The place of information and communication technology-mediated consultations in primary care: GPs’ perspectives

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Background. New information and communication technologies such as email and text messaging have been shown to be useful in some aspects of primary care service delivery. Little is known about Scottish GPs’ attitudes towards the adoption of these technologies as routine consultation tools.

Objectives. To explore GPs’ perceptions of the potential place of new non-face-to-face consultation technologies in the routine delivery of primary care; to explore GPs’ perceived barriers to the introduction of these technologies and to identify the processes by which GPs feel that new consultation technologies could be incorporated into routine primary care.

Methods. Qualitative interview study: 20 in-depth semi-structured interviews carried out with maximum variation sample of GPs across Scotland.

Results. Whilst the face-to-face consultation was seen as central to much of the clinical and diagnostic work of primary care, many GPs were conditionally willing to consider using new technologies in the future, particularly to carry out administrative or less complex tasks and therefore maximize practice efficiency and patient convenience. Key considerations were access to appropriate training, IT support and medico-legal guidance.

Conclusions. GPs are conditionally willing to use new consultation media if clinically appropriate and if medico-legal and technical support is available.

Keywords. Electronic mail, general practice, qualitative research, telemedicine.

Introduction

Traditionally consultation between doctor and patient in general practice in the UK has taken place face to face. However, important changes in the organization and delivery of primary care services in the UK have taken place in recent years, underpinned by the epidemiologic transition towards chronic disease and increased fragmentation of the delivery of care. Concurrently, the range of modalities by which patients and doctors might communicate has expanded to include text messaging, email and other forms of technology-mediated non-face-to-face interaction. It is already understood that phone-based services can not only be an efficient means of managing chronic conditions in general practice1 but can also enhance the management of such conditions. It is also recognized that use of newer information and communications technologies (ICTs) has the potential to improve and increase patient access to primary care services generally.2

Email, text messaging, video messaging and other web-based communications are commonly used by the general population and some, such as email and telemedicine, are used increasingly within primary care internationally to aid communication between health professionals.3–5 However, these technologies are not used ‘routinely’ by general practitioners (GPs) to communicate or consult clinically with their patients,6,7 despite the strong interest of some GPs in using technologies such as email and text messaging to expedite patient interactions8,9 and research suggesting that primary care patients have an ‘unmet need’ for clinical email services.10,11

Many health professionals remain uneasy about using non-face-to-face methods of consulting.1,12,13 To date, primary care research in the UK has taken as its focus the use of technology and e-health within the
administration and delivery of general practice but has not looked specifically at GPs' perceptions of technology-mediated clinician–patient encounters. In addition, whilst research has been carried out on the adoption, implementation and integration of complex interventions in health service delivery, none has focused on the normalization of ICT-mediated consultations or communications in primary care. Therefore, in this paper, we will explore GPs' perceptions of the potential place of new consultation technologies in the routine delivery of primary care, investigate the barriers GPs perceive to the use of non-face-to-face consultation technologies and identify the processes by which GPs feel that ICTs could be incorporated into routine primary care.

Methods

Design, setting and participants
Twenty GPs participated in a qualitative arm of a mixed-methods study investigating primary care professionals’ experiences of, and views about, non-face-to-face consultations or communications with patients. Prior to the qualitative phase, a national survey of all general practices in Scotland was carried out. Information on all General Practices and GPs in Scotland was provided by Information and Services Division Scotland, part of NHS National Services Scotland. A questionnaire was mailed to a randomly selected GP from every general practice; the GP response rate was 48% (491 respondents). Of these respondents, 178 (36%) indicated on their questionnaire that they would be prepared to take part in a subsequent qualitative interview. Based on their responses to the survey, interview participants were selected from this cohort of GPs to produce maximum variation sample. This included GPs of varying ages, both sexes, reporting differing use of and attitudes towards non-face-to-face consulting and working in practices in varying geographical locations and with varying practice characteristics (e.g. practice list size, practice area deprivation index). Characteristics of the interview sample are shown in Table 1.

Data collection
Nineteen interviews were conducted face to face. One was conducted over the telephone with a participant practising in a remote island location. Interviews were semi-structured and based on a topic guide to allow detailed exploration of the issues around non-face-to-face consulting particularly relevant to interviewees themselves. Interviews explored with participants their experiences of non-face to face consulting, the meaning and purpose of face-to-face primary care consultations and the fit between these and new modes of consulting. In addition, interviewees’ attitudes towards increased non-face-to-face consulting and the potential impact of this upon the nature of general medical work, the relationship between doctor and patient and job satisfaction were explored. As a prompt for discussion and reflection, participants were invited to comment on key results from the national survey presented in graphical form (for example charts showing GPs’ agreement with potential barriers to the use of non-face-to-face consultation technologies and graphs showing highly significant associations between some positive attitudes to non-face-to-face consultation technologies

<table>
<thead>
<tr>
<th>GP identifier</th>
<th>Sex</th>
<th>Age range (years)</th>
<th>Practice list size</th>
<th>Deprivation quintile (1 = most deprived, 5 = least deprived)</th>
<th>Practice geographical location</th>
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<td>GP0</td>
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<td>2</td>
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<td>2001–6000 patients</td>
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<td>Accessible rural</td>
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<td>6001–10 000 patients</td>
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and factors such as increasing practice list size or decreasing GP age). Participants were asked to compare these findings with their own attitudes and experiences and to offer expert interpretation and opinion on the national data. All interviews were audio-recorded and transcribed verbatim.

Analysis
Following the precepts of constant comparative analysis, transcripts were interpreted iteratively, developing themes (or categories) within respondents' discourse. Transcripts were searched for both common themes and deviant cases. Common themes were indexed (as 'codes'). QSR NVIVO software was used to facilitate coding and retrieval of categories of data. The coding framework was developed by the research fellow (LH, a social scientist), in consultation with the research team (KF, a GP, and CM, a medical sociologist). LH applied the coding frame to the data. KF coded a 30% sample of the data and qualitative inter-rater checking was undertaken on this sample of data to ensure consistency in coding and interpretation. Discrepancies were resolved by discussion.

Results
Place of new consultation technologies in the routine delivery of primary care
Most GPs readily accepted a potential role for new technologies in communicating with patients about simple matters, for example reminding them of appointments, informing them of routine laboratory test results and ordering of repeat medication:

I think [text messaging] would be a good thing to look at in terms of reminding people about appointments, so picking out the people who are frequent non-attendees and perhaps sending them a text message to remind them you've got an appointment today at such and such a time. I think that would be useful if we had the technology to support that. (GP12)

Text messaging could be very useful for getting results back to patients. That would be fine. (GP19)

We do have email in our practice for repeat prescribing or repeat prescription requests. (GP3)

Whilst most interview participants did not see an immediate necessity to increase non face to face consulting (see next section) many predicted a role in the future for the new technologies in easing practice administrative tasks and providing a complementary information service for patients:

I think it's the way forward, I think it... we can't be left behind on this one. If you look at the internet use and you look at your e-mail yourself, there's not many things you can't do on the internet now, you know, book holidays, get your shopping delivered, buy a book, buy a CD, book tickets, you know, it rules peoples' lives, do their banking. Certainly it can be the way you do most things in your life and it's certainly it's the way I do, personally, a lot of these things, so I think it's convenient, it can be used at a time that suits the patient, so we could have... web-based appointment systems, web-based enquiries, prescription requests, all these kind of things, supported by the IT packages that are available. If the banks can do it and Marks and Spencer's can do it, then primary care has to do it, otherwise we're going to be left in the dark ages. (GP12)

There's a place for trying a lot of these things because otherwise, you know, people are not going to get the service that they're looking for and what they're looking for is instant access and instant decision. (GP3)

However, some GPs were reluctant to consider consulting with patients using new technologies. By consulting they were meaning the more complex interaction between doctor and patient about their illness and the patient's experience of it which in itself has potential therapeutic benefit. Most GPs still felt that the face-to-face consultation was central to both good quality primary care and job satisfaction:

These [non face to face technologies] are poor substitutes for seeing the patient. (GP10)

I think general practice is an enormously demanding job and to do it well is incredibly stressful and demanding but I think it's the people that make the job and to sort of divorce yourself from the people by using technology is not going to do anybody any favours really. I mean I think you become a GP because you're probably a people person in the first place and if your contact with people is largely electronic then that's not what we came into the job to do. (GP6)

However, some GPs acknowledged that it may not be possible to maintain solely face-to-face interactions with patients in the current primary care environment in the UK:

If I had sufficiently few patients and sufficiently large quantities of energy I'd do it all face to face, but that's not the real world. (GP2)

There probably is going to be increasing time pressure in the future as more work is shifted from secondary into primary care and there will be time
pressures which may cause GPs to adopt new ways of consulting. (GP17)

Overall, the importance of individual professional choice in, and comfort with, using new technologies was emphasized:

There are some GPs who are never going to be comfortable with adopting [technology-driven consultations]. There should always be a the option of continuing what you’re good at and provides the best service for the patient. (GP17)

To do away with the patient and do everything computerised and totally technology-based only, it might be very efficient but it would be very unsatisfying and I think you need to get that into the equation as well. (GP9)

GPs’ perceived barriers to the use of non-face-to-face consultation technologies

Reliability of technology. Some interviewees felt new ICTs were highly reliable; however, others expressed concern about email or text messaging network availability. Others spoke of the past or current poor speed or reliability of their internet connection or computer systems.

[Mobile phone coverage here] is patchy. So you might not get, you may not be able to get people on their mobile phones. (GP10)

We do have a problem with Internet connectivity and I’ll not get on my full half hour rant on that one, but we have inadequate band width and we can’t get the health board to give us adequate band width... we’ve got a woefully slow connection. (GP2)

Lack of perceived patient demand. Some GPs tended to perceive that patients preferred the face-to-face consultation, and felt there was an overall lack of current patient demand for some new forms of consultation.

A lot of the patients quite like coming down to the surgery, they like seeing their doctor face to face. (GP1)

I don’t think there’s much of a demand for text messaging or tele-consulting. (GP12)

However, GPs working in areas of high affluence or low unemployment, where patients were often absent from their home during daytime hours, acknowledged that some patients may favour non-face-to-face modes of consultation such as email.

Inequalities in access to primary medical care. Some GPs were concerned that introducing new technologies would create or widen inequalities in access to care for patients, as some might either not own computers, for example socio-economically deprived patients or possess the competence to use them, for example elderly patients or those with a visual impairment.

The elderly, they don’t tend to use computers. They’re the ones we see. They get iller as they get older. So email would bring unequal access probably. Text messaging, it’s not going to help the elderly either because they don’t generally, they might have a mobile phone for emergencies but they wouldn’t generally be texting. (GP15)

However, other GPs felt that as long as new consultation technologies were used in addition to existing traditional ways of accessing care such as the face-to-face consultation and the telephone, issues of inequality of access would be mitigated and furthermore patients could choose to access the professional in the way that suited them best:

We are so accessible. So I would see it more as just a different form of communication, rather than an inequality. They would just be able to access us in a different way so it wouldn’t make their access superior. We wouldn’t be limiting face-to-face [access]. (GP10)

Workload. Most interviewees were concerned that introducing new consultation technologies such as email and text messaging would increase their workload anticipating that patients would use these modalities to access advice about issues that they wouldn’t bring to a face-to-face encounter. Many emphasized both the need to control patients’ access to the GP via these technologies and the importance of having dedicated time to deal with communications or consultations from patients using these technologies:

The worry is obviously your email workload, millions of patients start emailing you and you’re trying to get through this everyday as well as dealing with your kind of daily work. (GP1)

One would have to have dedicated time to deal with that e-mail, because otherwise you could have... you could be inundated with queries and just never get to them. (GP12)

Medico-legal concerns. GPs’ accounts about medico-legal issues surrounding the use of non-face-to-face consultation technologies illustrated concerns about confidentiality and security.

I suppose when you’re dealing with any kind of technology and we’re dealing with sensitive confidential issues, one would be concerned about the security of any of these modalities... certainly with the e-mail, text messaging and teleconsulting one would be concerned about the confidentiality aspect. (GP12)
Interestingly, few GPs expressed similar security concerns about their routine use of postal communications to patients.

In addition, GPs were concerned about the negotiation of clinical risk and uncertainty of diagnosis using non-face-to-face consultation technologies, particularly within an increasingly litigious culture:

Yeah [I would be prepared to email patients], obviously you would need to be quite careful I think these days because you’re always worried about getting sued [laughs]. (GP1)

And then there’s all the medico-legal implications if somebody sends an email and what they’re saying seems very, very trivial and we just answer to that saying “Oh well just you know see how it goes.” And it turns out to be something serious, it just seems so trivial that you miss it and you don’t answer it or whatever, you could end up in trouble. (GP9)

Effect on doctor–patient relationship. There was not broad agreement between respondents about the potential effect on the doctor–patient relationship of using new technologies. For example, some respondents felt that the traditional relationship would be threatened:

I mean general practice works because of the way it’s structured. It works more effectively in defined communities, I think, and where there’s an element of an ongoing relationship that is based on continuity. I think it does break down when you’ve got, I don’t know… it works well in inner cities where you’ve got individuals who apply themselves. If you find it’s a complete burden then it does break down, if you’re just doing episodes of care, episodes of care, episodes of care, it doesn’t work that way. General practice doesn’t work that way. General practice is about relationships and building relationships over a period of time. (GP14)

However, several of the GPs in the study acknowledged that the nature of the personal relationship between doctor and patient was changing and saw new technologies as providing an opportunity to build a new kind of relationship.

I don’t necessarily need to see somebody face to face to feel that I’m having contact with people to feel that I’m giving them some kind of advice and value and that we are having an exchange. I’m quite happy to have that exchange in different ways. (GP12)

GPs’ perceived facilitators to the routine use of non face to face consultation technologies

Most GPs felt that there were pre-requisites for routinely incorporating new modes of consulting into their practice and that these importantly included adequate resource, support and training from their health board, and clear medico-legal guidance:

We’d need to have dedicated time to be taught how to use [new consultation technologies] by people that really know what they’re doing. (GP15)

Well you give me teleconferencing and give me adequate bandwidth and I’ll use it. (GP2)

And as long as it was secure enough and patients understood that and whoever rules our lives [laughs] were happy for us to do it then we would be perfectly happy. (GP9)

In conclusion, most GPs felt that new ICTs could be useful adjuncts to their routine practice, but did not perceive them to be useful in areas of uncertainty (either in relation to knowledge of the patient or to diagnosis). In these cases, GPs felt that the face-to-face consultation was critical.

I think there’s probably a place for all of these things with the adequate support and with the provisions that it’s used in appropriate settings and that we can default to the more traditional methods when it’s felt required. (GP12)

Conclusion

The findings of this study reiterate that the face-to-face consultation remains central to much of the clinical and diagnostic work of general practice. However, many of the GPs interviewed were conditionally willing to consider using new technologies to communicate with patients. In particular, they expressed willingness to carry out administrative or less complex tasks using new technologies as they saw this as a way to maximize practice efficiency and enhance patient convenience. Key considerations for them in routinely implementing new ways of consulting were access to appropriate training and ICT support and clear medico-legal guidance (as recommended by Car and Sheikh19).

Some of the concerns raised by GPs in this study echo the findings of other research; for example the disquiet they felt about technology-mediated care leading to inequality of access for patients reflects the conclusions of Chapman et al.20 that initiatives such as NHS Direct in the UK (a 24-hour telephone triage service) increase access for white middle-class patients but may also increase access inequalities. In relation to general attitudes to technology use amongst practitioners in Scotland, our findings are congruent with those of Richards et al.4 who carried out a survey of attitudes to eHealth of doctors and nurses working in remote areas in Scotland and found that ‘although health professionals recognize the general benefits of eHealth, uptake is low’ (p. 2).
These qualitative data were collected from a maximum variation sample of GPs in Scotland, representing different ages, locations and practice characteristics, and with varying attitudes to non-face-to-face consultations. A diverse range of GPs, who in our national survey had reported varying overall willingness to consider using a range of non-face-to-face consultation technologies, were selected to participate and the study therefore avoided sampling only those GPs with an interest or commitment to technology. The study design enabled process-oriented, ecological, interpretative research to be carried out (as recommended by Greenhalgh et al.\textsuperscript{16}) on the potential diffusion of ICT-mediated consultations in primary care and established the context-dependent nature of GPs’ perspectives on the embedding\textsuperscript{17} of these technologies in their practice.

Findings from this Scottish study are also applicable to the rest of the UK and in an international context. First, the nationally negotiated General Practice contract in the UK means that the general practice system in Scotland is more similar to that in the rest of the UK than the health care system more broadly. Second, some of the atypical features of Scottish general practice, such as the higher proportion of rural and remote rural practices compared to the rest of the UK, enhance the international relevance and applicability of this research. Furthermore, much of this study’s findings concern the nature of microlevel communication between doctor and patient and this pertains regardless of the system of health care operating.

This research has provided important insights into the conditions in which primary care health professionals are comfortable using non-face-to-face consultation technologies and as such should inform future technology uptake, implementation initiatives and service redesign. ICT-mediated non-face-to-face consultations have the potential to increase access to clinical advice and that this can in turn strengthen the doctor–patient relationship rather than threaten it. The concomitant potential for increased workload might be mitigated by the enhanced continuity of patient care that routine use of non-face-to-face ICT-mediated contact could facilitate.

In order to allay professionals’ concerns and maintain organizational efficiency, health boards, primary care organizations and GPs’ professional organizations should aim to develop appropriate educational and IT support and clear medico-legal guidance for the use of non-face-to-face consultation technologies in primary care, consonant with findings on structural and organizational factors supporting the design, adoption and diffusion of innovations in health care.\textsuperscript{15–17} Future research requires a study of patients’ attitudes to non-face-to-face consultation/communication technologies to provide essential data\textsuperscript{15} to inform the development, introduction and normalization\textsuperscript{17} of these consultation/communication technologies.

Declaration

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Conflict of interest: none.

References


