

# Trends in $\beta$ -lactam resistance in community-acquired lower respiratory tract infection in the UK and Ireland

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## Introduction

Resistance to commonly-prescribed  $\beta$ -lactam antibiotics among the organisms responsible for community-acquired lower respiratory tract infections increased sharply during the 1990s. The BSAC Respiratory Resistance Surveillance Project has tracked resistance in the British Isles since 1999 to monitor current trends.

## Methods

Isolates were collected in 4 winter seasons between Oct 1999 and April 2003, excluding duplicates (within 2 weeks of a previous isolate), cystic fibrosis and patients in hospital more than 48 hours. Results shown are for 2405 *S. pneumoniae* and 3197 *H. influenzae* isolates collected by seventeen laboratories that contributed in all four years (to avoid spurious trends due to laboratory replacement). MICs were determined and interpreted centrally by BSAC agar dilution methods and breakpoints.

## Results

There were no significant linear trends in resistance for *S. pneumoniae*. For *H. influenzae*, there were significant trends to reduction of  $\beta$ -lactamase production and resistance to ampicillin, amoxicillin-clavulanate and cefuroxime in Ireland (Republic & Northern Ireland), and to reduction of resistance to cefuroxime in Great Britain (England, Wales and Scotland).

As previously reported, the prevalence of  $\beta$ -lactam resistance (in *S. pneumoniae* only) was significantly higher in Ireland than in Great Britain.

## Conclusion

$\beta$ -Lactam resistance in community-acquired *S. pneumoniae* and *H. influenzae* is no longer rising in the British Isles, and appears to be falling in *H. influenzae* in the island of Ireland.

## Acknowledgements

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## Organism ID and Susceptibility Testing

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**Collecting Laboratories:** Royal Aberdeen\*; WGH Edinburgh; New Royal Edinburgh; SGH Glasgow\*; Royal Belfast\*; Ulster Dundonald; Beaumont Dublin; Meath Adelaide Dublin; St. Vincent's Dublin; UCH Galway\*; UHW Cardiff\*; Wrexham Maelor\*; City Birmingham\*; Southmead Bristol\*; Addenbrooke's Cambridge\*; QEH Gateshead; St. James's Leeds\*; Royal Leicester\*; University of Liverpool\*; St. Bartholomew's and Royal London\*; UCH, London\*; Freeman Newcastle; Royal Victoria Newcastle; Derriford Plymouth\*; Hope Salford\*; General Southampton\*. (\*contributed in all 4 years)

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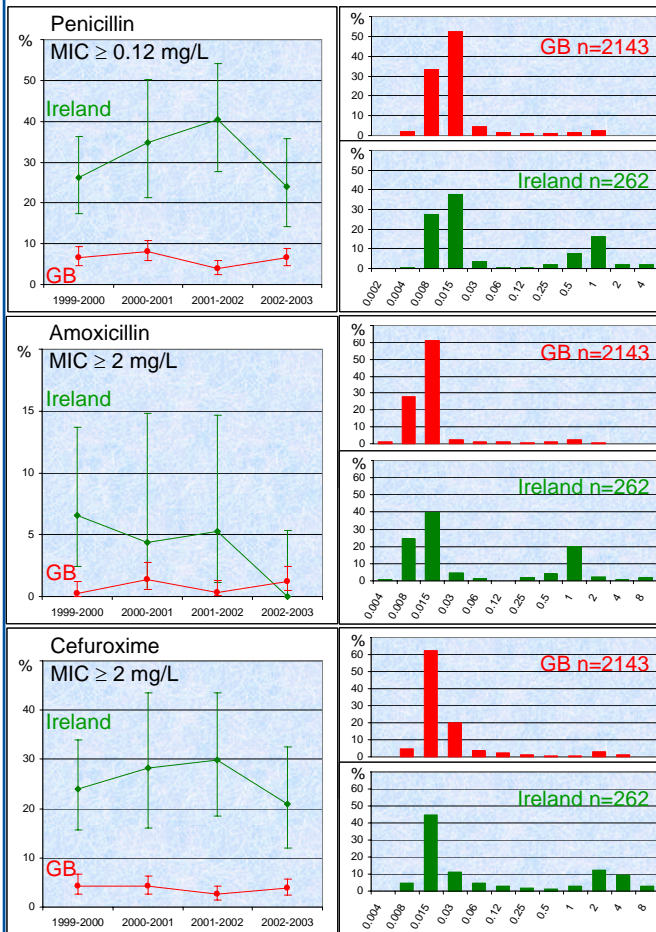
**Supported by:** BSAC

**Central Laboratory:** GR Micro Ltd, London

## *S. pneumoniae*

Trend in prevalence (%) with 95% confidence interval

MIC distributions (%) MICs in mg/L

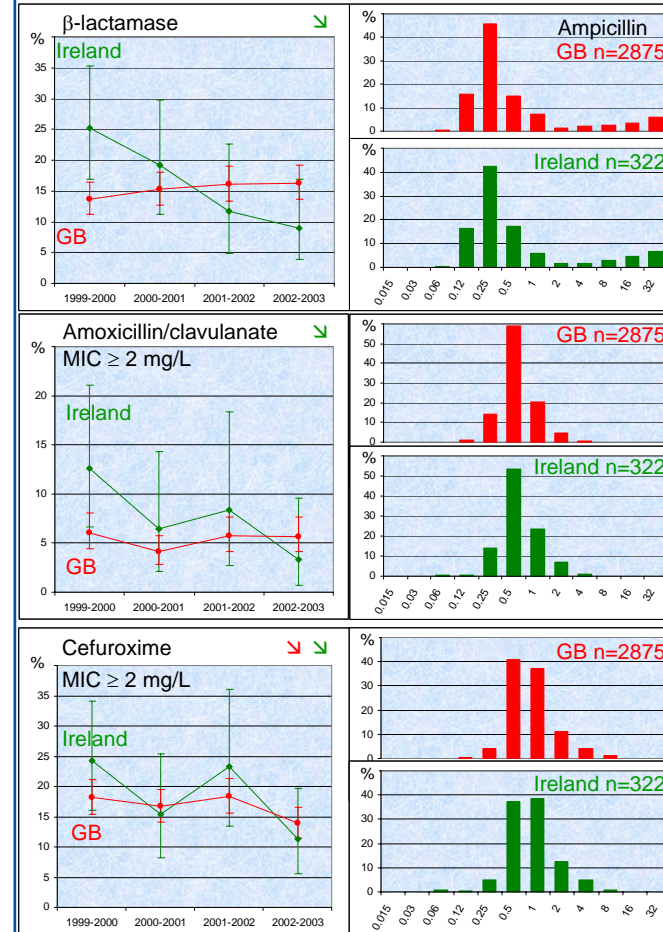


No significant linear trends.

## *H. influenzae*

Trend in prevalence (%) with 95% confidence interval

MIC distributions (%) MICs in mg/L



Significant linear trends:  $\blacktriangledown$  Great Britain,  $\blacktriangledown$  Ireland

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