

**P1528**

**Paper Poster Session**

**Lessons from surveillance of resistance in Gram-negatives**

**An evaluation of the antimicrobial resistance surveillance system in England, 2013 - 2014**

Sophie Newitt<sup>1</sup>, Dean Ironmonger<sup>2</sup>, Amardeep Bains<sup>2</sup>, Richard Puleston<sup>1</sup>, Alan Johnson<sup>3</sup>, Obaghe Edeghere<sup>2</sup>

<sup>1</sup>*Public Health England, National Infection Service, Nottingham, United Kingdom*

<sup>2</sup>*Public Health England, National Infection Service, Birmingham, United Kingdom*

<sup>3</sup>*National Infection Service, Public Health England, Hcai & Amr, London, United Kingdom*

**Background:** Antimicrobial resistance (AMR) is an important public health issue globally. It is therefore essential to improve our understanding of the epidemiology of AMR through efficient surveillance systems. In 2009, England implemented a system to collect antimicrobial susceptibility testing (AST) reports for all bacterial isolates tested in laboratories.

**Material/methods:** Based on the Centers for Disease Control and Prevention guidelines for evaluating surveillance systems, we quantitatively assessed the attributes flexibility, simplicity, timeliness, representativeness, data quality and acceptability for the period 01 January 2013 to 31 December 2014. We also assessed a number of attributes qualitatively by interviewing a purposive sample of system users using a semi-structured electronic questionnaire. As a proxy measure of representativeness, we compared a subset of antibiotic resistant bacteraemia isolates to two alternative national datasets for AST reports.

**Results:** During 2013 to 2014, over 40 million unique AST reports were submitted to the system. By December 2014, 90% of 134 English laboratories had reported to the system. The response rate for the system users survey was 17%. The system was assessed as simple due to integration into existing laboratory reporting arrangements but inflexible due to difficulties in adapting to individual laboratory systems and updating coding tables. Reports took a median of 21 days (range: 0-194 days) from the specimen date to import. The completeness of patient demographic data fields ranged from 80.6% to 99.7%. Data completeness of the fields "MIC" and "Zone size" were low at 14% and 1%, respectively. When compared to two datasets, the system was 57% and 45% representative.

**Conclusions:** The AMR surveillance system in England was successful in collating AST results. However, improvements are required in completeness, timeliness and data quality to ensure it accurately describes the burden of disease and highlights emerging issues in a timely manner. Work is currently in progress to address this.