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O0333 Overseas travel and antibiotic use are more important than community demographics or measures of social and material deprivation in predicting ESBL colonization at the time of hospital admission

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Background: ESBL-producing Enterobacteriaceae (ESBL-E) are clinically problematic and drive the use of carbapenems. Individual risk factors associated with antibiotic use and travel are typically associated with ESBL carriage. Few studies have evaluated variations in community demographics or social and material deprivation as risk factors for ESBL-E carriage.

Materials/methods: 1633 inpatients were tested for ESBL-E carriage in rectal swabs as part of a universal admission screening project using chromogenic agar culture and semi-automated antimicrobial susceptibility testing (Vitek). Patients were linked by residential postcode to community-based risk factors including population density, population ethnicity, housing, length of residence in the UK, and various deprivation indices. Individual risk factor data was collected at the time of specimen collection. Risk factors for ESBL-E carriage were determined by univariable and multivariable binary logistic regression. Variables that were significant by univariable analysis ($p<0.05$) were included in multivariable analysis. The multivariable analysis was adjusted for the rate of attending hospital emergency departments in each region.

Results: A total of 9.6% of the patients were colonised with ESBL-E. In the univariable analysis, the following variables were associated with ESBL-E carriage: Asian or Black ethnicity, travel to Asia or Africa in the past 12 months, the length of time spent overseas, two or more courses of antibiotics in the past 6 months, the proportion of residents with Arabic ethnicity, and living in a home with two or less rooms. In the multivariable analysis, the following variables were associated with ESBL-E

carriage: travel to Asia (OR 5.0, CI 2.5-10.0) or Africa (OR 2.9, CI 1.2-7.0) in the past 12 months, two or more courses of antibiotics in the past 6 months (OR 2.2, CI 1.4-3.5).

Conclusions: We were able to link individual risk factor information (such as antibiotic use and overseas travel) with community-based risk factor information (such as the proprotion of residents in various ethnic groups). This allowed us to conclude that individual risk factors (including antibiotic use and overseas travel) were more important than community-based risk factors for predicting colonisation with ESBL-E at the time of hospital admission. This information is useful when identifying risk groups for targeted screening.