

Mobile phone messaging reminders for attendance at healthcare appointments

Review question

Do mobile phone messaging reminders improve attendance at health care appointments?

What is a mobile phone messaging reminder?

A mobile phone messaging reminder includes an SMS and MMS text message sent to a patient's mobile phone prior to a health care appointment. In the studies included in this review, the reminder message was sent between 24 and 72 hours before the appointment.

Key findings

Based on the results of 6,615 participants in eight randomised controlled trials, the authors concluded that:

- Text message reminders improved the rate of attendance at health care appointments compared with no reminders, and compared with postal reminders
- Text messaging and phone call reminders had similar effects on attendance, but the costs per text message were lower than the costs per phone call
- Only one study reported on adverse events, finding no adverse events during the study period

Full citation for this review:

GuroI-Urganci I, de Jongh T, Vodopivec-Jamsek V, Atun R, Car J. [Mobile phone messaging reminders for attendance at healthcare appointments](#). *Cochrane Database of Systematic Reviews* 2013, Issue 12. Art. No.: CD007458. DOI: 10.1002/14651858.CD007458.pub3

This summary is relevant for:

This evidence bulletin can be used by decision makers and clinicians considering or using reminders for health care appointments

This summary includes:

- Key findings from research based on a systematic review (p 1)
- Considerations about the relevance of this research to policy makers and clinicians (p 2)
- A more detailed description of the research (p 3)

Not included:

- Additional evidence
- Detailed descriptions of how to implement the intervention in practice
- Recommendations

What is a systematic review?

A systematic review aims to locate, appraise and synthesise all of the available evidence related to a specific research question. Authors adopt rigorous methods to minimise bias as a way of producing reliable findings with the ultimate goal of making the evidence more useful for practice. See [navigatingeffectivetreatments.org.au](#) for more information.

Relevance to the health care context in Victoria, Australia

<p>The broader policy and clinical context</p>	<p>Research shows that one of the most frequently cited reasons that patients give for missing an appointment is that they forgot that they had an appointment. Any form of reminders may therefore decrease the rate of missed appointments, reducing inefficiencies and costs generated by non-attendance. Possible modes of communicating reminders include face-to-face, postal messages, call to landline, call to mobile, via web-based electronic health records, email and SMS/MMS. Effective communication of appointment times via mobile phone messaging can form part of an overall strategy to help support patient engagement in clinical care (see The Victorian Government Department of Health's Patient Centred Surgery guide)</p>
<p>The populations and settings in which this relevant</p>	<p>A concern regarding text-messaging reminders is their possible impact on health inequalities, as people in higher socio-economic groups, who are more likely to own a mobile phone, will be less likely to miss an appointment. However, this concern is unlikely to be realised, particularly in Australia, given the widespread use of mobile phones across socio-economic groups. This review included studies in a range of countries, across a range of health service settings.</p>
<p>Implications for decision makers</p>	<p>Automated mobile phone reminder messages are among the cheapest and least resource intensive of reminder message options. Electronic communication with patients is considered a routine part of general practice (see Royal Australian College of General Practitioners' Standards for General Practices, criterion 1.1.2) and for elective hospital admissions (see Victorian Government Department of Health's Elective surgery access policy)</p>
<p>Implications for clinicians</p>	<p>The use of mobile phone messaging reminders requires having correct contact information for patients and securely stored health records to adhere to privacy, confidentiality and data protection requirements.</p>

Related Resources
Systematic reviews

- de Jongh T, Gurol-Urganci I, Vodopivec-Jamsek V, Car J, Atun R. [Mobile phone messaging for facilitating self management of long-term illnesses](#). Cochrane Database of Systematic Reviews 2012, Issue 12. DOI: 10.1002/14651858.CD007459
- Gurol-Urganci I, de Jongh T, Vodopivec-Jamsek V, Car J, Atun R. [Mobile phone messaging for communicating results of medical investigations](#). Cochrane Database of Systematic Reviews 2012, Issue 6. DOI: 10.1002/14651858.CD007456.pub2
- Vodopivec-Jamsek V, de Jongh T, Gurol-Urganci I, Atun R, Car J. [Mobile phone messaging for preventive health care](#). Cochrane Database of Systematic Reviews 2012, Issue 12. Art. No.: CD007457. DOI: 10.1002/14651858.CD007457.pub2.
- Whittaker R, McRobbie H, Bullen C, Borland R, Rodgers A, Gu Y. [Mobile phone-based interventions for smoking cessation](#). Cochrane Database of Systematic Reviews 2012, Issue 11. Art. No.: CD006611. DOI: 10.1002/14651858.CD006611.pub3.
- Horvath T, Azman H, Kennedy GE, Rutherford GW. [Mobile phone text messaging for promoting adherence to antiretroviral therapy in patients with HIV infection](#). Cochrane Database of Systematic Reviews 2012, Issue 3. Art. No.: CD009756. DOI:10.1002/14651858.CD009756
- Atherton H, Sawmynaden P, Meyer B, Car J. [Email for the coordination of healthcare appointments and attendance reminders](#). Cochrane Database of Systematic Reviews 2012, Issue 8. Art. No.: CD007981. DOI: 10.1002/14651858.CD007981.pub2
- Reda S, Rowett M, Makhoul S. [Prompts to encourage appointment attendance for people with serious mental illness](#). Cochrane Database of Systematic Reviews 2001, Issue 2. Art. No.: CD002085. DOI: 10.1002/14651858.CD002085.

Background

Information about this review

The authors of this systematic review conducted a detailed search of studies published up to August 2012. They used the following criteria to determine which studies to include:

Types of studies

- Randomised controlled trials

Participants

- People attending health care appointments. The authors included all study participants regardless of age, gender and ethnicity as well as all types and stages of disease. In addition, they included appointments attended across settings (i.e. Outpatient, community and hospital settings) with any kind of health care provider.

Types of intervention

- Any intervention using SMS or MMS as reminders for health care appointments. The messaging needed to be between a health care provider (either automated or in person) and a patient. Multi-faceted interventions that included reminder messaging were excluded as it was not possible to determine the effect of reminder messaging alone.

Comparison

- SMS or MMS reminders were compared with other modes of communication including face-to-face reminders, postal letters, calls to landline or mobile phones, email or via electronic health records and, if applicable, automated versus personal messaging.

Outcomes

The following outcomes were examined:

- Rate of attendance at health care appointments
- Health outcomes as a result of the intervention, including physiological measures, clinical assessments, biomarker values and self-report of symptom resolution or quality of life
- Costs (direct and indirect)
- User (patient, carer or health care provider) evaluation of the intervention, including satisfaction, readiness to use, timeliness, availability and/or convenience
- User perceptions of safety
- Potential harms or adverse events

Main results

This review included 6,615 participants in eight studies.

About the studies

The studies were conducted in various countries (1 in Australia) across a range of settings and with different kinds of providers (i.e. hospital clinics, physical therapy departments, primary care clinics).

In the majority of studies, the text messages were delivered via automated systems and contained the time and place of the appointment, with encouragement to call the clinic only if participants were unable to attend.

Effects of the interventions

- Text message reminders improved the rate of attendance at health care appointments compared with no reminders, and compared with postal reminders
- Text messaging and phone call reminders had similar effects on attendance, but the costs per text message were lower than the costs per phone call
- Only one study reported on adverse events, finding no adverse events during the study period

What this review does not show

No included study reported health outcomes, or user perceptions of safety. There were few data on user evaluations of the intervention and non on specific adverse events.

Results table: mobile phone messaging reminder versus no reminder, postal or phone reminder

Outcome	Impact with no reminder/postal/phone reminder	Impact with (95% CI)*	Relative effect (95% CI)*	No of Participants (studies)	Evidence quality (GRADE)#
1 Attendance at health care appointment (comparison: no reminder)	68 per 100	78 per 100 (70 to 85)	RR 1.14 (1.03 to 1.26)	5,841 (7 studies)	Moderate
2 Attendance at health care appointment (comparison: postal reminder)	86 per 100	94 per 100 (88 to 100)	RR 1.10 (1.02 to 1.19)	291 (1 study)	Low
3 Attendance at health care appointment (comparison: phone call reminder)	80 per 100	80 per 100 (76 to 82)	RR 0.99 (0.95 to 1.02)	2,509 (3 studies)	Moderate
4 Costs	Only costs between mobile phone messaging reminders and phone call reminders were compared. In two studies, costs were 55% and 65% lower for text messaging reminders than phone call reminders.				
5 Adverse outcomes	Only one study reported adverse outcomes, finding that there were none during the study period.				

* Relative effect is measured as Relative Risk (RR) followed by a 95% confidence interval (95% CI)

For more information on the GRADE working group's rating of quality of evidence go to www.gradeworkinggroup.org

This evidence bulletin draws on the format developed for SUPPORT summaries (for more information on SUPPORT summaries see www.supportsummaries.org).

Health Knowledge Network

The Health Knowledge Network is the knowledge transfer arm of the Centre for Health Communication and Participation. The Centre is funded by the Quality, Safety and Patient Experience Branch, Department of Health, Victoria, Australia.

The Health Knowledge Network summarises reviews published by the Cochrane Consumers and Communication Review Group.

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Suggested citation

Synnot, A. 2014. Mobile phone messaging reminders for attendance at health care appointments [Evidence Bulletin]. <http://www.latrobe.edu.au/aipca/about/chcp/health-knowledge-network/bulletins>