

Sarah Peters, Samantha Rowbotham, Anna Chisholm, Alison Wearden, Susie Moschogianis, Lis Cordingley, David Baker, Catherine Hyde and Carolyn Chew-Graham

## Managing self-limiting respiratory tract infections:

a qualitative study of the usefulness of the delayed prescribing strategy

### Abstract

#### Background

Despite respiratory tract infections usually being viral and self-limiting, most primary care consultations still result in an antibiotic prescription. The National Institute for Health and Clinical Excellence (NICE) introduced the 'delayed prescribing' (DP) strategy. It remains unknown how useful UK clinicians find this approach.

#### Aim

To investigate how DP is used within UK primary care, and the benefits and challenges associated with this strategy.

#### Design and setting

Qualitative interview and focus group study in UK scheduled and unscheduled care primary care settings.

#### Method

Data were gathered through semi-structured interviews ( $n = 49$ ) and six focus groups with GPs, trainee GPs, and nurse prescribers (NPs). An iterative analysis approach, using grounded theory principles, was used to generate themes from the dataset.

#### Results

Prescribers were familiar with DP but used it infrequently. DP was often used to manage diagnostic uncertainty, although NPs, trainee GPs, and GPs working in unscheduled care services preferred patients to reconsult under these circumstances. Prescribers used DP to avoid conflict, although some had found more effective strategies to achieve this. Prescribers were generally uncomfortable giving clinical responsibility to patients, and DP was perceived to communicate a conflicting message to patients about antibiotic efficacy.

#### Conclusion

DP was not considered to be a helpful strategy for managing patients with self-limiting respiratory tract infections within primary care and the findings do not support the centrality of DP in NICE guidelines as a primary means of reducing antibiotic prescribing. Future training and guidelines should encourage alternative ways of communicating empathy, addressing patient beliefs, and encouraging self-management.

#### Keywords

antibacterial agents; drug prescriptions; health communication; primary care; qualitative research.

### INTRODUCTION

Respiratory tract infections (RTIs), such as sore throat, acute cough, ear infection, and the common cold are the most frequent acute problems dealt with in primary care, with approximately one-quarter of the population visiting their GP with a RTI each year.<sup>1–5</sup> Most are viral, self-limiting infections that can be self-managed effectively with analgesia and rest,<sup>4,6</sup> without the need for antibiotics.<sup>4,7,8</sup> Nevertheless, RTIs account for up to 60% of all antibiotic prescribing in primary care,<sup>9</sup> with 45–91% of RTI presentations resulting in an antibiotic prescription.<sup>2,10,11</sup>

Unnecessary prescribing represents a significant financial problem for healthcare services in the UK and elsewhere.<sup>4,12–15</sup> Adverse side effects are experienced by one person in 16 (for example, vomiting, rash, diarrhoea<sup>12,16</sup>), and the estimated incidence of anaphylaxis with penicillin is slightly higher than the chance of nephritis or rheumatic fever after a sore throat.<sup>17</sup> Excessive use of antibiotics has resulted in bacterial resistance to antibiotics, representing a major public health threat, particularly in light of the dwindling supply of newer antimicrobial drugs.<sup>18–24</sup> Reducing demand for antibiotics for self-limiting conditions is considered the most effective way of preventing further antibiotic resistance.<sup>19</sup> Psychological iatrogenesis is also an important consequence of

inappropriate antibiotic prescribing, leading to an increased belief in the effectiveness of antibiotics, intention to reconsult with similar problems in the future, and reluctance to self-manage.<sup>4,8,25,26</sup>

Research highlights several reasons why clinicians prescribe antibiotics for self-limiting RTIs, including perceived pressure from patients to prescribe antibiotics, fear of complications following non-prescribing, the belief that prescribing antibiotics is quicker and easier than challenging patients' views of antibiotics, and to protect the doctor–patient relationship.<sup>12,27–30</sup> This suggests that the decision to prescribe antibiotics is primarily based, not on clinical indicators, but on factors arising from the interaction between patient and doctor.

To address the problem of inappropriate prescribing while also taking into account these patient-related factors, in 2008 the National Institute for Health and Clinical Excellence (NICE) introduced a 'delayed prescribing' strategy for dealing with common RTIs.<sup>4</sup> Delayed prescribing (DP) involves giving patients a prescription, with instructions to use it later if symptoms persist or worsen. Alternative ways of using DP include post-dating the prescription so that patients cannot 'cash it in' until a specified date, or instructing patients to collect the prescription from the practice reception at a later date if needed. The main benefits cited for DP are that it provides a

**S Peters**, PhD, CPsychol, senior lecturer in psychology; **S Rowbotham**, MRes, researcher; **A Chisholm**, MRes, researcher; **A Wearden**, PhD, CPsychol, reader in psychology; **S Moschogianis**, BSc, researcher, School of Psychological Sciences; **L Cordingley**, PhD, CPsychol, lecturer in health psychology; **C Hyde**, MBChB, researcher; **C Chew-Graham**, MD, FRCGP, professor of primary care, School of Community Based Medicine, University of Manchester, Manchester; **D Baker**, MBChB, researcher, North Western Deanery, Manchester.

#### Address for correspondence

Sarah Peters, School of Psychological Sciences, University of Manchester, Oxford Road, Manchester, M13 9PL, UK.

**E-mail:** sarah.peters@manchester.ac.uk

**Submitted:** 22 February 2011; **Editor's response:** 21 March 2011; **final acceptance:** 28 April 2011.

**©British Journal of General Practice**

This is the full-length article (published online 30 Aug 2011) of an abridged version published in print. Cite this article as: **Br J Gen Pract 2011; DOI: 10.3399/bjgp11X593866.**

### How this fits in

Despite usually being viral, respiratory tract infections (which are self-limiting in nature) still often result in an antibiotic prescription. The National Institute for Health and Clinical Excellence recommends delayed prescribing as an alternative strategy to no prescribing. UK GPs and nurse prescribers use delayed prescribing infrequently and uncomfortably to manage diagnostic uncertainty and avoid conflict. Delayed prescribing is not perceived as a helpful method for managing patient and clinician concerns about self-limiting respiratory tract infections, and more effective communication strategies exist.

'safety net' in the event that complications develop, and may be more agreeable than the no-prescribing strategy to those patients who have strong expectations for antibiotics.<sup>4</sup>

A Cochrane review of 10 randomised controlled trials found that DP resulted in a reduction in antibiotic use for the presenting problem compared to immediate prescribing (32% versus 93%).<sup>31</sup> However, antibiotic use in the no-prescribing group remained the lowest at 14% (with these patients presumably obtaining antibiotics from elsewhere following the initial consultation).<sup>31</sup> Patient satisfaction was high across groups, with no benefit found for DP over not prescribing. The review found that the way DP is administered had a marked effect on use; 28% of scripts were filled when antibiotics were left at reception, compared to 40% when the prescription was given with instructions to delay.<sup>31</sup> This suggests that DP may not address patients' beliefs about RTIs but is more likely to be influenced by the ease with which the prescription can be filled. This is supported by the finding that patients who receive an immediate prescription report similar intentions to reconsult with similar problems, compared with those given a delayed prescription.<sup>32</sup>

A small Australian qualitative study found that doctors saw DP as potentially useful for managing patient pressure for antibiotics.<sup>33</sup> Other perceived benefits included giving patients more responsibility and preventing inconvenience for patients. However, doctors were concerned that they had to judge whether patients were suitable for DP and that this approach might lead to patients perceiving them as indecisive or incompetent.<sup>33</sup> In contrast with the NICE

suggestion that DP can provide a 'safety net' in case of complications, some doctors expressed concerns that DP could lead to missing more serious illnesses.<sup>4</sup> The Cochrane review found no evidence that DP is safer or more harmful than a 'no-antibiotics' strategy.<sup>31</sup> A further study of Norwegian primary care found, similarly, that DP requires judgements to be made about patients' ability to make clinical decisions.<sup>34</sup> Edwards *et al* found that only 10% of patients presenting with a RTI are given a delayed prescription;<sup>35</sup> however, those that were, reported feeling confident in making the judgement of whether or not to take the antibiotics. Taken together, the emerging literature indicates that while DP may be beneficial in some circumstances, it is still associated with a number of problems that need to be overcome if the DP strategy is to be implemented successfully in the future.

There are significant cultural differences in antibiotic use;<sup>22,36,37</sup> hence, the current literature on DP may have limited generalisability within the UK. Furthermore, research has so far focused only on the views of family doctors, without considering non-medical prescribers who are increasingly responsible for prescribing antibiotics for RTIs. It is not currently known if these prescribers face similar, additional, or alternative issues to GPs within RTI consultations. Given that it has been 3 years since the introduction of the NICE guidelines recommending DP as an additional strategy for managing self-limiting RTIs, it is timely to investigate how DP is used by UK primary care prescribers, and the perceived benefits and limitations of this approach.

### METHOD

A qualitative interview and focus-group approach was used to allow greater access to the views and practices around DP among different groups of practitioners.

### Sampling and setting

Purposive sampling was used to select participants, to ensure a full range of views were represented.<sup>38</sup> Sampling was conducted to achieve maximum variance in occupation, experience, training level, prescribing setting, and level of antibiotic prescribing of a practice. Participants were recruited through a variety of methods including phoning practices and advertising at local training events. A total of 228 prescribers were approached directly and 30 agreed to take part (13.2%). Further responders were identified through

advertising and snowballing techniques. In total, 49 prescribers agreed to take part in interviews and 49 in focus groups (16 took part in both an interview and a focus group). Participants taking part in individual interviews were each paid an honorarium of £20. Locum cover was provided for focus groups, which occurred during protected learning time. Table 1 outlines the sample characteristics. All data were collected from participants working within the north west of England.

#### Procedure

**Interviews.** Interviews were conducted between November 2009 and May 2010. Forty-seven participants were interviewed face to face, and the remaining two were interviewed over the telephone. Participants were asked to talk about their experiences with RTIs, including patient factors, prescribing practices, and various aspects of RTI consultations. Interviews were structured around a topic guide but the interviewers were also responsive to issues emerging from participants' accounts. The mean interview length was 28 minutes (range 9–57 minutes).

**Focus groups.** Six focus groups were conducted between December 2009 and June 2010: two with GPs ( $n=3$  and  $n=3$  respectively), one with GP trainees ( $n=18$ ), one with both GPs and GP trainees together

( $n=16$ ), and two with nurse prescribers (NPs) ( $n=5$  and  $n=4$ ). The mean length was 83 minutes (range 71–101 minutes). The focus groups were recruited as a preliminary to a training intervention to equip primary care clinicians with better communication skills to manage RTI patients [A Chisholm *et al*, unpublished data, 2011].

Interviews and focus groups were digitally audiorecorded and transcribed verbatim, and identifying information (for example, names, practice locations) removed. An iterative process was used, in which emerging themes were explored throughout the data-collection process and specifically attended to and developed in further interviews and focus groups. In this way, analysis of the different groups of prescribers occurred in parallel with sampling and data collection.

**Analysis.** A grounded theory approach to analysis was used to develop conceptual categories from the dataset.<sup>39</sup> Categories, developed through the identification of recurrent patterns, were organised into themes by identifying codes that grouped together along common dimensions. This document was refined and elaborated in light of incoming data and discussion between research group members, including researchers and clinicians with expertise in health psychology and

**Table 1. Sample characteristics for interviews ( $n = 49$ ) and focus groups ( $n = 49$ )**

Characteristic	Interviews	Focus groups
<b>Role, <math>n</math></b>		
GP	14	16
GP trainee	20	24
Nurse prescriber	15	9
<b>Care setting, <math>n</math></b>		
Scheduled (GP surgeries)	33	35
Unscheduled (such as, out-of-hours and walk-in centres)	12	10
Both scheduled and unscheduled	4	4
<b>Sex, <math>n</math></b>		
Male	16	11
Female	33	38
<b>Age, years</b>		
Mean	38	36
Range	24–62	21–64
<b>Nationality, <math>n</math></b>		
White British	35	20
British Asian	3	0
African	2	2
Indian	1	2
Chinese	1	2
Pakistani	1	2
Australian	1	0
Not specified	5	21

medicine. Category boundaries were tested by seeking to identify disconfirmatory evidence within subsequent interviews. This process of constant comparison between the interview data and analysis allowed categories to be developed until thematic saturation was reached.<sup>39</sup>

## RESULTS

The results are organised in three sections: first, descriptive data on the nature of RTI consultations and prescribers' use of DP; secondly, the reasons for using DP; and finally, the problems with DP. Quotes from participants are displayed, and are attributed to individual interviews or focus groups using identifiers (for example, GP1, NP2, NP focus group 1).

### Nature of RTI consultations and the use of DP

Although the absolute frequency varied between prescribers, all reported seeing patients with RTIs regularly, usually daily:

*'Pretty much every day that I am working. So I work Monday to Friday, so at least, at least one consultation every day at least.'* [GP15]

*'I would say at least three-quarters of the time, three-quarters of my case load.'* [NP15]

Although some prescribers saw RTI consultations as being relatively simple, they were viewed by others as challenging, due to patients' expectations of antibiotics. These expectations were believed to have arisen from patients' previous experiences of receiving an antibiotic for an RTI and the perceived success of this treatment. Prescribers found it difficult to convince patients that an antibiotic was unnecessary:

*'If you are dishing out an antibiotic that is an easy consultation. Whereas if you try and educate them that is where the difficulty starts because they have got that thing in their mind that whenever they have got a cough they have to [have an antibiotic].'* [GP9]

*'It's difficult because they go "well last time I had this exact thing and Dr so and so gave me antibiotics, why won't you?" ... it puts you in such a difficult [position] ... and sometimes I have had to sort of give delayed scripts even though I really don't want to.'* [trainee GP8]

However, some prescribers commented

that there was a tendency to assume that patients expect antibiotics, when this was not necessarily the case, suggesting that clinicians may overestimate patient expectations and thus the potential difficulty of these consultations:

*'Sometimes they just ring up and say "could I have a cough bottle" ... you expect to have a big argument on the reason ... then you don't ... you are assuming ... they might not want an antibiotic, they just want to get it checked.'* [GP9]

One prescriber (trainee GP15) reported using DP regularly, while one (trainee GP14) revealed that they had never felt sufficiently comfortable with the strategy to implement it. All other prescribers reported using DP infrequently:

*'I must say it's not that often I use it but I do do sometimes ... I probably only ever do it about once every 3 or 4 months, it's not that often.'* [NP1]

*'20% of the time, maybe 10–20% of the time; it's not frequent by any means.'* [GP13]

The majority of prescribers used the DP method of giving the patient the script with instructions only to collect it if symptoms persist or worsen. While prescribers were aware of the post-dating and 'call and collect' methods, these were rarely used as they were felt to be too restrictive to the patient and to demonstrate a lack of trust, which could lead to confrontation:

*'I know there is a facility to post date it, on the system but I have not used that ... if I really felt that they weren't [appropriate] and I prescribed it, it would usually be because the consultation is leading to a confrontation, and so I probably wouldn't do that [post-date], because of the confrontation that would ensue.'* [trainee GP1]

However, one NP reported using post-dating, due to the belief that if the script was not post-dated, the patient would immediately collect and use the antibiotics:

*'You have to make sure you put the following day's date on it ... this research that I read said that if you give mum the prescription there and then with that day's date on it and say wait 24 hours she'll go get it, take it home, may wait but the day after if the child's still got a temp she'll give it whether it needs it or not ... that's why I always put the*

*second day's date on it.'* [NP focus group 2]

#### **Reasons for using delayed prescribing**

Prescribers generally described feeling uncomfortable about using DP as a strategy, and often sought to justify their actions in various ways. The decision to use DP was often presented as resulting from a complex decision-making process that took a variety of factors into account. The two main reasons that DP was used were for managing clinical uncertainty and managing the interaction.

*Managing clinical uncertainty.* Many prescribers commented upon the difficulty in distinguishing with certainty between viral and bacterial infections on the basis of symptoms alone, and often resorted to heuristics in making a diagnosis:

*'You base a lot of it on your experience of what an ill person looks like.'* [GP13]

DP was used to manage this uncertainty and was perceived as providing a 'safety net' for the practitioner as well as the patient. In particular, DP was employed by GPs and some trainees when there was a degree of ambiguity in the diagnosis or to safeguard against the possibility that something may have been missed during the consultation:

*'If there is ambiguity there, then I would like to have a safety net in place ... if I was satisfied that there wasn't any ambiguity, then I can't see any logical reason for a delayed prescription ... I don't know how many cases there are when there isn't ambiguity in my mind, probably not that many.'* [trainee GP13]

*'It can change and you get caught out ... It's just possible you know that I haven't heard the noise in the chest or something.'* [GP5]

In addition to using DP to manage uncertainty in the immediate clinical context, the strategy was also employed as a form of managing symptoms if they worsened at a later time:

*'Chances are this is all going to be better in the next 2–3 days, but if you start to get better, and then you start to get worse, in a new way, so, you know, it changes that you think you are getting better and then suddenly the next day you start to get worse, but it's not quite what it was before, you might be getting a secondary infection, well take them then. It's not often that that happens though.'* [GP14]

DP was also a way of limiting the need to involve other services such as the emergency department, if the condition deteriorated or patients couldn't access their doctor:

*'Patients cannot come back to a GP on a Saturday or a Sunday; they are then left with a system where they are seeing somebody that they don't know, they are usually faced with a trip or an experience of either an A&E, a walk-in centre, an on-call.'* [NP2]

In contrast, NPs (and some GP trainees) tended not to use DP in these circumstances, preferring patients to reconsult, believing this to be safer clinical practice:

*'You are prescribing them for something that you don't really know until, unless you have actually seen them and I would rather see them again ... Just from the safety aspect of it.'* [NP7]

This key difference between nurses and GPs with regard to prescribing when there is uncertainty in the diagnosis may lie in the degree of autonomy and responsibility that nurses and GPs have. Several nurses stated that because they have to record and justify their prescribing decisions, they would not prescribe antibiotics unless they were sure they were needed. On the other hand, GPs tended to be more concerned about what would happen if antibiotics were not prescribed and the patient worsened as a result. This suggests that NPs may be more comfortable refusing antibiotics because they feel more likely to be criticised for giving antibiotics when they are not clearly indicated, while the opposite may be true for GPs:

*'We have to document what we see don't [we], we can't, we can't give it if there's no indication, we tell this to patients all the time, if they don't like it, there's nothing we can do.'* [NP focus group 1]

*'We've had this argument with doctors ... because we've seen a patient and its typical viral but [if] the patient's not happy they go to the GP, out of hours, they give them antibiotics and their reasoning is if they didn't give them antibiotics and something happened later.'* [NP focus group 1]

One GP also commented on the use of guidelines and monitoring as a reason for reduced prescribing, and suggested that their own prescribing practice would

change if they were required to justify their prescribing decisions:

*'I mean the FY2s and the registrars prescribe less than we do, but that's because they are being watched all the time, so you have got to try and do what's right. It's hard ... they have got to justify all their decisions much more. If I had, if somebody said at the end of a surgery I am going to go through this surgery afterwards and check every decision you have made, I would probably operate slightly differently to how I do ... I would probably prescribe less.'* [GP5]

**Managing the interaction.** Prescribers commonly found consultations confrontational, due to a perception that patients expect antibiotics for RTIs. This was seen as potentially damaging to the clinician–patient relationship, and prescribers sought to avoid or limit this conflict wherever possible. DP was viewed by some as a useful strategy for dealing with these difficult consultations while maintaining the clinician–patient relationship:

*'It's ... like a battlefield and somehow I think we have to find ways to get alongside our patients ... so that they don't see us as kind of having to battle with us ... that's a very unhelpful dynamic ... it's sometimes better to then go for a deferred prescription.'* [GP4]

DP was also viewed as a compromise between prescribing and not prescribing when the patient wants an antibiotic but the practitioner does not consider it is clinically indicated. In this sense, DP was seen as a negotiation tool within the clinician–patient interaction, or a way of ending the consultation:

*'In effect we have both won ... I am happy because I am not giving them antibiotics in my head, but they are happy because they have got the piece of paper, saying you know they need antibiotics ... I suspect ... they don't even go and get the antibiotics ... they just wanted to be taken seriously, told they may have a chest infection and be ill.'* [trainee GP8]

Interestingly, most NPs did not report experiencing particularly confrontational consultations, while those who did stated that they would not yield to patient pressure or conflict. This ability to refuse antibiotics in the face of patient expectation was attributed to a number of factors including

confidence in their skills, a good support network, consistent prescribing within the team, having a clear protocol that governs their prescribing, and having more time to deal with patients:

*'Patients are demanding and expecting things, and we are giving out potentially unsafe, not evidenced-based medicines because we can't be bothered with the uncomfortableness of a confrontation ... you have to be very confident, in your medicine to say no, I think, to people and I am quite confident ... it comes from being supported by the medical staff definitely and working in a place where everyone does the same thing.'* [NP10]

*'The GP has got this timeframe and he wants them in and out, so it's easy to write a script for what he wants and then he's onto the next patient, whereas sometimes we can stand up for ourselves a bit more.'* [NP focus group 1]

Another way in which DP was used to manage patient expectations was to demonstrate to patients that their illness was being taken seriously:

*'It's a psychological safety net. I am using a deferred prescription where I think it's likely they don't need it, so I am not bothered about whether they collect it or not ... otherwise I would be giving them a prescription for antibiotics straight away. But I think psychologically it acts as a safety net ... a reassurance to them that their concerns have been noted and acted upon.'* [GP4]

Others employed alternative strategies for communicating that the patient's experience had been taken seriously, without recourse to a DP. This included acknowledging the patient's suffering and offering empathy. In doing this, prescribers do not dismiss the illness and suffering when refusing the antibiotics, but instead seek to validate the patient's illness experience.

*'We always say, we know that you're ill, it's just that two different infections, one's bacterial, viral, doesn't mean to say you're not as ill as a bacterial infection ... I say sometimes viruses are worse; it make them feel better.'* [NP focus group 1]

Furthermore, NPs in particular, described a repertoire of self-management strategies around pain relief, fluid intake, and rest, and saw giving this advice to

patients as a central role for them. This was supported by information leaflets that gave patients something to take away with them, but as they are not prescriptions they do not contradict the message that antibiotics are not needed:

*'At one time your mum would say, it's fine you know honey and lemon ... sometimes when you say honey and lemon they look at you and say "honey and lemon drink? What do you mean? Do I not need antibiotics?" They've got a sore throat you know, they don't know, they're not being ignorant, they just don't know, so that's just because people don't live near their families like they used to.'* [NP focus group 2]

#### **Problems with delayed prescribing**

Prescribers expressed two sets of concerns with the strategy of DP: the conflicting message that it sends to patients about the efficacy of antibiotics for viral RTIs, and concerns that DP alters the locus of clinical control.

*Giving mixed messages.* Prescribers were concerned that DP conveys a contradictory message about the use of antibiotics for self-limiting RTIs, since patients are told that antibiotics are ineffective, but are simultaneously provided with a prescription for these antibiotics:

*'I sometimes think well are you just fudging the issue ... you are having a bit each way really. You are saying "no you don't need them, but ... I am not prepared to stand up to you and say no outright". And again, you know, if they are going to go home and immediately start them, well you know you may as well just have said "right, take them".'* [GP6]

It was thought that DP reinforced patients' erroneous beliefs about the efficacy of antibiotics for RTIs and is therefore not an effective strategy for reducing patient expectations of antibiotics or intention to reconsult:

*'They come in requesting it specifically and then you have kind of confirmed that you know it is the right thing just by giving them a script.'* [trainee GP3]

*'I would rather educate a patient, so that, in future they don't just think that they automatically would need [antibiotics].'* [NP10]

*Altered locus of control.* Many prescribers

felt that DP puts the onus on the patient to make a clinical decision about whether to take antibiotics. One GP saw this as having potentially positive implications with regard to empowering patients:

*'[It] gives people the feeling that they have got some sense of control ... maybe a bit more willing to listen to you about the thing of waiting and seeing ... if it does actually sort of develop into anything ... the feeling being that I have got a prescription that I may not need to use but you know I will do those other things and yes the doctor said if I develop this, that or the other, then I will wait and see actually.'* [GP12]

However, the remainder of the sample were very uncomfortable with the idea of relinquishing clinical control to patients, and saw this as a negative aspect of DP. Reasons included reluctance to give patients the responsibility for the clinical decision making, lack of trust in patients to only use the prescription if the condition worsened, and the belief that for some patients DP is unsafe practice because they may rely entirely on the antibiotics and fail to seek further help if the condition worsens:

*'Putting the onus on a patient to make a clinical decision as to whether they are going to start a treatment or not ... asking a member of the lay public then to sort of make that final call as to whether they start on the antibiotics. It is not something I would do too lightly.'* [GP2]

*'In some patients it wouldn't be safe to, because actually if you think that they might be getting worse they might need to see a doctor.'* [GP8]

The idea of giving patients control over the final clinical decision was seen as even more of a problem in unscheduled services, due to the lack of follow-up opportunities:

*'Not that comfortable ... leaving the responsibility to the patient when they are on their own and it may not be just as simple as we think it will be when they have got to make a decision ... these are out-of-hours patients so I shall never see them again. It's not like I am their GP and they can ring me and I remember chatting to them 2 days ago ... I am no longer in control and yet I am responsible.'* [GP14]

Lack of follow-up was problematic for all prescribers, since few receive feedback about how patients used the prescription.

Only one prescriber indicated that when using DP, they would contact the patient afterwards to find out whether or not the strategy was actually useful:

*'If ever I do a delayed prescription I would always follow it up and find out what happened ... I would put them a telephone appointment for the next week and I will always try to contact them and ring them and ask them did they use them; I need to know for my own benefit to see how useful it is or am I just kidding myself that it works.'* [NP1]

## DISCUSSION

### Summary

This is the first study to explore UK primary care prescribers' perceptions of the NICE recommended delayed-prescribing strategy.<sup>4</sup> Findings indicate that while RTI consultations are a common feature of everyday practice and are often perceived as difficult due to patient expectations for antibiotics, the DP strategy is problematic and used infrequently. When used, most prescribers prefer to give the patient a prescription straight away, with instructions about when to get it dispensed (rather than using post-dating or call and collect), as this was felt to communicate trust and to be less likely to lead to confrontation. However, participants felt that when using this method, patients could collect the prescription immediately, and it is therefore unlikely that DP reduces antibiotic use and future expectations for antibiotics. Prescribers had no way of knowing whether the prescription had been used (and hence to learn whether DP is an effective antibiotic-reduction strategy), unless they chose to contact the patient subsequently.

Prescribers highlighted a number of problems with the DP strategy, namely that it presents a mixed message to patients about the efficacy of antibiotics for self-limiting RTIs and creates discomfort through giving patients clinical control over their condition.

DP was primarily used to manage diagnostic uncertainty and patient expectations, although some prescribers, particularly GPs working in unscheduled services, NPs, and GP trainees, preferred patients to reconsult if there was ambiguity in the diagnosis. This may reflect the influence of different types of clinician-patient relationships upon RTI management, with those prescribers who do not have a continuing relationship with patients being less comfortable with relinquishing clinical control to them.

These results suggest that when DP is implemented, it is used in line with NICE guidelines,<sup>4</sup> in that it is used as a means of safety netting against the condition worsening and to manage patients who have strong expectations for antibiotics. However, while some clinicians saw consultations about RTIs as confrontational and found it difficult to offer reassurance and refuse antibiotics in the face of patient expectations, others (in particular NPs) described more confidence in refusing antibiotics in response to patient expectations, when there was no clinical indication that they were needed. These clinicians employed alternative strategies, such as justifying the no-prescribing decision in light of the guidelines that govern their prescribing, educating patients about antibiotics and promoting self-management of symptoms, giving leaflets, and empathising with patients and acknowledging their suffering. This suggests that the DP strategy is not the only, or preferred, strategy to manage these issues.

### Strengths and limitations

This is the first UK study to look at primary care prescribers' use of, experiences with, and opinions about the DP strategy since its recommendation in the 2008 NICE guidelines.<sup>4</sup> It uses a large qualitative sample ( $n=82$ ) and multiple data-generation methods to develop a rich dataset. The inclusion of NPs and GP trainees in the sample affords a broader representation of how the strategy is used by different prescribers who may be subject to different pressures, and represents the first study to compare these different prescribers in their use of the DP strategy. Although NPs are likely to be the primary non-medical prescribing group involved with RTI patients, further work is needed to understand how other non-medical prescribers, such as pharmacists, use the DP strategy for managing these patients.

A further strength of the study is the grounded theory approach used to explore the issues around DP, without a specific hypothesis. This represents a data-driven rather than theory-driven approach, and, as such, data generation and analysis continued until thematic saturation was achieved and no new themes emerged. The analysis revealed important differences in views about the DP strategy, suggesting that the methods used were sufficiently sensitive to reveal new insights in the area of decision making in relation to prescribing.

A limitation of the present study relates to

the possibility of interviewer influence, as participants may have felt the need to defend the DP strategy and their own methods of prescribing during the interview, and thus may have presented inaccurate accounts of their actual practice. This could particularly be an issue within the focus group interviews if participants felt the need to defend their professional practice. For this reason, separate focus groups were conducted for NPs and GPs. Within the interviews, the interviewer took a non-judgemental stance and all participants were able to discuss openly instances in which their prescribing had been illogically reasoned or not clinically justified. This suggests that the interviewees felt sufficiently comfortable in presenting socially undesirable views. Nevertheless, to address these issues future studies should aim to observe prescribers during consultations, in order to obtain information about how they use the DP strategy in everyday practice.

#### Comparison with existing literature

Some of the themes in the present study, such as the use of DP to manage patient pressure, and feeling uncomfortable with handing over clinical control to the patient, correspond with those found in research with Australian and Norwegian GPs,<sup>33,34</sup> suggesting that there are some similarities in different prescribers' and different countries' experiences with DP. However, contrasts also emerged. The data revealed that UK prescribers did not necessarily consider DP in terms of its usefulness in educating patients and reducing antibiotic use, and instead saw DP as presenting a mixed (and potentially contradictory) message with regard to the effectiveness of antibiotics and when they should be used. This indicates the value of studying the use of this strategy in different populations to accurately represent the issues and experiences of prescribers.

In light of previous findings that prescribers often overestimate patient pressure for antibiotics,<sup>40,41</sup> and that patients often seek illness 'legitimation'<sup>8</sup> and symptom management rather than antibiotics per se,<sup>41</sup> it can be argued that DP may not be the best strategy for managing RTIs. Instead, given that patient satisfaction is dependent upon whether patients' concerns are dealt with, it would appear that strategies such as those more commonly advocated by NPs, which seek to elicit and address patient concerns and acknowledge their illness while educating them in the use of self-management, may

be more effective in addressing patient beliefs and reducing long-term reconsultation rates and excessive antibiotic use.

This was the first study to include non-medical prescribers, and although many of the challenges and concerns were the same, some differences emerged between GPs and NPs in how useful DP was. These may reflect differences in training and the roles: GPs are seen as being primarily responsible for the diagnosis and treatment of illnesses and come from a background of in-depth training in biomedical sciences and experiences of the different medical specialties.<sup>42</sup> NPs, on the other hand, are expected to fulfil a more caring role and are viewed as being more responsible for providing education and support to patients, with in-depth training in communication, health education, and health promotion.<sup>42</sup> Differences were also found over how autonomous the prescribers perceived themselves to be. Nurses worked to strict prescribing guidelines and felt they would be checked and criticised for 'inappropriate prescribing', and used this as a justification to patients for not prescribing antibiotics where they were not clinically indicated. GP trainees, similarly in a position where they expected to justify their decisions, felt confident working within guidelines and not yielding to patient pressure. For both, this allowed prescribers to present the 'no antibiotic prescribing' decision as out of their control and not personal, thus serving to protect the therapeutic relationship.

Another factor to be considered is the care setting in which the prescribers typically work, with differences emerging between scheduled and unscheduled care practice. Those working in scheduled care had the potential for ongoing relationships with their patients and were motivated to protect the clinician-patient relationship in the longer term. Clinicians working in this role viewed a 'no-prescribing' decision as potentially threatening to the relationship, and used DP as a strategy to avoid this. On the other hand, prescribers who worked in unscheduled care, seeing patients on a one-off basis, were less preoccupied about maintaining relationships with patients and more able to stand firm in their clinical decisions.

#### Implications for research and practice

Guidelines need to be clearer that while DP may serve as a useful safety net in case a medical situation deteriorates, it does not appear to be the best way for prescribers to manage patient expectations. Feedback to

#### Funding

This work was supported by a grant from the British Society for Antimicrobial Chemotherapy (reference no. EDG/07/02). The views expressed are those of the authors and not necessarily the funders.

#### Ethical approval

NHS ethical approval was obtained through the North West 2 Research Ethics Committee, Liverpool Central (reference no. 09/H1005/73).

#### Provenance

Freely submitted; externally peer reviewed.

#### Competing interests

The authors have declared no competing interests.

#### Acknowledgements

The authors are indebted to all the GPs, NPs, and GP trainees who took part in the study.

#### Discuss this article

Contribute and read comments about this article on the Discussion Forum: <http://www.rcgp.org.uk/bjgp-discuss>

clinicians about the outcome of DP in individual cases may help them, and prescribing authorities, to monitor the utility of this approach within clinical practice. Training and guidance should focus on alternative methods for identifying patient expectations, communicating sympathy, redressing erroneous treatment and illness beliefs, and equipping patients to manage self-limiting symptoms. Some clinicians in the study were able to use these alternatives to good effect without risking the clinician–patient relationship, and recognised that this had longer-term benefits and that training in these techniques is likely to be a more useful approach in the longer term. Moreover, the findings indicate that different challenges exist for prescribers from different disciplines and working in different settings, and it is important that these differences are recognised and addressed within guidelines and training.

DP strategy is used infrequently and inconsistently by prescribers. The two main ways the strategy was used were to manage uncertainty in the diagnosis and to manage patient expectations. While it may be a useful strategy in terms of providing a

'safety net' for doctors in case the condition worsens, the use of DP to manage patient expectation and conflict is problematic, as it is likely to reinforce erroneous beliefs about antibiotics and is therefore unhelpful in promoting self-management and reducing reconsultation rates and antibiotic expectations. Furthermore, when using DP, prescribers were often uncomfortable with the idea of relinquishing clinical control to patients and feel that for some patients it was potentially unsafe to do so. Taken together, this suggests that primary care prescribers do not perceive the DP strategy to be a particularly helpful solution to the problem of reducing antibiotic use for RTIs. Taken with other research on this topic, it is worth reconsidering DP as a central strategy in NICE guidelines. The data from the present study suggest that there are preferred ways in which expectations can be managed without recourse to antibiotics. These include empathising with patients, addressing patient beliefs, and encouraging self-management and appropriate use of services. As such, these kinds of strategies should be explored in more detail as alternative approaches to managing patients with RTIs.

## REFERENCES

1. Ashworth M. Variations in antibiotic prescribing and consultation rates for acute respiratory infection in UK general practices 1995–2000. *Br J Gen Pract* 2005; **55**(517): 603–608.
2. Ashworth M, Cox K, Latinovic R, et al. Why has antibiotic prescribing for respiratory illness declined in primary care? A longitudinal study using the General Practice Research Database. *J Public Health* 2004; **26**(3): 268–274.
3. McCormick A, Fleming D, Charlton J. *Morbidity statistics from general practice: fourth national study 1991–1992*. London: HMSO, 1995.
4. National Institute for Health and Clinical Excellence. *Respiratory tract infections: prescribing of antibiotics for self-limiting respiratory tract infections in adults and children in primary care. CG69*. 2008. <http://guidance.nice.org.uk/CG69> [accessed 29 Jun 2011].
5. Fleming DM, Ross AM, Cross KW, et al. The reducing incidence of respiratory tract infection and its relation to antibiotic prescribing. *Br J Gen Pract* 2003; **53**(529): 778–783.
6. Patient.co.uk. *Why no antibiotic?* <http://www.patient.co.uk/health/Antibiotics-Why-No-Antibiotic?.htm> Patient.co.uk, 2009 [accessed 29 Jun 2011].
7. Cosby JL, Francis N, Butler CC. The role of evidence in the decline of antibiotic use for common respiratory infections in primary care. *Lancet Infect Dis* 2007; **7**(11): 749–56.
8. Little P. Open randomised trial of prescribing strategies in managing sore throat. *Qual Saf Health Care* 1997; **314**(7082): 722–727.
9. Lindbaek M. Prescribing antibiotics to patients with acute cough and otitis media. *Br J Gen Pract* 2006; **56**(524): 164–165.
10. Petersen I, Hayward AC. Antibacterial prescribing in primary care. *J Antimicrob Chemother* 2007; **60**(Suppl 1): i43–i47.
11. Ashworth M. Age-related changes in consultations and antibiotic prescribing for acute respiratory infections, 1995–2000. Data from the UK General Practice Research Database. *J Clin Pharm Ther* 2006; **31**(5): 461–467.
12. Butler CC. Reducing antibiotics for respiratory tract symptoms in primary care: consolidating 'why' and considering 'how'. *Br J Gen Pract* 1998; **48**(437): 1865–1870.
13. Little P, Rumsby K, Kelly J, et al. Information leaflet and antibiotic prescribing strategies for acute lower respiratory tract infection: a randomized controlled trial. *J Am Med Assoc* 2005; **293**(24): 3029–3035.
14. Little P, Williamson I. Sore throat management in general practice. *Fam Pract* 1996; **13**(3): 317–321.
15. Gonzales R, Malone DC, Maselli JH, et al. Excessive antibiotic use for acute respiratory infections in the United States. *Clin Infect Dis* 2001; **33**(6): 757–762.
16. Arroll B, Kenealy T. Are antibiotics effective for acute purulent rhinitis? Systematic review and meta-analysis of placebo controlled randomised trials. *Qual Saf Health Care* 2006; **333**(7562): 279.
17. Madden TA. Adverse penicillin reactions in the records of a general practice 1973 to 1975. *J R Coll Gen Pract* 1977; **27**(175): 73–77.
18. Arason VA, Kristinsson KG, Sigurdsson JA, et al. Do antimicrobials increase the carriage rate of penicillin resistant pneumococci in children? Cross sectional prevalence study. *BMJ* 1996; **313**(7054): 387–391.
19. Cars O, Hogberg LD, Murray M, et al. Meeting the challenge of antibiotic resistance. *BMJ* 2008; **337**: a1438.
20. Costelloe C, Metcalfe C, Lovering A, et al. Effect of antibiotic prescribing in primary care on antimicrobial resistance in individual patients: systematic review and meta-analysis. *BMJ* 2010; **340**: c2096.
21. European Centre for Disease Prevention and Control. *Annual epidemiological report on communicable diseases in Europe*. Stockholm: European Centre for Disease Prevention and Control, 2009.
22. Goossens H, Ferech M, Van der Stichele R, et al. Outpatient antibiotic use in Europe and association with resistance: a cross-national database study. *Lancet* 2005; **365**(9459): 579–587.
23. World Health Organization. *WHO global strategy for containment of antimicrobial resistance*. Geneva: WHO, 2001.
24. House of Lords Select Committee on Science and Technology. *Resistance to antibiotics and other antimicrobial agents*. London: The Stationery Office, 1998.
25. Williamson I, Benge S, Mullee M, et al. Consultations for middle ear disease, antibiotic prescribing and risk factors for reattendance: a case-linked cohort study. *Br J Gen Pract* 2006; **56**(524): 170–175.
26. Little P, Gould C, Williamson I, et al. Reattendance and complications in a randomised trial of prescribing strategies for sore throat: the medicalising effect of prescribing antibiotics. *BMJ* 1997; **315**(7104): 350–352.
27. Hare ME, Gaur AH, Somes GW, et al. Does it really take longer not to prescribe antibiotics for viral respiratory tract infections in children? *Ambul Pediatr* 2006; **6**(3): 152–156.
28. Kumar S. Why do general practitioners prescribe antibiotics for sore throat? Grounded theory interview study. *Qual Saf Health Care* 2003; **326**(7381): 138.
29. Little P, Dorward M, Warner G, et al. Importance of patient pressure and perceived pressure and perceived medical need for investigations, referral, and prescribing in primary care: nested observational study. *BMJ* 2004; **328**(7437): 444.
30. Petursson P. GPs' reasons for 'non-pharmacological' prescribing of antibiotics – a phenomenological study. *Scand J Prim Health Care* 2005; **23**(2): 120–125.
31. Spurling GKP, Del Mar C, Dooley L, Foxlee R. Delayed antibiotics for respiratory infections. *Cochrane Database Syst Rev* 2007; **3**: CD004417.
32. Dowell J, Pitkethly M, Bain J, et al. A randomised controlled trial of delayed antibiotic prescribing as a strategy for managing uncomplicated respiratory tract infection in primary care. *Br J Gen Pract* 2001; **51**(464): 200–205.
33. Arroll B, Goodyear-Smith F, Thomas D, et al. Delayed antibiotic prescriptions: What are the experiences and attitudes of physicians and patients? *J Fam Pract* 2002; **51**(11): 954–959.
34. Hoye S, Frich JC, Lindboek M. Delayed prescribing for upper respiratory tract infections: a qualitative study of GPs views and experiences. *Br J Gen Pract* 2010; **60**(581): 907–912.
35. Edwards M, Dennison J, Sedgwick P. Patients' responses to delayed antibiotic prescription for acute upper respiratory tract infections. *Br J Gen Pract* 2003; **53**(496): 845–850.
36. McKee MD, Mills L, Mainous III AG. Antibiotic use for the treatment of upper respiratory infections in a diverse community. *J Fam Pract* 1999; **48**(12): 993–996.
37. Cars O, Mölstad S, Melander A. Variation in antibiotic use in the European Union. *Lancet* 2001; **357**(9271): 1851–1853.
38. Peters S. Qualitative research methods in mental health. *Evid Based Ment Health* 2010; **13**: 35–40.
39. Strauss A, Corbin J. *Basics of qualitative research techniques and procedures for developing grounded theory*. London: Sage Publications, 1998.
40. Stivers T, Mangione-Smith R, Elliott MN, et al. Why do physicians think parents expect antibiotics? What parents report vs what physicians believe. *J Fam Pract* 2003; **52**(2): 140–148.
41. Van Driel ML, Sutter AD, Deveugele M, et al. Are sore throat patients who hope for antibiotics actually asking for pain relief? *Ann Fam Med* 2006; **4**(6): 494.
42. Mundinger MO. Twenty-first-century primary care: new partnerships between nurses and doctors. *Acad Med* 2002; **77**(8): 776–780.