

## Demographic and socio-economic determinants of antibiotic consumption in Northern Ireland

### Key Findings:

- Across all socio-economic groups, females were more likely to receive a prescription for antibiotics than males (34.3% and 22.3% respectively);
- A greater proportion of those receiving 6+ antibiotic items were from the more disadvantaged categories;
- Those in both “currently married” or “once married” relationships were more likely to receive antibiotic prescriptions than those “never married”;
- Corroborating similar European studies, findings indicate that Catholics were more likely to receive prescriptions for antibiotics than Protestants.

### BACKGROUND TO THE RESEARCH

Antibiotic resistance is a key concern in modern medicine. While this may, at least in part, be related to precautionary prescribing at the community level, there has been limited investigation into the population-based characteristics which influence prescribing practices. This research was undertaken to explore the impact of these population-based characteristics on prescribing practices.

### METHODOLOGY & RESULTS

An anonymised record linkage study was conducted, combining the Northern Ireland Longitudinal Study (NILS) and a recently established Enhanced Prescribing Database, linking 2001 Census and area based attributed for approximately 450,000 individuals with antibiotic prescriptions during July 2009-June 2010. Baseline demographic attributes consisted of age, gender, and marital status, for the latter an indicator of couple co-habitation rather than marital status *per se* was used. Religious denomination was analysed to test broader conceptual concerns in relation to the noted association between religion and health. An indicator of the degree of urban or rural living was included. The effects of socio-economic circumstance were examined using three separate indicators, each highlighting different aspects of disadvantage:

- Personal and household disadvantage,
- Composite tenure and capital value of properties as a measure of lifetime accumulated wealth, and
- An area level indicator of deprivation.

The research was based on the number of antibiotic items (from zero to twenty-five or more) over the period July 2009 to June 2010.

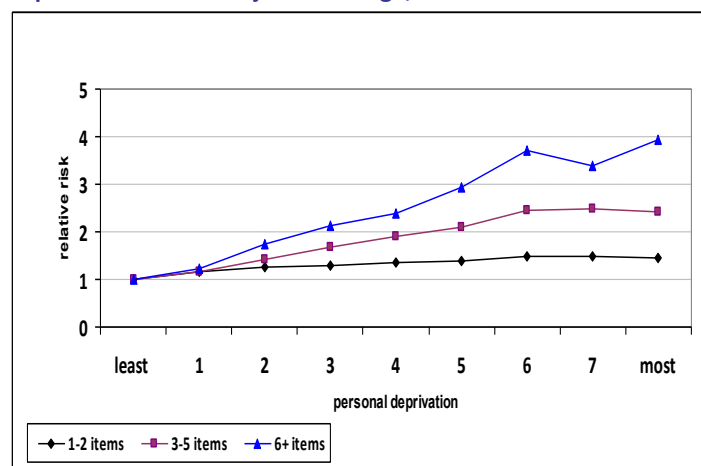
Of the study population, 22.4% received 1-2 prescriptions, 4.8% received 3-5 and 1.2% received 6+. In models adjusted for socio-economic circumstance, when compared against non recipients, females in all groups were more likely to receive a prescription than males. Increasing gradients for receipt of antibiotics were associated with older ages in all except the oldest cohort; those who were currently or once married, and

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those from more disadvantaged background. Furthermore, an examination of religious denomination showed a greater risk for Catholics than for Protestants (14% greater in the 6+group).

Overall, the results highlighted a clear socio-economic gradient with those receiving 6+ antibiotic items recording higher proportions in the more disadvantages categories.

### Persons 25-74: prescribing patterns by indicator of personal deprivation. Model adjusted for age, sex & marital status



### POLICY IMPLICATIONS

- Knowledge of patterns of population sub groups where antibiotic prescribing is concentrated is important in targeting interventions and awareness campaigns required to reduce known unnecessary prescribing.
- The use and importance of an anonymised large scale data linkage of population and health databases in an invaluable tool in research relating to all prescribing practices.

### NORTHERN IRELAND LONGITUDINAL STUDY (NILS)

The NILS, a sister study to the Northern Ireland Mortality Study (NIMS), is a large-scale record linkage study based on an approximate 28% sample of the Northern Ireland population (c. 500,000 individuals). Both studies allow exploration of health and socio-demographic characteristics. The NILS Research Support Unit provides information, advice and support for users of the NILS and NIMS databases. Contact us at: [www.nils-rsu.census.ac.uk](http://www.nils-rsu.census.ac.uk).

This research brief is based on Johnston F & Rosato M (2011) Demographic and socio-economic determinants of antibiotic consumption in Northern Ireland: a longitudinal analysis. For further information please go to: [NILS RSU Publications](#).