

Approved \_\_\_\_\_ Date \_\_\_\_\_

MINUTES OF THE House COMMITTEE ON Labor and Industry

The meeting was called to order by Representative Arthur Douville at  
Chairperson

9:10 a.m./~~p.m.~~ on March 6, 1987 in room 526-S of the Capitol.

All members were present except:

Representative Sifers - Excused

Committee staff present:

Jerry Ann Donaldson, Research Department  
Jim Wilson, Revisor of Statutes' Office  
Juel Bennewitz, Secretary to the Committee

Conferees appearing before the committee:

Representative Clint Acheson  
Dr. Ray Baker, Shawnee County Health Department  
Dr. Ferman Marsh, Superintendent of Schools, Shawnee Heights School District  
Joyce Lacey, Bus Contractor  
Judy Shorman, Intracorp, Shawnee Mission

Representative Acheson was recognized and explained the purpose of H.B. 2342 was to eliminate payment of unemployment benefits to nurses, nurses' aides and bus drivers employed in connection with school districts by not by them.

Dr. Ray Baker was recognized and testified, attachment #1.

Representative Green asked what the cost would be to train a new person each year. The response was, "considerable".

Chairman Douville asked what these employees did during the summer months and the response was that most of them prefer not to be employed during the summer months. Dr. Baker stated that they had conducted a survey of their employees regarding summer employment and it supported his previous statement.

Representative Whiteman asked if these employees' salaries were figured on a 9 or 12 month basis. The answer was they are paid hourly.

Dr. Marsh was recognized and testified that governmental entities have joined forces to save costs such as the school districts and the public health agency. A dilemma has been created with teacher aides not being able to collect unemployment and health aides being eligible. He stated that what is being asked for is, when a school district contracts with another agency for services, those employees be exempt from receiving unemployment.

Joyce Lacey was recognized and testified, attachment #2.

Representative Green asked what the rate of turnover was and Mrs. Lacey answered that it was very low. She has two drivers who have driven for her for 16 years and one in her sixth year.

Representative O'Neal made a motion to report H.B. 2342 favorably for passage. Representative Buehler seconded the motion. After a voice vote, division was called for by Representative Hensley. The motion carried. Representatives Hensley, Cribbs, Dillon and Roper asked to be recorded as voting "no".

Judy Shorman, occupational therapist, was recognized and testified, attachment #3. There were some questions from the committee.

The meeting adjourned at 9:53 a.m.

The next meeting will be March 17, 1987, at 9:00 a.m.

HOUSE COMMITTEE  
ON  
LABOR AND INDUSTRY

Name	GUEST LIST City	DATE <u>March 6, 1987</u> Representing
Rob Hodges	Topeka	KCC 1
Gary Terrill	Topeka	K.S. Workers Comp
Judy Shorman	SM	Private Rehab. Providers
Bill Clawson	TOPEKA	DEPT OF HUMAN RES.
BILL HAYES	"	" " " "
BILL BARKES	EMBRIA	ADP INC
Jayce Lacey	Melvern	Bus. Contractors
Grand Lweeney	Topeka	Rehab. Inc / SRS
Fernand Marsh	Topeka	USD 450
Roy Baker (MI)	Topeka	1 South St Dept
Richard Mason	"	KTLA
Bob Arhult	"	KTLA
Jim McSmith	Topeka	Observer
Don Jossent	Wichita	Wichita County

Presentation to House Labor and Industry Committee

March 6, 1987

I'm Dr. Ray Baker, Health Officer for Shawnee County; I'm pleased to be able to appear this morning on behalf of Section Q HB 2342.

For 18 years the Topeka-Shawnee County Health Agency and the Shawnee County suburban schools have joined forces to provide school health services. The Health Agency recruits, hires, trains and supervises the staff, and the school districts assist in planning the program and provide space. The costs are split equally between the schools and health agency. This arrangement recognizes and builds upon the strengths of both agencies: the school is an expert in education, the health agency is an expert in health. It also fulfills both the school's obligation to provide basic screening and the health agency's need to reach large numbers of children in a convenient setting to allow delivery of important preventive health services. It is a cooperative approach which is cost-effective, comprehensive and viewed very favorably by the State Department of Health and Environment as a model.

Unfortunately, that model is being jeopardized by rapidly increasing unemployment compensation costs which I feel are a result of an oversight in the current law. Our school health nurses and aides--like school personnel--clearly work only 9 or 10 months per year and are assured of reemployment each fall. But, simply because they are employed by the Health Agency rather than the schools they are eligible for unemployment benefits.

Those unemployment costs rose 27% between 1984 and 1985 and another 50% between 1985 and 1986; they are approaching 20% of the total Health Agency expenses for our share of the program. Scrutiny of these expenses reveals that although there was some rise in benefits during that period, the vast majority of the increase arose because more and more of these health agency employees became aware of their eligibility and applied.

The Shawnee County suburban school districts and the city and county governments all support the amendments to H.B. 2342 which will provide an exclusion for school health personnel employed by another agency. It could save these local governments \$21,000 or more per year during these bleak fiscal times, while still preserving the virtues of a cooperative program.

Attachment #1  
House Labor and Industry  
3/6/87

RDB:dmp

March 6, 1987

Labor and Industry Committee

Chairman , Rep. Arthur Douville

RE: House Bill 2342

Chairman Douville, and Members of the committee, I want to thank you for the opportunity to appear before you this morning.

I'm Joyce Lacey. My husband and I are school bus contractors for U.S.D. #456. We support House Bill 2342. This bill would disallow claims of unemployment for school bus drivers - a change that we believe definately needs to be made.

There are approximately 50-55 school bus contractors in the State of Kansas who employ 1100 bus drivers.

My husband and I are a small contractor as are most of the contractors in the state. We contract 6 routes plus activity trips. To be able to do this, we employ 4 drivers. We have employed retired people and housewives mostly. Right now all our drivers are housewives.

These are housewives who want a part-time job to earn a little extra money and still be home with there children when they are home, such as during summer and holiday vacations. They drive their route in the morning, are home all day (unless they happen to drive a kindergarten route at noon or an activity trip), and drive their route in the afternoon. This makes them getting home about the same time as their children in the afternoon and this is exactly what they want. If I offered them an 8 hour a day job, they'd turn it down. I can tell you from talking to other contractors in the state, this is the same thing we're all finding. To be honest,

Attachment #2  
House Labor and Industry  
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these housewives are some of our best drivers and I wouldn't want to lose them. However, these same drivers are drawing unemployment compensation for the holiday vacations, summer vacations, and spring breaks that we are out of school.

I did some calculating on our 4 employees salaries and the hours they drive. The average salary for the year 1986 was \$3,261.04 (a monthly average of \$362.34). The average number of hours spent driving was around 400 hours per driver. These figures include regular routes plus any activity trips the drivers may have taken.

The figure I'd like for you to look at is the 400 hours. That is for the whole year of 1986! For people who work a normal 40 hour week, that is only 10 weeks. Our employees are drawing unemployment compensation for that! I don't agree with it! They know when they are hired that they are going to work only a couple of hours a day for only 9 months out of the year.

We receive an Experience Rating Notice from the Department of Human Resources every December telling us what our contribution rate to the unemployment fund will be for the following year. The notice we received in December 1986 showed "Contributions Paid In" by us for prior years and up to and including June 30, 1986, as \$8,397.62. It also showed "Benefits Charged" to our account as \$15,856.70 up to that same date. Our account balance, therefore, is a minus \$7,459.08. Hence, our contribution rate is 6.4%, the highest rate assigned to employers. This is just another expense that is hurting the small businessman. As school bus contractors, this expense is sooner or later going to have to be passed on to the school district, which in time is going to come back to the state. So its an expense that in the end is costing us all.

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You can see what a draining effect just 4 part-time employees are having on the unemployment fund. With 1100 part-time school bus drivers in the state drawing on the fund, I can see why there has been concern about the ability of the fund to continue supplying unemployment assistance to those that really need it and really deserve it.

For these reasons, I urge you to vote in favor of House Bill 2342.

I thank you for your time and attention.

Joyce Lacey  
B. & J. Garage, Inc.  
Bus Contractor for U.S.D. #456  
Melvern, Kansas 66510

PRESENTATION TO THE HOUSE LABOR & INDUSTRY COMMITTEE

STATE OF KANSAS

March, 1987

In reference to  
Worker's Compensation Rehabilitation

Judy Shorman  
International Rehabilitation Associates  
6701 West 64th St., Suite 220, Shawnee Mission, KS 66202  
(913) 722-2085

Attachment #3  
House Labor and Industry  
3/6/87

## Introduction

My name is Judy Shorman. I am a Registered Occupational Therapist and hold a master's degree in Health Care Management. I am also a CIRS. I have been a private rehabilitation specialist and a supervisor of private rehabilitation specialists in Kansas for 6½ years. I currently manage all operations for Intracorp (International Rehabilitation Associates, Inc.) in 4½ states (Kansas, Missouri, Iowa, Nebraska and Arkansas)

IRA was the first private rehabilitation provider nationally and was incorporated in 1970. We remain the largest provider, with 135 offices and 3,500 employees. We opened our Kansas office 10 years ago and were the first provider in Kansas. We remain the largest in Kansas with 20 "rehab specialists" employed. These specialists work throughout the state and report to an administrative office in Shawnee Mission.

I am here to support HB 2186. I also appreciate the opportunity to speak today regarding the key components I recommend be included as amendments. I will present recommendations based on my experience in Kansas, as well as other states.

This presentation will outline:

- . A definition of Worker's Compensation Rehabilitation
- . IAIABC recommended components of Worker's Compensation Rehabilitation
- . Supportive evidence of the need for a system to assure injured workers receive rehabilitation in a timely fashion
- . NARPPS recommended components of Worker's Compensation rehabilitation
- . Statement describing the need for a system to assure injured workers receive the most appropriate rehabilitation possible
- . Probable costs of rehabilitation



## Definition of Worker's Compensation Rehabilitation

"Rehabilitation" begins at the moment a person is injured. It can be considered the long term restorative aspects of recovery. It is the process of taking an injured worker through his medical treatment program and returning him to gainful employment. Rehabilitative sources may include medical and vocational professionals, home health vendors, in-patient or out-patient facilities, consumer advocacy groups, and government programs.

We believe rehabilitation under Worker's Compensation has three basic characteristics:

1. Rehabilitation is financed from the liability of the employer/insurance carrier to the injured worker. Rehabilitation shares the goal of the employer - to return the injured worker as closely as possible to his pre-injury status.
2. The worker's disability is often traumatic and the worker's medical history is complicated, resulting in a rehabilitative process of quick improvements mixed with slow periods of change. To complicate the physical recovery, client motivation is a perishable commodity. It is extremely important that Worker's Compensation rehabilitation services be timely as well as of high quality.
3. Worker's Compensation rehabilitation is a cooperative process requiring the good faith of the employer/carrier, injured worker and counsel, organized labor, Worker's Compensation Commission, and the rehabilitation provider.

In summary, most injured workers return to the job with no complications, in a reasonable length of time. Their process of rehabilitation is simple, their motivation is high, and their employers are urging them to return to work. A recent study by the National Council on Compensation Insurance (NCCI) revealed that only 5% of the lost time cases had not returned to work as of 90 days post-injury. That figure was based on a national sample of 65,000 workers.

International Association of Industrial Accident Boards and Commissions  
(IAIABC) Recommended Components of Worker's Compensation Rehabilitation.

Several groups, including the IAIABC, have developed conceptual models of what components should be included in a Worker's Compensation statute. These conceptual plans have had much in common and uniformly have called for rather specific statutes rather than enabling acts. Among the recommendations of the IAIABC were:

1. A rehabilitation unit of the workmen's compensation system to oversee the provisions of rehabilitation service to the industrially disabled and to help informally mediate disputes among the parties.
2. Definitions of the responsibilities respectively of the employer/ carrier, the injured worker, and the rehabilitation provider. In essence, rehabilitation should be mandated both for the employer/ carrier to provide and the worker to accept.
3. A definition of the goal of rehabilitation and the limits of the duration of service.
4. A mechanism for resolving disputes efficiently and with adequate due process protection for the parties.

Components of Worker's Compensation rehabilitation received by the National Association of Rehabilitation Professionals in the Private Sector (NARPPS):

1. The goal of Worker's Compensation rehabilitation should be to return the injured worker to an income as close as possible to the income earned at the time of injury with due regard to the employee's age, education, and past work experience.
2. There should be a fail safe system to assure that any injured worker needing rehabilitation gets it in a timely manner.
3. There should be an administrative arm of the Worker's Compensation system that deals strictly with rehabilitation, which we have in Kansas. Their goal should be to assure compliance with the act and to promptly resolve disputes.
4. The act should distinguish health care services from vocational services. We believe medical intervention is geared to helping a worker maintain or return to a job.
5. The following suggested hierarchy of goals assures that vocational plans are as simple and direct as possible. Not only is this the most cost-effective approach to rehabilitation, but also the most likely to succeed;
  - . return to the same job with the same employer;
  - . return to the same job with modification with the same employer;
  - . return to the same or modified job with a new employer;
  - . return to a new job with newly developed job skills;
  - . return to independent living status.
6. The act should mandate the employer/carrier to provide a rehabilitation evaluation, and if indicated, a rehabilitation plan. It should also mandate the injured worker to participate in the rehabilitation evaluation, and, if indicated, the rehabilitation plan.
7. Rehabilitation providers should be required to register with the Division of Worker's Compensation.
8. The act should authorize the direction of the rehabilitation division to study and to report on the effectiveness and costs of rehabilitation services being provided.

## The importance of timely rehabilitation intervention

Page eleven of the model Worker's Compensation act (previously submitted) provides guidelines for special rehabilitation referral. We suggest referrals be made for catastrophically injured workers immediately, and others at 90 to 120 days post injury. I suggest this based on my own experience, the fourteen years of experience by our company, and a study of the literature available.

At the moment a typical worker enters medical treatment he enters a foreign world of language, procedures, and expectations. My observation has been that he often quickly becomes overwhelmed, frightened or confused. He then develops unrealistic expectations regarding his treatment plan, expected recovery, and return to work. This results in increased anxiety, anger, and frustration for some people - these are the people who will not progress through their rehabilitation at the average rate.

The second group of individuals I've observed who are not completing treatment and returning to work as expected are those who have not had adequate medical care or who have had additional complications. This can occur for a variety of reasons, such as;

- . he doesn't understand prescribed treatment and so doesn't follow through on it
- . he could benefit from additional evaluations
- . he has had multiple treatments which have not been successful
- . he has a history of another disease process, such as arthritis or diabetes

International Rehabilitation Associates was the first company to employ rehabilitation specialists who could objectively evaluate and intervene in an injured worker's medical status and employability, through interviews with the worker, his doctor and his employer. We made mistakes in our early years of believing our services could be successful for anyone, regardless of the injury and the length of lost work time. After some costly failures we made it a goal to educate employers and insurance carriers to the need for early referral to our specialists. The attitude and process of rehabilitation begins at the moment of injury, not after all else has failed.

In the NCCI study, only 5% of the lost time cases had not returned to work as of 90 days post-accident. This figure dropped to 3.7% as of 120 days. This finding is consistent with studies done by physicians and facilities involving back injured patients. Studies done in California and Minnesota show the later a case is referred for rehabilitation, the more expensive it is likely to be and the less successful.

The point is that most injured workers will return to work promptly after receiving appropriate treatment. It's the minority of injured workers who need additional rehabilitation intervention, and the sooner they get it, the more likely it will be successful.

# Work for All

## For Those with Low Back Pain as Well

ALF NACHEMSON, M.D.\*

The problem of low back pain is enormous in all industrialized societies. Attempts to decrease its impact by different educational, ergonomic, or treatment methods have generally failed. The deleterious effects of long-term absence from activity and work are well known. New information is available regarding the healing time and properties of possibly diseased tissues and the actual loads on the lower back in various positions of activity and work; data are also available regarding the perception of pain, both acute and chronic, and how it can be affected by muscle activity. This new information may well serve as a basis for a new type of treatment for back pain—early, gradual, biomechanically controlled return to activity and work for the 80% of patients with back pain in whom no objective cause for the pain can be found after a thorough examination.

The enormous problem of low back pain and its treatment is well known. As mirrored by the current medical literature, divergent opinions exist as to its solution. Knowledge of low back pain is increasing but not at the same rate as the costs to society or to the patients.<sup>28,42,43,66,68,78,89,97,119</sup> The present paper contains a fresh look at a treatment method that will benefit everyone, especially, of course, those who experience back pain but also all "therapists" of different schools, social workers, and politicians.

"Work for all" is currently a rather over-used, even abused, slogan, which nevertheless merits some thought by those who treat

patients with back pain. In all probability many of these patients, had they been properly activated at an earlier stage, would not only have been free from symptoms more rapidly but would also have avoided the severe medical and psychologic effects of long-term inactivity both in their working lives and in their leisure time. The new program requires not only renewed efforts by physicians but also contributions from politicians and industrial leaders.

### EPIDEMIOLOGY OF LOW BACK PAIN

Investigations from Sweden, the United States, and many other industrialized countries reveal an increasing incidence and prevalence of low back pain.<sup>4,7,8,28,36-38,42,43,45,51,53,69,72,78,89,97,104,111,112,118</sup> Svensson<sup>96</sup> recently demonstrated that almost 70% of 40-47-year-old men in Gothenburg had experienced low back pain and that 50% of these men had missed work at least once; in addition, 30% of those interviewed had experienced back pain during the previous month—a record high prevalence! In this as well as in many other studies,<sup>3,6,15,16,32,35,44,54-56,59,82,90,91,95,100,119</sup> a clear-cut relation has been demonstrated between such factors as heavy lifting, high physical activity at work, and prolonged time away from work in low back pain. It has also been demonstrated, however, that psychologic factors are important.<sup>3,11,35,48,63,68,73,93,96,98,111,112</sup> Monotony and unhappiness at work in general are other significant factors that affect the number of days lost through sickness.

\* Professor and Chairman, Department of Orthopedic Surgery I, Göteborg University, Sweden.

Reprint requests to Alf Nachemson, M.D., Department of Orthopedic Surgery I, Sahlgren Hospital, S-413 45 Göteborg, Sweden.

Received: November 24, 1982.

Psychologists indicate that in modern society the back stands for moral as well as physical strength. It is the structural center of the body, literally and figuratively the bearer of burdens, and this is, in various ways, mirrored in daily language: "He hasn't enough backbone," "the farmers are the backbone of the country," and so on. If the back becomes the site of pain that, despite visits to the physician, does not go away, the person feels weakened and perhaps even inferior.<sup>17,107</sup>

The manner in which sick benefits are granted also plays a role, which, however, is debated relatively seldom.<sup>29</sup> Regarding early return to work, there is a significant difference between those who are and those who are not insured, even when they have the same symptoms and the same type of work.<sup>24-26,46</sup>

During a hearing of the United States Senate in 1976<sup>21</sup> it was demonstrated that the threshold of increased disability claims lies at about 55% of net income; if the income received during sickness is greater than this percentage, the number of claims increases drastically. In a historic perspective it is also likely that the increase in sickness and sick benefit by those who experience back pain that is currently occurring in many industrial societies has a sociopolitical as well as an economic background.

The physical working environment has improved substantially in the last decades but without a corresponding reduction in the number of sick days due to various back problems. One explanation, and perhaps the most important, for this increasing problem may lie in the fact that no satisfactory manner has been found in which to explain the patient's pain. Therefore, no cause-directed therapy, and sometimes not even a satisfactory symptomatic therapy, exists.<sup>63,65,69</sup>

#### TREATMENT OF THE PATIENT WITH ACUTE BACK PAIN

Currently, however, sufficient knowledge is available in this field to create a program for the treatment of these patients based on

scientific evidence. Such a program was, in fact, recently presented in Sweden.<sup>52</sup> The general practitioners or health officers should have the responsibility for providing adequate advice and symptomatic relief to patients with acute back pain.<sup>64,65</sup> By clinical examinations they must be able to exclude any serious disease that would require treatment by a specialist. It must be stressed that, generally, physicians should take a greater responsibility for these patients than has been the case to date. It was recently found<sup>105</sup> that many patients with back pain who missed work for longer than six weeks had never even been asked to remove their clothing when examined by their doctors!

The proposed treatment program thus stresses that "a thorough examination is half the treatment." For the patient with acute low back pain, examined within two weeks of the onset of pain, the main prescription is: (1) rest, preferably bed rest, for a few days; (2) adequate information concerning back care; and (3) analgesic drugs. Patients should not perform physically demanding work or any strenuous activities during leisure time.

Patients are also advised to have several rest periods during the day, in the psoas position; they should be instructed to get up from the supine position by turning to the side and using the arms to raise the body. Standing is preferable to sitting. All flexion of the back and the use of low chairs should be avoided. When sitting patients should use a good lumbar support and an arm rest.

The basic substance in the analgesic drugs prescribed is paracetamol; codein is added if pain is severe and diazepam if severe muscle spasm is present.

If patients have low back pain and sciatica, they should be advised at the first visit to try strict bed rest for three to five days and, in essence, to follow the same regimen as patients with acute back pain only. The same type of analgesic drugs should be prescribed, usually at a somewhat higher dosage. Sciatic patients, however, should also be given information concerning the cause of the pain; warning about bowel and bladder function

should be given; a follow-up visit should be arranged within the next two or three weeks.

A thorough examination should be performed again at the second visit; pertinent blood and urine tests and rectal and abdominal palpation should be included to exclude root syndromes or pain originating in other organs. Radiographs are usually obtained during the first few weeks only in patients in whom tumor or infection is suspected. Thus, only in patients younger than 20 years of age or older than 50-60 years are roentgenograms obtained within the first month. For the rest of the patients no roentgenograms are considered necessary until two months have elapsed and the patient still has pain. Currently, patients with back pain in particular are subjected to worrisome amounts of radiation.<sup>30</sup>

If after one month the low back and/or sciatic pain has not subsided, a thorough examination should again be performed; the patient should be advised concerning continued rest and back care, including return to work, if possible. For reinforcement of this type of information the patient is sent to a back school.<sup>122,123</sup> All patients exhibiting some improvement should be advised to return to work<sup>63</sup>; these patients are instructed: (1) not to lift any heavy objects; (2) to stand close to the work site; (3) to avoid bending the back; (4) to avoid all twisting; (5) to change position frequently; (6) to avoid sitting in low chairs; and (7) to use a lumbar support and arm rests when sitting. After about six weeks only one-fifth or less of patients who present with back pain will require referral to specialists, in most cases an orthopedic surgeon. In patients in whom signs of a root syndrome have been elucidated the patient should be referred to specialists earlier.

The orthopedic surgeon should give the same advice as that previously given by the general practitioner. Some type of specific treatment, *e.g.*, corset, traction, facet blocks, or, if necessary, a myelogram, is also normally prescribed. If no sciatica is found, increased activities are advised. The various

modalities used by the specialists are described in detail elsewhere in this symposium. Additional time must, however, be added to these procedures for information concerning the benefit of increasing activities, performed in a biomechanically sound manner.<sup>9,63,70,123</sup>

Most patients stricken by acute low back pain will recover within a short time<sup>5,8,9,68,77,89,96,115,118</sup>; within six weeks 80% of them will have returned to work. The remaining 20% who experience chronic pain represent 80% of the total costs to society for back pain.<sup>5,43,47,61,97</sup> It is to this group that specific medical and sociopolitical resources should be directed.

If after six to eight weeks patients have not recovered sufficiently to return to work and if at this time a thorough examination by an orthopedic surgeon or another specialist has failed to demonstrate any signs of a more severe disease or a back problem for which a cause-related treatment exists, they should not continue to miss work or be declared disabled in the vain hope that nature will eventually heal the "injury." This latter group contains the largest proportion of patients in whom severe, disabling, and chronic back pain will develop.<sup>5,32,47,68,96</sup>

Thorough examination of patients with acute back pain will probably establish whether an injury exists to one or several of the many structures that can elicit pain in the back. With a treatment program such as that outlined previously, which specifically seeks to deload the spine mechanically, any such injury should heal within four to six weeks. Occasionally, if a vertebra has fractured or a ligament or tendon has been injured, healing might require a somewhat longer time. Thus, there are exceptions, but thorough history taking and examination of the patient should allow exclusion of most of these conditions,<sup>63</sup> *e.g.*, disc hernia,<sup>108,109</sup> minor compression fracture,<sup>46</sup> or symptoms from a spondylolisthesis,<sup>58</sup> spinal stenosis, or an overt psychological or social disease.<sup>73,111,112</sup> The number of patients in whom such a diagnosis can be established is fairly small; the

group actually contains only 20% of patients with back problems.

In a recent study in which 70 patients with back pain were selected at random after being on sick leave for longer than three months, it was demonstrated that only 30% exhibited any objective symptoms.<sup>105</sup> The majority of these patients thus have subjective symptoms with no objective signs of disease or injury. This has been noted in other investigations in similar types of patients.<sup>7,12,24,26,47</sup> It is these patients in particular who must be informed that a gradual, biomechanically sound return to activity and work in all probability is the treatment that will make them symptom-free most rapidly. Patients must be told repeatedly that a gradual return to work will not worsen their condition in the future. However, at the same time patients must be warned of the possibility of recurrence, the incidence of which is well known.<sup>9,28,101,102</sup> It has been demonstrated that symptoms recur in about 50% of patients during the first two to three years after an acute episode of back pain, but no evidence can be found in the literature that such recurrences are related to an early or late return to work. Patients who have the greatest risk of recurrence<sup>101,102</sup> are usually somewhat older (older than 50 years of age), have sciatica rather than back pain only, and have a positive straight leg raising test ( $<60^\circ$ ); in addition, the back pain in these patients usually was caused by a fall or by a very heavy lift. Again, in the majority of patients who have not recovered after six to eight weeks and who have declared themselves disabled, none of the previously mentioned findings or pain-inducing situations can be found. Their only symptom is pain in the back, pain that persists in defying different attempts at treatment.

These patients also tend to exhibit special pain behavior. According to Fordyce and his group<sup>24-26</sup> in Seattle, chronic pain produces, in essence, a different type of behavior. The longer these patients are considered disabled, the less are their chances of being rehabilitated to an active life.<sup>1,47,88</sup> The currently

used sick-listing procedure will, in reality, only make them feel more sick.<sup>39,98</sup> Sometimes, in the most desperate cases premature, permanent disability pensions are granted, again an interference in the patient's life that can not be regarded as proper medical practice except in a very few cases, especially in light of present knowledge concerning the psychologic effects of work on a patient's sense of self-esteem.<sup>12,25,50,94</sup> It is known that this type of back pain always either improves considerably or disappears, unless the patient has been overtreated by several operations, injections, or manipulations during a number of years.<sup>56,57,68,69,93,101,102,106</sup>

In a Norwegian investigation of patients with sciatica who failed to improve after conservative care or surgery and then received disability pensions, Weber<sup>110</sup> demonstrated that ten years later these patients were performing the same type of strenuous activities that they had performed previously, even though, subjectively, they declared themselves disabled. It has also recently been demonstrated that patients with chronic back pain show a significant reduction in mineralization of the axial skeleton,<sup>81</sup> probably the effect of reduced activity. Unless normal activities are resumed in controlled and gradual forms, microfractures in the weakened trabeculae of the vertebral bodies might result.<sup>31</sup>

It must be stressed that definite, scientific evidence of the benefits of return to work is lacking, but the following proof can be delineated indirectly.

(1) Biomechanical investigations have identified the movements and positions that mechanically stress the lower back, as well as those that create less load.<sup>3,20,44,59,62,67,70,74,75,83,84,90-92,100-102,113</sup> Much of this new information is given to patients in the various back school programs and should, according to the previously outlined treatment program, be received by all patients with back pain within one month of the onset of trouble. It has also been proved that the back school<sup>123</sup> alone has a beneficial effect on the patient with acute back pain.<sup>9</sup>

Investigations in patients with sciatica<sup>10,60</sup>



and other back conditions<sup>71</sup> who strain the back in various work positions also demonstrated that most of these patients, in spite of their pain, could perform several isometric tasks with almost the same force as healthy control subjects, with no increase in pain.

(2) In a prospectively controlled series at Volvo<sup>9</sup> 210 patients received three different types of treatment. Those who received the informative back school program returned to work one week earlier than those receiving physiotherapy with manipulation or only weak shortwave diathermy. The back school patients, however, had also been instructed by the physiotherapist to avoid the most strenuous positions and movements at work. It was also demonstrated that many of these patients returned to work despite some pain. The latter patients did not, however, exhibit more numerous or more severe recurrences during the following year than those who returned to work later. Furthermore, those who returned to work earlier exhibited fewer recurrences during the following year.<sup>9</sup>

(3) Whether it is suspected that back pain is caused by an injury to the disc, to the cartilage of the facet joints, to the spongy trabeculae of the vertebral body, or to a muscle, all scientific evidence currently indicates the beneficial effect of motion on symptoms, as well as on healing. This statement is true for injuries of such tissues in other parts of the body, and no study has proved that the structures of the lower back behave differently.

The author's investigations of the nutrition of the disc<sup>33,34,103</sup> in dogs have demonstrated the beneficial effect of a program of moderate activity for 30 minutes three to four times a week; Canadian<sup>111</sup> and Finnish<sup>79,114</sup> investigations have demonstrated an even more striking effect on cartilage, while the deleterious effect of inactivity on muscles<sup>40</sup> has long been recognized. Even after fairly large muscle injuries or operations through large muscle groups, patients rarely experience pain for more than one week and are always trained actively after a few weeks! The same is true for tendons<sup>117</sup> and ligaments.<sup>49</sup> In essence, early but moderate and

gradual motion and loading improve healing in all of the structures that build the back.

(4) It is well known that after some time patients with pain always have a more or less pronounced psychologic overlay.<sup>11,112,126, 48,73,88,94,98</sup> The personality changes resulting from pain can be measured by different psychologic instruments, e.g., the MMPI.<sup>19, 116</sup> In the previously mentioned report of patients in Gothenburg who missed work due to back pain for longer than three months, Vällfors<sup>105</sup> demonstrated altered patterns of behavior in several subjects. Waddell and co-workers<sup>107</sup> demonstrated this in several hundred patients in Scotland and in Canada. They delineated five clinical signs that always indicated a poor prognosis after surgery. This different mode of reaction is probably caused by the chronic pain; however, it should be considered not as malingering but rather as a different psychologic reaction to pain occurring in certain patients. In the quoted investigation<sup>105</sup> only 30% of the patients showed objective signs when examined after three months of sick leave, while 70% did not reveal any signs. In this latter group, in the vast majority (80%) three of five possible Waddell signs were positive, while among the 30% of patients who had objective signs after three months none had any positive Waddell signs.

In his pain behavior modification program Fordyce,<sup>24</sup> through different types of psychologic manipulation, demonstrated that even patients with chronic, disabling pain can be improved with regard to the individual sensation of pain, behavior, and activity.<sup>25,26</sup> This has also been verified by others.<sup>22,50</sup> Even if the pain in many patients remained approximately the same after treatment, they learned through the program to tolerate the pain, to decrease significantly the use of analgesics, and to increase their physical activity. As Wynn Parry<sup>120</sup> concluded after his investigations of rehabilitation methods for patients with severe pain after plexus injury, "The single most effective maneuver that reduces pain is absorption by the patient in work."

Many other investigations<sup>1,7,22,23,86</sup> have demonstrated that the rehabilitative measures

in patients with chronic back pain become less successful the longer the pain is untreated; after six months of disablement the rate of return to work in patients with back pain has been only 30% and after one year only 10%. Åberg<sup>1</sup> recently studied a group of patients with back pain with a one-year disablement. In a random fashion half of these patients were treated at a back institute for six weeks and then compared with another group who were not admitted to such a program. After one year no significant differences could be observed, either in the number of patients returning to work or in the decrease in subjective symptoms.

(5) Knowledge of the human body's chemical pain-modulating system, the endorphine system, is increasing every year.<sup>2,99</sup> It has been shown that activity in large muscle groups yields an increased amount of endorphine both in the blood and in the cerebrospinal fluid. This in turn lessens sensitivity to pain.<sup>85,121</sup>

It has been most clearly demonstrated in rats<sup>87</sup> but also in investigations in humans<sup>13</sup> that physically fit persons have fewer attacks of back pain and significantly shorter pain periods. Other investigations<sup>14,18,27,85,121</sup> have demonstrated that with increasing physical fitness more pain can be tolerated. Johansson *et al.*<sup>41</sup> demonstrated a significantly lower amount of endorphine in the cerebrospinal fluid of about ten patients with chronic back pain; this finding was recently corroborated by Puig *et al.*<sup>76</sup>

### CONCLUSION

The new knowledge, together with knowledge of the natural history of back pain and its possible etiology, speak in favor of the fact that physicians should more actively advocate patients' return to work. Patients must be convinced that this is in their interest and social workers and politicians should also be aware of the available facts. With a simplified treatment program, geared toward activity rather than passivity, this should be possible since the activities that stress the back too much and those that diminish this mechan-

ical stress have been identified. Again, patients must be told that activity, moderate and gradual at the beginning, is beneficial. Strict bed rest<sup>115</sup> and avoidance of all activities are probably necessary only during the first few days. Standing and walking give very little increased mechanical load,<sup>62,67,70</sup> less than sitting! After a few weeks the walks should be increased, or patients should perhaps start to jog on soft, even ground. Bicycling or swimming are other beneficial activities. Thereafter, patients can return to work, gradually, if possible, and with due respect to present knowledge of the size of the mechanical stress that different positions and movement can place on the back.

At this point politicians and industrial leaders enter the field. Short-term use of an increased number of work sites that are mechanically "kind" to the back is needed. Currently, only the largest industries can offer ergonomic and orthopedic experts for counseling. This must become the norm, however, because, as has been demonstrated in the present paper, a gradual return to activity and work in all probability increases the chances of healing in injured tissue and diminishes pain.

"Work for all—for those with low back pain as well" should be a slogan that, given the present state of knowledge, is well justified from a medical, psychological, and economic point of view.

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# WCRI RESEARCH BRIEF

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## VOCATIONAL REHABILITATION OUTCOMES

### Evidence from New York

Vocational rehabilitation is an integral part of many workers' compensation programs. According to supporters, rehabilitation serves workers by helping get them back to work sooner, and serves employers and insurers by limiting their liabilities. Critics point to rapidly escalating costs and raise questions about overutilization and the cost-effectiveness of vocational rehabilitation, especially in states where it is mandatory.

This study provides basic data on vocational rehabilitation, based on an analysis of nearly four thousand cases from New York.

- The study examines the key outcomes of rehabilitation programs — program length and rates of program completion, return to work, and earnings recovery.
- The study compares these outcomes for public and private rehabilitation providers, finding that the cases served by private providers have better outcomes.
- The study isolates and measures the effects of early intervention on rehabilitation outcomes. It finds, for example, that intervention at three months versus twelve months increases program completion rates by 3 percentage points and rates of return to work and earnings recovery by 7 percentage points.

Other studies in this series will address issues of rehabilitation costs, services, and outcomes. Studies to be completed in the next year will examine these issues in Florida and possibly Minnesota.

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# VOCATIONAL REHABILITATION OUTCOMES

## Evidence from New York

One of the principal goals of a workers' compensation system is to facilitate the injured worker's return to work. Vocational rehabilitation helps achieve this goal. Policymakers and system participants have focused increased attention on rehabilitation in recent years. California, Florida, and Minnesota have enacted reforms that significantly increased both use and costs. Other states are contemplating similar actions. These initiatives have led many observers to raise questions about the effectiveness and cost justification of rehabilitation in certain types of cases. Yet little systematic information on the costs, outcomes, or effectiveness of vocational rehabilitation has been available.

This study fills part of that information gap, providing information on rehabilitation in one large state — New York. Specifically, we examine four key outcomes of vocational rehabilitation programs: program completion, program length, return to work, and recovery of preinjury earnings.

We made two principal findings:

- The outcomes of private rehabilitation programs are better than those of public programs.
- Earlier initiation of rehabilitation services improves program outcomes.

Because the available data are limited, several important issues are not addressed in this study. These include rehabilitation costs, cost-effectiveness, and improved targeting of rehabilitation services. WCRI recently has launched a study of vocational rehabilitation in Florida that will gather more extensive data and examine both costs and outcomes.

### The Data

Our analysis here is based on 3,735 vocational rehabilitation cases in New York closed between 1981 and 1983. By *vocational rehabilitation* we mean services that are closely related to job placement: vocational evaluation and testing, training, job modification, and schooling. We exclude things normally thought of as medical rehabilitation or medical care.

### Vocational Rehabilitation in New York

Most vocational rehabilitation in New York is provided by a single state agency — the Office of Vocational Rehabilitation (OVR) — which is a part of the Department of Education. The OVR provides services in the majority of the workers' compensation cases receiving vocational rehabilitation. It is a traditional state vocational rehabilitation agency whose philosophy, during the period studied, is best described as "maximizing the client's potential" rather than "rapid return to work." Another state agency, the State Employment Service, provides services in a few cases. Private rehabilitation providers — both nonprofit and for-profit firms — provide services in nearly 30 percent of the cases receiving services. Interestingly, about 7 percent of the cases receive services from both public and private providers.

### Outcomes

The outcomes of the programs in New York are shown in Table A.

**PROGRAM COMPLETION.** Nearly three-quarters of the programs were completed. Of the 27 percent who failed to complete programs, physical in-

**Table A Rehabilitation Outcomes**

Program completion	73.1%
Program length	
Median program length	15 months
Programs over 36 months	17.0%
Return to work	
All rehabilitants	45.5%
Employment status known	58.2%
For same employer (of those returning to work)	23.4%
Earnings recovery*	74.0%

\* Percentage of weekly earnings that worker is projected to be earning at the time had the injury not occurred; this is higher than preinjury earnings.

ability and lack of claimant cooperation were the leading explanations.

**PROGRAM LENGTH.** The typical program lasted 15 months, but programs varied widely in length. For example, 17 percent of programs lasted more than three years.

**RETURN TO WORK.** Among those receiving rehabilitation services whose employment status is known, 58.2 percent returned to work on completion of a program — 40 percent of them for their previous employer.

**EARNINGS RECOVERY.** Of those who returned to work, the median worker earned 74 percent of what he or she would have been earning had the injury not occurred.

### Public Versus Private Vocational Rehabilitation

Our analysis points to clear differences in the outcomes of public and private vocational rehabilitation programs. Private providers have higher completion rates, shorter programs, and higher rates of return to work and earnings recovery (see Table B). We offer several explanations for this difference, but the data do not allow us to assess their relative importance. First, the OVR may offer a different combination of ser-

**Table B Rehabilitation Outcomes, Public and Private Programs**

Outcome	Private	OVR	Both*
Program completion (percent)	80	70	81
Median program length (months)	8	18	24
Return to work			
All cases (percent)	62	55	73
Program completers (percent)	73	68	83
Earnings recovery (percent of workers)†	62	35	30

\* Workers receiving services from both the OVR and private providers.

† Workers who on return to work achieve at least 90 percent of the wage they would have been earning if they had not been injured.

**Table C Effects of Earlier Intervention, by Type of Provider**

Outcome	Private (percent)	OVR (percent)
Program completion*		
3 months versus 12 months	3	3
12 months versus 36 months	9	4
3 months versus 36 months	12	7
Return to work†		
3 months versus 12 months	7	4
12 months versus 36 months	10	4
3 months versus 36 months	17	8
Earnings recovery‡		
3 months versus 12 months	7	1
12 months versus 36 months	11	4
3 months versus 36 months	18	5

\* Percentage-point increase in likelihood program will be completed.

† Percentage-point increase in likelihood rehabilitant will return to work.

‡ Percentage-point increase in wage at return to work.

vices from those of private providers, emphasizing retraining or schooling rather than rapid return to work via job modification and placement. This may explain why the OVR's programs typically run longer than private programs. And longer programs are less likely to be completed. Second, where similar services are provided, private firms may provide them more efficiently than the public agency. And third, the OVR may be handling more difficult cases — a possibility we found little evidence to support. The characteristics of rehabilitants (age, gender, occupation, industry) and types of injuries are surprisingly similar among public and private cases. Moreover, medical reasons for incomplete programs were equally important for each type of provider. If the OVR has more difficult cases, it must be on some dimension about which we had no data.

### Early Intervention

The median time from injury to intervention was 13 months. About a sixth of the cases started within 3 months, but a similar number did not begin until more than 36 months after the injury.

The evidence supports the view that early intervention improves rehabilitation outcomes. As

Table C indicates, those receiving services earlier have higher rates of return to work, controlling for other factors that influence return to work. Earlier intervention also results in higher rates of program completion and earnings recovery. Although important for both public and private programs, the importance of earlier intervention is systematically greater for private programs than for public programs.

Finally, we found that private programs were likely to start sooner after injury than were public programs. The median time from injury to start was 8 months for private programs, 13 months for public ones. In view of the favorable effect of early intervention, especially in private programs, this result explains some of the advantages in outcomes that we found for private programs — but it does not explain them all.

## **Summary**

Our study focuses on vocational rehabilitation in New York State. New York has characteristics unique to both its workers' compensation system and economic environment. For example, except in a small number of cases, neither injured employees nor their employers are required to participate in vocational rehabilitation. And New York's economy is relatively highly unionized. Still, there is much to be learned from the vocational rehabilitation experience in New York. We have selected outcomes and analysis techniques that, with appropriate caution and careful interpretation, should make our findings here of interest to policymakers, rehabilitation professionals, and employers and insurers in many other jurisdictions.

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**Evidence from New York**

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