

Antibiotic Resistance

– facts and figures

Fact #1

Antibiotic resistance is an increasingly serious public health problem in Europe [1, 2]. Resistance to antibiotics is often high and increasing. In many countries, resistance rates have more than doubled in the past five years.

Growing antibiotic resistance threatens the effectiveness of antibiotics now and in the future.

The suggested patient dialogue model below proposed a method that primary care prescribers can use with patients consulting for respiratory tract infections based on the elicit-provide-elicit model:

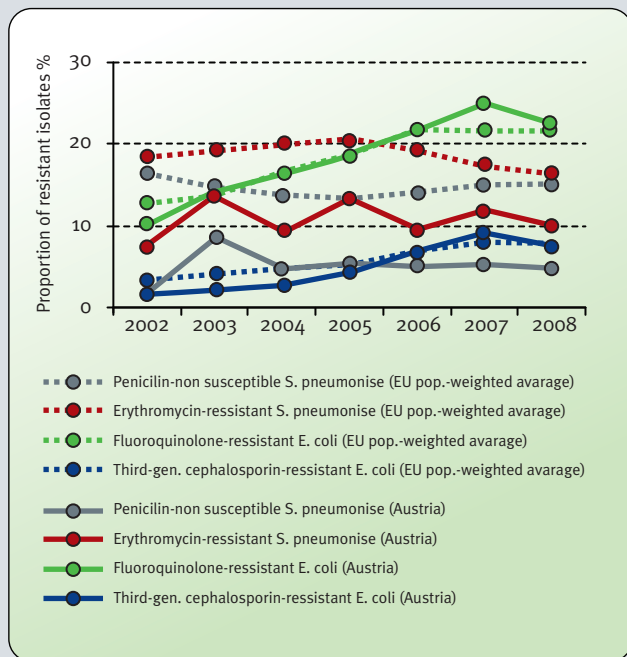


Figure 1. Trends in antibiotic resistance (invasive infections), 2002-2008. Source: EARSS, 2009 [3].

Fact #2

Antibiotic exposure leads to emergence of antibiotic resistance [4]. The overall uptake of antibiotics in a population, as well as how antibiotics are consumed, has an impact on antibiotic resistance [5, 6].

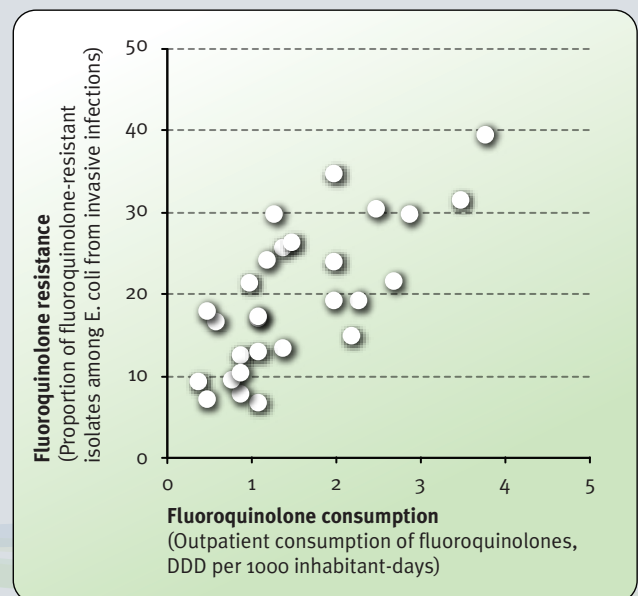
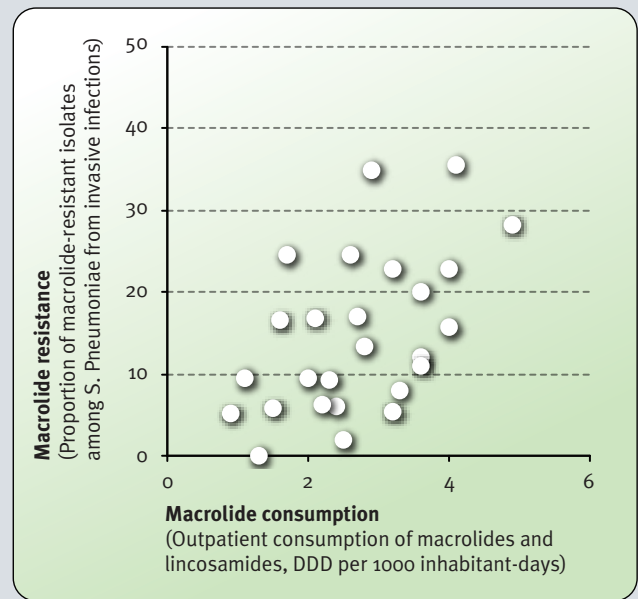


Figure 2. The link between antibiotic consumption and antibiotic resistance, 2007 (or latest available year, each data point represents one country) [3, 7]

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Fact #3

Antibiotic prescribing and consumption varies between European countries [7, 8]. Primary care accounts for about 80 to 90% of all antibiotic prescriptions, mainly for respiratory tract infections [5, 9].

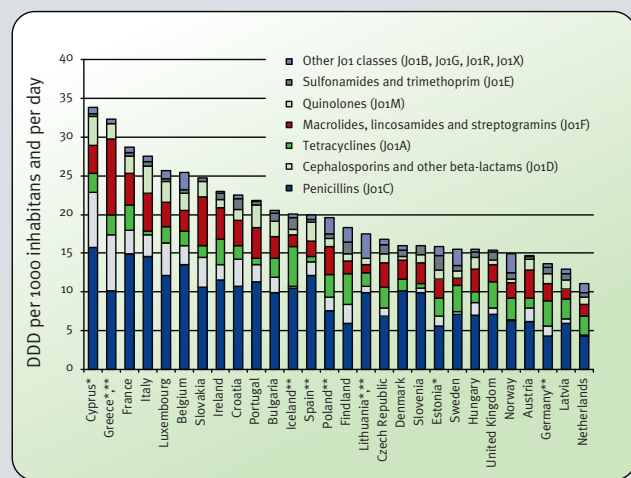


Figure 3. Outpatient antibiotic consumption in 28 European countries in 2007 (reported in Defined Daily Doses (DDD) per 1000 inhabitants and per day). Source: ESAC, 2009 [7]. *Total use, i.e. including inpatients, for Cyprus, Estonia, Greece and Lithuania. **2006 data for Germany, Greece, Iceland and Lithuania; 2005 data for Poland and United Kingdom. ***Reimbursement data, which do not include over-the-counter sales without a prescription for Spain.

Fact #4

Communicating with patients is key. Professional medical advice impacts patients' perceptions and attitude towards their illness and perceived need for antibiotics.

Studies show that patient satisfaction in primary care settings depends more on effective communication than on receiving an antibiotic prescription [10-12] and that prescribing an antibiotic for an upper respiratory tract infection does not decrease the rate of subsequent return visits [13].

Professional medical advice impacts patients' perceptions and attitude towards their illness and perceived need for antibiotics, in particular when they are advised on what to expect in the course of the illness, including the realistic recovery time and self-management strategies [14].

Primary care prescribers do not need to allocate more time for consultations that involve offering alternatives to antibiotic prescribing. Studies show that this can be done within the same average consultation time while maintaining a high degree of patient satisfaction [9, 15, 16].

References

- [1] European Antimicrobial Resistance Surveillance System. EARSS Annual Report 2007. Bilthoven, Netherlands: National Institute for Public Health and the Environment, 2008. http://www.rivm.nl/earss/result/Monitoring_reports/. [2] Cars O, Högberg LD, Murray M, et al. Meeting the challenge of antibiotic resistance. *BMJ* 2008;337:a1438. doi: 10.1136/bmj.a1438. [3] European Antimicrobial Resistance Surveillance System (EARSS). Interactive database. <http://www.rivm.nl/earss/database/>. [4] Malhotra-Kumar S, Lammens C, Coenen S, Van Herck K, Goossens H. Effect of azithromycin and clarithromycin therapy on pharyngeal carriage of macrolide-resistant streptococci in healthy volunteers: a randomised, double-blind, placebo-controlled study. *Lancet* 2007;369:482-90. [5] Goossens H, Ferech M, Vander Stichele R, Elseviers M; ESAC Project Group. Outpatient antibiotic use in Europe and association with resistance: a cross-national database study. *Lancet* 2005;365:579-87. [6] Guillemot D, Carbon C, Balkau B, et al. Low dosage and long treatment duration of beta-lactam: risk factors for carriage of penicillin-resistant *Streptococcus pneumoniae*. *JAMA* 1998;279:365-70. [7] European Surveillance of Antibiotic Consumption (ESAC). http://app.esac.ua.ac.be/public/index.php/en_gb. [8] Mölstad S, Lundborg CS, Karlsson AK, Cars O. Antibiotic prescription rates vary markedly between 13 European countries. *Scand J Infect Dis* 2002;34: 366-71. [9] Cals JWL, Butler CC, Hopstaken RM, Hood K, Dinant GJ. Effect of point of care testing for C reactive protein and training in communication skills on antibiotic use in lower respiratory tract infections: cluster randomised trial. *BMJ* 2009;338:b1374. doi: 10.1136/bmj.b1374. [10] Butler CC, Rollnick S, Pill R, Maggs-Rapport F, Stott N. Understanding the culture of prescribing: qualitative study of general practitioners' and patients' perceptions of antibiotics for sore throats. *BMJ* 1998;317(7159):637-42. [11] Kallestrup P, Bro F. Parents' beliefs and expectations when presenting with a febrile child at an out-of-hours general practice clinic. *Br J Gen Pract* 2003;53(486):43-4. [12] Macfarlane J, Holmes W, Macfarlane R, Britten N. Influence of patients' expectations on antibiotic management of acute lower respiratory tract illness in general practice: questionnaire study. *BMJ* 1997;315(7117):1211-4. [13] Li J, De A, Ketchum K, Fagnan LJ, Haxby DG, Thomas A. Antimicrobial prescribing for upper respiratory infections and its effect on return visits. *Fam Med* 2009;41(3):182-7. [14] Rutten G, Van Eijk J, Beek M, Van der Velden H. Patient education about cough: effect on the consulting behaviour of general practice patients. *Br J Gen Pract* 1991; 41(348):289-92. [15] Cals JWL, Scheepers NAM, Hopstaken RM, et al. Evidence based management of acute bronchitis; sustained competence of enhanced communication skills acquisition in general practice. *Patient Educ Couns* 2007;68(3):270-8. [16] Welschen I, Kuyvenhoven MM, Hoes AW, Verheij TJM. Effectiveness of a multiple intervention to reduce antibiotic prescribing for respiratory tract symptoms in primary care: randomised controlled trial. *BMJ* 2004; 329(7463):431-3.