

The information needs and information seeking behaviour of family doctors

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Abstract

Aims: To explore the information needs and information seeking behaviour of family doctors, identifying any differences in attitudes and behaviours deriving from membership of a training practice and investigating the impact of a practice librarian.

Methods: A case study of general practitioners (GPs) in Aylesbury Vale incorporated a quantitative study of use of the medical library, and two qualitative techniques, in-depth interviews and group discussions.

Results: A total of 58 GPs, almost three quarters of those in the Vale, participated; 19 via individual interviews and a further 39 via two group discussions. Family doctors are prompted to seek information by needs arising from a combination of professional responsibilities and personal characteristics. A need for problem-orientated information, related to the care of individual patients, was the predominant factor that prompted these GPs to seek information. Personal collections remain the preferred information resource; electronic sources rank second. The study demonstrated low use of the medical library. However, both vocational training and the employment of a practice librarian impacted on library use.

Conclusions: The study illuminates the information needs and preferences of GPs and illustrates the contribution that librarians may make at practice level, indicating the importance of outreach work.

Introduction

General practitioners (GPs) occupy a position of pivotal importance in the primary care led National Health Service. Few in number, their effective management of the patient experience and input to organizational structures and quality assurance processes, is critical. Hence, while knowledge services for primary care staff must be founded on a close understanding of all the target user groups, it is vital that information provision meets the priorities and preferences of GPs.

A recent survey of outreach librarians in England indicated that librarians require greater insight into primary care professionals, their 'needs, priorities and the best mediums to use to communicate with them'.¹ It is precisely these issues that were addressed, in relation to GPs, in a study conducted across Aylesbury Vale in 1999.

User studies

This field has attracted both diligent, original research and extensive re-working of previous findings. Taken together, the reviews published by Ellayan,² Verhoeven *et al.*³ and Haug⁴ cover the information needs and preferences of family physicians up to the early 1990s. The literature

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review, originally undertaken to inform this study in 1998, focused on subsequent papers. Updated and published in summary form in 2000, it highlighted a need for qualitative research to illuminate the affective and cognitive dimensions of information seeking.⁵

The literature about GPs continues to grow (see Appendix 1). Future researchers may also wish to draw on recent work on needs assessment, knowledge management, clinical governance, research utilization and communication in primary care.

Aim

The principal aim of the study was to explore the factors that motivate GPs to pursue information, examining both the definition of information need and the experience of information seeking from their perspective.

Research Methodologies

Reviewing some of the methodological issues arising from qualitative research, Bradley identified triangulation, combining data collected in different ways from different sources, as 'a powerful way of obtaining a fuller understanding of phenomena.'⁶

The choice of methodologies was influenced by the nature of the phenomenon itself. Opportunities for participant observation in general practice are restricted by the need to respect the confidentiality of the doctor-patient relationship.

Practices feel burdened by 'paperwork'⁷ so the viability of conducting an effective postal survey was questionable. Moreover, the value of previous research had been partially diminished by undue reliance on self-reporting; Covell demonstrated that observed behaviour may not match the 'ideal behaviour' professed by respondents.⁸ Recognizing the risk that 'prestige bias' might distort the research findings, a quantitative analysis of use of the local medical library was incorporated into the research design.⁹

The Primary Care Sharing The Evidence (PRISE) project showed that many studies concentrated on clinical information needs¹⁰ rather than eliciting data on the full range of information requirement.

Therefore this research sought to allow GPs to voice their reasons for seeking information, their feelings and thoughts about the process, without constraining their responses by the use of a pre-structured research instrument.

It was recognized that perceived information needs, more properly termed information 'wants' are, necessarily, limited to those things that an individual knows to be available, or has the capacity to imagine.

In all, three methodologies were employed. In addition to the quantitative study, two qualitative techniques (in-depth interviews and group discussions) were used to gain credible insights into information needs and information seeking behaviour, as perceived by the GPs themselves. In this context, credibility refers to 'the adequate representation of the constructions of the social world under study'.⁶

A case study

A case-study approach was adopted because, as Hughes observed in his exploration of ethnography in health research, it offers 'a powerful learning modality that more vividly and sustainedly engages human empathy and, through that, better imprints knowledge than does an abstractly enunciated generalization.'¹¹ For the purposes of this investigation, it was judged that such strength outweighed the limitations upon generalizability inherent in the selection of a small sample of informants.

Aylesbury Vale, Buckinghamshire, was selected deliberately as a deviant case, unusual in that several practices within the area directly contracted the services of an independent librarian. A prosperous area extending across 300 square miles, some 150 000 people lived in the Vale in 1998, served by 79 GPs within 20 practices. By tradition, the Wilfred Stokes Library and Information Service at Stoke Mandeville Hospital assisted GPs on request although the library was only funded to support up to eight GP registrars.

Six 'training practices' comprised 30 doctors and six GP registrars (the remaining 14 practices included 50 doctors). Three of these practices employed a librarian for 2.5–3.5 hours per week, to manage their practice libraries. These surgeries

comprised 17 doctors (14 GPs, three registrars); the remaining 17 practices included 69 doctors (65 GPs, three registrars, one assistant).

Providing 'open access collections, offering some enquiry and current awareness services' the practice librarian undertook a varied role as part of these primary health care teams (see Appendix 2).¹² Thus, this case study of GPs working in the Aylesbury area offered an exceptional opportunity to investigate two further areas:

- differences in perceptions and behaviour between doctors who work in training practices and GPs working elsewhere;
- any perceptible differences in attitudes and behaviours within the subset of training practices employing a part-time information specialist.

The quantitative research

Comprehensive records permitted an analysis of all recorded use of the library between April 1996 and September 1998. The library services manager affirmed 'If it's not written down, we didn't do it.'

The quantitative study examined handwritten sheets recording anonymised data on all users. Activity derived from GPs, which was shown separately from other staff groups, were analysed to identify usage by:

- GPs from training practices in comparison with the remainder;
- doctors from surgeries with a practice librarian (in comparison with those from practices without).

The qualitative research

The library service manager compared the library's detailed record of enquirers (April–September 1998) with the Health Authority's list of 'Responsible GPs' to identify active users and contacted each, obtaining consent for their identity to be disclosed and an invitation to be interviewed to be sent to them.

In all, 58 GPs, almost three quarters of those in Aylesbury Vale, participated in the research from January–April 1999; 19 via individual interviews and a further 39 via two group discussions. Eleven users and 47 non-users of the postgraduate medical library took part. Eleven doctors from practices with a librarian and nine trainers participated.

The doctors came from 16 of the 20 local practices; the remaining four are geographically closer to another postgraduate centre.

In-depth interviews

An ethnographic approach was taken to the in-depth interviews. Greatest use was made of descriptive and structural questions intended to discover the concepts which informants used to classify their understanding of their information needs and their experience of seeking information.¹³ An explanatory sheet was prepared for informants and an *aide memoire* for the researcher. A pilot interview highlighted the need to schedule adequate time and illustrated a tendency for informants to volunteer significant observations in the closing stages of an interview.

The emphasis was on 'purposely selecting information-rich cases.'¹⁴ Ten informants held responsibilities additional to 'mainstream' practice e.g. in clinical audit, GP education and a primary care group. A single-handed GP and a 'returner' were included. See Fig. 1.

The interviews lasted approximately 45 min. Each was recorded, with consent, and subsequently transcribed. Confidentiality was maintained through coding of the names of doctors and practices.

Group discussions

The Aylesbury Trainers' Group readily engaged in a half-hour discussion in February 1999. All 12 GPs contributed; only one had already been interviewed individually. This discussion was characterized by genuine verbal, intellectual, emotional and attitudinal interplay between participants.

The second discussion featured within a 'Half Day Study Day' for GPs in March 1999. Scheduled after a session on 'Snoring and sleep apnoea' the discussion was lively. Of the 31 doctors only one had previously been interviewed; two had participated in the Trainers' Group. The GPs came from 14 practices and about 20 different doctors spoke.

These discussions confirmed that all the issues identified as critical within the groups were being raised spontaneously, or with prompting, in the individual interviews. They also gave voice to many

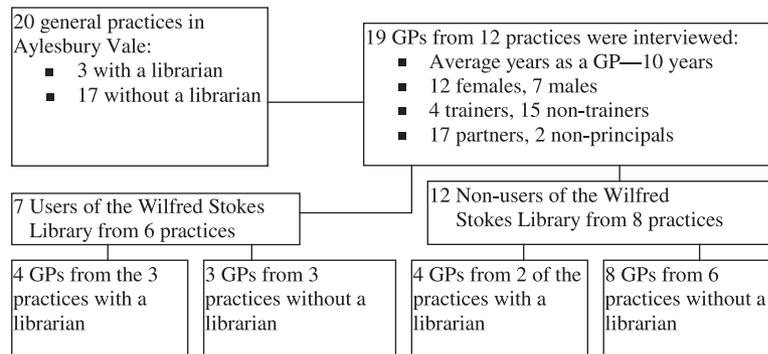


Figure 1 The composition of the sample

more non-users of the medical library than had participated in the interviews (10 of the 12 trainers, 28 of the 31 participants in the second group).

Findings of the quantitative study

This analysis provided reliable data on one aspect of the information seeking behaviour of local GPs, namely the use of the local medical library by GPs in Aylesbury Vale. The study reported on the supply of loans and copies (from stock and inter-library loans) and on enquiries and requests for literature searches.

A detailed report on the quantitative study was prepared.¹⁵ Use of the library's services by GPs was very low and declining. Overall, library activity increased from April 1996–September 1998; it increased from a weekly average of 84 loans and copies supplied to all users to 109. By April–September 1998 the number of loans or copies supplied to GPs per week dropped from six to four. The library relied heavily on inter-library loans to meet these requests (46% of loans and copies supplied to GPs in 1996/7 and 75% by 1998). Enquiries from GPs fell from one a week in 1996/7 to one a fortnight in 1998.

The data demonstrate a link between vocational training and library use. Over the period of the study, taking into account the number of GPs in each subset, a doctor at a training practice was four times more likely to use the library's document delivery services than a GP from elsewhere. Anecdotal evidence suggested that training practices were early adopters of the Internet. Demand for searches from these six practices fell from 24 in 1996/7 to just one between April and September 1998.

Enquiries from practices with a librarian dropped to zero over the period of the study. Allowing for the number of doctors in each subset, a GP at a practice with a librarian was twice as likely to make use of document delivery services (from stock and via inter-library loans) and three times more likely to request articles held in stock, than one from a practice without a librarian. The remaining training practices made more use of inter-library loans.

Anecdotal evidence suggests that the practice librarian enhanced the use of medical library stock, diverting requests to professional libraries which partners at these practices were entitled to use appropriately, hence lowering the demand for inter-library loans from Stoke Mandeville.

Findings of the qualitative study: information 'wants'

Participants appeared to enjoy taking part in the qualitative research. It yielded a wealth of data¹⁵, establishing the ranking of perceived information needs, or 'wants', of GPs. See Table 1.

Strong feelings about the quantity of unsolicited material received by practices contextualized the discussion of those factors that prompt GPs to look for information. 'Information's just landing on us!' declared one.

'The difficulty with the paperwork is trying to be efficient and relevant, and prioritizing, because it is so overwhelming in terms of the amount that comes through.'

Articulated by every single informant, the clinical care of individual patients was the primary reason

Table 1 Ranking of perceived information needs.

1.	Clinical care*
2.	Keeping up-to-date
3.	Information for patients
4.}	Pharmacological information
4.}	Gaps in knowledge
5.	Curiosity
6.	Uncertainty

*Except for GP Trainers, who rank needs deriving from vocational training highest.

for seeking information. Information need was perceived as problem-orientated. One doctor coined the phrase 'clinical conundrums' to describe questions arising from the diagnosis and therapeutic management of patients.

'Immediately wanting to find an answer to a specific question raised in a consultation with a patient, so it is very much patient-led in terms of going out and searching out for information.'

A practitioner of 19 years identified a changing pattern of information need:

'By the time you've finished your GP Training Scheme you should be right up to date on therapeutics. Where I never felt completely confident, to begin with, was on the subject of diagnosis. At least, you started off fairly gung-ho about it and then began to realize! ... After 10 years of experience you'd seen most of what was going to come through the door and so your confidence from the point of view of diagnosis and prognosis is very much better but your knowledge of therapeutics is becoming out of date.'

Keeping up-to-date ranked second, closely followed by a need for information for patients in third place. The wish 'to refresh, to update, keep abreast of developments' was expressed by more than two thirds of the interviewees and both groups. Patient information was discussed by each group and by two thirds of the interviewees. Information is wanted 'to explain really important different risk factors.' Well-informed patients generate information needs (mentioned by almost half of the informants and by both groups). Media coverage of health issues is a factor.

'She'd heard it on something on good old Radio 4 ...'

Sharing fourth place, a need for pharmacological information ('hard data to back-up prescribing decisions') was cited as a factor that prompts information seeking as frequently as specific gaps in knowledge on 'new' diagnoses and therapies motivate GPs to pursue information. More than half of the interviewees identified a personal *bete noir*, typically anatomy or 'skins'.

Information seeking is driven by 'personal interest and inclination to a large extent.' Curiosity ranked fifth as a factor, identified by almost half the interviewees and the Trainers Group.

Issues around uncertainty and evidence ranked sixth:

'It's also when somebody has said something ... then it's the right time for a new search... Somebody else's bullshit! ... You start thinking "Well, maybe they've got a point."'

A third of the interviewees offered insights into tolerance of uncertainty. Most regard it as the norm but probing led to the expression of attitudes towards the emergent philosophy of evidence-based medicine.

'Although I know that there's a lot of good evidence out there, and I will actively search it out, I understand that a lot of medical evidence is imperfect and that we never know the answers to everything.'

A fifth of the interviewees and participants in the Half Study Day wanted information about the 'evidence base' for practice guidelines and protocols. Some trainers and just two individual interviewees wanted information about external guidelines.

For half the trainers interviewed, the principal 'want' was not patient-led but derived from vocational training (because registrars 'will be probing, asking questions'), thus displacing the ranking of each of the seven factors described above in turn.

Three GPs wanted to know about 'the political bit', two required information for lectures. Individuals

identified a range of other motives (audit, clinical governance, examinations, research, significant events and writing).

Comparison with previous research

Key aspects of these findings accord with those from earlier research. Thompson asserted that 'Physicians seek information for two main reasons: (1) to obtain answers to patient-specific questions that cannot be answered through their personal knowledge alone and (2) to stay abreast of developments in clinical medicine.'¹⁶ The PRISE team reported that 'drug information and management of specific health problems' are the major components of the primary need 'for specific information relating to a particular patient at a particular time.'¹⁰ The Peripatetic Library Service Project emphasized the importance of information for patients and pharmacological information, and highlighted concerns about information overload.¹⁷

Comparing the information 'wants' of GPs across the Vale

The greatest difference in perception demonstrated lay in the importance ascribed by trainers to the needs deriving from their role in vocational training. Doctors from non-training practices placed more emphasis on personal curiosity as a reason for pursuing information. In other respects, little difference could be discerned between the attitudes of GPs in either group.

GPs at practices with a librarian were more likely to voice a concern to keep up-to-date and identified a much wider range of information 'wants' than colleagues elsewhere. A disproportionately greater number of doctors from the other practices expressed a need for patient information.

Findings of the qualitative study: information seeking

This study illuminated the information seeking behaviour of GPs in Aylesbury Vale (see Table 2). A wealth of rich data was gathered.¹⁵ The research did not attempt to examine the value that doctors ascribe to information or how they use it.

Table 2 Preferred approaches to information seeking.

For GPs at the three practices contracting a practice librarian	For the majority—at practices which did not employ a practice librarian
1. A personal collection	1. A personal collection
2. Electronic resources	2. Electronic resources
3. Practice library	3. Contacting individuals
4. Contacting individuals	4. Medical library
5. Medical library	

All but one of the interviewees spoke of constraints upon the time available to look for information. 'Sometimes it's "Oh God! The time!" that is overwhelming' said one. While a minority 'enjoy the sleuthing', the attitude of half the interviewees towards looking for information was epitomised as 'time-consuming and frustrating'.

Almost half the informants, and members of the Trainers Group, reported pursuing clinical questions after a consultation; many list queries. More than a third of the interviewees, and several trainers, described checking information during consultations. Those who estimated how frequently they seek information (a fifth) perceived this as a routine task, undertaken 'several times a surgery'.

Information preferences

Reference to printed information within the practice (in the consulting room or practice library) to verify reference data and aid diagnosis, was the most common form of information seeking, cited by four fifths of the interviewees. Doctors without their own consulting room carried resources around with them. Half the interviewees, and participants in both discussions, used personal collections; generally a few reference tools, numbering superseded editions. More than a third named *the British National Formulary*. *The Oxford Textbook of Medicine* and dermatology texts were popular.

Use of electronic information sources was the second preferred behaviour; identified by most (almost two thirds of the interviewees plus group members) yet the majority 'don't feel at all comfortable' about their searching skills. Almost two thirds of the GPs interviewed had used the Internet; a third regularly accessed it, a quarter

described searching MEDLINE. Different perspectives on end-user searching were proffered.

'I don't see ordinary GPs, in their day-to-day clinical practice, trying to practice evidence-based medicine, doing what I would call a "proper" search.'

'Doing searches myself you get the focus and the searches were more on my nuances ... If you get an information scientist to do your search ... you don't get the unfiltered lot that you can start "eyeballing" ... that's why doing them together would be ideal.'

Contacting local specialists and colleagues featured as their third line of enquiry (except for doctors at practices with a librarian, where the practice library ranked third). More than half the interviewees and participants in both discussions sought information from others: 'If you're a bit stuck you go and "pick a brain"', e.g. consultants and drug information pharmacists. Some feel inhibited about approaching immediate colleagues:

'You need a certain confidence that you're not going to be taken the piss out of—and they wouldn't—but emotionally you don't feel quite the same way.'

Using the postgraduate medical library represented the least common means of seeking information identified. Only two other behaviours were identified; one GP used a health information service for patient information, one approached pharmaceutical companies. Several doctors expressed concern about promotional materials from drug companies.

However, all the interviewees scanned medical journals on an *ad hoc* basis to help them to keep up-to-date. Half relied on making time to read at home. A quarter, all female part-time doctors, allocated time for professional reading. At the practices with a librarian, a Current Contents service was a popular resource.

Practice Libraries

Three fifths of the interviewees, and members of the Trainers Group, mentioned a practice library. Those at practices without a librarian (a fifth of

the interviewees) described its characteristics e.g. 'there's not huge numbers of books.' By contrast, doctors from surgeries with a librarian (two fifths of the interviewees plus some trainers) discussed how they used their library to find information.

'If we've got something that is a problem, and I need to look up a differential diagnosis, or a bit of anatomy or a bit of what the eye should be doing, I might need to know that in five minutes. It might be something I can put off and need to know that day. It might well be something I only need to know when the patient returns in a week or two, but the alternative of having to go away and visit a library remotely makes it less likely to happen, and it's very valuable to be able to pop upstairs to look at it and get back to the patient.'

Comparisons between using a practice library and the Wilfred Stokes Library, offered by GPs from two separate practices, illuminate both the affective and cognitive dimensions of information seeking.

'Using this one here is fine. It's convenient, it's small. That's half the problem with the one at Stoke. It's feeling a little bit lost there ... I think "Oh God, everyone's wondering who I am" ... but having said that I mean it's a very user-friendly place. The librarians are excellent, with all the other facilities you could want there as well.'

Doctors from the three practices concerned perceived that the practice librarian influenced the information seeking behaviour of GPs within these surgeries, and discussed the librarian's role.

'I see a role for the librarian to do all the work for us, basically. It's "Why have a dog and bark yourself?" I'm slow at it. I probably could get quicker but I have other priorities. If we're working as part of the ... "skill-mix", have a practice librarian as part of the team—and what they do is as relevant as what we do with regard to searches and audit and things.'

Comparison with previous research

These findings confirmed Haug's conclusion that books and journals are the primary information

sources used by family doctors.⁴ In contrast to previous research that highlighted the importance of personal contacts,^{3,18} this study demonstrates a preference for electronic sources of information over consulting other people and endorses the findings of Timpka's team that convenience and availability take precedence over other criteria for selecting information sources.¹⁹ Finally, these data reflect other reports of low use of medical libraries by GPs.^{20,21}

Comparing the information behaviours of GPs across the Vale

The data indicated small differences between the behaviour of GPs from training practices and their peers. A slightly higher proportion of these doctors used electronic sources. They also reported seeking information from other people less often than colleagues from non-training practices, but the effect was not as marked as for practices with a librarian.

Use of the practice library is the most significant difference in behaviour between GPs from surgeries with a librarian and those elsewhere. For doctors at the training practices with a librarian the practice library ranked third, displacing the use of personal contacts. Most of these doctors used a Current Contents compilation to keep up-to-date. Most of the regular Internet users were from a single training practice with a librarian.

Attitudes towards using libraries

Participants identified the key factors that inhibited them from using the local medical library as opening hours, distance and parking.

'Basically the major conflict comes with getting to them ... General practice, as far as I'm concerned, means librarians in general practice, as far as possible. In the hospitals? ... it's got to be more out in the community.'

Non-users at the Half Study Day were vocal, associating a 'Going to church feeling' with the library. They were uncertain about the role of the librarians, lacked confidence as library users and seemed apologetic.

'I'm not so at ease with librarians' systems, library systems, that I can go in without needing help. I need help because my time is so limited. ... I do want a service, I'm afraid.'

The data suggested a change in behaviour deriving from access to the Internet.

'Before I had online access at home, the librarian did searches for me, but mainly I just present them with the references.'

Library use is influenced by interpersonal relationships, as well as by the quality of the service.

'Stoke—only because ... they're brilliant at getting things for me. So it's about personal relationships.'

One active library user commented on the interpersonal skills of librarians.

'I mean, most librarians are pleased if you talk to them. Ah! No! [Laughter] I think one of the frustrations of librarians, I imagine, is that they are rarified, that they are under-used as resources, and they do appear to be remote. ... basically librarians need the same skills as GPs ... it doesn't matter how much you know about your field, your information sources, if you're not a consultant, not good in face-to-face consultations with your users, I don't imagine you're a busting lot of use—and so it's time that librarians had sort of videoed consultations.'

A quarter of the GPs related experiences of library user education sessions, suggesting that such training influences subsequent behaviour.

'That got me started. It was you swearing at the screen—and that was liberating.'

'... the librarian at ... made me aware that unless you use the right words you're not going to get the right thing. I thought "Oh Lord! Well that's me scuppered."'

Reflections on the research process

The richness of the data gathered derives from the candour with which the family doctors of

Aylesbury Vale approached the interviews. Nevertheless, at the outset it was difficult to recruit to the study. Barriers were overcome by persistence and through the group discussions, yet future researchers in this field may wish to consider carefully how best to engage GPs.

Summary

Family doctors are prompted to seek information by needs arising from a combination of professional responsibilities and personal characteristics. The data demonstrate that a need for problem-orientated information, related to the care of individual patients, was the predominant factor that prompted the GPs of Aylesbury Vale to seek information. It showed that personal collections of written information remained their preferred information resource. These family doctors made little use of the local medical library. Membership of a training practice influenced perceptions of information need as well as information seeking behaviour. Indeed, for some trainers needs deriving from their training role were dominant (Table 3).

The employment of a practice librarian at three training practices stimulated greater use of

information resources at practice level, and impacted upon use of the stock of the medical library (Table 4).

Conclusion

The study suggests that training practices demonstrate a particular awareness of the importance of information to good practice, in comparison with other partnerships and also illustrates the contribution that a librarian may make at practice level, indicating the importance of outreach work in primary care. Interpersonal skills and user education appear to be important in building effective relationships.

This research also revealed a demand for community-based information services able to meet the needs and preferences of family doctors.

Appendices

The appendices to this article are available on the Blackwell website at <http://www.blackwellpublishing.com/products/journals/suppmatt/hir/hir490/hir490sm.htm>

Table 3 The significance of involvement in vocational training.

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- GP trainers readily identified electronic information sources
 - Overall, doctors at training practices made slightly more use of electronic resources than colleagues at non-training practices
 - GPs at these surgeries reported seeking information from other people less often than colleagues from other practices (but the effect was not as marked as for practices with a librarian)
 - Doctors from training practices made four times as much use of the medical library's document delivery services (from stock and via inter-library loans) than GPs at non-training practices
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Table 4 Differences in perceptions and behaviours between GPs at training practices that employed a librarian and GPs at practices that did not.

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- These doctors identified a broader range of information 'wants' than most GPs
 - GPs from these practices placed more emphasis on keeping up-to-date and most used a Current Contents compilation to keep up-to-date
 - These GPs perceived their practice library as a valuable resource and identified using it more frequently than they discussed approaching personal contacts
 - These GPs described making more use of electronic sources than other GPs
 - GPs from these surgeries made twice as much use of the medical library's document delivery services (from stock and via inter-library loans) as others
 - They were three times more likely to request resources from the medical library's stock (other training practices made relatively more use of inter-library loans)
 - They made less mention of a need to find information for patients than other GPs
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