

# BSAC Bacteraemia Resistance Surveillance Update 2007

R. Reynolds<sup>1</sup>, R. Hope<sup>2</sup>, D.M. Livermore<sup>2</sup>, J. Zhang<sup>2</sup>, N. Woodford<sup>2</sup> and The BSAC Extended Working Party on Resistance Surveillance<sup>1</sup>

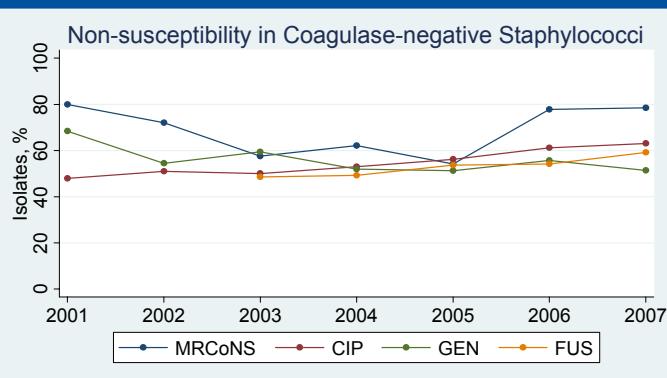
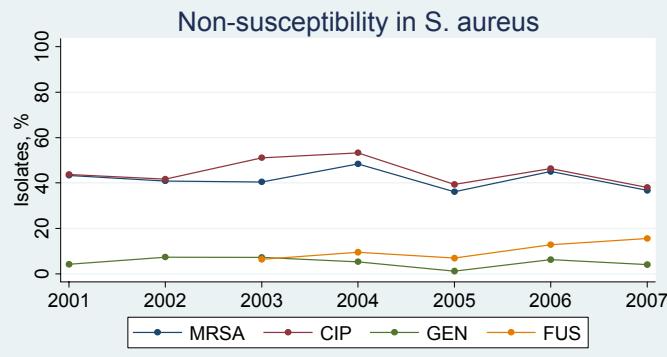
<sup>1</sup>British Society for Antimicrobial Chemotherapy, Birmingham, B1 2JS <sup>2</sup>HPA Centre for Infections, London, NW9 5EQ

## Background

- The BSAC Bacteraemia Resistance Surveillance Programme monitors antimicrobial susceptibility in the major organisms causing bacteraemia in the UK and Ireland.

## Methods

- 25 laboratories each submit up to 10 blood isolates from each of 12 organism groups, excluding duplicates.
- MICs are measured and interpreted by BSAC methods.
- Detail: [www.bsacsurv.org](http://www.bsacsurv.org) or JAC, 2008. **62**, suppl 2 ii15 - ii28

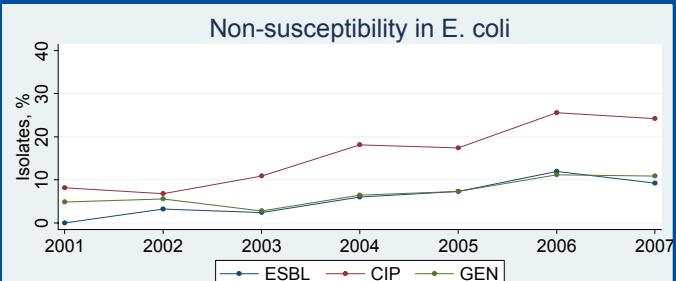


37% of *S. aureus* in 2007 were MRSA, down from a previous 5-year average of 42%. The HPA LabBase system has reported a similar drop. Resistance to ciprofloxacin and gentamicin tracked MRSA, but resistance to fusidic acid has increased.

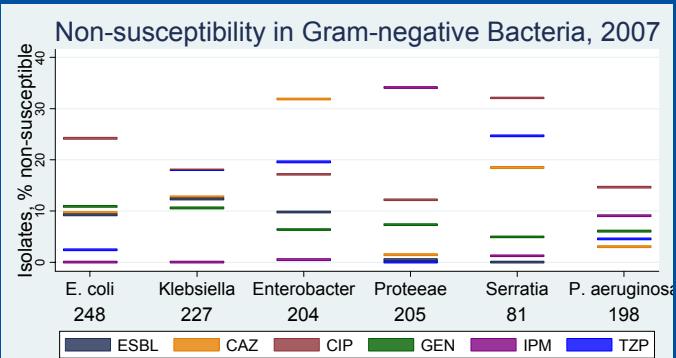
Methicillin-resistance showed no trend in CoNS, while resistance to ciprofloxacin and fusidic acid increased.

The first linezolid-resistant isolates in 7 years' surveillance were seen in 2007 - one MRSA (MIC 8 mg/L) and one MRCNS (16 mg/L), from the same laboratory and with the same G2576T mutation in their 23S rRNA genes.

Non-susceptibility in streptococci and enterococci was little changed from previous years.



After increasing dramatically from 2001 to 2006, the prevalence of ESBLs and non-susceptibility to CIP and GEN in *E. coli* steadied at 9, 24 and 11% respectively.



Resistance rates in other Enterobacteriaceae were similar to those of the last three years, and there was little change in *Pseudomonas* and *Acinetobacter* spp..

Acquired carbapenem resistance was rare in Enterobacteriaceae apart from ETP resistance in AmpC-derepressed *Enterobacter* spp., but we found MICs indicating reduced susceptibility to IPM in one isolate of *Enterobacter* (8 mg/L) and one *Serratia* (4 mg/L); both were susceptible to GEN.

One *Acinetobacter baumannii/calcoaceticus* (out of 14 tested) was resistant to IPM at 16 mg/L and also to CIP, GEN, TZP and TGC at 128, 128, 512 and 8 mg/L, the second isolate in four years fully resistant to these agents.

## Conclusions

- Methicillin- and associated resistances have become less prevalent in *S. aureus*.
- The rise in ESBLs and associated resistances in *E. coli* appears to have levelled off.
- Though rare as yet, the detection of linezolid-resistant staphylococci and highly multi-resistant *Acinetobacter* in these relatively small sample groups is unwelcome.

**Abbreviations:** ESBL extended-spectrum  $\beta$ -lactamase, MRSA/MRCNS methicillin-resistant *S. aureus*/coagulase-negative staphylococci. CAZ ceftazidime, CIP ciprofloxacin, GEN gentamicin, IPM imipenem, TGC tigecycline, TZP piperacillin-tazobactam.

**BSAC Bacteraemia Resistance Surveillance Programme 2001 - 2006, 2007.** **Sponsors:** Astellas, AstraZeneca, Chiron, Cubist, Johnson & Johnson, MSD, Novartis, Pfizer, Theravance, Wyeth. **Support:** BSAC. **Collecting laboratories:** please see [www.bsacsurv.org](http://www.bsacsurv.org)

**Central Laboratory:** HPA Centre for Infections, London. **Organism ID and Susceptibility Testing:** G. Brick, M. Colman, R. Hope, N. Potz.

Correspondence: Dr. R. Reynolds, BSAC Resistance Surveillance Co-ordinator  
Department of Medical Microbiology, Southmead Hospital, Bristol, BS10 5NB  
rreynolds@bsac.org.uk