BMJ Open

Multiplicity and complexity: a qualitative exploration of influences on prescribing in UK general practice

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To cite: Carter M, Chapman S, Watson MC. Multiplicity and complexity: a qualitative exploration of influences on prescribing in UK general practice. *BMJ Open* 2021;**11**:e041460. doi:10.1136/bmjopen-2020-041460

► Prepublication history and additional materials for this paper is available online. To view these files, please visit the journal online (http://dx.doi.org/10.1136/bmjopen-2020-041460).

Received 10 June 2020
Revised 15 December 2020
Accepted 28 December 2020

Check for updates

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ABSTRACT

Objectives Despite widespread availability of evidence-based guidelines to inform rational use of medicines, considerable unwarranted variation exists in prescribing. A greater understanding of key determinants of contemporary prescribing in UK general practice could inform strategies to promote evidence-based prescribing. This study explored (1) current influences on prescribing in general practice and (2) the possibility that general practice-based pharmacists (PBPs) may contribute to greater engagement with evidence-based prescribing.

Design Semistructured, telephone interviews and a focus group were conducted, audio-recorded and transcribed verbatim. Thematic analysis was undertaken.

Participants General practice prescribers: general practitioners (GPs), PBPs, nurses.
Key informants: individuals within the National Health Service (NHS) with responsibility for influencing, monitoring and measuring general practice prescribing.

Setting General practices and NHS organisations in England.

Results Interviews with 17 prescribers (GPs (n=6), PBPs (n=6), nurses (n=5)) and 6 key informants, and one focus group with five key informants were undertaken between November 2018 and April 2019. Determinants operating at individual, practice and societal levels impacted prescribing and guideline use. Prescribers' professional backgrounds, for example, nursing, pharmacy, patient populations and patient pressure were perceived as substantial influences, as well as media portrayal and public perceptions of medicines.
Prescribers identified practice-level determinants of prescribing, including practice culture and shared beliefs. Key informants tended to emphasise higher-level influences, including NHS policies, availability of support and advice from secondary care and generic challenges associated with medicines use, for example, multimorbidity.
Participants expressed mixed views about the potential of PBPs to promote evidence-based prescribing in general practice.

Conclusion Prescribing in UK general practice is influenced by multiple intersecting factors. Strategies to promote evidence-based prescribing should target modifiable influences at practice and individual levels. Customising strategies for medical and non-medical prescribers may maximise their effectiveness.

Strengths and limitations of this study

- ► This study explored a range of perspectives.
  - Medical and non-medical professionals prescribing in general practice (doctors, pharmacists and nurses).
  - Key informants working at various National Health Service levels who are influencing, monitoring and measuring general practice prescribing.
- ► The interview/focus group topic guides were developed flexibly to allow for exploration of additional topics.
- ► This study investigated the use of guidelines in general; research to explore the uptake of guidelines for specific medical conditions may reveal a different picture.

INTRODUCTION

Medicines are the most common intervention used within the National Health Service (NHS).[1] They are vital to the prevention and treatment of illness, maintenance of health and management of chronic conditions. NHS expenditure on medicines is eclipsed only by the staff budget.[2] Despite annual increases in spending to £17.4 billion (2016/2017),[3] there is substantial evidence that medicines are not always used judiciously,[4 5] with considerable unwarranted variation in practice[6 7] and suboptimal patient outcomes.[8 9]

Although the National Institute for Health and Care Excellence (NICE), established in 1999 to address problematic variation in NHS treatment availability and quality,[10] issues a huge volume of prescribing advice and guidance to prescribers, inconsistent prescribing behaviour persists and is not fully explained by practice and patient variation.[11] In accordance with major professional bodies, NICE endorses 'Medicines Optimisation' principles.[12] These explicitly promote prescribing based on individual patient experience, evidence and safety and highlight a balance between strict observance of guidelines and clinician judgement for individual patients.

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In contrast with most other countries, non-medical prescribing is a key feature of UK healthcare.[13] While prescribing is embedded in undergraduate and postgraduate medical curricula, non-medical professionals undertake additional training to prescribe within their scope of competency. Currently there are approximately 48 000 nurse (independent or supplementary) prescribers[14] and 9000 pharmacist independent prescribers.[15] Many of these prescribers work in general practice.

This study investigated influences (including the use of guidelines) on prescribing and the practice-based pharmacists' (PBPs') potential to optimise the use of evidence in prescribing in general practice. The objectives were to explore:

1. General practice prescribers' perceptions of influences on their prescribing.
2. Key informants' perspectives about the ways in which prescribing in general practice is influenced, monitored and measured, including the use of NICE and other guidelines.
3. The role and potential of PBPs to promote greater use of evidence in prescribing in general practice.

METHOD

Study design

The study adopted pragmatist principles,[16] seeking to gain a practical understanding of participants' experience of prescribing; data collection methods (interviews and focus group) suited to eliciting knowledge based on experience reflected this epistemological underpinning.

To encourage participation, participants were offered either a telephone or face-to-face interview. As a further boost to recruitment and to encourage an exchange of perspectives and experiences between key informants,[17] members of a Regional Medicines Optimisation Committee (RMOC) comprising five members were invited to attend a focus group as an adjunct to one of their half-yearly meetings.

Recruitment

Potential interviewees were initially identified through local, regional and national NHS networks and contacts and thereafter by snowball sampling.[18] Individual and practice characteristics reported to influence prescribing (eg, experience,[19] and patient profile[20]) were included in a sample matrix (table 1). Matrix elements were used to guide recruitment of (i) medical and non-medical prescribers in general practice and (ii) key informants working at local (one Clinical Commissioning Group (CCG)), regional (across CCGs) and national NHS levels in roles connected with general practice prescribing. Recruitment ceased when all the matrix elements were addressed.

Initial contact with potential participants was by email. Sampling ceased when all matrix elements were filled.

Table 1 Target recruitment matrix

General practice prescribers		Key informants	
Gender	Male Female	Gender	Male Female
Role	General practitioner Practice-based pharmacist Nurse	NHS level	Local Regional National
Years since qualification	≤10 >10	Years in current post	≤2 >2
Employment	Clinical Commissioning Group Practice NHS England	Direct contact with general practice	Yes No
Practice size (patient list)	Small (<5000 patients) Medium (5000–≤10 000 patients) Large (>10 000 patients)		
Practice level of deprivation*	≤5 >5		

*Information from National General Practice Profiles[41] (lower numbers indicate more deprivation).

Data collection

Potential participants were sent an information sheet and asked to provide written informed consent prior to participation. The topic guides (interview for prescribers and interview/focus group for key informants) (see online supplemental file) were informed by the literature and information from preliminary discussions with local and regional NHS contacts. Questions focused on the participant's role, perceived influences on prescribing, the experience of variation in prescribing and the role and potential of PBPs. Guides were piloted with non-participating pharmacists to check for relevance of questions and terminology and were refined during the study as new topics were identified.[21] Prior to the interview, participants were asked to provide brief details about themselves and the general practice or organisation in which they worked.

All one-to-one interviews were conducted by telephone by one researcher (MC). MC led the focus group, supported by a facilitator (NA, postdoctoral researcher) who made brief notes to support transcription of the recorded discussion. The interviews and focus group were digitally recorded, transcribed verbatim and identifying information removed (MC). MC made short reflexive field notes.

Data collection took place between November 2018 and April 2019.

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Data analysis

Transcripts were coded using standard software QSR NVivo V.11. Data were analysed interpretatively, focussing on participants' perception and understanding of influences on prescribing,[22] in two groups (i) from interviews with prescribers and (ii) from interviews and focus group for key informants. Topic guides included the same areas of investigation and allowed common experiences and perceptions between the groups to be identified. Codes about the influences on prescribing and the PBP's role were generated using reflexive thematic analysis techniques[23] by which participants' experiences and perceptions were understood and categorised. MC developed an initial framework of codes, which was applied by a mixed-methods researcher (AD, PhD student) to analyse and code a subset (n=6) of transcripts. Both researchers subsequently discussed commonalities and differences in coding. The framework was amended to reflect these discussions, and thereafter all transcripts were coded by MC using the refined coding framework. Main themes and links between themes from all transcripts were discussed by MC and AD and agreed with the entire team.

Both MC and AD had previously conducted qualitative research with general practices, but neither was a pharmacist or prescriber. Two interviewees were known professionally to MC prior to participating.

This report conforms to the Standards for Reporting Qualitative Research[24] and Consolidated Criteria for Reporting Qualitative Research[25] guidelines.

Patient and public involvement

This study specifically focused on the influences on prescribing; prescribers, key informants and patients were not involved in the design or conduct of the research.

RESULTS

Twenty-three interviews were completed with 6 general practitioners (GPs), 11 non-medical, independent prescribers (PBPs (n=6), nurses (n=5)) (table 2) and 6

Table 2 Prescriber and general practice characteristics

Individual characteristics					General practice characteristics	
Participant no.	**Gender**	**Employer and work location**	**Years since registration**	**Years since qualifying as independent prescriber**	**Practice list size**	**Indices of multiple deprivation decile***
General practitioners						
P10	F	Practice, England (West)	20		5000–≤10 000	≤5
P12	M	Practice, England (South West)	36		5000–≤10 000	>5
P13	F	Practice, Scotland	26		5000–≤10 000	>5†
P14	F	Practice, England (South West)	31		5000–≤10 000	>5
P16	F	Practice, England (South West)	26		>10 000	>5
P18	F	Practice, England (Midlands)	12		5000–≤10 000	≤5
Practice-based pharmacists						
P3	M	Practice, England (South)	>10	>5	>10 000	>5
P9	M	Group of four practices, England (London)	<10	≤5	<5000	≤5
					>10 000	>5
					>10 000	<5
					>10 000	<5
P11	M	Practice, England (West)	<10	≤5	>10 000	>5
P22	M	Practice, England (South)	>10	≤5	>10 000	≤5
P29	F	Practice, England (East)	<10	≤5	>10 000	>5
P32	M	Community pharmacy/practice, England (South)	>10	≤5	5000–≤10 000	>5
Nurses						
P5	F	Practice, Wales	>10	>5	>10 000	>5†
P1	M	Practice, England (West)	>10	>5	>10 000	>5
P15	F	Practice, England (West)	>10	>5	>10 000	>5
P19	F	Practice, England (Midlands)	>10	>5	>10 000	≤5
P21	F	Practice, England (South)	>10	≤5	>10 000	>5

P9 worked in four practices; P3 and P21 worked in the same practice.
All PBPs and nurses were independent prescribers.
*Information from National General Practice Profiles[41] (lower numbers indicate more deprivation).
†Derived from participant's depiction of patient population.

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Table 3 Key informant characteristics

Participant no.	Gender	Age (years)	National Health Service level Local*/regional†/national‡ (England)	Time in post (years)	Direct contact with general practices	Interview or focus group
P2	F	>30–≤50	Local	≤2 years	Y	Interview
P4	F	>50	Regional	>2	Y	Interview
P8	F	>30–≤50	Local	≤2	Y	Interview
P17	F	>50	National	>2	N	Interview
P23	F	>50	Local and regional	>2	Y	Interview
P24	M	>50	Local and regional	>2	N	Focus group
P25	F	>30–≤50	Local and regional	>2	Y	Focus group
P26	M	>30–≤50	National and regional	>2	Y	Focus group
P27	M	>50	Local and regional	>2	Y	Focus group
P28	F	>50	National and regional	>2	Y	Focus group
P31	M	>50	National and regional	>2	N	Interview

*Local: working at individual Clinical Commissioning Group level.
†Regional: working across Clinical Commissioning Groups or regional body.
‡National: representative of/working on national body.

key informants. One focus group was conducted with five key informants (table 3) comprising representatives from an RMOC whose members (decision-makers, healthcare professionals and patients) support and optimise local prescribing practice and reduce unwarranted variation regionally and nationally (in England). Interviews lasted a mean of 41 min (range 24–53 min). The focus group lasted 59 min.

Most participating PBPs had direct experience of the Clinical Pharmacists in General Practice programme,[26] a scheme funded by NHS England to support the introduction of pharmacists into general practice. PBPs' current roles varied, with most including responsibility for medicines reviews, repeat prescriptions and some audit work.

The results are presented under theme headings in three sections: (i) prescribers' perspectives, (ii) key informants' perspectives, (iii) comparison of prescriber and key informant perspectives. The contributor of each quotation is denoted by a unique P (participant) number and role (GP, nurse, PBP, KI—key informant). For key informants the NHS level at which s/he worked and I—interview or FG—focus group is indicated.

Prescribers' perspectives

Summary of prescribers' perspectives (themes in bold text)

Prescribers acknowledged that **guidelines** from NICE and other bodies were a predominant influence on their prescribing. They also discussed the impact of their **professional background** and training, as well as experience and **individual characteristics**. **Patient characteristics**, such as socioeconomic features of local **populations** were frequently cited as an important determinant of prescribing, as was the **organisational culture** of the general practice. Prescribers expressed a range of views about the current and potential **roles of PBPs**.

National and local guidelines

Prescribers from all professional groups reported that their prescribing was fundamentally influenced by information provided by NICE guidelines, their local CCG, condition-specific organisations and Royal Colleges:

> I suppose virtually everything that I see and talk about is influenced by NICE in the first instance, and the relevant NICE guidance, whatever it might be. (P1, Nurse)

> NICE guidance we're heavily influenced by … number 1 is [*name of CCG formulary*] … number 2 is the NICE guidance and then I suppose number 3 is the British National Formulary, it's every GP's bible really. (P14, GP)

Guidelines were often amplified by financial incentive schemes, such as the national Quality and Outcomes Framework[27] and local initiatives, for example, from the CCG.[28] Prescribers commented on the impact of computerised decision-support tools, such as ScriptSwitch[29] and Optimise RX.[30] Some prescribers appreciated the real-time prompts from these systems:

> I personally find it a huge source of assurance and reassurance in my prescribing practice. (P1, Nurse)

Others reported being overwhelmed by the information:

> There's so much information sometimes like 'do not prescribe this in pregnancy' and it's someone in their 50s … we are inclined to ignore that kind of information and then suddenly realise that … what it was flagging up was actually important. (P13, GP)

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Professional background

Many participants mentioned their own and colleagues' professional background as influencing their prescribing. PBPs and nurses were frequently characterised, by themselves and others, as aware of their professional boundaries and 'sphere of competence' and therefore more likely to follow prescribing guidelines than their GP colleagues:

> I guess I'd make the distinction between GPs and independent prescribers … [the latter] … are a bit more cautious … you … have your area and you … won't stray outside that. So being educated before prescribing in new areas is much more important. Whereas I think as far as the GPs go, they can prescribe anything and everything from day 1. (P11, PBP)

Individual experience and qualities

Individual prescribers' accumulated experience and access to support, education and development opportunities were also considered to be important determinants of prescribing:

> So we might have a specialist in the field … recently we had a cardiologist consultant and he spoke about heart failure, so it was educational … it really helped weighing up the prescribing techniques that we use. (P22, PBP)

Individual qualities, such as confidence and ambition were also mentioned as influences on prescribing:

> I think you're willing to learn, you're willing to try new things and look at your own confidence and you've got to be really honest. (P29, PBP)

Patient characteristics

The socioeconomic profile of the local patient population was identified by prescribers as an influence on their prescribing. Several reported responding to the needs of deprived patient populations:

> Where I work, it's quite a deprived area, life expectancy is generally a lot lower … So our approach is very different, we really try to serve the needs of the local demographic … if it was in a different setting we would be saying 'go and buy this over the counter' … that patient's not really in a position where they would afford it. (P22, PBP)

Some also mentioned the pressure of prescribing for an affluent and assertive population:

> [*We*] encourage [*sic*] people that things that are cheaper to buy over the counter would be better buying over the counter … But some of our patients are a bit resistant to the idea … a case of 'why should we? We've paid tax, we should be getting these things'. (P13, GP)

Prescribers identified guidance from authoritative sources, such as NICE, as a tool for managing challenging demands from individual patients:

> NICE is what you turn to when the patient says 'I want the drug that was in the Daily Mail last week'. And you say 'sorry I can't prescribe that, it's not been agreed by NICE yet'. (P12, GP)

Comments about managing patient demand highlighted differences between individual prescribers:

> I'm probably a bit too nice sometimes! One of my colleagues is very good at just saying 'no'. For things like sleeping tablets. I tend to do more negotiation, short supplies or weaning courses … rather than being a point blank 'no' person. (P18, GP)

Organisational culture

Prescribers discussed the culture within their general practice, including opportunities for informal learning from colleagues about new developments in guidelines and prescribing:

> We take group learning very seriously, we have clinical catch up at coffee, where if anyone has found any new exciting evidence or guidelines or examples of good practice we do tend to talk inter-professionally. (P29, PBP)

> In practice, we don't as a group kind of get together … as clinicians and feeding back information, events that have happened … significant events … we don't have joint CPD [*continuing professional development*] events. (P22, PBP)

Although prescribers often reported limited influence from the pharmaceutical industry (noted by some as being different from close relationships in the past), contact between practices and 'drug reps' still continued in other forms:

> Every practice I've worked in has stopped seeing drug reps. I think there is still advertising in Monthly Index of Medical Specialities and in things like the British Medical Journal … some of the fairly accessible GP free education has still got drug reps attending. I don't talk to them, but I'm always made to feel slightly bad for not talking to them because you're always encouraged to. (P10, GP)

PBP roles

PBPs had differing employment models and patterns, with some individuals working as full members of the general practice team and others shared between several practices. Experience varied considerably as did their access to training, support and development.

Although other prescribers often mentioned the positive impact of PBPs' complementary knowledge and skills, some GPs were cautious about PBPs' potential impact on prescribing in general practice:

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> Prescribing in the context of multi-morbidity is the sort of thing that experienced GPs offer … I think prescribing pharmacists could do really well, but when they're into the more complex, multi-faceted, social, psychological issues and stuff that the generalist patients have, they would find it more difficult. (P12, GP)

Participants expressed mixed views about PBPs' potential to influence their colleagues' prescribing practice, but many mentioned the importance of PBPs' particular knowledge of medicines:

> They (PBPs) were invaluable as a source of information, in terms of kind of combinations of things and interactions. (P18, GP)

Some identified the types of tasks most appropriate for PBPs, including medicines review and reconciliation, repeat prescribing and patient education, but cautioned against PBPs duplicating tasks commonly undertaken by nurses.

> They're certainly looking at the sheer burden of repeat prescribing and medicine management … that's going to … be more pharmacist-driven to take some of the pressure off ourselves. (P13, GP)

Key informants' perspectives

Summary of key informants' perspectives (themes in bold text)

Key informants emphasised the fundamental influence of **guidelines** produced by NICE, CCGs and professional bodies on prescribing in general practice. They highlighted the effect of strategic developments, the roll-out of **NHS policies** and **medicines optimisation** principles. Key informants often suggested that a prescriber's **professional background** and **patient characteristics** were important determinants of their prescribing and were concerned about variation in **PBP roles** and access to career support.

National and local guidelines

Key informants cited NICE guidelines as a key source of evidence used by prescribers in general practice, but also emphasised the guidance and associated formularies developed by local commissioning bodies, condition-specific organisations and Royal Colleges as equally important and invariably in tune with the national guidelines:

> If it's on the formulary it's accepted, you know, it is the formulary choice. And actually now it's the GPs who are pushing back, if a specialist says 'why not use this?' 'yeah, but it's not on the formulary'. (P27, KI, local/regional, focus group)

NHS policies and organisation of services

Several key informants were involved in developing NHS policies which they believed had a direct influence on prescribing:

> I think there is also a significant amount of influence resulting from national policy initiatives, so two recent examples that I could cite would be the items that shouldn't be routinely prescribed in primary care and also conditions for which medicines shouldn't be routinely prescribed. (P31, KI, regional/national, interview)

They also highlighted that the availability of external support (eg, from secondary care) affects prescribing in general practice:

> Some areas have community geriatricians who help to support the prescribing with GPs and the pharmacists in the team, for people in care homes and those complex ones. And in other places … that support isn't there. (P28, KI, regional/national, focus group)

Medicines optimisation

Key informants expressed concern about medicines and prescribing-related problems which they explicitly connected with an impetus to develop and embed medicines optimisation principles.

Influences on prescribing in general practice included an increase in problematic polypharmacy, and the importance of patient-centred and safe prescribing:

> So it … will say first line this, add in that, add in this as a third drug … So you've only got to have two long term conditions … and you'll be on six drugs before you know it. (P4, KI, regional, interview)

> The fact that your liver might need some fancy drug might be of completely no interest to you if it means that you're trekking off to the hospital all the time and you're suffering from side effects and actually what you want to do is spend some time with your grandchildren. (P28, KI, regional/national, focus group)

> If I want to get somebody to really think twice about the way they prescribe, then I always play the safety card … our prescribing incentive scheme for GPs is called the 'quality prescribing and safety scheme'. (P23, KI, local/regional, interview)

Professional differences

Key informants attributed variation in prescribing to different professional backgrounds and training. They mainly characterised nurses and PBPs as risk-averse and prescribing within strict limits, whereas GPs were considered to have the greatest ability and appetite for risk-taking and managing complex patients:

> I think nurses tend to be … a bit more protocol-driven and so tend to be quite focussed on an individual disease entity. … Pharmacists I see have a slightly different risk appetite and they're willing to juggle maybe two or three comorbidities and then, I would hope, what should come about is that GPs and doctors should be able to then multiple [*sic*] the more

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complex, multi comorbidities. (P27, KI, local/regional, focus group)

Patient characteristics

Key informants reflected on the influence of patients as individuals as well as populations (general and local). Public opinion and media messages about medicines were particularly mentioned:

> I mean just because it's cancer doesn't mean that the drugs always work, if only you can get your hands on them, which is how they're portrayed in the media, isn't it? If only we could get this drug funded all would be well. (P28, KI, regional/national, focus group)

Key informants also recognised the importance of socioeconomic factors in influencing prescribing in an area:

> Self-care is hugely on the agenda at the moment, encouraging patients to buy things over the counter, rather than getting them prescribed. [*Our*] GPs are in a more deprived area and tend to feel that patients can't afford to buy those products and therefore they end up prescribing them. (P8, KI, local, interview)

Practice-based pharmacists

Key informants recognised that PBPs had hugely variable roles, responsibilities and models of employment. Participants expressed mixed opinions about the best model; most favoured situating pharmacists within general practices. Some believed that PBPs' skills and time may be most effectively used within the emerging primary care networks, in which groups of practices are working together to provide a range of healthcare services for the local population.

Participants reported variation between PBPs, particularly in terms of experience and skills, and expressed concern about differing levels of support and training available. Some saw opportunities for career development as crucial to allowing PBPs to achieve their potential:

> We have this varied pattern of some people who come in more or less newly qualified to the role in a GP practice. So the NHS England training is good, actually, but it only goes up to a certain point. What happens to those people … where do they go next? (P28, KI, regional/national, focus group)

Comparison: prescribers' and key informants' perspectives

There was general agreement between prescribers and key informants about many of the influences on general practice prescribing (figure 1).

Both groups acknowledged that national and other prominent guidelines had considerable influence and emphasised the effects of prescribers' professional backgrounds and experience. Both groups identified individual patients, populations, the media and public opinion as having a substantial influence on prescribing.

While prescribers identified influences on prescribing that may be shaped at a general practice level, such as attitudes towards shared learning, key informants highlighted the effect of NHS organisational policies and the availability of external support (eg, from secondary care). Key informants mentioned universal problems with medicines (eg, polypharmacy) and the benefits of medicines optimisation principles for patient outcomes. Participants in both groups mentioned current wide variation in the role of the PBP. Prescribers had mixed views about the potential for the PBP to address underlying workforce problems in general practice, and key informants emphasised the need for ongoing training, support and career progression.

DISCUSSION

Principal findings

This study identified a range of influences on prescribing in general practice by exploring the perspectives of prescribers and key informants. Although the guidance

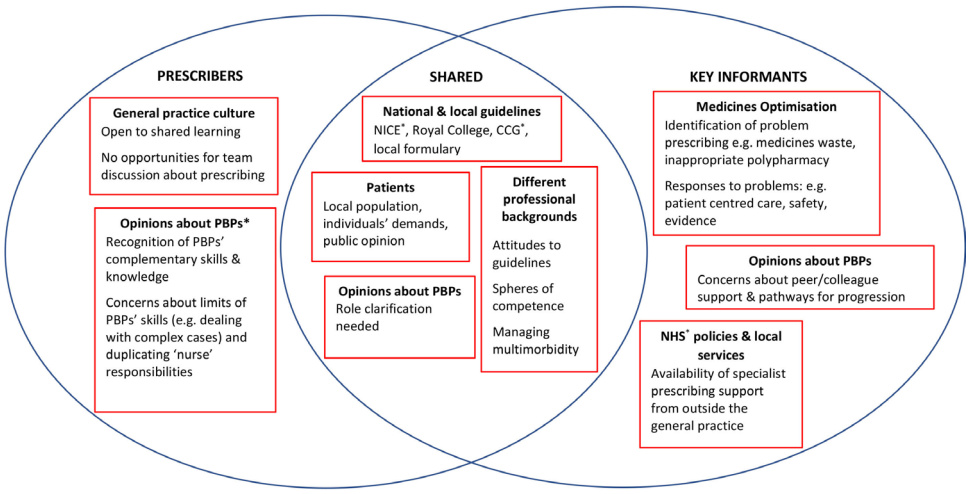

Figure 1 Comparison of prescriber and key informant perspectives. CCG, Clinical Commissioning Group; NHS, National Health Service; NICE, National Institute of Health and Care Excellence; PBP, practice-based pharmacist.

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provided by NICE and other bodies is frequently described as fundamental to informing prescribing decisions in general practice, this study highlighted a complex range of intersecting factors which impact on prescribers' abilities or inclination to prescribe according to the available evidence. The application of guidelines differs between professional groups, whose attitudes are shaped by their early and continuing training. Patient characteristics (both individuals and populations) are also key influences. The role of the PBP varies between general practices, and this study has revealed some caution (especially among GPs) about the potential for increasing PBPs' impact on general practice prescribing.

Strengths and limitations

While prescribers were evenly drawn from the different professional groups identified at the study outset, most were from practices with medium to large list sizes (>5000 patients) and with less deprivation. All GPs recruited to the study had several years of experience. Prescribers in smaller general practices, in areas of greater deprivation, and with less experience may have provided additional insights into the factors influencing their prescribing. Key informant participants were working at various levels within the NHS and encompassed a broad range of roles and perspectives.

Flexible evolution of the interview topic guides allowed for exploration of additional issues raised by individual participants which had not been anticipated at the research design stage. The focus group discussion with key informants was less researcher-led than the interviews and offered an opportunity for participants to interact with, probe and challenge each other. A similar session with prescribers may have yielded alternative or additional observations, but this was not possible.

This study explored the use of guidelines in general and the factors which intersect with them to influence general practice prescribing. Research to explore the uptake of guidelines for specific medical conditions or to investigate prescribing in instances where evidence is unclear or existing guidelines are considered unhelpful, may provide different insights.

Comparison with existing literature

Previous research has highlighted differences between evidence, such as NICE guidelines, and prescribing in a range of healthcare settings.[8 31] This study identified several influences which general practice prescribers balance with the evidence-based approach promoted in guidelines when making prescribing decisions, in particular their own professional background. Sharing of responsibilities among prescribers from differing professional backgrounds may have resulted in variation in the use of guidelines, but some see non-medical prescribers as suited to promoting an evidence-based approach to prescribing.[32] Although all professional groups represented in this study acknowledged the importance of guidelines, nurses and pharmacists were perceived by themselves, GPs and key informants as more likely to prescribe in accordance with the available evidence than GPs. This suggests that strategies to increase evidence-based prescribing should be tailored for professional groupings and reflect their different routes to acquiring prescribing skills. Differences in the scope of prescribing routinely undertaken by medical and non-medical prescribers should also be considered. Participants explicitly mentioned the impact of local demographics on prescribing, which corresponds with previous research linking practice prescribing patterns with patient populations.[33 34] Taking account of local demographics and providing patient-centred care may impact the professional's prescribing and perceptions about the appropriateness of guidelines. This tension echoes previous research which identified competing 'macro' and 'micro' influences on prescribing[20] and the 'explicit' and 'tacit' types of knowledge which inform prescribing decisions.[35]

Previous research with GPs found that openness to sharing knowledge among general practice colleagues can shape and develop prescribing.[36] Some participants in this study worked in practices which encouraged diverse professionals to share new evidence and some did not. Their reflections suggest that a collaborative culture may facilitate greater use of guidelines and reduce problematic variation in prescribing within teams.

This study revealed more cautious attitudes, particularly among GPs, towards PBPs' contribution to the general practice team than reported elsewhere.[37 38] PBPs who had been part of the NHS England scheme[26 39] were positive about the associated training, support and networking opportunities and these have previously been identified as important factors which optimise the complementary skills of prescribers from a pharmacy background; the ambition and aptitude of the individual are also influential.[40]

Implications for research and practice

This study has demonstrated a range of complex and intersecting factors that affect prescribing in general practice and impact prescribers' use of the evidence presented in guidelines. These influences are not all amenable to modification and further analysis of the data to pinpoint flexible behaviours and determinants would be a useful next step. Participants in our study expressed a range of views about the potential for PBPs to influence prescribing in general practice. Capturing the views and experiences of a greater number of PBPs working in diverse practice contexts will provide a robust basis for developing strategies which involve PBPs in promoting the use of guidelines in general practice prescribing. These strategies should focus on the more flexible influences on prescribing and take account of the different use of guidelines between prescribers from a range of professional backgrounds.

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CONCLUSION

A multiplicity of influences impact prescribing in general practice and intersect with guidance from NICE and other bodies. The effect of these influences is often experienced differently by medical prescribers who are less focused on guideline use than their non-medical colleagues. Pharmacists and their general practice colleagues require a clearer definition of the PBP role to allow them to fulfil their potential to contribute to greater evidence-based prescribing in general practice.

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Acknowledgements We would like to thank our participating investigators. Dr Nour Alhusein (NA), who assisted with the focus group, Antoinette Davey (AD) who assisted with coding and analysing interview/focus group data, Dr Prasad Nishtala and Dr Philip Rogers who contributed to interpretation of the data. We also acknowledge the contribution of all those who participated in this study, including pilot interviewees at the University of Bath.

Contributors MC, MCW and SC contributed to the design of the study. MC collected and analysed all the data. MC, MCW and SC contributed to the interpretation of the data for this manuscript. MC drafted the manuscript and MCW and SC critically revised and gave approval for the final version. All authors agree to be accountable for all aspects of the work.

Funding This work is supported by a PhD Studentship (reference 189447056) awarded to the lead author (MC) by the University of Bath.

Competing interests None declared.

Patient consent for publication Not required.

Ethics approval This study was approved by the Research Ethics Approval Committee for Health (ref. EP 17/18 233), University of Bath.

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement Data are available upon reasonable request.

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