# Text messaging between clinicians and patients – Hve we got thngs unda cntrl?

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## ABSTRACT

**INTRODUCTION:** Patients are interested in receiving text messages (texts) related to their health care. However, anecdotes are emerging of associated problems and it is possible that many of the potential pitfalls are not recognised.

**AIM:** To assess clinicians' attitudes and behaviours towards text messaging (texting) with patients.

**METHODS:** A voluntary, anonymous, online survey was created and distributed to general practitioners and physiotherapists in New Zealand and to Sports Medicine Fellows and Sports Medicine Registrars in New Zealand and Australia.

**RESULTS:** In total, 322 clinicians completed the survey. Texting behaviours relating to accuracy, privacy and security were identified. A range of sensitive and important medical information was frequently conveyed and at times forwarded to third parties. The clinicians generally felt uneasy communicating this way and some felt pressured into it. Most thought that guidelines are insufficient and that they had not received sufficient education on the issues. Most were interested in further education.

**CONCLUSION:** This study has demonstrated frequent texting between clinicians and patients. It has highlighted potential risks to the privacy, accuracy and security of medical information. Current guidelines and education may be insufficient. Clinicians were interested in receiving readily available best practice guidelines and education regarding texting.

**KEYWORDS:** Texts; SMS; clinician; health professional; patient; attitude

## Introduction

Text messaging (texting) is a popular, inexpensive and rapid way to communicate.[1] In Australia in 2013, 65% of the adult population (16 – 65 years) owned a smart phone.[2] In the USA, 98% of doctors own and use smartphones, and 73% have reported texting other doctors about work-related issues.[3] Many patients are interested in receiving health-related text messages (texts), but little is known about how common this is or the potential effects.[4] Anecdotes are emerging of problems and it is possible that many potential pitfalls are not recognised.

Previous studies relating to electronic communications in health care focus on email.[5] Studies related to texting are restricted to reminders; for example, about medications,[6] smoking cessation,[7] diabetes prevention[8] and sexual health.[9]

This study is a preliminary investigation. It assessed clinicians' attitudes and behaviours

## WHAT GAP THIS FILLS

**What is already known:** It is unclear how widespread texting is between clinicians and patients or what the content of texts are. There are few studies addressing potential problems of clinician-to-patient texting.

**What this study adds:** This study is a preliminary investigation. It documents widespread texting between clinicians and patients and clearly demonstrates risks to privacy, accuracy and security. It highlights a lack of education and the need and desire for accessible best practice guidelines.

towards texting patients and the content of sent texts.

## Methods

We created a voluntary, anonymous, online survey accessed via a secure website (Survey Monkey). There were no incentives for participation. Data were collected over 3 months (November 2014 to January 2015).

The study gained ethical approval from the University of Auckland's Human Participants Ethics

*Box 1. Survey questionnaire*

| Question make-up | • 16 questions with subparts; totalling 36 responses<br>• Opportunity for comments |
|---|---|
| Question style | • Most were five-point Likert scales<br>• Some yes/no questions |
| Question grouping | • Clinician demographics (eg age and occupation)<br>• Texting behaviours<br>• Texting content<br>• Texting accuracy<br>• Texting privacy<br>• Texting security<br>• Patient demographics |

*Box 2. Survey participants*

1. General practitioner are members of the Royal New Zealand College of General Practitioners

2. Physiotherapists are members of Physiotherapy New Zealand

3. Sports Medicine Fellow are members of the Australasian College of Sports Physicians (ACSP)

4. Sports Medicine Registrar are members of the ACSP

Committee (reference 012975). Consent was implied by voluntary login and survey completion.

The text boxes (Box 1–3) summarise the key components of the study methods.

## Results

A total of 322 out of 7414 clinicians completed the survey (with some skipped questions by some respondents). Respondents comprised 168 physiotherapists (physios), 78 general practitioners (GPs), 52 Sports Medicine Fellows (SMFs), and 24 Sports Medicine Registrars (SMRs); a group response rate ranging from 4 to 44% (Table 1). Ten other clinicians completed the survey, representing diverse occupations outside of the intended groups; they were excluded from analysis.

### Texting behaviours

Despite widespread texting by all groups, GPs and physios recorded the least uneasiness (32% of GPs, 31% of physios, 58% of SMRs, 71% of SMFs; $P < 0.0001$) and were more likely to find texting useful for patient communication (76% of GPs, 73% of physios, 48% of SMRs, 33% of SMFs; $P < 0.0001$). Both GPs and SMFs were least likely to feel pressured into texting patients (12% of GPs, 14% of SMFs, 28% of physios, 33% of SMRs; $P = 0.0078$).

### Texting content

General practitioners were least likely to discuss patient symptoms and signs via texts (26% of GPs, 34% of SMFs, 39% of SMRs, 50% of physios; $P = 0.0046$). However, GPs were most likely to discuss imaging or laboratory results (75% of GPs 33% of SMFs, 28% of physios and 22% of SMRs; $P < 0.0001$) and management plans (61% of GPs, 47% of physios, 38% of SMFs, and 30% of SMRs; $P = 0.021$).

### Texting accuracy

Most clinicians (84%) identified issues with accuracy when texting ($P = 0.46$), with 73% texting the wrong person socially ($P = 0.22$) and 10% professionally ($P = 0.41$), with no statistically significant difference between groups.

## Texting privacy

Most clinicians (89%) thought texting patients is a privacy concern, with no statistically significant difference between groups ($P$ = 0.22). More GPs sought consent before texting patients (79% of GPs, 55% of physios, 50% SMRs, 28% SMFs; $P$ < 0.0001). GPs were least likely to discuss medical information with third parties via texts (9% of GPs, 25% of physios, 35% of SMFs, 58% SMRs; $P$ < 0.0001).

## Texting security

High numbers of clinicians allowed others to access their mobile phone, with GPs the most likely (75% of GPs, 69% of SMFs, 65% of SMRs, 60% of physios; $P$ = 0.15), and 17% of all clinicians had permanently lost their mobile phone, with no statistically significant difference between groups ($P$ = 0.75).

General practitioners were least likely to lock their mobile phone either manually or automatically (31% of GPs, 30% of SMFs, 23% of SMRs and 16% of physios; $P$ = 0.02). However, GPs were least likely to use their personal or work mobile phone to send texts to patients (34% of GPs, 72% of SMFs, 73% of SMRs and 86% of physios; $P$ < 0.0001), preferring to use a work computer programme for texting (80% of GPs, 54% of physios, 43% of SMFs, 22% of SMRs; $P$ < 0.0001).

## Education

More GPs thought sufficient guidelines are available for texting but the numbers were low (13% of GPs, 9% of physios, 6% of SMFs, 4% of SMRs; $P$ = 0.0054). Small numbers of clinicians felt they had received sufficient education on texting, with no SMRs at all feeling that they had (0% of SMRs, 9% of physios, 10% of SMFs, 11% of GPs; $P$ = 0.0054). More SMRs wanted further education, with moderate numbers of the other clinicians agreeing (75% of SMRs, 57% of GPs, 56% of physios, 39% of SMFs; $P$ = 0.013).

The key survey results are summarised in Table 2.

## Discussion

This preliminary study has shown that clinicians in New Zealand (and Australia) are texting

Box 3. Survey process

1. Introductory email was sent to the relevant medical colleges by the study authors

2. Permission granted by colleges to communicate with all their members

3. Potential participants notified either via respective college email or online newsletter*

4. Participants voluntarily clicked on online survey link

5. Participants completed survey on secure online platform

\* In accordance with each college's privacy protocols for electronic communication.

Table 1. Characteristics of clinician groups

| | *n* in group | No. of responses (*n*) | Response rate (%) | Median age (years) |
|---|---|---|---|---|
| **General practitioners** | 4800 | 78 | 2 | 45–49 |
| **Physiotherapists** | 2400 | 168 | 7 | 35–39 |
| **Sports Medicine Fellows** | 159 | 52 | 33 | 50–54 |
| **Sports Medicine Registrars** | 55 | 24 | 44 | 30–34 |
| **Total** | **7414** | **322** | **86** | **40–44** |

patients, with subsequent risks to the accuracy, privacy and security of this clinical information. Texting is occurring despite uneasiness from clinicians. Some clinicians felt pressured into texting, placing them in a clinically or ethically compromised position. Many doctors feel uneasy using any form of electronic communication to convey health information.[10]

Texting may be inappropriate for conveying clinical information,[11] but our study shows this occurring. Texting is not as accurate as face-to-face or phone communication. Communication breakdown is a key contributor to medical errors, linked to 60% of all reported medical sentinel events.[12]

Clinically related texts should be considered professional communication and fully recorded in patients' notes. Records should include the time the text was sent and any reply. Clinicians should avoid 'text-speak' (slang) due to informality and potential misinterpretation.[11]

Most clinicians recognised issues with texting accuracy, and most had sent a text to the wrong

person. This is similar to reports investigating texting accuracy in other settings.[12] Clinicians should frequently check contact details, as patients frequently change phone numbers or share phones.[11]

Many clinicians did not seek consent before texting. Consent should always be obtained and recorded in the patient's notes.[11] Clinicians should provide patients with limitations and boundaries for texting; for example, it is inappropriate for urgent after-hours advice, for safety and privacy reasons.[11] Additionally, some clinicians texted medical information to third parties, creating

further privacy concerns. Lastly, clinicians often send 'no-reply' texts. This prevents a texting conversation, but introduces uncertainty about whether the text is received, or by whom.

This study identified security risks for patient clinical information. Texting is inherently insecure and messages remain forever, unencrypted, on telecommunication networks. There is no global agreement on monitoring and security.[13] In the USA, doctors are forbidden from sending texts containing electronic protected health information, with large fines for breaches.[12] Our study showed clinicians using personal or work

Table 2. Key survey results

| | Physiotherapists $N = 168$ | General practitioners $N = 78$ | Sports Medicine Fellows $N = 52$ | Sports Medicine Registrars $N = 24$ | *P* value |
|---|---|---|---|---|---|
| **Clinicians' attitudes towards texting** | | | | | |
| Uneasy | 50 (30) | 24/75 (31) | 36 (69) | 14 (58) | < 0.0001 |
| Useful | 116 (69) | 58 (74) | 17 (33) | 11 (46) | < 0.0001 |
| Pressured into texting | 45 (27) | 9 (12) | 7 (13) | 8 (33) | 0.0078 |
| **Topics of text communication** | | | | | |
| Symptoms and signs | 79 (50) | 20 (26) | 16 (31) | 9 (38) | 0.0046 |
| Imaging and laboratory results | 43 (26) | 56 (72) | 16 (31) | 5 (21) | < 0.0001 |
| Management plans | 75 (45) | 46 (59) | 18 (35) | 7 (29) | 0.021 |
| **Perceived problems with texting** | | | | | |
| Accuracy | 125 (74) | 66 (85) | 46 (89) | 22 (92) | 0.46 |
| Wrong recipient socially | 122 (73) | 52 (67) | 33 (63) | 18 (75) | 0.22 |
| Wrong recipient professionally | 12 (7) | 11 (14) | 5 (10) | 2 (8) | 0.41 |
| Identified privacy concern | 136 (81) | 70 (90) | 48 (92) | 23 (96) | 0.22 |
| **Processes used with texting patients** | | | | | |
| Sought patient consent | 80 (48) | 53 (68) | 11 (21) | 9 (38) | < 0.0001 |
| Discuss medical info with others | 40 (24) | 7 (9) | 17 (33) | 14 (58) | < 0.0001 |
| Others have access | 96 (60) | 57 (73) | 35 (67) | 15 (63) | 0.15 |
| Seldom/never lock mobile phone | 25 (15) | 24 (31) | 15 (29) | 6 (25) | = 0.02 |
| Used personal or work mobile phone | 127 (76) | 20 (26) | 34 (65) | 16 (67) | < 0.0001 |
| Used work medical programme for messaging | 74 (44) | 47 (60) | 20 (38) | 5 (21) | < 0.0001 |
| Permanently lost phone | 25 (15) | 11 (14) | 11 (21) | 4 (17) | 0.75 |
| **Perceived education needs** | | | | | |
| Felt sufficient guidelines available | 14 (8) | 10 (13) | 3 (6) | 1 (4) | 0.005 |
| Felt had sufficient education | 15 (9) | 8 (10) | 5 (10) | 0 (0) | 0.027 |
| Interested in more education | 90 (53) | 43 (55) | 20 (38) | 18 (75) | 0.013 |

Data are presented as *n* (%).

mobile phones to text patients, despite others having access to their phone or the phone being unlocked. This lax security is similar to the research conducted into medical students sharing medical information via texting.[14] Furthermore, patients may not lock their phones, creating additional security issues.

Many clinicians reported having permanently lost their mobile phone. If a mobile phone is lost and texts have not been deleted, this information cannot be protected; texts will stay indefinitely on senders' and receivers' phones.[12,15] We suspect that most clinicians (and patients) do not regularly delete texts, risking exposure of patient sensitive information if phones are misplaced.

GPs were more likely than other clinicians to use a work computer-based programme for texting. These programmes convey more security than a mobile phone, allow easier record keeping and maintain clinician privacy and working hours.

Overall, better systems are needed to ensure texting security,[2] including secure data storage, encryption, recipient authentication and monitoring.[12]

Despite increases in use of electronic health records, few institutions worldwide offer relevant training to medical students, doctors[11,16] or physiotherapists. Education on email in a clinical context showed significantly improved outcomes among resident doctors,[17] and may have similar benefits for texting.

## Strengths and weaknesses

One of the major limitations of survey-based studies is their ability to attract participants. In our study, response rates were higher in the groups receiving an email invitation to participate in the survey (SMFs and SMRs) than for groups receiving the survey invitation as a weblink embedded in their college's email newsletter (GPs and physios). We were bound by the individual college's privacy rules regarding distribution of electronic information and so could not email all potential participants directly, which may have increased the response rate. It is also possible that the clinicians who did respond to our survey were

more likely to be interested in electronic communication with patients, which potentially created a selection bias. Difficulties were encountered with the creation of a novel survey tool. In particular, the survey had to be relevant to a wide variety of clinicians working with a broad range of patients in different ways. However, as the study was anonymous and had no incentives, it is likely that the responses were accurate.

## Conclusion

Frequent use of texting with patients is apparent, despite issues involving message content, privacy, accuracy and security. Clinicians seemed aware of the risks but still continue to communicate by texting. Most felt there are insufficient guidelines on risks or that they had received sufficient education on them. They wanted relevant education. Large numbers of clinicians consider this to be a useful form of communication, and usage is likely to increase as our society becomes more electronic-based. There is a clear need for further research in this area and the development of readily available, best practice guidelines.

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