

Editorial

Educational interventions for improving primary care

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Initiatives to improve the quality of (primary) health care can use various educational interventions, such as educational materials, group-based learning and computer-generated reminders. Many countries have nationwide programmes and structures for continuing education of the healthcare work force. While many resources are invested in education, there are reasons to be concerned about its value for improving the quality of health care. This contribution discusses those concerns and elaborates on strategies to improve learning by health professionals, focusing on primary care.

Effectiveness of educational interventions

There is a substantial body of research evidence on the effectiveness of educational interventions for health professionals, including a large number of randomised trials. Cochrane reviews are available for several educational methods, including audit and feedback,¹ outreach educational visits,² and tailored interventions to overcome barriers for change.³ Few reviews have specifically focused on primary care, but the available research suggests that the effectiveness of interventions to improve primary care is broadly similar to that for interventions intended to improve hospital care.^{4,5} Overall, educational interventions for health professionals have clinically relevant, but in absolute terms moderate, impact on professional performance and health outcomes. Some interventions, such as small group learning and reminders, may be more effective than other types.⁶ There is, however, a big problem: educational interventions show a large variation in their effectiveness, and it is difficult to predict whether any specific intervention will be effective. It remains unclear what factors are associated with this variation, and what additional interventions would be required to be effective.⁷

Another concern about the impact of educational interventions is related to the organisation of healthcare delivery. In many countries, changes are taking place in the organisational and technological conditions for providing primary care. Organisational changes such as more involvement of nurses in patient care, integrated care delivery systems for patients with chronic diseases, and collaboration within groups of primary care practices, can help to improve the quality and efficiency of healthcare delivery.⁸ This is particularly the case when organisational problems inhibit improvement. In those situations, educational interventions alone cannot effectively improve quality of care, or their effectiveness will be limited at best. Interestingly, efforts to tailor quality-improvement interventions to barriers for change did not always seek to address organisational problems, even if these were identified.⁹ It is probably more feasible to develop and provide an educational intervention than to change the organisation of healthcare delivery.

Another major development is the information revolution in society, which is facilitated by the wide implementation of computers and access to the World Wide Web. This opens a world of new technical methods of information transfer and skills training, but it also has implications for what constitutes professional knowledge and professional identity. Knowledge is now much more easily accessible to larger numbers of individuals, including patients and payers of health care, and this may be perceived as threatening for the expert role of healthcare providers.¹⁰ However, many individuals prefer professional support in their use of medical knowledge if they have a health problem.¹⁰ Primary care probably has a special role in providing such guidance, because it often provides the first entry point to health care, and it may co-ordinate further use of health care.¹¹ The impact of educational interventions on professional performance may be sub-optimal, if these are based on traditional models of professional competence.

Optimising educational interventions

Educational research in the previous century has a number of important findings. It showed that self-directed learning is effective and motivating for students and teachers; that professional performance can be assessed, provided that validated methods are used; and that learning and assessment should continue after receiving a medical degree.¹² Quality circles – learning in small peer groups combined with audit and feedback – are based on these research findings and have become very widely used in primary care in north west Europe.¹³

A logical next step in the optimisation of educational interventions is to develop programmes for periodic assessment of primary care professionals and practices, and use these for certification, accreditation and public reporting. For instance, the Dutch College of General Practitioners (NHG) has developed a comprehensive audit and feedback system for general practice, which is focused on clinical performance, organisation of the practice, and the patient experience of general practice. Audit and feedback are combined with outreach visits by trained facilitators who help to make plans for improvement. This system is educationally orientated because it is focused on the content of primary care (such as adherence to clinical guidelines) rather than on a description of organisational procedures. Interestingly, participation in audit and feedback leads to formal accreditation, regardless of the actual scores, but the practice only remains accredited if it can show improvements one year after accreditation. A three-year study by our research group to evaluate the effectiveness of this educational accreditation system will start in 2008.

There is some evidence, but little from primary care and only from observational studies, that certification may improve professional performance.¹⁴ More research on the effectiveness and efficiency of certification is urgently needed. The same can be said about profiling performance of primary care providers to authorities, purchasers or the public.¹⁵ Relevant outcomes include effect on professional performance and health outcomes, but also efficiency (effectiveness in relation to costs) and acceptability. It would be particularly helpful to learn about the underlying mechanisms, and about potential unintended consequences. For instance, the impact of certification may be more related to the preparation for it by a professional or practice than to the actual content of the certification procedure. Besides questions about impact, there are also many important research questions about the validity and reliability of the performance assessment

itself.¹⁶ For instance, how many measurements per practice are needed for a reliable assessment, and can different performance measures be combined into an aggregated measure?

Web-based learning

Information technology can be used in several ways to enhance learning, including computerised decision support, telemedicine and web-based learning. Web-based learning uses the World Wide Web for distance learning.¹⁷ This opens many opportunities, such as discussion forms via email, feedback on learning tasks, and use of video streaming. It can be combined with more or less (or no) face-to-face contact between students and teachers. An attraction for primary care providers may be that it reduces travelling time compared to attendance at educational meetings, particularly for those that work in remote areas or who combine their clinical work with other responsibilities. Also, it may be more efficient for clinical conditions that are only marginally important for primary care – because of low numbers of patients with such conditions and/or the minor impact of these.

An important question is, of course, whether web-based learning is effective. Sending written educational materials has been considered ineffective for a long time,⁶ but a study of a written distance learning package on lower urinary tract symptoms for general practitioners found changes in patient education and referral patterns.¹⁸ The underlying mechanism was probably that this written package included many activating components, such as a knowledge test and patient vignettes. Also, we found that sending a pile of patient leaflets was associated with even more changes. However, test ordering patterns did not change as a consequence of this study. The test is intended to exclude prostate cancer, and this topic probably requires a more complex educational approach. This example may illustrate both the possibilities and the limitations of distance learning.

More research on the effectiveness of various types of web-based learning is needed. A systematic review identified 16 studies, of which two focused on primary care, and none examined actual performance.¹⁹ A randomised trial which compared internet-based education with live interactive education for primary care physicians found that improvements in knowledge and behaviour were largely similar in both groups.²⁰ The authors of this trial claim that it is the first trial of web-based learning to show improvement of professional behaviour, and recommend further research before wide-scale implementation.

Scaling up educational interventions

Large-scale implementation in a region or country is a challenge for any initiative to improve the quality of care. Insight into factors that contribute to nationwide implementation is limited, and research has shown sometimes counterintuitive results. One study concerned the impact of a nationwide programme to improve primary mental health care, which comprised educational and organisational interventions at different levels in the healthcare system. Two years after its start, no impact on the professional practices of general practitioners was found.²¹ On the other hand, repeated mailing of educational materials to all general practitioners in a large region helped to motivate them to refer patients with chronic fatigue syndrome to a mental healthcare institution for cognitive-behavioural therapy.²² More research is needed on how to achieve sustainable, large-scale implementation.

Conclusions

Educational interventions for health professionals remain crucially important for improving the quality of health care. While there is a substantial body of educational research, many issues remain to be studied. Besides purely educational questions, studies should also examine combinations of organisational change and educational interventions. Research should not only address the instrumental value of specific educational interventions (such as their effectiveness), but also the consequences of the wide availability of information technology for primary care.

REFERENCES

- Jamtvéd G, Young JM, Kristoffersen DT, O'Brien MA and Oxman AD. Audit and feedback: effects on professional practice and health care outcomes (Cochrane Review). *The Cochrane Library*, Issue 2. Oxford: Update Software, 2006.
- O'Brien MA, Rogers S, Jamtvéd G *et al.* Educational outreach visits: effects on professional practice and health care outcomes (Cochrane Review). *The Cochrane Library*, Issue 4. Oxford: Update Software, 2007.
- Shaw B, Cheater F, Baker R *et al.* Tailored interventions to overcome identified barriers to change: effects on professional practice and health care outcomes (Cochrane Review). *The Cochrane Library*, Issue 3. Oxford: Update Software, 2005.
- Wensing M, Van der Weijden T and Grol R. Implementing guidelines and innovations in primary care: which interventions are effective? *British Journal of General Practice* 1998;48:991–7.
- Cantillon P and Jones R. Does continuing medical education in general practice make a difference? *BMJ* 1999;318:1276–9.
- Grimshaw J, Thomas RE, MacLennan G *et al.* Effectiveness and efficiency of guideline dissemination and implementation strategies. *Health Technology Assessment* 2004;8(6).
- Foy R, Eccles M, Jamvedt G *et al.* What do we know about how to do audit and feedback? Pitfalls in applying evidence from a systematic review. *BMC Health Services Research* 2005;5:50.
- Wensing M, Wollersheim H and Grol R. Organisational interventions to implement improvements in patient care: a structured review of reviews. *BMC Implementation Science* 2006;1:2.
- Bosch M, Van der Weijden T, Wensing M and Grol R. Tailoring quality improvement interventions to identified barriers: a multiple case analysis. *Journal of Evaluation in Clinical Practice* 2007;13:161–8.
- Blumenthal D. Doctors in a wired world: can professionalism survive connectivity? *Milbank Quarterly* 2002;80:525–46.
- Starfield B, Shi L and Macinko J. Contribution of primary care to health systems and health. *Milbank Quarterly* 2005;83:457–502.
- Norman G. Research in medical education: three decades of progress. *BMJ* 2002;324:1560–2.
- Beyer M, Gerlach FM, Flies U and Grol R. The development of quality circles/peer review groups as a method of quality improvement in Europe. *Family Practice* 2003;20:443–51.
- Sutherland K and Leatherman S. Does certification improve medical standards? *BMJ* 2006;333:439–41.
- Goldfield N, Gnani S and Majeed A. Profiling performance in primary care in the United States. *BMJ* 2003;326:744–7.
- Hutchinson L, Aitken P and Hayes T. Are medical postgraduate certification processes valid? A systematic review of the published evidence. *Medical Education* 2002;36:73–91.
- McKimm J, Jollie C and Cantillon P. Web based learning. *BMJ* 2003;326:870–3.
- Wolters R, Wensing M, Klomp M *et al.* Effects of distance learning on clinical management of LUTS in primary care: a randomised trial. *Patient Education and Counseling* 2005;59:212–18.
- Wutoh R, Austin Boren S and Balas A. eLearning: a review of internet-based continuing medical education. *Journal of Continuing Education in the Health Professions* 2004;24:20–30.
- Fordis M, King JE, Ballantyne CM *et al.* Comparison of the instructional efficacy of internet-based CME with live interactive CME workshops. A randomized trial. *Journal of the American Medical Association* 2005;294:1043–51.
- Heideman JMC, Laurant MGH, Wensing M and Grol RPTM. Improving mental health care: impact of a nationwide programme. *Health Policy* 2007;81:146–54.

- 22 Scheeres J, Wensing M, Mes C and Bleijenberg G. The impact of informational interventions about cognitive behavioral therapy for chronic fatigue syndrome on GP referral behavior. *Patient Education and Counseling* 2007;68:29–32.

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