Appropriate prescribing of antibiotics in general practice in England

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Background
The RCGP RSC has a network of approximately 100 practices covering approximately one million patients, from which it collects morbidity and antibiotic prescribing information. It is able to provide analysis of prescribing behaviour in retrospect and in real time, so that changes over time and the decision to prescribe or not can be studied. The database contains patient linked data which allows prescriptions of antibiotics to be time linked to diagnosis. The data have been validated against data from the NHS Prescriptions Pricing Division at national and practice level.

Content of Presentation
The presentation gives a brief background to the RCGP RSC and explains how the database results have been validated. Analyses of persons prescribed antibiotics and numbers of items prescribed (courses of treatment) by age and gender in 2010 for all antibiotics and for the 12 groups of antibiotics as classified in the British National Formulary. Real-time analysis of respiratory tract infections and otitis media consultations; showing the proportion of consultations that were prescribed an antibiotic during 2012.

Relevance/Impact
This project gives insight into the antibiotic prescribing habits of general practitioners in England in 2010. The potential of RCGP RSC to be used routinely to monitor antibiotic prescribing in relation to diagnosis is highlighted. The results of this study are highly relevant to informing prescribing policy and understanding how general practitioners follow prescribing guidelines.

Outcomes
For all antibiotics rates of persons receiving antibiotics were highest in persons at the opposite ends of the age spectrum but antibiotic item rates were highest in older age groups increasing rapidly in persons over 65 years (figure 1). For penicillinase sensitive antibiotics items prescribed (IPR) and persons receiving prescriptions (PPR) are similar in both genders, the difference between the IPR and PPR increased with age. For broad spectrum penicillins (the most frequently prescribed group of antibiotics) the rate of courses of treatment is on average 40% higher than the persons prescribed rate, indicating that the average person receiving such an antibiotic receives 1.4 courses of treatment during a 12 month period. Females have a 20% higher PPR and IPR for penicillinase resistant penicillins, except in the <5 age group. The PPR for cephalosporins is approximately 3 times higher in females than males. On average 60% of RTI diagnoses (Figure 2) and 88% of otitis media diagnoses are issued an antibiotic prescription.

Figure 1: Persons receiving an antibiotic prescription(PPR) during 2010 and rates of antibiotic prescriptions(IPR) per 1000 population

Figure 2: Real time analysis Persons reporting RTI with and without an antibiotic prescription, weekly January to March 2012 (RCGP data)
Conclusions
This study provides factual data on prescribing in a population well representative of the national population and summarises prescribing practice in the Weekly Returns Service of the RCGP. The study shows the potential of the RCGP database for reporting real time antibiotic prescribing linked to diagnosis. The study allows the prescribing of antibiotics in primary care to be evaluated in comparison with prescribing guidelines.

Keywords antibiotic prescribing, antibiotic resistance