ÚS OPTIMITZAT DELS ANTIBIÒTICS

DES DE LA VESSANT DE L'ATENCIÓ PRIMÀRIA

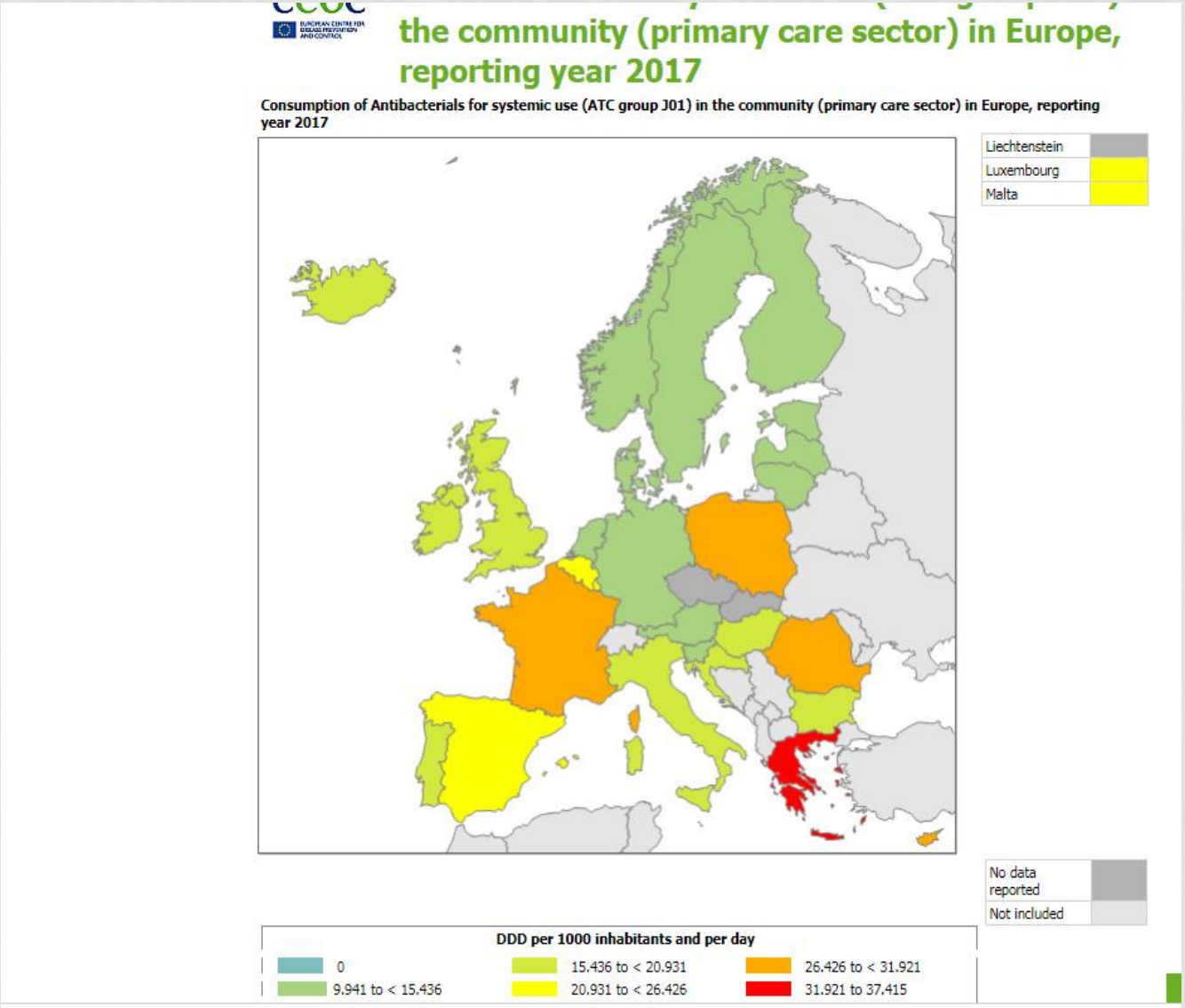
DR. JOSEP M COTS
METGE DE FAMÍLIA
CAP LA MARINA
PROFESSOR FACULTAT MEDICINA UB

ANTIBIÒTICS I ATENCIÓ PRIMÀRIA

- On som ?

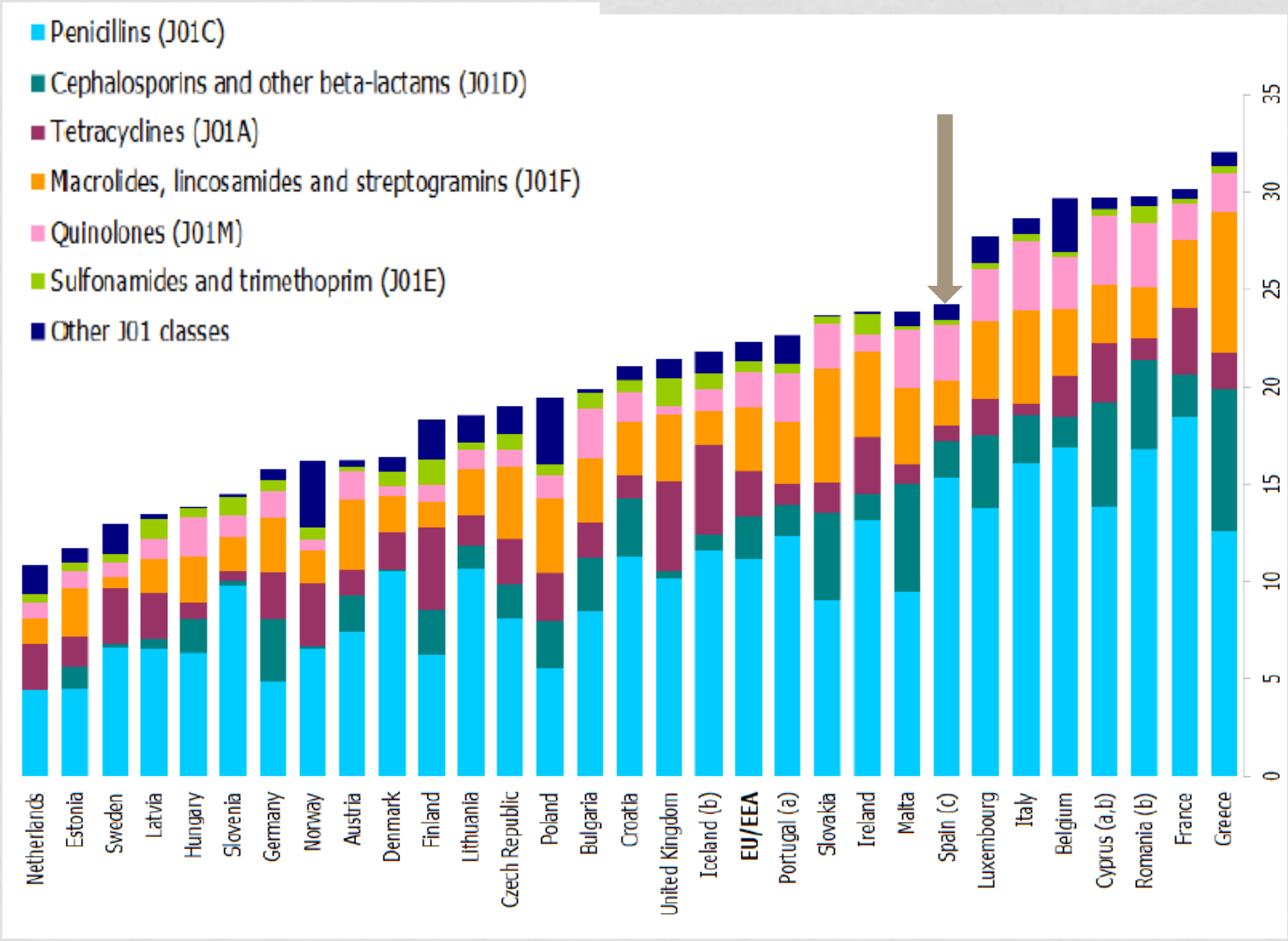

80%
OF ALL ANTIBIOTICS ARE
USED ON FARM ANIMALS
Creative Commons, Gunnar Richter: Namenlos.net

Total antibiotic use in 2017, expressed in number of DID in Europe



ESAC; [c]Spain provided reimbursement data (not including OTC consumption of antibiotics)

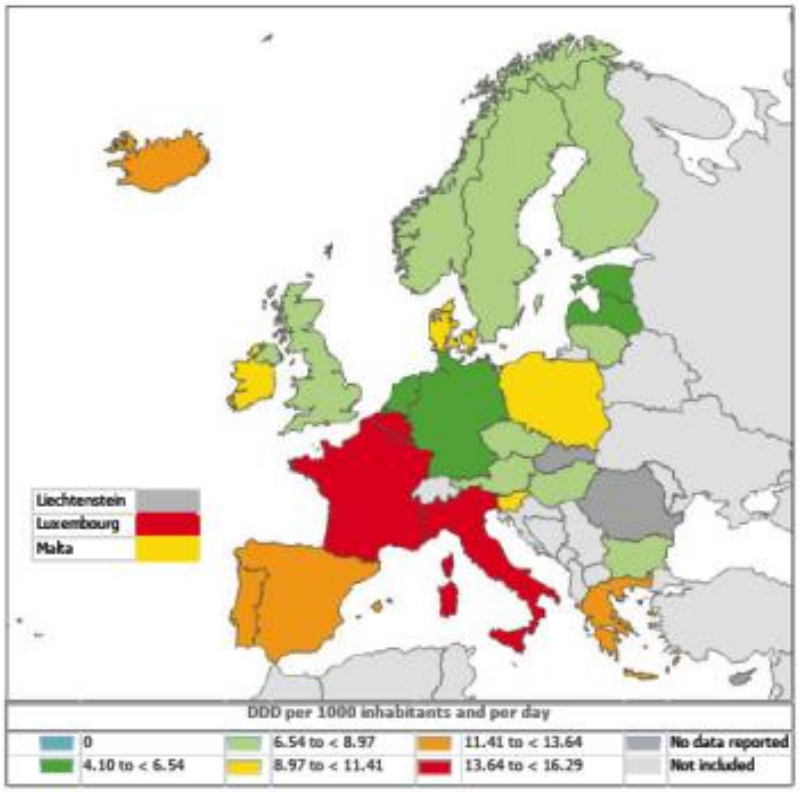
Total antibiotic use in 2017, expressed in number of DID in Europe



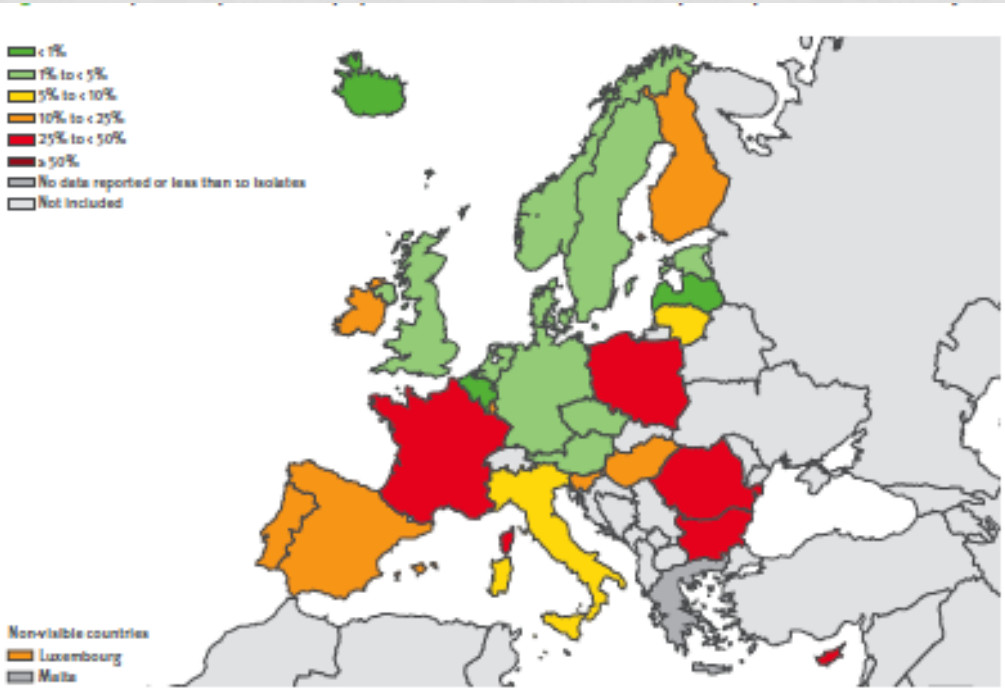
ESAC; [c]Spain provided reimbursement data (not including OTC consumption of antibiotics)

Countries with higher consumption of antibiotics have higher resistance rates[1,2]

Consumption of β-lactams, penicillins (2010 data)[3]



Proportion of invasive *Streptococcus pneumoniae* isolates non-susceptible to penicillin (2009 data)[4]

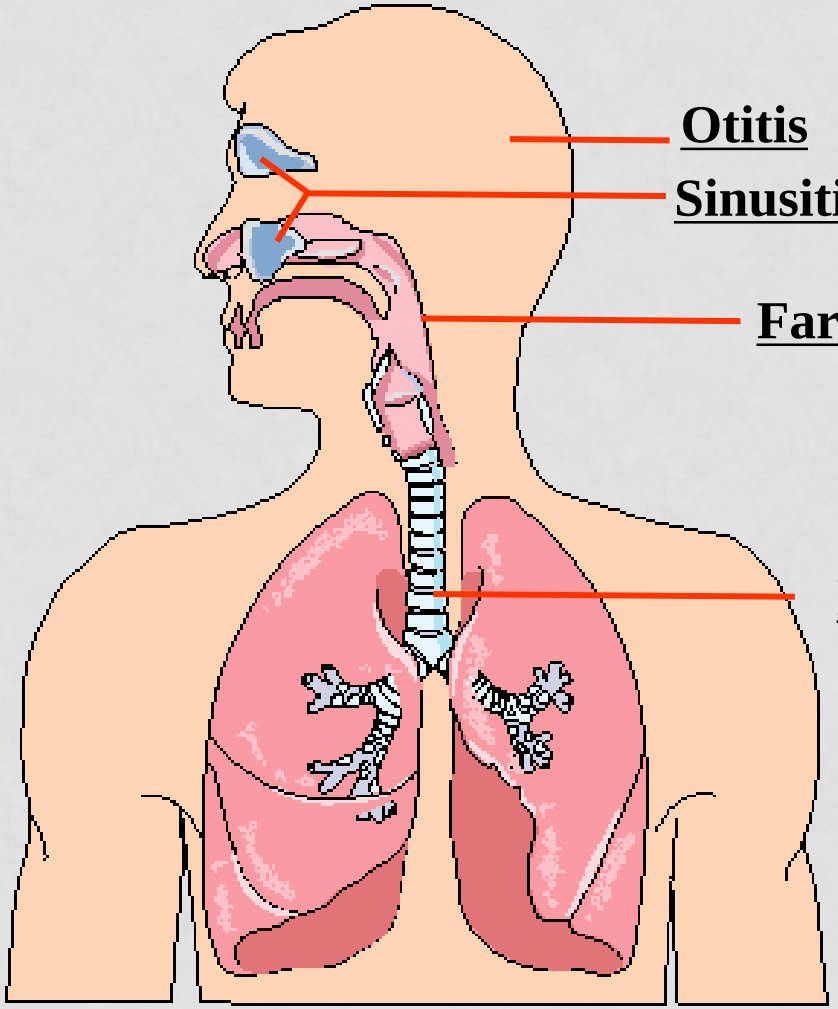


http://www.ecdc.europa.eu/en/publications/Publications/1011_SUR_annual_EARS_Net_2009.pdf

ANTIBIÒTICS I ATENCIÓ PRIMÀRIA

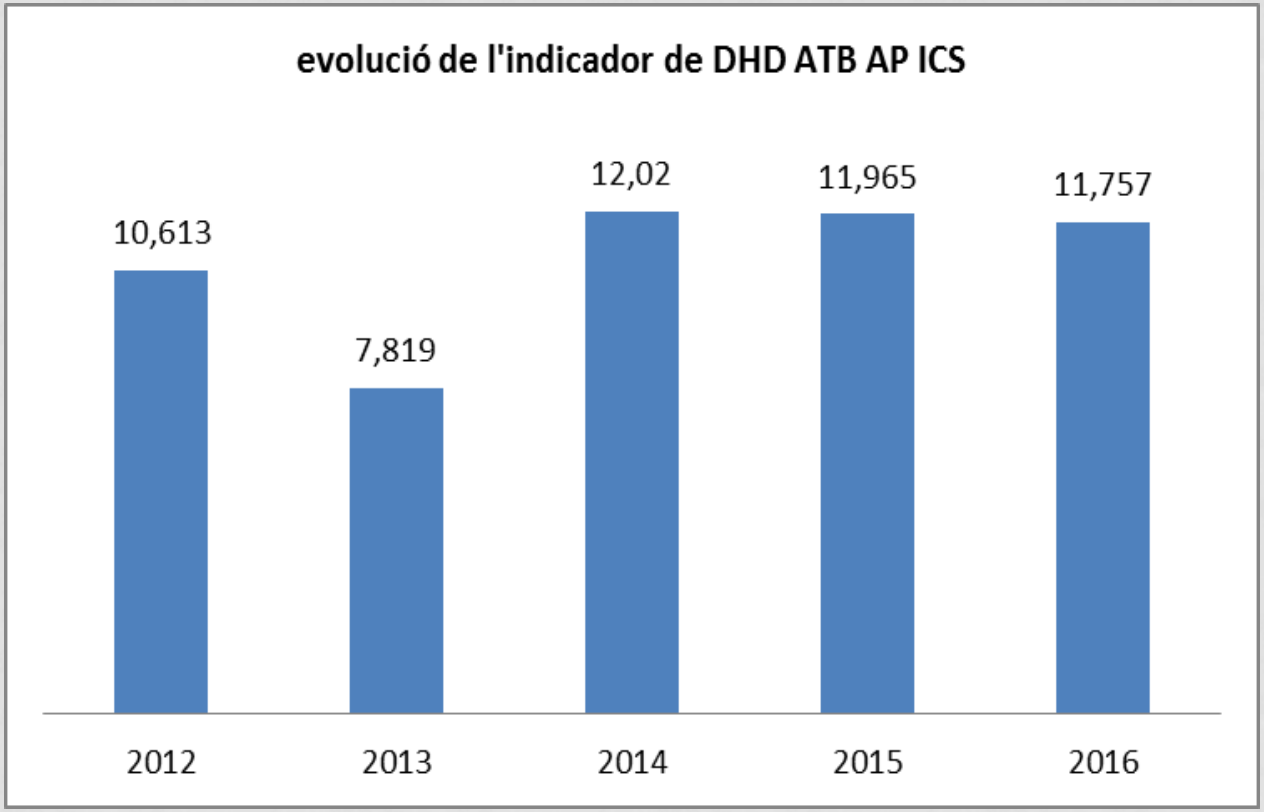
- Que estem fent?

Infecciones de vías respiratorias altas. Etiología viral vs Prescripción Antibióticos



Otitis	20%	80%
Sinusitis	35-40%	85%
Faringoamigdalitis	15%	60%
Bronquitis	5%	60%

ANTIBIÒTICS PRESCRITS I DISPENSATS EN DHD D'EAP DE L'ICS



Font: aplicació de farmàcia de l'ICS

DHD DE PENICIL·LINES PRESCRITES

Antibiòtic	DHD 2016	DHD 2015	DHD 2014	DHD 2013	DHD 2012
AMOXICIL·LINA TRIHIDRAT	**3,675**	**3,656**	**3,558**	**2,273**	**3,247**
AMOXICIL·LINA+CLAVULANIC	**3,459**	**3,615**	**3,705**	**2,091**	**3,149**

Font: aplicació de farmàcia de l'ICS

ANTIBIÒTICS I ATENCIÓ PRIMÀRIA

- Com podem millorar ?

¿Podemos modificar los hábitos de los médicos de atención primaria en cuanto a prescripción antibiótica?

Métodos pasivos dirigidos a médicos
Clases, charlas, folletos para médicos, guías, audits sin feedback

→ Controvertido

Excepción: Estudios de Finlandia e Islandia

Métodos activos dirigidos a médicos y pacientes
Recuerdos, audits con feedback y discusión de resultados, folletos para pacientes

→ Poco efectivo

Mejor si son polifacéticos

Tests rápidos en la consulta
Prescripción diferida de antibióticos
Habilidades comunicativas

→ Efectivo

Arnold SR & Strauss SE. C*ochrane Database Syst Rev* 2005;(**4**):CD003539.
Spurling GKP et al. *Cochrane Database Syst Rev* 2013;(**4**): CD004417.

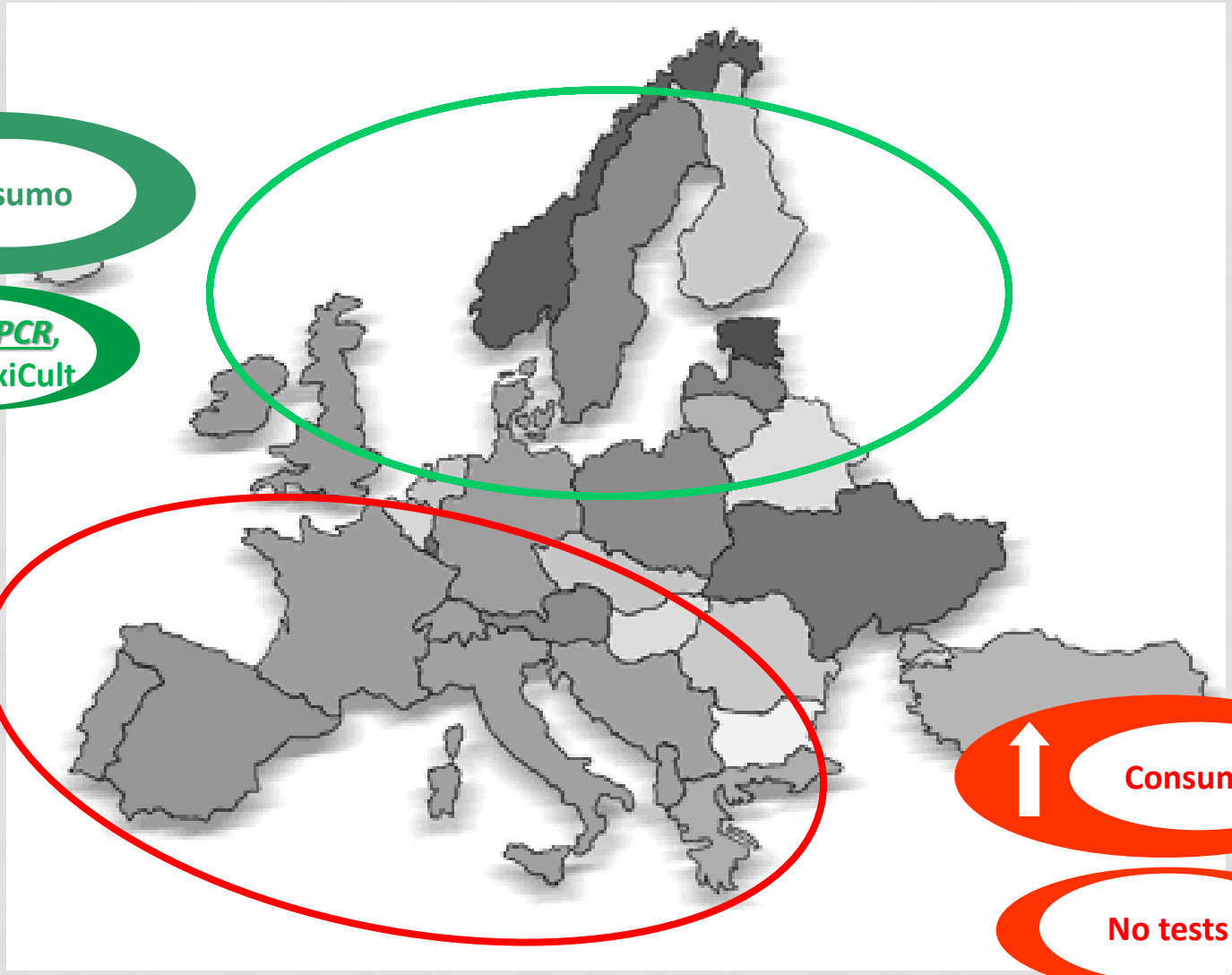
Probes de Diagnòstic Ràpid

Streptococo A

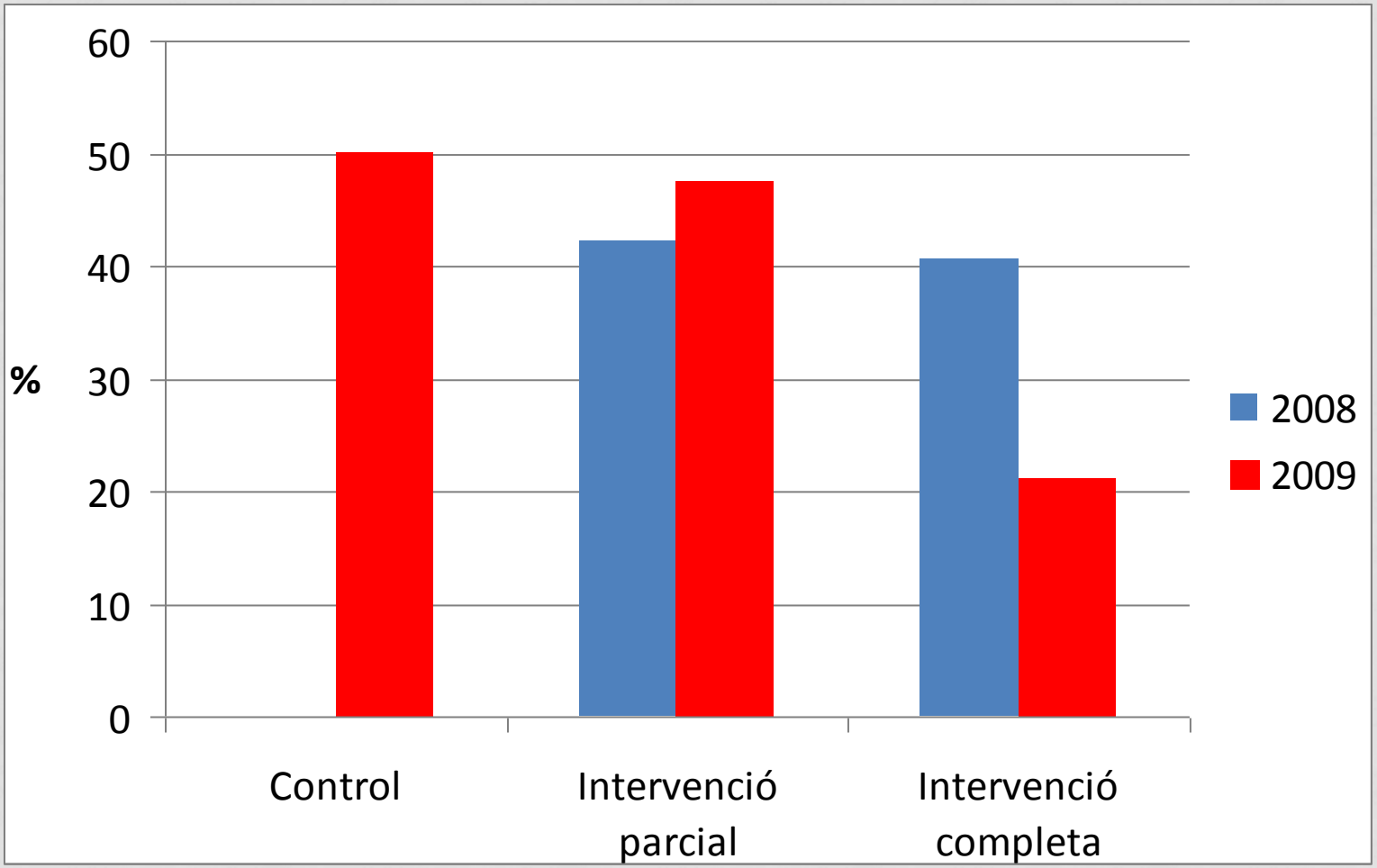
Tira reactiva orina

Proteina C Reactiva

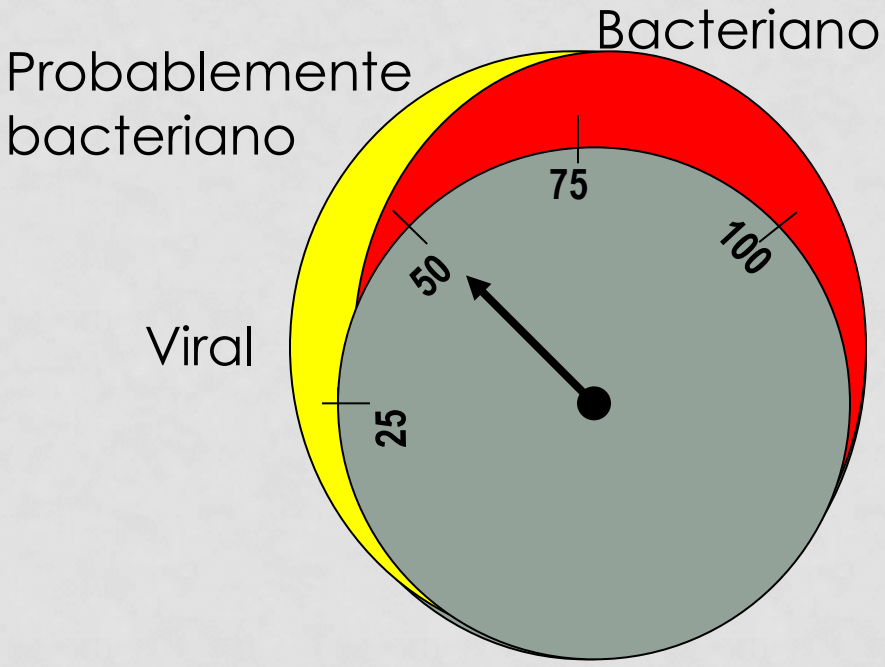
Correlación negativa entre consumo & resistencia y uso de tests rápidos



Porcentaje de prescripción antibiótica en la amigdalitis aguda segun grupo (n: 2.153). Estudio Happy Audit



¿BRONQUITIS AGUDA O NEUMONÍA? DIAGNÓSTICO MÁS PROBABLE SEGÚN VALORES DE LOS REACTANTES DE FASE AGUDA

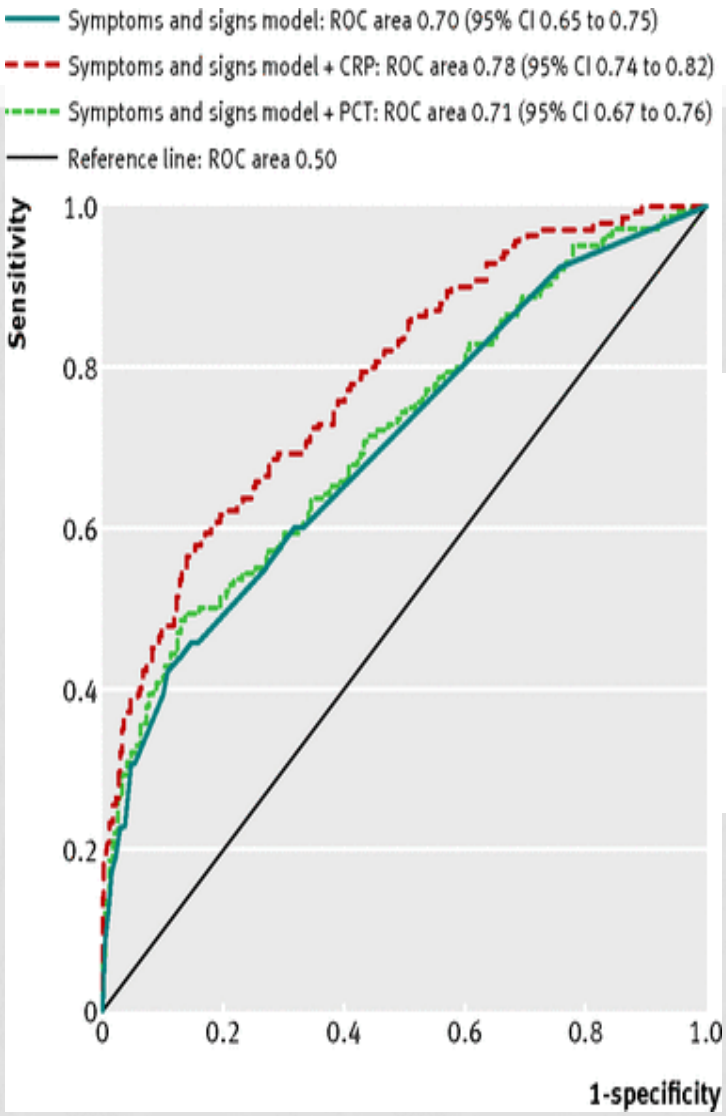


Proteína C reactiva (mg/l)

- < 20 bronquitis
- 20 – 100 duda
- > 100 neumonía

Predicción de riesgo estimado de presentar una neumonía

Estudio GRACE



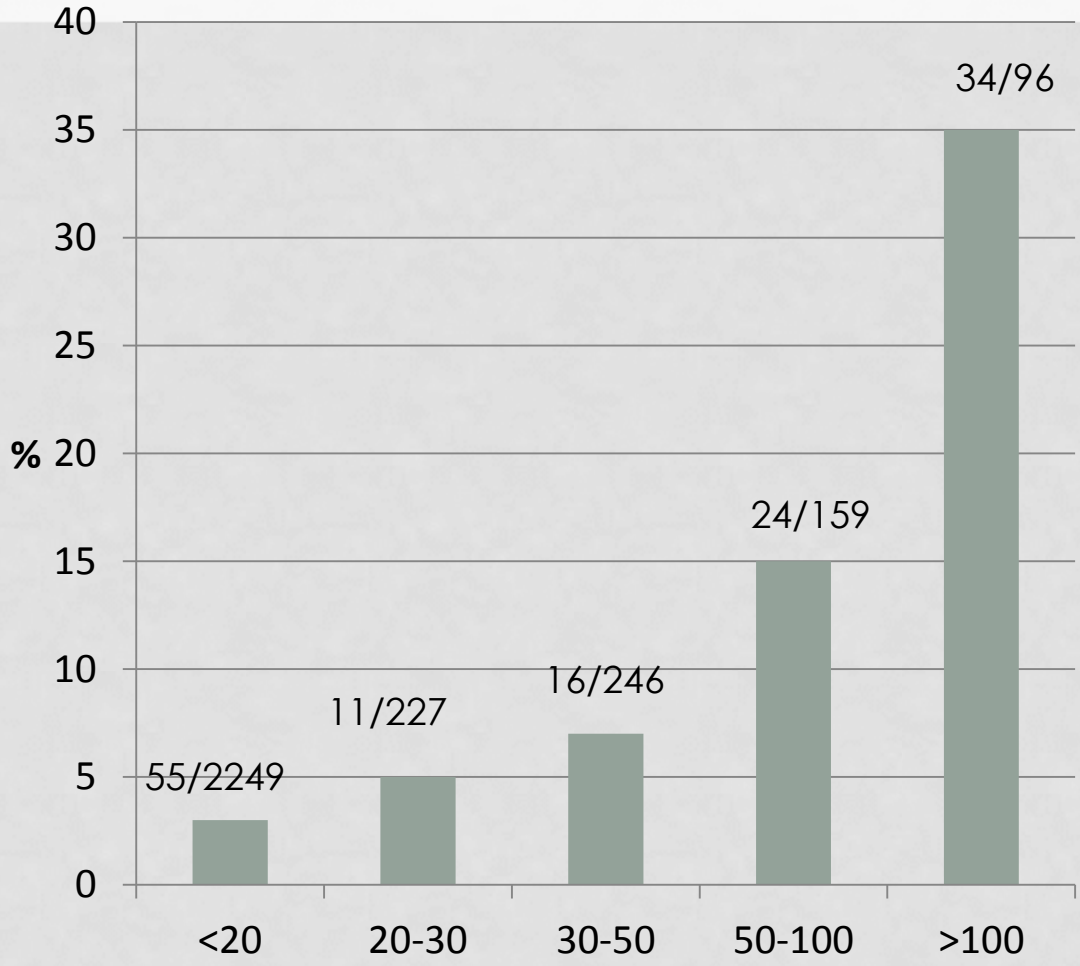
Signos y síntomas:

- Ausencia de rinorrea
- Disnea
- Crepitantes
- ↓ murmullo vesicular
- Taquicardia (> 100 lpm)
- Temperatura >37,8C

Van Vugt SF et al. *BMJ* 2013;**346**:f2450.

Incidencia de neumonía según concentraciones de PCR (en mg/L)

Estudio GRACE

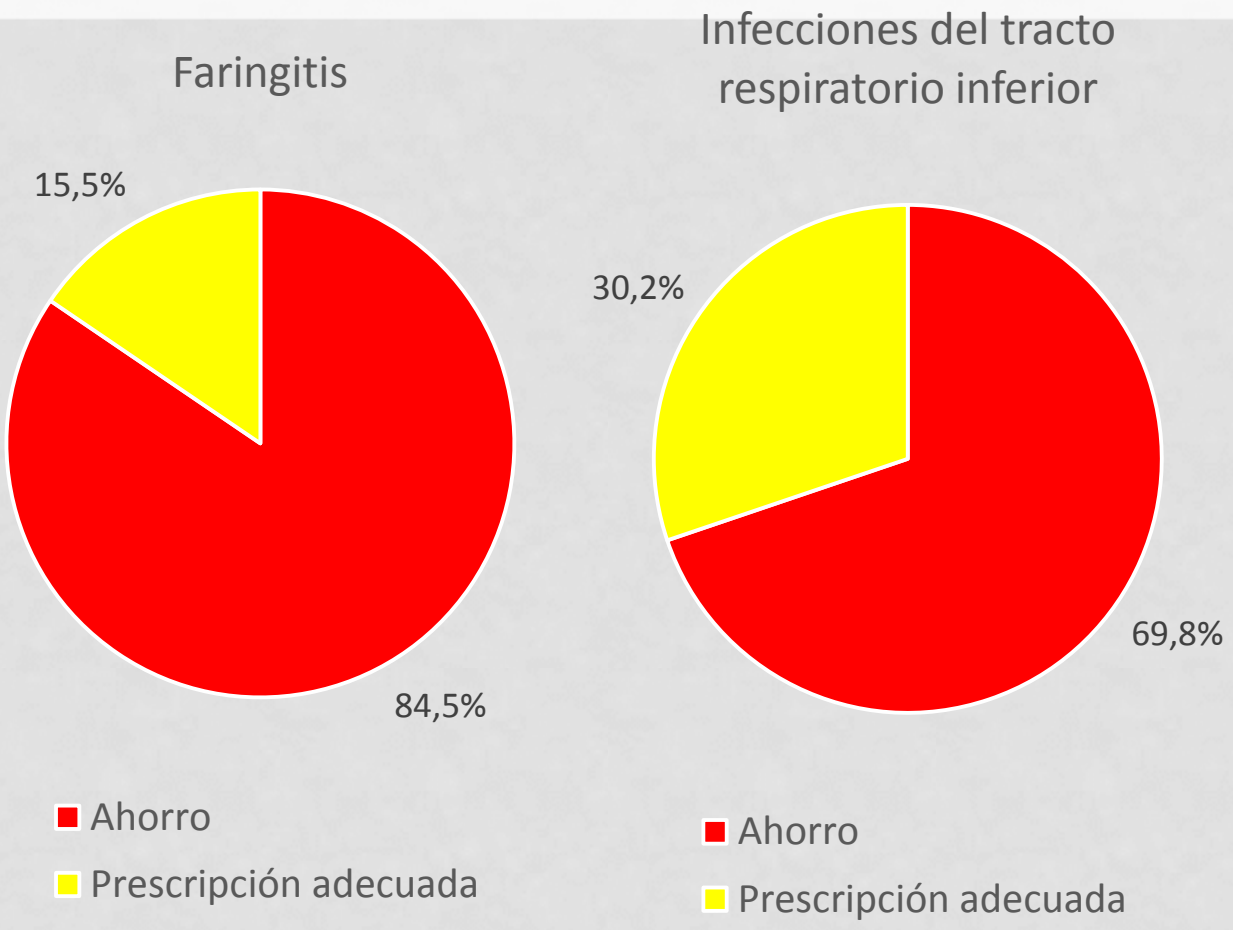


Van Vugt SF et al. *BMJ* 2013;**346**:f2450.

Prescripció antibiòtica en les infeccions del tracte respiratori inferior segons nivell de PCR obtingut. Grup Intervenció Completa 2009 – Estudi Happy Audit

Utilització de PCR	Prescripció antibiòtica. n (%)
No ús de PCR	2.992 / 4.840 (61,8)
Ús de PCR:	
- 0 – 10 mg/L	35 / 253 (13,8) 75%casos
- 11 – 20 mg/L	16 / 28 (57,1) 15% casos
- > 20 mg/L	168 / 213 (78,9) 10% casos
- Valor no escrit	20 / 51 (51,0)
- Total	239 / 545 (43,9)

Ahorro estimado de antibióticos en las faringitis e infecciones del tracto respiratorio (basado en el estudio Happy Audit 3, 2015)



Plan Nacional Resistencia Antibióticos

3. Identificar e impulsar medidas alternativas y/o complementarias de prevención y tratamiento

Pruebas de diagnóstico en el punto de Atención al Paciente:

- Prueba rápida detección de EstreptoA en faringoamigdalitis aguda
- Prueba cuantitativa determinación Proteína C Reactiva (PCR) en infecciones respiratorias vías bajas

Prescripció Diferida Antibiòtics

Study protocol

Highly accessed

Open Access

Rationale, design and organization of the delayed antibiotic prescription (DAP) trial: a randomized controlled trial of the efficacy and safety of delayed antibiotic prescribing strategies in the non-complicated acute respiratory tract infections in general practice

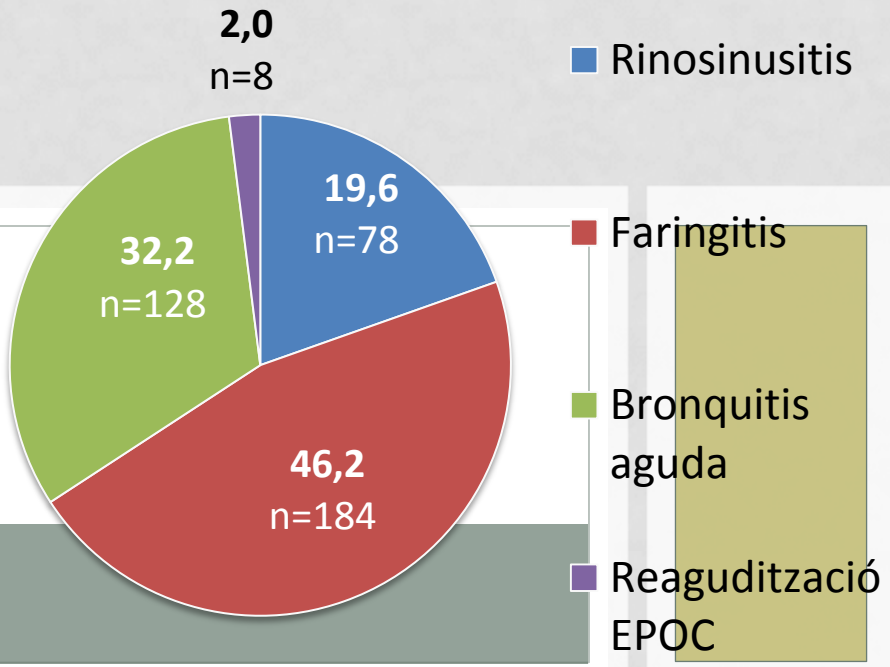
Mariam de la Poza Abad[1], Gemma Mas Dalmau[2], Mikel Moreno Bakedano[3], Ana Isabel González González[4], Yolanda Canellas Criado[5], Silvia Hernández Anadón[6], Rafael Rotaeche del Campo[7,8], Pere Torán Monserrat[10,9], Antonio Negrete Palma[10], Guillem Pera[9], Eulàlia Borrell Thió[11], Carl Llor[6], Paul Little[12], Pablo Alonso Coello[2,8]* and for the Delayed Antibiotic Prescription (DAP) Working Group

JAMA Intern Med. 2016;176(1):21-29. doi:10.1001/jamainternmed.2015.7088
Published online December 21, 2015.

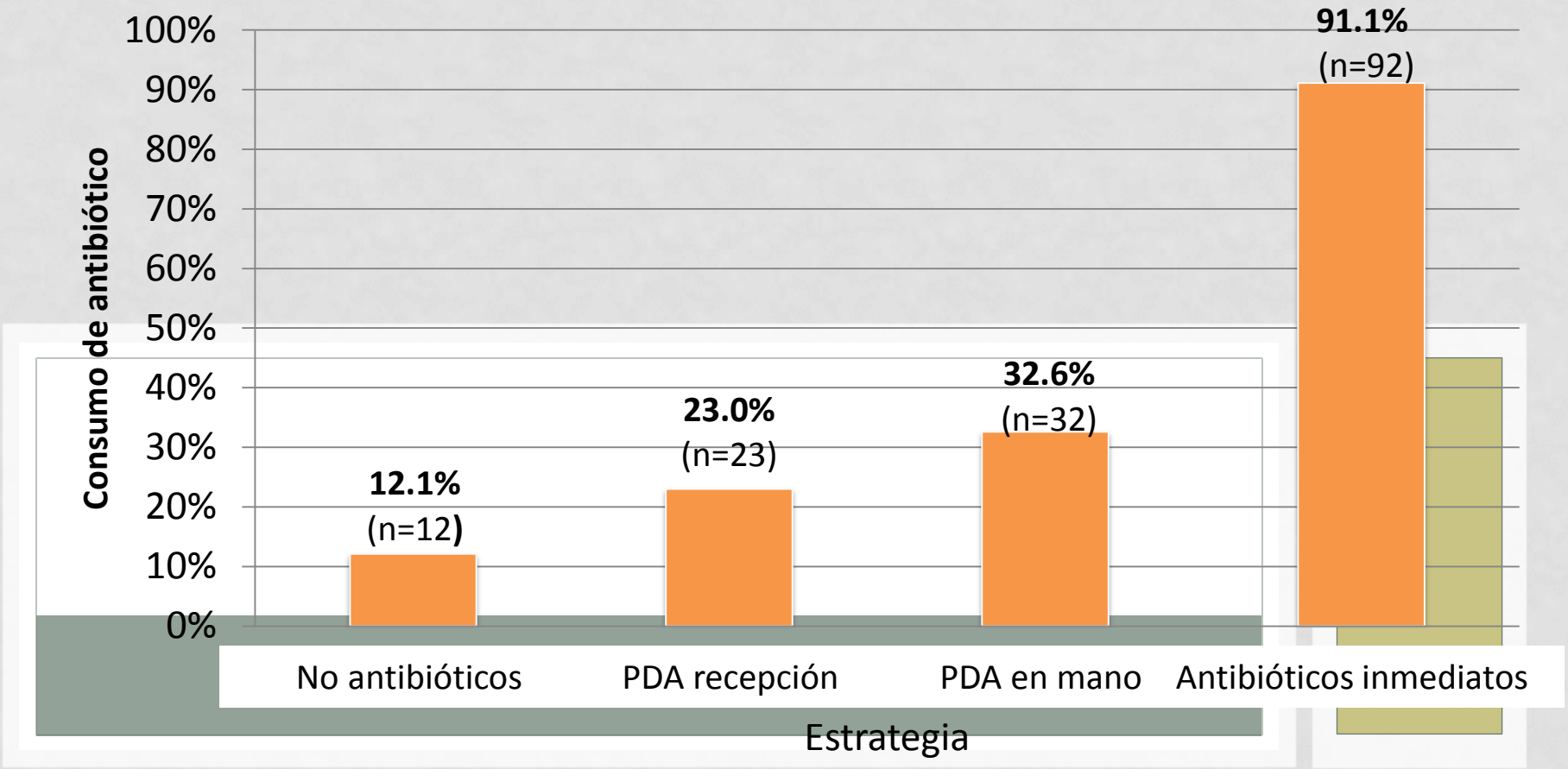
Resultados: Datos generales

- 405 pacientes aleatorizados
- 398 pacientes incluidos
- 65,8% mujeres (n=262)
- Duración media de síntomas en visita basal de 6 días (SD=6)
- La mayoría de pacientes no eran fumadores (80.1%) y no tenían comorbilidades respiratorias (93,5%)

(%) de pacientes incluidos por patología



Resultados: Consumo de antibióticos



Habilitats Comunicatives en prescripció d'antibiòtics

Habilidades comunicativas: Estudio IMPAC3T

BMJ

RESEARCH

Effect of point of care testing for C reactive protein and training in communication skills on antibiotic use in lower respiratory tract infections: cluster randomised trial

Jochen W L Cals, general practitioner trainee and researcher,[1] Christopher C Butler, professor of primary care medicine,[2] Rogier M Hopstaken, general practitioner and researcher,[1,3] Kerenza Hood, reader in statistics,[2,4] Geert-Jan Dinant, professor of general practice[1]

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[2]Department of Primary Care and Public Health, School of Medicine, Cardiff University, Wales
[3]Foundation of Primary Health Care Centres Eindhoven, Netherlands
[4]South East Wales Trials Unit, School of Medicine, Cardiff University, Wales
Correspondence to J W L Cals j.cals@hag.unimaas.nl

Cite this as: *BMJ* 2009;338:b1374 doi:10.1136/bmj.b1374

ABSTRACT

Objective To assess the effect of general practitioner testing for C reactive protein (disease approach) and receiving training in enhanced communication skills (illness approach) on antibiotic prescribing for lower respiratory tract infection.

Design Pragmatic, 2×2 factorial, cluster randomised controlled trial.

Setting 20 general practices in the Netherlands.

Participants 40 general practitioners from 20 practices recruited 431 patients with lower respiratory tract infection.

Main outcome measures The primary outcome was antibiotic prescribing at the index consultation. Secondary outcomes were antibiotic prescribing during 28 days' follow-up, reconsultation, clinical recovery, and patients' satisfaction and enablement.

Interventions General practitioners' use of C reactive protein point of care testing and training in enhanced communication skills separately and combined, and usual care.

Results General practitioners in the C reactive protein test group prescribed antibiotics to 31% of patients compared with 53% in the no test group (P=0.02). General practitioners trained in enhanced communication skills prescribed antibiotics to 27% of patients compared with 54% in the no training group (P<0.01). Both interventions showed a statistically significant effect on antibiotic prescribing at any point during the 28 days' follow-up. Clinicians in the combined intervention group prescribed antibiotics to 23% of patients (interaction term was non-significant). Patients' recovery and satisfaction were similar in all study groups.

Conclusion Both general practitioners' use of point of care testing for C reactive protein and training in enhanced communication skills significantly reduced antibiotic prescribing for lower respiratory tract infection without compromising patients' recovery and satisfaction with care. A combination of the illness and disease focused approaches may be necessary to achieve the greatest reduction in antibiotic prescribing for this common condition in primary care.

Trial registration Current Controlled Trials ISRCTN85154857.

INTRODUCTION

Contrasting broad approaches to improved management in general medicine have been emphasised.[1] A disease focused approach seeks to improve diagnosis, whereas the illness focused, patient centred approach emphasises understanding the whole patient and sharing decisions, which may be more contingent on clear information about prognosis rather than making an accurate diagnosis.[2,3] A combination of these approaches, however, may be required to achieve the best outcome for patients. We evaluated the effect of two interventions on achieving evidence based management of lower respiratory tract infections in primary care.

Lower respiratory tract infection is one of the commonest acute reasons to consult, accounting for 17 million consultations in the European Union and 11 million in the United States each year.[4-6] Acute bronchitis accounts for 80% of lower respiratory tract infections[6,7] and despite evidence of little or no benefit from antibiotics, up to 80% of patients consulting for this condition are prescribed them.[8-10] Moreover, lower respiratory tract infection is associated with increasing use of broad spectrum antibiotics.[9-11] Everyday decisions about whether or what antibiotic to prescribe for lower respiratory tract infection therefore constitute an important part of the burden of antibiotic use that drives antimicrobial resistance.[9-12,13]

Diagnostic or disease focused solutions address the limited value of medical history and physical examination in differentiating between pneumonia and self limiting acute bronchitis.[14-16] Diagnostic uncertainty increases the chances of inappropriate antibiotic prescribing,[17] and general practitioners often prescribe to give patients "the benefit of the doubt" in the face of possible pneumonia and possible clinical benefit[18] especially since routinely requesting chest radiography for all patients with lower respiratory tract infection is neither feasible nor appropriate in most primary care

- Ensayo clínico aleatorio con clusters.
- 40 médicos de familia en 20 centros.
- Inclusión de 421 pacientes.
- Variable de resultado principal: prescripción antibiótica en infecciones del tracto respiratorio inferior.

Cals JW et al. *BMJ* 2009;**338**:b1374.

Habilidades comunicativas

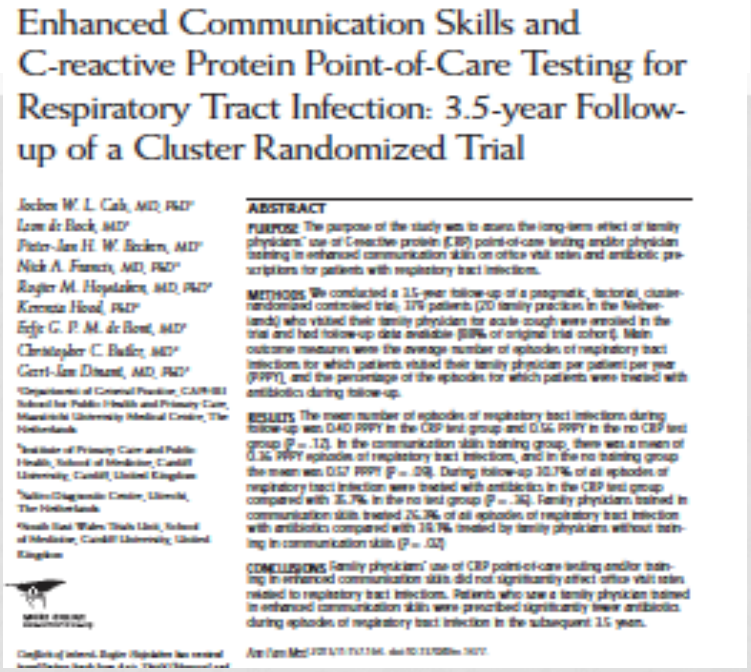
Resultado del estudio IMPAC3T. Prescripción antibiótica en la visita inicial

		Comunicación	
		Sí	No
PCR	Sí	(Comunicación + PCR) **23%**	(PCR) **39%**
	No	(Comunicación) **33%**	(Consulta habitual) **68%**

Cals JW et al. *BMJ* 2009;**338**:b1374.

Habilidades comunicativas: efectos a largo plazo

3,5 años más tarde del estudio IMPAC3T



Enhanced Communication Skills and C-reactive Protein Point-of-Care Testing for Respiratory Tract Infection: 3.5-year Follow-up of a Cluster Randomized Trial

Jochen W. L. Cals, MD, PhD*
Lieve de Bock, MD*
Pieter-Jan H. W. Beuken, MD*
Nick A. Francis, MD, PhD*
Roger M. Heyndrickx, MD, PhD*
Kerenza Hood, PhD*
Erik G. P. M. de Bont, MD*
Christopher C. Butler, MD*
Gerrit-Jan Dinant, MD, PhD*

ABSTRACT

PURPOSE: The purpose of the study was to assess the long-term effect of family physicians' use of C-reactive protein (CRP) point-of-care testing and/or physician training in enhanced communication skills on office visit rates and antibiotic prescriptions for patients with respiratory tract infections.

METHODS: We conducted a 3.5-year follow-up of a pragmatic, factorial, cluster-randomized controlled trial; 378 patients (20 family practices in the Netherlands) who visited their family physician for acute cough were enrolled in the trial and had follow-up data available (88% of original trial cohort). Main outcome measures were the average number of episodes of respiratory tract infections for which patients visited their family physician per patient per year (PPPY), and the percentage of the episodes for which patients were treated with antibiotics during follow-up.

RESULTS: The mean number of episodes of respiratory tract infections during follow-up was 0.40 PPPY in the CRP test group and 0.56 PPPY in the no CRP test group (P = .12). In the communication skills training group, there was a mean of 0.36 PPPY episodes of respiratory tract infections, and in the no training group the mean was 0.57 PPPY (P = .09). During follow-up 30.7% of all episodes of respiratory tract infection were treated with antibiotics in the CRP test group compared with 35.7% in the no test group (P = .36). Family physicians trained in communication skills treated 26.3% of all episodes of respiratory tract infection with antibiotics compared with 39.7% treated by family physicians without training in communication skills (P = .02).

CONCLUSIONS: Family physicians' use of CRP point-of-care testing and/or training in enhanced communication skills did not significantly affect office visit rates related to respiratory tract infections. Patients who saw a family physician trained in enhanced communication skills were prescribed significantly fewer antibiotics during episodes of respiratory tract infection in the subsequent 3.5 years.

Los pacientes que fueron visitados por un médico de familia formado en una mejora en las habilidades comunicativas prescribieron significativamente menos antibióticos en episodios de infecciones del tracto respiratorio en los siguientes 3,5 años

Cals JW et al. *Ann Fam Med* 2013;**11**:157-64.

Habilidades comunicativas: Estudio GRACE-INTRO

Effects of internet-based training on antibiotic prescribing rates for acute respiratory-tract infections: a multinational, cluster, randomised, factorial, controlled trial

Paul Little, Beth Stuart, Nick Francis, Elaine Douglas, Sarah Tonkin-Crine, Sibyl Anthierens, Jochen W L Cals, Hasse Melbye, Miriam Santer, Michael Moore, Samuel Coenen, Chris Butler, Kerenza Hood, Mark Kelly, Maciek Godycki-Cwirko, Artur Mierzecki, Antoni Torres, Carl Llor, Melanie Davies, Mark Mullee, Gilly O'Reilly, Alike van der Velden, Adam W A Geraghty, Herman Goossens, Theo Verheij, Lucy Yardley, on behalf of the GRACE consortium

Summary

Background High-volume prescribing of antibiotics in primary care is a major driver of antibiotic resistance. Education of physicians and patients can lower prescribing levels, but it frequently relies on highly trained staff. We assessed whether internet-based training methods could alter prescribing practices in multiple health-care systems.

Methods After a baseline audit in October to December, 2010, primary-care practices in six European countries were cluster randomised to usual care, training in the use of a C-reactive protein (CRP) test at point of care, in enhanced communication skills, or in both CRP and enhanced communication. Patients were recruited from February to May, 2011. This trial is registered, number ISRCTN99871214.

Results The baseline audit, done in 259 practices, provided data for 6771 patients with lower-respiratory-tract infections (3742 [55·3%]) and upper-respiratory-tract infections (1416 [20·9%]), of whom 5355 (79·1%) were prescribed antibiotics. After randomisation, 246 practices were included and 4264 patients were recruited. The antibiotic prescribing rate was lower with CRP training than without (33% *vs* 48%, adjusted risk ratio 0·54, 95% CI 0·42–0·69) and with enhanced-communication training than without (36% *vs* 45%, 0·69, 0·54–0·87). The combined intervention was associated with the greatest reduction in prescribing rate (CRP risk ratio 0·53, 95% CI 0·36–0·74, p<0·0001; enhanced communication 0·68, 0·50–0·89, p=0·003; combined 0·38, 0·25–0·55, p<0·0001).

Interpretation Internet training achieved important reductions in antibiotic prescribing for respiratory-tract infections across language and cultural boundaries.

Funding European Commission Framework Programme 6, National Institute for Health Research, Research Foundation Flanders.

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See Online/Comment http://dx.doi.org/10.1016/S0140-6736(13)61445-7

Primary Care and Population Sciences Division, University of Southampton, Southampton, UK (Prof P Little FRCGP, B Stuart PhD, S Tonkin-Crine PhD, M Santer PhD, M Moore FRCGP, M Mullee MSc, G O'Reilly PhD, A W A Geraghty PhD); Centre for Applications of Health Psychology (CAHP), Faculty of Social and Human Sciences (E Douglas MSc, Prof L Yardley PhD) and Julius Centre for Health Sciences and Primary Care (A van der Velden PhD, Prof T Verheij MRCGP), University Medical Centre Utrecht, Utrecht, Netherlands; Cochrane Institutes of Primary Care and Public Health (N Francis PhD, Prof C Butler FRCGP), and South East Wales Trials Unit (Prof K Hood PhD, M Kelly PhD), School of Medicine, Cardiff University, Cardiff, UK; Department of Family and Community Medicine, Medical University of Lodz, Lodz, Poland (M Godycki-Cwirko PhD); Independent Laboratory of Family Physician Education, Pomeranian Medical University in Szczecin, Szczecin, Poland (A Mierzecki PhD); Ely Bridge Surgery, Ely, Cardiff, UK (M Davies MSc); Pneumology Department, Clinic Institute of Thorax, Hospital Clinic of Barcelona-Institut d'Investigacions Biomediques, August Pi i Sunyer-University of Barcelona-Ciber de Enfermedades Respiratorias, Barcelona, Spain (Prof A Torres PhD); Centre for General Practice

Introduction

Physicians prescribe antibiotics for many patients with acute uncomplicated lower-respiratory-tract infections, which are among the most common acute presentations in primary care.[1–3] Most of these infections are viral, and evidence from systematic reviews[4] and other studies[5,6] suggest only slight benefit is achieved from the prescription of antibiotics. Thus, rationalisation of antibiotic use in the treatment of lower-respiratory-tract infections in primary care is a priority in the prevention of antibiotic resistance.[7]

C-reactive protein (CRP) has predictive value for pneumonia.[8,9] In the IMPAC3T study,[10] training of physicians in CRP testing lowered the rate of antibiotic prescribing by 20%. These findings were supported in a later study.[11] The usefulness of training in consultation skills requires clarification[10] because there is limited evidence for effects on symptom control[10,12,13] and whether a particular approach to training can be used in different settings.

Interactive workshops for health-care professionals and education of patients are likely to lower the rate of antibiotic prescribing.[12,14,15] The IMPAC3T study[10] showed that the training of physicians in advanced communication skills by seminar role-playing and peer feedback on consultation transcripts reduced antibiotic prescribing rates by 20%. The STAR programme involves five stages of web-based training in advanced communication skills that include recording of reactions to scenarios, sharing of accounts of clinical experience, and expert-led face-to-face seminars. This approach led to a 4% reduction in global antibiotic use over 1 year in practices across Wales.[16] Nevertheless, because such outreach interventions are generally performed by small groups of highly trained staff based at research centres of excellence, the generalisability of delivery and the potential effects on real-world practice are questionable. Novel techniques are, therefore, needed to lead to changes at national and international levels. Internet training has the advantage that it can be disseminated widely at low cost and does not require highly trained outreach facilitators to be on site. In one study of internet training for general practitioners, the use of an interactive booklet for consultations with children attending for

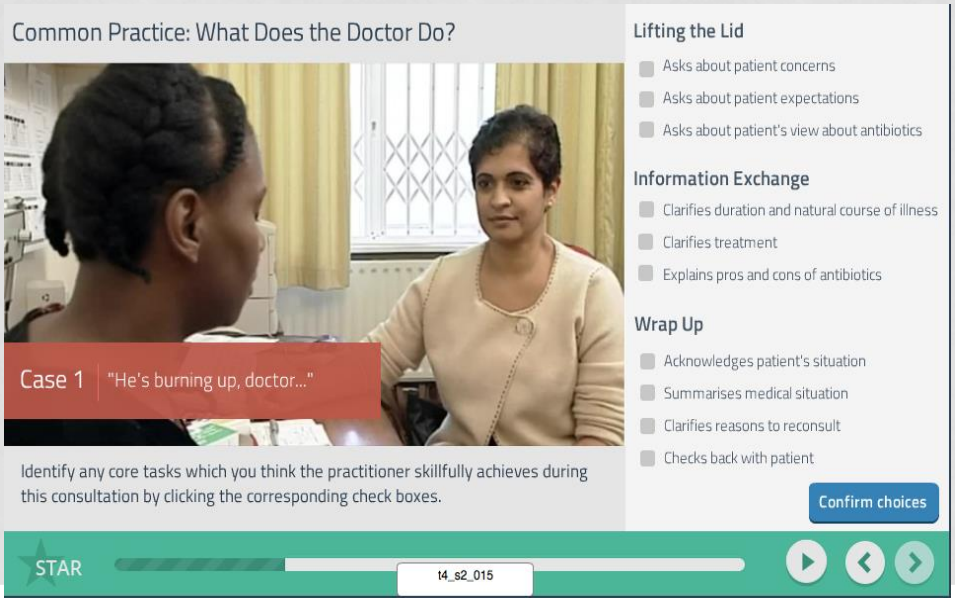
- Ensayo clínico aleatorio.
- 259 consultas con 6.771 pacientes con infecciones del tracto respiratorio inferior.
- Variable de resultado principal: prescripción antibiótica.

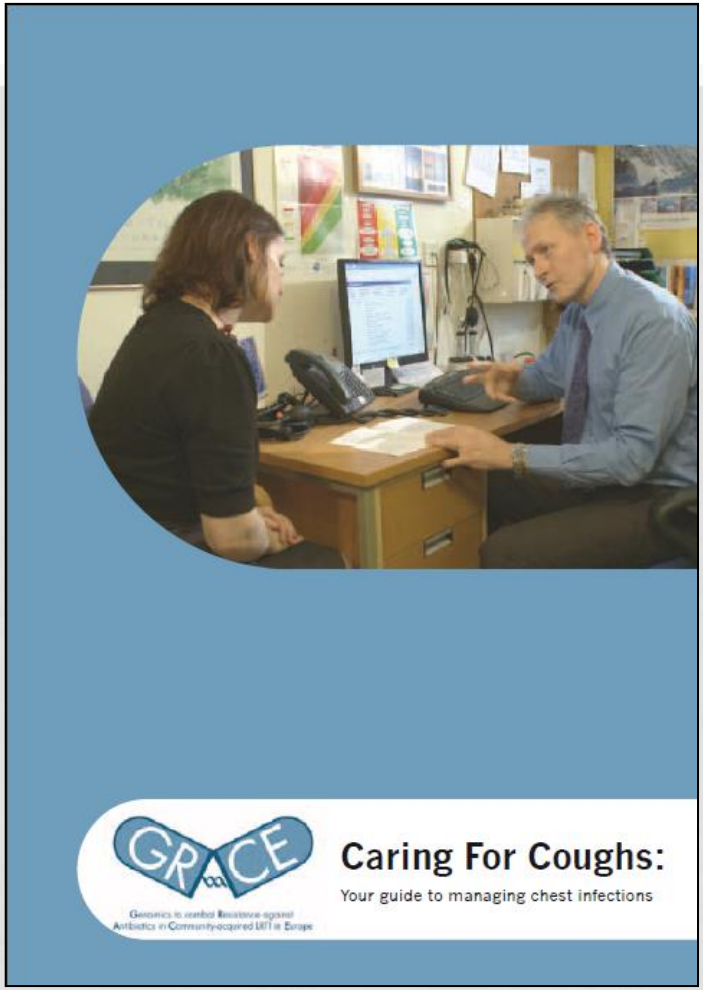
Little P et al. *Lancet* 2013;**382**:1175-82.

Habilidades comunicativas: Estudio GRACE-INTRO

Grupo de comunicación

- Videos online de comunicación
- Folletos informativos





Little P et al. *Lancet* 2013;**382**:1175-82.

Habilidades comunicativas

Resultado del estudio GRACE-INTRO. Prescripción antibiótica en la visita inicial

		Comunicación	
		Sí	No
PCR	Sí	(Comunicación + PCR) **33%**	(PCR) **37%**
	No	(Comunicación) **43%**	(Consulta habitual) **62%**

Little P et al. *Lancet* 2013;**382**:1175-82.

Pautes antibiòtiques curtes que caldria recomanar

Infecció	Comparació	n	Evidència
Rinosinusitis bacteriana aguda[1]	3-7 vs. 6-10 dies 5	4.430 (12 estudis)	OR de curació clínica: 0,95 (0,81 – 1,12)
Otitis mitjana aguda[2]	2-7 vs. ≥7 dies 5	570 (5 estudis)	OR de fracàs terapèutic de 0,85 (0,60-1,21) en més grans de 2 anys
Pneumònia adquirida a la comunitat[3,4]	3-5 vs. >7 dies 5	1540 (8 estudis)	RR de fracàs clínic: 0,96 (0,74 – 1,26)
Exacerbació d'MPOC[5]	<5 vs. ≥5 dies 5	10.698 (21 estudis)	OR de curació clínica als 25 dies: 0,99 (0,90 – 1,08)
Pielonefritis aguda[6]	7-14 vs. 14-42 d 7	185 (2 estudis)	OR d'èxit clínic de 1,03 (0,80 – 1,32)

[1]Falagas ME et al. *Br J Clin Pharmacol* 2009;**67**:161–71. [2]Kozyrskyj A et al. *Cochrane Database Syst Rev* 2010;**9**:CD001095. [3]Li JZ et al. *Am J Med* 2007;**120**:783–90. [4]el Moussaoui R et al. *BMJ* 2006;**332**:1355. [5]El Moussaoui R et al. *Thorax* 2008;**63**:415–22. [6]Kyriakidou KG et al. *Clin Ther* 2008;**30**:1859–68.

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CONCLUSIONS - I

Existeix un sobrediagnòstic d'infeccions bacterianes i un sobretractament amb antibiòtics

CONCLUSIONS -II

Tenim eines per millorar la prescripció d'antibiòtics com les probes de diagnòstic ràpid (institució) la prescripció diferida (professionals) i la comunicació (població)

Moltes Gracies

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Resultados: Duración de síntomas

	Inmediata	PDA recepción	PDA en mano	No antibiótico	p valor general
	media (SD)	media (SD)	media (SD)	media (SD)	
Duración de síntomas severos (puntuados con 5 o 6, escala Likert 6-puntos)	3,6 (3,3)	4,0 (4,2)*	5,1 (6,3)*	4,7 (3,6)*	0,002
Duración de síntomas moderados (puntuados con 3 o 4, escala Likert 6-puntos)	4,7 (4,0)	5,2 (4,3)*$	6,0 (5,5)*	6,5 (5,2)*	<0,001

*p<0,05 comparado con la estrategia inmediata

$ p<0,05 comparado con la estrategia no antibiótico