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Addressing outpatient antibiotic prescribing

Antibiotic prescribing trends and patterns among out-of-hours providers, England, 2010-2014

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Background: Antimicrobial resistance (AMR) is a global public health threat, resulting in increased morbidity and mortality. In England, publicly funded clinical commissioning groups (CCGs) locally commission Out-of-Hours (OOH) services to provide primary healthcare outside general practice (GP) opening hours. In 2013-2014, there were an estimated 3.3 million OOH consultations and 300 million in-hours GP consultations. National surveillance reported a 32% increase in antibiotic prescription in community services other than GP between 2010- 2013. These services include a range of providers, which include, but are not limited to, OOH. We aimed to describe antibiotic prescribing patterns and trends among OOH services between 2010-2014.

Material/methods: We estimated the proportion of CCGs with OOH data available in the national prescribing database; described and compared antibiotic prescribing by volume, seasonality and trends in GP and OOH, using linear regression; and compared the proportion of broad-spectrum to total antibiotic prescriptions in OOHs with their respective CCGs in terms of seasonality and trends, using binomial regression.

Results: Data was available in 143/211 (68%) CCGs. Prescription volume in OOH represented 3.2% of GP antibiotic prescription volume (range 3.1-3.3% in individual years) and peaked (as did GP antibiotic prescription) each year in December. Prescription volume was stable over time ($p=0.4$). The proportion of broad-spectrum antibiotics prescriptions increased in OOH when it increased in the CCG they operated in (regression coefficient 0.99; 95%CI 0.94-1.06). Compared with GP, the proportion of broad spectrum antibiotic prescriptions in OOH was consistently higher but decreased both in GP and OOH (Table 1, -0.57%, 95%CI -0.54;-0.6 and -0.76%, 95%CI -0.59;-0.93 per year respectively).

Table 1. Proportion of broad spectrum antibiotics out of total antibiotic prescriptions, by year and type of practice, England, 2010-2014

	2010		2011		2012		2013		2014	
	%	95%CI	%	95%CI	%	95%CI	%	95%CI	%	95%CI
GP	12.7	12.5-12.8	11.8	11.7-11.9	10.7	10.7-10.8	10.6	10.5-10.7	10.3	10.3-10.4
OOH	15.5	14.9-16	14.8	14.3-15.3	13.4	12.9-13.9	13.0	12.4-13.5	12.5	12-13.1

Conclusions: Compared with in-hours GP, OOH prescribing was out of proportion to the volume of consultations. OOH prescribing volume was stable over time, and followed similar seasonal patterns to GP. OOH antibiotic prescribing reflected the CCGs they operated in but with relatively more broad-

spectrum antibiotics than in-hours GP, although the gap was narrowing. Understanding factors influencing prescribing in OOH will enable the development of tailored interventions promoting optimal prescribing in this setting.

Figure 2. Contribution of broad spectrum antibiotics to prescribing volume among OOH providers and their CCGs, England, 2010-2014

