Development and initial evaluation of an evidence-based in-office decision aid to improve the assessment and treatment of patients with acute low back pain in primary care practice:
The Peterborough Back Rules Template

by Jaime Guzmán, MD

A thesis submitted in conformity with the requirements for the degree of
Master of Science in Clinical Epidemiology,
Graduate Department of Community Health,
University of Toronto

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ABSTRACT


This thesis reports the development and initial evaluation of an in-office decision aid to facilitate the implementation of evidence-based clinical practice guidelines for the management of acute low back pain. The decision aid (a chart template and postural advice/prescription tear-off) was developed with local physician opinion leaders in the City of Peterborough Ontario in the context of a guideline implementation project. A survey answered by 70% of practising primary care physicians in the city showed that 98% were aware of the implementation project, but the acceptability of the chart template was low, 10/63 physicians (15.9%) reported using it with more than 50% of their new patients with low back pain. Opinions about the usefulness of the chart template were mixed: very useful (8%), useful (20%), somewhat useful (17%), not useful (13%), can’t judge (32%). The qualitative part of the evaluation revealed that many physicians did not see the need for a decision aid in dealing with acute low back pain, and were reluctant to change their current office and charting practices to accommodate it.
To Lynn, Eric and Sabrina.

With love
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Chapter 1

Introduction
1.1 Research question, objectives and rationale

Low back pain (LBP) is a common and costly health problem. In Ontario, 11% of the population reports "serious back problems" [1] and back pain is the major cause of work disability [2]. Back pain is consistently rated among the five leading symptoms for patient-initiated visits in family practice [3]. In Ontario, primary care physicians reported they saw an average of six patients with LBP per week [4]. Several studies have documented wide variation in the diagnostic and therapeutic approach to this problem [5,6]. There is a significant gap between usual current practice and research evidence [4,7,8]. As a consequence, a significant proportion of patients with LBP may be undergoing tests and treatments of doubtful or no benefit. In particular, therapies that were commonplace 10 years ago such as prolonged bed rest and use of potent analgesics and muscle relaxants are now discouraged [3].

In recent years a large number of organizations have published evidence-based clinical practice guidelines with the explicit goal of facilitating the transfer of research findings into medical practice [9,11]. The guidelines of the Quebec task force on spinal disorders [12] and, more recently, the US Agency for Health Care Policy and Research (AHCPR) [3] are perhaps the best known examples of practice guidelines addressing LBP.

The AHCPR organized a multidisciplinary panel of expert clinicians, methodologists, and patient representatives to review research evidence published up to 1993. In December, 1994 the panel released 73 specific recommendations for the management of acute low back pain (see Appendix). Each recommendation was explicitly linked to the strength of the scientific evidence supporting the recommendation. The key points of the AHCPR guidelines are summarized in the abstract included with the guidelines' booklet and reproduced in Table 1.1 [3]. There are two major axes to the approach underlying these recommendations: (1) Minimize studies and interventions during the first month, unless there are signs of serious underlying conditions (red flags). (2) Promote exercise and early return to regular activities; do not recommend prolonged
bed rest. The research evidence summarized by the AHCPR expert panel and their recommendations form the basis for the decision aid developed in this thesis.

Despite the effort put into their development, publication and passive diffusion of guidelines seems to have little, if any, impact on practice [13] [14]. On the other hand, a number of active dissemination strategies have been effective in changing physicians' practice, particularly when several strategies are combined [14,18]. They include training of opinion leaders in the community, academic detailing, use of reminders during the patient visit, and patient education. Administrative and regulatory strategies have also been effective in some settings but their discussion is outside the scope of this thesis.

The aim of this thesis project was to engage the participation of opinion leaders in a Canadian community to develop a decision-aid that could be used as an effective reminder to facilitate implementation of the AHCPR LBP guidelines. Our working hypothesis was that a simple decision aid developed with community physicians according to evidence-based guidelines and their own views and preferences would have a much better chance of being incorporated into practice than traditionally formatted practice guidelines.

The thesis had two specific objectives:

1. To develop a in-office decision aid based on the AHCPR practice guidelines for acute LBP through qualitative assessment of needs/preferences and active participation of local physician opinion leaders in a medium-sized city in Southern Ontario.

2. To conduct an initial evaluation of acceptability and perceived usefulness of the resulting decision aid by primary care physicians not involved in its development.
Abstract

Findings and recommendations on the assessment and treatment of adults with acute low back problems—activity limitations due to symptoms in the low back and/or back-related leg symptoms of less than 3 months' duration—are presented in this clinical practice guideline. The following are the principal conclusions of this guideline:

- The initial assessment of patients with acute low back problems focuses on the detection of "red flags" (indicators of potentially serious spinal pathology or other nonspinal pathology).
- In the absence of red flags, imaging studies and further testing of patients are not usually helpful during the first 4 weeks of low back symptoms.
- Relief of discomfort can be accomplished most safely with nonprescription medication and/or spinal manipulation.
- While some activity modification may be necessary during the acute phase, bed rest > 4 days is not helpful and may further debilitate the patient.
- Low-stress aerobic activities can be safely started in the first 2 weeks of symptoms to help avoid debilitation; exercises to condition trunk muscles are commonly delayed at least 2 weeks.
- Patients recovering from acute low back problems are encouraged to return to work or their normal daily activities as soon as possible.
- If low back symptoms persist, further evaluation may be indicated.
- Patients with sciatica may recover more slowly, but further evaluation can also be safely delayed.
- Within the first 3 months of low back symptoms, only patients with evidence of serious spinal pathology or severe, debilitating symptoms of sciatica, and physiologic evidence of specific nerve root compromise corroborated on imaging studies can be expected to benefit from surgery.
- With or without surgery, 80 percent of patients with sciatica recover eventually.
- Nonphysical factors (such as psychological or socioeconomic problems) may be addressed in the context of discussing reasonable expectations for recovery.

Table 1.1 The abstract of the AHCPR Clinical Practice Guidelines for Acute Low Back Pain. The research evidence summarized by the AHCPR expert panel and their recommendations form the basis for the decision aid developed in this thesis.
1.2 The IWH/NHRDP Guideline Implementation Project and its relationship to this thesis

This thesis was conducted in the context of a community guideline implementation project sponsored by the Institute for Work & Health (IWH) and Health Canada’s National Health Research and Development Program (NHRDP) hereafter referred to as the IWH/NHRDP Guideline Implementation Project, or simply The IWH/NHRDP Project. The Institute for Work & Health is an independent, non-profit knowledge-base organization striving to improve workers' health and reduce occupational disability. A research fellowship from the Institute enabled me to complete my masters degree and write this thesis.

In 1995, IWH received pilot funding from the NHRDP to develop a multifaceted intervention for implementation of the AHCPR acute low back pain practice guidelines in primary care in two medium size cities in Southern Ontario. One city (Peterborough, ON) was the subject of intensive implementation activities, while the other underwent passive diffusion activities only.

The IWH/NHRDP Project was based on the conceptual framework depicted in Figure 1.1. According to this framework, physicians' practice is seen as the result of the interaction between patient and physician, both of them influenced by personal and societal factors. It follows that implementation activities should target the interaction between these key players and the most influential factors. Based on review of the literature available in 1995, the research team decided that a multifaceted intervention jointly designed with local educationally influential physicians (EIP's) was most likely to succeed in modifying the assessment and management of LBP in the community. Building on concepts from advertising, marketing and adult education the project stressed flexibility, active local participation and use of existing community resources and communication networks.
Factors influencing physician's practice

**Figure 1.1** The conceptual framework of the IWH/NHRDP Guideline Implementation Project. Since investigations and therapy are seen as the result of the interaction between physician and patient, implementation activities should target the interaction itself and the most influential factors acting on physician and patient.
The IWH/NHRDP Project included four preparatory activities and a three-phase field trial (Figure 1.2). The preparatory activities were the identification of target communities, identification and recruitment of local educationally influential physicians, the development of initial drafts of educational materials, and the development of survey methods and instruments to assess the impact of the project. The field trial included a pre-intervention survey of current practice and patient outcomes, the testing and refinement of implementation activities and tools, and a post-intervention survey. Main project activities started in March 1996 and the project is in its final phase at the time of this writing, with final results expected in 1999.
The development and initial evaluation of the decision aid were conducted in the context of the IWH/NHRDP Guideline Implementation Project. The assessment of local Educationally Influential Physicians (EIP's) views and the evaluation of the decision aid were activities specifically added for this thesis.
Preparatory activities for the IWH/NHRDP Guideline Implementation Project

After careful consideration and site visits to eight candidate communities, the research team selected the cities of Peterborough and Guelph, Ontario as the study sites. Identification of educationally influential physicians by their peers was attempted in both communities using the modified Hiss questionnaire shown in Appendix C [19,20]. Survey return rate was 50% in Peterborough and 26% in Guelph. Peterborough was selected as the implementation community, and Guelph as the passive diffusion community.

Primary care physicians by and large did not nominate any of their peers as educationally influential. They selected local specialists instead. In Peterborough three of the five rheumatologists in town were mentioned as educationally influential in regards to the management of LBP. The research team invited all five local rheumatologists to collaborate on the project. Since the guidelines are meant to be applied by family physicians, the researchers also invited five family physicians to participate in the project (the Chief of Family Medicine, the physician in charge of organizing local grand rounds, and three other family physicians interested in LBP guidelines). Eventually four rheumatologists and four family physicians worked intensively with the research team in guideline implementation activities.

Baseline survey of local presentation and management of LBP

Prior to beginning implementation activities, the researchers conducted a telephone survey of patients who presented with acute LBP in both communities (Pre-intervention survey in Figure 1.2). In summary, 131 adults with new episodes of LBP referred by primary care physicians completed phone interviews about two and eight weeks after pain onset. Most subjects (60%), did not report any symptoms suggestive of red flags and 85% were not investigated at the initial visit. The overall management of patients
with acute back pain in these Canadian cities seemed in line with AHCPR practice guidelines (Figure 1.3). Most patients improved quickly, although some of them had residual discomfort at the second interview (average of 61 days after onset). Most patients were satisfied with the interpersonal aspects of care but not as satisfied with the information about low back pain given by the physician (Figure 1.4).
LBP Management at the Initial Visit Compared with AHCPR Guidelines *

- **AHCPR RECOMMENDED:**
  - No tests
  - Exercise
  - NSAID's
  - Acetaminophen
  - Manipulation

- **AHCPR OPTIONAL:**
  - Muscle relaxants
  - Narcotics

- **NOT RECOMMENDED:**
  - Lumbar X-ray
  - Referred to specialist
  - Bed rest >4 days
  - Blood/urine tests
  - CT/MRI

* Within the first month of acute low back pain if there are no red flags.

**Figure 1.3** Primary care management of low back pain in two Ontario cities. Prior to guideline implementation activities, the IWH/NHRDP Project interviewed 131 LBP subjects to assess current practice. The overall management of these subjects was already 'in line' with the AHCPR guidelines.
Patients' Ratings of Ten Aspects of Care

- Excellent or very good
- Good
- Fair or poor

The way you were treated
Availability of the MD
Easiness to get to clinic
Concern showed by MD
Overall care
Treatment effectiveness
Info about cause of LBP
Info about coping with LBP
Info about time to recover
Info about preventing LBP

* According to 131 patients interviewed a median of 2 months after pain onset

Figure 1.4  Satisfaction with primary care for acute low back pain. A survey of 131 patients cared for by primary care physicians suggested patients were satisfied with the interpersonal component of care, but not as satisfied with the information about LBP received from physicians.
The described Guideline implementation project and the results of its baseline survey provided the immediate background for my thesis work. My involvement with the IWH/NHRDP Project started about the same time that the funding from Health Canada became available. I participated actively with the research team as the original proposal was modified, adapted and put into practice. Soon it became evident that the IWH/NHRDP Project itself was too large and the time line too long to be able to use the main results of the project as my thesis. In discussion with my supervisor (the principal investigator in the IWH/NHRDP Project) we decided to focus this thesis on the development and initial evaluation of the in-office decision aid used in the project.

The three main original scientific contributions reported in this thesis are the qualitative assessment of the views of local EIP's about guidelines (Chapter 3), the development of the decision aid and support materials (Chapter 4), and the initial evaluation of the decision aid (Chapters 5 and 6). The evaluation included an estimation of the acceptability and perceived usefulness of the decision aid (Chapter 5) and qualitative exploration of barriers and facilitators for its use. The assessment of views and the evaluation of the decision aid were not part of the original IWH/NHRDP Project. They were added specifically for this thesis (Figure 1.2).
1.3 Organization of the thesis

The thesis starts with this introductory chapter which reviews thesis rationale and objectives, the relationship of the thesis with IWH/NHRDP Guideline Implementation Project and the general organization of the thesis.

Chapter 2 presents a review of relevant literature into three distinct sections. The first section outlines the relationship between practice policies, practice guidelines and decision aids, and reviews previous decision aids proposed for LBP. Since the intention of a decision aid is to influence physicians' practice, section 2.2 reviews published conceptual frameworks for changing physicians' practice. Section 2.3 summarizes the findings of published trials that have intended to change physicians' practice.

Chapter 3 describes the first of the three main original research contributions in this thesis, the qualitative assessment of the views of Peterborough EIP's. This was accomplished by participant observation by myself and a anthropologist during a weekend Train the Trainer Workshop organized by the IWH/NHRDP project. Our analysis revealed that the perceived motives and the credibility of the sponsor were seen as crucial for physicians in deciding whether to adopt the guidelines, and that support to handle patient expectations was essential for successful implementation in practice. It was suggested that a chart template and prescription tear-off sponsored by a local group of physicians would be an acceptable and useful decision aid.

Chapter 4 describes the second main research activity, the actual development and dissemination of the decision aid using a participatory approach. On the basis of discussions during the Train the Trainer Workshop, it was felt that successful implementation of guidelines would require a coordinated package of materials and activities. Intensive collaboration of researchers and local EIP's in a working group led to the development of The Peterborough Back Rules for Acute Low Back Pain (four statements seen as key for an evidence based management of the condition) and a
decision aid (The Peterborough Back Rules Template) to be incorporated in the patient chart, containing all the essential elements to support such management. A tear-off portion of the decision aid would serve as printed advice on posture and customizable prescription sheet. The working group also developed a poster, a pocket card, a three minute examination video and a patient information pamphlet. Dissemination activities in Peterborough included three local workshops lead by EIP’s, community wide distribution of the materials, two local Grand Rounds and regular updates during the meetings of the Department of Family Medicine.

Chapter 5 describes the quantitative evaluation of acceptability and perceived usefulness of the decision aid. A survey of primary care physicians in Peterborough showed that most of them were aware of the Peterborough Back Rules, but the acceptability of the chart template was low, 15.9% of survey respondents reported using it with more than half of their LBP patients. Opinions about the usefulness of the chart template were mixed, a third of physicians thought it was useful or very useful. Fifty seven percent of survey respondents reported recent changes in their approach to LBP. All but one of the changes were compatible with The Rules and the chart template.

Chapter 6 presents a qualitative exploration of barriers and facilitators for use of the decision aid. Analysis of comments written by physicians in the survey, transcripts of 12 one-on-one interviews and a focus group suggested that the main reason for the low acceptability of the template was a marked imbalance between perceived need and effort to incorporate the decision aid. Many physicians did not see the need for a chart template in dealing with acute low back pain, so it was perceived as not worth the effort of changing their current office and charting practices to accommodate it. Some physicians chose other Peterborough Back Rules materials as their decision aids and not the chart template.
Chapter 7 integrates the findings of the quantitative and qualitative component of the thesis, in the context of the literature review. The thesis is concluded with a discussion of the limitations of the presented research, and the implications for both improving clinical practice and future research in this field.

The thesis is complemented by a series of appendices. These include a glossary of important terms regarding practice guidelines and the process of changing physicians' practice, and reproductions of all the questionnaires and materials referred to in the thesis.
Bibliography


Chapter 2

Background and literature review
This chapter is devoted to the review of the published literature bearing on two fundamental questions: Why is it important to develop a decision aid for LBP? And, with what purposes?

The goal of the IWH/NHRDP Guideline Implementation Project was to influence physicians' practice to make it more compatible with the scientific evidence summarized in the AHCPR Practice Guidelines (Chapter 1). In this context, the decision aid developed and tested in this thesis should be seen as one possible tool to influence physicians' practice. So it was important to review how decision aids fit in regards to practice guidelines and other initiatives to influence physicians' practice.

Section 2.1 is devoted to the relationship between practice policies, practice guidelines and decision aids, and also reviews previous decision aids proposed for LBP. Section 2.2 addresses the theoretical underpinnings and Section 2.3 reviews the empirical data accumulated in regards to changing physicians' practice. The final section of this chapter (Section 2.4) summarizes the previous sections and highlights the linkages between the key concepts described in this chapter.
2.1. Practising medicine in the 90's. Practice policies, practice guidelines and decision aids.

The last 20 years have witnessed the rapid growth of managed health care in the US, with widespread secondary effects in other Western countries. This rapid growth has been fuelled by rising health care costs and the recognition of wide practice variations that have made unsustainable the old dictum “the doctor is always right” [1]. At the same time there has been an exponential increase in the number of national, regional and local clinical practice guidelines, that can now be counted by the hundreds. The growth of managed care and the guideline movement have clear implications for the professional autonomy traditionally enjoyed by physicians. Faced with these challenges, some physicians and physician organizations have fiercely opposed the changes, and others have rushed to promulgate clinical practice guidelines themselves, in an attempt to regain control and preserve some degree of autonomy [2].

In this section I will discuss how the development and use of decision aids relates to practice policies and practice guidelines. This section borrows heavily from the work of David Eddy [1,3-12], and to lesser extent from the work of Steven Woolf [13-15] and Jonathan Lomas [16-19]. I will use the assessment and management of low back pain to illustrate the main concepts and relationships.

Practice policies

Ideally, clinical decisions should be based on a detailed assessment of harms and benefits of alternative forms of care from the point of view of the patient sitting across the desk [1,3]. This is in a sense the ideal purported by the evidence-based medicine movement [20]. Nevertheless the more elemental reality check shows that this is not, by and large, the way everyday medicine is practised. In fact, as Eddy has pointed out, most medical care is guided by heuristics, by pre-made decision shortcuts learned by
physicians during their training and subsequent practice. These are the practice policies, pre-made decisions about how to handle clinical situations of similar type [4,5]. Practice policies have been at the heart of the practice of medicine for centuries. Practice policies are traditionally maintained and transmitted to new physicians by two main means: medical textbooks and the time honoured tradition of learning medicine by apprenticeship (i.e., by imitating mentors during clinical training). After training, the internalized practice policies are adapted or modified through contact with peers as the physician enters practice in a defined community.

In an ideal world,

"[Practice policies] analyse as many decisions as possible in advance, potentially taking whatever time, resources, and skills are needed to make the most accurate estimates of outcomes of alternative practices, and then pass this information to practising physicians [4]."

In the real world, practice policies have traditionally evolved implicitly and unsystematically as the accepted norms of practice by slowly incorporating scientific findings and experience through successive editions of textbooks, and gradual changes in the consensus of respected mentors and local practitioners in defined settings [5]. Different textbooks may propose different practice policies, and different local settings will evolve practice policies in particular ways.

In the area of back pain there is a long history of conflicting clinical policies, compounded by the fact that health practitioners from many disciplines other than medicine have been substantially involved in the management of this condition for many years.
Practice guidelines

Practice guidelines are practice policies, with two main qualifications: they are developed in a systematic way, and they are officially sanctioned by a health care organization as superior to other practice policies. Practice guidelines, defined as systematically developed statements to assist practitioner and patient decisions about appropriate care for specific clinical circumstances [21], have been promulgated by the hundreds.

According to their method of development, practice guidelines can be classified in four types: 'global subjective judgement', 'evidence-based', 'outcomes-based' and 'preference-based' [5]. 'Global subjective judgement' guidelines rely almost exclusively on the consensus of respected experts and mentors, a good example is the Consensus Conference Program of the National Institutes of Health in the US. 'Evidence-based guidelines' explicitly describe the gathering and summarizing of research evidence, and the strength of each recommendation is tied to the availability and quality of the evidence supporting it. A good example are the practice guidelines developed by the US Agency for Health Care Policy and Research (AHCPR). The 'outcomes-based approach' is also anchored to evidence but it performs a quantitative estimation of the outcomes of different practices. The 'preference-based approach' goes beyond quantification of outcomes by adding quantification of patient preferences for the outcomes. At present, there are hardly any guidelines developed using the latter two approaches. Costs may or may not be explicitly considered in any of the four types of guidelines [5,11].

In the area of back pain, at the time of this writing, there are several national guidelines and dozens of regional and local guidelines. A recent review compared eight national practice guidelines published in English, from the US, UK, Israel, Australia, New Zealand and The Netherlands [22]. According to the authors of the review only two of these eight guidelines, from the US and the UK, explicitly link recommendations with
the strength of evidence [22]. Most guidelines restricted themselves to acute low back pain and have used the evidence-base gathered for the development of the AHCPR guidelines for the management of acute LBP [23].

**Decision aids**

In trying to apply practice policies during everyday practice, physicians have sometimes sought the assistance of decision aids (any medium or object easily available during the patient encounter that is used to help make a diagnostic or therapeutic decision). A number of decision aids can be found in any typical physician's office. They include textbooks, pocket manuals, posters, pocket cards, printed algorithms, check lists, chart forms, etc. Most of these can and have been adapted to computer systems [24]. Most practice guidelines also incorporate elements that could be used as decision aids to help implementation. For example the patient care algorithms included in the AHCPR guidelines [23].

In general terms decision aids function as situational cues to help in implementing a practice policy. They might provide information needed to implement the policy (such as dosage cards and body surface area nomograms), and/or suggest particular assessment or management activities, like the Glasgow coma score [25], the APGAR score [26], or the Ottawa ankle rules [27].

Nursing has a long history of embodying practice policies into point of contact decision aids called protocols. An example is the nursing protocol for the assessment of low back pain reported by Greenfield et al in 1975 [28]. These protocols often take the form of check lists with a limited number of action plans to choose from depending on the clinical characteristics checked, ie they are used for the triage of patients.
**TextBox 1** The relationship between decision aids, clinimetric indexes and clinical prediction rules.

Clinimetric indexes are often used as decision aids to categorize patients into subgroups with a particular prognosis or in need of a particular therapy. In this particular case they could be called "clinical prediction rules" [29].

In discussing clinimetric indexes Feinstein makes the point that almost any clinimetric index can be used as a "practice guideline" by adding a call for action [30]. For example the APGAR scale can be used as a practice guideline by adding the statement "newborns with an APGAR < 7 at five minutes should be kept under closer observation in the nursery".

**Decision aids for low back pain**

A large number of decision aids for acute LBP have been proposed in textbooks and reviews. They vary widely in their format (algorithms, check lists, protocols, management plans, examination routines, etc) and most of them are not explicitly grounded on research evidence but rather reflect the preferences of an expert or group of experts.

Four decision aids for LBP merit special attention since they have been developed and/or tested with rigorous methods. Waddell et al. conducted extensive assessments of the reliability and validity of commonly asked questions and examination techniques that resulted in a structured system for history taking and examination which classifies patients into three groups: nonspecific mechanical back pain, nerve root irritation, and suspicion of underlying systemic disorder [31]. In 1975, Greenfield et al reported the
outcomes of the use by nurse practitioners of a one-page low back pain protocol [28]. The protocol classifies patients into four groups: patients with 'red findings' requiring physician assessment, patients with 'grey findings' suggesting possible nerve irritation, patients with probable urinary track infection, and patients with simple low back strain.

More recently, two systematic efforts to gather and analyse the scientific evidence in LBP have resulted in decision aids. The evidence-based report of the Quebec Task Force for Spinal Disorders included a one page critical path for the management of spinal disorders [32]. It considered two main groupings of patients, those with non-specific and those with specific diagnoses. The AHCPR guidelines included a series of five patient care algorithms. The initial algorithm classifies patients according to the absence or presence of red flags for three kinds of serious conditions: cancer/infection, vertebral fracture and severe neurological deficit.

**Summary**

Practice policies have been an integral part of the practice of medicine for centuries, but traditionally they evolved implicitly and unsystematically. The basic contribution of the practice guidelines movement of the last decade has been a push for explicit, systematic development of practice policies. As a consequence, the practice guideline movement has opened practice policies to the input and scrutiny of third party payers and the public, therefore decreasing physician autonomy. Decision aids have also been a part of the practice of medicine for many years, serving as implicit or overt reminders of a practice policy and helping obtain and organize information necessary for policy implementation. Because of these roles decision aids are a natural adjunct to practice guideline implementation.

As a result of the guideline movement there has been an increased interest in how physicians adopt and change their practice policies, in other words, their practice
patterns and behaviour. To make sense of the often conflicting evidence in the field of changing physicians' practice, the following section reviews the most important conceptual frameworks, models or theories, proposed to explain the process of change in physicians' practice.
Section 2.2 Conceptual frameworks for changing physicians’ practice

The emergence of managed care as a new reality in medicine has fueled an increased interest in active modification of physicians’ practice. A large number of research trials to modify physicians’ practice have been published in the biomedical literature [33] [34]. Most trials have focused on the prescription of tests and treatments as the physicians’ practice behaviours of interest. Some trials have dealt with patient counselling [35], and a few with patient-physician communications [36,37]. Researchers have approached the modification of practice behaviour from different perspectives. Most trials have approached the problem in the context of implementation of practice guidelines [34], transfer of research findings into practice [16], or continuing medical education (CME) activities [38].

Explicitly or implicitly, every trial of interventions to change physicians’ practice makes a series of assumptions regarding the determinants of change in practice behaviour. Several authors have proposed conceptual frameworks to explicate those assumptions, and to facilitate understanding of the process of changing physicians’ practices. In this section I will first describe briefly the best known models of changing physicians practice, then I will compare and contrast the models on the basis of their underlying assumptions. I will conclude with a discussion of the implications of models and assumptions for researchers designing trials to change physicians’ practice. The discussion will be informed by references to broader theories of behavioural change in individuals and groups.
Description of proposed conceptual frameworks

The following paragraphs describe ten conceptual frameworks (or models) proposed to explain the process of change in physicians' practice. The models are named according to the first author of the original publication and described in chronological order to provide a sense of the evolution of ideas in this field.

**Geertsma's model of the change process.** Geertsma, Parker and Whitbourne proposed in 1982 a model of physician change developed from a hypothetical framework and interviews with 66 physicians about 182 changes in practice [39]. They proposed a three-phase model of change --priming, focusing, and follow-up--, although many changes did not involve all three stages. Priming was characterized by dissatisfaction with an aspect of practice generated by events and experiences in practice. Focusing involved becoming aware of an alternative practice behaviour from reading, conferences, or talking with colleagues. During the follow-up stage the physician actively selected information sources to help change. This often entailed singling out specific colleagues or a directed search in professional journals. This step was crucial to the actual occurrence of change.

**Green's PRECEDE model.** Green's model has been one of the most influential models in the field of changing physicians' practice since its publication in 1988. Green et al propose a framework for physicians' practice change based primarily on principles derived from the adult education field [40]. According to this framework, physicians are influenced by a number of factors that determine their practice. The factors are categorized as predisposing, enabling or reinforcing. The model thus implies an ordered process to changing practice with different factors acting on different phases of the process.
Predisposing factors are the cognitive, attitudinal and perceptual characteristics that are part of the physician's personality and previous training. Beliefs in one's self-efficacy and skillfulness are also included here. Enabling factors are the skills and resources needed to make the change, including monetary resources and reimbursements. Lastly, reinforcing factors are those that physicians face once they have tried the new behaviour, such as incentives, support from colleagues, and feedback from patients.

Green et al also proposed that interventions to change physician's behaviour based on the PRECEDE framework should follow the seven principles of adult education [40]: educational diagnosis, the hierarchical principle, cumulative learning, participation, situational specificity, multiple methods, individualization, and feedback.

**Greer's diffusion of medical technologies model.** Greer approached change in physicians' practice from the point of view of the diffusion of innovations, by exploring the adoption of new medical technologies by medical communities. She based her model on interviews with 290 physicians in the US, UK and Canada in the late 80's. Perhaps her model is best illustrated by the following quote [41]:

"...dynamic medical technologies [those which diffuse at the same time that are developed] arrive in local medical communities through individual innovators, are promoted by idea champions and, as the characteristics of the technologies and their results become observable, are assessed by local opinion leaders... Local activity promotes and permits evaluation of achieved results so that a local consensus may result and rapid local diffusion becomes possible."

Greer's model is an adaptation to the medical field of the broader model for the diffusion of innovations championed by Rogers since the 60's [42]. New practice guidelines, and practice policies in general, can easily be seen as a new technology whose adoption is being promoted by the sponsoring organization. The basic diffusion of innovation model includes four main elements: the innovation itself, communication channels, time and the social system. Five characteristics of the innovation might
influence its adoption. These include its perceived relative advantage, compatibility and complexity, the ease with which the innovation can be tried on a limited basis (trialability) and observed by others (observability).

**Fox's theory of learning and change.** Fox, Mazmanian and Putman approached change in physicians' practice from the perspective of learning/continuing medical education [43]. The theory was developed inductively using a grounded theory approach based on interviews with 356 physicians. According to this theory, first published in 1989, change begins when the physician perceives the action of one or more external forces (personal, professional, social). The particular force(s) involved and the clarity with which the physician identifies the force(s) determine whether the physician will change practice and what kind of change will be made. The physician then develops a mental image of the desirable future state and compares it with his/her current skills and knowledge. If the physician feels confident with his or her level of current skills and knowledge, the change will be made right away. If not, the physician will pursue learning to acquire additional knowledge and skills.

**Mittman.** The main assumption in the model proposed by Mittman et al in 1992 is that practice behaviour is the result of a socialization process defined as "a process whereby individuals adopt the norms, assumptions, and beliefs of a group" [44]. Change in physicians' practice is seen as the result of social influences in three kinds of settings: interpersonal one-on-one settings, persuasion/group settings, and mass media.

**Walsh's Systems Model of Clinical Preventive Care.** Walsh et al, in 1992 approached the issue of changing practice from a preventive care point of view [45]. They recognized that in many preventive care situations it is necessary to change patient and physician behaviour at the same time. Their model proposes that behaviours of
patients and physicians are the result of their mutual interaction in the context of a system comprised by interrelated predisposing, enabling, and reinforcing factors. Patient and physician are seen at the same level, and change in their behaviour is a response to changes in the surrounding factors. Thus the model closely approximates the conceptual underpinnings of the IWH/NHRDP guideline implementation project associated with this thesis (see Chapter 1).

**Lomas’ Coordinated Implementation model.** Lomas approached the field of changing physicians’ practice from the perspective of research transfer [16]. He combined ideas from theories of social influence, diffusion of innovation, adult learning, and marketing. He discusses why the passive diffusion and active dissemination models of research transfer failed to explain empirical evidence and in 1993, he proposed a model of coordinated implementation [16]. The model, which has “multiple routes of influence” focuses on the conditions in the environment surrounding the physician and the multiple factors influencing physicians’ practice. As part of the overall practice environment, Lomas highlights educational, administrative, personal, economic and community influences.

**Kanouse’s model.** In 1995, Kanouse et al contrasted two models of physicians’ behaviour while trying to explain empirical data derived from trials of changing physicians’ behaviour [46]. The first one, a model they characterize as ‘naive’ posits that physicians make decisions based on probabilistic weighing of competing outcomes. The second model (which they support) is based on social influence theories and sees physicians’ practice as the result of three sets of social influences: regulatory (external reward-punishment), normative (the physician’s self-perception of the caregiver role), and informational influences. For Kanouse, informational influence is perhaps the best way to characterize research dissemination efforts [46].
Robertson's conceptual framework. Robertson et al combined a number of psychosocial theories of behaviour to reflect on the process of changing physicians' practice [47]. In their 1995 paper they invoke nine psychological and social theories, categorized on three levels (personal, group, and organizational). According to Robertson, "the same strategy may be effective in one situation but not in another, depending on the obstacle to change that is present", i.e. different theories or models should be used in different situations [47].

Grol. Reflecting on his experience with guideline development and implementation by primary care physicians in The Netherlands, Grol has recently combined ideas from multiple fields into several separate approaches to changing physicians' practice [48]. For him each of these approaches may be appropriate for changing practice behaviour depending on the stage of the change process and the setting of the intervention. Three of those approaches (educational/adult learning, epidemiological/cognitive, and marketing) focus on internal physicians' influences, while the other four (behavioural, social interaction, organizational, coercive) focus on external influences. On this basis, Grol proposes a stepwise, cyclical model that can be used by sponsoring organizations to influence/change physicians' practice. Its basic structure is akin to models of quality management and organizational change based on systems theory [49]. The model has five main steps: develop a change proposal, identify obstacles to change, link interventions to obstacles, develop a plan, carry out the plan and evaluate progress.

Comparing the models according to their underlying assumptions

One obvious difference among the conceptual frameworks just described is the method used to derive them. Geertsma, Greer and Fox used an inductive method starting with physicians' interviews about change, innovation and learning [39,41,43]. The other conceptual frameworks have been assembled with theoretical notions from other fields.
In addition to differences in how the conceptual frameworks were derived, there seems to be fundamental differences in regards to the assumptions of each model. After reviewing the individual models, it seemed useful to compare them on the basis of three sets of fundamental assumptions. These include, assumptions about the nature of human behaviour, the nature of change, and the nature of the patient/physician interaction.

Assumptions about the nature of human behaviour. In the following discussion of assumptions about human behaviour, I have borrowed notions discussed by Albert Bandura in his book "Social Foundations of Thought and Action. A Social Cognitive Theory" [50]. In the psychological field, there is not single universally accepted theory to explain human behaviour. There are a number of different theories from diverse perspectives. These lead to several defensible assumptions.

Four basic assumptions about human behaviour are discernable in the conceptual frameworks reviewed above. The first one posits that practice behaviour is the result of rational, conscious and probabilistic decision making, i. e., when faced with a decision the physician weighs the likelihood and desirability of the outcomes of the alternative courses of action [16,48]. Other conceptual frameworks assume that practice behaviour is basically a habit, ie. the result of norms and attitudes learned during a socialization process [44]. Yet other models subscribe to a third, radical behavioural assumption. They posit that behaviour is the result of external incentives and disincentives and that human thoughts and perceptions are essentially epiphenomena greatly relevant to the sense of self, but immaterial in determining behaviour. A fourth assumption, made only in a few of the models, sees the prescription of tests and treatments as the result of a 'system of care'. That is, physicians' practices are the result of the interactions between several actors in a particular context, rather than isolated behaviours of the physician.
Kanouse's 'naive' model, Lomas' 'passive diffusion', Mittman's 'traditional' model, and Grol's 'epidemiological approach', all are strongly based on the assumption that behaviour is rational, ie test and treatments are the result of a reasoned probabilistic decision by the physician. All these models are described by the authors as inadequate in the face of mounting empirical evidence [16,44,46,48].

Fox, Geertsma and Greer developed their models inductively from physicians' interviews and in doing so, they assumed that behaviour is the result of conscious processes that can be readily articulated by physicians [39,41,43].

On the other extreme of the spectrum, Grol's coercive approach clearly subscribes to the assumption that behaviour is the result of external incentives and disincentives, and that physicians' cognitions do not play a significant role [48].

Some models combine assumptions. The PRECEDE model assumes that internal processes, such as beliefs and attitudes can predispose one to change but that the expression of the new behaviour requires external influences in the form of enabling and reinforcing factors (reminders, decision aids, incentives and disincentives) [40].

In a sense, Grol [48] and Robertson [47] propose eclectic utilitarian approaches to changing physicians' practice behaviour, similar to the eclectic utilitarian approach to psychotherapy proposed by Prochaska [51]. The underlying notion of these eclectic approaches is: since we don't know what determines behaviour, let's choose different theories in different situations, depending on their proof of usefulness in similar circumstances. For some, this is not acceptable: you cannot assume one theory now and an opposing theory later. What is needed is a new theory able to explain the apparently conflicting evidence. Bandura's Social Cognitive Theory is such an attempt to reconcile internal and external influences on human behaviour [50].
Assumptions about the nature of change. The second set of assumptions concerns the nature of change. Some conceptual frameworks assume that change is automatic (like an on/off switch). Others assume that change is a stepwise process. Still others assume that change is continuous. Those models that assume that behaviour is rational often conceptualize change as automatic, i.e., once physicians are convinced that there is good reason for a change they will change their behaviour at once. Models that see behaviour as the result of incentives and disincentives, like Grol’s coercive approaches, also tend to conceptualize change as automatic. For example, a coercive model would predict that not reimbursing physicians for a treatment will immediately stop the provision of the treatment.

Perhaps the most common assumption among the reviewed models is that change is a stepwise process. This is clearly the case with Fox’s theory of learning and change, Green’s Precede Model and Geertsma’s model. The stepwise assumption echoes a widely cited theory of the process of psychotherapeutic change proposed by Prochaska. Prochaska proposes four stages of change, pre-contemplation, contemplation, action and maintenance, and eight fundamental psychotherapeutic processes of change used with more or less emphasis on different stages of change [51].

Organizational models, particularly continuous improvement models such as Grol’s, are singled out in assuming and depicting change as an on-going cyclical activity [49].

Assumptions about the nature of the patient/physician interaction. The third set of assumptions discernable across models concerns the nature of the patient-physician interaction. These assumptions have gone unrecognized by most authors. In categorizing the assumptions about the nature of the patient/physician interaction I have adopted the classification proposed by Emanuel and Emanuel [52]. They describe four basic models of interaction: ‘paternalistic’, the physician knows and does what is best for the patient; ‘interpretive’, the physician does what is likely to achieve what the
patient thinks is best; ‘deliberative’, physician and patient negotiate what is best for the patient; and ‘informative’, the physician provides information for the patient to choose what is best for him/her.

Most conceptual frameworks of changing physicians' practice assume the paternalistic model. This is to a certain extent surprising, as many people in North America believe it is an undesirable model of medical care [53]. Most conceptual frameworks could accommodate the interpretive model of patient/physician interaction, but only Lomas' and Walsh’s frameworks seem to embrace the deliberative model. This is evident in the graphical depiction of Walsh’s model [45]. Despite growing appreciation of the power of patient mediated interventions [54] and the increasing emphasis on patient satisfaction in many areas of medicine, none of the reviewed frameworks assumed the informative model of interaction.

**Implication for research in changing physicians practice**

The above description makes it clear that there is no universally accepted conceptual framework for changing physicians' practice. In fact, although the number of published studies of interventions to change physicians' practice has grown exponentially in the last decade [54], we still ignore many factors involved in determining physicians' practice. The reviewed frameworks often hold very different assumptions. In fact some proposed frameworks include opposing assumptions within the same framework, such as Robertson’s model. Lack of clarity in assumptions and frameworks, can only block our understanding of changing physicians' practice.

My discussion has been restricted to conceptual frameworks specifically proposed to explain change in physicians' practice behaviour. It is evident that broader models of human and professional behaviour could also be used to inform the process of changing physicians’ practice. In fact some of the conceptual frameworks discussed here are
adaptations of broader theories, or combinations of theoretical notions derived from other fields of human inquiry.

Clarification of the underlying model and assumptions during the planning of intervention trials to change physicians' practice can be very useful. It can ensure that everybody on the research team holds compatible assumptions so that the trial can be conducted as a coordinated effort. From a scientific perspective, selecting and adhering to a conceptual framework during an intervention trial allows for the results of the trial to be used to test and refine the model.

So, which model is best? The IWH/NHRDP Project used a conceptual framework similar to Walsh's System Model of Preventive Care and Lomas' Coordinated Implementation Model. These were perhaps the best models available when the project was designed. Since then, further advances have been made. At the time of this writing, I believe Grol's stepwise, cyclical model offers the best blueprint for researchers to design intervention trials to change physicians' practice. It would be necessary though, to extent Grol's model to give more relevance to the patient/physician relationship and the role of the patients themselves.

The conceptual frameworks and assumptions discussed in this section will assist in our interpretation of the available empirical evidence on changing physicians' practice summarized in the following section.
2.3 Empirical evidence on changing physicians' practice

This section focuses on the results of interventions to change physicians' practice reported in the biomedical literature. The number of studies is sizable and is not contained under a single heading. Studies are variously described as quality improvement initiatives, guideline implementation projects, research transfer investigations, or evaluations of continuing medical education activities. If one restricts oneself to studies with strong research designs (randomized and other controlled trials) they would add up to about two hundred, with the exact number depending on the particular criteria used to select them [33,34,38].

Many summaries of this body of literature are available, with more than 20 systematic reviews published over the last 10 years [54]. Some reviews concentrate on particular physician behaviours, such as prescribing [55] or using laboratory tests [56]. While others have dealt with particular change interventions, such as using opinion leaders [57] or physician profiling [58], still other reviews have focused on the use of computer systems to deliver interventions [24].

Given the large number of studies and reviews, the "state of the art" will be summarized here by building on the most comprehensive and highest quality (using Oxman's criteria [59]) systematic reviews of educational interventions to change physicians' practice. Four systematic reviews were selected [38] [34] [33] [60]. Two of them were published by one group of investigators, but had somewhat different emphases [33] [38]. Since all four reviews included trials published up to 1994, the following discussion is supplemented with review of selected randomized trials published from 1995 up to April, 1998. The additional studies were identified by searching Medline and the Research and Development Resource Base on Continuing Medical Education at the University of Toronto using the search strategy published by Davis et al [38].
Four systematic reviews

What follows is a brief comparison of the methods and findings of the four reviews based on the criteria to judge scientific quality of overviews proposed by Oxman et al [59]. The stated aim of the reviews reflect the variety of perspectives in approaching change in physicians' practice. Two reviews purported to analyse studies of guideline implementation, one intended to review CME interventions, and the other included "interventions to improve professional practice". The review by Grimshaw et al [34] asked whether practice guidelines can change practice, while the other three aimed to contrast the effectiveness of different types of interventions.

All reviews made use of extensive electronic database searching and citation tracking. Wensing et al [60] also performed a manual search of 26 journals. As a group, the four reviews report on a total of 177 controlled studies of changing clinical behaviour judged to represent 'best available evidence'. Individual reviews included 61 to 102 studies. Thirteen studies were included in all 4 reviews, 40 studies were included in three reviews, and 80 studies were reported only in one of the four reviews.

None of the reviews reported detailed appraisals of the methodological quality of individual trials. Oxman et al state that they scored methodological quality using a six point scale, but the published article does not include the results of such assessment [33]. All four reviews used the type of research design to select what was considered 'best evidence studies' for detailed review. All four reviews considered at least indirectly the impact of different settings, populations and interventions. Davis et al [38] were most explicit in considering these elements and the extent to which interventions were in fact tailored to the situation (i.e., performed a needs assessment).

Three of the reviews attempted to categorize trials according to the type of intervention. All three found it difficult and to some degree arbitrary [33] [38] [60]. Grimshaw et al
[34], took a different approach and provided a succinct description of the actual intervention, study setting and results of each study for the reader to appraise.

In summarizing trial results, only Grimshaw et al provided a semi-quantitative estimate of effect size. Reviewers concluded that the marked heterogeneity among studies precluded meaningful pooling of effect sizes. Davis [38] and Wensing [60] summarized results across groups of trials (e.g. trials of a particular kind of intervention) by reporting the proportion of trials showing statistically significant changes in physicians' practice.

Despite the differences in design and reporting of the four systematic reviews, for the most part they produced compatible conclusions:

- It is possible to induce change in physicians' practice with non-coercive methods, but actual changes are often moderate. In many trials changes were observed in only a few of several practices of interest. Significant changes in patient outcomes were seen less often. Assessments of cost-effectiveness are for the most part lacking.

- There are no 'magic bullets' [33]. Available evidence suggest that no single method for changing physicians' practice is better or will work in all circumstances. Because of the many variations and inadequacies in reporting it is not possible to make definitive conclusions about relative effectiveness of the interventions. Multifaceted and intensive participatory interventions seem more effective on average, but are more expensive. Interventions relying exclusively on distribution of printed materials seem to have little effect on average, but even they may change physicians' practice in special circumstances.

- Three of the four reviews recommend greater attention to identifying the particular barriers to change in the setting under consideration in order to tailor
interventions accordingly. This kind of situational analysis/educational diagnosis was variously termed needs assessment, market research, or simply identification of barriers.

What has been left out of the reviews?

Because the reviews selected only RCT’s and other “best evidence” trials from the biomedical literature, they have excluded a large number of interventions proposed and tested by non-biomedical researchers. These other interventions often include organizational and management strategies, such as administrative regulations, physician profiling [58], pre-certification, credentialing, formulary restrictions and the like. They won’t be reviewed in detail in this thesis either, since the aim is to develop and evaluate physicians’ acceptability of a decision aid. Judging from a few studies retrieved during our searches and the widespread adoption of such interventions by managed care organizations in the US, some of these interventions seem to be very cost effective, at least in the short term. For example, Zaat et al. showed in a controlled before-and-after study that elimination of certain tests from laboratory request forms reduced overall test use by 18% [61]. In a more recent trial, researchers in British Columbia showed that a single letter notifying primary care physicians of their status as high prescribers of regulated analgesics decreased prescriptions by 25% [62].

Our literature search 1995-1998 disclosed several additional trials. A number of these trials confirmed previous studies reporting changes in physicians’ practice with use of computerized reminders in settings where computers are an integral part of routine care [63][58]. Two new trials reached conflicting conclusions about the effectiveness of opinion leader strategies [64] [65]. They are described along with other opinion leader trials in a subsequent section.
Studies based on broader conceptual frameworks which go beyond the physician to consider patient and environmental factors are starting to appear. Katon et al reported the successful effects of an education and support program for managing depression which included direct patient involvement [66] [67]. Interestingly, this research group also reported a failed attempt to influence management of depression with a fairly intensive, but physician-restricted educational program [68]. In another study, Ockene et al showed significant improvements in physician nutrition counselling by a combination of change in the structure of office practice and training. A counterproductive effect was suggested in the group of physicians that was exposed to training without restructuring of the office practice [35].

Focus on educationally influential physicians

Since the involvement of local EIP’s was a key element in the IWH/NHRDP Project, it is important to assess in more detail the empirical evidence available about this approach. Thomson et al have recently published in electronic media (Cochrane Library) a systematic review of randomized trials of interventions based on local opinion leaders/educational influentials for changing provider performance or health care outcomes [57]. They found six randomized trials, four of which focused on physicians’ behaviour. The other two trials involved changing the behaviour of nurses. Three of the four trials were reported by Stross et al in the early 80's [69] [70] [71]. Thomson et al concluded that five of the six trials demonstrated some improvement in practice behaviour for at least one outcome variable; of three trials that measured patient outcomes, only one [72] achieved an impact of practical importance [57].

Our search for additional trials using opinion leaders published between 1995 and 1998 added two trials; one reported success in changing physicians’ practice [64], and the other failed to produce statistically significant changes [65]. Soumerai et al reported the results of a randomized trial of an opinion leader-based intervention in 37
community hospitals in Minnesota [64]. Local opinion leaders conducted group discussions, revisions of protocols and clinical pathways, and informal consultations about the management of acute myocardial infarction in 20 intervention hospitals. Control hospitals received mailed performance feedback only. The number of patients prescribed aspirin and Beta-blockers increased 13% and 31% in absolute terms, compared with -3% and +18% in the control group. There were no statistically significant differences in use of thrombolysis or lidocaine between intervention and control hospitals. On the other hand, Elliott et al. failed to show improvements with an opinion leader-based multifaceted intervention in cancer pain management in six Minnesota communities (three intervention, three control). In fact their main outcome - patient pain intensity scores-- increased slightly in the intervention communities [65].

So what do we know about changing physicians' practice

The bulk of the empirical evidence reviewed above demonstrates that change in physicians' behaviour with educational interventions is not easy, but it is possible. Change is for the most part gradual and small to moderate in size. It is less clear which are the crucial factors determining success or failure.

Several reviews have assumed that success is a function of the type of intervention, and consequently have tried to establish which are the effective interventions. To a large extent these efforts have been stalled by the overwhelming variability in contexts, behaviours, and interventions present in published studies [33]. Reviewers tentatively concluded that printed educational materials are for the most part insufficient to change practice, and that intensive, participatory, and multifaceted interventions seem more effective on average.

Assuming that success is a function of the type of intervention ignores the principle of educational diagnosis [40] and the considerable evidence from the fields of adult
education, diffusion of innovations and marketing that points to the need for different interventions in different settings and for individuals in different stages of the change process (See section 2.2 above) [48]. Based on these notions it seems clear that what determines success is the fit between the situation and the intervention, rather than the use of a particular kind of educational intervention. Davis et al. have provided some empirical evidence in this regard by showing that studies which performed more thorough needs assessments were most often successful [38].

A key element of any educational intervention, is its content. Assuming that success is a function of the type of intervention tends to ignore the importance of the actual nature of the intended change. Grilli and Lomas have shown that physicians' compliance is higher for recommendations concerning procedures with low complexity and higher trialability [73].

Perhaps a more fruitful approach to summarizing the empirical evidence on changing physicians' practice is to define several commonly encountered situations and then analyse the interventions that seem useful in those situations. An example would be to assess studies purporting to reduce excessive drug prescriptions by general practitioners in community settings. One difficulty in implementing this approach is that descriptions of the setting of interventions in published articles are often incomplete. In fact, the assessment of some important setting characteristics might require use of qualitative research methods [74] [75].

An example may help clarify the point. Barnett et al [76] and McAlister et al [77], both reported on randomized controlled trials of the use of computer-generated reminders to improve the management of hypertension in general practice. Barnett et al reported a large effect on physicians' practice, while McAlister reported no statistically significant effects. On first inspection these trials seem to have found contradictory effects of the same intervention. Further reading discloses that Barnett's study took place in a prepaid group practice which had been using electronic patient records for 10 years.
before the trial; reminders flashed automatically in the physicians' screen. On the other hand, McAlist er et al studied separate community practices using traditional paper patient records. The computerized feedback consisted on mailing physicians printouts of the computer analysis of study-specific patient forms provided by the physicians themselves. Are these studies really comparable?

If we are to disentangle the “variation in the characteristics of targeted professionals, the interventions studied, the targeted behaviours and the study design” [33], researchers and reviewers ought to pay much more attention to description and analysis of the context of practice. The conceptual framework proposed by Grol [48] and Rogers’ diffusion of innovation principles [42] could provide a theoretical foundation to systematically appraise the important characteristics of the situation. A better integration of conceptual framework, situational analysis and the actual tailoring of the intervention is urgently needed to advance our knowledge in changing physicians’ practice.
2.4 Summary of Chapter 2

In this chapter we learned that decision aids can be conceptualized as tools to influence physicians' practice. Our review of the literature suggests that in most instances everyday medical practice is based on implicit practice policies (heuristics of how to deal with particular patient conditions). Decision aids are a vehicle to embody those practice policies to make them available right where they are needed (at the point of contact with the patient).

In trying to situate the development of decision aids and the IWH/NHRDP Project itself in the context of changing physicians' practice, Section 2.2 looked at the theoretical models proposed to explain the process of change in clinical practice. We reviewed many different models, and noted that they are based on different assumptions about the nature of human behaviour, the nature of change, and the nature of the patient-physician relationship. The bottom line is, there are not unequivocal answers as to which assumptions are warranted and more empirical testing of the proposed models is needed. For the time being the model proposed by Grol [48] is perhaps the best blueprint to build intervention trials to change physicians practice.

Finally Section 2.3 summarized evidence from about 200 published trials of interventions to change physicians' practice. The key take home messages from this section were:

- It is possible to influence physicians' practice with educational/informational activities, but changes are often modest and hard to achieve.

- There are not 'magic bullet' interventions that will work in every situation. What matters is the fit between the situation and the intervention.
On average intensive multifaceted interventions seem to work best, but even small scale interventions such as distribution of printed materials may be effective if used in the appropriate setting.

Any intervention trial to change physicians' practice should first perform a detailed situational analysis of the context of the practice of interest to tailor an intervention that will fit the situation and induce the purported change.

The decision aid developed and tested in this thesis was one of a series of tools and activities used in a multifaceted intervention to influence the management of low back pain by primary care physicians in Peterborough, ON (Chapter 1). Some of the above notions about changing physicians' practice were already evident at the onset of the IWH/NHRDP project, but others evolved afterwards.

Aware of some of the above concepts, the IWH/NHRDP Project first assessed the views and preferences of local EIP's in regards to guideline implementation and decision aids (Chapter 3 next), and then collaborated intensively with the EIP's to develop the decision aid as described in the forthcoming Chapter 4.
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Chapter 3

Qualitative Assessment of Local Views About Practice Guidelines
In this chapter I will describe a detailed assessment of the views and preferences of local Educationally Influential Physicians (EIP's) about guideline implementation. The EIP's perspectives were gathered using qualitative research methods. This assessment was important to judge what kind of decision aid and educational strategies would be appropriate for guideline implementation in Peterborough. The EIP's views about guidelines were assessed during a Train the Trainer Workshop convened as part of the IWH/NHRDP Guideline Implementation Project (Chapter 1). Even though the assessment did not focus on decision aids, it is detailed here since it is an essential diagnostic step and a major contribution of my thesis.

As outlined in Chapter 1 the identification and selection of EIP's resulted in all five local rheumatologists, and four family physicians participating in a workshop near Toronto on March 21 to 23, 1997. Participants were offered continuing medical education credits for their participation and their accommodations for the weekend were free. The local medical librarian and several members of the research team also participated in the workshop. At the beginning of the workshop participants were told that I was interested in gathering their views about guidelines to be included in my thesis and consent was obtained for audio-taping of workshop sessions.
3.1 Methods

Methodological Approach

Our approach to investigate the views of workshop participants was mostly inductive/interpretative. It was based on ethnography [1] and grounded theory principles [2]. Data gathering consisted of participant observation by two observers (myself and a collaborator with an anthropology background) and group discussions (large group workshop sessions and two small focus groups). The central analysis process was the feedback and interaction between the observers. The results of this process were compared/contrasted against audio-tapes recorded during the workshop, and the answers to attitude questions asked as part of the workshop to allow triangulation to strengthen the validity of the study.

As we approached observation fieldwork during the workshop, we attempted to clarify observers' pre-conceived assumptions and expectations about participants' views. This constitutes a deviation of traditional Grounded Theory principles which state that you should approach fieldwork without any pre-conceived notions/ideas [2]. In our opinion this idealized principle ignores the fact that most people often have pre-conceived, although perhaps not fully conscious ideas about a situation. Since these underlying assumptions would undoubtedly influence our interpretation of participants' views we considered it preferable to state them upfront so that the reader would be able to assess the impact of our pre-conceived assumptions on our analysis of participants' views.

Four main assumptions emerged from our preparatory discussion:

- Participants' views are individual phenomena, but many of them are developed in a social context through interaction with peers, mentors, patients, etc [3]. The
interaction with others helps articulate (make conscious) some of the "unconscious" views.

- Participants' views have different depths, from public, politically correct opinions to unconscious 'gut reactions' which may be expressed non-verbally.
- Participants' views might relate to different parts of the concept, process and/or content of the guidelines. They may vary from a general rejection of the concept due to fears of decreased physician autonomy to a belief that one or more recommendations are wrong.
- Judging from the participants' background, those involved in the workshop fall into three main sub-groups: local primary care physicians, local rheumatologists (consultants), and the hosts / research team. Individual views might have a particular shade/tone depending on participants' membership in any of these groups.

From these four premises the tentative classification/coding scheme shown in Table 3.1 was deducted and discussed prior to the workshop. The explicit definition of this scheme allowed comparison with study findings to assess to what extent concepts were in fact empirically "grounded" or were a re-elaboration of pre-conceived assumptions.
<table>
<thead>
<tr>
<th>Axis 1. Individual and group views</th>
<th>Axis 2. Depth of views</th>
<th>Axis 3. Target/content area of views *</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual view</td>
<td>Public domain view</td>
<td>About purpose/goal of guidelines</td>
</tr>
<tr>
<td></td>
<td>(opinions)</td>
<td></td>
</tr>
<tr>
<td>Views shared by rheumatologists</td>
<td>Views verbalized among close friends only</td>
<td>About motives underlying guidelines</td>
</tr>
<tr>
<td>Views shared by Family physicians</td>
<td>Conscious but usually not verbalized views</td>
<td>About the process to develop guidelines</td>
</tr>
<tr>
<td>Views shared by researchers</td>
<td>Unconscious views expressed by body language only</td>
<td>About the actual recommendations</td>
</tr>
<tr>
<td>Views shared by all the physicians</td>
<td></td>
<td>About the effects guidelines may have</td>
</tr>
</tbody>
</table>

Table 3.1. Axes for initial coding of the views of local EIP's about practice guidelines. These axes were derived from examination of observers pre-conceived assumptions before fieldwork.

* Each of the components of axis 3 may refer to guidelines in general or to the LBP guidelines in particular.
Workshop organization

The workshop took place over a weekend in an informal environment in a small hotel two hours driving distance from the physician's community. The workshop consisted of three informational large group sessions and two break-out sessions on Saturday, followed by three large group planning sessions on Sunday (Figure 3.1). For the large group sessions participants and researchers were seated at four round tables in a large room. During the session "Dialogue on Practice Guidelines" participants used touch pads to answer anonymously a series of questions prepared by the research team to probe attitudes towards guidelines. On Saturday afternoon participants were divided into two small groups with one facilitator and one observer each (both were researchers) to discuss issues related to implementation of the guidelines, using case-scenarios developed by the researchers as prompts. These small groups functioned in fact as "focus groups" [4].
Friday, March 21, 1997
6:30 - 9:30 p.m.
Welcome Dinner & Introduction

Saturday, March 22, 1997
8:30 - 8:45 a.m.
Introduction

8:45 - 9:45 a.m.
Dialogue on Practice Guidelines

10:00 - 12:30
Key Components of the AHCPR Guidelines

12:30 - 1:30 p.m. - lunch

1:30 - 3:00 p.m.
Educationally Influential Physicians - Roles, Tools & Resources

3:00 - 3:30 p.m. - refreshment break

3:30 - 5:30 p.m.
How do we put it all together? Part I

5:30 - 6:00 p.m.
Review of Today ... Setting the Stage for Tomorrow

7:30 - 10:30 p.m.
Dinner with participants, facilitators and partners

Sunday, March 23, 1997
9:00 - 10:00 a.m.
How do we put it all together? Part II

10:00 - 11:00 a.m.
Factors that Promote/Hinder Guideline Implementation

11:00 - 11:15 a.m. - refreshment break

11:15 - 12:15 p.m.
Evaluation & Summary

Figure 3.1 General organization of the ‘Train the Trainer Workshop’ for local EIP’s.
Two observers conducted participant observation during the workshop with emphasis on the session “Dialogue on Practice Guidelines” and the 2 small groups sessions on Saturday afternoon “How to Put it All Together Part I”.
Observers and observation plan

The two investigators conducting participant observation had different, but complementary roles. My role as workshop participant was more active by virtue of being a physician and a rheumatologist, closer to Gold's type "participant as observer" or Adler's "active member" [5]. The other observer, had a less involved role because she is not a physician (she is an anthropologist) and was introduced as a researcher working on a related project. She was closer to Gold's "observer as participant" or Adler's "peripheral member role" [5]. Both observers were well positioned as "acceptable incompetents" [6], since they had no direct experience with the practice of medicine in the community.

Before the workshop, observers reviewed the research questions, approach and assumptions of the study and developed a general plan to conduct observations. During workshop sessions observers paid attention to overheard conversations and non-verbal cues from participants. Observers made an effort to sit with different participants at different sessions. Interaction during the social events (lunches and dinners) was devoted to gathering information about participants' background, family, interests; and to assess the degree of social familiarity among participants. During breaks, observers tried to introduce issues about guidelines into informal conversations. Two parts of the workshop were highlighted as particularly relevant to the research question -- the opening session on "Dialogue on Practice Guidelines" and the small group sessions/focus groups on Saturday afternoon ("How do we put it all together? part I").

To protect participants privacy and still allow tracking of their respective opinions and roles I will refer to them by fictitious names. Frank, Mary, Nancy, James and John are the local rheumatologists. Mark, Robert, Scott and Thomas are family physicians. John did not participate in Saturday activities, Thomas did not stay for the Sunday sessions.
Participants seemed to be enjoying themselves and interested in the workshop. The atmosphere during most sessions was very relaxed and cordial. We noticed that some participants had close links with each other. We did not sense any overt rivalries.

Analysis

The Analysis was conducted in four phases of induction/inference:

- Writing of extended field notes. Initial hand-written field notes taken during the workshop were transcribed and edited separately by each observer in the form of informative incidents in computer text files. An informative incident is any event occurring during the workshop that in the opinion of the observer gives information relevant to the research question. Each informative incident record consisted of a unique identifier, the context/setting of the incident, the actions-reactions of the actors during the incident (often dialogues), observer’s thoughts and feelings during the incident, and a blank column to write coding/analysis ideas (see example in Figure 3.2).

- Individual review of field notes. Each observer went over their own field notes, comparing them to the preliminary coding axes listed in Table 3.1. During this preliminary review of the field notes new codes and themes started to emerge. To facilitate this process informative incident records were cut off in separate pieces of paper and used as cards that could be shuffled and re-shuffled. “Memoing” also started during this phase [7].

- Review and discussion of coding. Observers met to compare emerging themes with each other and with the tapes of the workshop. I then proceeded to a detailed analysis of common themes using informative incident maps. An example of a informative incident map is shown in Figure 3.3. Emerging themes
were then challenged to test their robustness (see "Challenging and connecting the themes" below).

- Putting it all together in a congruent description of the views. After further shuffling and re-shuffling of informative incidents observers met to discuss successive drafts and made revisions together. This process was helped by a directed review of literature relating to the emerging themes. Since jokes were often used by participants during the workshop, published works on the role of jokes as communication tools were also reviewed [8].
Frank: "Sometimes guidelines may feel kind of insulting".
Nobody responded.

<table>
<thead>
<tr>
<th>ID</th>
<th>SETTING</th>
<th>ACTION/REACTION (DIALOGUE)</th>
<th>MY THOUGHTS AND FEELINGS</th>
<th>CODING/ANALYSIS NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 22/03/97 9:10</td>
<td>Whole group. Evans room. Question 1</td>
<td>Frank: &quot;Sometimes guidelines may feel kind of insulting&quot;. Nobody responded.</td>
<td>Because they curtail the independent practice of medicine. Perhaps not a majority view. Funny nobody said anything.</td>
<td>Individual Close friends Consequences</td>
</tr>
</tbody>
</table>

**Figure 3.2** Example of the informative incident records used during analysis of the views of EIP's about guidelines. Each of these records included incident identification, the site/context of the incident, the actors and their actions during the incidence (often dialogue), the observer thoughts and feelings, and a blank column for coding an analysis ideas.
Figure 3.3 Example of the informative incident maps used during analysis of the views of EIP's about guidelines. The numbers on the vertical axis of the map represent each of the informative incidents. Each incident is connected to related concepts, themes or participants with a straight line. These maps were a useful tool to see imbrications and relationships among themes.
3.2 Findings

Emerging Themes

The following themes emerged during the initial review of field notes. They were named using descriptive metaphors often generated by the participants themselves.

Credibility and 'the forces of evil'. A good part of the initial dialogue on guidelines focused on the issue of credibility and its relationship to sponsorship of the guidelines. As one workshop participant put it, "There is a difference in the trust you put in the guidelines according to their source". It was apparent from the beginning that some sponsors raise a lot of suspicion. One of the researchers labelled them 'the forces of evil' and the term was embraced by the whole group as a metaphor to underscore the questionable motives of some organizations to sponsor guidelines. But who are 'the forces of evil'? In general, participants cited private enterprises: those who could make money from modifying or limiting the way physicians practice medicine. This included drug companies, third party payers, and 'bad employers'. In regards to LBP the Worker's Compensation Board (WCB) was clearly identified as one 'force of evil'. In another part of the workshop, law courts and professional disciplinary bodies were also labelled as 'forces of evil'. Besides motives, participants also discussed the geographical location/cultural context of the sponsor. For example, American guidelines were deemed not relevant to Canadian settings because "they respond to American market-forces". A third issue was whether the experts sitting on the guidelines panel were credible.
Text box 2

Jokes as communication and soul searching tools

Jokes during the workshop were often used as metaphors to communicate and to question physicians' own assumptions. The following are a few of the most laughed at jokes during the seminar and my interpretation of the basic incongruence underlying them. *

*Well with so much medical literature you either read the literature or practice medicine, but you can't do both*

A cry of desperation about feeling overwhelmed by the medical literature and the conflicting demands on physicians' time.

-- "The results of the survey show that patients liked the way they were treated, but they were not very satisfied with treatment"

-- "Of course, they are not satisfied with treatment because there is none"

I could not illustrate the notion of therapeutic nihilism any better.

*Well, you know, idiopathic means the doctor is an idiot and the patient is pathetic*

Blatant statement of the pitfalls of diagnostic nihilism.

* Jokes are communication. According to Vogel's model, humour happens when someone sees or says or thinks of something which he thinks is incongruous, creates a text around it, and then shares this text with someone else. The other person "gets" the joke if he/she can see the incongruence behind it [8].
Transparency and the role of evidence. A good deal of the researchers' presentations focused on the incorporation of results of published research into guidelines. One of the researchers proposed the concept of transparency, i.e. guidelines are credible if the sponsorship and the process of going from evidence to recommendations is clear and untainted. Although the participants didn't reject this metaphor of 'guideline transparency', they didn't embrace it as enthusiastically as 'the forces of evil' metaphor. When asked directly (using the touch pad), most participants agreed that guidelines based on evidence had more weight than guidelines based on opinion or experience. One comment from Mary: "Most guidelines are based on evidence and up to date" and one from Scott: "Guidelines based on evidence are valid here and in lower Chile" supported the relevance of evidence. However, despite these comments, the majority of the energy and discussion revolved around the role of the sponsor and 'the forces of evil'.

From 'cook-book medicine' to 'physicians' demeaning'. Cook-book medicine was a term introduced by the researchers in one of the questions about attitudes posed to the participants during the session entitled Dialogue on Practice Guidelines. Although it was never explicitly defined, it seemed that participants used it to describe an activity that is performed always the same way, as when following a recipe in a cook book, with little room for creativity and adaptation to the circumstances of the case at hand. When asked directly, most participants disagreed that guidelines promote 'cook-book medicine', but later in the workshop it seemed clear that participants feared that 'the forces of evil' would use guidelines to impose a 'cook-by-the-book' approach. A related concept is that of physician's demeaning (a sense of threatened identity or undermined status). Most participants seemed to share the view that applying guidelines/algorithms may feel demeaning. Demeaning was the term used by Mark when we were examining examples of checklists for use during the consultation. It is related to Frank's assertion: "We like to think that we are reasonably competent, and
don't miss too many things", and to the participants' rejection of the idea of following an algorithm with the patient "as if you didn't know how to practice medicine".

The negative side of the guidelines. Very few of the comments expressed during the workshop referred explicitly to the negative side of the guidelines. Several comments implied that guidelines could be used against physicians by third party payers (to deny payment) and in court or by disciplinary bodies. On the other hand, a few participants mentioned that the guidelines could be used for the benefit of physicians in court and to keep 'the forces of evil' under control.

From 'patients' expectations don't matter' to spending half the workshop discussing them. When early in the workshop participants were presented with the statement: 'Guidelines which do not meet my patients' expectations are too difficult to use on a regular basis', four of them disagreed, 2 were unsure and 2 agreed. The results of this anonymous vote would suggest that physicians think patients' expectations matter little. Nevertheless, the ensuing group discussions during the workshop were marked by many comments related to patients' expectations. A few quotes:

"Every patient has bad experiences, they have heard of a friend or relative who started with LBP that turned out to be cancer or led to paralysis. Since this is a real concern; ruling out red flags is a good idea."

"If someone wants an X-ray [and you don't order it], they will go to another care provider and get it."

"Laying on of the hands on the back doesn't help to diagnose the condition but helps the patient."

Moreover, the patient was drawn at the centre of the diagram used by Frank to summarize the discussion in his small group (Figure 3.4).
Figure 3.4  Drawing used by one of the EIP's to summarize the ideas discussed in his small group session. The figure at the centre represents the patient. The right upper corner represents the physicians divided into "converted" and "unconverted". The hard hat represents the work site. The male and female figures represent physiotherapists, chiropractors and other health care professionals. The bottom left corner represents the media.
‘Preaching to the converted’ and the unknown views of the unconverted. Our concern that people who agreed to attend the workshop already had more positive views towards the guidelines was very clearly articulated by Frank during the report of his small group session (Figure 3.4):

"[in the upper right corner] there are two different groups of docs. First of all there are the converted, symbolised by this cross, ...and the unconverted. These unconverted physicians never come to grand-rounds, would never attend small group learning workshops. We rarely see them. They are a relatively small number [in our community]."

WCB’s ‘kiss of death’. A recurring theme during the workshop was a feeling of rejection against the Workers’ Compensation Board (WCB). In repeated occasions participants stated the displeasure or hatred patients feel towards WCB, and in several instances they admitted to their own uneasiness towards the WCB. This was nicely summarized by a participant:

“WCB sponsorship would be a kiss of death for the guidelines.”

This ‘kiss of death’ metaphor sums up the negative feelings about the WCB, identifies it as one of ‘the forces of evil’, and asserts that WCB sponsorship would discredit the LBP guidelines. WCB was purposely excluded by Frank from Figure 3.4 because: “as soon as you put the WCB stamp on something... your chances of success plummet down.”

The ‘unglamorous back pain’ and ‘therapeutic nihilism’. A number of incidents seemed to reflect the physician’s belief that s/he cannot really do much to help the patient with low back pain. At some point this concept was related to comments about the lack of glamour of LBP. This therapeutic nihilism is reflected in comments like the joke that “the patient is not satisfied with the treatment because there is none”; Mary saying that she would rather get the LBP patient over with so she can see patients with rheumatoid arthritis, lupus, or osteoporosis whom she can help; or Frank saying: “The physicians’ role is to tell the patient what she/he doesn’t have and then the patient
should take responsibility for their own back." This belief seemed quite strong among the rheumatologists.

About 'diagnostic nihilism' and the 'importance of a name'. The following joke underscores a view we called diagnostic nihilism (We cannot know the cause of the pain in most patients, so there is no diagnosis):

One researcher said: 'when I presented the guidelines program to the medical directors of the Canadian WCB's they wouldn't accept a diagnosis of idiopathic or unqualified back pain.'
A family physician: 'well you know, idiopathic means the doctor is an idiot and the patient is pathetic.'
Everybody laughed loudly.

Diagnostic nihilism may be interpreted as a position of healthy skepticism, nevertheless there is a down side. Participants often referred to the detrimental effect of 'no diagnosis' on the patient, and thus proposed to agree on one diagnostic term (acute back sprain or mechanical back pain) to be used by all the practitioners in the community as part of the local guidelines. A common diagnosis could also provide reassurance to the practitioner.

Challenging and Connecting the Themes

In challenging the above emerging themes we first focused our attention on individual themes by asking the following questions (based partially on Miles & Huberman):

• Can this theme be fruitfully divided into two or more concepts?
• Are the primary concepts really supported by field notes?
• Is there a better way to combine the constituent concepts?
• Can this theme be incorporated into a larger, more meaningful concept?
• Have we overlooked important themes contained in the field-notes?
The result of this process was some splitting and hierarchical re-arrangement, as illustrated in Table 3.2. The right hand column in Table 3.2 is in fact an alternative framework/structure emerging from the data. One interesting concept not included in the initial themes is that the media has a lot of credibility in patient's eyes as a source of health information. Another concept picked up at this stage was participants' suspicion that revenue issues may influence the decision making of some physician's about guidelines.

For a second challenge, we contrasted the emerging framework on the right hand column of Table 3.2 with the recordings of participants' reports of the focus groups. We asked: Do the concepts discussed in those reports fit in the framework? Can the emerging framework accommodate those reports? In general the emerging structure held true, but it became evident that, perhaps due to the structure and objectives of the workshop, a lot of the views were discussed in the context of implementation rather than in expressing opinions about the adequacy of specific guideline recommendations. So it seemed useful to group several of the views as views about implementation.
<table>
<thead>
<tr>
<th>THEME</th>
<th>PRIMARY CONCEPTS</th>
<th>LARGER CONCEPT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credibility and the forces of evil</td>
<td>Credibility, Sponsorship, Locality, Private companies, Third party payers, Disciplinary bodies</td>
<td>Credibility, Forces of evil</td>
</tr>
<tr>
<td>Transparency and the role of evidence</td>
<td>Transparency, Expert opinion, Research evidence</td>
<td>Credibility</td>
</tr>
<tr>
<td>From cookbook medicine to physician's demeaning</td>
<td>Cook-book medicine, Against creativity, Demeaning</td>
<td>Consequences of guidelines</td>
</tr>
<tr>
<td>The negative side of the guidelines</td>
<td>Used against physicians, Used by physicians</td>
<td>Consequences, Used by the forces of evil</td>
</tr>
<tr>
<td>Patient expectations</td>
<td>Fears, Demands for tests, Dissatisfaction with treatment, Empathetic reaction, Things that help but are unscientific, Impact of the media, Compensability, Secondary gain, Myths</td>
<td>Over-arching theme related to guideline implementation</td>
</tr>
<tr>
<td>Preaching to the converted and the unknown views of the unconverted</td>
<td>Converted physicians, Unconverted</td>
<td>Implementation, One caveat of this study</td>
</tr>
<tr>
<td>WCB's kiss of death</td>
<td>Negativity against WCB, WCB = force of evil, Sponsorship</td>
<td>Forces of evil, Credibility</td>
</tr>
<tr>
<td>Unglamorous back pain and therapeutic nihilism</td>
<td>Lack of glamour, Therapeutic nihilism</td>
<td>Implementation</td>
</tr>
<tr>
<td>Diagnostic nihilism and the importance of a name</td>
<td>Diagnostic nihilism, Peer rejection, Importance of a name</td>
<td>Implementation, Important for the patient</td>
</tr>
<tr>
<td>Impact on physicians revenue (additional theme)</td>
<td>Non important for oneself, Maybe for colleagues</td>
<td>Implementation</td>
</tr>
</tbody>
</table>

Table 3.2 Challenging and deconstructing the emerging themes about EIP's views. This list exemplifies a number of sub-themes and larger concepts explored while challenging the initial emerging themes.
The third challenge consisted of contrasting the emerging structure with our four initial assumptions (see also table 3.1). On doing this we realized that two participants were involved in just a few informative incidents and we did not hear much about their views, other than their implied approval of other participants' comments. Also, since we had few opportunities for one-on-one exchanges, most of the recorded incidents reflected views usually verbalized among colleagues with just a glance at deeper views. The assertion that views would relate to different parts of the concept, process and/or content of the guidelines turned to be the most useful one, with some adapting to reflect the importance of sponsorship. We found it hard to attribute particular views to a specific group with perhaps three exceptions: 1. On the issue of credibility, the research team focused on the 'How', i.e. the process of arriving at the guidelines; while the community physicians focused in the 'Who' and 'Why'. 2. Family physicians mentioned the importance of empathising and supporting the patient several times. 3. The feelings of "therapeutic nihilism" seemed stronger among rheumatologists, perhaps because they are referred complicated patients.

After some iteration of these challenges it became apparent that a good way to illustrate the key relationships is Figure 3.5. Regarding the views of community physicians about guidelines, it seems that there are three main sets of 'actors' and three main processes. The 'actors' are the 'forces of evil', patients and their expectations, and the physicians. The 'forces of evil' are those individuals or organizations with vested interests in the use of certain tests or drugs, or in the entitlement of compensation. The first process is adopting the guidelines, and here the crucial concept is credibility of the sponsor, based on the 'Who' and 'Why' rather than the 'How' of the guidelines. Association with the 'forces of evil' can be very discrediting of the guidelines (in particular the association of the WCB with the LBP guidelines). The second process is implementing the guideline, making it work in the circumstances of your practice, and here most views attested to the importance of patient and/or community expectations. The third process is facing the consequences of the guidelines, the negative consequences, mostly of 'the forces of evil' using the guidelines, and the positive
consequences of using the guidelines to resist 'the forces of evil'. A physician’s experiences during the second and third processes undoubtedly lead to questioning or modifying the decision to adopt the guidelines.
A model of participants' views

Figure 3.5  Graphic summary of the three main processes and three main actors related to the views of local EIP's about practice guidelines.
3.3 Summary of Chapter 3

We have presented the results of using an ethnographic and a modified grounded theory approach to explore the views about LBP guidelines held by local EIP’s participating in a workshop. We have presented some raw data and many steps of the research process in detail to allow the reader to judge the appropriateness and limitations of this approach. It is clear that we can say nothing about the views of physicians who did not participate in the workshop. Chances are non-participants would tend to have more negative views about guidelines, in comparison to the ‘converted’ physicians attending the workshop. It is also clear that this exploration is fairly superficial (because of the limited time and context of the workshop) and tells us mostly about opinions shared with colleagues, but little about deeper views.

With these caveats in mind we believe the following conclusions are justified:

- Participants views can be meaningfully summarized in regards to three main interrelated processes: adopting the guidelines, implementing the guidelines and facing the consequences of the guidelines (Figure 3.5).
- On adopting the guidelines the crucial attribute is their credibility and it depends mostly on who sponsors the guidelines and why. Certain sponsors, particularly private businesses and the WCB may have a negative effect on the adoption of the guidelines by physicians. Other factors which add credibility to the guidelines are the degree to which they are based on research evidence, the personal credibility of the experts involved in guideline development and the general transparency of this process.
- On implementing LBP guidelines the crucial elements are patients and their expectations.
- On facing the consequences there are fears of demeaning and punitive action by third party payers and disciplinary bodies.
The findings of this qualitative assessment of views about LBP guidelines could be used fruitfully to pinpoint areas that require attention during guideline dissemination and implementation to gain the approval of local physicians. It seems that sponsorship by a credible body and provisions to help handle patient expectations are very important for adoption and implementation of LBP guidelines in this community.

The assessment of EIP's views about practice guidelines presented here was a preliminary step for the development of the decision aid and other materials to support guideline implementation. The development process itself and the dissemination of the final product are the subject of the next chapter.
Bibliography


Chapter 4

Development and Dissemination of the Decision Aid
In response to the views and preferences of local EIP's (Chapter 3), the emphasis shifted from implementation of the US AHCPR guidelines to implementation of a local initiative. The local initiative became eventually known as 'The Peterborough Back Rules for Acute Low back Pain', hereafter referred to as 'The Rules'. In accordance with the participatory philosophy of the project, researchers and local EIP's collaborated in a working group, The Peterborough Back Rules Working Group. The working group took on the development of The Rules, the decision aid subject of this thesis, and other accompanying materials. The decision aid took the form of a check list/chart template (The Peterborough Back Rules Template) with a postural advice/prescription tear-off section. The additional materials included a one page reproduction of The Rules, a poster and pocket card, a physical examination video and a patient information pamphlet eventually named 'Back Advice'.

The development of the decision aid was a negotiated process between the needs and preferences of the local EIP's and the need to fairly reflect existing scientific evidence. My role was to coordinate this process. I prepared and modified the drafts of the decision aid and associated materials. I participated in all the meetings of the working group, and several meetings with ad hoc subgroups to discuss and agree on modifications to the decision aid. I also coordinated the pre-testing and review of the decision aid.

This chapter reports on the development and dissemination of the decision aid. It has three sections. The first section describes the key developmental stages. The second section presents the final decision aid and the rationale for each of its components. The third section summarizes activities undertaken to disseminate the decision aid. Figure 4.1 provides an overall picture of the process. For the purpose of clarity, development and dissemination activities are described in separate sections, even though many of these activities occurred concomitantly.
Key Stages in the Development and Dissemination of the Decision Aid

DEVELOPMENT
- Negotiating 'The Rules'
- Drafting the decision aid
- Pre-testing and review
- Approval and production

DISSEMINATION
- Grand Rounds
- Family Medicine meetings
- Local workshops
- Distribution & Outreach

Figure 4.1 Time line of the key stages and important milestones in the development and dissemination of the decision aid.
4.1 Key stages in the development of the decision aid

The development of the decision aid started officially during the Train the Trainer Workshop convened by the IWH/NHRDP Project in March 21-23, 1997. It concluded with the community wide distribution of the final version on October 7, 1997. Although the development was fluid and gradual, four key developmental stages are discernable (Figure 4.1).

The first stage involved negotiation with the local EIP’s of the general working plan and the content of The Rules. This phase started at the Train the Trainer Workshop and concluded with the approval of the text of The Rules on May 23, 1997. The second stage comprised the iterative drafting of the decision aid. It started with some of my preliminary ideas generated before the Train the Trainer Workshop and concluded with the preliminary release of the decision aid during local workshops in June 16 and 24, 1997. The third stage involved testing and review of the decision by local practitioners, the research team and several external reviewers. It started with the local workshops in June and concluded at the beginning of September. The fourth and last stage involved proof-reading and minor changes in the layout of the decision aid. It started with approval by the working group on September 16, 1997, and concluded with the official release of the final version on October 7, 1997.

Negotiating the general approach and the content of The Rules

Three factors were determinant in deciding the general approach to develop the decision aid. The first one was the baseline assessment of local practice, which showed that local physicians were for the most part adhering to the AHCPR guidelines already and that patients were somewhat dissatisfied with the information about LBP they received from their physicians (Chapter 1). The second factor was our assessment of EIP’s views, which suggested that for the decision aid to be well-accepted it had to be
sponsored by a credible professional body and provide strategies to help manage patient expectations (Chapter 3). The third factor was a strong preference expressed by EIP's during the Train the Trainer Workshop. Local EIP's liked and supported a previous regional initiative to implement guidelines for the use of X-rays in acute ankle injuries, The Ottawa Ankle Rules [1]. They wanted the local effort to implement LBP guidelines to follow similar strategies to the ones used by the Ottawa Ankle Rules.

**General approach.** Considering these three factors it was decided to capitalize on the impetus generated during the Train the Trainer workshop and support the local EIP's in implementing a local adaptation of the AHCPR guidelines, The Peterborough Back Rules for Acute Low Back Pain, instead of trying to implement the AHCPR guidelines as such. Since EIP's liked the Ottawa Ankle Rules so much, the local initiative was modelled after them.

The Ottawa Ankle Rules consist of two unambiguous statements describing the physical findings necessary to justify ordering an ankle radiographic series or a foot radiographic series in patients presenting to the emergency room after an acute ankle injury [1]. The materials used for testing and dissemination of the Ottawa Ankle Rules include a poster and pocket card depicting graphically the relevant examination findings, a one page checklist/case report form, and a patient information sheet.

The working group decided that a package of materials similar to the one used to implement The Ottawa Ankle Rules should be developed. The working group divided into subgroups with different persons taking the initiative in developing the various materials. I was in charge of coordinating the development process. The original proposal included the following materials:

- Check list for the physician with prescription tear-off section
- Poster and/or card in Emergency and examination rooms
- Patient exercise sheet with hand written prescription of number of repetitions
• Computer program for small group learning and as back-up resource (this refers to software previously developed by the Institute for Work & Health).
• Patient education pamphlet to support in-office advice and education. Modified from a British booklet entitled The Back Book [2].
• Physical examination video for the physician
• Patient video, to be chosen from several existing videos

The check-list, prescription tear-off and exercise sheet were eventually combined and became the evidence-based in-office decision aid subject of this thesis.

**Content of The Rules.** Based on their analysis of the AHCPR guidelines and local circumstances, EIP’s proposed ten key messages for The Rules (the right column in Table 4.1). Working with these key points and the format laid out by the Ottawa Ankle Rules, I developed a first draft for The Rules. I deemed it essential to reduce the number of key points to a more manageable number combining two or more related ideas in a single “rule” (The Ottawa Ankle Rules contain only two key statements). The other important addition was the listing of specific questions and examination maneuvers constituting the focused approach promoted by The Rules. The listed questions and examination techniques were modified from the AHCPR guidelines. Local EIP’s were very active in providing feedback and revising several versions of The Rules. After several iterations the final wording of the four Peterborough Back Rules was approved by the Working Group on May 23, 1997. The approved Rules read:

I. Perform a focused history and physical as outlined.

II. If there are no red flags or neurological findings the patient has Mechanical Back Pain. There is no need for X-rays or laboratory tests.

III. Encourage activity (*Hurt* does not mean *Harm*). Acetaminophen, non-steroidal anti-inflammatory and manipulation may help the patient during the first month.
IV. Ninety percent of patients will be much better in 4 weeks. Recommend early return to work and contact the work site for accommodation if needed.

Table 4.1 presents schematically how these four statements are grounded in the AHCPR guidelines and the initial key messages proposed by local EIP’s. A reproduction of the actual rules in their final format is included in the appendix.
**AHCPR guidelines abstract**

The initial assessment ... focuses on the detection of "red flags"

In the absence of red flags, imaging studies and further testing are not usually helpful during the first 4 weeks

Relief of discomfort can be accomplished most safely with nonprescription medication and/or spinal manipulation

While some activity modification may be necessary during the acute phase, bed rest >4 days is not helpful and may further debilitate the patient

Patients recovering from acute low back problems are encouraged to return to work or their normal daily activities as soon as possible

Low-stress aerobic activities can be safely started in the first 2 weeks of symptoms... if low back symptoms persist, further evaluation may be indicated.

Patients with sciatica may recover more slowly, ...

Within the first 3 months of low back symptoms, only patients with evidence of serious spinal pathology... can be expected to benefit from surgery.

With or without surgery, 80% of patients with sciatica recover eventually.

Nonphysical factors (such as psychosocial or socioeconomic problems) may be addressed...

---

**The Peterborough Rules**

I. Perform a focused history and physical as outlined

II. If there are no red flags or neurological findings the patient has Mechanical Back Pain. There is no need for x-rays or laboratory tests

III. Encourage activity (Hurt does not mean Harm). Acetaminophen, non-steroidal anti-inflammatories and manipulation may help the patient during the first month

IV. Ninety percent of patients will be much better in 4 weeks. Recommend early return to work and contact the work site for accommodation if needed

---

**Key messages from EIP’s**

A good history and a short organized physical are enough to make decisions in the initial visit

If there are no red flags give the patient a diagnosis of acute lumbar sprain or mechanical back pain (a name ... will increase patient and physician confidence)

Explain the difference between hurt and harm

Encourage the patient to avoid inactivity and de-conditioning

Patients need to be reassured of the benign natural history of LBP and take responsibility for their own backs

Recommend early return to work - "you don’t need to wait until you are 100% better to go back to work"

Establish work site contact

Help the patient learn about pain management

Give specific advice about exercise

Encourage work sites to be more flexible and accommodating

---

**Table 4.1** The relationship between the AHCPR guidelines abstract, The Peterborough Back Rules for Acute Low Back Pain (The Rules), and the key messages initially proposed by local EIP’s.
Drafting the decision aid

Preliminary ideas for the decision aid. We started by collecting a number of existing LBP decision aids and educational materials. Along with those materials I proposed an idea for a possible decision aid. It was a pocket card with a simplified version of the AHCPR guidelines initial assessment algorithm on one side, and a list of red flag symptoms and signs on the other (Figure 4.2). During the Train the Trainer Workshop, EIP's reviewed all the educational materials, including the prototype of the pocket card I had prepared. This initial idea was discarded as it did not find a good reception among EIP's. They had already referred to the "demeaning" effect of following an algorithm (Chapter 3).

Following the deliberations during the Train the Trainer Workshop I developed a draft for a check list and prescription tear-off using as a model the Rourke Baby Record (copyright 1985 by James and Leslie Rourke, Goderich Ontario, 1996 revision). The Rourke Baby record was selected as a model since primary care physicians in the working group believed that this or similar baby records were very well accepted and incorporated into the practices of many physicians across Canada. In April, 1997 I circulated the draft shown in Figure 4.3 to the local EIP's who had volunteered to help develop the decision aid. The idea was later discarded since it failed to engage them (none of them answered my request for comments and suggestions).
Figure 4.2 Initial idea for a decision aid, November 1996. This idea for a pocket card was drafted without input from the EIP’s and presented to them during the Train the Trainer Workshop of March, 1997. The front of the pocket card (upper panel) is a simplified version of the AHCPR guidelines initial assessment algorithm. The back of the card (bottom panel) lists red flag findings according to the AHCPR guidelines.
### Peterborough Back Rules checklist and prescription tear-off.

<table>
<thead>
<tr>
<th>Name:</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age:</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date</th>
<th>First visit</th>
<th>Second visit (approx. 4 weeks later)</th>
<th>Third visit (approx. 6 weeks after onset)</th>
</tr>
</thead>
<tbody>
<tr>
<td>History</td>
<td></td>
<td>Any changes? Explore psychosocial and work-related factors.</td>
<td>Any changes?</td>
</tr>
<tr>
<td>Onset, duration, location (sciatica), modifying factors, past problems, previous therapy.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current limitations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Red flags (NIFTI): Neurological deficit Infection Fracture Tumour Inflammation</td>
<td></td>
<td>New red flags?</td>
<td>New red flags?</td>
</tr>
<tr>
<td>Physical</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>_ Palpation of back _ Straight leg raise Left ___ Right ___ _ Knee reflexes _ Ankle reflexes _ Toe dors flexion _ Foot sensory exam if sciatica</td>
<td></td>
<td>Pain behaviour</td>
<td></td>
</tr>
<tr>
<td>Advice and therapy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lab / X-ray not needed for mechanical back pain. Possible fracture: X-ray; bone scan at 10 days Tumour Infection: CBC, ESR, Bone scan, X-ray</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>_ Activity _ Exercise _ Return to work _ Manipulation</td>
<td></td>
<td>Consider imaging or laboratory studies.</td>
<td>Patient is evolving into chronicity. Consider referral to intensive therapy.</td>
</tr>
<tr>
<td>Meds:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Name: ____________________________ Yo are suffering from mechanical back pain, 90% of people will feel much better within 4 weeks. I have specifically ruled out any serious illness such as a fracture or infection. The key to your recovery is self-management of pain and keeping as active as possible. I would recommend:  

_ Healthcoid _ Massage _ Back support  
_ Walking _ Swimming  

Medications:  

Return to ___ modified or ___ regular work. ___ as soon as possible or within ___ days.  

Signed Dr. ____________________________

### Figure 4.3 Second idea for a decision aid of, April 1997. This idea was developed following the model of the Rourke Baby Record (copyright 1985 by James and Leslie Rourke, Goderich, Ontario), but it did not find a good reception among EIP's.
The Peterborough Back Rules Template. After the two failed attempts described above, on April 28, I received an alternate proposal for a "guideline template" from one of the EIP's that was derived from the AHCPR guidelines. I followed the lead of this EIP on developing successive drafts of the chart template. On June 6 the NIFTI acronym was incorporated in the chart template. NIFTI was proposed at the Train the Trainer Workshop as a mnemonic to remind physicians of the red flag conditions that ought to be considered in evaluating a patient with acute low back pain: Neurologic deficit, Infection, Fracture, Tumour and Inflammation.

After further iterations, the preliminary version of The Peterborough Back Rules Template shown in Figure 4.4 was ready for pre-testing and review.

The Postural Advice/Prescription tear-off. Mostly because different people became involved in its development, the tear-off section of the decision aid evolved separately from the chart template. My idea of April, 1997 contained an small tear-off component at the bottom (Figure 4.3). The first draft of The Peterborough Back Rules Template generated by the EIP did not have a tear-off component.

Eventually, the prescription tear-off was combined with the proposed exercise sheet into a Postural Advice/Prescription tear-off. The original plan negotiated with the local EIP's called for one of them (a family physician) to involve the local physiotherapy community in the design of an exercise sheet. It should be pointed out that the researchers were sceptical about the evidence supporting the effectiveness of any particular set of back exercises. The EIP made several failed attempts to engage local physiotherapists and no exercise sheet was available for the first local workshop conducted on June 16.

On June 18, the EIP suggested a card with bullet points of advice on the front and some exercises on the back. I responded with a draft for a half letter-size postural advice/prescription sheet that could be attached as a tear-off section to The
Peterborough Back Rules Template. The text of this sheet was based on The Rules, The Back Book [2] and the AHCPR guidelines. The figures on the initial draft were photocopies of an existing exercise sheet (copyright The Canadian Back Institute and 3M laboratories). The EIP obtained feedback from several local physiotherapists and the sheet was quickly revised, so that the version reproduced in Figure 4.5 would be ready for pre-testing starting at the second local workshop held on June 24.
Figure 4.4 Version of The Peterborough Back Rules Template released in June 1997. This version was pre-tested by volunteer primary care physicians and reviewed by co-investigators in the IWH/NHRDP Project and external reviewers.
Prescription for: ____________________________

Date: ______________

1. Try to maintain your daily activity as close to normal as possible. Ask your employer for temporary accommodation if you need it.

2. Use ______________ up to ___ times a day to control the pain in the meantime.

3. Begin walking, exercise bike, or swimming as soon as possible. Start with ____ min the first day. Add ____ min each day until you reach up to 30 minutes of activity without stopping.

4. On the back of this card you’ll find advice on postures and exercises that will help you.

_______________________________ MD

Please remember:

- You have Mechanical Back Pain. The pain is not due to spinal damage. There is no need for X-rays or laboratory tests.

- Ninety percent of people with Mechanical Back Pain are much better in 4 weeks.

- To recover faster you have to keep active and strengthen your muscles.

- Of course it hurts, but you really can help yourself. Remember, hurt does not mean harm.

- If you are not better in ______ weeks, come back to my office.

---

**Figure 4.5** Version of the Postural Advice/Prescription tear-off released in June, 1997. This version was pre-tested by volunteer primary care physicians and reviewed by co-investigators in the IWH/NHRDP Project and external reviewers.
Pre-testing and review of the decision aid

To refine the decision aid we obtained feedback through three fora. The local workshops conducted in June, 1997, a review of the decision aid by 'experts' and from pre-testing by several local primary care physicians.

Local workshops. The workshops of June 16 and June 24 were lead by local EIP's and included a demonstration of working up an hypothetical case using the chart template. The template seemed well received. Workshop evaluations handed in by 16 of 19 attendees showed that five of them strongly agreed and eight agreed that the template would assist them in record keeping (two neither agreed nor disagreed and the other one did not answer this question). Four participants strongly agreed, nine agreed and one neither agreed nor disagreed that the decision-aid would assist them to manage their patients with acute low back pain. During the workshop there were several comments about the need for extra space to record findings. When asked which of the information presented during the workshops was more valuable to them, five of the 16 physicians mentioned the template.

Review of the decision aid by experts. To make sure that the decision aid fairly reflected available scientific evidence, the co-investigators in the IWH/NHRDP Project and four external reviewers recognized for their expertise in the assessment and management of LBP reviewed the decision aid in detail. The external reviewers were Dr. Hamilton Hall (Medical Director, Canadian Back Institute), Dr. Lily S. Cheung, Dr. Lisa Doupe (PWR Health Consultants Inc.), and Alice Dong (The Wellesley Hospital and Chair of the Ontario medical Association Advisory Group on Work and Health). Dr. Gordon Waddell, in the UK, and Dr. Alf Nachemson, in Sweden, were also contacted for feedback, but were unable to review the decision aid.

The main issues raised were:
The use of a grid to prescribe work-restrictions sends a strong negative message and there is very little scientific evidence supporting any set of particular restrictions. Perhaps what is needed is a tear-off for the workplace detailing accommodation needed by the worker.

The symptoms and examination sections should include the same items as The Rules and the examination video, preferably in the same order.

Inflammation is not a red flag condition according to the AHCPR guidelines. Why was it included here?

The evidence supporting the effectiveness of a particular set of back exercises is weak at best [3]. Chances are some exercises may be helpful for some patients and different ones for others. It may be preferable to frame the exercises as pain control techniques that a patient can try to see if they help with his/her pain.

Need more space for the physician to report on findings and recommended actions.

The terms 'pain behaviour', 'psychological' and 'socioeconomic' need more description and explanation.

Pre-testing by local primary care physicians. After some modifications in response to the above comments, we conducted pre-testing of the decision aid by volunteer primary care physicians. I approached the physicians who attended the June workshops and two of the EIP's approached colleagues working in the same medical practice. We asked these physicians to use the decision aid regularly in their practices for four weeks and provide feedback. The pre-testing was done during the summer, in August 1997. It was difficult to contact physicians as many of them were either getting ready for or
already on vacation. Others were just back from vacation and trying to catch up. Eventually three of the physicians I contacted accepted to pre-test the decision aid. The EIP’s gave copies of the decision aid and accompanying materials to seven other physicians.

To obtain feedback I visited the three physicians in their offices four weeks later. The other seven physicians contacted through the EIP’s did not provide formal feedback in the pre-testing. The main issues raised by the three physicians were:

- The template should clarify what the boxes are for, i.e., there is a need for some instructions on how to use it. For example, should the boxes be checked to indicate that you covered that part of the exam, or only if there are abnormal findings?

- The template should provide room to record follow-up visits and the eventual outcome. There is also need for extra room to record patient identification and documentation of diagnosis and treatment.

- One of the physicians felt that the template did not help him, since he already has a set routine for the assessment of LBP that contains most of what is included in the template. He also felt the tear-off should incorporate flexion exercises.

**Final approval and production of the decision aid**

After discussing the comments provided during pre-testing and review of the decision aid with the EIP who proposed the original Template and with my supervisor, I proposed to the working group a revised version which incorporated the following changes:
• The work-restriction and current limitations grid were eliminated. Direct questions to assess limitations were included.
• The layout of the left column of the template was changed to follow the same order as The Rules and the video, and to provide more description of management strategies and extra room for recording of findings.
• More detailed questions to address psychosocial issues based on the New Zealand Acute Low Back Pain Guide recommendations for assessing psychosocial 'yellow flags' [4].
• Room and recommendations for second and third visits (if needed) to be added in the back of the template.

The changes were discussed during a meeting of the working group on September 16, 1997. The psychosocial questions were further modified since it was felt that they were too direct and perhaps tended to 'blame the victim'. They were phrased in a more neutral tone. The other proposed changes were approved without objections.

After this final approval, the decision aid underwent minor changes in wording, spelling and layout and was ready for production and distribution. Due to prohibitive printing costs the Postural Advice/Prescription was distributed as a separate sheet, and not as a tear-off of the chart template as originally intended. The final version of the decision aid is reproduced in Appendix B.
4.2 Final decision aid and rationale for its elements and configuration

This section describes in detail the components of the decision aid and the scientific rationale behind each of them. At the end there is a brief description of the other Peterborough Back Rules materials. Reproductions of these materials can be found in Appendix B.

The final decision aid consists of The Peterborough Rules Template and the Postural Advice/Prescription tear-off (Appendix B). The template is a check-list meant to be incorporated in the patient's chart as a permanent record of the visit. The intention is to walk the physician through the essential elements of history and physical proposed in The Rules and facilitate recording of findings. The Postural Advice/Prescription tear-off is to be handed to patients with mechanical back pain during the first visit. It contains instructions to help self-manage the pain.

The decision aid contains four distinct sections. The first one deals with the general approach to the patient with acute LBP at the initial visit (in particular mechanical back pain), and is printed in the left column in the front of the template. The second one is a reminder of red flag conditions and is printed in the right hand column in the front of the template. The third section deals with a second and third follow up visits (if needed) and is printed on the back of the template. The fourth section is the Postural Advice/Prescription tear-off.

General approach to the patient with LBP

The left column on the front of the template addresses the general approach to the patient with acute low back pain and management of the most common type of pain, mechanical back pain. It contains four headings: 'Symptoms', 'Examination', 'Pain Behaviour/Pyschosocial', and 'Assessment & Management'.

“Symptoms” lists the five questions considered essential in the initial primary care assessment of a patient with acute low back pain as stated in The Rules: Pain onset and duration? What makes it worse or better? Worse in back or leg (sciatica)? Activity limitations? And past back problems? It also contains a few questions to tap into patients beliefs, occupational disability and recovery expectations.

“Examination” lists the elements of the primary care screening exam recommended by The Rules and depicted in the “Three-minute Examination Video”. For convenience it is divided into standing, lying and sensory examination. The ‘standing’ examination includes back inspection, palpation for tenderness (palpation may not help in diagnosis of LBP, but it was felt essential for its “therapeutic” effect), assessment of range of movement of the back and testing of the strength of the lower extremities (heel walk, L4,L5; rise on toes, S1). The “lying” examination includes straight leg raising testing; assessment of hip rotation (for pain), great toe dorsi flexion and knee (L4) and ankle reflexes (S1). In accordance to the AHCPR guidelines, the sensory examination was deemed necessary only in cases of sciatica or other symptoms suggesting neurological compromise. It includes testing sensation on medial malleolus (L4), first web space (L5) and lateral foot (S1).

The “Pain Behaviour/Psychosocial” section was based on the body of evidence reviewed in the New Zealand Psychosocial “yellow flags” guidelines [4]. The first four items explore the four individual-level factors predictive of poor outcomes according to the New Zealand guidelines: the belief that back pain is harmful and potentially disabling, fear-avoidance behaviour, tendency to low mood and social withdrawal, and the expectation that passive treatments rather than active participation will help. The last two items are reminders for the physician to explore the family and work environment.

The “Assessment & Management” section includes seven recommendations geared to patients with mechanical low back pain (acute low back pain in the absence of red flag
conditions). These are minor re-wordings of AHCPR guideline statements. The emphasis is on active self-management of the symptoms. Treatments not recommended by the guidelines, such as muscle relaxants and narcotic analgesics are not listed. The statement about early return to work is grounded on reviews of literature performed by the Institute for Work & Health [5,6,7].

**Reminder of red flag conditions**

This section is located in the front of the template within a box that runs along the right hand side. It starts with a directive to rule out red flag conditions followed by three headings ‘Symptoms’, ‘Examination’ and ‘NIFTI Management’. It also provides room to record any red flags that may be present. The mnemonic NIFTI stands for Neurological, Infections, Fracture, Tumour and Inflammation. Progressive neurological deficit, spinal infections, vertebral fractures, and spinal tumours are all red flag conditions according to the AHCPR guidelines. Inflammatory disorders are not explicitly referred to as red flag conditions in the AHCPR guidelines, although ankylosing spondylitis is discussed in the guidelines in regards to red flag findings. Inflammation was considered important by the working group and it completed the acronym NIFTI, which was felt useful to remind physicians about rare conditions that should be considered when assessing a patient with acute low back pain.

‘NIFTI management’ lists the investigations recommended by the AHCPR guidelines algorithm in case of suspicion of particular red flag conditions.

**Follow up visits**

The back of the template deals with a second and a third visit for the same episode of LBP if required. It is organized in two columns, the recommended assessment and
management plan is on the left, and there is room to record findings on the right. The second visit is tentatively recommended 4 to 6 weeks after pain onset since the AHCPR guidelines implied that after 4 weeks there is a need for further assessment. At this stage investigations and referral for physiotherapy might be appropriate [8].

During the third visit, more than 6 weeks after pain onset if not improved, the template calls for active interventions since the patient is potentially evolving into chronicity, and referral to multidisciplinary/occupational clinic might be appropriate [5,6].

**Postural Advice/Prescription tear-off**

This portion of the decision aid is meant to be separated by the physician from the template at the visit and handed to patients with mechanical back pain after the physician writes in some patient-specific indications. The tear-off is printed on both sides of half letter-size thick paper so that it may be folded to the size of the prescription pads commonly used by physicians in the community. Folded in this way it consists of four panels.

The first panel is a customizable prescription which encourages the patient to keep activity as normal as possible. It also provides room for the physician to prescribe one medication for pain control, an aerobic exercise quota, and advice for a return visit if the pain does not improve. The recommendation to maintain activity as close to normal as possible is based on the study by Malmivaara et al which showed that this advice was preferable to a recommendation for bed rest or a recommendation for back exercises [7]. The recommendation for an aerobic exercise quota is transcribed from the AHCPR guidelines [8].

The second panel, just below the first one, includes five statements to reinforce the benign nature of the problem and the need for keeping active/returning to activity as
soon as possible. The primary modification in relation to the AHCPR guidelines, is the addition of a name (mechanical back pain), rather than calling this situation idiopathic LBP. Our assessment of the views of educationally influential physicians suggested that a name would help fight diagnostic nihilism and reassure patients and physicians about the benign nature of the problem (Chapter3). The alternative term “acute lumbar sprain” was discarded since it could lead to a search for an injury/accident and would imply 100% recovery with ice and rest (commonly accepted treatments for acute sprains).

The statement on prognosis was based on the literature reviewed for the AHCPR guidelines and on the study of the natural history of LBP in primary care by Coste et al [9]. The third and fourth statements encourage activity and make the point that “hurt does not mean harm” to reduce fear and avoidance behaviour [10]. They are minor modifications of statements contained in “The Back Book” [2]. The last statement introduces advice on postures and pain control techniques contained on the back of the tear-off.

The third panel (on the back) illustrates ways to decrease pain while conducting usual activities such as lifting, standing, sitting, and sleeping. All drawings are by Helena Pereira. The fourth panel, also on the back of the tear-off depicts a series of extension exercises meant to be tried as methods to decrease the pain. The balance of available scientific evidence does not support the effectiveness of any particular set of exercises [3]. The reason for recommending these positions is to encourage patients to experiment on their own and regain some measure of control over the pain.

**Other Peterborough Rules materials**

In addition to the decision-aid, the working group developed a poster/pocket card, a physical examination video, and “Back Advice” (a patient pamphlet). These materials
are reproduced in the appendix.

The Poster (11" x 17") and pocket card (4" x 6") contained the same information in slightly different format. They include the four Peterborough Rules and the list of questions and examination maneuvers referred to in the first rule. The same information was also made available in a letter size paper sheet. The back of the sheet included additional details on the goals and management recommended by the AHCPR guidelines. This sheet was mailed by local rheumatologists to primary care physicians as part of the consultation reports for patients with LBP.

The examination video was produced by two of the primary care physicians in the working group. It follows the general layout of a video depicting a three minute examination for LBP patients by Barry J. Miller, MD distributed by the LBP collaborative directed by the Boston-based Institute for Health Improvement. The video is meant to illustrate a basic screening examination that is sufficient for most patients with acute LBP seen in primary care. The examination maneuvers depicted in the video are listed in the decision aid and The Rules themselves. They are compatible with the history and examination recommended by the AHCPR.

The Back Advice pamphlet is a reduced version of The Back Book with minor modifications (copyright The Stationery Office, UK). The original booklet was large (20 pages) and included some words uncommonly used in Canada. The research team secured permission from the authors and editors of the booklet to use portions of the original text in the Back Advice pamphlet. The overarching theme of the pamphlet is reassurance and encouragement to pursue a self-directed, gradual activity program. Its format and illustrations were chosen to make it patient-friendly and easy to photocopy.
4.3 Dissemination of the decision aid

Dissemination activities of the IWH/NHRDP Project (Chapter 1) included a number of community wide initiatives. In this section I will describe briefly those activities directly leading to dissemination of the decision aid among primary care physicians in Peterborough and surrounding townships. These activities included two Grand Round presentations at the local hospital, regular updates about the Project during the monthly meetings of the local Department of Family Medicine, a total of three local workshops leaded by EIP's and outreach visits to primary care physicians who could not be reached through the above activities or through the EIP's. There were also one-on-one informal encounters of local physicians with EIP's, but these were not recorded systematically.

Grand Rounds

The research team organized two presentations at Grand Rounds on May 23, and November 14, 1997. The first presentation intended to raise general awareness about LBP and the Peterborough Back Rules initiative. It was presented by Dr. Hamilton Hall, Medical Director of the Canadian Back Institute, who is regarded by many local physicians as a national LBP expert. He discussed the assessment and management of back pain in a session attended by approx. 100 physicians, physiotherapists, occupational therapists and chiropractors. A second presentation at Grand Rounds on November 14, 1997 was lead by Dr. Claire Bombardier, the principal investigator in the IWH/NHRDP Project, to provide local clinicians with an update on project accomplishments and to reinforce the messages of The Rules and the decision aid.
Meetings of the Department of Family Medicine

The IWH/NHRDP project was first introduced to the medical community in Peterborough during a meeting of the local department of Family Medicine in September 1996 and subsequent brief regular updates kept family physicians informed of key developments in the project. It was through these updates, that physicians were invited to local workshops and kept abreast of the development of the decision aid. The decision aid was officially released during the meeting of the Department of Family Medicine held on October 7, 1997.

Local workshops conducted by EIP’s

Local EIP’s conducted three workshops to discuss in detail the aims and content of The Rules and to demonstrate the use of the decision aid by working out an hypothetical case. Two workshops, conducted on June 16 and 24, 1997 were open to all physicians. One additional workshop in September was devoted specifically to physicians working in the Emergency Department at the Peterborough Civic Hospital.

Outreach visits to distribute the decision aid

Plans for community wide distribution of The Rules and associated materials were discussed with EIP’s during the meeting of the Working Group on September 16. It was decided to distribute the binders at a Family Medicine meeting, and to reach non-attending physicians through local EIP’s contacts, or personal outreach visits. During the official release of the decision aid on October 7, 52 binders containing the decision aid and the other Peterborough Rules materials were distributed after EIP’s briefly described the intention of the binders and decision aid. Binders for other 27 physicians
were delivered through local EIP's and the Peterborough Civic Hospital medical administrator.

The remaining 17 binders were distributed through outreach visits conducted by me to cover the total distribution list of 96 physicians (this total includes the four primary care EIP's). I travelled to Peterborough on three occasions between October 14 and 28, 1997. I managed to meet seven of the 17 physicians in person for about 5 minutes each. During these brief visits I went over the contents of the binder and remarked that the Peterborough Back Rules template was to be used to record the encounter with patients with LBP and that the Postural Advice/Prescription sheet was to be handed to patients with mechanical back pain during the first visit. I spoke on the phone with four additional physicians. This allowed only for a brief introduction to the general intention of The Rules and to tell them that their binders will be handed in to their receptionists. It was not possible to contact the remaining six physicians, so I handed in the binders to their receptionists.
4.4 Summary of Chapter 4

In this chapter we have reviewed the key stages in the development and dissemination of the decision aid from the initial Train the Trainer Workshop of March 1997 to the community wide distribution of the final decision aid to local primary care physicians in October 1997.

The main challenge in developing the decision aid was trying to balance the local views and preferences put forward by the local EIP’s with the existing scientific evidence. It took a couple of attempts before we managed to effectively engage local EIP’s in developing the decision aid, but the process was eventually successful. The decision aid underwent fairly extensive scrutiny by local practitioners, the co-investigators of the IWH/NHRDP Project and several external reviewers until a final version was reached in the fall of 1997.

In Section 4.2 we reviewed in detail the scientific rationale behind each of the sections of the decision aid. While the decision aid is based for the most part on the AHCPR guidelines, some portions are based on research published after the guidelines, such as a very relevant study published by Malmivaara et al in 1995 [7], reviews of the management of LBP by Frank et al at the Institute for Work & Health published in 1996 and 1998 [5,6] and the New Zealand guide for the assessment of psychosocial ‘yellow flags’ released in January 1997 [4].

As expected from the way the decision aid was developed, some portions of it represent a compromise with the views and preferences of local EIP’s. Included here is the fact that the decision aid explicitly supports implementation of The Peterborough Back Rules instead of the AHCPR guidelines, the use of the term mechanical back pain, and the addition of inflammatory diseases of the spine as a red flag condition to be considered when evaluating the patient.
To conclude this chapter, section 4.3 reviewed the activities undertaken to disseminate the decision aid. These included two Grand Rounds at the local hospital, updates during meetings of the Department of Family Medicine, three workshops lead by local EIP's and community wide distribution of the final version of the decision aid.

After all this effort it was important to assess the impact of the decision aid and other materials on primary care physicians' practice. A full evaluation of the IWH/NHRDP project goes beyond the scope of this thesis, but the results of an initial evaluation of the decision aid are reported in Chapters 5 and 6.
Bibliography


Chapter 5

Quantitative evaluation of acceptability and perceived usefulness of the decision aid
The preceding chapter presented the low back pain (LBP) decision aid developed in this thesis (The Peterborough Back Rules Template and Postural Advice/Prescription tear-off). This is the first of two chapters which describe the initial evaluation of the decision aid. In this chapter we report the results of a survey conducted among local primary care physicians, to estimate the acceptability and perceived usefulness of the decision aid. If the decision aid is not accepted and used by the physicians, there is little hope it would have any impact on physicians' practice. Chapter 6 reports on the use of qualitative research methods to explore barriers and facilitators for use of the decision aid.

The decision aid was distributed as part of a package of physician and patient-oriented materials to support implementation of The Peterborough Back Rules. Binders containing the materials were given to all practising primary care physicians in Peterborough and surrounding townships in October, 1997. Copies of all the materials associated with The Rules are included in Appendix B. The two portions of the decision aid, the Template and the Postural Advice/Prescription tear-off, are evaluated separately, since they were distributed as separate pieces of paper.
5.1 Methods

Subjects

The subjects of the survey were all the primary care physicians actively caring for patients with acute low back pain in Peterborough and surrounding townships at the time of the distribution of the decision aid (October 7, 1997). They were selected according to the following criteria:

Inclusion criteria:
1. Family physician or general practitioner
2. Practising in Peterborough, Lakefield, Northbridge, Millbrook, or Keen, ON.

Exclusion criteria:
1. Retired or on sick leave/maternity leave as of October 7, 1997.
2. Practice restricted to non-back pain patients.

Questionnaire

The survey questionnaire is reproduced in Appendix C. The questionnaire was the result of modifications to a preliminary version pre-tested by six family physicians (four local EIP’s and two researchers).

The questionnaire consisted of six forced-choice questions and six open-ended questions. The questions explored three main constructs: awareness, acceptability, and perceived usefulness. The proportion of community physicians aware of The Rules was an index of successful/unsuccessful dissemination and provided the denominator to estimate acceptability and perceived usefulness. Acceptability was defined as the proportion of physicians aware of The Rules reporting use of the chart template during...
the patient visits of more than 50% of their patients with a new episode of LBP. Perceived usefulness of each of the materials was rated by physicians in four categories (very useful, useful, somewhat useful, not useful).

Question 1 was used to verify eligibility of the physician. Physicians whose current clinical practice did not include patients with back pain were not eligible. Question 2 inquired about any changes in the physician’s approach to patients with low back pain, in order to assess possible effects of The rules. Additional space was provided for the physician to describe the nature and causes of any changes in approach. Question 3 defined whether the respondent was aware of The Rules, and question 4 explored whether this awareness applied to the most important messages. Question 5 asked for explicit rating of usefulness of the decision aid and other Peterborough Rules materials by checking the respective option in a table. Question 6 focused on the acceptability of the chart template, and provided room for the physician to describe experienced any difficulties experienced during its use.

Survey methodology

The sampling frame for the survey was the Canadian Medical Directory 1997 Edition with updating by the Medical Administration Department at the Peterborough Civic Hospital. All eligible physicians were approached via a letter from the Associate Dean of Continuing Medical Education, University of Toronto (Appendix C). I delivered the letters in person at physicians’ offices in Peterborough. The letter made it clear that a response was required independently of whether the clinician was or was not aware of The Rules. Physicians were asked to return the blank survey if they choose not to participate. The cover letter asked for the completed survey to be faxed to the office of Continuing Education, University of Toronto. Preliminary work suggested approximately 70% of physicians had access to FAX machines in their practices. Return
envelopes with postage paid were also provided should the physician prefer to mail the survey back.

Physicians not returning the completed survey within 10 days were contacted via FAX or mail to request a response. Those physicians not returning the survey 6 weeks after receiving it were given a new hand-delivered copy of the survey. An intermediary reminder planned at three weeks was cancelled in consideration of physicians' overload, a mail strike, and the Christmas Holidays.

Surveys were marked with a unique identification number to track survey response. The list of names and identifying numbers was kept in separate locked storage. Once data was entered in duplicate in a computer database with no personal identifiers original facsimiles/surveys were destroyed.

Analysis

Survey responses were coded and entered in a Quattro Pro Worksheet (© Corel Corporation Limited 1996). Printouts of the data were then checked against the original surveys to confirm data were accurate. Data was transferred to SPSS/PC+ programs (© SPSS Inc 1990) to calculate frequency distributions and percentages. The statistical significance of differences between respondents and non-respondents was estimated using the chi square test, or Fisher's exact probability test. The binomial distribution tables reported by Rossner were used to estimate 95% confidence intervals for the acceptability of the chart template [1].
5.2 Results

Return rate

One hundred and twelve family physicians or general practitioners were listed by the Canadian Medical Directory as residing in the communities of Peterborough, Lakefield, Bridgenorth, Keene and Millbrook. Updating with the Medical Administrator at the Peterborough Civic Hospital added the names of five unlisted physicians, for a total of 117 candidate physicians.

According to information provided by the Medical Administrator and visits to the community, 25 physicians were clearly ineligible before survey delivery for the reasons listed in Figure 5.1. Another three physicians were felt to be probably ineligible but this information could not be confirmed and they received the survey. One of these three physicians deemed herself eligible. The other two physicians returned blank surveys, but to provide conservative estimates of survey return rate these two physicians were counted as if they were in fact eligible.

A total of 92 surveys were hand-delivered on November 26 and 28, 1997. Ten physicians faxed back by December 5 and the remaining 82 received a faxed mailed reminder on December 9. On January 7 a second reminder was hand delivered or mailed to 35 physicians. The slow initial return rate could be explained because many physicians opted for mailing back the survey instead of faxing it, and there was a postal strike which lasted from November 15 to December 6. One consequence of the delay was that many physicians who had already mailed the survey, received the first faxed reminder.

Eventually 74 surveys were returned. Two physicians stated that their practice excluded patients with LBP (and were thus not eligible), one ran a practice restricted to
obstetrics and the other was on maternity leave. Nine were blank surveys from MD's who declined to participate, leaving a total of 63 usable answers. Thus the overall return rate (usable answers/eligible subjects) was 63/90 = 70%. Figure 5.1 summarizes survey return.

Table 5.1 compares the general characteristics of respondents and non-respondents. There were no statistically significant differences between these groups in regards to the characteristics listed.
SURVEY RESPONDENTS

| Canadian Medical Directory | 112 names |
| Local medical Administration | 5 names |

Total of 117 candidate physicians:
- 12 retired/moved
- 7 did not see LBP
- 4 developed The Rules
- 2 other

92 Surveys delivered:
- 1 did not see LBP
- 1 on maternity leave

90 eligible physicians:
- 18 did not return survey
- 9 returned blank survey

63 usable responses

Figure 5.1 Summary of survey return. * Other includes one physician residing but not working within the study area and one physician on maternity leave.
<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Respondents (n = 63)</th>
<th>Non-respondents (n=27)</th>
<th>p value*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>18 (30.2)</td>
<td>7 (25.9)</td>
<td>0.51</td>
</tr>
<tr>
<td>Graduated before 1980</td>
<td>33 (53.2)</td>
<td>10 (37)</td>
<td>0.18</td>
</tr>
<tr>
<td>University of graduation:</td>
<td></td>
<td></td>
<td>0.5</td>
</tr>
<tr>
<td>McMaster</td>
<td>9 (14.3)</td>
<td>4 (14.8)</td>
<td></td>
</tr>
<tr>
<td>Ottawa</td>
<td>5 (7.9)</td>
<td>3 (11.1)</td>
<td></td>
</tr>
<tr>
<td>Queens</td>
<td>15 (23.8)</td>
<td>10 (37)</td>
<td></td>
</tr>
<tr>
<td>Toronto</td>
<td>13 (20.6)</td>
<td>4 (14.8)</td>
<td></td>
</tr>
<tr>
<td>Western</td>
<td>5 (7.9)</td>
<td>4 (14.8)</td>
<td></td>
</tr>
<tr>
<td>Other Canadian</td>
<td>8 (12.6)</td>
<td>1 (3.7)</td>
<td></td>
</tr>
<tr>
<td>Foreign</td>
<td>7 (11.1)</td>
<td>1 (3.7)</td>
<td></td>
</tr>
<tr>
<td>Practice type:</td>
<td></td>
<td></td>
<td>0.42</td>
</tr>
<tr>
<td>Large group practice **</td>
<td>30 (47.6)</td>
<td>10 (37)</td>
<td></td>
</tr>
<tr>
<td>Small group practice</td>
<td>19 (30.2)</td>
<td>8 (29.7)</td>
<td></td>
</tr>
<tr>
<td>Solo practitioner</td>
<td>6 (9.5)</td>
<td>6 (22.2)</td>
<td></td>
</tr>
<tr>
<td>Emergency room</td>
<td>8 (12.7)</td>
<td>3 (11.7)</td>
<td></td>
</tr>
</tbody>
</table>

Table 5.1 Characteristics of physicians responding and not responding to the survey to evaluate the decision aid. Number and (percent) of physicians in each category are shown.

* Probability that the observed difference between respondents and non-respondents is due to chance, calculated with chi square test or Fisher’s test.

** Group practices with 10 or more physicians were considered large.
Awareness

All survey respondents reported being aware of the Peterborough Back Rules for Acute Low Back Pain. Nevertheless, three physicians had some problems identifying the key messages of The Rules (Figure 5.2). The responses given by two physicians when asked how they found out about The Rules cast doubt about their awareness. One answered that s/he had received them by mail (The Rules were never mailed out), and another that it was through Dr. D. Davis (Doctor Davis himself never presented the Rules in Peterborough). All together survey results suggest than more than 90% of the respondents were effectively reached by the dissemination process.

Off the 63 survey respondents, six physicians did not mention how they became aware of the rules. Forty three mentioned a single source, 14 mentioned more than one source. Most physicians became aware of The Rules through Grand Rounds at the local hospital, small group local workshops and/or personal contacts with educationally influential physicians (Table 5.2).
What is/are the most important message(s) of The Peterborough Back Rules?

<table>
<thead>
<tr>
<th>Message</th>
<th>Percentage of survey respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>A focused history and physical suffice for initial assessment.</td>
<td>88.9</td>
</tr>
<tr>
<td>A plain lumbar X-ray is useful in most patients.</td>
<td>1.6</td>
</tr>
<tr>
<td>Activity and exercise are good treatments.</td>
<td>79.4</td>
</tr>
<tr>
<td>Bed rest for a few days is necessary for many patients.</td>
<td>1.6</td>
</tr>
<tr>
<td>Not sure</td>
<td>1.6</td>
</tr>
</tbody>
</table>

Figure 5.2  Physicians' awareness of the main messages of the Peterborough Back Rules. All respondents (n=63) reported being aware of the Peterborough Rules, but three of them had difficulties identifying the main messages.
<table>
<thead>
<tr>
<th>Source</th>
<th>Percent of physicians (n=63) *</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rounds</td>
<td>46 (73%)</td>
</tr>
<tr>
<td>Workshops</td>
<td>22 (35%)</td>
</tr>
<tr>
<td>Contacts with EIP</td>
<td>14 (22%)</td>
</tr>
<tr>
<td>Patient recruitment for study</td>
<td>10 (16%)</td>
</tr>
<tr>
<td>Family Medicine meetings</td>
<td>6 (10%)</td>
</tr>
<tr>
<td>Outreach visits</td>
<td>5 (8%)</td>
</tr>
</tbody>
</table>

**Table 5.2** Most common answers to the question: How did you find out about The Peterborough Back Rules?

* Total exceeds 100% since some physicians learned about the rules through several sources.

EIP= Local educationally influential physicians
Acceptability

The distribution of answers to the question "In what proportion of your patients with new episodes of low back pain have you used the chart template to record your findings?" is depicted in Figure 5.3. Using our *a priori* definition of acceptability (proportion of physicians reporting use of the template in more than 50% of their patients), the acceptability of the decision aid was low, reaching only 15.9% (95% CI from 8% to 27%). Forty physicians (63.5%) did not use it at all. Thirty five respondents commented on difficulties with using the template, and seven physicians offered suggestions for improvement (see Chapter 6 for details).
Figure 5.3  Reported use of the Peterborough Back Rules Template in a survey of 63 primary care physicians. The acceptability of the chart template was low since only 15.9% reported using it with more than half of their patients and 63.5 % of the physicians did not use it at all.
Perceived usefulness

Physicians were split on whether the Chart Template was perceived to be useful. Thirty two percent considered it useful or very useful, 16% considered it not useful, and 32% declined to offer an opinion (Figure 5.4). On the other hand most considered that the Postural Advice/Prescription tear-off was useful. Twenty physicians reported they had not seen the video, suggesting problems with its dissemination, 17.5% considered the video useful or very useful. None of the physicians surveyed thought that patient-oriented materials, ie the postural advice/prescription sheet and the Back Advice pamphlet were not useful (Figure 5.4). The complete data on physicians' ratings for each of The Peterborough Rules Materials are reported in Table 5.2

Physician-reported changes in practice

Overall 36 physicians (57.1%) reported changes in their approach to patients with LBP within the last year. Except for one physician, reported changes were all compatible with the main messages of the rules. Eleven physicians reported changes in their history taking or physical exam. Ten physicians reported less investigation/drug use and nine reported greater emphasis on physical activity. Of interest, seven physicians reported increased confidence in the diagnosis and treatment of patients with LBP. When asked about the reasons for changing practice, 15 physicians specifically mentioned The Rules or associated dissemination activities.
Figure 5.4 Perceived usefulness of the decision aid and other Peterborough Rules materials. Patient-oriented materials were clearly rated as more useful than Physician oriented materials. The Postural Advice/Prescription tear-off was rated separately from the Template since it was distributed as a separate piece. Twenty physicians reported they had not seen the video.
<table>
<thead>
<tr>
<th></th>
<th>Very useful</th>
<th>Useful</th>
<th>Somewhat useful</th>
<th>Not useful</th>
<th>Can't judge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decision aid (Template)</td>
<td>6</td>
<td>14</td>
<td>13</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>(9.5)</td>
<td>(22.2)</td>
<td>(20.6)</td>
<td>(15.9)</td>
<td>(31.8)</td>
</tr>
<tr>
<td>Decision aid (Tear-off)</td>
<td>23</td>
<td>26</td>
<td>7</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>(36.5)</td>
<td>(41.3)</td>
<td>(11.1)</td>
<td></td>
<td>(11.1)</td>
</tr>
<tr>
<td>Poster</td>
<td>7</td>
<td>14</td>
<td>13</td>
<td>19</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>(11.1)</td>
<td>(22.2)</td>
<td>(20.6)</td>
<td>(30.2)</td>
<td>(15.9)</td>
</tr>
<tr>
<td>Pocket card</td>
<td>8</td>
<td>13</td>
<td>17</td>
<td>16</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>(12.7)</td>
<td>(20.6)</td>
<td>(27.0)</td>
<td>(25.4)</td>
<td>(14.3)</td>
</tr>
<tr>
<td>Examination video</td>
<td>3</td>
<td>8</td>
<td>14</td>
<td>7</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>(4.8)</td>
<td>(12.7)</td>
<td>(22.2)</td>
<td>(11.1)</td>
<td>(49.2)</td>
</tr>
<tr>
<td>Back Advice pamphlet</td>
<td>30</td>
<td>20</td>
<td>7</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>(47.6)</td>
<td>(31.7)</td>
<td>(11.1)</td>
<td></td>
<td>(9.5)</td>
</tr>
</tbody>
</table>

**Table 5.3** Physicians' ratings of usefulness of the decision aid (The Peterborough Back Rules Template and Postural Advice/Prescription tear-off) and other Peterborough Back Rules Materials. Number and (%) from a total of 63 survey respondents.
5.3 Summary of Chapter 5

The results of this survey suggest that most physicians in the community were aware of The Rules and knowledgeable about their main messages. When judging the usefulness of the different materials it was apparent that patient oriented materials were greatly appreciated by most physicians. On the other hand, only one third thought physician oriented materials were useful or very useful. With regards to the decision aid, the chart template was accepted by a minority of the physicians, but the portion to be given to the patient (The Postural Advice/Prescription tear-off) was considered useful or very useful by most of them. It is interesting to note that even though one third of physicians thought the chart template was useful or very useful, only 15.9% reported using it in more than half of their patients with new episodes of low back pain. The reasons for this low acceptability are explored by qualitative methods in the following chapter.

One possible caveat of the study relates to survey non-respondents. Our return rate of 70% is better than many other recent physician surveys. According to a recent article by Asch et al the mean response rate in physicians’ surveys is about 54% [2]. Nevertheless, it is possible that non-respondents differ substantially from respondents in their opinions about The Rules and their acceptability of the chart template. In the most extreme of cases if all physicians who did not return the survey were unaware of the rules, awareness would go down to around 65%. In regards to acceptability, the worst case scenario would be that all 27 non-respondents were in fact aware of The Rules and all of them decided not to use the chart template. In this situation, the acceptability, calculated as the proportion of physicians aware of the rules (n=90) that reported use of the chart template in more than half of their patients with LBP (n=10) would go down to about 11%.

The reasons for the differential perceived usefulness of physician-oriented and patient-oriented materials are not clear. It may mean that it is much easier to give patients a
new piece of paper than changing your own assessment, management and recording routines. Potential reasons are further discussed in the following chapter, on the basis of comments written by physicians on the surveys, and interviews and focus group with local physicians.

Acceptability in this study was defined as reported use of the chart template. Reported use may overestimate actual use, but it is very unlikely to underestimate it. Any bias introduced by using reported use is thus very unlikely to change our main finding of low acceptability of the chart template.

In conclusion, our survey of local primary care physicians not involved in the development of the decision aid showed that only a minority of physicians had incorporated The Peterborough Back Rules Template into their practices six weeks after receiving it, despite being perceived as useful by a third of them. Dissemination of The Peterborough Back Rules and associated materials seemed successful in that most eligible physicians were aware of the rules and their main messages. The perceived usefulness of patient-oriented materials was much larger than that of physician-oriented materials.
Bibliography


Chapter 6

Qualitative Evaluation of Barriers and Facilitators for Use of the Decision Aid
The results of the evaluation survey reported in Chapter 5 showed that the acceptability of The Peterborough Back Rules Template was low despite moderate perceived usefulness. On the other hand, patient oriented materials (the Postural Advice/Prescription tear-off and the Back Advice pamphlet) were considered useful or very useful by most physicians.

In this chapter we report the use of qualitative research methods to explore the barriers for use of the chart template and possible ways to improve it. During this evaluation some insights about the other Peterborough Rules materials were also gained.

To allow the reader to judge the validity of our findings this chapter describes in detail the original data and the key stages of analysis as well as the end result [1]. The qualitative research methods used for our exploration of barriers and facilitators are described in section 6.1. The first-hand impressions gained from each of the three data sources (survey, one-on-one interviews and focus group) are described in sections 6.2, 6.3 and 6.4 respectively. The integration of findings from the three sources (triangulation) is described in section 6.5, and the key resulting inferences are summarized at the end (section 6.6). Throughout this chapter, statements inside "double quotation marks" are verbatim transcripts of participants' comments. Statements inside 'single quotation marks' are my paraphrasing of participants comments and views. The latter are often used to name themes emerging from the analysis.
6.1 Methods

To explore barriers and facilitators for use of the decision aid we adopted the theoretical framework of grounded theory [1] and the methods of coding and drawing conclusions detailed by Miles and Huberman [2]. Our main \textit{a priori} assumptions under this framework were:

1. There are not "true" universal barriers and facilitators for the use of the decision aid. Instead there are a number of perceived individual-level barriers and facilitators acting in the context of each individual clinician's practice.

2. The goal of the analysis is to provide a rich description of experienced barriers and facilitators to further our understanding of why the decision aid was accepted by some physicians and not by others, and to generate useful ideas to increase its acceptability.

3. Data collection and analysis are interrelated processes and sampling proceeds on theoretical grounds based on the ongoing analysis [1]. What we are sampling are barriers, facilitators and their links to useful ideas to increase acceptability. The final number and selection of participants depends on building a comprehensive description of barriers and facilitators (reaching saturation) within the constraints of available resources.

Three sources of qualitative data were triangulated to more thoroughly examine the findings. The first source was the answers to open-ended questions in a one page survey of primary care physicians in the community. The second source was transcripts of in-depth one-on-one interviews with volunteer primary care physicians. The third source of data was transcripts of a focus group with five willing primary care physicians.
Survey

The details of survey methodology are described in Chapter 5. In brief, all primary care physicians in Peterborough and neighbouring townships whose current practice included patients with low back pain received a hand-delivered one page questionnaire (Appendix C), followed by two faxed/mailed reminders two and six weeks later. A total of 63 usable answers were obtained for a 70% response rate.

The questionnaire included two open-ended questions dealing with barriers and facilitators for use of The Peterborough Back Rules Template: What difficulties did you encounter in trying to use the chart template? And, how can the chart template be improved? However we did not restrict our analysis to the answers to these two questions, but rather used all the qualitative information present in the survey that had any bearing on our exploration of barriers and facilitators.

One-on-one interviews

The information described here was derived from in-person or phone interviews (depending on respondent's preference) conducted as part of a separate study evaluating the impact of the IWH/NHRDP guideline implementation project and the role of informal physicians' communication in continuing medical education (S. Rappolt et al, personal communication). Interviews with primary care physicians in the community were conducted on behalf of Continuing Medical Education, University of Toronto by a person not involved in the development of The Rules. The interviewer used a interview guide which included several questions suggested by me, to explore perceived barriers and facilitators for use of the decision aid and other Peterborough Rules materials (Appendix C).
The questions proceeded from the general to the particular, first probing awareness about the Rules and general opinions and attitudes towards the process and the materials. Then interviewees were encouraged to share their opinions on each of the materials, focusing on the chart template. The suggested questions pertaining to the decision aid were: What do you think of the chart template? Did you use it? Why? (Or why not?) Did you find it useful? Why? (Or why not?) Does it progress logically? Does it allow you to record your findings in a straightforward and efficient manner? Does it provide a useful addition to the patient's chart or is it just one more piece of paper? Does it/will it facilitate your reassessment or subsequent assessment of patients?

Prior to the interviews it was hypothesized that 12 to 20 interviews would be required to reach saturation. The interviewer first contacted a 20% random sample of primary care physicians in the community. It was difficult to convince physicians to participate in the interviews. Eventually 79 physicians had to be contacted to obtain 14 interviews. Because two of the interviews conducted were with members of the working group which developed The Rules, they are excluded from the present analysis, leaving a total of 12 usable interviews.

Focus groups

We originally hypothesized that two or three focus groups with six participants each would be necessary to obtain a comprehensive description of barriers and facilitators for use of the decision aid. Aware of the difficulties in recruiting physicians for one-on-one interviews, we initially invited 30 physicians in the community to participate in focus groups. They were selected according to the following criteria to represent different opinions about the template and different practice arrangements:
• Survey respondents with different opinions about the template. We invited up to four physicians in each response category to the usefulness question (Question No. 5, see appendix).

• Physicians who did not return the survey and physicians who did not attend activities during the dissemination of the decision were sampled at random.

• Additional physicians were selected, if necessary, to ensure participation of physicians working in the emergency room and in different practice arrangements.

The goal of the focus group was to stimulate discussion and interaction among participants to make explicit the motives and interests underlying participants' varying perspectives [3].

It was very difficult to convince physicians to donate their time for focus groups. On January 7, the 30 primary care physicians selected as outlined above received in their offices invitations signed by the Associate Dean of Continuing Education, Faculty of Medicine, University of Toronto. Physicians were offered complimentary dinner and a choice of two dates. Invitations were followed up with phone calls. Eight primary care physicians agreed to participate in the focus group of January 19, and three in the focus group planned for January 28. Five physicians eventually attended the first focus group. On January 21 a further 13 physicians were invited by fax and phone to recruit additional participants for the second focus group. Eventually only 4 physicians confirmed their intention to participate and the second focus group was cancelled.

The focus group was lead by two facilitators independent of The Peterborough Rules Working Group using a facilitator's guide I prepared (Appendix C). None of the members of the working group was present. Discussion proceeded from the general to
the particular with primary focus on the chart template, and secondary focus on the other Peterborough Rules materials. The facilitators were informed of survey results so that they could direct the discussion to explore outstanding issues and "wrap up" the qualitative component of the evaluation.

Analysis

Focus group and interviews were audio taped and transcribed. Handwritten answers to open-ended questions in the survey were entered as full text in a database. Printouts of qualitative data were subdivided into separate analysis units (a written answer to a survey question, a question and answer during an interview, or the connected statements of interacting focus group participants). Initial coding was conducted by grouping and re-grouping together related analysis units. Analysis units from the three different sources of data were kept separate during the initial analysis. Subsequent coding used concepts derived from the framework for the assessment of clinical sensibility of clinimetric indexes proposed by A. Feinstein [4]. This framework includes five main topics/concepts: purpose and framework, overt format, face validity, content validity and ease of usage [4]. At this stage analysis required integration of themes emerging from the three sources of data.
6.2 Findings from the survey

Of the 63 physicians responding to the survey, 35 volunteered comments about difficulties in using the template and seven provided suggestions to improve it. Most comments were brief and telegraphic. Although at first I planned to analyse each comment on its own, I realized this would strip them from their most valuable context, the participant's answers to the other survey questions. So I decided to keep each returned survey as the unit of analysis instead of isolated comments. I will first summarize comments about the chart template. Then I will discuss some additional comments reported in the survey.

Themes about the decision aid emerging from the survey

Forty survey respondents reported not using the template at all. Chances are their opinions about barriers and facilitators for use of the decision aid/chart template would be qualitatively different from the opinions of physicians who at least tried the template with a few patients (Table 6.1). Sixteen of these 40 physicians declined to provide an opinion of the usefulness of the template. This might suggest a lack of awareness of the existence and content of the template. Eighteen physicians thought the template was not useful or somewhat useful, which implies that they made up their mind about the template at face value, before trying it. Two other physicians gave exactly the same usefulness ratings to all the materials (poster, pocket card, etc.), one physician rated everything as "very useful", and the other as "useful", but neither one used the template at all.
Physicians who did not use the template at all
(n=40) | Physicians who used the template at least once
(n=23)
---|---
**Opinion about usefulness:**
Can’t judge | 16 (40%) | 2 (9%)
Not useful/somewhat | 18 (45%) | 5 (22%)
Useful/very useful | 6 (15%) | 14 (61%)

**Comments/difficulties:**
To cumbersome/lengthy | 6 (15%) | 1 (4%)
No chance to evaluate it | 5 (12%) | 1 (4%)
Incompatible with charting | 4 (10%) | 2 (9%)
Not available when needed | 2 (5%) | 3 (13%)
Not interested in template | 2 (5%) | 0
Not enough room | 0 | 2 (9%)

**Suggestions to improve it:**
Shorten/simplify it | 3 (10%) | 0
Make room for history | 0 | 3 (13%)
Computerize it | 1 (2%) | 0

Table 6.1 Opinions and comments about The Peterborough Back Rules Template in a survey of 63 primary care physicians.
Among the 40 physicians who did not use the template, six mentioned the template was too cumbersome or lengthy. Five physicians commented they didn’t have a proper chance to evaluate it, mostly because they didn’t see enough patients with LBP during the time between distribution of the template and the survey. Two physicians said the template was not easily available, and two others said they were just not interested. Four physicians working in the emergency room mentioned incompatibility with charting systems in the emergency room:

"I work in emergency and the template would double my charting efforts as we have to fill out a hospital ER chart anyway."

Among the 23 physicians who reported using the template with at least some of their patients, three commented that the template was not easily available when needed, two reported interference with charting practices, two felt there was not enough room to document patient history, one thought it took too long to use it, and the other said s/he didn’t have a proper chance to evaluate it (Table 6.1). Table 6.1 also summarizes suggestions for improving the template volunteered by 7 physicians. Physicians who had not used the template suggested shortening/simplifying it, while physicians who had used the template suggested adding room to record extra history findings.

The above description suggests three main themes relating to the use or non-use of the template. About one fourth of the 63 physicians seemed unaware or uninterested in the template. Another fourth judged it of little use at face value without trying it. A third theme was the need to change charting and/or office practices to make the template available when needed.

"It is not useful to add to my chart. Too much paper already. Does not fit in my chart well. I use progress notes to record pt. visits".

Only a few physicians commented about the content of the chart template itself, often asking for more room to record specific history data.

"Not enough room to describe mechanism of injury in case [it] is needed at a later date for insurance forms, etc."

Other Comments

Survey respondents had a chance to include brief comments about other materials in the last column of question 5, or in the general comments section at the end of the survey (see appendix). Twenty physicians reported not having seen the video. Three physicians commented the poster was too big/bulky, one mentioned the poster was a reminder for him/her and served as patient education to facilitate acceptance of advice, another physician mentioned the poster was set up in the emergency room. Four physicians commented they didn’t use the pocket card, one physician thought the card was a somewhat useful reminder. Three physicians commented that they liked/were using the patient pamphlet. In regards to the postural advice/prescription sheet two physicians commented they preferred exercise sheets from other sources.

Three physicians commented that having so many different Peterborough Rules materials was perhaps excessive and expensive. One physician complained that feedback given about the materials was ignored and another complained of being overwhelmed by the study without remuneration.
6.3 Findings from one-on-one interviews

A total of 12 interviews with primary care physicians not involved in the development of The Rules were conducted by an experienced interviewer independent of The Peterborough Rules Working Group (see section 6.1 Methods). The following interpretations are based on my analysis of anonymous, edited transcripts of the portions of the interviews which dealt with the decision aid and other Peterborough Rules materials.

There were marked individual differences in the way physicians judged and used the different materials in the binder. Overall The Peterborough Rules materials did not seem to be very present in physicians’ minds, since most of them needed extensive probing to remember them.

Individual points of view of interviewees

I first analysed the transcripts of each interview separately to gather a general sense of the individual perspective of each interviewee. The individual perspectives are described below using some illustrative quotes.

Interviewee No. 1 had some positive comments about the binder but had not used the decision aid or any of the materials. Interviewee No. 2 was very enthusiastic about the chart template, but had not given much consideration to the other materials. S/he said:

"I came back with this little, this flow sheet, and here was something that right away I could start using and so I did. And I think that reinforced a lot of the points that were brought up at the information session. It reminded me, you know, about them, so that I was starting to use that right away in the practice, so I did find that really worthwhile."
Several of the Peterborough Rules materials were finding their way into the practice of Interviewee No. 3. In regards to the chart template s/he commented:

"I don't use that on every patient because it is a little bit more time consuming, but, uhm, in general I've been using it and, or using a shortened version of it in my notes so I, I found it useful"

Interviewee No. 4 incorporated the Peterborough Rules poster into his/her practice but had little awareness of the binder and other materials. Interviewee No. 5 was not aware of binder or poster, but s/he was in fact using some of the Peterborough Rules materials. When asked: Did you receive The Peterborough Back Rules binder? S/he answered:

"No. [Opened filing cabinet]. What I do have [opening and going through a file] is...lots of...information which I xeroxed, so, including the Back Rules, the Back Advice, you know, that sort of thing, the questionnaire..."

Interviewee No. 6 seemed to reject the idea of checklists and guidelines upfront. S/he was aware of the materials but only admitted to using the pocket card once in a while. Interviewee No. 7 was critical about the unnecessarily complicated template and mentioned using the poster as a reminder. S/he preferred his/her own patient education materials. Interviewee No. 8 was barely aware of the content of the binder but somehow the poster found its way into the office's walls. Interviewee No. 9 was not using any of the components of the package, and did not seem to have a clear idea of the binder's contents. Interviewee No. 10 seemed happy with his/her current system for management of back pain and unwilling to change, but s/he did incorporate the Back Advice pamphlet because:

"I think the main thing is that it tells the patient that there's nothing seriously wrong and, uhm, nothing to worry about but we're going try to deal with this on a mechanical basis. So there's the reduction in anxiety. And most people by reading the pamphlet feel more relaxed about, about what their situation is,..."
Interviewee No. 11 liked and used the poster, but didn't remember receiving the decision aid or the binder. Interviewee No. 12 liked and used the chart template but s/he was barely aware of the other materials in the binder.

"...and we have the flow sheet available to us to put in our charts. So we made copies of the flow sheet for that. So that's what we pulled out of it."

Themes emerging from the interviews

Despite the individual differences in preferences and styles a number of themes appeared throughout the interviews. The following paragraphs illustrate the most salient themes during my initial analyses across the twelve transcripts of interviews.

'No I didn’t receive a binder, did I?’ The initial response of many interviewees was one of doubt and hesitation when first asked about the binder. Some of them stated upfront that they had not received the binder. At face value this would suggest a major breakdown of distribution channels, but as interviews went on many of the physicians remembered that they had received the binder, or at least were aware of one or more of the materials contained in the binder. In fact some physicians had to dig at the bottom of piles of printed materials and look through whole filing cabinets to find the binder.

The initial denying of receiving the binder seems to be a reflection of the little salience that the binder had in their minds. Many of them only perused the binder when first received, took one or two ideas or materials they liked and never looked through the binder again. The following quote from interviewee number 4 illustrates a fairly typical situation:
"I don't think I did [receive the binder]. I have the poster. Uhm, but that was, they were given. Wait a minute. There it is there, that's it yes, they were given out, yes there it is."

'That's the way I practice already.' A recurrent theme in many of the interviews was that The Rules and the binder were not used because that was the way local physicians were practising already.

"... it really highlights the important things about uh, back care but I don't think it'll change my practice patterns because it's pretty well what I'm doing anyway, and have been doing for some time so, uhm, that's probably why it's been sitting there because I haven't felt a need to [chuckling] to pull it out to remind myself."

Despite this initial reaction, several physicians later on in the conversation commented in actual or contemplated changes in their approach to back pain.

"I have to say probably before I would use more muscle relaxants than I do now."

'I am happy with the way I keep notes (and practice medicine), thank you very much.' Many comments during the interviews related to unwillingness to change current charting practices, with the underlying implication that changing would mean accepting something was wrong with their current way of charting or practising medicine. On a couple of occasions the implication was that only beginners need to be told how to keep charts or how to practice.

"...I tend to keep fairly comprehensive medical records anyway. I think I'm pretty good at that, like I do spend time with charting so I'm not sure if this would add a lot to...for me."
'If it's written up it must be true.' Several physicians referred to the authority that patients often vest in printed materials with the related implication that printed materials would help increase the authority of the physicians’ advice. The following quote illustrates this concept:

"You say all this stuff and then here it is, it's written right on the piece of paper [the Back Advice pamphlet] so it maybe substantiates what you’ve said with the patient, because for many of them they might think that the kind of advice you're giving them is really not...medical advice or [smiling], you know what I'm saying?"

Nevertheless for at least one physician it made little difference:

"Uh, I can't honestly say. They don't seem to notice it [the Poster], I can't honestly recall referring them to it."

'Building confidence.' While printed information was seen as a way to increase patient confidence, several physicians also mentioned an increase in their own confidence as a result of their exposure to The Rules.

"... and maybe the other, the biggest thing would be increased confidence on my part when I deal with a patient with back pain in that how I'm managing them. You know, feeling more confident that yes, this is accepted practice. There it is, it's in the book. It's you know, been talked about."

'Keep it simple.' In discussing specifically the chart template many of the comments highlighted the need to simplify it to facilitate its use.

"...maybe if I used it and got used to it I might, but it sort of on first glance it [looked] awfully dense" ... "a lot of, a lot of lines, a lot of things to tick off and go through."
6.4 Findings from the focus group

The focus group took place on January 19, 1998 after dinner at the Kaos Cafe in Peterborough with five primary care physicians, one leading facilitator and one recording facilitator. The facilitator handed me the tapes recorded at the focus group which I transcribed. My verbatim transcripts comprised a total of 60 pages. Five general sections could be distinguished:

- In the first four pages facilitators introduced themselves and the objectives of the focus group. Participants asked for clarification about the goals and intentions of the IWH/NHRDP Guideline Implementation Project.

- The second section (pages 5-27) dealt with overall impressions about the Peterborough Rules binder and its components.

- During the third section (pages 28 to 41) the discussion focussed on the chart template, contrasting it with other commonly used templates in primary care in Ontario (the 'antenatal care form' and the 'well-baby form'). There were secondary discussions about nurses' templates and compensation issues on back and neck pain.

- The fourth section (pages 42 to 49) was an interesting discussion of the general role of templates in the practice of medicine with a few comments on the role of science in medicine.

- Section five (pages 50-60) wrapped up the focus group with reflections about the project overall and concluding remarks by the facilitators. There were interesting side comments on the unavailability of physiotherapy services in the community.
Individual points of view of focus group participants

Despite our attempts to include physicians who expressed different opinions about the usefulness of the chart template, none of the physicians who eventually attended the focus group thought the template was 'useful' or 'very useful'. Two attendees had not answered the survey, two thought the template was not useful and the other one thought it was somewhat useful. Four of the five participants had attended local workshops conducted by the EIP's. Three graduated from medical school in the 80's, one in the 70's and one in the 60's. Two practised in large urban group practices, one in a small rural practice, one was a urban solo practitioner and the remaining physician practised exclusively at the emergency room at the local hospital.

In the opinion of the facilitators, the focus group was challenging since participant number two was very outspoken and had strong opinions about all sort of issues independent of the topic of the focus group. On the other hand, facilitators felt participant number five was very articulate and offered the most helpful feedback. A simple count of the number of recorded interventions by each participant confirmed the dominance by participant number two. He had 83 interventions, while the other participants varied from 29 to 32. It should also be noted that participant number two often interrupted other participants during the focus group.

Analysis of all recorded interventions by each of the participants, suggest their individual perspectives can be outlined as follows:

Participant number one was sceptical about the whole process. He defined himself as not being a 'poster or template kind of guy'. He seemed to have some doubts about the legitimacy of the IWH/NHRDP Project trying to influence physicians' practice.
Participant number two had a lot to say about his qualifications to handle back pain and the fact that he had taken extra courses and routinely used back manipulation in his practice. He also pointed out that the IWH/NHRDP Project made two probably unwarranted assumptions: a) that the majority of physicians were not managing back pain as suggested in The Rules, and b) that the information contained in The Rules was valid and would improve patient outcomes.

Participant number three had some reservations about the goal of the project but was very enthusiastic about patient materials. He also commented about the excessive number of materials in the project.

Participant number four believed the aim of the project was to find effective ways to change physicians' practice, rather than improving the management of low back pain. This physician provided general comments during the discussion but very few specific comments about the materials. She did not seem to be using any the Peterborough Rules materials at all. A few isolated comments hinted at the implication that the materials were for beginners and physicians who do not keep good notes.

Participant five was positive about the project as a whole but he didn't embrace the Peterborough Rules materials. In fact he suggested the project should look at the big picture of improving the management of low back pain in the community rather than focus on developing decision aids. He also called attention to the confidence building effect of The Rules.

Themes related to the decision aid emerging from the focus group

As planned, a large part of the discussion dealt with barriers and facilitators for use of the template. The main themes discussed in this regard are presented below. Other
themes relating to the IWH/NHRDP Project and other Peterborough Back Rules materials are described in the next section, since they provide a useful context to understand barriers and facilitators. The comments about larger issues such as the prevalence and relevance of back pain, compensation, and the role of nursing and physiotherapy are not analysed in this thesis.

'Medicine is not a template kind of thing.' Many of the comments during the focus group reflected a rejection of the idea of using templates as decision aids for the practice of medicine. Reading in between lines there was a sense that templates might reduce physicians' autonomy and are demeaning of the physicians' work. Participant number one was the most vocal in this regard.

"Working in 'emerg' [emergency room] we have seen the need for and developed a template of sort of a trauma record. Even as we developed it ourselves for our own personal use we found it difficult to use. Because sitting down with a template is completely different than what you do with the patient, you know it is an additional process."

"And some family physicians my find this very useful [the template]. You know, if you are not comfortable dealing with backs. And not everybody has-not everybody is comfortable with backs. Then they may find this very helpful."

'Every patient is different.' One of the main arguments to substantiate that templates and medicine don't mix together, was that medicine requires individualization that is not easy to achieve when you are using a standard template.

"I think the templates would have to be so different. Uh... if there is a single template for everybody it would have to have so much information. For instance, if I see a 30 year old male with acute back pain I do not think about his prostate, not in my "computer" [probably referring to the physician's brain]. But if his father comes in, this afternoon and he came with acute back pain I would not not think of his prostate. His prostate would be in my mind."
[N.B. The fact that the father will be significantly older than the son puts prostate cancer higher in the list of possible explanations for the back pain. Prostate cancer will be a much less likely cause of back pain in a young adult. This is why age is one of the red flags listed in the AHCPR practice guidelines, and in the Peterborough Back Rules Template.]

'Templates are useful as communication tools or dynamic charts.' When asked why physicians would use some templates, such as the 'antenatal care form' and the 'well-baby form', but not others, such as The Peterborough Back Rules Template, participants mentioned two main reasons. First, templates such as the 'antenatal care form' are useful when many different people need to be aware of key information, i.e., the template is used as a communication tool.

"I think the one thing about it [the antenatal form] is that in that scenario there are many different people sharing this information. Back pain is not even near the same amount of, you know science involved for one thing."

"So, if I was working under certain conditions where I wasn't a solo practitioner on the office. Or, if I work with a large conglomerate like WCB or something, and 15 different people are gonna look at my assessment later, then something like this could be more useful. But for private practitioners in your own offices, no."

The second reason was that those templates were dynamic depositories of large amounts of information. Both the antenatal and well-baby forms summarize up to 20 visits, and small amounts of information are added each time.

"... the antenatal form is a dynamic chart. Every time the patient comes in, information is added to it... and every visit is documented, in just one line. We're talking 20 visits maybe."
‘It’s just too much.’ When asked to give a judgement of the Peterborough Back Rules template, a few participants commented on the need to simplify it. One of the strongest criticisms in this respect was provided by participant number one:

“You know, is too much, it’s far too much information for what you need to manage back pain effectively. ... to me [it] is very inefficient, looks like a government type form. You know the ones we hate! It's not useful.”

‘It doesn’t fit with my charting style.’ Most participants felt that their current way of charting their notes was appropriate for their purposes and felt little need to adopt the new recording format proposed in the template.

“Well- uh- uh- what I do is I draw a cross, and that represents lateral, forward flexion, and then I put plus, plus, and straight leg raising. You know straight leg raising 45 degrees, positive dorsi-flexion, and then ankle jerk, knee jerk, you know, reflexes normal.”

“...and then it’ll get lost in the chart somewhere [the template]. Some of my patients charts are that thick and, you know, we don’t have nice binders.. you know, we don’t.”

Themes from focus group regarding the IWH/NHRDP Project and project materials

The above comments about the template are perhaps better interpreted within the context of the general opinions about the IWH/NHRDP Project and other Peterborough Back Rules materials expressed by the participants during the focus group, and summarized in the following paragraphs.

‘Tell us upfront what are you trying to do.’ At the beginning of the focus group participants expressed confusion about the goals of the IWH/NHRDP Project. Towards the end of the focus group this confusion seemed to incorporate a sense of frustration
for not being told the motives and goals of the study upfront. The following conversation was recorded at the very end of the focus group:

-- "...probably [the goal of the IWH/NHRDP project is] related to the desire to disseminate guidelines to influence the physicians effectively so that they can change their practice to more cost-effective methods of dealing with people. That's just a cynical..."

-- "I think that's exactly what [this is]...

-- "That's on! [the second tape recorder] ... [people laughing and joking in the background]"

This conversation implies that participating physicians shared some reservations about the whole project but were reluctant to have them recorded and discussed during the focus group.

‘Building confidence.’ All five participants seemed to concur that they were already practising according to the plan proposed by The Rules. A related theme voiced strongly by two of the participants was that the implementation project activities and to a certain extent the materials helped increase physicians' confidence but did not change their practice.

"One thing that struck me about the presentation of the whole deal is the fact, that you know we've gone over 35,000 studies and you can tell people you are gonna get better within a month you're not cripple for life.. that just gave me the authority to tell people that I've known in the last 35 seconds and I've examined in 3 minutes ... look they've gone thru 30,000 studies you have mechanical back pain, you'll be better in a month... you know."

‘The rules are old news.’ A corollary of the general perception that participants were already practising very close to the manner proposed by The Rules is that The Rules were seen as 'old news'.
"... the information on the Peterborough Back Rules, you know, is not reinventing the wheel. I mean, this information is in other sources... you know, we've read it before from other areas. This is not like it is something new, you know... it's just re-presented in a nice slick fashion and I think it is always useful for us to revisit that in our mind but it is not new. And you know, they're trying to imply that there is something new and there isn't."

'Overkill.' Perhaps as a consequence of the sense that they were already practising that way, and that the rules were not new, the decision aid, plus the other materials and local educational activities was seen by several participants as 'overkill'.

"It was just- it was just kind of overwhelming that... The 'emerg' [emergency] physicians attended their own rounds and Dr. ... presented the Peterborough back Rules, and then 3 or 4 days later everybody got a binder, everybody got a poster, everybody was just inundated with stuff."

'Whom is this poster for anyway?' When discussing the use of the poster one of the participants expressed confusion as to who was the intended user of The Peterborough Rules poster.

"When I look at this I'm not sure whose wall this should go up on. If it's going to do me any good it would have to be there as the patient is sitting there and it certainly... it can't be for the patient because it is telling me what to do, and yet I shouldn't have to have... I could be more discreet if I didn't know it [people laughing] than having it... there, you know."

'A good physician shouldn't need this reminder.' Most participants felt The Peterborough Rules pocket card itself was not very useful to keep, since the information contained there could easily be remembered with no need to be reminded. To a certain extent it was perceived by some participants as an insult to their intellect.
"So, I mean, the average physician will see enough back pain that you know having sort of clued in to this way of looking at it they will... you know, they wouldn’t need to be re-prompted every time they saw a patient with back pain or they shouldn’t..."

This concludes the listing of themes emerging from initial analyses of the focus group. The following section will attempt to integrate themes across the different sources of qualitative data to provide an overall view of the main barriers and facilitators for use of the decision aid.
6.5 Triangulation. Integration of findings from the three sources

To proceed with the qualitative analysis and gain an overall insight into the reasons for the low acceptability of the decision aid the next step was to re-examine the emerging themes from the three sources of data to focus specifically on barriers and facilitators. It was important to look at common barriers repeated across the sources and identify and explain the unique contributions of each source in light of the other sources.

Overall the survey was a limited source of qualitative data, but since it was answered by 70% of the practising primary care physicians in the city, it gave a general idea of the proportion of physicians aware of the chart template, the breakdown of general opinions about it, and the proportion of physicians using it. Interview data was most valuable in that it emphasized the importance of different physicians' styles and preferences, and the little overall salience that the Peterborough Rules binder had in physicians' minds. The focus group allowed exploration of the reasoning behind opposition to the use of the template, since it brought together a group of physicians who in general disliked the template. Together the three sources allowed a good mix of breadth and depth in our qualitative exploration of barriers for the use of the decision aid. Our assessment of facilitators for use of the template, ie the reasoning of physicians who liked and accepted it, was to some extent limited.

Table 6.2 lists possible barriers for use of the decision aid derived from a re-examination of the emerging themes described at length earlier in this chapter.
<table>
<thead>
<tr>
<th>Survey</th>
<th>One-on-one interviews</th>
<th>Focus group</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Lack of awareness or interest in the template</td>
<td>6. Many physicians do not like templates by choice</td>
<td>11. Medicine is not a template kind of thing</td>
</tr>
<tr>
<td>2. At first glance, it doesn’t seem useful</td>
<td>7. Physicians are practising that way already</td>
<td>12. Is not new, that’s current practice</td>
</tr>
<tr>
<td>3. Too cumbersome/lengthy</td>
<td>8. Little salience/awareness of binder and template</td>
<td>13. Current charting is just fine, don’t need a template</td>
</tr>
<tr>
<td>4. Incompatibility with charting/office practices</td>
<td>9. It would require changing charting process</td>
<td>14. Filling in a template is different than seen patients</td>
</tr>
<tr>
<td>5. Not enough room/misses some history elements</td>
<td>10. It seems complicated, time consuming, bulky</td>
<td>15. Template conflicts with individualization of care</td>
</tr>
<tr>
<td></td>
<td></td>
<td>16. Template over simplifies the condition, problem</td>
</tr>
<tr>
<td></td>
<td></td>
<td>17. It looks too busy, complicated</td>
</tr>
<tr>
<td></td>
<td></td>
<td>18. Incompatible with current charting system</td>
</tr>
<tr>
<td></td>
<td></td>
<td>19. Using template implies physician is a beginner</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20. It implies physician needs to be told how to practice</td>
</tr>
</tbody>
</table>

Table 6.2 Barriers for use of The Peterborough Back Rules Template derived from three sources of qualitative data. These barriers emerged from our initial separate analyses of each source.
A few barriers repeated themselves almost in exactly the same form in the three sources. These included the perception that the template is too cumbersome (i.e., too bulky, too dense, would require too much time to fill), the incompatibility with current charting system, and the little salience of the template in physicians' minds. These comprised the minimal common denominator across the three sources, and were even detected in a poor source of qualitative data such as the survey. Another important insight from perusing Table 6.2 is that as you move from left to right, from survey to interviews to focus group, the issues get deeper and richer. On the left, barriers seem to be mostly a matter of circumstance, but as one moves to the right they surface as more fundamental.

Mapping the barriers listed in Table 6.2 onto the framework for the assessment of sensibility proposed by Feinstein [4] it seems clear that barriers form two main clusters. Those that relate to the purpose/clinical justification of the decision aid, and those that relate to its ease of use (Figure 6.1). Issues about ease of use dominated the answers to the survey, but moving into the interviews and the focus group revealed misgivings about the purpose/clinical justification of the decision aid. There were very few barriers relating to the other concepts in the framework. There were no major concerns about the validity of the decision aid (face validity in Feinstein's framework, Figure 6.1) or how it should be used (over format in Figure 6.1), and just minor comments about missing elements on the history portion of the template (content validity in Figure 6.1).
Figure 6.1 Mapping out of barriers for use of the decision aid onto Feinstein’s framework for assessment of sensibility. The mapping out showed two main clusters: ‘little clinical justification/perceived need’ and ‘not easy to use/fair effort required’.
The clustering at the two extremes of the framework, i.e., clinical justification versus ease of use brings to mind the basic tenet of a number of behavioural theories [5], namely that human decisions to pursue any behaviour depend on the balance of need and effort. Most barriers listed at the clinical justification end question the need for adopting the decision aid, while most barriers listed at the ease of use extreme attest to a fair amount of effort required to adopt the template. The relative paucity of identified barriers in regards to how to use the decision aid and its validity could mean that there are no problems in those areas, but it could also mean that since most physicians saw no clinical justification for the decision aid, they did not expend any time questioning its validity or how to use it more efficiently.

In retrospect, it seems that one of the most "telling" pieces of information about fundamental barriers for use of the template was not contained in any of the transcripts. It was the low participation rate in evaluation activities. The difficulty in recruiting physicians could be due to time constraints, or feeling overwhelmed by other projects, but it most likely relates to the low salience that the template and the project overall had in their minds. This lack of interest should be considered one of the main findings of the evaluation and is probably a reflection of the little perceived need/clinical justification for a template for patients with acute low back pain. This lack of interest is reflected by the fact that many surveyed physicians declined to pass any judgement in regard to the usefulness of the template, the fact that many physicians had problem remembering and finding the binder with the Peterborough Rules Materials during the interviews, and the fact that participants in the focus group discussed general issues about templates instead of the specific template at hand.

On the basis of this conceptualization of an imbalance between perceived need/clinical justification and ease of use/required effort the listed barriers can be regrouped and their relative importance appraised (Figure 6.1).
Among the barriers contributing to the little perceived need/clinical justification there was the perception that physicians were already practising according to the rules, ie 'the rules are old news'. A second important notion is reflected in themes such as 'I am happy with the way I keep charts (and practice medicine), thank you very much' and 'Medicine is not a template kind of thing'. These themes reflect a general rejection of the idea of using templates in the practice of medicine. The comments were often shaded by the implication that competent physicians wouldn't need a template. One physician who really liked the template felt compelled to justify it to the interviewer ("I like templates, but I shouldn't"). In a way the rejection of templates could be seen as a reaction to threatened competence and autonomy. In other words: 'I reject templates because I don't need to be told how to practice medicine, I know how to do it by myself.'

Among the barriers contributing to perceptions about ease of use/required effort to incorporate the template in practice there was a general perception of incompatibility with current systems and unwillingness to change them. The other important set of barriers related to the fact that the template was seen as too complicated, lengthy or bulky: ie it was perceived as cumbersome. So that their context of practice did not afford them time to change methods.

Some caution is needed in interpreting our findings as they relate to actual practice. Although several physicians referred to increased confidence in their management of LBP as a result of the rules, few admitted to substantial changes in their practice. A larger proportion of physicians reported such changes in the survey, less during the interviews (after the initial denial), and virtually nobody in the focus group. One possible explanation is social desirability bias. In other words physicians were more willing to admit they were not practising according to The Rules in the less personal situation of the written survey, and less so in front of an interviewer or their own colleagues. On the other hand it might well be true that most physicians in town were
already practising according to The Rules in general terms (Chapter 1). Social desirability bias could also have induced interviewees to say that the decision aid and The Rules in general were great. Given the multiple criticisms of the template it seems that this played a minor, if any, role in participants' judgements about the template.
6.3 Inferences/conclusion

The results of our exploration of the barriers for use of the template can ultimately be summarized by the simple depiction in Figure 6.2. Many physicians did not use the template because there was a marked imbalance between perceived need for a low back pain template, and the amount of effort required to integrate the template in practice. We propose that six fundamental barriers or issues generated this imbalance.

According to our analysis there were three fundamental barriers explaining the little perceived need. First, the belief held by many physicians that they were practising that way already; so, why adopt the template? The second was a matter of choice, many physicians just did not seem to like templates as decision aids. A third and perhaps more powerful reason, was the perception that being told to use a template implied you needed to be told how to practice medicine.

The little perceived need was met on the other side of the equation with three fundamental barriers that contributed to the effort required to incorporate the template in physicians' everyday practice (Figure 6.2). The first one was that at first glance the template was perceived as too complicated and cumbersome, deterring many physicians of even trying it. The second one could be called inertia, ie 'I would rather keep my current charting practices.' The third barrier was the need to change the organization of their office routines to set up a way to get the template in the chart when needed.
Figure 6.2  Summary of main barriers for use of The Peterborough Back Rules Template. According to our qualitative analysis the low acceptability of the chart template was due to a marked imbalance generated by very little perceived need on one side, and a fair amount of effort needed to incorporate the template in practice in the other.
In this thesis we designated the chart template \textit{a priori} as our decision aid and designed our evaluation around it. On the other hand, as emerged from the interviews, different physicians chose different Peterborough Back Rules materials as decision aids. For some it was the poster, for some it was the patient materials. It seems that only a minority chose the template as their main decision aid.

Which of the six fundamental barriers are more amenable to change? It seems that the easier one would be the simplification of the template, since it is under the direct control of the researchers. Physicians could also be offered help to reorganize office and charting practices by working with their practice assistants to make the template easily available when needed. The above would reduce the effort required to incorporate the template into practice. Nevertheless, given the little perceived need, the effort would need to be markedly reduced to move the balance towards acceptance of the template (Figure 6.2).

What about increasing perceived need? One caveat of trying to increase perceived need is that it may well be true that most physicians were already practising according to The Rules and so there was a genuine lack of need for the decision aid in this community. Assuming this is not true, efforts to increase the perceived need for the template could address any of the fundamental barriers depicted in Figure 6.2. Changing perceptions of threatened autonomy and competence (since the template implies being told how to practice medicine) would probably require major undertakings in time and resources. Perhaps re-conceptualizing and re-framing the decision aid as patient education material instead of a physician check list/template could circumvent this barrier. Provision of feedback data showing that physicians are in fact not practising according to The Rules may be effective in increasing perceived need (assuming this is true and the data can be obtained). An alternative to override the relative lack of perceived need is regulation (i.e., mandating the use of the template or analogous decision aid). Judging from some of the comments during interviews and
focus group regulation would meet steep opposition and result in low physicians' moral.

Even if the overall balance can be changed to favour the use of the template, a significant proportion of physicians may still be reluctant because of a matter of preference, of style. Perhaps one should consider offering alternative decision aids or strategies that could fulfill the same function as the template.

In summary, despite significant difficulties in recruiting physicians' collaboration for interviews and focus group, our examination revealed multiple individual barriers reflecting a fundamental imbalance between perceived need for the decision aid and perceived effort to incorporate it into everyday practice. The three fundamental barriers accounting for the little perceived need were the belief held by many physicians that they were practising according to The Rules already, a matter of personal style (many physicians would rather have a different kind of decision aid), and the perception that being told to use a decision aid implied you needed to be told how to practice medicine. The three fundamental barriers accounting for the perceived effort to incorporate the decision aid in practice were the first-sight impression that the template was cumbersome, inertia (i.e., reluctance to change charting practices), and the logistics involved in making the template available when needed.
Bibliography


3. Kitzinger J. The methodology of focus groups: the importance of interaction between research participants. Sociology of health and illness 1994; 16(1): 103-21.


Chapter 7
Lessons learned
In this thesis we set out to accomplish two objectives. 1. to develop an in-office decision aid based on the US AHCPR practice guidelines for acute low back pain through qualitative assessment of needs/preferences and active participation of local physician opinion leaders in a medium-sized city in Southern Ontario, and 2. to conduct a initial evaluation of acceptability and perceived usefulness of the resulting decision aid by primary care physicians not involved in its development. These were to be accomplished within the context of a funded guideline implementation project in Peterborough, Ontario which included a larger number of activities and tools to influence the primary care management of acute low back pain.
7.1 Summary of Findings

We succeeded in engaging local opinion leaders (EIP’s) who together with the researchers formed a working group and developed the decision aid, as part of a package of activities and materials to support a local LBP guideline implementation initiative called The Peterborough back Rules for Acute Low Back Pain. An initial assessment of the views of EIP’s using qualitative research methods pointed out to the importance of local professional sponsorship and the need to offer strategies to help manage patient expectations. It was suggested that a check list/chart template with a prescription tear-off would be an acceptable and useful tool.

The activities of the working group resulted on the production of The Peterborough Back Rules Template and Postural Advice/Prescription tear-off. The working group also produced a poster/pocket card, a three minute examination video, and the Back Advice patient pamphlet to support the implementation of The Rules. Copies of all these materials are included in Appendix B. The Rules propose a way of managing acute low back pain that is in line with the US AHCPR guidelines [1], and incorporates the results of relevant up to date research and local views and preferences. The four Peterborough Rules propose a way of managing acute LBP that could be summarized in one sentence: ‘In the absence of findings suggestive of serious underlying conditions establish a diagnosis of mechanical back pain, minimize medical intervention and encourage activity and self-care.’

The Peterborough Back Rules Template and Postural Advice/Prescription tear-off is a checklist meant to be incorporated in the patient’s chart during the first visit for acute low back pain, with a tear-off portion to be given to patients with mechanical back pain. The template guides the physician through the pertinent assessment and management for the initial and 2 subsequent visits. The postural advice/prescription tear-off is meant to reassure the patient of the benign nature of the problem and to
encourage active self-management on the pain. For logistical reasons the Postural Advice/Prescription was distributed as a separate piece in this study.

A survey of Primary care physicians practising in Peterborough, to evaluate the acceptability and perceived usefulness of the chart template, showed low acceptability of the chart template, despite moderate perceived usefulness. Patient oriented materials, ie, the 'Back Advice' pamphlet and The Postural Advice/Prescription tear-off were perceived as the most useful of The Peterborough Back Rules materials.

Qualitative analysis of comments written on the survey and transcripts of interviews and focus group suggested that the low acceptability of the template was due to a marked imbalance between perceived need and the effort required to incorporate it into practice. The main reason for the imbalance was little perceived need for the template since many physicians felt they were already practising according to The Rules, considered that using templates was not their personal style and/or resented the implication that they needed to be told how to practice medicine. The perceived complexity of the template, incompatibility with current charting practices, and the need to change office routines to make the template available at the time of the visit made up for a relatively large perceived effort to use the template.
7.2 Limitations of the study

Our results should not be directly extrapolated to other settings without due attention to the context. Certain particularities of this community and the research team which contributed to the successful development of the decision aid might not hold true for other communities.

First, primary care physicians in Peterborough are a fairly compact professional community with a very active department of Family Medicine. This facilitated the identification and recruitment of educationally influential physicians, despite a background of physicians' unrest due to provincial cuts in health care funding. Second, in this community the local rheumatologists were seen as influential physicians in regards to the management of low back pain. This may be atypical since informal conversations with physicians in other communities suggest orthopaedic surgeons are often influential. It is not clear whether gaining collaboration from orthopaedic surgeons would be easier or harder. Third, the leader of the research team in the IWH/NHRDP Guideline Implementation Project and I are both rheumatologists. This probably played a role in facilitating communication, lending credibility and gaining collaboration of the EIP's.

Another consideration in extending our results to other communities pertains to the incorporation of the name of the community into the study materials (The 'Peterborough' Back Rules). This may have helped raise awareness and gain a positive reception for the initiative, but it may work against the extension of the use of the rules to other communities.

We based our assessment of acceptability of the decision aid on reported use. This does not necessarily reflect actual use of the decision aid. Chances are actual use would be lower than the reported use of 15.9%, and thus would not change our main conclusion of low acceptability of the decision aid. We believe it is unlikely that physicians under-
reported their use of the decision aid. Since social desirability bias would tend to produce over and not under-reporting.

It is certainly possible that some opinions were left out of our qualitative assessment of barriers and facilitators for use of the chart template. Our data gathering and analysis could not be continued until we were convinced saturation was reached since there was limited participation of local physicians in interviews and focus groups. This fact is in itself very informative and supports our conclusion that the main barrier to use of the decision aid was little perceived need for the decision aid. Our qualitative description of barriers was rich, but the description of facilitators was limited perhaps as a reflection of the little acceptability; i.e., there were fewer people available to say what was good about or facilitated their use of the template. Instead we explored some general attributes which may facilitate adoption of templates, such as using a template as a communication tool and as a dynamic summary of large amounts of information. The few comments about the actual content of the template should be considered with reservation since it seems that most physicians did not use the template out of little perceived need, without detailed analysis of its content.

For the sake of this thesis we designated the chart template as the main decision aid. Nevertheless subsequent interviews with physicians showed that many of them chose and used other components of The Peterborough Back Rules binder as their decision aids.
7.3 Implications for improving clinical practice

We found that despite the multiple demands on EIP's time, they were willing to work in the project as long as the goal was to improve patient care and they retained some measure of control over the process. Given the ongoing struggle to control practice guidelines and practice policies [2,3] this may indicate that offering local physicians some control over the process may act as an incentive to engage their collaboration.

The importance of a detailed baseline situational analysis as the initial step in practice-improvement initiatives can not be over-stated. At the beginning of the IWH/NHRDP Project the research team assumed that there was a significant gap between current local practice and ideal evidence-based practice, and that educational activities directed to primary care physicians were the best way to close/decrease that gap. As far as we can tell from patient and physician baseline data gathered during the IWH/NHRDP field trial (Chapter 1) the gap was much smaller than expected and activities to coordinate care with other health care professionals in the community and to help handle patient expectations were perhaps more important than physician-oriented educational activities. Individuals and institutions seeking to improve clinical practice need to remain open as to the nature of needed interventions. Often there would be a need to impact circumstances surrounding the physicians at the same time than their knowledge or attitudes about the condition under consideration.

Although to focus this thesis we designated The Peterborough Back Rules Template as the decision aid, it turned out that in practice some physicians chose other Peterborough Back Rules materials as their decision aid. Initiatives to improve practice need to provide for the needs of physicians with different styles and preferences. Not single decision aid or educational program will be good for everybody.

Judging from our assessment of perceived usefulness and our exploration of barriers for use of the decision aid, it seems that incorporating management principles into patient
educational materials might be a more effective way of influencing physicians' practice than promoting the use of physician-oriented decision aids.

Most physicians are proud of their tradition as independent thinking professionals. They will resent any implication that they are being told how to practice medicine. Projects depending on volunteer participation by physicians need to be seen as a physician initiative if they are going to have any success.
7.4 Implications for future research.

More research is needed into the role of practice circumstances and system variables in determining physicians' practice. Situational diagnoses of factors affecting physicians' practice could be approached as market research, educational needs assessment, or identification of barriers for change. Diffusion of innovation principles can provide a useful framework to conduct these situational analyses [4]. Qualitative methods such as interviews, focus groups and participant intervention may be a useful adjunct to more traditional survey and secondary data analysis methods in conducting such situational diagnoses.

Researchers proposing an intervention to change physicians' practice should first provide evidence to support the appropriateness of their intended intervention to the situation at hand. In other words they should provide the results of their situational analyses supporting the indication for the intervention. The process of tailoring interventions to the practice and context of interest has been outlined recently by Grol [5]. Tailored interventions built on detailed knowledge of the system of practice have greater potential to be cost effective than un-tailored multifaceted interventions.

Research to identify and categorize different physicians' styles and the relationship of physicians' style to their use of particular decision aids is needed. Research on this area could build on the large body of adult education theory and experience regarding different types of learning styles.
Conclusion

We fulfilled the objectives of this thesis by successfully developing a chart template and prescription tear off for the management of acute low back pain patients. Despite being developed with intensive participation of local practitioners, the template showed moderate perceived usefulness and low acceptability because of little perceived need/clinical justification for a chart template in this condition and a fair amount of effort required to incorporate it into charting practices and office routines.

Along the way we learned valuable lessons about how to facilitate changes in medical practice and how to conduct better research in changing physicians’ practice behaviour.
Bibliography


Appendix A

Glossary of terms relating to guideline implementation and changing physicians’ practice
Glossary

The burgeoning field of practice guideline development and implementation has introduced new terms and sometimes modified significantly the meaning of others. The following glossary lists (and defines) in alphabetical order important terms as they are used in this thesis.

**Academic detailing (educational outreach visits).** Individual visits to clinicians in their practice settings by a trained person to provide information with the intent of improving clinicians' performance [practice behaviour] (Thomson1997), (Soumerai1990).

**Acute Low Back Pain (LBP).** Pain located between the ribs and the gluteal folds with or without irradiation into the lower limbs, of less than 3 months duration and without previous episode within the last three months.

**Conferences.** Short duration [less than a week], educational meetings in which one or several experts deliver information to groups of clinicians outside their practice settings.

**CME (continuing medical education):** The planning and conducting of educational interventions for physicians in practice (Davis 1995).

**Decision aid.** Any medium (posters, brochures, computer software) meant to assist clinicians in deciding about appropriate health care in specific clinical circumstances.

**Diffusion (passive diffusion).** Making information available for prospective users to locate, appraise and apply. The passive diffusion model of research transfer assumes that physicians actively seek out research information, select and appraise the information appropriately, and use the appraised information to make research-driven probabilistic patient care decisions (Lomas1993).

**Dissemination (active dissemination):** Selective provision of synthesized and appraised information to target audiences with the intention of changing behaviour (modified from Lomas (Lomas1993)).

**Educational intervention.** Any attempt to persuade physicians to modify their practice performance [behaviours] by communicating clinical information (Davis1995).

**Educational materials (printed).** Distribution to clinicians by hand or by mail of printed recommendations for clinical care (Freemantle1997).
Educational outreach visits. See academic detailing

Educationally influential physicians. Physicians nominated by their peers as trustworthy sources of medical information. See also local opinion leaders

Evidence. Results from rigorous high quality research relevant to a given situation.

Evidence-based. Any statement or process explicitly grounded on best available evidence.

Evidence-based medicine. The conscientious, explicit, and judicious use of current best evidence from health care research in making decisions about the care of individual patients. Such decisions must balance the patient’s circumstances, and personal preferences for care, with evidence from research that pertains to their health problem (Sacket1996).

Implementation: Coordinated effort to change physicians’ behaviour through the provision of selected, appraised information and/or changes in practice environment, based on identification and targeting of barriers to behavioural change (modified from Lomas [Lomas1993]).

In-office decision aid. Any media easily available at the time of a health care encounter meant to assist clinicians in deciding about appropriate health care in specific clinical circumstances.

Local Opinion leaders. Community clinicians explicitly nominated by their peers as educationally influential (Oxman1995).

Multifaceted educational intervention. Coordinated provision of three or more types of educational interventions with the same aim (Davis1995).

Practice guidelines. Systematically developed statements to assist clinicians and patients in deciding about appropriate health care in specific clinical circumstances (Field1990).

Practice policies. Preformed recommendations issued for the purpose of influencing decisions about health interventions (Eddy1990).

Protocol. Written practice policy meant to be followed very closely. Often in the context of nursing or other physician assistant’s practice.

Physician’s practice behaviour. In a broad sense, behaviour displayed by physicians
during their provision of health care to patients. In some contexts it is used in a limited sense to refer to physicians’ behaviours intended to prevent or to manage health disorders.

**Randomized clinical trial (RCT).** Type of research design in which study subjects are allocated to experimental or control groups by a random process. Widely considered the best research design to demonstrate effectiveness of interventions.

**Reminder.** Any prompt, available at the time of the health care encounter, for the clinician to perform a particular clinical action [Oxman1995].
Appendix B

Reproductions of the decision aid and other Peterborough Back Rules materials
September, 1997

Dear Colleague:

A group of Peterborough physicians with support from the Institute for Work & Health and Health Canada, has developed *The Peterborough Back Rules for Acute Low Back Pain (The Rules)* to enhance and facilitate the management of patients with acute low back pain in our community. *The Rules* are based on up-to-date research evidence recently reviewed by the U. S. Agency for Health Care Policy and Research. The goal of *The Rules* is to recommend only management strategies that have been proven to improve the speed of recovery or comfort during recovery, as well as to avoid unnecessary investigations and inappropriate treatments for patients with mechanical back pain.

The materials supporting *The Peterborough Back Rules* include:

- a poster and pocket card summarizing *The Rules*
- a video demonstrating a 3-minute examination for low back pain
- a chart template and management plan sheet for the patient
- *Back Advice* - patient information pamphlet

You may find it helpful to review *The Peterborough Back Rules* and the video first, then you could try the suggested assessment and management plan documenting your findings in the chart template. The poster, video and chart template follow the same order for easier reference.

The template is designed to:

a) serve as a reminder of the key assessment and management parameters of *The Rules*.

b) provide a logical and efficient way to record the information while reduce writing time.

c) become the clinical note for the patient encounter. It is easily adapted to an electronic medical record or a dictation outline.
The management plan sheet and the Back Advice pamphlet may be given to the patient on their first visit to you for an episode of mechanical back pain. They are designed to complement and reinforce your verbal advice.

We hope you will find these materials both informative and helpful for the management of your patients with acute low back pain. We will be evaluating the usefulness of these materials later this fall. Please give your comments when you are contacted.

Sincerely,

The Peterborough Back Rules Working Group:

Claire Bombardier
Fred Doris
Jaime Guzmán
Roger Holmes
Doug MacIntosh
Judy MacIntosh
Ivan McCully

Ron Milne
Vicki Pennick
Gordon Powell
Jane Purvis
Sue Sudbury
Ian Sutherland

The Peterborough Back Rules and Supporting materials have been produced as part of a research project partially funded by the Canadian National Health Research and Development Program. The investigators in the research project are: Geoff Anderson, Claire Bombardier, Dave Davis, Ed Gibson, Rick Glazier, Sheila Hogg-Johnson, and Gwen Jansz.

Special thanks to Peter Birt, Lily Cheung, Alice Dong, Lisa Dupé and Hamilton Hall for their assistance in the production of this package.
The Peterborough Back Rules
For Acute Low Back Pain

<table>
<thead>
<tr>
<th>HISTORY</th>
<th>PHYSICAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain onset and duration</td>
<td>Back inspection/palpation</td>
</tr>
<tr>
<td>What makes it worse or better?</td>
<td>Heel walk (L4,L5)</td>
</tr>
<tr>
<td>Worse in back or leg (sciatica)?</td>
<td>Rise on toes (S1)</td>
</tr>
<tr>
<td>Activity limitations?</td>
<td>Straight leg raising</td>
</tr>
<tr>
<td>Past back problems?</td>
<td>Hip rotation</td>
</tr>
<tr>
<td>Rule out RED FLAGS:</td>
<td>Great toe dorsi flexion</td>
</tr>
<tr>
<td>Neurological deficit</td>
<td>Knee reflex (L4)</td>
</tr>
<tr>
<td>Infection</td>
<td>Ankle reflex (S1)</td>
</tr>
<tr>
<td>Fracture</td>
<td>If sciatica, test sensation</td>
</tr>
<tr>
<td>Tumour</td>
<td>in medial malleolus (L4), first web space (L5)</td>
</tr>
<tr>
<td>Inflammation</td>
<td>and lateral foot (S1)</td>
</tr>
</tbody>
</table>

I. Perform a focused history and physical as outlined.

II. If there are no red flags or neurological findings the patient has Mechanical Back Pain. There is no need for x-rays or laboratory tests.

III. Encourage activity (Hurt does not mean Harm). Acetaminophen, non-steroidal anti-inflammatory and manipulation may help the patient during the first month.

IV. Ninety percent of patients will be much better in 4 weeks. Recommend early return to work and contact the work site for accommodation if needed.

1. Symptoms
Onset: [ ] sudden [ ] gradual while:
Duration: ________ days Injury date (if any) ________
Severity: [ ] mild [ ] moderate [ ] severe
Aggravated by: ________________________________
Relieved by: _________________________________
Worst pain: [ ] back OR [ ] R [ ] L leg
How long can sit? ________ stand: ________ walk: ________ work: ________?
How much can lift? ________ Kg
Past back problems [ ] No [ ] Yes, specify: ________________________________

[ ] Think pain is due to: ________________________________

Off work/school? ________ days Insurance/WCB
Expect to return to work in ________ days

2. Examination
(check box if normal - if not, describe abnormalities)

Standing
[ ] Back inspection
[ ] tenderness
[ ] flexion ________ degrees
[ ] extension ________ degrees
[ ] heel walk (L4, L5)
[ ] rise on toes (S1)

Lying
[ ] pain below knee on straight leg raise at ________ degrees [ ] no pain
[ ] hip rotation
[ ] femoral stretch
[ ] great toe dorsi flexion
[ ] knee reflex (L4)
[ ] ankle reflex (S1)

Sensory (if sciatica)
[ ] thigh, medial malleolus (L4)
[ ] first web space (L5)
[ ] lateral foot (S1)

3. Pain Behavior/psychosocial
(explore the following factors which may impact recovery)
Believes hurt equals harm
Fears/avoids activity
Low mood/social withdrawal
Prefers passive treatment
Home environment
Work environment

4. Assessment & Management
(check strategies used/recommended)
[ ] discuss patient expectations
[ ] educate on posture
[ ] heat/cold
[ ] medications
[ ] manipulation if <1 month and no radiculopathy
[ ] activities/exercises
[ ] early return to work

Rule out red flag conditions (NIFTI)

Symptoms:
Neurological: major motor weakness, disturbance of bowel or bladder control
Infection: fever, risk of UTI, IV drug use, immune suppressed
Fracture: trauma, osteoporosis risk
Tumour: history of cancer, weight loss, fever, pain worse supine or at night
Inflammation: morning stiffness > 1 h
Age: < 20 years or > 50 years

Examination:
Neurological (severe) deficit:
- saddle numbness
- major motor weakness
- major sensory loss

Any red flags?
[ ] No [ ] Yes, specify: ________________________________

NIFTI Management:
Neurological:
- questionable deficit:
  - EMG, SEP (evoked potentials)
- unquestionable deficit:
  - specialist, CT or MRI urgent if cauda equina
  - consider epidural steroid injection
Infection: CBC, ESR, bone scan, x-ray
Fracture: x-ray, bone scan at 10 days if still suspicious
Tumour: x-ray, bone scan, calcium
Inflammation: bone scan, ESR

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Name: ________________________________

Four to six weeks after onset if not improved

1. Symptoms (focus on improvements, even if small)
   - Severity: □ better □ same □ worse
   - Worst pain: □ back OR □ R □ L leg
   - How long can sit: ____ stand: ____ walk: ____ work: ____?
   - How much can lift? _____ Kg
   - Off work/school? ______ days
   - Expect to return to work in ______ days

2. Examination (repeat as for first visit)
   - Back flexion ______ degrees, extension ______ degrees
   - Pain below knee on straight leg raise at ______ degrees
   - OR □ no pain

3. Pain Behavior/psychosocial
   - Explore following factors which may impact recovery
   - Believes hurt equals harm
   - Fears/avoids activity
   - Low mood/social withdrawal
   - Prefers passive treatments
   - Home environment
   - Work environment

4. Assessment & Management
   - Check strategies used/recommended
     □ investigations (CBC, ESR, X-ray, bone scan, CT scan)
     □ modified work/workplace support
     □ physiotherapy

Over 6 weeks after onset if not improved

1. Symptoms (focus on improvements, even if small)
   - Severity: □ better □ same □ worse
   - Worst pain: □ back OR □ R □ L leg
   - How long can sit: ____ stand: ____ walk: ____ work: ____?
   - How much can lift? _____ Kg
   - Off work/school? ______ days
   - Expect to return to work in ______ days

2. Examination (repeat as for first visit)
   - Back flexion ______ degrees, extension ______ degrees
   - Pain below knee on straight leg raise at ______ degrees
   - OR □ no pain

3. Pain Behavior/psychosocial
   - In depth assessment of identified risk factors

4. Assessment & Management
   - Patient is potentially evolving into chronicity. Consider referral to appropriate specialist or multidisciplinary clinic.

New Findings:

Date: ________________________________

Assessment:

Date: ________________________________

Plan:

Signature: ________________________________
Prescription for:

Date: ____________

1. Try to maintain your daily activity as close to normal as possible. Ask your employer for temporary lighter duties if you need it.

2. Use _____________, ___ times a day to control the pain.

3. Begin walking, using the exercise bike, or swimming as soon as possible. Start with ___ minutes the first day. Add ___ minutes each day until you reach 30 minutes of activity without stopping.

4. If you are not better in _____ weeks, come back to my office.

_________________________ MD

Please remember:

- You have Mechanical Back Pain. The pain is not due to spinal damage. There is no need for x-rays or laboratory tests.

- Ninety percent of people with Mechanical Back Pain are much better in 4 weeks.

- To recover faster you have to keep active.

- It does hurt, but you really can help yourself. Remember, hurt does not mean harm.

- On the back of this card you will find advice on postures and techniques that will help you control your pain.

---

**Postural advice**

**Lifting**
Lift and carry close to your body. Bend your knees and make your legs do the work. Don’t twist your back. Work with a partner for heavy objects.

**Sitting**
Use an upright chair. Try a rolled towel or back support in the small of your back.

**Standing**
Try putting one foot then the other, on a low box or stool. Have your working surface at a comfortable height.

**Driving**
Keep buttocks as far back in seat as possible. Adjust your seat from time to time. Try a rolled towel or back support in the small of your back.

**Sleeping**
Try a firm mattress. Try a rolled towel around your waist, pillows under your knees, or both.

---

**Pain control techniques**

**Partial push-up**
Lie on your stomach. Push up with your arms, but keep your hips on the floor.

**Pelvic tilt**
Lie on your back with knees bent and feet flat on the floor. Suck your stomach in and press the small of your back against the floor.

---

*Postural advice based on The Back Book 2nd impression by Prof Martin Rubens, Prof Gordon Westall, Dr Jennifer Kaiser-Matell, Dr Helen Burnet, Dr Chris Allen, Dr Herb Carreiro. © The Stationery Office Ltd, Hornsea.*

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Back Advice

Remember:

If you have a normal life, eat a balanced diet, and avoid straining. Help yourself to recover quickly and keep moving. Stay active and avoid disability. Help yourself to keep your back as a priority in everything you do.

The best and most effective advice on how to prevent:

• Slipping
• Falling
• Lifting
• Twisting
• Turning
• Bending
• Reaching

Follow these guidelines - you really can help yourself.
Some things make your pain worse:

- Being on your feet too long
- Lifting without thinking
- Stout shoes with high heel supports
- A low chair without back support
- Sitting for a long time

Losing weight can help your pain.

Here are some ways to help your pain:

- Exercise: Being mobile.
- Take breaks.
- Don't stand for long periods of time.
- Get sufficient sleep.
- Use a firm mattress and pillow.
- Avoid smoking.
- Keep your weight under control.

Some exercises that may help:

- Walking
- Swimming
- Cycling
- Yoga
- Strength training

Avoid:

- Activities that make your pain worse.
- Lifting heavy objects.
- Prolonged sitting or standing.

If your pain does not get better, you should see a doctor.
THE PETERBOROUGH BACK RULES

For Acute Low Back Pain

HISTORY
Pain onset and duration
What makes it worse or better?
Worse in back or leg (sciatica)?
Activity limitations?
Past back problems?

Rule out RED FLAGS:
Neurological deficit
Infection
Fracture
Tumour
Inflammation

PHYSICAL
Back inspection/palpation
Heel walk (L4, L5)
Rise on toes (S1)
Straight leg raising
Hip rotation
Great toe dorsiflexion
Knee reflex (L4)
Ankle reflex (S1)
If sciatica, test sensation in medial malleolus (L4), first web space (L5) and lateral foot (S1)

I. Perform a focused history and physical as outlined.

II. If there are no red flags or neurological findings the patient has Mechanical Back Pain. There is no need for x-rays or laboratory tests.

III. Encourage activity (Hurt does not mean Harm). Acetaminophen, non-steroidal anti-inflammatories and manipulation may help the patient during the first month.

IV. Ninety percent of patients will be much better in 4 weeks. Recommend early return to work and contact the work site for accommodation if needed.
I. Perform a focused history and physical as outlined.

II. If there are no red flags or neurological findings the patient has Mechanical Back Pain. There is no need for x-rays or laboratory tests.

III. Encourage activity (Hurt does not mean Harm). Acetaminophen, non-steroidal anti-inflammatory and manipulation may help the patient during the first month.

IV. Ninety percent of patients will be much better in 4 weeks. Recommend early return to work and contact the work site for accommodation if needed.

Developed by the Peterborough Health and Health Canada.
Appendix C

Questionnaires referred to in this thesis
Dear Doctor:

The three paragraphs that follow are an attempt to describe the behavioural characteristics of physicians as they interact with their colleagues on an informal basis during the course of a typical day in practice. These characteristics have been derived from a survey of over three hundred Michigan physicians. Most physicians demonstrate these characteristics throughout their careers. However, as with any human interaction, some physicians demonstrate such behaviour more often and more consistently than others. What we would like to learn from you is which physician(s) in your community best fit the descriptive paragraphs that follow.

Please read each paragraph carefully and indicate the name(s) of the physician(s) that best fit each description. You may write the names of up to three physicians for each paragraph. The same physician may be named in more than one paragraph. Remember all information on this survey is strictly confidential.

**Paragraph A**

They convey information in such a fashion as to provide a learning experience. They express themselves clearly and to the point—provide practical information first and then an explanation or rationale if time allows. They take the time to answer you completely and do not leave you with the feeling that they were too busy to answer your inquiry. They enjoy and are willing to share any knowledge they have.

NAME __________________________________________

NAME __________________________________________

NAME __________________________________________

**Paragraph B**

They are individuals who like to teach. They are current and up to date and demonstrate a command of medical knowledge. They demonstrate a high level of clinical expertise.

NAME __________________________________________

NAME __________________________________________

NAME __________________________________________

**Paragraph C**

They are "caring" physicians who demonstrate a high level of humanistic concern. They never talk down to you; they treat you as equal even though it's clear they are helping you.

NAME __________________________________________

NAME __________________________________________

NAME __________________________________________
November, 1997

Dear Colleague,

Over the last year, a group of physicians in Peterborough and researchers at the Institute for Work & Health in Toronto, have conducted continuing medical education activities in regard to acute low-back pain. This effort has been sponsored by the Office of Continuing Medical Education at the University of Toronto. I would appreciate your confidential evaluation of this program by answering the enclosed survey.

- Please fax the completed survey to 416-971-2722 at your earliest convenience.

- If you are not aware of any CME activities on back pain, answer only the three initial questions.

- If you choose not to answer, please return the blank survey, so that we will not contact you again.

To preserve confidentiality and still allow tracking of survey respondents, we have marked each survey with an identifying number. Only the research assistant tracking survey response will have access to the list of identifying numbers. Your fax and this list will be destroyed after we get the surveys back.

Sincerely,

Dave Davis, MD
Associate Dean, Continuing Education

encl.
CME ON BACK PAIN. EVALUATION SURVEY

Please circle one answer for each question.

1. Does your current medical practice include patients with back pain?
   1. NO   2. YES

2. Over the last year, have you modified in any way your approach to patients with low back pain?
   1. NO   2. YES

   In what way?

   Why?

3. Are you aware of The Peterborough Back Rules for Acute Low Back Pain?
   1. NO   2. YES

   How did you find out about them?

4. In your opinion, what is/are the most important message(s) of The Peterborough Back Rules? Please circle all that apply.

   A. A focused history and physical suffice for initial assessment in most patients.
   B. A plain lumbar X-ray is useful in most patients.
   C. Activity and exercise are good treatments.
   D. Bed rest for a few days is necessary for many patients.
   E. Not sure
   F. Other:
5. There are a number of materials supporting *The Peterborough Back Rules*. Please check the option that best reflects your opinion about the usefulness of each of the following.

<table>
<thead>
<tr>
<th>Material</th>
<th>Very useful</th>
<th>Useful</th>
<th>Somewhat useful</th>
<th>Not useful</th>
<th>Can't judge</th>
<th>Why?</th>
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<tbody>
<tr>
<td>Poster</td>
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<td>Pocket card</td>
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<td>Examination video</td>
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<tr>
<td>Chart template</td>
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<tr>
<td>Postural advice sheet</td>
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<tr>
<td>Back Advice pamphlet</td>
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</tbody>
</table>

6. We are particularly interested in your experiences with the chart template (form to record findings in the patient’s chart). In what proportion of your patients with new episodes of low back pain have you used it to record your findings?

A. 100%
B. More than 75%
C. 50 to 75%
D. 25 to 50%
E. Less than 25%
F. I have not used it.

What difficulties did you encounter in trying to use the chart template?

How can the chart template be improved?

Any other comments about *The Peterborough Back Rules* or how they were introduced?

In January, there will be focus groups held in Peterborough for local physicians to share their views on the Peterborough Back Rules.

☐ Please check here if you are interested in participating.

Thank you. Please fax survey to Dr. Davis at 416/971-2722 or mail it in enclosed envelope.
Focus groups facilitator's guide

The focus groups you have been asked to facilitate are part of an study evaluating the acceptability and usefulness of The Peterborough Back Rules for Acute Low Back Pain, in particular the chart template. Please find attached an structured abstract of the whole study and copies of the chart template and the other materials supporting the Peterborough Back Rules.

Our objective for the focus groups is to explore in depth the barriers and facilitators for the use of the rules in primary care practice. Preliminary survey and qualitative interview data suggest that the following are significant barriers and facilitators:

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---
---

We would like to have a better sense of the relative importance of these barriers and facilitators. We will also like to make sure we are not missing important barriers/facilitators.

We have invited to the focus groups physicians with different opinions about the usefulness of the Peterborough Rules and chart template, so that the group discussion and exchange will force them to clarify their respective positions. Towards the end of the focus group we would like you to lead the group in crystallising concrete recommendations to increase acceptance of the decision aid. What follows is a suggested agenda for the focus group.

PRESENTATION

Start by introducing yourself and welcome the participants. Make it clear that you do not have any vested interest in the decision aid, but in getting an accurate assessment of the participants opinions and perceptions. State the objective of the focus group: "To explore in depth the barriers and facilitators for the use of the rules in primary care practice."

Set up the ground rules for the focus group:

1. Everybody is entitled to his/her opinion
2. The discussion will be audio taped. Tapes will be stored in a secure place and transcripts will be devoid of any identifying information about participants.
3. Tapes and transcripts will be used for research purposes only.
Try breaking the ice asking that each participant briefly introduces him/herself and say why they accepted to participate. Although most of the participants will know each other, make sure that everybody can refer to each other by first name.

OPEN DISCUSSION

Suggested questions and probes:

1. What do you like about the Peterborough Back Rules?

2. What you don’t like about the Peterborough Back Rules?

3. Have you used the Peterborough Back Rules template? Why?

4. What do you like about the template?

5. What you don’t like about the template?

FOCUSED DISCUSSION

Explore in more detail specific barriers and facilitators expressed during the open discussion or from the survey/qualitative interviews.

1. A number of people mention _____ how important is that for you?

2. A number of people suggested that changing the template to ______ would make it more useful. Would that work for you? Why?

CLOSURE

Close focus group with a wish-list, asking each of the participants for the one thing that they would like to change about the Peterborough Back Rules in general and about the chart template in particular.

Finish by thanking the participants for their collaboration and give them a little token of appreciation (a chocolate or something like that) to take home.
Interview guide for qualitative interviews

1. Are you aware of the low back pain guidelines study going on in Peterborough
   • If no, probe mentioning the Peterborough Back Rules
   • If they maintain they are not aware of any such study bring closure to the interview

2. I'd really be interested in any comments about the study and how it has been conducted to date.

3. Have you attended any small group workshops, meetings or seminars where the Peterborough Back Rules and associated materials were introduced?
   • Did you find the workshops/seminars helpful, informative, clear?
   • Did you come away with an understanding of how you could use the Peterborough Back Rules in your practice?

4. Did you receive the Peterborough Back Rules binder?
   • What did you like about it?
   • What you did not like about it

This general question leaves it open for them to comment in the way binders were distributed and their general feelings about it. They will also be free to highlight that part of the binder that they liked/disliked the most.

5. Have you seen the video that demonstrates a 3 minute examination for low back pain?
   • What do you think of its:
     clarity, conciseness, comprehensiveness?
     presentation?

6. What do you think of the chart template?
   • Did you use it? Why? (Or why not?)
   • Did you find it useful? Why? (Or why not?)
   • Does it progresses logically?
   • Does it allow you to record your findings in a straightforward and efficient manner?
   • Does it provide a useful addition to the patient’s chart or is just one more piece of paper?
   • Does it/will it facilitate your reassessment or subsequent assessment of patients?
7. What do you think about the management plan/postural advice sheet that you can fill out and give to your patients who have mechanical back pain?
   • Have you filled it out and given to any of your patients?
   • Have they made any comments to you about its clarity or helpfulness?
   • Are there certain patients with mechanical low back pain for whom you feel the sheet would not be appropriate? Why?

8. What did you think of the pocket card that summarizes The Rules?
   • Did you use it? Why? (Or why not?)
   • Did you find it useful? Why? (Or why not?)
   • Is the term NIFTY helpful?
   • What do you think or its:
     - clarity, conciseness, comprehensiveness?
     - presentation, legibility?
     - user-friendliness?

10. What did you think about the poster or wall chart?
    • Did you use it? Why? (Or why not?)
    • Did you find it useful? Why? (Or why not?)
    • What do you think or its:
      - clarity, conciseness, comprehensiveness?
      - presentation, legibility?
      - user-friendliness?

11. Do you have any comments about the pamphlet for mechanical back pain patients entitled "Back Advice"?
    • Have you given it to any of your patients?
    • Have they made any comments to you about its clarity or helpfulness?
    • Are there certain patients with mechanical back pain for whom you feel the pamphlet would not be helpful? Why?

12. How does the material provided through the study compare to information that you can get from other sources such as your colleagues or conferences?
    • Is the content of the information different?
    • Is the written information form the study better than/worse than/the same/or different from information you could get/have gotten from other sources?

13. Has there been much discussion of the Peterborough Back Rules, the associated materials, or the study itself among you and your colleagues outside of formal meetings - for example, in study groups? over lunch? during other non-professional involvement?
    • How are the study and the study materials viewed by your colleagues?
14. What do you think of the process that was followed in developing and disseminating the Peterborough back Rules?
   - Do you feel Peterborough physicians were given sufficient opportunity for input and questions?
   - Do you feel the process was too top-down?
   - Are there different points of view or interest groups or individuals that were not adequately represented?

15. What effects has the study had on you personally?
   - Has it affected your practice?
   - Have you changed the way you treat low back pain as a result of the study or study materials?

   If yes:
   - Which one of these media had the most effect on your decision to change your practices;

   Or,
   - Was it a combination? (specify)

   Or,
   - Was it something else that made you want to make changes?

   If no:
   - Please explain why you choose not to make changes.
Appendix D

The recommendations of the AHCPR Clinical Practice Guidelines for Acute Low Back Problems in Adults
The ratings in parentheses indicate the scientific evidence supporting each recommendation according to the following scale:

A = strong research-based evidence (multiple relevant and high-quality scientific studies).
B = moderate research-based evidence (one relevant, high-quality scientific study or multiple adequate scientific studies).
C = limited research-based evidence (at least one adequate scientific study in patients with low back pain).
D = panel interpretation of evidence not meeting inclusion criteria for research-based evidence.

The number of studies meeting panel review criteria is noted for each category.

<table>
<thead>
<tr>
<th>Recommend</th>
<th>Option</th>
<th>Recommend against</th>
</tr>
</thead>
<tbody>
<tr>
<td>History and Physical Exam 34 studies</td>
<td>Basic history (B). History of cancer/ infection (B). Signs/symptoms of cauda equina syndrome (C). History of significant trauma (C). Psychosocial history (C). Straight leg raising test (B). Focused neurological exam (B).</td>
<td>Pain drawing and Visual Analog Scale(D)</td>
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<tr>
<td>Patient Education 14 studies</td>
<td>Patient education about low back symptoms (B). Back school in non-occupational settings (C).</td>
<td></td>
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<tr>
<td>Injections 26 studies</td>
<td>Epidural steroid injections for radicular pain to avoid surgery (C).</td>
<td>Epidural injections for back pain without radiculopathy (D). Trigger point injections (C) Ligamentous injections (C) Facet joint injections (C) Needle acupuncture (D).</td>
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<tr>
<td>Bed Rest 4 studies</td>
<td>Bed rest of 2-4 days for severe radiculopathy (D).</td>
<td>Bed rest &gt; 4 days (B).</td>
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<td>-------------------</td>
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<tr>
<td>Activities and Exercise 20 studies</td>
<td>Temporary avoidance of activities that increase mechanical stress on spine (D). Gradual return to normal activities (B). Low-stress aerobic exercise (C). Conditioning exercises for trunk muscles after 2 weeks (C). Exercise quotas (C).</td>
<td>Back-specific exercise machines (D). Therapeutic stretching of back muscles (D).</td>
</tr>
<tr>
<td>Detection of Physiologic Abnormalities 14 studies</td>
<td>If no improvement after 1 month: Bone scan (C). Needle EMG and H-reflex tests to clarify nerve root dysfunction (C). SEP to assess spinal stenosis (C).</td>
<td>EMG for clinically obvious radiculopathy (D). Surface EMG and F-wave tests (C). Thermography (C).</td>
</tr>
<tr>
<td>X-rays of L-S spine 18 studies</td>
<td>When &quot;red flags&quot; for fracture present (C). When &quot;red flags&quot; for cancer or infection present (C).</td>
<td>Routine use in first month of symptoms in absence of &quot;red flags&quot; (B). Routine oblique views (B).</td>
</tr>
<tr>
<td>Imaging 18 studies</td>
<td>CT or MRI when cauda equina, tumor, infection, or fracture strongly suspected (C). MRI test of choice for patients with prior back surgery (D). Assure quality criteria for imaging tests (B).</td>
<td>Use of imaging test before one month in absence of &quot;red flags&quot; (B). Discography or CT-discography (C).</td>
</tr>
<tr>
<td>Surgical Considerations 14 studies</td>
<td>Discuss surgical options with patients with persistent and severe sciatica and clinical evidence of nerve root compromise after 1 month of conservative therapy (B). Standard discectomy and microdiscectomy of similar efficacy in treatment of herniated disc (B). Chymopapain, used after ruling out allergic sensitivity, acceptable but less efficacious than discectomy to treat herniated disc (C).</td>
<td>Disc surgery in patients with back pain alone, no &quot;red flags,&quot; and no nerve root compression (D). Percutaneous discectomy less efficacious than chymopapain (C). Surgery for spinal stenosis within the first 3 months of symptoms (D). Stenosis surgery when justified by imaging test rather than patient's functional status (D). Spinal fusion during the first 3 months of symptoms in the absence of fracture, dislocation, complications of tumor or infection (C).</td>
</tr>
<tr>
<td>Psychological Factors</td>
<td>Psychological factors can alter patient response to symptoms and treatment (D).</td>
<td>Referral for extensive evaluation/treatment prior to exploring patient expectations or psychosocial factors (D).</td>
</tr>
</tbody>
</table>