



## ORIGINAL ARTICLE

# Effectiveness of two types of intervention on antibiotic prescribing in respiratory tract infections in Primary Care in Spain. Happy Audit Study



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### KEYWORDS

Audit;  
Respiratory tract  
infections;

### Abstract

**Objective:** To evaluate the effectiveness of two types of intervention in reducing antibiotic prescribing in respiratory tract infections (RTI).

**Design:** Before–after audit-based study.

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Antibiotics;  
Point-of-care test;  
Intervention

*Setting:* Primary Care centres in Spain.

*Participants:* General practitioners (GPs) registered all patients with RTIs for 15 days in winter 2008 (pre-intervention), and again in winter 2009 (post-intervention).

*Interventions:* Intervention activities included meetings, with the presentation and discussion of the results, and several training meetings on RTI guidelines, information brochures for patients, workshops on point-of-care tests – rapid antigen detection tests and C-reactive protein rapid test – and provision of these tests in the clinic. All GPs, with the exception of those in Catalonia, made up the full intervention group (FIG); conversely, Catalan doctors underwent the same intervention, except for the workshop on rapid tests (partial intervention group, FIG). Multilevel logistic regression was performed taking the prescription of antibiotics as the dependent variable.

*Results:* Out of a total of 309 GPs involved in the first register, 281 completed the intervention and the second register (90.9%), of which 210 were assigned to the FIG, and 71 to the FIG. The odds ratio of antibiotic prescribing after the intervention was 0.99 (95% CI: 0.89–1.10) among GPs assigned to FIG, and 0.50 (95% CI: 0.44–0.57,  $p < 0.001$ ) among those who were allocated to FIG. The reduction in antibiotic prescribing in FIG was more marked in flu infection, common cold, acute pharyngitis, acute tonsillitis, and acute bronchitis.

*Conclusions:* Active participation of GPs with the performance of point-of-care tests in the clinic is accompanied by a drastic reduction of antibiotic use in RTIs, primarily in infections considered as mainly viral.

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## PALABRAS CLAVE

Audit;  
Infecciones del tracto  
respiratorio;  
Antibióticos;  
Pruebas rápidas;  
Intervención

## Efectividad de dos tipos de intervención en la prescripción antibiótica en las infecciones de las vías respiratorias en atención primaria en España. Estudio Happy Audit

### Resumen

*Objetivo:* Evaluar la efectividad de dos tipos de intervención en la prescripción antibiótica en infecciones del tracto respiratorio (ITR).

*Diseño:* Estudio antes-después basado en audit.

*Emplazamiento:* Centros de atención primaria de España.

*Participantes:* Médicos de familia registraron durante 15 días en invierno 2008 todas las ITR (preintervención), que se repitió en 2009 (postintervención).

*Intervenciones:* Se realizaron reuniones con presentación y discusión de resultados, sesiones de formación en guías de ITR, folletos informativos para pacientes, talleres en uso de pruebas rápidas (Strep A y proteína C reactiva) y su provisión en las consultas. Los médicos participantes a excepción de Cataluña realizaron la intervención completa (IC), mientras que los médicos de Cataluña realizaron lo mismo menos el taller de pruebas rápidas (intervención parcial [IP]). Se efectuó análisis de regresión logística multinivel considerando como variable dependiente la prescripción antibiótica.

*Resultados:* De los 309 médicos que realizaron el primer registro, 281 completaron la intervención y el segundo registro (90,9%), de los cuales 210 se asignaron a IC y 71 a IP. La odds ratio de prescripción antibiótica después de la intervención fue de 0.99 (IC95%: 0,89–1,10) entre los médicos asignados a IP, mientras que el observado en la IC fue de 0.50 (IC95%: 0,44–0,57,  $p < 0,001$ ). La mayor reducción de prescripción antibiótica en IC se observó en gripe, catarro común, faringitis aguda, amigdalitis aguda y bronquitis aguda.

*Conclusiones:* La participación activa de los médicos con uso de pruebas rápidas en la consulta se acompaña de una reducción importante de antibióticos en las ITR, sobre todo en las infecciones mayoritariamente virales.

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## Introduction

A third of primary care consultations are due to an infectious disease and more than half are caused by a respiratory tract infection.<sup>1</sup> Inappropriate use of antimicrobials for these

infections is associated with increased risk of adverse drug events and higher overall health care costs.<sup>2,3</sup> Data from 26 European countries demonstrated a correlation between the use of antibiotics and the level of antibiotic resistance.<sup>4</sup> The danger of increasing antibiotic resistance has been

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