

## Use of text messaging in general practice:

a mixed methods investigation on GPs' and patients' views

### Abstract

#### Background

Text messaging has become more prevalent in general practice as a tool with which to communicate with patients.

#### Aim

The main objectives were to assess the extent, growth, and perceived risks and benefits of text messaging by GPs to communicate with patients, and assess patients' attitudes towards receiving text messages from their GP.

#### Design and setting

A mixed methods study, using surveys, a review, and a focus group, was conducted in both urban and rural practices in the south-west of Ireland.

#### Method

A telephone survey of 389 GPs was conducted to ascertain the prevalence of text messaging. Subsequently, the following were also carried out: additional telephone surveys with 25 GPs who use text messaging and 26 GPs who do not, a written satisfaction survey given to 78 patients, a review of the electronic information systems of five practices, and a focus group with six GPs to ascertain attitudes towards text messaging.

#### Results

In total, 38% ( $n = 148$ ) of the surveyed GPs used text messaging to communicate with patients and 62% ( $n = 241$ ) did not. Time management was identified as the key advantage of text messaging among GPs who used it (80%;  $n = 20$ ) and those who did not (50%;  $n = 13$ ). Confidentiality was reported as the principal concern among both groups, at 32% ( $n = 8$ ) and 69% ( $n = 18$ ) respectively. Most patients (99%;  $n = 77$ ) were happy to receive text messages from their GP. The GP focus group identified similar issues and benefits in terms of confidentiality and time management. Data were extracted from the IT systems of five consenting practices and the number of text messages sent during the period from January 2013 to March 2016 was generated. This increased by 40% per annum.

#### Conclusion

Collaborative efforts are required from relevant policymakers to address data protection and text messaging issues so that GPs can be provided with clear guidelines to protect patient confidentiality.

#### Keywords

communication; confidentiality; general practice; informed consent; medicolegal guidelines; mixed methods.

### INTRODUCTION

Finding strategies to manage the ever-increasing GP workload are essential. Previous international research has highlighted the benefits of text messaging as a means of communicating with patients to: increase clinic appointment attendance;<sup>1</sup> issue reminders about, or recall patients for, vaccination;<sup>2</sup> facilitate disease management interventions, for example, for diabetes;<sup>3</sup> and to aid smoking cessation.<sup>4</sup> Fisher and Clayton noted the acceleration of social media use in healthcare delivery, as well as patients' increasing acceptance of it.<sup>5</sup> However, previous international qualitative studies with GPs based in the UK and Australia reported key barriers to the use of IT for communicating with patients; these included medicolegal implications,<sup>6,7</sup> the demographic of mobile phone users (IT-based communication being unsuitable for older patients), and difficulties maintaining an accurate record of patients' current telephone number.<sup>8</sup>

Existing guidelines are inconsistent regarding the safe use of text messaging in general practice. For example, medical indemnity providers such as Medisec and the Medical Protection Society, as well as the Office of the Data Protection Commissioner, lack uniformity on an issue as basic as the frequency with which to obtain consent from patients. In addition, research into GP use of, and attitudes towards, text messaging to

communicate with their patients is limited. As such, the main aims of this study were to assess the extent, growth, and perceived risks and benefits of text messaging by GPs to communicate with patients, and assess patients' attitudes towards receiving text messages from their GP.

### METHOD

The mixed methods study was conducted in both urban and rural general practices based in the south-west of Ireland. It integrated quantitative and qualitative methods.<sup>9</sup> Quantitative methods included:

- telephone surveys with GPs ( $n = 389$ ); these were used to determine how many GPs communicated with their patients by text message. In total, 30 names were randomly selected from the GPs who used text messaging and 30 names from those who did not. Each of these GPs was invited to participate in a follow-up telephone survey to determine current practice regarding text messaging;
- a written patient satisfaction survey ( $n = 78$ ); this was conducted in three practices where three of the study authors are based;
- data review; data were extracted from the IT systems of five consenting practices to determine how many text messages were sent between January 2013 and March 2016; and

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**Submitted:** 2 May 2017; **Editor's response:** 17 May 2017; **final acceptance:** 6 June 2017.

©British Journal of General Practice

This is the full-length article (published online 26 Sep 2017) of an abridged version published in print. Cite this version as: **Br J Gen Pract 2017; DOI: <https://doi.org/10.3399/bjgp17X693065>**

### How this fits in

Substantial numbers of GPs currently text message their patients, and the number of text messages sent is increasing. Existing guidance on the appropriate use of text messaging is conflicting. The main objectives of this study were to assess the extent, growth, and perceived risks and benefits of text messaging by GPs to communicate with patients, and assess patients' attitudes towards receiving text messages from their GP. This study highlights the benefits of text messaging for using GP time more effectively. However, clinicians need to be aware of the risks regarding consent and confidentiality issues when using text messaging to communicate with their patients.

- text message content assessment; the content of a sample of text messages ( $n = 600$ ) was assessed for clinically sensitive information.

The qualitative method involved a focus group with a convenience sample of six GPs who participated prior to commencing their monthly Continuing Professional Development (CPD) meeting. Participants were asked about their attitudes towards the use of text messaging in general practice, and their views regarding the perceived risks and benefits of doing so. All of the GPs who participated in the focus group were from urban-based GP practices.

### Data analysis

GP survey data were coded numerically and input to SPSS version 21 for descriptive analysis. Focus group data were transcribed verbatim and coded independently by two of the study authors to ensure correct and consistent coding. A thematic approach was applied to the analysis.<sup>10</sup> The qualitative software NVivo 11 was used to store and organise data into themes. Data saturation was reached when, upon review of the coding list and discussion between both coders, it was agreed that no new codes were evident in the focus group transcript.

## RESULTS

### GP surveys

Of the 389 GPs surveyed, 38% ( $n = 148$ ) used text messaging to contact patients and 62% ( $n = 241$ ) did not. In total, 30 of those who did use text messaging, and 30 of those who did not, were invited to participate in a follow-up telephone survey; 25 and 26 GPs agreed to do so from each group respectively.

*GPs who used text messaging.* Findings for GPs who used text messaging are outlined in Table 1. The main advantage of text messaging they cited was time management ( $n = 20$ ; 80%) where GPs found that using text messaging to communicate with patients was much quicker than phoning. The main disadvantage was potential confidentiality issues (32%;  $n = 8$ ); 36% ( $n = 9$ ) of GPs who used text messaging had addressed that issue.

There was a unanimous 'no' with regard to sending text messages to patients aged <16 years, although 64% ( $n = 16$ ) of GPs used text messaging to communicate with patients aged 16–17 years. Most obtained patient consent to receive text messages (92%;  $n = 23$ ) and 52% ( $n = 13$ ) also obtained patient consent to text medically sensitive information. In total, of GPs who used text messaging to communicate with patients, 24% ( $n = 6$ ) had a written text-messaging policy. Patient phone numbers were checked periodically by 96% ( $n = 24$ ) of GPs.

*GPs who did not use text messaging.* Table 2 provides an overview of the survey results from GPs who did not use text messaging. Time management was also identified as the main advantage to this method of communication (50%;  $n = 13$ ), while risks to confidentiality were also seen as the main disadvantage (69%;  $n = 18$ ). If endorsed by their medical indemnifier or the Irish College of General Practitioners (ICGP), 54% ( $n = 14$ ) of these GPs indicated that they would start using text messages to communicate with their patients.

### Patient satisfaction survey

Results of the patient satisfaction survey are given in Table 3. Most patients were happy to receive texts from their GP (99%;  $n = 77$ ). Seventy-two participants responded to the question regarding the advantages of receiving text messages. Fast test results (32%;  $n = 23$ ), followed by providing effective patient reminders (12%;  $n = 9$ ), were identified as the main advantages of receiving such texts. Sixty-six participants responded to the question regarding the disadvantages of receiving text messages. Interestingly, 64% ( $n = 42$ ) of patients did not find there to be any disadvantage to receiving text messages. The main disadvantages for patients were being unable to respond to web-generated text messages (20%;  $n = 13$ ) and confidentiality issues (4%;  $n = 3$ ).

### Data review

Data were extracted from the IT systems of five consenting practices to generate the

number of text messages sent from January 2013 until March 2016; these increased by 40% per annum with a 90% increase in the number of text messages sent from 2013 to 2014. (Figure 1). One date was randomly selected and the content of all text messages sent from the five practices' systems on that date was extracted. All text messages ( $n = 600$ ) contained clinically sensitive information; examples of such texts are given in Box 1.

**Table 1. GPs who used text messaging ( $n = 25$ )**

Survey question	<i>n</i> (%)
<b>Sex</b>	
Male	12 (48)
Female	13 (52)
<b>Advantages to text messaging</b>	
Time management	20 (80)
Efficiency	3 (12)
Out-of-hours contact	1 (4)
Privacy	1 (4)
<b>Disadvantages to text messaging</b>	
Confidentiality	8 (32)
Text message failure	5 (20)
Patient changing mobile number	2 (8)
Patient misinterpreting information	2 (8)
Sensitivity of certain results	2 (8)
Limited information	2 (8)
Cost	1 (4)
Patient does not respond	1 (4)
Patient anxiety	1 (4)
Patient does not read text message	1 (4)
<b>Do you obtain consent from patients for receiving text messages?</b>	
Yes	23 (92)
No	2 (8)
<b>Do you obtain consent specifically to receive medically sensitive information?</b>	
Yes	13 (52)
No	12 (48)
<b>Do you send text messages to patients aged &lt;16 years (to child's private phone)?</b>	
Yes	0
No	25 (100)
<b>Do you send text messages to patients aged 16–17 years (to young person's private telephone)?</b>	
Yes	16 (64)
No	7 (28)
Unsure	2 (8)
<b>Do you check mobile phone numbers periodically?</b>	
Yes	24 (96)
No	1 (4)
<b>Do you use text-messaging templates?</b>	
Yes	13 (52)
No	12 (48)
<b>Do you have a written policy about text messaging?</b>	
Yes	6 (24)
No	19 (76)
<b>Do you address confidentiality (for example, tell patients: 'others may access your device and see text messages')?</b>	
Yes	9 (36)
No	16 (64)

### GP focus group

Focus group themes were divided into the perceived risks and benefits of using text messaging to communicate with patients.

*Identified risks of texting patients.* The main risks included:

- confidentiality and consent issues;
- incorrect phone numbers;
- opening a forum for ongoing discussion; and
- misleading patients regarding 'normal results'.

Some GPs communicated medically sensitive information with their patients — for example, blood test and radiology results — as well as appointment reminders, such as for smear tests. Most GPs, however, expressed concern about texts being viewed by the wrong person:

*'I suppose the concerns about confidentiality, somebody reading the text who maybe shouldn't have ... making sure we don't give any ... personal details ... it's all kind of generic like "your tests are normal" ... without identifying what it was ...'* (GP 3, female, 35–49 years)

Some GPs expressed concern about how often they should update patient consent:

*'We don't renew that [patient consent form] every year and we have had discussions around that with regards to whether that should be renewed every year.'* (GP 3, female, 35–49 years)

Most GPs in the focus group were reluctant to text their patients due to concern about inaccurate patient phone numbers and texts being sent to the wrong person. GPs highlighted the fact that patients do not inform them when they change their phone number:

*'I don't text patients because I have ongoing concerns about having the phone numbers correct ... texts going to the right person and not having any feedback from the person.'* (GP 1, male, 35–49 years)

Some GPs were also reluctant to text patients because they did not want to encourage an ongoing conversation. Others were concerned about text messaging patients to say their results were 'normal', which could potentially mislead patients who had borderline results:

*'I think for routine blood tests ... somebody*

**Table 2. GPs who did not use text messaging (n = 26)**

Survey question	n (%)
<b>Sex</b>	
Male	16 (61)
Female	10 (38)
<b>Advantages to text messaging</b>	
Time management	13 (50)
Convenient	4 (15)
Cost-effective	4 (15)
None	3 (11)
Effective	1 (4)
Avoid telephone 'ping pong' (where GP phones and leaves a message, patient returns call but GP cannot answer, repeatedly)	1 (4)
<b>Disadvantages to text messaging</b>	
Confidentiality	18 (69)
Text messaging conversation might follow	2 (8)
Consent	2 (8)
Increased patient anxiety	1 (4)
Changing phone numbers	1 (4)
Unnecessary	1 (4)
Lack of feedback	1 (4)
<b>If an IT provider set it up, would you use text messaging?</b>	
Yes	12 (46)
No	14 (54)
<b>If ICGP/MPS/Medisc endorsed text messaging, would you use text messaging?</b>	
Yes	14 (54)
No	11 (42)
Maybe	1 (4)

ICGP = Irish College of General Practitioners. MPS = Medical Protection Society.

heart disease in 3 years' time.' (GP 4, male, >50 years)

*Identified benefits of texting patients.* The benefits included:

- improved time management for patients and GPs;
- ability to communicate basic practice information, such as appointment reminders; and
- using existing GP software to embed the text in the clinical record.

Text messaging was seen as hugely advantageous in terms of time management. Some GPs felt that patients appreciated the convenience of receiving test results via text, rather than having to visit or telephone the practice. Most also found text messaging useful for informing their patients about basic practice information, for example, influenza vaccines, appointment reminders, and so on:

*'Most of them [patients] really liked to get a text message because a lot of them are working and it is time for them as well as it is time for us, taken up, ringing people back, missed calls etc.'* (GP 5, female, <35 years)

Some GPs also highlighted the benefits of embedding texts, and consent, within the patient's clinical record:

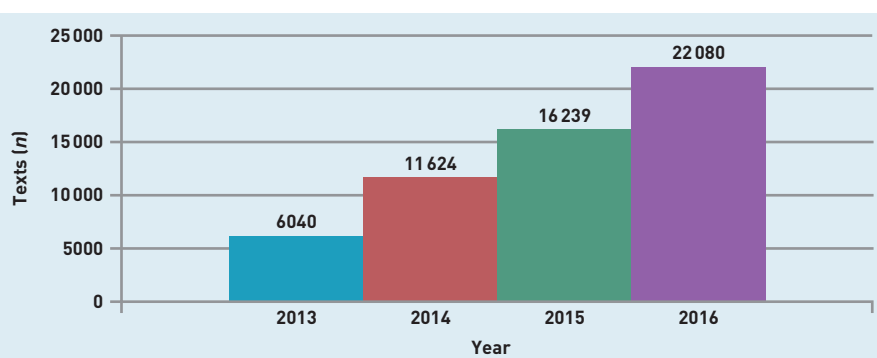
*'Whenever a patient joins the practice ... we would have new patient registration forms and we would have that question in it, "Would you be happy to receive text messages with results or informing you of appointments?", and they have to tick "yes" or "no", so we have a section then on Socrates [practice management system], which we can tick and, if it is not ticked, they won't allow a text message.'* (GP3, female, 35–49 years)

## DISCUSSION

### Summary

There is a paucity of research addressing the current use of text messaging in general practice. This study has identified that a substantial proportion (38%) of GP responders currently text message their patients.

The number of text messages sent by GPs in the practices involved in the study grew rapidly, increasing from just over 6000 in 2013 to just over 22 000 in the first 3 months of 2016. The content of all texts analysed was clinical, which may compromise patient confidentiality and breach data protection



**Figure 1. Number of texts sent by GPs to their patients, per year, across five GP practices, from January 2013 to March 2016.**

*gets a cholesterol level and it is 5.2 ... but they ... have a very low HDL [high-density lipoprotein] ... you tell them that their blood results are normal and suddenly they get*

### Box 1. Sample of text messages sent to patients by their GPs

Dear [forename of patient], Your recent test results are normal. Regards Dr \_\_\_\_\_.

Dear [forename of patient], the lab results showed some minor irregularities. Please book a consultation [...] to have a chat about it.

Hi [forename of patient]. Hope stress test went fine. Forwarding blood results to [name of other health professional]. Cholesterol a little raised. Regards. Dr \_\_\_\_\_.

**Table 3. Patient satisfaction survey results (N = 78)**

Survey question	n (%)
<b>Sex</b>	
Male	24 (31)
Female	54 (69)
<b>Age, years</b>	
<35	20 (26)
35–49	34 (44)
≥50	24 (31)
<b>Are you happy to receive a text message from your GP?</b>	
Yes	77 (99)
No	1 (1)
<b>In your opinion, what is biggest advantage of getting a text message from your GP?<sup>a</sup></b>	
Fast test results	23 (32)
Useful for patient appointment reminders	9 (12)
No need to phone surgery	9 (12)
Can use as a patient record	8 (11)
No need to make practice visits	7 (10)
Not always available to take phone calls	7 (10)
Saves time	6 (8)
A reminder that someone cares	1 (1)
Saves GP time	1 (1)
Reduces receptionist's workload	1 (1)
<b>In your opinion, what is biggest disadvantage of getting a text message from your GP?<sup>b</sup></b>	
None	42 (64)
Being unable to respond to web-generated text messages	13 (20)
Confidentiality	3 (4)
Unable to ask further questions	2 (3)
Receiving text messages at inappropriate times	2 (3)
Impersonal	2 (3)
Distraction while driving	1 (1)
Unclear information that requires further clarification	1 (1)

<sup>a</sup>Missing data — calculations based on responses from 72 patients. <sup>b</sup>Missing data — calculations based on responses from 66 patients.

recommendations. Although almost all GPs obtained consent to text their patients, only a little more than half of them obtained specific consent to text information that was medically sensitive.

Both GPs and patients clearly identified improved time management as the key benefit of text messaging and confidentiality issues as the main risks. GPs identified additional risks, including using wrong phone numbers, opening a forum for ongoing discussion with patients, and patients being misled by 'normal' results.

### Strengths and limitations

To the authors' knowledge, this is the first mixed methods study that assesses both GP and patient attitudes towards text messaging as a means of communication in general practice. The results from the GP survey should be interpreted with a degree of caution, however, due to the relatively small sample size, and because it was conducted in one geographical area. Furthermore, the generalisability of the

current findings to other cultural contexts may prove to be a limitation, given the extent of diversity between international primary care structures.

However, key findings from this mixed methods study compared favourably with previous international qualitative studies on this topic.<sup>8–12</sup>

### Comparison with existing literature

Consistent with international research and reports from medical indemnifiers and the ICGP, the study presented here shows there has been an increase in GPs' use of text messaging to communicate with their patients in general practice.<sup>5,11,13</sup> The potential confidentiality issues reported as the biggest disadvantage among all GP responders reflect reports by the Medical Protection Society and the ICGP.

The study presented here identified the potential breach of confidentiality as a major risk of text messaging. Similarly, Litchfield *et al*, having conducted a study of four primary care practices in the UK, noted a general consensus that text messaging risked compromising patient confidentiality.<sup>8</sup>

It is important to note that just over half of GPs who did not communicate with patients via text message indicated that they would do so if endorsed by the ICGP or their medical indemnifier. The need for medicolegal guidance within an increasingly litigious culture was identified in previous qualitative research, in Scottish general practices, regarding the place of non-face-to-face consultation technologies in the routine delivery of primary care.<sup>6,14</sup>

Some GPs in the current study expressed concerns that patients might consider text messaging a forum for an ongoing conversation. In a recent discussion paper on ethical issues in general practice, Mintzker and Rogers noted the importance of providing clarity — for both patients and GPs — of the limitations of using virtual communication compared with traditional face-to-face consultation.<sup>15</sup>

Consistent with previous research,<sup>5</sup> the majority of patients in the current study were happy to receive text messages from their GP, citing improved time management as advantageous. Jenssen *et al* noted that participants from low socioeconomic and minority ethnic groups were more likely to support the use of text messaging and social media as a form of communication with their GP.<sup>16</sup> However, in a systematic review regarding non-attendance in general practice, one of the key demographic characteristics for missed appointments was lower socioeconomic status.<sup>12</sup>

### Implications for research and practice

Larger national patient surveys are required to determine attitudes towards text messaging in

general practice, across all socioeconomic and ethnic minority groups. National surveys with GPs and patients, which would inform a larger, in-depth qualitative study on the attitudes and concerns that need to be addressed from GP group interviews and focus groups, are required.

Given the GP recruitment crisis, the importance of effective time management for both patients and GPs should not be underestimated. The findings from the telephone surveys with GPs and the focus group identified time management as the major benefit of text messaging. The ability of patients to access GPs is a major concern and effective time management by GPs is central to facilitating this. The use of text messaging as opposed to phoning to communicate with patients is more efficient and may facilitate GPs with more time to address patients' needs. However, further large-scale longitudinal studies are needed to assess the amount of time saved through communicating with patients using text messages compared with phoning.

National surveys with GPs and patients are also required to determine the generalisability of the findings presented here. Recent guidance from the General

Medical Council advocates the use of text messaging and other forms of electronic communication when convenient and appropriate for the patient.<sup>17</sup> It may be timely for GP representative bodies, indemnifiers, data protection officials, and patient representatives to formally address and resolve the confidentiality and data protection challenges posed by GP text messaging.

It is vital to foster a shared understanding that the clinical content of GPs' text messages to patients presents both risks and benefits. Informed consent, following discussion between a GP and their patient, whereby the patient understands the benefits and limitations of text messaging, (for example, that confidentiality may be compromised and the importance of advising their general practice when mobile numbers are changed) may ultimately provide the solution to this dilemma. In order to achieve consensus among GPs, patients, and regulatory bodies, additional focus groups with patients and representatives from the relevant bodies would provide a useful forum to establish safe text messaging guidelines.

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### Funding

The current study was funded by the Irish College of General Practitioners.

### Ethical approval

The study received ethical approval from the Clinical Research Ethics Committee of the Cork Teaching Hospitals (Reference: ECM 4 March, 2016).

### Provenance

Freely submitted; externally peer reviewed.

### Competing interests

The authors have declared no competing interests.

### Acknowledgements

The authors thank the GPs and patients who participated in the study.

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