Resistance among the Pathogens of Bacteremia in the UK assessed by Sentinel Surveillance and Routine Data

**Background**
Antibiotic resistance is a rising concern that demands surveillance. We compared susceptibility results from sentinel and routine methods of surveillance in bacteremia.

**Sentinel Survey - BSAC Bacteremia Resistance Surveillance**
In 2001, 24 laboratories in England, Wales, Scotland, N. Ireland and Eire each collected up to 10 consecutive isolates of each of the commonest agents of bacteremia. A central laboratory identified them to species level by defined methods, tested them by the BSAC agar dilution MIC method and categorised them by BSAC breakpoints (including intermediate with resistant).

**Routine Data - LabBase system, PHLS**
In the same year, >200 hospitals in England and Wales only contributed susceptibility results to LabBase from bacteremia isolates using local, possibly varied, methods of identification, testing and interpretation.

**Results**
Most resistance rates agreed well between the two studies. Differences for penicillin / S. pneumoniae, ampicillin / E. faecalis, and gentamicin / P. aeruginosa may be explained by routine under-detection of penicillin resistance, routine mis-identification among enterococci, and inconsistent use of breakpoints.

The sentinel study showed very high susceptibility to piperacillin/tazobactam among P. aeruginosa (93%), E. coli (98%), Klebsiella spp. (90%) and Proteaeae (100%), to imipenem in Enterobacteriaceae (see charts), and to linezolid among Gram-positive cocci (100%).

**Acknowledgements**

Southmead Hospital, Bristol; Wyeth Laboratories; Addenbrookes Hospital, Cambridge; Mercia, Sharp & Dohme; Microex, Central Public Health Laboratory; BSAC Bayer Pharmaceuticals; GlassSmKlinke; City Hospital Birmingham.

Collecting Laboratories: Ashford PHL, Bangor PHL, City Belfast, City Birmingham, Bristol PHL, Cardiff PHL, Chelmsford PHL, Chester PHL, University Cork, Coventry PHL, Beaumont Dublin, Ninewells Dundee, Royal Glasgow, St Mary’s London, UCH London, Altnagelvin Londonderry, Manchester PHL, Middlesbrough PHL, Freeman Newcastle, Norwich PHL, Queens Nottingham, Sheffield PHL, Shrewsbury PHL, Southampton PHL, Truro PHL.

Sponsored by: Merck, Sharp & Dohme Pharmacia Wyeth

Supported by: BSAC

Central Laboratory: CPHL, London

**Abbreviations**
BSAC: British Society for Antimicrobial Chemotherapy; CPHL: Central Public Health Laboratory; EARSS: European Antimicrobial Resistance Surveillance System; PHLS: Public Health Laboratory Service

**References**
1. MacGowan AP: Merck, Sharp & Dohme
3. 69m gL-1. Please address correspondence to: Dr. R. Reynolds, BSAC Resistance Surveillance Co-ordinator, Department of Medical Microbiology, Southmead Hospital, Bristol, BS10 5NB, England.

**ICAC, San Diego, Sept 2002 C2-302**