



# Exploring the implementation of interventions to reduce antibiotic use (ENACT study)

## Appendices A to C

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## Appendix A. Search strategies used in the 2 reviews

The reported search strategies were performed in Medline database and adapted for other databases as necessary (with the same search terms included).

### Search strategy used in Review 1 (RQ1)

- 1 exp Respiratory Tract Infections/
- 2 ((respiratory or chest) adj3 (infect\* or inflam\*)).ti,ab.
- 3 (ARI or ARTI or URTI or LRT).ti,ab.
- 4 (pharyngit\* or nasopharyngit\* or naso-pharyngit\* or rhinopharyngit\* or rhino-pharyngit\* or sinusit\* or nasosinusit\* or naso-sinusit\* or rhinosinusit\* or rhino-sinosit\* or rhinit\* or rhinorrhoea or rhinorrhea or ((runny or running or discharg\* or congest\* or blocked or stuff\* or dripping or runn\*) adj2 (nose\* or nasal))).ti,ab.
- 5 ((throat\* adj3 (sore or pain or inflam\* or infect\*)) or tonsillit\* or laryngit\* or rhinolaryngit\* or rhino-laryngit\* or nasolaryngit\* or naso-laryngit\* or sinonasal\* or sino-nasal\*).ti,ab.
- 6 (croup or pseudocroup or tracheitis or tracheobronchit\* or laryngotracheobronchit\* or bronchit\* or bronchiolit\* or pneumon\* or pleuropneumon\* or bronchopneumon\* or pleurisy).ti,ab.
- 7 (cough or sneez\* or common cold).ti,ab.
- 8 (influenza or flu).ti,ab.
- 9 (otitis media or aom or ome or earache\*).ti,ab.
- 10 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9
- 11 exp Anti-Bacterial Agents/
- 12 (antibiotic\* or anti-biotic\* or antibacterial\* or anti-bacterial\* or antimicrobial\* or anti-microbial\* or macrolide\* or beta-lactam\* or penicillin or methicillin or ampicillin or azithromycin or cephalixin).ti,ab.
- 13 11 or 12
- 14 Inappropriate Prescribing/
- 15 exp Prescriptions/
- 16 Practice Patterns, Physicians'/
- 17 (prescribing or prescription?).ti,ab.
- 18 ((antibiotic\* or anti-biotic\* or antibacterial\* or anti-bacterial\* or antimicrobial\* or anti-microbial\* or macrolide\* or beta-lactam\* or penicillin or methicillin or ampicillin or azithromycin or cephalixin) adj3 ("use" or overuse or overprescri\* or usage or consum\* or uptake or delay\* or demand? or reduc\* or discontinu\* or stop\*)).ti,ab.
- 19 stewardship.ti,ab.
- 20 14 or 15 or 16 or 17 or 18 or 19
- 21 Ambulatory Care/ or exp Ambulatory Care Facilities/
- 22 exp general practice/ or exp general practitioners/ or exp physicians, family/ or exp physicians, primary care/ or exp Primary Health Care/ or exp Office Visits/
- 23 COMMUNITY PHARMACY SERVICES/ or PHARMACY/

24 Pharmacists/  
25 (ambulatory adj3 (care or setting? or facilit\* or ward? or department? or service?)).ti,ab.  
26 ((general or family) adj2 (practi\* or physician? or doctor?)).ti,ab.  
27 (primary care or primary health care or primary healthcare).ti,ab.  
28 (after hour? or afterhour? or "out of hour?" or ooh).ti,ab.  
29 ((health\* or medical) adj2 (center? or centre?)).ti,ab.  
30 (clinic? or visit?).ti,ab.  
31 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30  
32 attitude/ or exp "attitude of health personnel"/ or exp attitude to health/  
33 (attitude? or knowledge or view? or opinion? or experience?).ti,ab.  
34 (barrier? or challeng\* or obstacle? or facilitat\* or enab\* or opportunit\* or  
implement\*).ti,ab.  
35 32 or 33 or 34  
36 10 and 13 and 20 and 31  
37 10 and 13 and 20 and 31 and 35  
38 (Qualitative systematic review\* or (systematic review and qualitative)).ti,ab.  
39 (evidence synthesis or realist synthesis or realist review).ti,ab.  
40 (Qualitative and synthesis).ti,ab.  
41 (meta-synthesis\* or meta synthesis\* or metasynthesis).ti,ab.  
42 (meta-ethnograph\* or metaethnograph\* or meta ethnograph\*).ti,ab.  
43 (meta-study or metastudy or meta study).ti,ab.  
44 systematic review\*.ti,ab. and qualitative research/  
45 38 or 39 or 40 or 41 or 42 or 43 or 44  
46 36 and 45  
47 limit 46 to (english language and yr="2000 -Current")  
48 qualitative research/  
49 \*interviews as topic/ or focus groups/ or narration/  
50 observation.ti.  
51 interview?.ti,ab.  
52 (qualitative adj2 (interview\* or study or research)).ti,ab.  
53 qualitative.ti.  
54 (focus group? or story or stories or narration or narrative\* or discourse or discursive or  
grounded theory or ethnogra\* or phenomenolog\*).ti,ab.  
55 "Surveys and Questionnaires"/  
56 (questionnaire? or survey?).ti,ab.  
57 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56  
58 37 and 57  
59 limit 58 to (english language and yr="2000 -Current")  
60 47 or 59

### Note

Results of the search in line 47 were used to identify systematic reviews of qualitative studies, whereas results of the search in line 60 were used to identify individual qualitative studies.

## Search strategy used in Review 2 (RQ2)

- 1 exp Respiratory Tract Infections/
- 2 ((respiratory or chest) adj3 (infect\* or inflam\*)).ti,ab.
- 3 (ARI or ARTI or URTI or LRT).ti,ab.
- 4 (pharyngit\* or nasopharyngit\* or naso-pharyngit\* or rhinopharyngit\* or rhino-pharyngit\* or sinusit\* or nasosinusit\* or naso-sinusit\* or rhinosinusit\* or rhino-sinosit\* or rhinit\* or rhinorrhoea or rhinorrhea or ((runny or running or discharg\* or congest\* or blocked or stuff\* or dripping or runn\*) adj2 (nose\* or nasal))).ti,ab.
- 5 ((throat\* adj3 (sore or pain or inflam\* or infect\*)) or tonsillit\* or laryngit\* or rhinolaryngit\* or rhino-laryngit\* or nasolaryngit\* or naso-laryngit\* or sinonasal\* or sino-nasal\*).ti,ab.
- 6 (croup or pseudocroup or tracheitis or tracheobronchit\* or laryngotracheobronchit\* or bronchit\* or bronchiolit\* or pneumon\* or pleuropneumon\* or bronchopneumon\* or pleurisy).ti,ab.
- 7 (cough or sneez\* or common cold).ti,ab.
- 8 (influenza or flu).ti,ab.
- 9 (otitis media or aom or ome or earache\*).ti,ab.
- 10 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9
- 11 exp Anti-Bacterial Agents/
- 12 (antibiotic\* or anti-biotic\* or antibacterial\* or anti-bacterial\* or antimicrobial\* or anti-microbial\* or macrolide\* or beta-lactam\* or penicillin or methicillin or ampicillin or azithromycin or cephalixin).ti,ab.
- 13 11 or 12
- 14 Inappropriate Prescribing/
- 15 exp Prescriptions/
- 16 Practice Patterns, Physicians'/
- 17 (prescribing or prescription?).ti,ab.
- 18 ((antibiotic\* or anti-biotic\* or antibacterial\* or anti-bacterial\* or antimicrobial\* or anti-microbial\* or macrolide\* or beta-lactam\* or penicillin or methicillin or ampicillin or azithromycin or cephalixin) adj3 ("use" or overuse or overprescri\* or usage or consum\* or uptake or delay\* or demand? or reduc\* or discontinu\* or stop\*)).ti,ab.
- 19 stewardship.ti,ab.
- 20 14 or 15 or 16 or 17 or 18 or 19
- 21 Ambulatory Care/ or exp Ambulatory Care Facilities/
- 22 exp general practice/ or exp general practitioners/ or exp physicians, family/ or exp physicians, primary care/ or exp Primary Health Care/ or exp Office Visits/
- 23 COMMUNITY PHARMACY SERVICES/ or PHARMACY/
- 24 Pharmacists/
- 25 (ambulatory adj3 (care or setting? or facilit\* or ward? or department? or service?)).ti,ab.
- 26 ((general or family) adj2 (practi\* or physician? or doctor?)).ti,ab.
- 27 (primary care or primary health care or primary healthcare).ti,ab.
- 28 (after hour? or afterhour? or "out of hour?" or ooh or walk-in or walkin).ti,ab.
- 29 ((health\* or medical) adj2 (center? or centre?)).ti,ab.
- 30 (clinic? or visit?).ti,ab.
- 31 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30

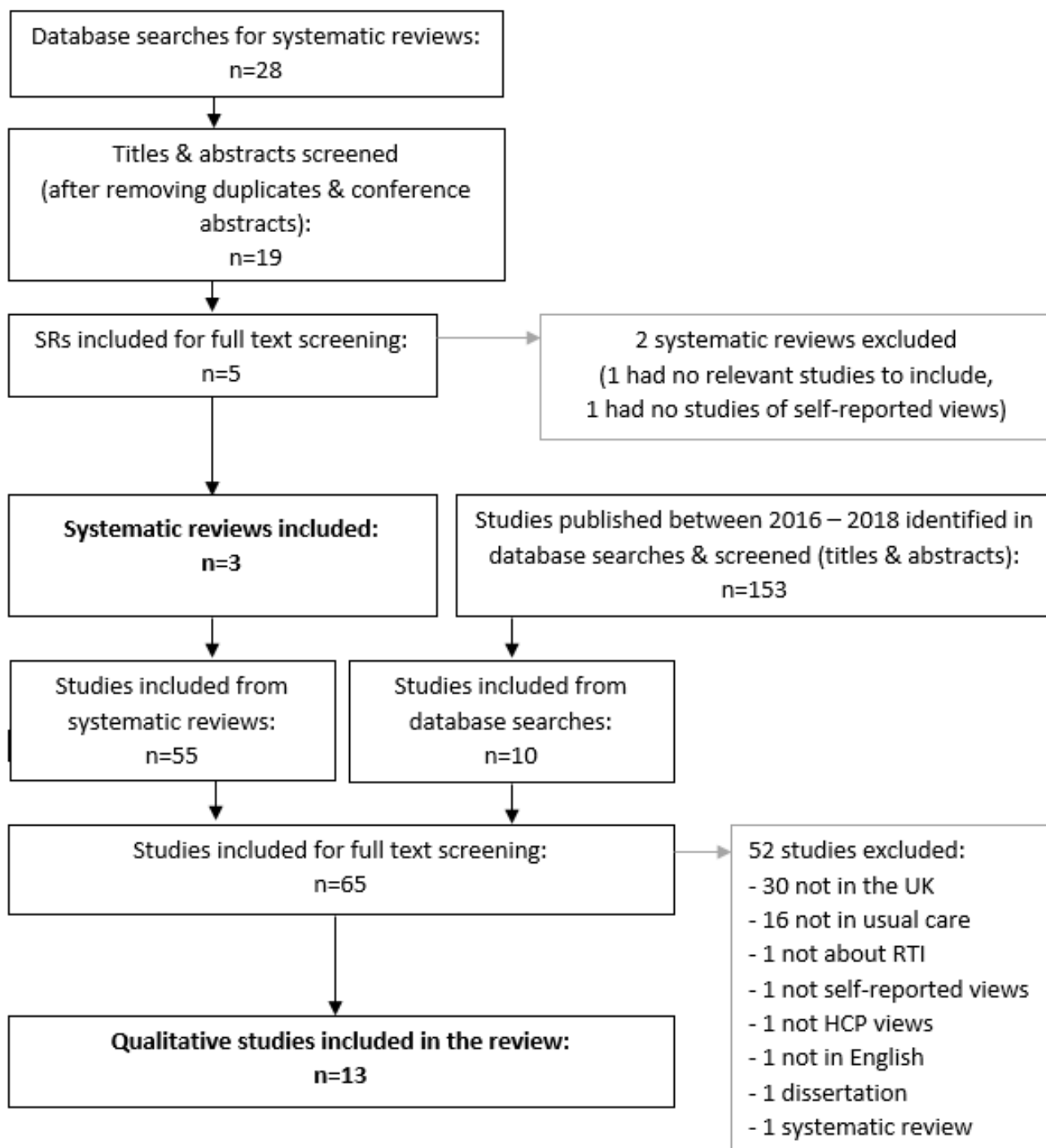
32 10 and 13 and 20 and 31  
33 limit 32 to "reviews (maximizes specificity)"  
34 limit 33 to (english language and yr="2000 -Current")  
35 randomized controlled trial.pt.  
36 controlled clinical trial.pt.  
37 randomized.ab.  
38 placebo.ab.  
39 clinical trials as topic.sh.  
40 randomly.ab.  
41 trial.ti.  
42 35 or 36 or 37 or 38 or 39 or 40 or 41  
43 exp animals/ not humans.sh.  
44 42 not 43  
45 32 and 44  
46 limit 45 to (english language and yr="2000 -Current")

**Note**

Results of the search in line 34 were used to identify systematic reviews of research studies, whereas results of the search in line 46 were used to identify individual research studies.

## Appendix B. Flow chart of selection process of qualitative studies

This flow chart shows the number of articles identified and screened during the systematic review of qualitative studies. An accessible text version is provided below the flow chart.



## Accessible text version

Stage 1: Twenty-eight articles were identified in the database searches for systematic reviews.

Stage 2: Nineteen articles underwent title and abstract screening (once duplicates and conference abstracts had been removed).

Stage 3: Five systematic reviews underwent full text screening. Two systematic reviews were excluded at this stage, as one had no relevant studies to include and one had no studies of self-reported views.

Stage 4: Three systematic reviews were included. At this point, a separate literature search was conducted for studies published between 2016 to 2018, and 153 articles identified in this search underwent title and abstract screening.

Stage 5: Fifty-five studies were identified in the 3 systematic reviews. Ten studies were identified from the separate literature search described in Stage 4.

Stage 6: A total of 65 studies underwent full text screening. Fifty-two studies were excluded for the following reasons: 30 were not conducted in the UK, 16 did not focus on usual care, 1 did not focus on respiratory tract infections (RTI), one did not present self-reported views, one did not present healthcare professional (HCP) views, one was not published in English language, one was a dissertation, and one was a systematic review.

Stage 7: Thirteen qualitative studies were included in the review.

## Appendix C. Characteristics of included systematic reviews of qualitative studies and of qualitative studies

**Table C1. Characteristics of included systematic reviews of qualitative studies**

First author, year, title; review type	Review objective	Dates and databases searched	Number of included qualitative studies	Key results (relevant to healthcare professionals only)
<p><b>Germeri 2018</b> Antibiotic prescribing for acute respiratory tract infections in primary care: an updated and expanded meta-ethnography.</p> <p>Systematic review and meta-ethnography of qualitative studies.</p> <p>(Update of review by Tonkin-Crine and others 2011)</p>	<p>To synthesise general practitioners' (GPs) experiences of antibiotic prescribing (AP) for acute respiratory tract infections (RTIs), including their views of interventions aimed at more prudent prescribing..</p>	<p>To 29 June 2016</p> <p>Medline, Embase, PsycINFO, ASSIA, Web of Science</p>	<p>45 studies (53 articles)</p> <p>Including 25 on experiences of antibiotic prescribing, 22 on views of interventions, 6 mixed; 42 studies published since year 2000</p>	<p>Usual care studies</p> <p>Primary care professionals (PCPs) tend to assume multiple roles in the context of acute RTI consultations (the expert self, the benevolent self, the practical self), depending on the range of intrapersonal, interpersonal, and contextual situations in which they find themselves.</p> <p>Intervention studies</p> <p>Four possible ways in which PCPs may experience quality improvement interventions: compromise, 'supportive aids', source of distress, and unnecessary.</p>



First author, year, title; review type	Review objective	Dates and databases searched	Number of included qualitative studies	Key results (relevant to healthcare professionals only)
<p><b>Lucas 2015</b> A systematic review of parent and clinician views and perceptions that influence prescribing decisions in relation to acute childhood infections in primary care.</p> <p>Systematic review and meta-ethnography of qualitative studies.</p>	<p>To investigate the views of parents, clinicians, and children pertaining to prescribing decisions for acute childhood infection in primary care</p>	<p>To October 2012</p> <p>Medline, Embase, CINAHL, PsycINFO, SSCI, SIGLE, Dissertation Express, NHS Economic Evaluations</p>	<p>15 studies</p> <p>Including 8 studies with clinicians published since year 2000</p>	<p>Clinicians prescribed antibiotics when they felt pressured by parents or others (for example, employers) to do so, when they believed there was a clear clinical indication, but also when they felt uncertain of clinical or social outcomes they prescribed 'just in case'. Clinicians avoided antibiotics when they were concerned about adverse reactions or drug resistance, when certain they were not indicated, and when there was no perceived pressure from parents. Primary care clinicians want satisfied parents and short consultations.</p>
<p><b>Tonkin-Crine 2011</b> Antibiotic prescribing for acute respiratory tract infections in primary care: a systematic review and meta-ethnography.</p>	<p>To examine GPs' attitudes and experiences of AP and interventions aimed at more prudent prescribing for acute RTIs</p>	<p>1950 to May 2011</p> <p>Medline, Embase, Web of Science, PsycINFO, CINAHL</p>	<p>12 studies</p> <p>Including 11 studies published since year 2000</p>	<p>Seven themes related to perceptions of AP decisions and highlighted factors that influence GPs' prescribing decisions:</p> <ol style="list-style-type: none"> <li>1. perceptions of acute RTI management</li> <li>2. GPs' previous experience of acute RTI management</li> <li>3. uncertainty in acute RTI management</li> <li>4. perceptions of external pressure to reduce prescribing</li> </ol>

First author, year, title; review type	Review objective	Dates and databases searched	Number of included qualitative studies	Key results (relevant to healthcare professionals only)
Systematic review and meta-ethnography of qualitative studies.				<p>5. perceptions of potential conflict with patients</p> <p>6. perceptions how to provide patient-centred care</p> <p>7. perceptions of occupational pressure</p> <p>Five themes related to perceptions of interventions aimed at more prudent prescribing and highlighted the benefits of interventions that had helped GPs to prescribe more prudently in practice:</p> <ol style="list-style-type: none"> <li>1. It may allow GPs to reflect on their own prescribing</li> <li>2. It may help to decrease GPs' uncertainty</li> <li>3. It may educate GPs about appropriate prescribing</li> <li>4. It may facilitate more patient-centred care</li> <li>5. It can be beneficial to implement in practice</li> </ol> <p>One theme related to GPs satisfaction with their prescribing decision.</p>

**Table C2. Characteristics of included qualitative studies**

First author, year, title	Study aim	Design or methods	Setting and participants	Key findings (related to HCP views, extracted from abstracts)
<b>Ashdown 2016</b> Prescribing antibiotics to 'at-risk' children with influenza-like illness in primary care: qualitative study.	To investigate GPs' accounts of factors influencing their decision-making about antibiotic prescribing in the management of at-risk children with influenza-like illness.	Semi-structured telephone interviews (with a case vignette); maximum variation sampling; thematic analysis.	General practice: 41 GPs	There was considerable uncertainty and variation in the way GPs responded to the case and difference of opinion about how long-term comorbidities should affect their antibiotic prescribing pattern. Factors influencing their decision included the child's case history and clinical examination; the GP's view of the parent's ability to self-manage; the GP's own confidence and experiences of managing sick children and assessment of individual versus abstract risk. GPs rarely mentioned potential influenza infection or asked about immunisation status. All said that they would want to see the child; views about delayed prescribing varied in relation to local health service provision including options for follow-up and paediatric services.
<b>Brookes-Howell 2012a</b> Clinical influences on antibiotic prescribing decisions for lower respiratory tract infection: a 9-country qualitative study of variation in care.	To investigate clinicians' accounts of clinical influences on antibiotic prescribing decisions for LRTI to better understand variation and identify	Semi-structured interviews (with a scenario to reflect); randomly selected sample; 5-stage (thematic) analytic framework approach.	General practice: 80 GPs (14 in UK)	Four main individual clinical factors guided clinicians' antibiotic prescribing decision: auscultation, fever, discoloured sputum and breathlessness. These were considered alongside a general impression of the patient derived from building a picture of the illness course, using intuition and familiarity with the patient. Comorbidity and older age were considered main

First author, year, title	Study aim	Design or methods	Setting and participants	Key findings (related to HCP views, extracted from abstracts)
	opportunities for improvement.		(In UK and 6 other countries)	risk factors for poor outcomes. Clinical factors were similar across networks, apart from C reactive protein near patient testing in Tromsø. Clinicians developed ways to handle diagnostic and management uncertainty through their own clinical routines.
<b>Brookes-Howell 2012b</b> Understanding variation in primary medical care: a 9-country qualitative study of clinicians' accounts of the nonclinical factors that shape antibiotic prescribing decisions for lower respiratory tract infection.	To investigate clinicians' accounts of non-clinical factors that influence their antibiotic prescribing decision for patients with LRTI, to understand variation and identify opportunities for addressing possible unhelpful variation.	Semi-structured interviews (with a scenario to reflect); randomly selected sample; 5-stage (thematic) analytic framework approach	General practice: 80 GPs (14 in UK)  (In UK and 6 other countries)	Non-clinical factors imposed by the healthcare system operating within specific regional primary care research networks: patient access to antibiotics before consulting a doctor (Barcelona and Milan), systems to reduce patient expectations for antibiotics (Southampton and Antwerp) and lack of consistent treatment guidelines (Balatonfüred and Łódz). Secondly, accounts revealed factors related to specific characteristics of clinicians regardless of network (professional ethos, self-belief in decision-making and commitment to shared decision-making).
<b>Cabral 2015</b> 'It's safer to ...' parent consulting and clinician antibiotic prescribing decisions for children with respiratory tract infections: an analysis	To understand the drivers of parental consulting and clinician prescribing behaviour when children under 12	Cross-study analysis of 4 studies: (i) focus groups with parents; (ii) interviews with parents; (iii) interviews with	General practice:  In study (iii): 28 (22 GPs and 6 nurses)	Four overarching themes were identified: the perceived vulnerability of children; seeking safety in the face of uncertainty; seeking safety from social disapproval; and experience and perception of safety. The social construction of children as vulnerable and normative beliefs about the roles of parents and clinicians were reflected in parents'

First author, year, title	Study aim	Design or methods	Setting and participants	Key findings (related to HCP views, extracted from abstracts)
across 4 qualitative studies	years consult primary care with acute RTI.	<p>clinicians on experiences of RTI consultations with children (ref. to conference paper);</p> <p>(iv) systematic review synthesising parent and clinician views of prescribing for children with acute illness.</p> <p>Themes and common patterns identified across dataset through iterative approach, translating common themes across studies and re-organising themes into conceptual groups.</p>		<p>and clinicians' beliefs and decision making when a child had an RTI. Consulting and prescribing antibiotics were both perceived as the safer course of action. Therefore perception of a threat or uncertainty about that threat tended to lead to parental consulting and clinician antibiotic prescribing. Clinician and parent experience could influence the perception of safety in either direction, depending on whether previous action had resulted in perceived increases or decreases in safety.</p>
<p><b>Cabral 2016</b></p> <p>Influence of clinical communication on</p>	<p>To understand clinicians' and parents' perceptions</p>	<p>Video recordings of 60 consultations for children with RTIs</p>	<p>General practice:</p>	<p>While clinicians commonly told parents that antibiotics are not effective against viruses, this did not have much impact on parents' beliefs about</p>

First author, year, title	Study aim	Design or methods	Setting and participants	Key findings (related to HCP views, extracted from abstracts)
<p>parents' antibiotic expectations for children with respiratory tract infections.</p>	<p>of communication within consultations for RTI in children and what influence clinician communication had on parents' understanding of antibiotic treatment.</p>	<p>and cough in 6 general practices; purposive sampling of 27 parents and 13 clinicians for semi-structured video-elicited interviews; thematic analysis</p>	<p>13 GPs</p>	<p>the need to consult or on their expectations concerning antibiotics. Parents believed that antibiotics were needed to treat more severe illnesses, a belief that was supported by the way clinicians accompanied viral diagnoses with problem minimizing language and antibiotic prescriptions with more problem-oriented language. Antibiotic prescriptions tended to confirm parents' beliefs about what indicated illness severity, which often took into account the wider impact on a child's life.</p>
<p><i>Courtenay 2017</i> Antibiotics for acute respiratory tract infections: a mixed-methods study of patient experiences of non-medical prescriber management.</p>	<p>To (1) explore patients' expectations and experiences of nurse and pharmacist non-medical prescriber-led management of RTIs, (2) examine whether patient expectations for antibiotics affect the likelihood of receiving them and (3) understand factors influencing</p>	<p>Mixed methods: (i) questionnaires with 120 patients, (ii) interviews with 22 patients, (iii) interviews with 16 nurse and pharmacist non-medical prescribers; qualitative analysis informed by quantitative findings, inductive thematic analysis</p>	<p>General practice: 16 nurse and pharmacist non-medical prescribers</p>	<p>There was alignment between self-reported patient expectations and those perceived by non-medical prescribers. 'Patient-centred' management strategies (including reassurance and providing information) were received by 86.7% of patients. Regardless of patients' expectations or the management strategy employed, high levels of satisfaction were reported for all aspects of the consultation. Taking concerns seriously, conducting a physical examination, communicating the treatment plan, explaining treatment decisions and lack of time restrictions were each reported to contribute to patient satisfaction.</p>

First author, year, title	Study aim	Design or methods	Setting and participants	Key findings (related to HCP views, extracted from abstracts)
	patient satisfaction with RTI consultations.			
<p><b>Horwood 2016</b> Primary care clinician antibiotic prescribing decisions in consultations for children with RTIs: a qualitative interview study.</p>	<p>To investigate healthcare professional (HCP) diagnostic and antibiotic prescribing decisions for children with RTIs.</p>	<p>Semi-structured interviews; purposive maximum-variation sampling; thematic analysis</p>	<p>General practice and walk-in centre:  22 GPs and 6 nurses from 6 general practices and one walk-in centre</p>	<p>HCPs varied in the symptom and clinical examination findings used to identify children they thought might benefit from antibiotics. Their diagnostic reasoning and assessment of perceived clinical need for antibiotics used a dual process, combining an initial rapid assessment with subsequent detailed deductive reasoning. HCPs reported confidence diagnosing and managing most minor and severe RTIs. However, residual prognostic uncertainty, particularly for the intermediate illness severity group, frequently led to antibiotic prescribing to mitigate the perceived risk of subsequent illness deterioration. Some HCPs perceived a need for more paediatrics training to aid treatment decisions. The study also identified a number of non-clinical factors influencing prescribing.</p>
<p><b>Kumar 2003</b> Why do general practitioners prescribe antibiotics for sore</p>	<p>To understand why GPs prescribe antibiotics for some cases of sore throat and to explore the</p>	<p>Open-ended interviews using an interview guide; purposive and theoretical sampling;</p>	<p>General practice:  40 GPs</p>	<p>GPs are uncertain which patients will benefit from antibiotics but prescribe for sicker patients and for patients from socioeconomically deprived backgrounds because of concerns about complications. They are also more likely to</p>

First author, year, title	Study aim	Design or methods	Setting and participants	Key findings (related to HCP views, extracted from abstracts)
throat? Grounded theory interview study.	factors that influence their prescribing.	grounded theory, constant comparative analysis		prescribe in pressured clinical contexts. Doctors are mostly comfortable with their prescribing decisions and are not prescribing to maintain the doctor-patient relationship.
<p><b>Mustafa 2014</b> Managing expectations of antibiotics for upper respiratory tract infections: a qualitative study.</p>	To explore the views and experiences of GPs about asking patients directly whether they expect to receive antibiotics and focusing on the problem of eliciting expectations of antibiotics as a possible treatment for URIs.	Semi-structured interviews; convenience sampling (all GPs in the area invited, interviewed those who responded); thematic analysis	General practice:  20 GPs	Physicians assumed most patients or parents wanted antibiotics, as well as wanting to be 'checked out' to make sure the illness was 'nothing serious'.  Physicians said they did not ask direct questions about expectations, as that might lead to confrontation. They preferred to elicit expectations for antibiotics in an indirect manner, before performing a physical examination. The majority described reporting their findings of the examination as a "running commentary" so as to influence expectations and help avoid generating resistance to a soon-to-be-made-explicit plan not to prescribe antibiotics. The physicians used the running commentary to preserve and enhance the physician-patient relationship.
<p><b>Rowbotham 2012</b> Challenges to nurse prescribers of a no-antibiotic prescribing strategy for managing</p>	To explore the experiences of nurse prescribers in managing patients	Semi-structured interviews and focus groups; purposive maximum-variation sampling;	General practice:  Interviews: 15 nurses	Although participants reported experiencing numerous challenges within these consultations, they believed that they possessed some of the communication skills to deal effectively with patients without prescribing antibiotics.



First author, year, title	Study aim	Design or methods	Setting and participants	Key findings (related to HCP views, extracted from abstracts)
self-limiting respiratory tract infections.	with self-limiting RTIs.	qualitative approach to develop conceptual categories and themes	and 3 focus groups 21 nurses (5, 4 and 12 in each)	Participants reported that protocols supported their decision-making and welcomed the benefits of peer support in dealing with 'demanding' patients. However, the newness of nurses and other non-medical prescribers to the prescribing role meant that some were cautious in dealing with patients with respiratory tract infections.
<b>Tonkin-Crine 2011</b> GPs' views in 5 European countries of interventions to promote prudent antibiotic use.	To explore GPs' views and experiences of strategies to promote a more prudent use of antibiotics.	Semi-structured, telephone (in UK) interviews; purposive sampling from high and low-prescribing practices; thematic and framework analysis	General practice: 52 GPs (11 in UK)  (In UK and 4 other countries)	Themes were remarkably consistent across the countries. GPs had a preference for interventions that allowed discussion and comparison with local colleagues, which helped them to identify how their practice could improve. Other popular components of interventions included the use of near-patient tests to reduce diagnostic uncertainty, and the involvement of other health professionals to increase their responsibility for prescribing.
<b>Williams 2017</b> General practitioner and nurse prescriber experiences of prescribing antibiotics for respiratory tract infections in UK primary care out-of-hours	To explore GP and nurse prescriber (NP) views on and experiences of prescribing antibiotics for RTIs in primary care OOH services.	Semi-structured interviews; purposive maximum-variation sampling supported by snowball or chain sampling; inductive thematic analysis	Out-of-hours: 30: 15 GPs and 15 nurse prescribers	The research shows that factors particular to OOH influence antibiotic prescribing, including a lack of patient follow-up, access to patient GP records, consultation time, working contracts and implementation of feedback, audit and supervision. Nurse prescribers reported perceptions of greater accountability for their prescribing compared with GPs and reported they had longer consultations during which they were able to discuss decisions

First author, year, title	Study aim	Design or methods	Setting and participants	Key findings (related to HCP views, extracted from abstracts)
services (the UNITE study).				with patients. Participants agreed that more complex cases should be seen by GPs and highlighted the importance of consistency of decision making, illness explanations to patients as well as a perception that differences in clinical training influence communication with patients and antibiotic prescribing decisions.
<p><i>Wood 2007</i> Socially responsible antibiotic choices in primary care: a qualitative study of GPs' decisions to prescribe broad-spectrum and fluoroquinolone antibiotics.</p>	<p>To explore the reasons for GPs' choice of prescribed antibiotic, in particular their decision to prescribe fluoroquinolones.</p>	<p>Interviews; purposive and theoretical sampling; grounded theory approach, data indexed into analytical categories</p>	<p>General practice: 40 GPs</p>	<p>Choosing to prescribe a broad-spectrum antibiotic such as a fluoroquinolone, rather than a narrow-spectrum antibiotic, related to a number of clinical considerations, perceptions of patient expectations and organizational influences. GPs from high fluoroquinolone prescribing practices were more likely to prioritize patients' immediate needs, whereas GPs from average prescribing practices were more likely to consider longer term issues. GPs from both high and average fluoroquinolone prescribing practices justified their antibiotic choices on the basis of a desire to do their best for their patients and society.</p>

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