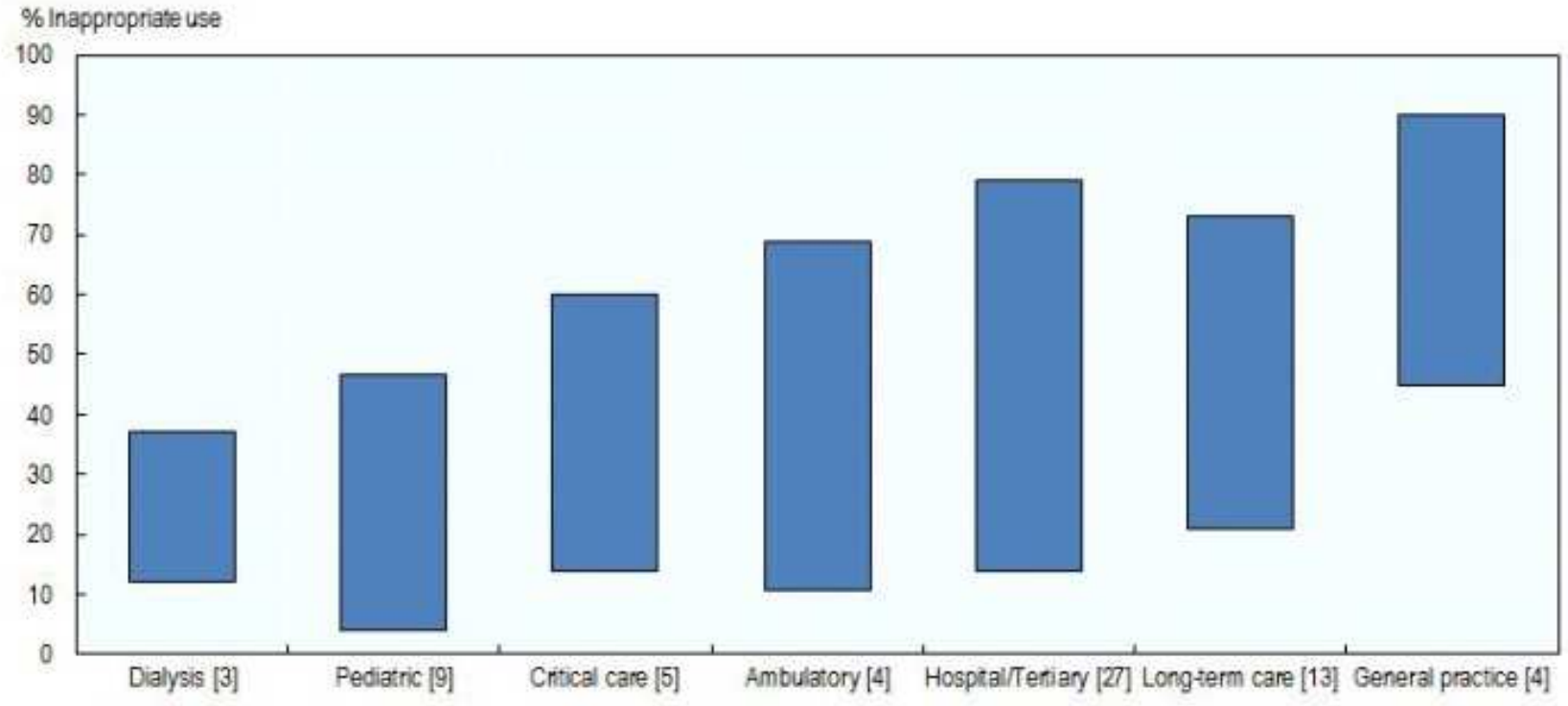
	Antibiotici (qualsiasi categoria)	FLU, CEF e MAC	CEF-I e FLU	FLU
	Prevalenza d'uso inappropriato (%)			
	Influenza, raffreddore, laringotracheite acuta	*Faringite e Tonsillite acuta*	*Bronchite acuta* °	*Cistite non complicata* *
ANALISI GEOGRAFICA				
Nord	31,6	29,1	23,3	40,2
Centro	39,2	31,4	35,3	42,2
Sud e isole	44,9	34,1	49,0	41,3
ANALISI PER GENERE				
Maschi	35,3	30,3	34,9	
Femmine	38,6	32,2	33,8	41,0
ANALISI PER ETA'				
≤45	33,0	30,7	23,9	38,7
46-65	35,8	31,3	32,4	43,5
66-75	51,4	33,7	39,0	
>75	49,1	34,1	45,3	
Totale	37,1	31,4	34,3	41,0

; CEF: cefalosporine; CEF-I: cefalosporine iniettive; MAC: macrolidi; FLU: fluorochinoloni

°senza diagnosi di BPCO/asma registrata nel periodo precedente alla diagnosi di bronchite acuta

* solo donne età <65 anni e senza diabete mellito tipo 2

Indici di inappropriatezza

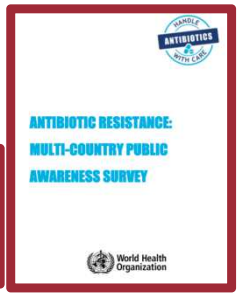


A proposito di appropriatezza (Exploring patient and doctor-related variables associated withantibiotic prescribing for respiratory infections in primary care **Eur J Clin Pharmacol** (2003) 59: 651–657 *G.Mazzaglia, A P.Caputi, A. Rossi, G. Bettoncelli, et Al.)*

- Results: On 67,761 cases of ARIs, antibiotics were prescribed in 63.2%, varying from 80.9% for acute bronchitis to 43.9% for croup, influenza and common cold. Significant associations with antibiotic use were found for geographic location and number of patients under care. The use of diagnostic tests significantly lowered the risk.
- In conclusion, antibiotics in Italy are still widely used for inappropriate indications and their use is also influenced by the physicians' characteristics, particularly the cultural environment in which they practice.

World Health Organization

WHO multi-country survey reveals widespread public misunderstanding about antibiotic resistance - 2015



Some common misconceptions revealed by the survey include:

•Three quarters (76%) of respondents think that antibiotic resistance happens when the body becomes resistant to antibiotics. In fact bacteria—not humans or animals—become resistant to antibiotics and their spread causes hard-to-treat infections.

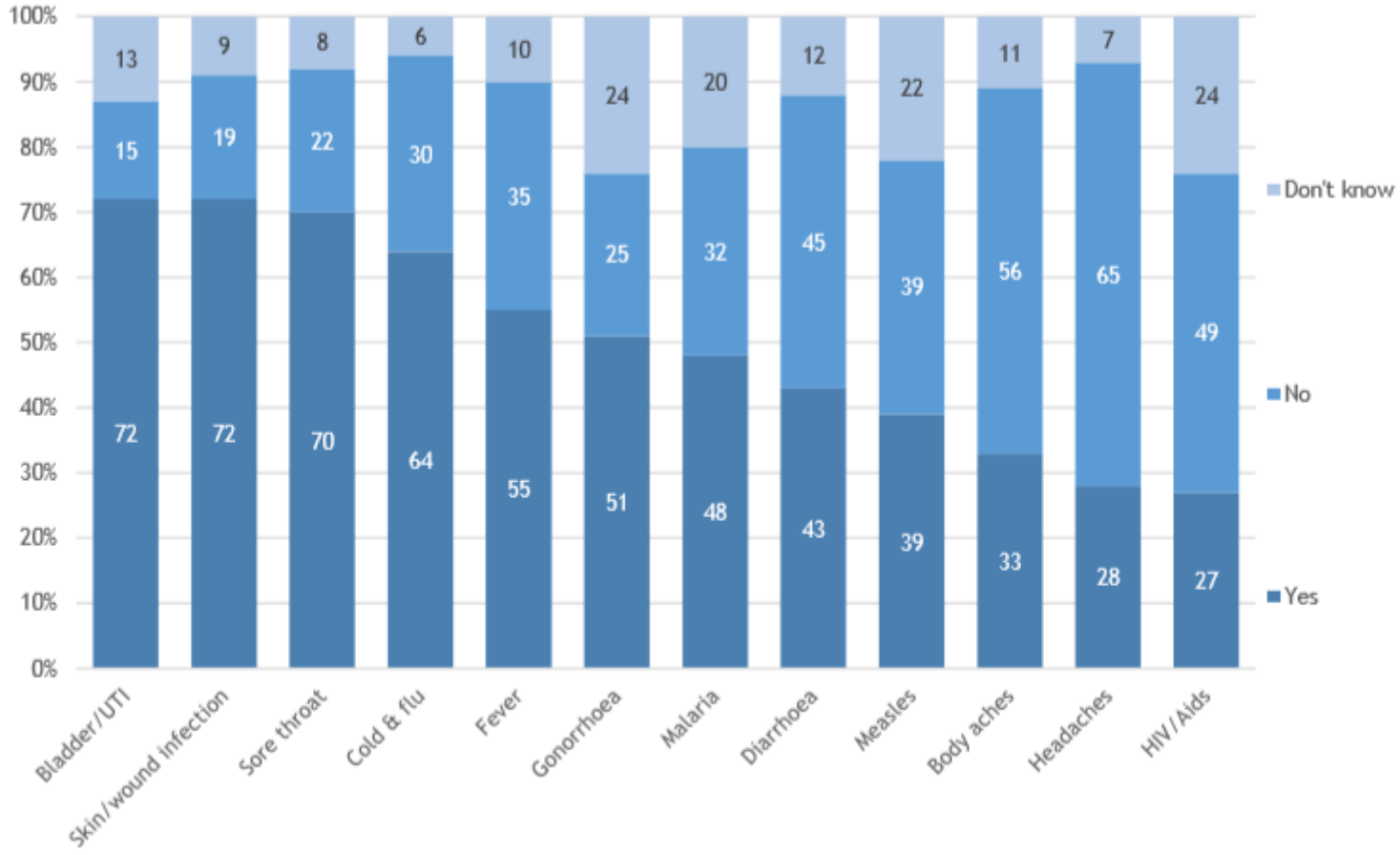
•Two thirds (66%) of respondents believe that individuals are not at risk of a drug-resistant infection if they personally take their antibiotics as prescribed.

• Nearly half (44%) of people surveyed think antibiotic resistance is only a problem for people who take antibiotics regularly. In fact, anyone, of any age, in any country can get an antibiotic-resistant infection.

• More than half (57%) of respondents feel there is not much they can do to stop antibiotic resistance,

• Nearly two thirds (64%) believe medical experts will solve the problem before it becomes too serious.

• Another key finding of the survey was that almost three quarters (73%) of respondents say farmers should give fewer antibiotics to food-producing animals.



Percentage of responses from all respondents to "Do you think these conditions can be treated with antibiotics?"

OECD HEALTH POLICY OVERVIEW

Health policy in Italy

BETTER POLICIES FOR BETTER LIVES

November 2015 www.oecd.org/health

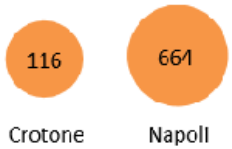
Italy's indicators of health system outcomes and quality are consistently good. This is despite levels of health spending below other high-income OECD countries. However, Italy is lagging behind in some areas, like long-term care and prevention of non-communicable diseases. Based on available OECD analyses, further progress is called for to promote appropriateness of care, address geographic imbalances in health care use and prevent the spread of risk factors including obesity and alcohol consumption among children.

Promote appropriateness of care and reduce regional variation

Large variation in activity, outcomes and health care quality are found across Regions and Autonomous Provinces (R&AP)

Geographical variation in health care might suggest that unnecessary care is being delivered in areas of high activity, or that there is unmet need in regions of low activity. Such variation in activity and outcomes across R&AP is both inefficient and inequitable.

Caesarean section rates (per 1000 live births)



Doctors in Italy prescribe too many antibiotics: Italy reports the 5th highest volumes of antibiotics prescribed

High volume of antibiotics prescribed is highly correlated with resistant bacterial strains, and is a sign of poor health care quality in the primary care sector.

Volumes of antibiotics consumption in 2013 (DDDs per 1000 population)

What can be done?

- Ensure more consistent application of national quality initiatives at regional level.
- Support Regions and Autonomous Provinces with weaker infrastructure and reduced capacity to deliver care of equal quality to the best performing areas.
- Strengthen accountability through the use of performance metrics in contracting.
- Better use of financial resources and incentives.
- Ensure that ongoing efforts to contain health system spending do not subsume health care quality as a fundamental governance principle.
- Implement stewardship programmes to educate healthcare personnel as well as awareness campaigns.
- Enforce early detection of resistant infections and enhance hospital sanitation.
- Develop new ways of paying for new antibiotics which do not encourage higher antibiotic sales.

To read more about our work:

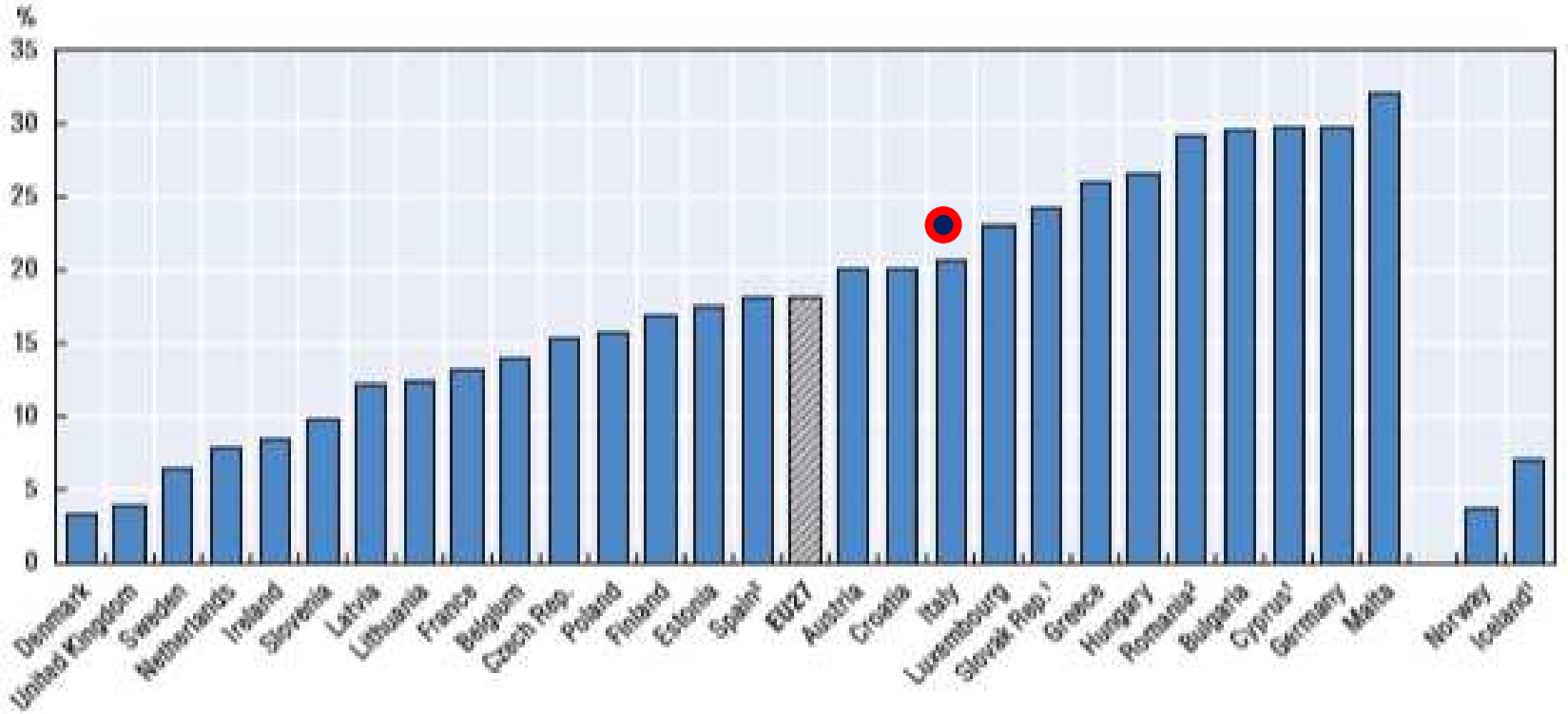
Geographic Variations in Health Care - What Do We Know and What Can Be Done to Improve Health System Performance? (2014)

Health at a Glance 2015

www.oecd.org/health/health-expenditure.htm

www.oecd.org/els/health-systems/Antimicrobial-Resistance-in-G7-Countries-and-Beyond.pdf

Second-line antibiotics (quinolones and cephalosporins) as a proportion of all antibiotics prescribed in primary care, 2014



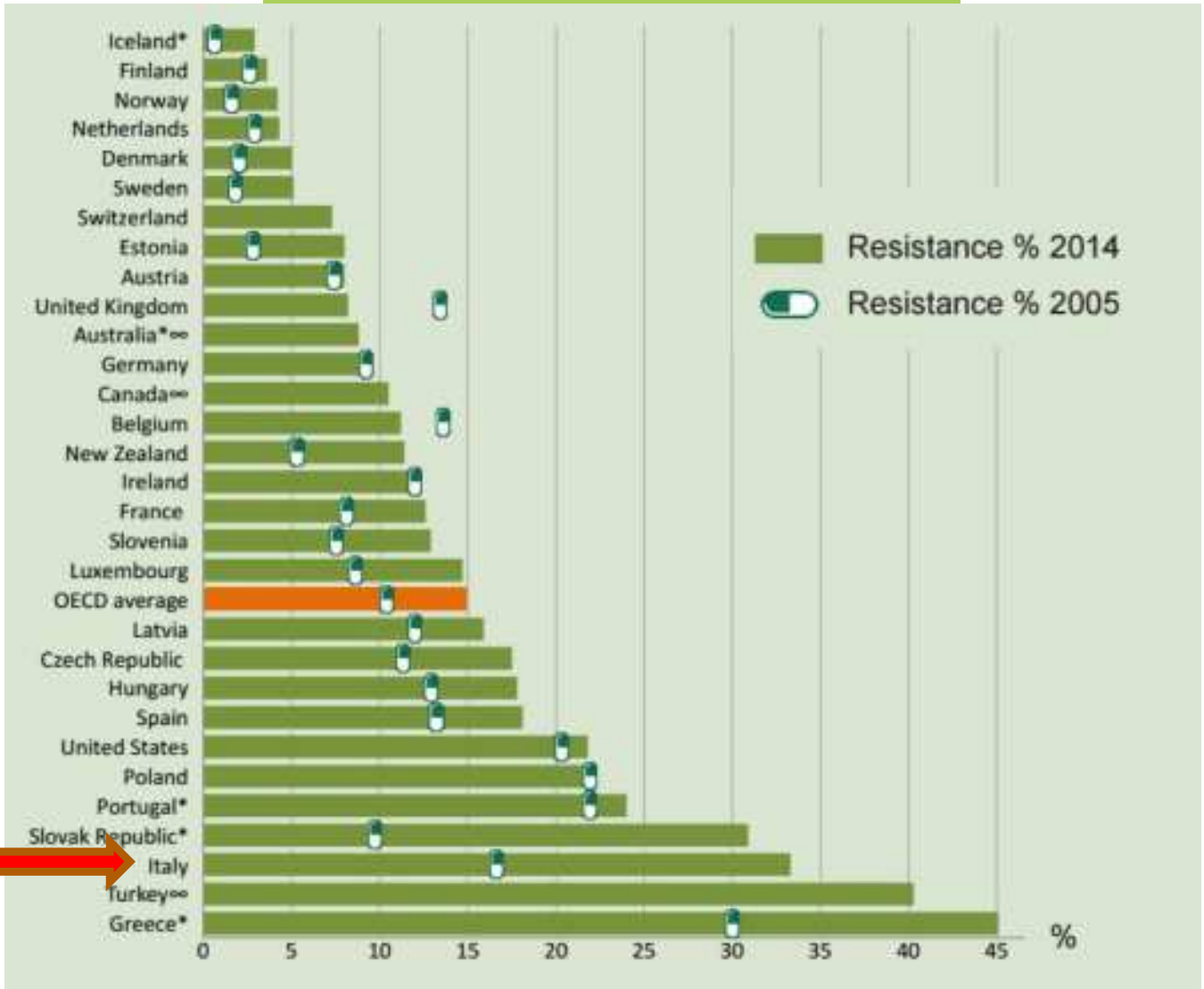
1. Data refer to all sectors (not only primary care).
2. Reimbursement data, i.e. not including consumption without a prescription and other non-reimbursed courses.

Source: European Centre for Disease Prevention and Control (2016).

StatLink http://dx.doi.org/10.1787/888933428506

Trends across OECD countries

Antibiotic resistance is growing




CHE FARE?

Identificare i batteri responsabili?

Disease Course of Lower Respiratory Tract Infection With a Bacterial Cause
Jolien Teepe, et al. *March/April 2017; 15 (2)*

CONCLUSIONS

Patients with acute bacterial LRTI have a slightly worse course of disease when compared with those without an identified bacterial cause, but the relevance of this difference is not meaningful.

Cochrane Library

Cochrane Database of Systematic Reviews

Utilizzare di più i test rapidi?

Efficacy and safety of rapid tests to guide antibiotic prescriptions for sore throat (Protocol)

Cohen JF, Pauchard JY, Hjelm N, Cohen R, Chalumeau M

Non-selective strategy

Rapid test for all

Clinical decision rule combined with rapid test

Rapid test in selected patients based on a scoring system

Clinical decision rule without rapid test

Clinical scoring system only

Cochrane Database of Systematic Reviews
8 NOV 2016 DOI: 10.1002/14651858.CD012431

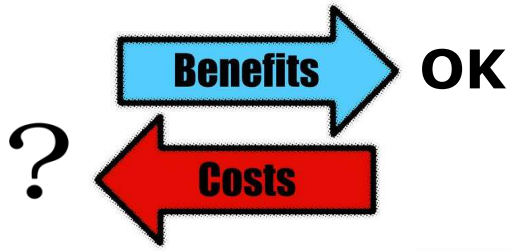
Cochrane Library

Cochrane Database of Systematic Reviews

Efficacy and safety of rapid tests to guide antibiotic prescriptions for sore throat (Protocol)

Cohen JF, Pauchard JY, Hjelm N, Cohen R, Chalumeau M

It becomes critical to implement strategies that allow limiting antibiotic prescriptions in ambulatory care to contain the emergence of antibiotic resistance.
Rapid tests could be effective to achieve this goal.



Cochrane Library

Cochrane Database of Systematic Reviews

Utilizzo di biomarkers come guida all'antibioticoterapia?

Biomarkers as point-of-care tests to guide prescription of antibiotics in patients with acute respiratory infections in primary care (Review)

Aabenhus R, Jensen JUS, Jørgensen KJ, Hróbjartsson A, Bjerrum L

Authors' conclusions

A point-of-care biomarker (e.g. **C-reactive protein**) to guide antibiotic treatment of ARIs in primary care can reduce antibiotic use, although the degree of reduction remains uncertain. **Used as an adjunct to a doctor's clinical examination this reduction in antibiotic use did not affect patient-reported outcomes**, **including recovery from and duration of illness**. However, a possible increase in hospitalisations is of concern. A more precise effect estimate is needed to assess the costs of the intervention and compare the use of a point-of-care biomarker to other antibiotic-saving strategies.

Cochrane Library

Utilizzo di biomarkers come guida all'antibioticoterapia?

Cochrane Database of Systematic Reviews

Procalcitonin to initiate or discontinue antibiotics in acute respiratory tract infections

Review | Intervention

Philipp Schuetz ✉, Beat Müller, Mirjam Christ-Crain, Daiana Stolz, Michael Tamm, Lila Bouadma, Charles E Luyt, Michel Wolff, Jean Chastre, Florence Tubach, Kristina B Kristoffersen, Olaf Burkhardt, Tobias Welte, Stefan Schroeder, Vandack Nobre, Long Wei, Neera Bhatnagar, Heiner C Bucher, Matthias Briel

First published: 12 September 2012

Editorial Group: Cochrane Acute Respiratory Infections Group

Authors' conclusions

Use of **procalcitonin** to guide **initiation and duration of antibiotic treatment** in patients with ARI was not associated with higher mortality rates or treatment failure. **Antibiotic consumption was significantly reduced across different clinical settings and ARI diagnoses**. Further high-quality research is needed to confirm the safety of this approach for non-European countries and patients in intensive care.

Cochrane Library

Dilazionare la prescrizione dll'antibioticoterapia?

Cochrane Database of Systematic Reviews

Delayed antibiotics for respiratory infections (Review)

Spurling GKP, Del Mar CB, Dooley L, Foxlee R, Farley R

Authors' conclusions

Most clinical outcomes show **no difference between strategies**. Delay slightly reduces patient satisfaction compared to immediate antibiotics (87% versus 92%) but not compared to none (87% versus 83%). In patients with respiratory infections where clinicians feel it is safe not to prescribe antibiotics immediately, **no antibiotics, with advice to return if symptoms do not resolve, is likely to result in the least antibiotic use**, while maintaining similar patient satisfaction and clinical outcomes to delayed antibiotics.

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Educare mediante informazioni scritte date al paziente?

Cochrane Acute Respiratory Infections Group

25 November 2016

Written information for patients (or parents of child patients) to reduce the use of antibiotics for acute upper respiratory tract infections in primary care

Authors' conclusions

Compared to usual care, moderate quality evidence from one study showed that **trained GPs providing written information to parents of children with acute URTIs in primary care, can reduce the number of antibiotics used by patients, without any negative impact on reconsultation rates or parental satisfaction with consultation**. Low quality evidence from two studies shows that, compared to usual care, GPs prescribe fewer antibiotics for acute URTIs but prescribe more antibiotics when written information is provided alongside prescribing feedback (compared to prescribing feedback alone). There was no evidence addressing resolution of patients' symptoms, patient knowledge about antibiotics for acute URTIs, or frequency of complications.

Cochrane Library

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O B J E C T I V E S: To assess whether interventions that aim to facilitate shared decision making increase or reduce antibiotic prescribing for ARIs in primary care. 1.100 GP e 492.000 paz.

Interventions to facilitate shared decision making to address antibiotic use for acute respiratory infections in primary care (Review)

Coxeter P, Del Mar CB, McGregor L, Beller EM, Hoffmann TC

Interventi di condivisione delle decisioni?

A U T H O R S ' C O N C L U S I O N S

Implications for practice

Interventions that aim to facilitate shared decision making reduce antibiotic prescribing for acute respiratory infections (ARIs) in primary care in the short term by a relative risk **reduction of almost 40%** compared with usual care **(29% vs 47%)**, without an increase in patient-initiated reconsultations for the same illness or a decrease in patient satisfaction.

There is insufficient evidence that the effect may be sustained in the medium to longer term (~ one to three years).

Ridurre a tutti i costi l'uso di antibiotici nelle RTIs è davvero senza rischi?

Safety of reduced antibiotic prescribing for self limiting respiratory tract infections in primary care: cohort study using electronic health records

Martin C Gulliford,[1] Michael V Moore,[2] Paul Little,[2] Alastair D Hay,[3] Robin Fox,[4] A Toby Prevost,[1] Dorota Juszczyk,[1] Judith Charlton,[1] Mark Ashworth[1]

Objective To determine whether the incidence of pneumonia, peritonsillar abscess, mastoiditis, empyema, meningitis, intracranial abscess, and Lemierre's syndrome is higher in general practices that prescribe fewer antibiotics for self limiting respiratory tract infections (RTIs).

Setting 610 UK general practices from the UK Clinical Practice

Conclusions General practices that adopt a policy to reduce antibiotic prescribing for RTIs **might expect a slight increase in the incidence of treatable pneumonia and peritonsillar abscess**. No increase is likely in mastoiditis, empyema, bacterial meningitis, intracranial abscess, or Lemierre's syndrome. Even a substantial reduction in antibiotic prescribing was predicted to be associated with only a small increase in numbers of cases observed overall, but caution might be required in subgroups at higher risk of pneumonia

Altre strategie

- Avvisi di posta elettronica di non prescrivere inutilmente
- Sistemi telematici che suggeriscono alternative
- Reminders da software elettronici
- Giustificazioni responsabili della prescrizione
- Incentivi economici
- Confronto tra pari

JAMA 2016

Altre strategie

Avvisi di posta elettronica di non prescrivere inutilmente

Sistemi telematici che suggeriscono alternative

Reminders da software elettronici

Incentivi economici

Giustificazioni da parte dei responsabili della prescrizione

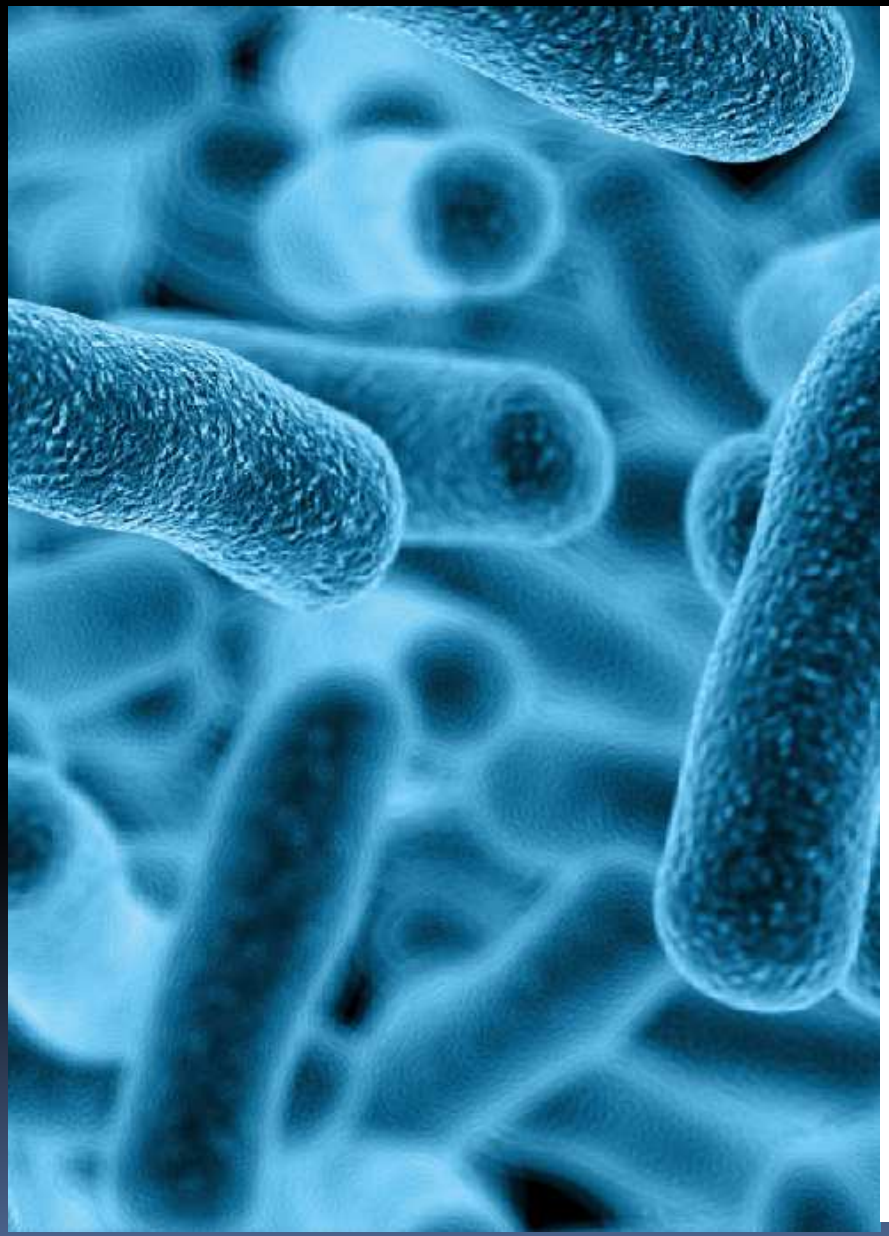
Confronto tra pari

JAMA 2016


Processo logico per la terapia ragionata
Dati epidemiologici sui possibili agenti
Dati clinici generali
Possibilità/limiti nello spettro antibiotico
Dati laboratoristici e strumentali orientativi
Diagnosi clinico/eziologica di localizzazione
Esigenze farmacologiche
(diffusibilità a livello dei vari organi)
Scelta definitiva dell'antibiotico

- **Desiderio di partecipare al processo decisionale**
- **Affermazione del proprio punto di vista**
- **Sovrastima del ruolo degli antibiotici**
- **Autocura**
- **Condizionamento ad opera del contesto famigliare e sociale**

Il rapporto paziente-medico



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