

## Implementing guidelines in general practice care

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By changing nothing we hang to what we understand, even if it is the bars of our own jail – JOHN LE CARRE, *The Russia House*, 1990

Developing guidelines for general practice care, based on good research and on valuable clinical experience, is increasingly seen as one of the crucial tools for achieving high quality care.<sup>1</sup> Despite efforts to set standards, guidelines, or protocols implementing them in practice has generally received little attention.

Guidelines are not self implementing.<sup>2</sup> It is well known that new and valuable information; new scientific results; and, in particular, new consensus guidelines or protocols reach only part of the target group.<sup>3-5</sup> Even if doctors are well informed about what to do, they often do not perform according to their knowledge or skills,<sup>3 6-9</sup> and the relation between their attitude towards certain expected behaviour and actual performance is generally weak.

Ideas about implementing guidelines and standards in general practice tend to be naive. The interventions or strategies are often restricted in circulation to publication in (scientific) journals and to continuing medical education by means of lectures or group discussions. Many general practitioners (GPs) do not read this information. Only half of them will attend meetings for continuing medical education, and only those on topics considered as interesting to them. Often only reinforcement of existing ideas is achieved. Research usually shows that the effect of continuing medical education on actual performance in practice is marginal.<sup>6 7 10-12</sup>

Classic approaches to implementing new information fail because, firstly, too little attention is given to the specific barriers to change in certain groups of doctors and practices. Also too much effort is spent on improving knowledge and attitudes and too little on improving skills and actual behaviour; too little is known about interventions and programmes that are really effective in changing GPs' performance. In this paper I shall explore the current views and research on implementing guidelines and suggest some recommendations on methods and approaches to quality improvement in general practice. I shall discuss in more detail some of the general principles of promoting change in clinical care highlighted by Stocking in this journal.<sup>13</sup>

### Implementing guidelines as a step by step process

To disseminate and implement consensus guidelines and new information in general

practice performance several steps must be taken. Views on changing behaviour from various disciplines<sup>14-20</sup> may help in identifying these steps. They are summarised as follows.

- Orientation – attention and becoming informed about the existence of new guidelines
  - feeling interest, commitment
- Insight – understanding the guidelines
  - awareness of (gaps in) own performance, persuasion of the need to change
- Acceptance – positive attitude to the new guidelines
  - intention to change, confidence in success
- Change – actual implementation in practice, experimentation
  - recognition of positive outcomes, maintenance of change.

Each step in the process may be attended by specific problems or barriers. It is important to be aware of these, to study them, and to adapt the interventions to overcome them.<sup>19</sup> These barriers may be studied by examining the literature; surveys of physicians, other care providers, and patients; or structured group interviews with representatives from the target population.<sup>21</sup> An observation of the actual practice performance in some of the practices may also improve the understanding of specific problems of implementing changes. The message is "know your target group."<sup>22</sup> Someone who wants to implement guidelines must "zip himself into the clients' skins and see their situation through their eyes."<sup>23</sup> Barriers may exist because of either the characteristics of the GP or those of the practice setting.

#### BARRIERS WITHIN GPs

Barriers within the doctor can be in competence, motivation and attitude, and personal characteristics.

*Competence* – GPs with competence barriers do not keep up with the literature or read a rather one-sided selection of new information; they do not follow continuing medical education programmes and are poorly informed about new developments and insights. They may forget new information before implementing it.<sup>6 24</sup> They may be unaware of gaps in their performance or underestimate them.<sup>25</sup> They lack the necessary skills to perform the expected behaviour<sup>26</sup> or may not have the opportunity to experiment with new behaviour.<sup>27</sup>

*Motivation, attitude* – Some GPs may see more disadvantages than advantages or may expect negative consequences from the

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proposed guidelines.<sup>14</sup> They may be satisfied with their performance and not see the need to change.<sup>27 28</sup> They may not view the guidelines as feasible or applicable or not see any possibility of implementing them.<sup>27</sup> They may not trust the initiators and the promoters of the proposed change, regarding them as “academics” not as practitioners.<sup>14 29 30</sup> Perhaps they do not accept the guidelines because of lack of involvement in consensus discussions or of opportunity to “reinvent” and adapt the proposals for change in their own situation.<sup>14</sup> The guidelines may also not fit into their existing views, opinions, and values about work.<sup>5 14</sup>

*Personal characteristics* – Several of the doctors’ personal characteristics may be important.

*Age and experience* – Older doctors generally have more problems with accepting new information and guidelines than younger doctors.<sup>5 31–34</sup>

*Membership of professional organisations* usually results in being better informed and more inclined to accept innovations.<sup>5 32 33</sup>

*Learning style* – Doctors differ in their learning style<sup>35 36</sup>; some learn about new insights by reflection or by theoretical introduction, others by experience or demonstration.

*Self confidence* – Doctors’ confidence in performing adequately according to the guidelines and that their behaviour will have the expected outcomes may differ.<sup>18 20 37</sup>

*Willingness to change* – Some doctors are more open to new information, are more prepared to take risks, and are more inclined to experiment with new behaviour than others.<sup>14</sup> Thus “early adopters,” “middle majority,” and “late adopters” may be distinguished: these groups may differ in their needs, personal characteristics, values, communication behaviour, and learning styles.<sup>38 13</sup>

**BARRIERS WITHIN PRACTICE SETTING**

GPs do not work entirely independently. Decisions come about in discussions and negotiations with others (practice staff, patients, other care providers) who may have a powerful influence on the doctors’

performance. The same is true for all kinds of practical and structural factors related to the general practice setting.<sup>39</sup>

*Social factors* – Patients may have different opinions and requirements; they may refuse to cooperate or the doctor may be afraid that they will not cooperate.<sup>40</sup> Colleagues, practice staff, other care providers in the practice or in the area, managers or opinion leaders, and key persons within the doctor’s social network may also disagree with the proposed change.<sup>29 41</sup> The networks of some GPs are conservative and resistant to new ideas and guidelines.<sup>6</sup> One problem may be that the physician works solo and is seldom involved in professional interaction. Soloists seem to have less information and seem to change less than practitioners who collaborate closely with other care providers.<sup>5 33 42</sup>

*Structural, logistic, and organisational factors* – The prerequisites for change may not be available in the practice<sup>6 41</sup> or the guidelines may demand an extra investment of time or money.<sup>43</sup> The proposed change can interfere with existing practice routines or requires alterations in practice management.<sup>14</sup> Finally, local infrastructures, rules, or laws may interfere with the proposed change.<sup>19</sup>

Each of these barriers to change may play a part in preventing the adoption of guidelines and the achievement of necessary improvements in general practice care. Table 1 shows how they relate to the steps of implementing new guidelines. In the Netherlands the Dutch College of General Practitioners has been involved in national standard setting since 1987. A rigorous procedure, lasting 1–1.5 years, has been used to develop guidelines with a scientific basis and broad acceptance among GPs. Since 1989, 25 sets of guidelines have been published in a scientific journal.<sup>5</sup> One guideline is concerned with the management of a distorted ankle. It says that GPs may carry out the diagnosis and treatment in their own practice; x ray examinations as well as referrals to surgeons and physiotherapists are seldom necessary. A survey of a randomised sample of 500 Dutch GPs (response rate 64%) was

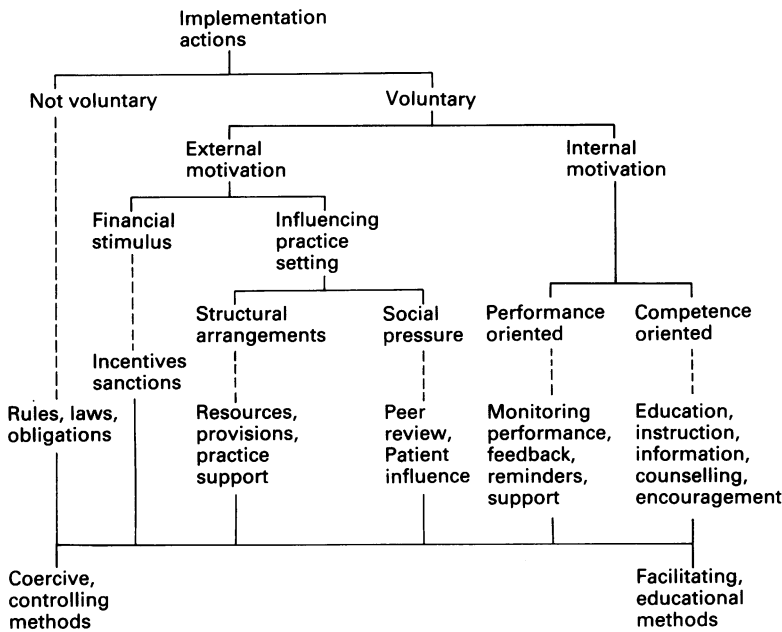
Table 2 Problems experienced by 320 Dutch GPs in complying with national guidelines for managing distorted ankle (revised version of original table<sup>43a</sup>)

Table 1 Barriers to implementing new guidelines

Steps	Barriers, problems
Orientation	No reading or selective reading, no continuing medical education
	No contact with colleagues
	No needs or interest
Insight	Insufficient knowledge or skills
	No awareness of gaps in own routines
	Overestimation of own performance
Acceptance	Seeing more disadvantages than advantages
	Change not seen as feasible
	Not feeling involved, committed
	Expecting problems, negative consequences
	Negative attitude of opinion leaders in network
Change	Change requires extra time or money
	Seeing no concrete alternatives
Change	Inadequate practice premises
	No confidence in success
	Forgetting, reverting to old routines
	Negative outcomes of change, no reinforcement

	% Of respondents	Factor analysis	
		I	II
Patients often go directly to the hospital	83	0.60	0.05
Patients have other wishes	69	0.67	0.17
Patients have doubts about the competence of the GP	60	0.76	0.09
I do not have bandaging skills	54	0.08	0.54
Physiotherapist often takes over the treatment	53	0.68	0.04
My colleagues perform differently	38	0.40	0.14
Insufficient research evidence available	36	0.10	0.53
Extra workload on weekend services in general practice	28	0.11	0.58
Insufficient knowledge of this condition	24	0.03	0.79

I = Barriers within GPs (competence, attitudes).  
 II = Barriers within practice setting (social and organisational factors).



\* Adapted from Van Woerkom<sup>45</sup>, Damoiseaux<sup>46</sup>

Factors involved in successful implementation of new information and guidelines in practice\*

performed to evaluate the barriers and problems that GPs experienced in complying with these national guidelines. In particular, barriers related to the network of the GP seemed to inhibit implementation of the guidelines.<sup>43a</sup> Most respondents saw the attitude of the patients in this case as a problem in complying with the recommendations. Clustering of the problems and barriers by a factor analysis (varimax rotation) supports the existing distinction between barriers in the GP and barriers in the practice setting (table 2).

**Effective interventions**

There is no one ideal strategy or intervention. Since many different factors and barriers play a part in the change process and doctors and practices differ in experience, needs, and learning styles a variety and combination of methods is required to implement guidelines successfully.<sup>13 31 44</sup> Intensive, long lasting interventions, in which the "message" is repeated again and again are necessary.<sup>7 10 45 46</sup> Effective implementation of guidelines requires written as well as personal approaches; use of mass media as well as small group and individually directed approaches; and interventions aimed at changing

Table 3 Features of different groups of GPs and approaches to implementing practice guidelines

	Early adopters	Majority	Late adopters
Salient features	Opinion leaders, models	Deliberate, sceptical	Traditional, isolated
Motivation for change	Intrinsically, seeing advantages	Social needs, relation with peers	Extrinsically, pressure, power
Actions directed to	Cognitions	Motivation, attitudes	Behaviour
Actions, interventions	Written methods, scientific arguments, credible sources	Personal sources, opinion leaders, peer activities, reinforcement by social network	Regulations, laws, incentives or sanctions, practical resources and provisions

Sources: Stocking,<sup>13</sup> Rogers,<sup>14</sup> Green *et al.*<sup>38</sup>

knowledge, skills, and attitudes as well as those addressing performance and behaviour.<sup>11 18 47-49</sup> These interventions should be directed towards existing barriers and problems with implementation<sup>8 9 19 41 50</sup> and are preferably carried out on various levels – that is, nationally as well as locally and at a practice level.

A COMBINATION OF INTERVENTIONS

Methods to disseminate and implement guidelines in practice might range from a predominantly facilitating approach to more coercive approaches (figure).<sup>15 51 52</sup> Generally, both educational and coercive approaches may be required to achieve lasting implementation. The more positive a target group is about the recommendations or the more it perceives a need for it, the more an educational and facilitating approach might be sufficient. However, when doctors are rather resistant or when the guidelines demand some investment from them other policies might also be required to complete the intervention. Bearing in mind the diversity of the target group, that any target group is composed of "innovators" and "early adopters", "majority," and "late adopters," several different interventions and strategies are likely to be more effective in different subgroups.<sup>13 38</sup> For the early adopters written scientific information might be sufficient; the majority will be particularly sensitive to peer influences and the opinions of key persons in the social network; and the late adopters might need an extra stimulus in the form of resources and provisions for their practices, incentives or official statements, and rules by responsible bodies (table 3).

The methods of implementing guidelines in general practice follow a parallel dimension to the one above; table 4 summarises their effectiveness. Reviews on the subject are those by Haynes *et al.*,<sup>10</sup> Haynes and Walker,<sup>53</sup> Horder *et al.*,<sup>31</sup> Lomas and Haynes,<sup>7</sup> Soumerai *et al.*,<sup>48</sup> and Mugford *et al.*<sup>54</sup>

*Written educational materials* – Evidence from many well controlled studies indicates that articles in journals, printed educational materials, drug bulletins, educational brochures, and the use of mass media alone to

Table 4 Effectiveness of interventions designed to change routines in general practice

		Effect
Facilitating, educational methods	Mailed educational materials, journals, mass media	-
	Continuing medical education, group education, courses, tutorials	+/-
	Face to face education, individual instruction	+
	Audit and feedback (by computer)	+/-
	Reminders (by computer)	+
	Peer reviews, quality circles, practice visiting	+
	Patient influence	?
	Structural arrangements (provisions, staff)	?
	Barriers to performance	+/-
	Incentives or sanctions	+/-
Coercive, controlling methods	Rules, laws, obligations, certification, contracts	?

disseminate new information have hardly any effect on medical practice.<sup>3 7 11 24 48 52 55-59</sup>

*Continuing medical education and group education* such as courses, lectures, tutorials, skills training, etc, may improve knowledge and skills if carried out over a protracted period.<sup>6 12 45</sup> In some studies they proved to be insufficient in changing performance whereas in others they affected practice behaviour.<sup>11</sup> When giving information to doctors was combined with small group discussions, self-instruction materials, and tracing individual gaps in performance the effect was improved.<sup>60-63</sup>

*Face to face education and individual instruction* – These include brief one to one educational visits by trained colleagues or counsellors, which may be effective in changing doctors' performance,<sup>56-59 64-67</sup> particularly in influencing prescribing patterns.<sup>48</sup> Especially, they are more effective than other educational interventions.<sup>68 69</sup> Visits by respected and competent colleagues ("the best friend model") are held to be more successful than visits by non-medical colleagues.<sup>59 70</sup>

*Audit and feedback* reinforce performance by collecting data and supplying positive or negative information on (gaps in) performance. Some studies show that monitoring practice performance and giving feedback are effective in changing medical practice,<sup>25 71-81</sup> "individualised or personal feedback" proving to be superior to group feedback.<sup>82-84</sup> Computers may have an important supporting role in feedback on performance.<sup>53 55 78</sup> However, other studies on the effects of feedback were less positive.<sup>85-88</sup> Feedback probably is most influential when it is presented directly after the performance and it is continual to prevent practitioners reverting to their old routines.<sup>89 90</sup> In particular, audit and feedback by respected peers as part of a more comprehensive strategy will be effective in introducing and implementing guidelines.<sup>91 92</sup>

*Reminders* – Before or while carrying out certain activities, the doctor is reminded (by an assistant, a computer, or other) that certain behaviour should (or should not) be performed. Although this is an area of developing research, some studies show that reminders may contribute to influencing doctors' performance, particularly when combined with other methods.<sup>9 93-102</sup>

*Peer review, quality circles and practice visits* – With these methods influence and pressure of persons in the social network are intended to effect a change in practice routines. Most people are sensitive to opinions, values, and signals from their peers, particularly when they act as opinion leaders or key persons. In approaching a district, a health centre, or a doctor to implement changes in performance, cooperation from key persons should be sought first.<sup>29 45 65 66</sup> These individuals may serve as models in convincing other doctors.<sup>37</sup> When applied to motivating general practitioners in Ireland to participate in peer review groups this approach resulted in 90%

participation. In several studies peer review in groups of doctors proved to be effective in changing practice routines.<sup>82 83 91 92 103-105</sup> In these studies (peer) feedback was used as a part of a broader more comprehensive approach, in which various methods and interventions (criteria setting, quality circles, educational methods, group discussions, feedback, etc) were combined ("shotgun approach"). A promising peer review method is the practice visit by (teams of) colleagues, which proved to be acceptable in the United Kingdom, Canada, New Zealand, and Netherlands, particularly for testing (new) trainers in vocational training.<sup>105-109</sup> Unfortunately, results from well designed studies of its effects are not yet available.

*Patient influence* can be brought to bear on practice routines and implementing guidelines – for instance, through complaints procedures,<sup>110</sup> informing patients about new guidelines,<sup>99</sup> and surveys among patients on their needs, satisfaction, and health status and feedback to practitioners.<sup>111-115</sup> Although research evidence is not clear yet, this approach seems to be promising.

*Structural arrangements and provisions* – In some situations barriers to implementing guidelines are mainly related to practical aspects of the setting in which the change has to be implemented – for example, staff, workload, practice management, financial resources, provisions in the practice, or structural arrangements. In these cases giving temporary or continuous support might be decisive in successful implementation of necessary change in practice performance. Cohen, for instance, found that doctors' examination of diabetic patients' feet increased threefold when a practice assistant instructed the patients in advance to remove their shoes and socks.<sup>116</sup> Involving specially trained staff looks promising.<sup>67 117 118</sup> The use of computer programmes to support decisions and activities in general practice care may be very powerful in influencing the implementation of new guidelines.<sup>119 120</sup> More research in this area is required.

*Barriers to performance* – A particular form of structural arrangement is the use of barriers to force practitioners to follow guidelines, by which the doctor must ask approval or submit justification before a specific performance is accepted or remunerated.<sup>121</sup> Changing the laboratory test form influenced the test ordering in some studies<sup>122 123</sup> but not in others.<sup>124</sup>

*Incentives or sanctions* – From the 1970s onwards bonuses have been offered to doctors in many countries, in particular for carrying out less expensive procedures. Opinions of the value of financial incentives and sanctions for implementing new information in practice differ widely. Physicians were found to be responsive to financial incentives and income differentials.<sup>125</sup> Hillman *et al* concluded that some, but not all, financial incentives influence behaviour of physicians.<sup>126</sup> However, the effects gradually diminish because of familiarity. When physicians have a vested

interest in specific procedures they will perform them more often.<sup>127 128</sup> In a study of the effects of a financial bonus for obstetricians who reduced the hospital stay of patients the outcome was a significant reduction in the duration of admissions.<sup>129</sup> However, conflicting results were found from other studies.<sup>79 85 130-132</sup> Horder *et al* presented screening for cervical carcinoma and immunisation procedures by GPs in the United Kingdom as successful examples of this strategy, both of which increased after a financial reward for these procedures was introduced<sup>31</sup>; however, a decline in the number of deliveries was also recorded despite an incentive payment.

*Obligations, rules, and laws* – Finally, implementing guidelines for general practice may be achieved by coercion or obligation through rules and laws. These methods are used by governments or insurers in virtually all countries – for instance, the prescription of treatment is restricted in many countries; accreditation and recertification are similar methods. Regulation of this kind may be one of the most powerful methods of influencing behaviour, but the long term results are not yet clear.

Developing reliable, valid, sensitive, and feasible assessment and recertification tools and procedures will require additional research. Besides, even if we succeed in developing them, there are other, more fundamental, problems related to coercive methods and formal recertification of doctors based on quality guidelines. These are well described by Berwick.<sup>133</sup> Based on experience in industry, he argues that identification of poorly performing doctors (“bad apples”) will lead to fear, frustration, and anger in the target group. Under pressure they will probably

collaborate but will also try to sabotage or cheat the assessment. Moreover, such an assessment procedure will be expensive and inefficient, while it is directed only at a small proportion of the target group. He favours an approach of “continuous improvement” directed to all doctors and practice workers. Research is required to study the validity of this approach.

Having identified potentially effective interventions and having determined that the best approach is a combination of methods and interventions directed to specific barriers to change, we might ask who should be involved in the implementation of guidelines and changes in general practice and on what level should it be initiated? Table 5 summarises the possible approaches. On various levels the aims and the persons and organisations having the main responsibility for improving patient care in general practice are different. Linking the strategies on the various levels to each other will increase the likelihood that necessary changes will be implemented in practice.

### Conclusions and recommendations

Changing medical practice to improve patient care probably is the most complex step in a quality assurance system: “In my opinion, effectiveness in inducing behavioural change is the most important, yet least understood problem in quality monitoring today,” was the opinion of Donabedian.<sup>134</sup> Many of the routines in practice are based on automatic reactions. Thus GPs do not differ fundamentally from patients who have problems following the prescriptions of their doctor or changing their lifestyle.<sup>135</sup>

However, problems related to change do not only concern people. Often the work setting is

Table 5 Framework for implementing guidelines in general practice

Where? (Level)	Aim	Who?	How?
Central (national, regional)	Creating favourable conditions Infrastructure Developing methods and programmes	Professional organisations Government Insurers Organisations for continuing medical education and quality assurance Research institutes and academic departments	Publication of research results and guidelines in journals Mailing of guidelines Conferences, courses, tutorials on guidelines Good instruction materials for guidelines Financial incentives or sanctions Procedures for accreditation and relicensing
Local	Local arrangements Local continuing medical education Influencing local structures	Local doctors Specialists Other disciplines Local committees and boards Facilitators	Local continuing medical education, group education on guidelines Peer review Opinion leaders, key persons Consensus meetings with colleagues Arrangements with other care providers
Practice	Organising quality improvement with all practice members	Doctors Other practice workers Facilitators	Setting practice objectives Journals, library Practice based audit and feedback Involving facilitators for individual instruction Structural arrangements Practice visits Quality circles Patient surveys
Individual	Individual continuing education and change	Doctors other practice workers	Reading Following courses, tutorials Self audit Reminders Feedback Skills training

a crucial part of the problem.<sup>133</sup> Thus achieving change in medical practice is an issue that should be addressed in a creative and varied manner. Analysis of the current literature teaches us several important lessons.

- A process of continuous improvement should be planned on several levels – that is, on a central, local, practice, and individual level
- A combination of interventions, methods, and programmes should be developed; these should be directed to the specific barriers to change of specific target groups in the profession
- Face to face instruction, assessment, and feedback by well respected peers (in peer review groups, quality circles, or practice visits), combined with practical support (facilitators, provisions, and financial stimuli), seem to be particularly effective in improving the quality of care.

However, much more research on the effectiveness of interventions is necessary, in particular on the role of patients and computers in implementing new guidelines and procedures in general practice. The studies currently available often have methodological shortcomings, the interventions are difficult to compare, and most lack information on health outcomes.<sup>7 10 48</sup>

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