Implementing joint treatment guidelines to improve prescribing in general practice
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Chapter 1
Introduction

This thesis focuses on the quality of prescribing, specifically in the field of chronic diseases where general practitioners and hospital specialists both have the responsibility for the same group of patients. Within each medical profession different perspectives, diverse roles and various working environments exist. This may lead to a lack of cooperation or consistency between primary and secondary care, and reduce the quality of care.

Guidelines as a means to improve quality of treatment
Improving quality of treatment is an important topic in health care. There is growing awareness of large variations in clinical practice and of suboptimal health care. One of the means to reduce variation and improve treatment quality is the development and dissemination of practice guidelines. Guidelines refer to a collection of statements about a defined topic, usually the prevention, diagnosis, and treatment of a health problem. Guidelines are a tool for closing the gap between what clinicians do and what scientific evidence supports. Guidelines can improve clinical practice, but this depends on many factors, including the clinical context and the methods of developing, disseminating, and implementing those guidelines.

A guideline preferably begins with a thorough review of available scientific evidence by experts who appropriately represent the target group. The acceptance of a guideline depends on this development process. In addition, the properties of the guideline itself affect its adherence in daily practice. Compatibility of the recommendations with existing values is needed for physicians to accept the guideline. The less complex guideline recommendations are, the better they are usually followed. Furthermore, better use of guidelines is associated with situations where no new skills or organisational changes are needed.

Many different types of guidelines exist and as a result various recommendations are given to health care professionals leading to confusion. In the Netherlands, recommendations in terms of drug choice vary in regional treatment guidelines. In order to improve the quality of guidelines and guideline development, criteria for good quality guidelines have been set up. The Appraisal instrument for Guidelines, Research and Evaluation in Europe (AGREE) has been constructed to...
judge the scope, scientific evidence, as well as the clarity and applicability of guidelines \(^5\). Practice guidelines developed on the basis of reaching consensus take their evidence usually more from expert panels than from scientific evidence. This may lower the quality of the guideline \(^2\).

In the Netherlands, the Dutch Institute for Health Care Improvement (CBO) uses quality criteria to ensure high-quality development of guidelines. CBO-guidelines include recommendations for specialist care. For primary care, the Dutch College of General practitioners (NHG) develops its own guidelines. In 1998 both organisations made an agreement to adjust their guidelines to one another. General practitioners (GPs) in the Netherlands are rather positive about having guidelines in daily practice. GPs adhere to 70\% of the recommendations in the NHG-guidelines, although this varies between GPs and between guidelines \(^10\). Few studies have been conducted to examine the attitudes and use of guidelines in outpatient specialist care. Specialists were found to have a generally positive attitude towards guidelines, but were not using them to a large extent \(^11,12\). In the Netherlands, half of hospital specialists reported to use CBO-guidelines \(^13\).

An important issue is the collaboration between GPs and hospital specialists. Specialists have a great impact on treatment at the GP level; nevertheless they are often not included in efforts to improve treatment in primary care.

In the year 2000, a program has been set up in the Netherlands to improve the quality of treatment care across the primary-secondary care interface \(^14\). The aim was to improve both quality and efficiency in health care by bringing the therapeutic care provided by GPs and hospital specialists in line with each other on a regional level. In other countries some experience has been gained with joint treatment guidelines. In Scotland, a joint formulary was successfully developed by a group of specialists and interested local GPs \(^15\). One of the approaches in the Netherlands was to develop joint treatment guidelines to be used by all physicians in one region. In the Groningen region, local committees of specialists, family physicians, and hospital and community pharmacists were involved in development of such regional joint guidelines. Their recommendations were based on existing regional guidelines for primary care, national guidelines, scientific evidence and expert experiences. Such joint guidelines developed by a multidisciplinary team could reduce the lack of consistency and improve collaboration between primary and secondary care, and may lead to more efficient care.

**Barriers for implementing treatment guidelines**

Newly developed guidelines need to be disseminated to improve quality of care. Whilst knowledge of a guideline is important, it is rarely, by itself, sufficient to change behaviour. Behavioural change is not easy to accomplish and insight into the factors that prevent change will help to develop better implementation...
Obstacles in practice can arise at different stages in the health care system: at the level of the health care organisation, at the level of the individual physician, and at the level of the patient. Many studies have focused on the barriers at the physician level to explain the gap between evidence-based medicine and actual daily practice. In addition, some studies have shown that available resources and acceptance of a change by patients and colleagues are relevant factors. Therefore, quality improvement needs to take into account not only the clinical behaviour of individual physicians but also the system within which they work. Several of the problems in health care can be attributed to problems that arise at the interface between primary and secondary care. A specialist has a major influence on prescriptions of drugs in primary care. In addition, cooperation is scarce and the professions are providing fragmented care. Therefore, the setting in which the behavioural change should occur can hamper this process. Legislation and lack of resources are other determinants at the organisational level that influence the behavioural change. For instance, lack of time was felt by GPs as a major influence in every part of practice, as it minimises treatment options being discussed or patients being examined properly.

Barriers at the individual physician level can be negative attitudes and views towards guideline recommendations or legislation. These vary from feelings of being tired or stressed to the amount of self-efficacy or competence a physician experiences to perform a certain task. Moreover, motivation to change should be present for the behavioural change to occur. The physician may also need certain skills to enable actual change. Finally, the specialisation is relevant. Specialists, for example, may perceive guidelines developed without their input to contain insufficient expertise. It will be unlikely for specialists to use such a guideline, whereas for GPs such a guideline might be a useful aid in deciding which therapy to choose.

Patients’ demand for treatment that is not recommended, is reported to be a barrier for non-adherence to guidelines. The physicians’ intentions to avoid conflict with their patients and to respect the patients’ views are factors that may affect their decisions. Lack of patient compliance is mentioned as a barrier for adherence to treatment guidelines. Optimal care can only be reached if the patient is willing to cooperate. The complexity of some diseases is another factor that can hinder change. In the case of chronic heart failure, for example, the diagnosis of heart failure is difficult to make in general practice, and the doctor may not provide appropriate treatment due to uncertainty about the diagnosis.

Strategies for implementing guidelines
Systematic development of interventions and tailoring the strategy and the content to specific features of a target group and setting seems necessary for effective implementation.
improvement of the quality of patient care. Many different implementation strategies have been developed to change clinical practice and implement guidelines: professional oriented strategies, patient related strategies, financial incentives, organisational strategies and regulatory interventions (Table 1).

<table>
<thead>
<tr>
<th>Strategies</th>
<th>Approaches</th>
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<tr>
<td>Regulatory strategies</td>
<td>Accreditation, licenses, medical responsibility</td>
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<td>Financial incentives</td>
<td>Fee-for-service, incentives, penalties</td>
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<td>Patient related strategies</td>
<td>Patient charges, patient-mediated interventions, patient participation &amp; empowerment</td>
</tr>
<tr>
<td>Organisational strategies</td>
<td>Structural changes in facilities and resources, multidisciplinary teams, changes in professional roles</td>
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<tr>
<td>Professional oriented strategies</td>
<td>Educational meetings, academic detailing, feedback, reminders</td>
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None of these strategies is superior for all changes in all settings. Combination of strategies seems to be a more effective approach, as obstacles to change may occur within the physician setting, the patient population or the organisation. Regulatory and financial strategies are usually conducted on a national level. The generalisability of studies looking at the effect of these strategies is limited. These strategies may be effective in one setting but not in another. Financial incentives seem to affect physicians’ behaviour, but only a few adequate studies have been conducted.

Patient related strategies form another tool in quality improvement. They can enhance patient involvement and improve patient outcomes. Patient mediated interventions seem to have variable effectiveness. A study in the Netherlands examining the effect of feedback of patients’ evaluations of care found no effect. Although the GPs reported to have made changes in their performance, patients’ evaluations of care did not change. A qualitative study examining the impact of patient charges on GPs prescribing behaviour reported that patient charges did not have much influence on prescribing. The GPs were not confronted with patients complaining about out-of-pocket costs or drugs with out-of-pocket costs were not the GPs’ drugs of choice. In diabetes management, the addition of patient-oriented interventions has shown to be effective, especially through patient education or facilitating adherence to treatment.

Organisational intervention strategies often focus on improving collaboration between teams or changing roles to attain more efficient patient care. There is some evidence on the effect of organisational strategies. Interventions aimed at changing roles and responsibility, such as assigning nurses with medical tasks, have shown mixed results. Organisational interventions targeting regular recall
and review of patients (central computerised systems or nurses who regularly contact the patient) have shown to improve diabetes management. Collaboration between health professionals seems one of the important factors why some changes are effective in health care; however the evidence as yet is too heterogeneous to come to final conclusions.

Most research has been done on the effect of professional oriented strategies. The effect of distribution of educational materials seems to be limited but as part of a more comprehensive approach it may have more positive outcomes. Interactive dissemination strategies seem more successful, particularly when the participants are actively involved in the teaching process. Combining distribution of educational material with small group education and active participation proved to be effective for improving prescribing behaviour. Another promising approach is the provision of educational outreach visits, in particular when the aim is to improve prescribing. Studies demonstrating the effect of feedback have shown mixed results. Concurrent feedback and feedback in combination with reminders or education seem more effective then feedback alone. A review aimed at interventions to improve prescribing found that feedback which included specific recommendations was more likely to change behaviour than general feedback.

Comparison of one’s own practice with that of immediate colleagues may provide a powerful stimulant for changing behaviour. Behavioural theories suggest that performance is influenced by external stimuli such as feedback and reinforcements. Reminders seems to be one of the most effective single strategies.

### Implementing treatment guidelines in primary care in the Netherlands

For GPs in the Netherlands it is common to discuss the management of patients and drug prescribing in peer review groups. These are small groups of physicians or interdisciplinary groups with other health care professionals aimed at assessing and improving the quality of patient care. They discuss treatment of diseases and make agreements on pharmacotherapy, and are known to use the NHG-guidelines. The first peer review groups exist since the 1970s but they have been installed nation-wide since 1991. They are led by the doctors and pharmacists (peers) themselves.

Education in terms of sharing knowledge and clinical experience can be successful by discussing in a small group the way in which colleagues approach common problems. Group approaches appear to be a useful and cost effective approach to improve evidence based prescribing. Moreover, social influence theories suggest that it is important to meet the social norms in a group one identifies with. The few controlled studies that have been carried out in this area show some promising results. Veninga et al. found that an educational program in peer review groups improved prescribing behaviour for asthma. Effective meetings attempt not to
deviate too much from the current prescribing practice and meetings are in particular successful when the changes concern medication that should be stopped. Changes in chronic treatment are more difficult to achieve by peer review than changes in acute treatment. Additional activities might be needed, such as providing individual patient specific feedback and reminders. The use of feedback data and use of a formulary were two other characteristics that may enhance behavioural change. Feedback on actual patient cases appears to work better than theoretical lectures. Use of a formulary might be seen as an intention to rationalise prescribing. Some characteristics of peer review groups may affect the success of an educational program. The intention of the group, i.e. whether the groups were merely changing information or actually making agreements, influenced the success of the intervention. Large groups may be less effective due to not well-structured meetings. The amount of experience with this kind of ‘group learning’ is probably related to the effect of peer review groups meetings. Dutch GPs, who are used to having regular meetings and discussing pharmacotherapy, improved more using a peer review program than their Norwegian or Swedish colleagues.

Educational program to implement joint guidelines in primary care in this study

As said before, a national program has started in 2000 to improve the consistency of treatment between primary and secondary care. In Groningen this has resulted in joint treatment guidelines for sixteen diseases developed by local multidisciplinary committees consisting of GPs, specialists, community and hospital pharmacists. An educational program was developed to implement these joint treatment guidelines in primary care in the Groningen region. The program aims to be self-supporting within the context of the existing infrastructure of peer review groups of GPs and pharmacists in the Netherlands. One of the regular meetings of the peer review groups was chosen as the setting to perform the educational implementation.

The educational program incorporates several elements described in the previous paragraphs to make it successful. The educational program starts with an update of knowledge by discussing the recommendations in the joint treatment guideline. The idea is to get the physicians acquainted with the evidence-based guideline recommendations. The main part of the program focuses on discussing the treatment of actual patient cases. Discrepancies between current practice and prescribing recommendations in the joint guideline are examined and discussed. Each GP screens five of his own patients regarding their treatment. These patients are presented and discussed in the peer review group offering the opportunity to exchange information or getting advice from peers. The last part of the program deals with the barriers to change prescribing behaviour and possible solutions to
overcome these barriers. Each GP mentioned what the reason was for non-adherence if applicable. All barriers are written down and possible solutions are discussed in the peer review group. Here, the rationale is to improve the awareness of barriers and to learn skills in overcoming barriers. A GP or pharmacist leads the program ensuring active involvement from participants.

A local team of the Dutch Institute for Rational Drug Use (DGV) developed two educational packages for the peer review groups. This institute has consultants who support peer review groups in every region with their meetings, co-ordinate projects, provide them with educational material, and teach groups how to use prescribing data for feedback. One package aimed to improve the treatment of hypertension in diabetes mellitus type 2 patients, and the other to improve the treatment of chronic heart failure. These chronic diseases have been chosen because they are common both in primary and secondary care. Although the GP is usually the first who is confronted with the patient, these patients are often referred to a specialist for complications or advice on treatment. Furthermore, there is room for improvement in treatment of both diseases. For blood pressure control in patients with diabetes stringent target levels are being recommended in treatment guidelines, since this significantly reduces the risk of developing macrovascular and microvascular diseases. However, suboptimal management in both diagnosis and treatment of hypertension in type 2 diabetes patients has been shown. Despite several landmark studies that showed that appropriate treatment of chronic heart failure can improve morbidity and mortality, management in general practice is still not optimal. Persisting major problems are, among others, underuse and underdosing of angiotensin-converting enzyme (ACE) inhibitors.

Aims and Objectives

Research aims

This thesis focuses on three issues regarding implementing joint treatment guidelines for primary and specialist care. The first issue deals with the attitudes and barriers physicians experience with guidelines in general, and in particular with joint treatment guidelines. The question will be answered as to what type of barriers GPs and specialists perceive with joint treatment guidelines. Insight into these views is needed to tailor an educational program to the wishes of the target group, the physicians.

The second issue concentrates on the various determinants that influence prescribing quality. The gap between recommendations and actual prescribing is taken into account regarding the management of heart failure and of hypertension in diabetes mellitus type 2 patients. The relationship between perceived barriers and actual prescribing behaviour is studied. Furthermore, the impact of
determinants on different levels (organisational, physician or patient level) on quality of treatment is examined.

The third and last issue considers the evaluation of the educational program for implementing joint treatment guidelines in primary care, focusing on the effect on the management of these two chronic diseases. In addition, a process evaluation is conducted to be able to explain why the program was effective or not in changing practice.

Outline of thesis

Chapter 2 describes the results of a focus group study among 27 specialists to identify their views on the newly developed joint treatment guidelines. The focus group method was chosen to identify all factors that are relevant in a specific setting or context. The aim of this study was to explore the factors that may limit or facilitate the use of joint treatment guidelines for primary and secondary care as perceived by Dutch specialists. In Chapter 3 the family physicians’ views on joint treatment guidelines for primary and secondary care are addressed in addition to the specialists’ views. A survey was conducted to quantify the extent to which both hospital specialists and general practitioners are motivated to use the newly developed joint guidelines. This study examines three questions, i.e. which type of guidelines are used by both groups of clinicians, what is their support for using joint treatment guidelines, and what are the perceived barriers and facilitators for using a specific joint treatment guideline. A comparison is made between both groups of clinicians to determine whether an implementation program should be tailored for each of the groups separately.

Chapter 4 focuses more in detail on the barriers to the joint treatment guideline of chronic heart failure. Barriers are measured by means of a questionnaire including literature-based barriers and self-reported barriers. Little is known about the relevance of these barriers for actual management of chronic heart failure in general practice. In this chapter, we investigate to what extent the number and type of barriers perceived is related to the prescribing behaviour of GPs. In Chapter 5 and 6 the prescribing behaviour is evaluated of GPs who participate in the educational intervention to implement joint treatment guidelines. The extent to which prescribing at baseline is in accordance with guideline recommendations is assessed. In Chapter 5, we identify the influence of organisational, physician and patient characteristics on the quality of chronic heart failure treatment in primary care. Chapter 6 describes the quality of hypertension management in diabetes mellitus type 2 in relation to organisational, physician, and patient factors. The effect of the educational intervention on adherence to joint treatment guidelines in primary care is analysed in Chapter 7. The effects of both educational programs for the treatment of hypertension in diabetes mellitus patients and for the treatment of heart failure are evaluated.
The influence of some physician and patient characteristics is included in the analysis. In addition, the attending physicians evaluated the program itself. The thesis ends in Chapter 8 with a discussion of the major findings and conclusions regarding factors that influence the adherence to these joint treatment guidelines and the impact of the educational program. Implications for the effective implementation of joint guidelines and further approaches to improve joint care between primary and secondary care are discussed.

References

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11 General introduction