

Compliance with clinical practice guidelines in family physicians managing worker's compensation board patients with acute lower back pain

Paul B. Bishop, DC, MD, PhD*, Peter C. Wing, MB, MSc, ChB, FRCS(C)

Combined Neurosurgical and Orthopaedic Spine Program, Heather Pavilion, Vancouver General Hospital, 2733 Heather Street, Vancouver, BC V5Z3J5, Canada

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Abstract

BACKGROUND CONTEXT: Family physician compliance with acute lower back pain clinical practice guidelines remains uncertain.

PURPOSE: To determine the degree of guideline compliance of family physicians managing patients with workers' compensation claims and acute mechanical lower back pain.

STUDY DESIGN: Observational study.

PATIENT SAMPLE: One hundred thirty-nine family physicians in British Columbia.

OUTCOME MEASURES: Compliance with guideline recommendations for history, examination procedures, diagnostic testing and treatments.

METHODS: Physician workers' compensation board patient reports for acute lower back pain without leg symptoms and not greater than 2 to 3 weeks duration were scored for guideline adherence up until 12 weeks after onset.

RESULTS: Physicians demonstrated a high degree of compliance with the guideline-recommended history, examination procedures and medications, but low compliance with recommended imaging and many treatment recommendations.

CONCLUSIONS: Recently published clinical practice guidelines regarding the management of patients with acute mechanical lower back pain have not been fully implemented into the patterns of practice of the family physicians. © 2003 Elsevier Inc. All rights reserved.

Keywords:

Acute lower back pain; clinical practice guidelines; family physician; workers' compensation

Introduction

Approximately 40% of all worker's compensation board (WCB) claims concern back injuries. The majority of these claims involve acute injury to the soft tissues of the lower back or acute mechanical lower back pain. The WCB in the Province of British Columbia recently compiled, published and distributed clinical practice guidelines for the management of acute mechanical lower back pain to all family

physicians in this province [1]. These guidelines were based primarily on extensive and critical reviews of the literature carried out by a number of expert panels, which included the Agency on Health Care Policy and Research (US National Institutes of Health) [2], the Industrial Medicine Council of California [3] and the Quebec Task Force on Spinal Disorders [4]. Since that time, several other countries have convened multidisciplinary expert panels and have published similar guidelines [5–9]. As such, these guidelines are derived exclusively from the best available scientific evidence or expert panel consensus and are independent of any bias associated with worker/employer special interest issues.

Family physicians are the most common portal of entry into the health-care system for injured workers and are therefore in a unique position to significantly influence the clinical management of this group of patients. It has been demonstrated that the patterns of practice of family physicians

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* Corresponding author. Combined Neurosurgical and Orthopaedic Spine Program, Heather Pavilion, Vancouver General Hospital, 2733 Heather Street, Vancouver, BC, Canada V5Z 3J5. Tel.: (604) 875-4549; fax: (604) 875-5858.

E-mail address: pbishop@vanhosp.bc.ca (P.B. Bishop)

managing patients with lower back pain varies widely [10] and is resistant to change [11,12]. Furthermore, patients who receive compensation benefits are at increased risk for treatment failure, overuse of narcotics and for delayed return to preinjury activities [13,14]. Thus, family physician adherence to a patient management strategy that has the greatest potential for enhancing recovery by emphasizing evidence-based treatments and lessening the influence of interventions that have no long-term value or may prolong recovery from injury would seem to be of particular importance in these patients. This study investigated the degree to which the patterns of practice of a group of British Columbia family physicians was in compliance with the current clinical practice guidelines for managing patients with acute mechanical lower back pain who have an accepted WCB claim.

Methods

The research design was an observational study. It involved a consecutive sample of 139 different family physicians identified through the WCB database who submitted First Report forms identifying a patient with acute lower back pain without lower extremity involvement (i.e., Quebec Task Force Categories I and II) of 2 to 3 weeks duration. Each physician in the study managed one patient. The subsequent Progress Reports of the physicians whose patients went on to have approved WCB claims were followed. Family physician compliance with the clinical practice guidelines was measured using a standardized format that compared the distributed guidelines (Table 1) with the information obtained from the physician's WCB First Report and Progress Reports (Figs. 1 and 2). Data were recorded in this manner until the patient returned to full work status or for a period of 12 weeks from the date of injury (i.e., to the end of the acute phase of the injury). The initial reports were scored for the presence of two patient history items—1) recorded history of initiating event; and 2) prior history of similar symptoms—and two physical examination criteria—1) recorded lumbosacral-oriented neurological examination and 2) reference to the presence or absence of “red flag” conditions (e.g., tumor, infection, fracture, cauda equina).

For the 0–4-week postinjury interval, the use of diagnostic investigations that were consistent with guideline recommendations was recorded. These include the use of diagnostic radiological investigations (e.g., plane X-rays, computed tomography [CT] or magnetic resonance imaging [MRI]) to rule out “red flag” conditions (e.g., fracture, infection, tumor, cauda equina syndrome, underlying active inflammatory disease) suggested by the patient's history and/or physical examination findings or a prior history of similar symptoms. Additional diagnostic measures, such as a referral to a specialist when “red flag” conditions or nonspondylogenic conditions (e.g., abdominal aneurysm) were suspected, were also recorded. For the 0–4-week postinjury interval, the use of

Table 1

Workers' Compensation Board of British Columbia Clinical Practice Guidelines for the diagnosis and treatment of acute lower back pain

Guideline concordant	Guideline discordant
0–4 weeks after injury	
Diagnostic	
History	Routine X-rays, CT, MRI
Information concerning initiating event	Myelography
Prior history of similar symptoms	Discography
Physical examination	Thermography
Lumbosacral neurological examination	Electrodiagnostic studies
Red flags (i.e., signs of tumor, infection, spinal fracture, cauda equina syndrome)	Computerized strength and motion testing
Treatment	
Education and reassurance	Routine use of opioids, NSAID or muscle relaxants
Activity and work modification	Epidural corticosteroids
Exercise	Hospitalization for nonsurgical treatment
Nonnarcotic medications	Bed rest greater than 4 days
Bed rest not greater than 4 days	
Physical therapy modalities	
Spinal manipulation	
5–12 weeks after injury	
Diagnostic	
X-rays, CT, MRI or bone scan	Thermography
Laboratory tests	Discography
	Surface EMG
	Diagnostic facet joint injections
	Computerized strength and motion testing
Treatment	
Activity and work modifications	Spinal manipulation
Work conditioning program	TENS
	Use of opioids
	Epidural steroid injections
	Traction
	Acupuncture
	Trigger point injections
	Facet injections
	Prolotherapy
	Lumbar supports
	Biofeedback

Data from [2–4].

CT=Computed tomography; EMG=electromyogram; MRI=magnetic resonance imaging; NSAIDs=nonsteroid anti-inflammatory drugs; TENS=transcutaneous electrical nerve stimulation.

diagnostic investigations that were not consistent with the clinical practice guidelines (e.g., plane X-rays, CT or MRI scans without clear indication, discography, thermography, computerized strength and range of motion testing and specialist referrals with no clear indications) was also recorded. Compliance with guideline-recommended treatments (i.e., education and reassurance, activity and work modifications, exercise, nonnarcotic medications on an “as required” basis,


WORKERS' COMPENSATION BOARD OF BRITISH COLUMBIA PLEASE SEND THIS REPORT TO THE OFFICE COVERING WORKER'S WORKPLACE AREA. PLEASE NOTE: FACSIMILE (FAX) COPIES ARE ACCEPTABLE AT ALL WCB OFFICES IN BC		PHYSICIAN'S FIRST REPORT	
PHYSICIAN — THIS REPORT NEEDS TO BE COMPLETED AND SUBMITTED ONLY WHEN: 1. The worker will be disabled beyond the day of injury, or 2. If the claim is for Hernia, Back Condition, Shoulder or Knee Strain or Sprain, Occupational Disease, or 3. If the Workers' Compensation Board has requested this report. IN ALL OTHER CASES, ONLY YOUR PHYSICIAN'S ACCOUNT IS REQUIRED.			
			Claim number
EMPLOYER'S NAME (as registered with the Board)	Telephone number	WORKER'S LAST NAME (please print) Mr. Ms. Mrs. Miss	
Operating location address	First name(s)	Initial	Gender
Date and time of injury	Mailing address		
Date and time of treatment	Date requested by WCB	Telephone number	Social Insurance Number
Who rendered first treatment? (if known)	Worker's Personal Health Number from BC Carecard		Date of birth MONTH / DAY / YEAR
1. Worker's statement of what happened			
2. (a) Is this patient's first visit to your office? <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> Unknown		2. (b) If NO, how long has worker been your patient? <input type="checkbox"/> 0-6 Months <input type="checkbox"/> 7-12 Months <input type="checkbox"/> More	
3. Presenting complaint(s)			
4. Prior medical problems affecting this area? <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> Unknown If YES, please describe			
5. Clinical examination (objective findings)			
6. Diagnosis (written)			
Primary injury code (numbers and description) BP NOI AP		Additional injury code (numbers and description) BP NOI AP	
7. Do you understand the tasks/activities of this worker's job? <input type="checkbox"/> YES <input type="checkbox"/> NO If yes, please provide a brief comment			
8. Ability to work: Did injury cause worker to be disabled from work? <input type="checkbox"/> YES <input type="checkbox"/> NO If YES, a) Date first disabled _____ b) Is worker fit to return to work? <input type="checkbox"/> YES <input type="checkbox"/> NO If yes, estimated date fit to return to work _____ If no, please estimate how much longer will worker likely be disabled <input type="checkbox"/> 1-6 Days <input type="checkbox"/> 7-13 Days <input type="checkbox"/> 14-20 Days <input type="checkbox"/> More c) If available, can worker do alternative light or part-time work? <input type="checkbox"/> YES <input type="checkbox"/> NO If yes, please specify nature of work and date available			
Please stamp or type name and address of physician or group and personally sign.		Payee number	Telephone number
		Received date	
		Signature of physician	

Fig. 1. Workers' Compensation Board of British Columbia: physician's first report (reprinted with permission).

bed rest of not greater than 4 days, physical therapy modalities, spinal manipulation) and avoidance of guideline-discordant treatments (i.e., routine use of opioids, epidural corticosteroid injections, hospitalization for nonsurgical treatment, surgery and bed rest greater than 4 days) were recorded. There was no "weighting" of the treatment interventions.

The use of additional guideline-concordant diagnostic procedures (e.g., diagnostic imaging, laboratory clinical

chemistry tests) or guideline-discordant (e.g., diagnostic facet joint injections) in the 4–12-week postinjury period was also determined. For the period of 4 to 12 weeks after injury, the guideline-recommended treatments were activity and work modifications or work conditioning. The treatments that the guidelines recommended against were epidural steroid injection, spinal manipulation, all passive physiotherapy modalities, acupuncture, lumbar supports and prolotherapy.



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The *Workers Compensation Act* requires that a report be submitted to the Board within **3 days** after the worker is, in the opinion of the physician or qualified practitioner, able to resume work and, if treatment is being continued after resumption of work, to furnish further adequate reports.

Please indicate your WCB payee number in the space allotted below.

PHYSICIAN'S PROGRESS REPORT

EMPLOYER'S NAME (as registered with the Board)	Telephone number	WORKER'S LAST NAME (please print)		
Operating location address		Mr. Ms. Mrs. Miss		
		First name(s)	Initial	Gender
Mailing address				
Date of injury	Telephone number	Social Insurance Number		
Date of treatment	Worker's Personal Health Number from BC Carecard	Date of birth		
MONTH / DAY / YEAR				
1. Patient's current symptoms				
2. Clinical examination (objective findings)				
Diagnosis (written)				
Primary injury code (numbers and description)		Additional injury code (numbers and description)		
BP NOI AP		BP NOI AP		
3. Is recovery satisfactory? <input type="checkbox"/> YES <input type="checkbox"/> NO If NO, what are the complications/other factors impeding progress?				
4. Would patient benefit from <input type="checkbox"/> Assessment by WCB physician <input type="checkbox"/> Work conditioning <input type="checkbox"/> Other _____				
5. (a) Can patient return to pre-accident work? <input type="checkbox"/> YES <input type="checkbox"/> NO				
If NO, will patient benefit from <input type="checkbox"/> Regular/Part-time work <input type="checkbox"/> Modified/Part-time work <input type="checkbox"/> Modified/Full-time work				
Any work restrictions? <input type="checkbox"/> YES <input type="checkbox"/> NO		If YES, please describe		
Estimated duration of restriction <input type="checkbox"/> Days <input type="checkbox"/> Weeks				
NOTE: Research has shown that part-time or modified work promotes rapid recovery for most injuries.				
(b) Estimated number of days off work <input type="checkbox"/> 1–3 Days <input type="checkbox"/> 4–6 Days <input type="checkbox"/> 7–13 Days <input type="checkbox"/> 14–20 Days <input type="checkbox"/> More _____				
Estimated return to work date (if applicable)		Was patient advised of return to work date?		
MONTH / DAY / YEAR		<input type="checkbox"/> YES <input type="checkbox"/> NO		
6. Comments				
Please stamp or type name and address of physician or group and personally sign.		Payee number	Telephone number	Received date
		Signature of physician		

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Fig. 2. Workers' Compensation Board of British Columbia: physician's progress report (reprinted with permission).

Results

As shown in Fig. 3, 89% of attending family physicians in the study group reported information relating to the history of the initiating event of the acute episode, and 24% also reported information regarding prior episodes of similar symptoms. In addition, recorded physical examination information showed that 63% of physicians reported carrying out a neurological examination that was consistent with guideline recommendations. However, only 5% of physicians reported assessing patients for "red flag" conditions.

The overall compliance with guideline recommendations with respect to imaging studies was 95% and with respect to specialist referral was 90% (Fig. 4). Fig. 4 illustrates that at least one diagnostic imaging study (eg, CT, MRI or bone scan) was ordered by 31 (22%) of the physicians. Of those, 24 (17%) ordered these tests in a manner consistent with the guideline recommendations (ie, a patient presenting within the 0–4-week postonset period with a recorded history of a prior episode of similar symptoms or a "red flag" condition). Only 7 (5%) of family physicians ordered one (or more) of these studies in the absence of these indications

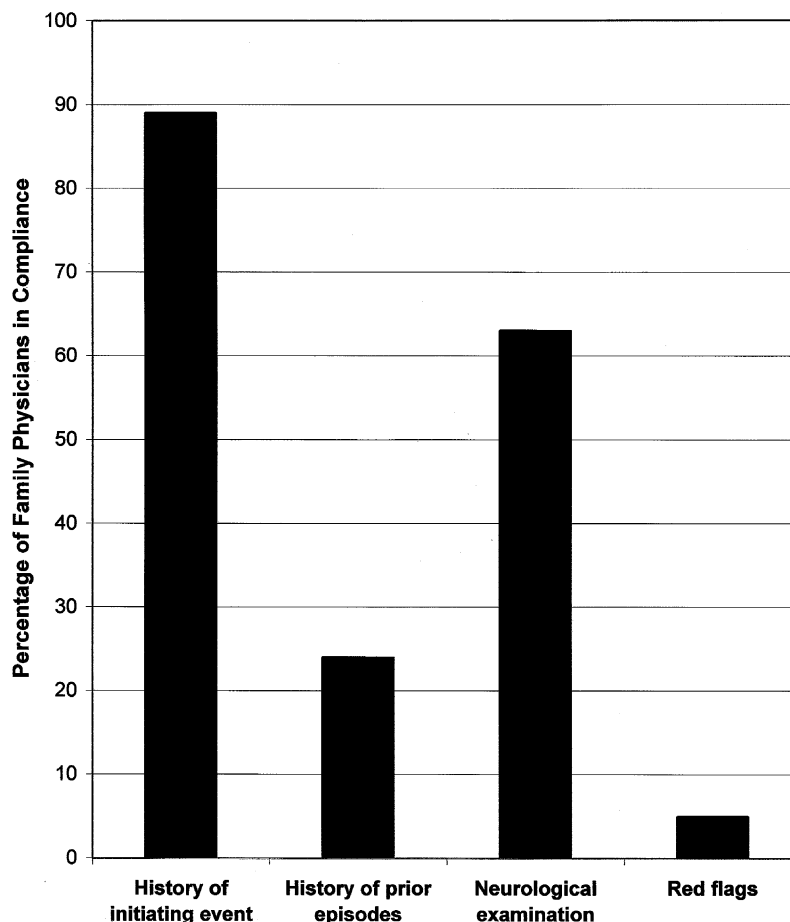


Fig. 3. Compliance with history taking and physical examination recommendations.

(ie, in contradiction of the guideline recommendations). Similarly, in the 4–12-week postinjury period, a total of 42 physicians (31%) referred patients to specialists. Of those, 29 (21%) specialist referrals were found to be in concordance with the guidelines (ie, with an abnormal documented patient history or physical examination finding), whereas 14 (10%) of the physicians made a referral without any supporting documented abnormal finding.

As far as treatment was concerned, 77% of family physicians prescribed medications in keeping with current clinical practice guidelines, but 40% recommended the use of narcotics beyond 4 weeks after injury. Chiropractic spinal manipulative therapy was recommended to 6% of patients by their family physicians in the 0–4-week postinjury period and by 5% beyond 4 weeks. Passive physiotherapy was recommended in concordance with guidelines by 66% of family physicians in the 0–4-week postinjury period and in a guideline-discordant manner beyond that time by 54% of physicians. Bed rest was recommended by 21% of physicians in the first 4 weeks and by 17% beyond 4 days after injury (Fig. 5). Forty-three percent of family physicians recommended guideline-consistent exercise, and only 7% reported that

they provided education and reassurance to their patients. Only 22% of physicians recommended some form of return to work (ie, graduated return to work, light duties or full return to work) (Fig. 6).

Discussion

Evidence-based clinical practice guidelines are now being developed and introduced to many areas of medical practice. These guidelines currently represent the “gold standard” of health care. They are derived mainly from research studies that, using sound methodology, have clearly demonstrated that a particular therapy/treatment has proven efficacy/effectiveness and that other treatments are either ineffective or actually increase morbidity. As such, clinical practice guidelines have the potential to dramatically improve the quality of health care through direct delivery of the most appropriate treatments and also indirectly, by acting as a standard to evaluate existing treatment programs [15].

The goal of this study was to determine the degree to which the patterns of practice of family physicians in British

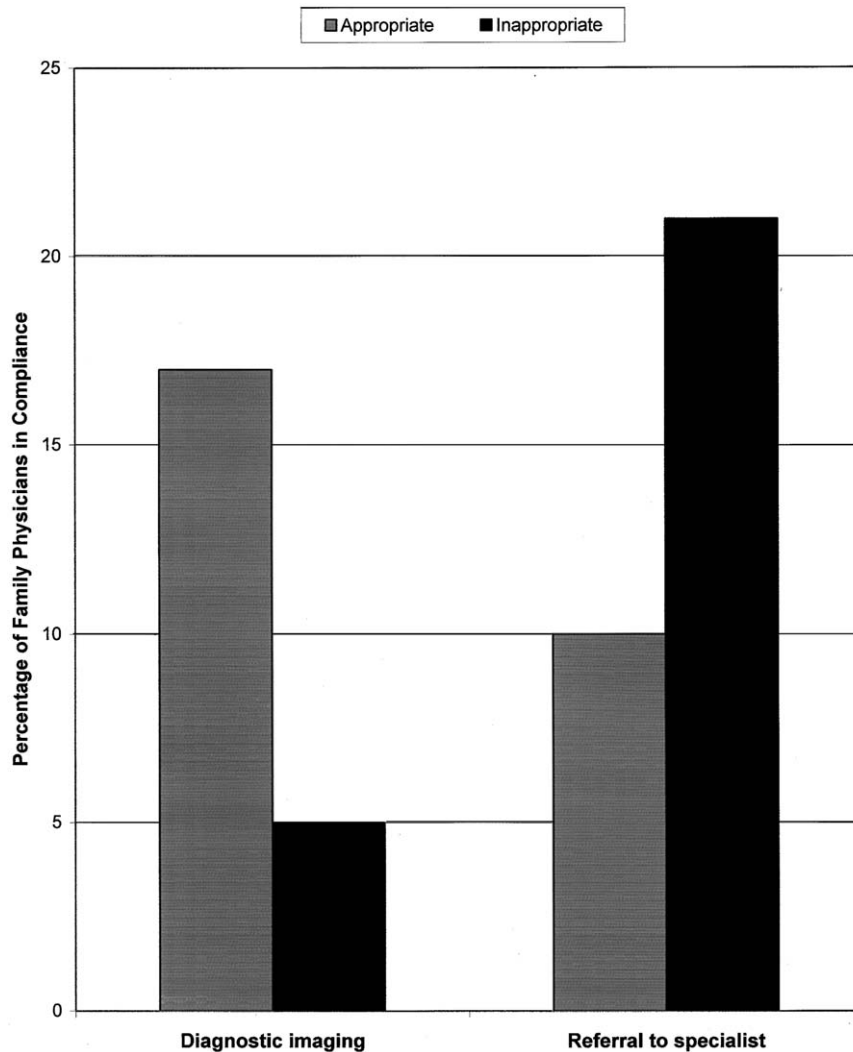


Fig. 4. Overall concordance with guideline recommendations for diagnostic imaging and referral to specialist.

Columbia are currently in agreement with the recommended guidelines for managing patients with acute mechanical lower back pain. The results show that the history taking, physical examination and use of the diagnostic imaging studies demonstrated by family physicians in large part compared favorably with the recommended clinical practice guidelines. However, the treatments recommended by family physicians to this group of patients differed significantly from those described by the guidelines. A significant number of family physicians made guideline-discordant treatment recommendations, such as excessive bed rest and passive physiotherapy. A large percentage of family physicians recommended some guideline-concordant treatments, such as early reactivation (77%) and exercise (43%), but failed to recommend guideline-concordant spinal manipulative therapy (6%).

As has been pointed out elsewhere, defining clinical practice guidelines is only one step in the process of developing evidence-based care [15–17]. An appropriate next step is to devise effective methods for implementing the guidelines. When this has been successfully achieved, more extensive patient outcome studies should then be carried out to determine whether the guidelines do indeed result in an improved standard of care. One such study has demonstrated that when physicians agree to follow guideline-recommended treatments, patients with acute lower back pain experience marginally improved short-term results and significantly reduced rates of developing chronic pain [18]. The final step in this process is to incorporate what has been learned from the processes of guideline implementation and validation into designs for more refined studies to form a basis for the next generation of clinical practice guidelines.

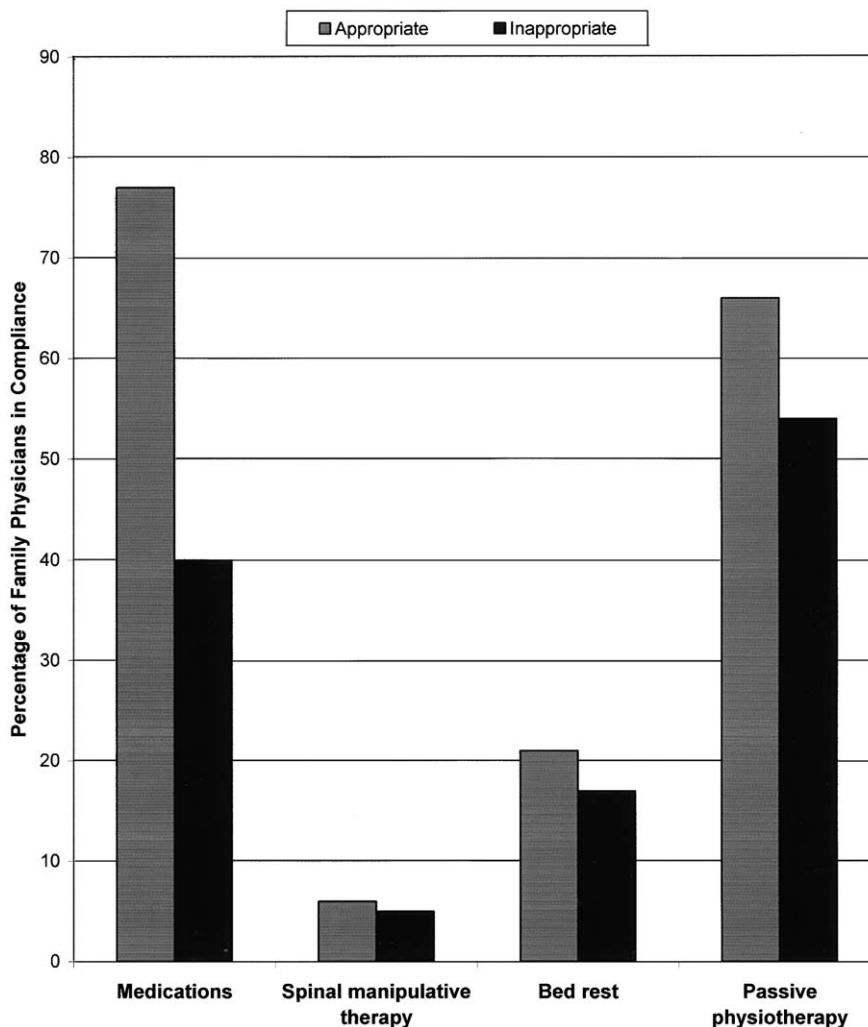


Fig. 5. Family physician compliance with guideline treatment recommendations.

There are several limitations inherent in a study of this nature. Of primary importance in this regard is the nature of the data collection process used in this study. The investigators relied exclusively on information obtained from WCB report forms that were completed and submitted by the patient's attending family physician. Thus, it is probable that all of the clinical information obtained from the family physician's office assessment of these patients was not reported in these forms. However, it would likely be reasonable to conclude that this type of omission error would principally affect the history taking and physical examination findings reported by the physician and be of lesser importance in the reported treatment recommendations. As we have noted, the main area of divergence from the recommended clinical practice guidelines reported in this study involved the area of family physician-recommended treatment.

Furthermore, the 139 family physicians included in this study represented 16% of the total number of family physicians in the Province of British Columbia. Thus, although

the actual number of family physicians studied was substantial, the degree to which this sample was representative of the entire population of family physicians in the Province of British Columbia is unknown.

Lastly, it should be remembered that the very nature of how clinical practice guidelines are derived has some inherent flaws. Several of the clinical and basic science studies on which the guidelines are based have been challenged from a methodological standpoint, and in some cases only single studies have been used. As such, these guidelines should be interpreted as a framework for managing patients rather than a doctrine. It may well be that there are subgroups of patients with acute mechanical back pain that would recover more quickly with treatments that are not consistent with current clinical practice guidelines. It is hoped that with improved implementation of guidelines, reliable patient outcome studies can be designed, which will in turn lead to a meaningful characterization of these subgroups.

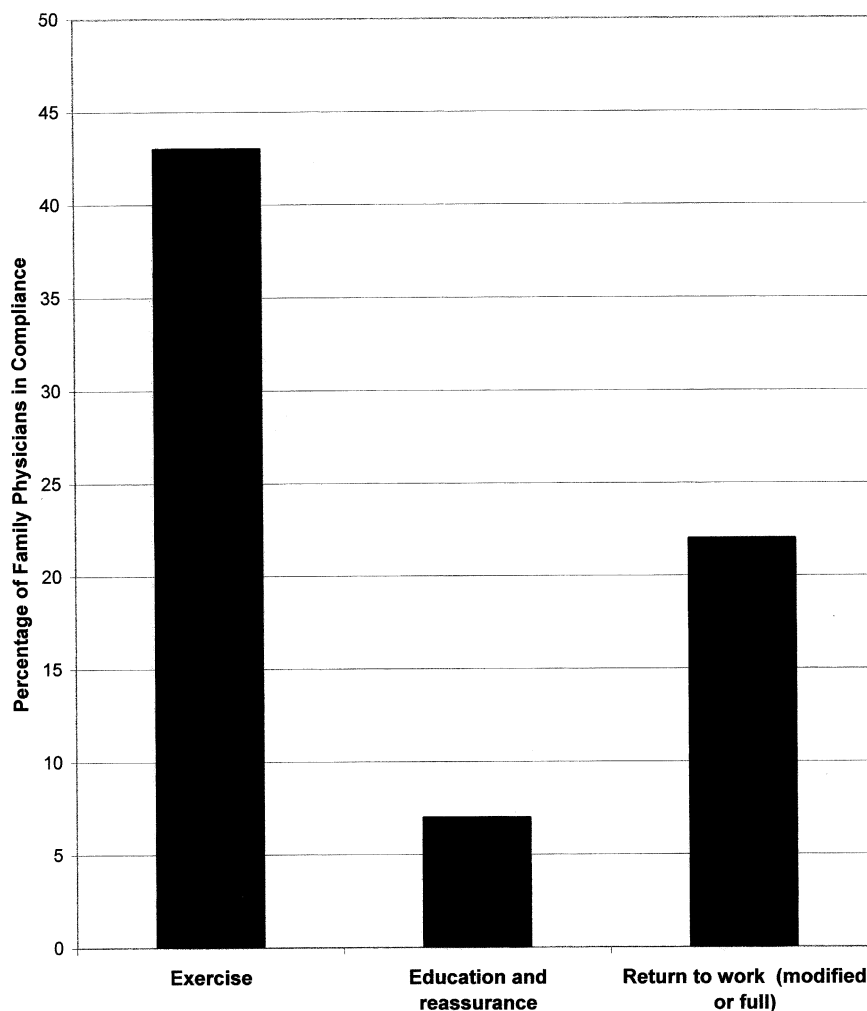


Fig. 6. Family physician compliance with guideline treatment recommendations regarding reactivation.

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Twenty-five Years Ago in Spine . . .

Bertil Stener and Björn Gunterberg, from the University of Göteborg, in 1978, established principles and described techniques for resection of sacral

tumors [1]. They reviewed previous case reports and presented their own experiences with 21 patients, 12 of whom had amputation of the sacrum and 9 a lateral resection of sacrum. They presented principles for planning surgical treatment of large sacral tumors and described techniques for performing the surgery.

Reference

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