

# Streptococci other than *S. pneumoniae* - 12-Year Resistance Trends in Bacteraemia in the UK and Ireland

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## BACKGROUND

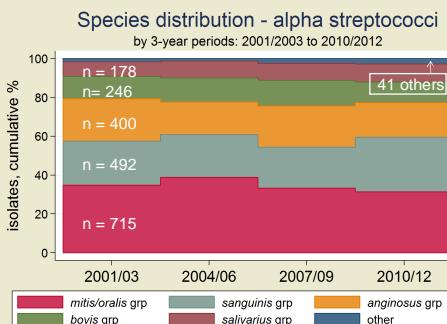
Alpha- and non-haemolytic streptococci cause about 9% of bacteraemias in the UK. Beta-haemolytic streptococci cause 5%. The BSAC Resistance Surveillance Project\* has monitored their resistance in blood in the UK and Ireland since 2001.

## METHODS

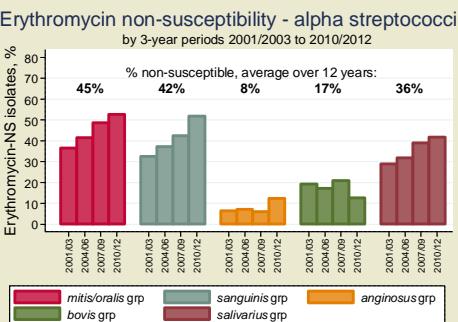
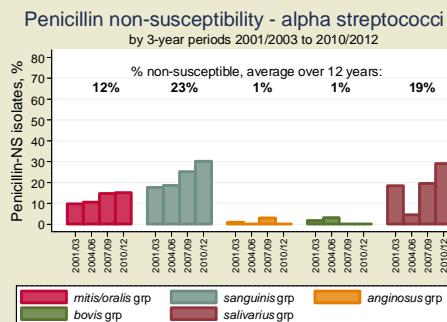
Each year, 25-40 clinical laboratories across the UK and Ireland contributed isolates from blood. Isolates were re-identified centrally by biochemical and Lancefield tests. MICs were determined by BSAC agar dilution and interpreted by BSAC / EUCAST breakpoints.

## RESULTS - ALPHA-HAEMOLYTIC STREPTOCOCCI: 2001 - 2012 (N = 2078)

Proportions of different species appeared steady over 12 years; see graph for total numbers. All isolates were susceptible to imipenem, teicoplanin, vancomycin and linezolid.



- Among *mitis/oralis*, *sanguinis* and *salivarius* groups, non-susceptibility increased substantially to erythromycin, and to a lesser extent to penicillin and amoxicillin.
- Over 99% of *anginosus* and *bovis* group isolates were susceptible to penicillins, and 92 and 83%, respectively, to erythromycin.
- Fewer isolates (6-11%) were resistant to clindamycin than erythromycin (8-45%).
- Inducible clindamycin resistance was tested only in 2012 and was rare - found in 2/190 isolates, both *bovis* II.



**Working Party Members (April 2014):** A. MacGowan<sup>1</sup> (Chair), M. Allen,<sup>2</sup> D. Brown,<sup>3</sup> A. Johnson,<sup>4</sup> D. Livermore,<sup>4</sup> S. McCurdy,<sup>5</sup> V. Martin,<sup>1</sup> J. Murray,<sup>6</sup> S. Mushtaq,<sup>4</sup> S. Peacock,<sup>7</sup> R. Reynolds,<sup>1</sup> A. Santerre-Henriksen<sup>8</sup>

**Organism ID and Susceptibility Testing:** S. Mushtaq<sup>4</sup> and staff at Public Health England.

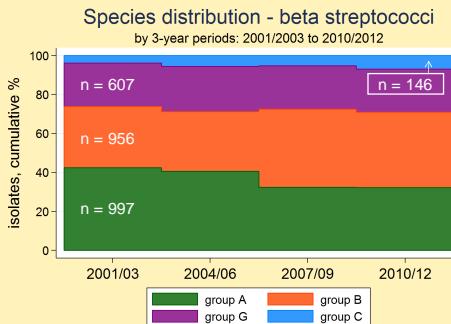
**Collecting Laboratories:** See [www.bsacsur.org](http://www.bsacsur.org) or White 2008, JAC 62 (Suppl 2) ii3–ii4.

<sup>1</sup>North Bristol NHS Trust; <sup>2</sup>Novartis; <sup>3</sup>EUCAST Scientific Secretary; <sup>4</sup>Public Health England, London; <sup>5</sup>Cubist; <sup>6</sup>LGC Ltd.; <sup>7</sup>Addenbrooke's Hospital, Cambridge; <sup>8</sup>Basilea

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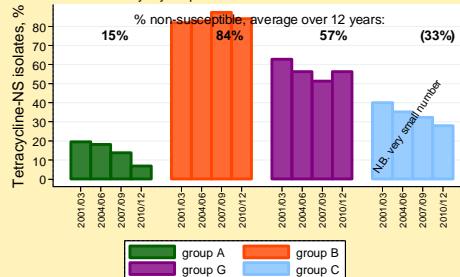
## RESULTS - BETA-HAEMOLYTIC STREPTOCOCCI: 2001 - 2012 (N = 2706)

Group B increased from 31 to 39% of all beta-haemolytic isolates, at the expense of group A. All isolates were susceptible to vancomycin, >99% to penicillin & teicoplanin, and >98% to linezolid.

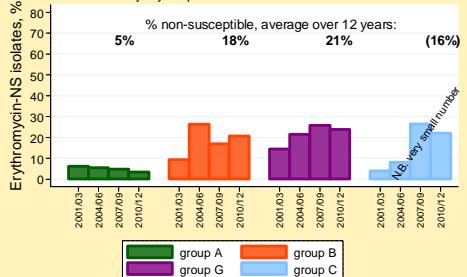


- Non-susceptibility was less prevalent in group A than other groups, and tetracycline non-susceptibility fell from 19% to 7%.
- Tetracycline non-susceptibility remains widespread in groups B, C and G, especially group B (84%).
- Groups B and G now have around 20% erythromycin non-susceptibility, and around 15% inducible clindamycin resistance.
- Isolates non-susceptible to linezolid (30/2706=1.1%) were of various groups and were all intermediate with MIC 4 mg/L.

## Tetracycline non-susceptibility - beta streptococci



## Erythromycin non-susceptibility - beta streptococci



## CONCLUSIONS

- Streptococci in the UK and Ireland remain widely susceptible to established antimicrobials.
- Different species and groups have very different susceptibility profiles.
- Erythromycin non-susceptibility has increased among *S. mitis*, *S. sanguinis* & *S. salivarius* groups over the last twelve years, and there is a similar trend for penicillin (from a lower baseline).



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