Interventions for promoting information and communication technologies adoption in healthcare professionals (Review)

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[Intervention Review]

Interventions for promoting information and communication technologies adoption in healthcare professionals

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A B S T R A C T

Background

Information and communication technologies (ICT) are defined as digital and analogue technologies that facilitate the capturing, processing, storage and exchange of information via electronic communication. ICTs have the potential to improve information management, access to health services, quality of care, continuity of services, and cost containment. Knowledge is lacking on conditions for successful ICT integration into practice.

Objectives

To carry out a systematic review of the effectiveness of interventions to promote the adoption of ICT by healthcare professionals.

Search methods

Specific strategies, defined with the help of an information specialist, were used to search the Cochrane Effective Practice and Organisation of Care Group (EPOC) register and additional relevant databases. We considered studies published from January 1990 until October 2007.

Selection criteria

Randomised controlled trials (RCTs), controlled clinical trials (CCTs), controlled before/after studies (CBAs), and interrupted time series (ITS) that reported objectively measured outcomes concerning the effect of interventions to promote adoption of ICT in healthcare professionals' practices.

Data collection and analysis

Two reviewers independently assessed each potentially relevant study for inclusion. We resolved discrepancies by discussion or a third reviewer. Two teams of two reviewers independently extracted data and assessed the quality of included studies. A meta-analysis of study

outcomes was not possible, given the small number of included studies and the heterogeneity of intervention and outcomes measures. We conducted qualitative analyses, and have presented the results in a narrative format.

Main results

Ten studies met the inclusion criteria. Nine of them were RCTs. All studies involved physicians as participants (including postgraduate trainees), and one study also included other participants. Only two studies measured patient outcomes. Searching skills and/or frequency of use of electronic databases, mainly MEDLINE, were targeted in eight studies. Use of Internet for audit and feedback, and email for provider-patient communication, were targeted in two studies. Four studies showed small to moderate positive effects of the intervention on ICT adoption. Four studies were unable to demonstrate significant positive effects, and the two others showed mixed effects. No studies looked at the long-term effect or sustainability of the intervention.

Authors' conclusions

There is very limited evidence on effective interventions promoting the adoption of ICTs by healthcare professionals. Small effects have been reported for interventions targeting the use of electronic databases and digital libraries. The effectiveness of interventions to promote ICT adoption in healthcare settings remains uncertain, and more well designed trials are needed.

P L A I N   L A N G U A G E   S U M M A R Y

Promoting the use of information and communication technologies (ICTs) by health care professionals

Information and communication technologies (ICTs) are technologies that help gather, store, process and share information electronically. Examples of ICTs are electronic medical records, medical journals and databases on the internet, videoconferencing for doctor appointments, or systems on the internet to give feedback to doctors so they can improve the care they provide. ICTs have the potential to improve health care and the health of patients. But even though computers are being used more and more in hospitals, not all health care professionals use ICTs. For this reason, there are many strategies to try and promote the use of ICTs. Strategies can include training groups of health care professionals to use a specific ICT, or teaching someone one-on-one to use an ICT, or simply providing training materials.

A review of the effects of different strategies to promote the use of ICTs was conducted. After searching for all relevant studies, 10 studies were found. The evidence shows that some ways, such as group training, or one-on-one training sessions, or providing training materials, may improve the use of ICTs. But overall, it is still uncertain whether some strategies are effective. More research is needed.

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