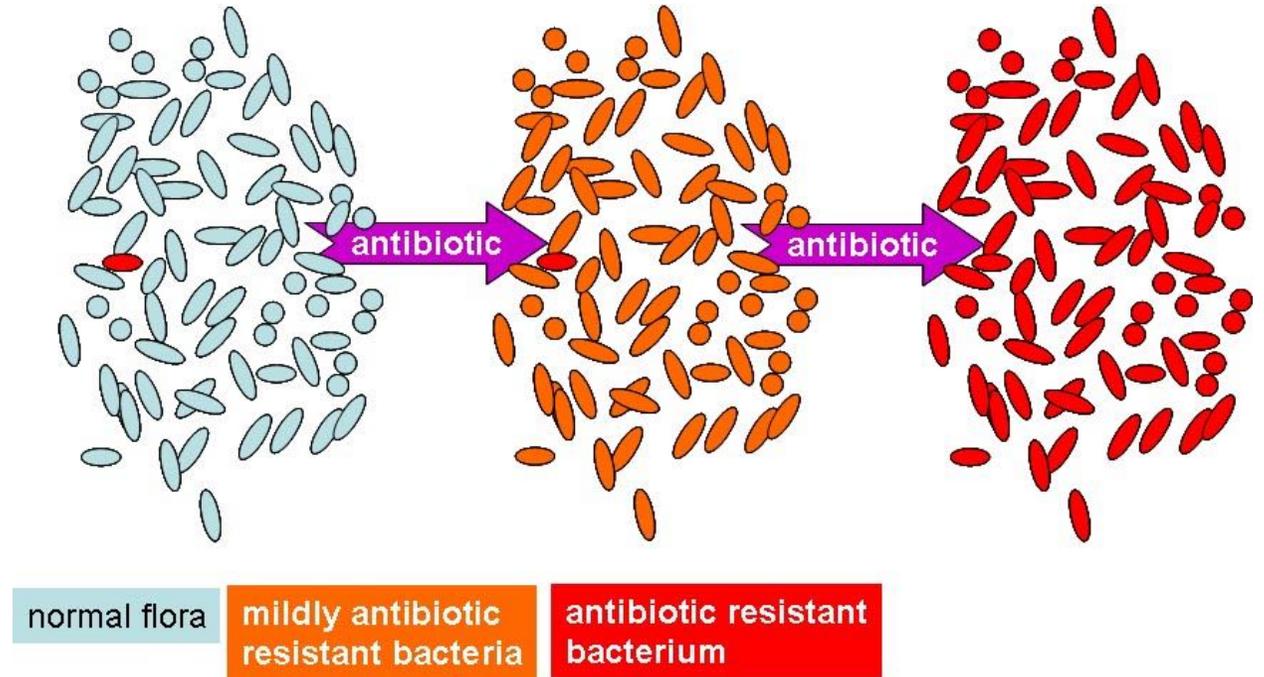


Antibiotic Prescription Rates

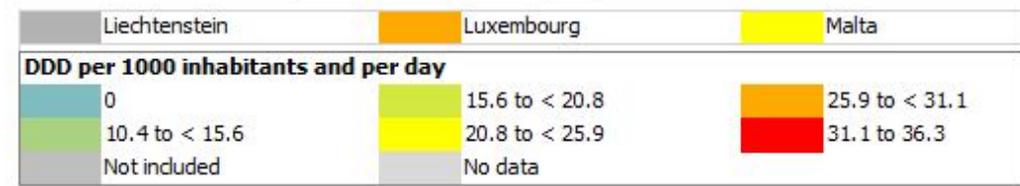
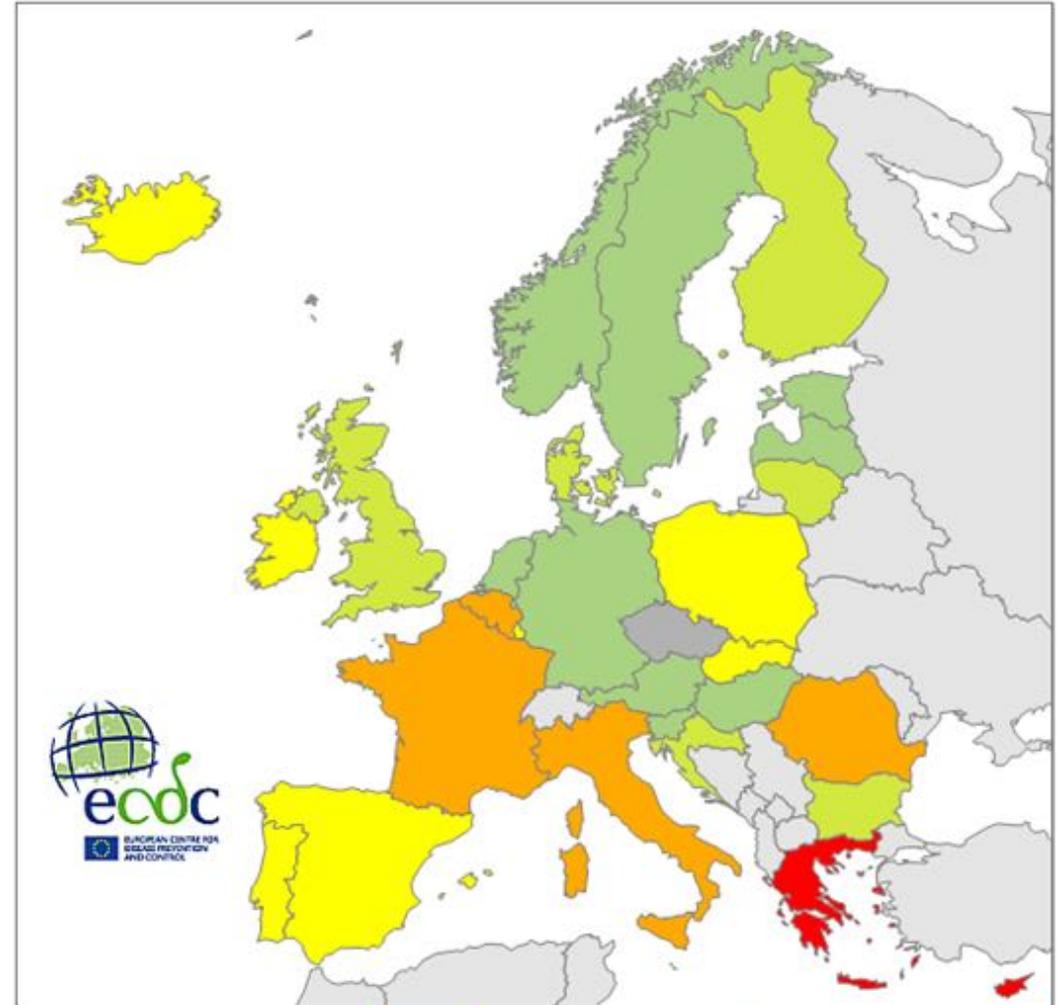


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Antibiotic Consumption

Outpatient antibiotic consumption over 2017
Defined Daily Dose per 1000 inhabitants per day

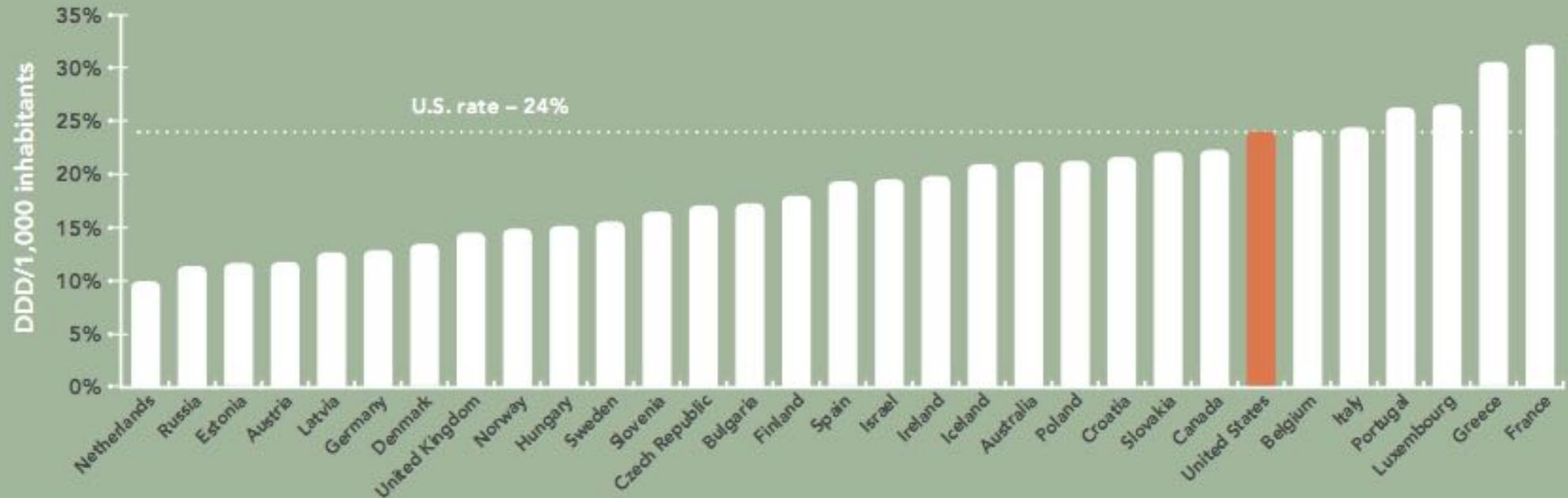


Ref: www.hpsc.ie

Antibiotic Prescription

FIGURE 1.6

Antibiotic prescribing rates for the United States and other countries



Sources: Canada, Australia, and United States, 1994 (McManus, Hammond et al. 1997); Russia, 1998 (Cizman, Beovic et al. 2004); Australia, 2002 (National Prescribing Service 2005); European countries, 2004 (Goossens, Ferech et al. 2003).

Note: DDD=defined daily doses, a standardized measure of antibiotic consumption.

Reference: The Center For Disease Dynamics, Economics & Policy

GPs at the top

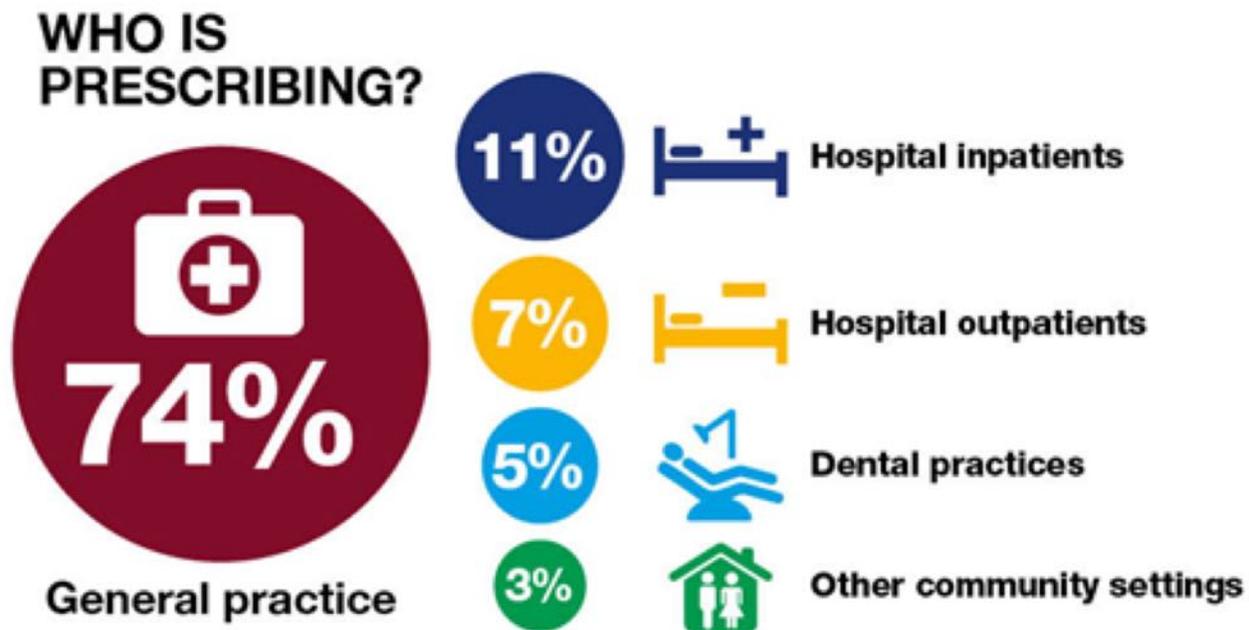


Table 1. Actual and ‘ideal’ antibiotic prescribing proportions among patients without comorbidities consulting at a general practice

| Condition | Consultations (n) | Proportion of consultations with a systemic antibiotic prescription (95% CI) | Ideal proportion of consultations resulting in systemic antibiotic prescriptions (IQR) ¹⁶ |
|--|-------------------|--|--|
| Acne | 60959 | 0.43 (0.43–0.44) | 0.21 (0.10–0.35) |
| Acute bronchitis | 17084 | 0.82 (0.82–0.82) | 0.13 (0.06–0.22) |
| Acute cough | 573827 | 0.41 (0.41–0.41) | 0.10 (0.06–0.16) |
| Acute otitis media (age 0–1 year) | 14886 | 0.92 (0.91–0.92) | 0.19 (0.09–0.33) |
| Acute otitis media (age 2–18 years) | 39513 | 0.88 (0.88–0.89) | 0.17 (0.08–0.30) |
| Acute rhinosinusitis | 74359 | 0.88 (0.88–0.88) | 0.11 (0.05–0.18) |
| Acute sore throat | 386971 | 0.59 (0.58–0.59) | 0.13 (0.07–0.22) |
| Asthma exacerbation | 23292 | 0.47 (0.46–0.47) | – |
| COPD exacerbation | 13840 | 0.73 (0.72–0.74) | 0.54 (0.31–0.78) |
| Gastroenteritis (age >2 years) | 114290 | 0.05 (0.05–0.05) | 0.09 (0.04–0.16) |
| Impetigo | 29809 | 0.53 (0.52–0.53) | 0.12 (0.06–0.53) |
| Influenza-like illness | 23787 | 0.18 (0.18–0.19) | – ^c |
| Lower respiratory tract infection ^a | 161065 | 0.87 (0.87–0.88) | – ^c |
| Upper respiratory tract infection ^b | 383847 | 0.25 (0.25–0.25) | – ^c |
| Urinary tract infection age (>14 years) | 128566 | 0.92 (0.91–0.92) | 0.75 (0.61–0.86) |

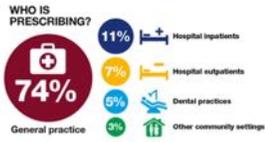
^aIncluding non-specific LRTI, COPD exacerbations, acute bronchitis and pneumonia.

^bIncluding non-specific URTI, common cold, laryngitis and tracheitis.

^cCondition for which expert opinion on ideal prescribing proportions was not elicited.

Pouwels et al.

J Antimicrob Chemother 2018; **73** Suppl 2: ii19–ii26
doi:10.1093/jac/dkx502



Antibiotic Prescription Study

Is there a the differences in antibiotic prescription rates between **‘conventional GPs surgeries’** and **GP surgeries employing GPs additionally trained in IM/CAM** within NHS Primary Care in England?

Which factors are already known to be associated?





Factors associated with Antibiotic Prescription in Primary Care

1. Knowledge and experience of clinician and patient

- *e.g. clinician attitude towards complications, fear to lose a patient*
- *e.g. patient's knowledge on antibiotics*

2. Patient characteristics

- *e.g. belief of illness*

3. Lifestyle and cultural factors

- *e.g. religion*

4. Capacity

- *e.g. medical insurance system/co-payment system*

5. Regulation

- *e.g. guidelines*



Antibiotic Prescription



GPs as a professional group are expected to react homogenously to external demands, basing their prescription on objective measures and guidelines.

But different views on medicalisation and the use of complementary and alternative medicines (CAM)/integrative medicine (IM) could result in variations in antibiotic prescribing.

The association between the use of CAM/IM by GPs and antibiotic prescribing has so far not been widely scrutinised.



The Times- March 2018





Methods

Design

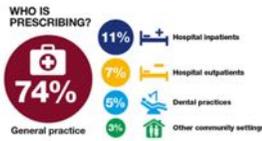
Retrospective study on antibiotic prescription rates (measured as total antibiotics, respiratory tract infection (RTI) specific antibiotics and urinary tract infection (UTI) specific antibiotics) **per GP surgery** using NHS digital data over 2016.

Participants

7283 NHS GP surgeries in England.

GP with CAM registration (state regulated or voluntary body)

- Chiropractic, osteopathy, acupuncture, herbal medicine and homeopathy and Anthroposophic Medicine.
- IM GPs were identified and a current working link was made to an NHS General Practice.



Results

IM GPs (N=9) were comparable to conventional GPs (N=7274) in terms of list sizes, demographics, deprivation scores and comorbidity prevalence.

Patients consulting an IM GP surgery were **22% less likely to get ‘any antibiotic’ prescription** compared to those who consulted a conventional GP surgery (RR 0.78, 95% CI: 0.64-0.97).

Receiving a RTI specific antibiotic prescription was **26% less likely** among those who consulted an IM GP surgery compared with those who consulted a conventional GP surgery (RR 0.74, 95% CI: 0.59-0.94).

There was no difference between the two types of practice when it came to levels of antibiotic prescribing to patients with urinary tract infections.



Conclusion

7283 NHS England General Practices were included in the analysis

Despite the **very small proportion of IM GP surgeries**, our data show that **significantly fewer** 'total antibiotics' and 'RTI specific antibiotics' were prescribed at IM GP surgeries compared to conventional GP surgeries within NHS England over 2016.

Main limitations: the lack of information on 1) number of consultations 2) individual deprivation scores, 3) individual GP characteristics and 4) continuum of care.

BMJ Open Do NHS GP surgeries employing GPs additionally trained in integrative or complementary medicine have lower antibiotic prescribing rates?

Retrospective cross-sectional analysis of national primary care prescribing data in England in 2016

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To cite: van der Werf ET, Duncan LJ, Flotow P, *et al.* Do NHS GP surgeries employing GPs additionally trained in integrative or complementary medicine have lower antibiotic prescribing rates? Retrospective cross-sectional analysis of national primary care prescribing data in England in 2016. *BMJ Open* 2018;**8**:e020488. doi:10.1136/bmjopen-2017-020488

► Prepublication history for

ABSTRACT

Objective To determine differences in antibiotic prescription rates between conventional General Practice (GP) surgeries and GP surgeries employing general practitioners (GPs) additionally trained in integrative medicine (IM) or complementary and alternative medicine (CAM) (referred to as IM GPs) working within National Health Service (NHS) England.

Design Retrospective study on antibiotic prescription rates per STAR-PU (Specific Therapeutic group Age–sex weighting Related Prescribing Unit) using NHS Digital data over 2016. Publicly available data were used on prevalence of relevant comorbidities, demographics of

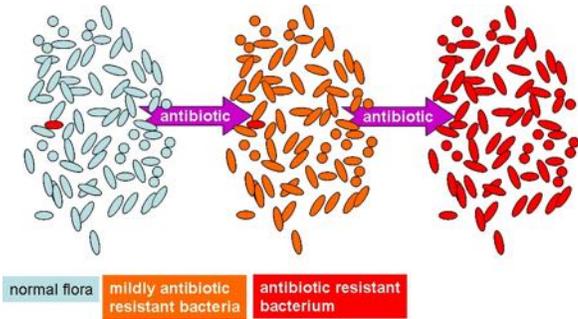
Strengths and limitations of this study

- Use of National Health Service (NHS) Digital data on antibiotic prescription per Specific Therapeutic group Age–sex weighting Related Prescribing Unit (STAR-PU) provided a comprehensive insight into the prescribing practices of total antibiotics, and for respiratory tract infection and urinary tract infection separately in conventional General Practice (GP) surgeries and GP surgeries employing general practitioners (GPs) additionally trained in integrative medicine (IM GPs).
- NHS England IM GP surgeries were comparable



Take Home Message

- Knowledge and experience of clinicians and patients matter, socio-economic, cultural factors matter: **capacity building is needed.**
- **Respiratory tract infections** is an area where the desired reduction in prescribing could take place.
- **Additional treatment strategies which are safe** for common primary care infections used by practices with GPs trained in IM should **be explored** to see if they **could be used** to assist in the fight against antimicrobial resistance and probably **could be integrated** in patient information sheets/decision making tools in primary care.



Thank you for your attention

Questions?

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Results: For most conditions, substantially higher proportions of consultations resulted in an antibiotic prescription than was deemed appropriate according to expert opinion. An antibiotic was prescribed in 41% of all acute cough consultations when experts advocated 10%. For other conditions the proportions were: bronchitis (actual 82% versus ideal 13%); sore throat (actual 59% versus ideal 13%); rhinosinusitis (actual 88% versus ideal 11%); and acute otitis media in 2- to 18-year-olds (actual 92% versus ideal 17%). Substantial variation between practices was found.