



January 2017– SUPPORT Summary of a systematic review

Can email communication between health professionals improve healthcare?

The use of email as a medium for business and social communication is increasingly common. Healthcare professionals have been communicating via email since the early 1990s, for varying purposes. However, it is not clear what the impacts of emails in healthcare are when compared to other forms of communicating clinical information.

Key messages

- Email reminders may improve health professional practice.
- Effects of email communication on health service outcomes and potential harms are uncertain. No studies were found evaluating this.
- Only one study in a high-income country was identified.



Who is this summary for?

People making decisions concerning communication between healthcare professionals

! This summary includes:

- **Key findings** from research based on a systematic review
- **Considerations about the relevance of this research** for low-income countries

X Not included:

- Recommendations
- Additional evidence not included in the systematic review
- Detailed descriptions of interventions or their implementation

This summary is based on the following systematic review:

Goyder C, Atherton H, Car M, et al. Email for clinical communication between healthcare professionals. Cochrane Database Syst Rev 2015; 2: CD007979.

What is a systematic review?

A summary of studies addressing a clearly formulated question that uses systematic and explicit methods to identify, select, and critically appraise the relevant research, and to collect and analyse data from the included studies

SUPPORT was an international project to support the use of policy relevant reviews and trials to inform decisions about maternal and child health in low- and middle-income countries, funded by the European Commission (FP6) and the Canadian Institutes of Health Research.

Glossary of terms used in this report:
www.supportsummaries.org/glossary-of-terms

Background references on this topic:
See back page

Background

The use of email as a medium for communication might have several advantages, such as timely and low-cost delivery of information in comparison to other types of written communication, but it may also have disadvantages, such as concerns regarding privacy and potential misuse of information and increased workload.

How this summary was prepared

After searching widely for systematic reviews that can help inform decisions about health systems, we have selected ones that provide information that is relevant to low-income countries. The methods used to assess the reliability of the review and to make judgements about its relevance are described here: www.supportsummaries.org/how-support-summaries-are-prepared/

Knowing what's not known is important

A reliable review might not find any studies from low-income countries or might not find any well-designed studies. Although that is disappointing, it is important to know what is not known as well as what is known.

A lack of evidence does not mean a lack of effects. It means the effects are uncertain. When there is a lack of evidence, consideration should be given to monitoring and evaluating the effects of the intervention, if it is used.

About the systematic review underlying this summary

Review objective: To assess the effects of healthcare professionals using email to communicate clinical information compared to other forms of communicating clinical information

Types of	What the review authors searched for	What the review authors found
Study designs & Interventions	Randomised trials, non-randomised trials, controlled before–after studies, and interrupted time series studies evaluating email for two-way clinical communication between healthcare professionals	One randomised trial evaluating an electronic medical record reminder delivered to primary care physicians compared to a control group (usual care pathway)
Participants	All healthcare professionals originating the email communication, receiving the email communication, or copied into the email communication	Women aged 50 to 89 who had suffered a fracture and had not received bone mineral density measurement or medication for osteoporosis
Settings	Any setting, including primary care settings, outpatient clinics, community settings (public health settings), and hospital settings	Non-profit, health maintenance organisation in the USA
Outcomes	Healthcare professional outcomes, patient outcomes and health service outcomes associated with whether email has been understood and acted upon correctly by the recipient as intended by the sender, and harms (e.g. effects on safety or quality of care, breaches in privacy, technology failures)	Health professional practice (whether the care provider ordered the test and/or prescribed the recommended medication); patient outcomes (women's calcium intake, regular activity and calorific expenditure), and satisfaction with care and services received. Health service outcomes and harms were not reported in the study.
Date of most recent search: November 2013		
Limitations: This is a well-conducted systematic review with only minor limitations		

Goyder C, Atherton H, Car M, et al. Email for clinical communication between healthcare professionals. Cochrane Database Syst Rev 2015; 2: CD007979.

Summary of findings

The review found only one study, evaluating primary care providers who received patient-specific email reminders for their enrolled patients from the chairman of the osteoporosis quality-improvement committee, and then a reminder after 3 months in case they had not ordered a bone mineral density test or prescribed pharmacological osteoporosis treatment for their patients.

- Email reminders may improve health professional practice, such as better test ordering and prescribing. The certainty of this evidence is low.
- No studies were found evaluating email communication on health service outcomes.
- No studies were found reporting on harms associated with email communication.

About the certainty of the evidence (GRADE) *

⊕⊕⊕⊕

High: This research provides a very good indication of the likely effect. The likelihood that the effect will be substantially different† is low.

⊕⊕⊕○

Moderate: This research provides a good indication of the likely effect. The likelihood that the effect will be substantially different† is moderate.

⊕⊕○○

Low: This research provides some indication of the likely effect. However, the likelihood that it will be substantially different† is high.

⊕○○○

Very low: This research does not provide a reliable indication of the likely effect. The likelihood that the effect will be substantially different† is very high.

* This is sometimes referred to as 'quality of evidence' or 'confidence in the estimate'.

† Substantially different = a large enough difference that it might affect a decision

See last page for more information.

Email reminders compared to usual care				
People	Health professionals managing female patients aged 50 to 89			
Settings	A health maintenance organisation in the USA			
Intervention	Email reminder			
Comparison	Usual care			
Outcomes	Absolute effect*		Relative effect (95% CI)	Certainty of the evidence (GRADE)
	Without Email reminder	With Email reminder		
Patients receiving bone mineral density measurement or osteoporosis medication	59 per 1000	516 per 1000	RR 8.69 (5.04 to 12.27)	⊕⊕○○ Low
	Difference: 457 more per 1000 (Margin of error: 240 to 670 more)			
Health services outcomes	No included studies		-	-
Harms	No included studies		-	-
Margin of error = Confidence interval (95% CI) RR: Risk ratio GRADE: GRADE Working Group grades of evidence (see above and last page)				
* The risk WITHOUT the intervention is based on the risk in the control group of the studies identified in the review. The corresponding risk WITH the intervention (and the 95% confidence interval for the difference) is based on the overall relative effect (and its 95% confidence interval).				

Relevance of the review for low-income countries

→ Findings	▷ Interpretation*
APPLICABILITY	
<p>→ The review identified 1 study with 202 participants evaluating email reminders to improve test ordering and prescribing for osteoporosis.</p> <p>→ Only one study was found in this review, conducted in a high-income country</p>	<p>▷ The identified study evaluated one of the many potential uses of email communication for one specific condition.</p> <p>▷ The use of email as a medium for communication is increasingly common in low-income countries. However, email availability, technology, and regulations affecting the use of email, and health system constraints may limit the applicability of the findings of this study.</p>
EQUITY	
<p>→ The study did not directly address equity.</p>	<p>▷ Email communication might increase health inequities, disavouring settings where access to email is reduced or restricted.</p> <p>▷ However, email is widely available and low-cost in comparison with other types of communication, so it might decrease health inequities, particularly in remote areas.</p>
ECONOMIC CONSIDERATIONS	
<p>→ The study did not measure costs.</p>	<p>▷ Email reminders may decrease costs compared with other types of reminders.</p>
MONITORING & EVALUATION	
<p>→ Only one study (in one setting in a high-income country) was found that addressed a specific use of email communication – for a problem that may not be a priority in low-income countries.</p>	<p>▷ Consideration should be given to monitoring both intended and unintended outcomes of changes in policy or the use of email for communication between healthcare professionals.</p> <p>▷ There is need for additional randomised trials evaluating email reminders in other settings and for other conditions.</p> <p>▷ There is need for additional randomised trials evaluating email for other types of communication between healthcare professionals.</p>

*Judgements made by the authors of this summary, not necessarily those of the review authors, based on the findings of the review and consultation with researchers and policymakers in low-income countries. For additional details about how these judgements were made see: www.supportsummaries.org/methods

Additional information

Related literature

Atherton H, Sawmynaden P, Sheikh A, et al. Email for clinical communication between patients/caregivers and healthcare professionals. *Cochrane Database Syst Rev* 2012; 11: CD007978.

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Sawmynaden P, Atherton H, Majeed A, Car J. Email for the provision of information on disease prevention and health promotion. *Cochrane Database Syst Rev* 2012; 11: CD007982.

Shojania KG, Jennings A, Mayhew A, et al. The effects of on-screen, point of care computer reminders on processes and outcomes of care. *Cochrane Database Syst Rev* 2009; 3: CD001096.

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Conflict of interest

None declared. For details, see: www.supportsummaries.org/coi

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This review should be cited as

Goyder C, Atherton H, Car M, et al. Email for clinical communication between healthcare professionals. *Cochrane Database Syst Rev* 2015; 2: CD007979.

The summary should be cited as

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About certainty of the evidence (GRADE)

The “certainty of the evidence” is an assessment of how good an indication the research provides of the likely effect; i.e. the likelihood that the effect will be substantially different from what the research found. By “substantially different” we mean a large enough difference that it might affect a decision. These judgements are made using the GRADE system, and are provided for each outcome. The judgements are based on the study design (randomised trials versus observational studies), factors that reduce the certainty (risk of bias, inconsistency, indirectness, imprecision, and publication bias) and factors that increase the certainty (a large effect, a dose response relationship, and plausible confounding). For each outcome, the certainty of the evidence is rated as high, moderate, low or very low using the definitions on page 3.

For more information about GRADE:
www.supportsummaries.org/grade

SUPPORT collaborators:

The Cochrane Effective Practice and Organisation of Care Group (EPOC) is part of the [Cochrane Collaboration](http://www.cochrane.org). The Norwegian EPOC satellite supports the production of Cochrane reviews relevant to health systems in low- and middle-income countries. www.epocoslo.cochrane.org

The Evidence-Informed Policy Network (EVIPNet) is an initiative to promote the use of health research in policymaking in low- and middle-income countries. www.evipnet.org

The Alliance for Health Policy and Systems Research (HPSR) is an international collaboration that promotes the generation and use of health policy and systems research in low- and middle-income countries. www.who.int/alliance-hpsr

Norad, the Norwegian Agency for Development Cooperation, supports the Norwegian EPOC satellite and the production of SUPPORT Summaries. www.norad.no

The Effective Health Care Research Consortium is an international partnership that prepares Cochrane reviews relevant to low-income countries. www.evidence4health.org

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