EFFECTS OF AN EARLY RETURN-TO-WORK PROGRAM ON THE COSTS OF WORKERS’ COMPENSATION

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
The Degree of Philosophy in the Graduate School of The Ohio State University

By
Robert A. Mosley, M.A.

The Ohio State University

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Dissertation Committee:
Professor Bruce Growick, Advisor
Professor Michael Klein
Professor Bruce Walsh

Approved by
Advisor
College of Education
ABSTRACT

One of the major issues confronting employers in the United States today is the high cost associated with workers’ compensation insurance. Although many factors contribute to the total overall cost of workers’ compensation, the major cost driver besides medical is lost time from work. As time off work due to a disabling injury increases, so do injury-related costs such as indemnity payments, medical and legal expenses, and employee costs.

This study will investigate the relationship between the implementation of an Early Return to Work program as a component of an Employers’ Disability Management program and its effects on one of the cost drivers affecting their compensation cost (lost time). The purpose of this study is to determine to what extent there is a relationship between early return to work and the length of time off work (TOW) and successful return to work (outcome).

This study compares two Early Return to Work (ERTW) programs, one with labor/management support (Toledo), and one without (Cleveland), and it evaluates each program’s effect on time off work (TOW) and rehabilitation outcome. This study will seek to find which of the following characteristics were predictors of desired outcome: Program type (labor/management support and non-labor/management support); Occupational group; and Nature of disability.
The employer’s ability to impact workers’ compensation costs has wide-reaching implications in the workforce. Determining the impact of early return to work on time off work and outcome will guide rehabilitation professionals, employers, Disability Management companies, Managed Care Organizations, insurance firms, and other professionals providing assistance in the worker’s compensation arena to develop effective Early Return to Work programs whose goal is to manage lost time—that is, return injured workers safely and effectively back to work, and reduce workers’ compensation costs for the employers.

Rehabilitation professionals, insurance companies, employers, and public and private rehabilitation companies and agencies need to have knowledge of what characteristics predict return to work in a workers’ compensation setting in order to increase programmatic emphasis on those program characteristics that affect time off work (TOW).
This dissertation is dedicated to those who believed in, and supported me:

Zelma Mosley,

Rachel Robeson,

Ida Norrell,

and

Angela Norrell
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VITA

May 30, 1950 ……………… Born – Smithers, West Virginia

1972 ……………………B.A. Political Science,
Oakland University, Rochester, MI

1974 ……………………M.A. Vocational Rehabilitation Counseling,
Michigan State University, East Lansing, MI

1996 – Present ……………Employability Assessor,
The Industrial Commission of Ohio, Columbus

1991 – Present ……………President, Transitional Work Systems, Inc.,
University Heights, Ohio

1989 – 1991…………………Program Administrator
Industrial Commission of Ohio, Cleveland

1979 – Present ……………Vocational Expert
Social Security Administration
Office of Hearing and Appeals, Cleveland

1986 – 1989…………………Rehabilitation Consultant
Industrial Commission of Ohio, Cleveland

1978 – 1986…………………Rehabilitation Supervisor/Vocational
Rehabilitation Counselor
Ohio Rehabilitation Services Commission
Cleveland, Ohio

1975-1978………………… Rehabilitation Administrator
Goodwill Industries
Cleveland, Ohio

FIELDS OF STUDY

Major Field: Education

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CHAPTER 1

INTRODUCTION

One of the major issues confronting employers in the United States today is the high cost associated with workers’ compensation insurance. Although many factors contribute to the total overall cost of workers’ compensation, the major cost driver besides medical is lost time from work. Escalating workers’ compensation and health care costs are threatening the survival of U.S. businesses and draining resources otherwise allocated to future economic development (Shrey, 1995).

Krause, Dasinger, Wiegand (1997) report that injuries at the workplace can result in substantial economic losses to the employer and considerable physical, emotional, and financial losses to the employee. As time off work due to a disabling injury increases, so do injury-related costs such as indemnity payments, medical and legal expenses, and employee costs.

In the 1970s, companies attempted to reduce workers’ compensation costs by implementing various cost containment strategies to help control the medical costs and lost time, the two biggest cost drivers. Among the more widely adopted interventions
were a development of employee assistance programs (EAPs), referrals to public and private rehabilitation providers, implementation of safety review programs, job modification techniques, and job accommodation practices. The impact of these interventions has produced varying successes, but did not have a significant effect on reducing medical costs or decreasing lost time from work.

In the 1980s, the concept of employer-based disability management and rehabilitation began to find its way into companies in the United States. This concept had been implemented with success in businesses in other countries including Finland, Sweden, and Australia. Burlington Industries in North Carolina in 1980 was the first American company to attempt to identify and manage injury/illness in the workplace (Tate et al., 1986).

Disability Management

“Disability Management” is described as “a proactive, employer-based approach developed to (a) prevent the occurrence of accidents and disability, (b) provide early intervention services for health and disability risk factors, and (c) foster coordinated administrative and rehabilitative strategies to promote cost-effective restoration and return to work” (Habeck et al., 1991, p. 212). One component of a comprehensive Disability Management program, which has been shown to be effective in helping to reduce workers’ compensation costs for the employer, is the implementation of an Early Return to Work program (ERTW) as a component of an employer’s Disability Management program (Elias & Growick 1994; Breslin & Olsheski 1996). The goal of
this program is to reduce lost time and thereby enable the employer to control costs associated with injuries at the workplace. The program encourages and helps the injured (or disabled) worker to return to work under medical supervision, performing jobs that are within his/her physical and medical capabilities. The rationale for providing this component is that the earlier the injured worker returns to the workplace in any capacity, the more likely it is that he or she will be able to return to regular employment.

This study seeks to explore the effects of the implementation of a formalized labor/management agreement supporting the ERTW program (“supported”) versus a program without a formalized labor/management support/agreement for their ERTW program (“non-supported”) on time off work (TOW) and rehabilitation outcomes. I use the case of the city of Cleveland, Ohio as a model for a non-supported ERTW program, and the city of Toledo, Ohio as a model for a supported ERTW program. This study will investigate the relationship between the implementation of an Early Return to Work program as a component of an Employers’ Disability Management program and its effects on one of the cost drivers affecting their compensation cost (lost time).

The purpose of this study is to determine to what extent there is a relationship between ERTW and the length of time off work (TOW) and successful return to work (outcomes). This study will seek to find which of the following characteristics were predictors of desired outcomes:

(1) Program type (labor/management support and non-labor/management support);
(2) Occupational group; and

(3) Nature of disability.

This study will evaluate a sample of workers employed by the metropolitan municipalities of Cleveland and Toledo in the state of Ohio who were involved in a state-funded workers’ compensation system between the years 1998 and 2000.

Statement of the Problem

A review of the literature indicates that escalating workers’ compensation and health care costs are threatening the survival of businesses. Many businesses and companies feel unable to do anything to control these rising costs. Others have been forced out of business as a result of not being able to afford to handle these costs, and it can be assumed that these costs have served as a deterrent to some in considering starting a business at all. In addition, because of the rising costs associated with workers’ compensation and the Americans with Disabilities Act, employers now more than ever feel the need to take control of their disability-related policies and costs. The need to implement a program of cost containment is seen as a way of stemming this rise in costs. According to Growick (1998), Breslin and Olsheski (1996), and Elias and Growick (1994), one way to accomplish this task is to establish a company-based Early Return to Work program (ERTW) as a component of an employer’s Disability Management program.

Lost time, the amount of time an injured worker is away from the job, impacts heavily on the employer’s workers’ compensation cost in a variety of ways. In addition
to direct costs associated with time off from work, there are a number of indirect costs to both the injured worker and the employer. For the injured worker, these include loss of self-esteem as a result of being isolated from his/her peers, emotional and psychological distress affecting the worker’s family and friends, and a sense of worthlessness due to being deprived of one’s occupational role in society. For the employer, these indirect costs may include the cost of hiring and training a temporary replacement for the injured worker, possible decrease in productivity and earnings stemming from leaving the injured worker’s position vacant, decrease in quality of production and morale, and increase in use of time off (sick, vacation) by other workers whose work loads increase when they are expected to cover for the injured worker.

Purpose of the Study

The purpose of this study is to determine to what extent there is a relationship between a Early Return to Work program as a component of an employer’s Disability Management program and the length of time off work (TOW) and successful return to work (outcomes).

Significance of the Study

The employer’s ability to impact workers’ compensation costs has wide-reaching implications in the workforce. Determining the impact of ERTW on time off work and outcomes will guide rehabilitation professionals, employers, Disability Management companies, managed care organizations, insurance firms, and other professionals
providing assistance in the worker’s compensation arena to develop effective ERTW programs whose goal is to manage lost time—that is, return injured workers safely and effectively back to work, and reduce workers’ compensation costs for the employers.

Rehabilitation professionals, insurance companies, employers, and public and private rehabilitation companies and agencies need to have knowledge of what characteristics predict return to work in a workers’ compensation setting in order to increase programmatic emphasis on those program characteristics that affect time off work (TOW).

Research Questions

In the following research questions, the term “time off work” (TOW) refers to the time between points A and C in the time line below. The term “outcome” refers to whether the worker returned to his/her pre-injury occupation or not.

<table>
<thead>
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<th>Time Line</th>
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<tbody>
<tr>
<td>A</td>
</tr>
<tr>
<td>Date of injury</td>
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1. Did the type of Early Return to Work program make a difference in the length of time off work (TOW)?
2. Did the type of Early Return to Work program make a difference in employment outcome?

3. Did the type of occupation make a difference in the length of time off work (TOW)?

4. Did the type of occupation make a difference in the outcome of employment?

5. Did the type of injury make a difference in the length of time off work (TOW)?

6. Did the type of injury make a difference in the outcome of employment?

Research Variables

The following characteristics identified through the literature and through the investigator’s observations were studied and they constitute the independent variables:

1. Program type (labor/management support and non-labor/management support);
2. Occupational group; and

The following dependent variables were studied:

1. TOW (length of time off work); and
2. Outcomes (successful return to work or not)

Limitations

Internal Validity

This study will be conducted post hoc with all of the data obtained from files maintained by several entities including the employer, the managed care organization.
responsible for providing overall case management services, the state bureau of workers’ compensation (BWC) responsible for management of workers’ compensation claims, and the office of this researcher, which was responsible for vocational case management services for the city of Cleveland.

There are two major threats to internal validity that are associated with the design used in this research. These include selection and mortality. Regarding selection, there may be biases resulting in differential selection of participants for the comparison group. In attempting to minimize selection bias in this study, individuals included in the comparison group will be taken from the same three divisions of a municipal employer from both cities, have an allowed lost time claim and have the same ICD-9 diagnosis codes. Information for both groups will be reviewed during the same 24-month time period. No comparison will be made for employee characteristics such as age, gender, race, education, tenure or non-claim related medical issues.

The threat to mortality via loss of subjects is also of concern. Frankel and Wallen (1993) state that the loss of subjects is probably the most difficult threat to internal validity to control and is especially a concern in intervention studies as the manipulation takes place over time. Since participation in Rehabilitation Services is voluntary, individuals in the treatment group may discontinue at any point during the implementation of their Rehab Plan (IWRP)/ERTW program. Without explanation, it cannot be determined whether their actions were related to the treatment or other factors. Exacerbation of the injury or a new injury is other circumstances under which individuals may drop out.
In addition to the two threats to internal validity that are associated with the research design, there also are the following threats to internal validity based on data collection, experimenter bias, and participants considered for the study:

1. Although all parties are mandated to follow the state regulations for workers’ compensation, individual internal needs and requirements may lead to differences in data collection methods and reporting processes. This threat to internal validity is minimized somewhat as representatives from all parties attend training sessions sponsored by the state BWC and receive copies of the policy manual developed for this process.

2. There may also be experimenter bias due to the fact that this researcher was one of the service providers and some of the data came from files maintained by his staff and reviewed by him for this study.

3. During the time period included in the data set, a number of employees were referred for vocational services more than once either for re-injury of a previously allowable claim or for a new injury. No distinction was made with regard to this, and each referral was counted independently of any other prior referral, which could present a threat to the internal validity of this study.

**External Validity**

Based on the research design, a major concern regarding external validity is the interaction effects of selection biases and the treatment (experimental variable). Threats to external validity include the following:
1. Participation in vocational rehabilitation is voluntary in the state of Ohio and the findings are based only on those injured workers who have voluntarily agreed to participate. There is no way of predicting what impact this self-selection has on the overall findings of this study.

2. This study was limited to employees of only one employer in each city (Cleveland and Toledo). Generalization of the results to other employers’ experience should be done with caution.

3. The participating employers were involved in the state-funded workers’ compensation program. Generalization to employers outside this program (i.e., the self-insured) may be limited.

4. Demographics such as age, sex, race, education, job title, type of injury or history of prior work related injuries were not controlled in this study.

ERTW Programs in the Municipalities of Cleveland and Toledo

In the state of Ohio, workers on disability leave for allowed claims are eligible to receive Temporary Total (TT) benefits. These benefits are managed generally through a state fund for workers’ compensation in which employers contribute an amount based on their computed workers’ compensation rates (state-funded) or through a fund set up and funded solely by the employer (self-insured). The longer an injured employee is off work and receiving TT benefits, the greater the cost to the employer (Ohio Bureau of Workers’ Compensation State Insurance Manual 1999). In the state of Ohio, the primary reason for high workers’ compensation costs for state-funded
employers is attributed to the number of days an injured worker is off work receiving TT benefits (TOW) and the direct effect that it has on the employer’s computed experience associated with the employer’s calculated premium rate. Ohio has the only state-funded insurance system with a ten-year reserving table. The state charges the employer $5.00 to every $1.00 paid out in TT benefits by the state insurance carrier (Bureau of Workers’ Compensation).

For example, the city of Cleveland reports that a claim filed (whereby the employee is off work for 12 weeks receiving $482.00 per week in TT benefits and generating $200.00 in medical costs) realizes a $28,920 reserve from which the premiums are calculated. If one were to multiply this reserve by 50 or more claims, it would be easy to see how this cost could become uncontrollable—and if not contained, could have a serious impact on the city’s workers’ compensation premiums.

In the case of the cities of Cleveland and Toledo, the goal was to develop a comprehensive and structured Early Return to Work program that would reduce the number of days an injured worker is off work (lost time) receiving workers’ compensation benefits. These benefits included both medical expenses and lost wage compensation (TT benefits). According to information on the cities’ usage, medical expenses represented 10% of their workers’ compensation cost per claim. However, lost wage compensation represented 90% of their cost per claim. The dilemma facing the cities was to develop a way to reduce the costs associated with lost-time claims.

Prior to 1994, these cities’ pre-disability management activities included an array of safety programs aimed at educating the worker about safe work practices for
on-the-job. Their post-injury disability management consisted of a hazardous duty program for their Safety Division (police, fire, EMS workers) and light duty programs that varied from department to department. Their Disability Management program lacked a cohesive, organizational approach. The Bureau of Workers’ Compensation Rehabilitation Division provided post-injury management services, which utilized the traditional rehabilitation approach that involved using outside rehabilitation providers to deliver services.

The injured worker participated in the services (i.e. general rehabilitation, physical therapy, pain management, work hardening and simulation programs) outside of his or her environment with very little employer input. The predominant goal of the rehabilitation programs in both cities was to secure a different job with a different employer. About 10-15% of the cities’ injured workers participated in vocational rehabilitation. According to Robert Lawson (2003), Risk Manager/ Workers’ Compensation Manager of the city of Cleveland’s Accident Control Division, and Edgar Irelan (2003), Loss Control Specialist for the city of Toledo, a number of factors contributed to this low participation in both cities. These factors included lack of early intervention and early referral to rehabilitation, lack of communication between employer and employee, lack of communication between the employer and the insurance company (State Bureau of Workers’ Compensation Rehabilitation Division), lack of incentive programs to encourage participation in rehabilitation, and lukewarm commitment to rehabilitation by management and labor. Robert Lawson and Edgar Irelan explained that misunderstandings about rehabilitation on the part of the medical
community, lack of communication and coordination between the employer, the State Bureau of Workers’ Compensation Rehabilitation Division and medical community and the various outside rehabilitation service providers were all factors that contributed to the uncontrolled management of the city’s injured worker population. These factors resulted in the injured worker staying off work for long periods of time, resulting in large TT costs.

Lawson (2003) and Irelan (2003) realized that their #1 issue regarding the two cities’ workers’ compensation cost was the inability to control the amount of time their injured worker was off work receiving workers’ compensation premiums from the Bureau of Workers’ Compensation, generating high reserves at a 5:1 ratio. In order to address this problem, the city, through its Risk Management Department, developed a comprehensive Disability Management program that would provide a continuum of pre-injury management and post-injury management activities.

It was concluded that a proactive approach to post-injury management was necessary. This proactive approach would involve early referral to rehabilitation, along with a transitional work program that would encourage early return to work for the injured worker. The city would be more involved with all aspects of the ERTW/rehabilitation plan and the associated delivery of services.

The objectives of the Early Return to Work/Transitional Work program for both cities included the following:
1. Promote the early referral of the injured worker to the rehabilitation process,
2. Promote Early Return to Work program, which will minimize the results of injury and effect the safe return of an injured worker to full employment;
3. Reduce the costs of rehabilitation and the cities’ workers’ compensation premium rates; and
4. Reduce the number of days off work due to lost time.

Highlights of each City’s ERTW Programs

Both the municipalities (Cleveland and Toledo) in this study had a structured and formalized ERTW program. However, Toledo’s ERTW program was part of the union contract. In other words, the city’s program had the support of management and labor through this agreement (see Appendix A). Cleveland’s ERTW program was not a part of a union contract, and there was no formalized agreement between labor and management to jointly support the ERTW program (see Appendix B).

The following is a comparison of the two cities in terms of their program structure and processes:

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<th>City Of Cleveland</th>
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<td>ERTW program not part of union contract</td>
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<tr>
<td>2. Wage Continuation Program</td>
<td>Wage Continuation program</td>
</tr>
<tr>
<td>3. No Charge Back System</td>
<td>Charge Back System</td>
</tr>
<tr>
<td>4. No formalized case staffing process</td>
<td>Formalized case staffing process</td>
</tr>
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</table>

14
5. Close relationship with BWC rehab  No relationship
6. Network of medical providers  Network of medical providers

Definition of Terms

**Allowed condition:** A medical condition recognized by Ohio's Bureau of Workers' Compensation as a direct result of an industrial injury or occupational disease.

**Lost-time claim:** In Ohio, a claim is filed when an employee loses eight or more calendar days from his or her job due to an industrial injury or occupational disease.

**Vocational Rehabilitation Services:** The injured worker is eligible for rehabilitation when the allowed injury is a significant impediment to returning to employment or to maintaining employment and one of the following is true:

- There is an order from the Industrial Commission (IC) or Bureau of Workers' Compensation (BWC);
- The injured worker is currently receiving temporary total compensation, wage loss, permanent total compensation payments in lieu of compensation or scheduled loss under 4123.57(B), as of the date of referral;
- The injured worker has received a significant permanent partial award and the BWC/IC medical specialist provides medical evidence that the impairment is at least 25% of the whole person;
• The currently working employee needs job retention services in order to maintain employment due to a significant, documented work-related problem caused by a previous lost time claim for which the injured worker has been compensated.

**Date of Injury (DOI):** The date an employee suffers an injury.

**Date of Referral (DOR):** The date an injured worker is referred for Rehabilitation Services. This referral is made after a determination is made by the MCO medical staff that the employee is medically stable and able to participate in a vocational rehabilitation program.

**Date of Return to Work (RTW):** Date injured worker returns to work.

**Individualized Written Rehabilitation Plan (IWRP):** Document developed by the Rehabilitation provider identifying the scope of rehab services to be provided to the injured worker. The plan includes specific vocational goals, dates, costs, and providers of services, and living maintenance (LM) payments to be paid to the injured worker.

**Transitional Work:** An Early Return to Work program involving performance of work tasks for pay. These tasks can be safely performed by a worker whose ability to perform the original job has been compromised.

**Temporary Total (TT):** Wage replacement compensation paid for a temporary disability that prevents an employee form returning to his or her job at the time of injury.
Surplus Fund: An account within the Ohio State Insurance Fund maintained by periodic credits from the OSID. Payments made from this account are not directly charged against an employer’s experience.

Indemnity Costs: Costs incurred by the employer as a result of an individual being off work and receiving TT benefits.

Risk Charges: Charges that impact claims within the employer’s experience e.g. compensation and medical payments. These costs are used to calculate premiums of employers in the Ohio State Insurance Fund (OSIF).

Summary

One of the major issues confronting employers in the United States today is the high cost associated with workers’ compensation insurance. As workers’ compensation costs continue to contribute to increasing health care costs for businesses, it is necessary to devise strategies that can assist employers in gaining control of these costs. Vocational Rehabilitation (VR) case management in association with a Disability Management program and a formalized return to work program may be the answer. The purpose of this study is to determine to what extent there is a relationship between ERTW and the length of time off work (TOW) and successful return to work (outcomes)
CHAPTER 2

REVIEW OF THE LITERATURE

Workers’ compensation is a system of insurance designed to protect employees and employers for the cost of industrial injury. The system was designed to function as a no-fault compromise between employers and employees. The primary objective for establishing the workers’ compensation insurance system was to provide a mechanism by which individuals injured on the job received compensation for medical treatment and some compensation for wages lost as a result of a work-related injury or disease, regardless of who was at fault. In turn, the employee agreed not to proceed with legal action against the employer.

The beginnings of workers’ compensation can be traced back to 19th-century Europe and the Industrial Revolution. The first workers’ compensation-related law was adopted in Britain in 1880. This law, referred to as the owner-liability law, allowed some protection for the worker who became injured as a result of defective machinery or negligence on the part of the employer. The major significance of the law was the fact that up until its inception, workers had no recourse in obtaining any type of compensation for work-related injuries. In 1883, Germany became the first country to
pass a formal workers’ compensation law and other European countries followed suit during the 1890s.

In the United States, workers’ compensation did not receive much attention until the early 1900s. As workers by the thousands entered into the country’s factories, mills, and mines, they became exposed to more hazardous situations which had the potential for injury. Those injured on the job and the families of workers who died as a result of work-related injuries were for the most part powerless to obtain any compensation for these tragedies. Only by suing the employer was there any hope of receiving any type of financial settlement. The majority of the time, the decision was in favor of the employer who argued that the worker or co-worker was at fault or that the risk went with the job and thus, the employee assumed this risk by accepting the employment.

Ohio Workers’ Compensation System

In Ohio, where industry flourished in the mills and foundries, the legislature’s first attempt to address the problem was in 1885 when the state General Assembly set up voluntary tribunals to settle disagreements over industrial accidents. This process was replaced in 1893 with the establishment of a three-man State Board of Arbitration and Conciliation consisting of (1) a representative for the employer, (2) the employee, and (3) a neutral third party. This system remained in place until May 31, 1911 when Ohio passed its first Workers’ Compensation law. By doing so, Ohio became one of eleven states in the United States to have official laws that protected the injured worker.
As part of the overall plan adopted in 1911, Ohio legislators, at the recommendation of the Employer’s Liability Commission of Ohio, elected to adopt a state-funded plan, which meant that employers could only receive coverage through the state of Ohio, and not through private insurance companies. Initially, participation in the plan was voluntary for employers but on September 3, 1912, the law was amended to make workers’ compensation mandatory for all Ohio employers. The first allowed workers’ compensation claim was filed on April 16, 1912.

The workers’ compensation insurance system was designed to function as a no-fault compromise between employers and workers. The primary objective for establishing the workers’ compensation program was to provide a mechanism by which individuals injured on the job received costs for medical treatment and some compensation for wages lost as a result of a work-related injury or disease, regardless of who was at fault. The system, which developed into the model with which, most Ohioans are familiar had its beginnings in 1913 when then Governor Judson Harmon replaced the State Board of Arbitration and Conciliation by signing the act that created the Industrial Commission of Ohio (ICO).

The three-member Commission was given the power to hear and adjudicate contested work-related claims. Today, the Industrial Commission is comprised of five members and is the adjudicative and policy-making branch of the workers’ compensation system in Ohio. It hears and decides all contested claims, determines permanent and total disability, approves premium rates calculated and recommended by the Bureau and grants self-insuring privileges to large employers.
In 1977, the Ohio Bureau of Workers’ Compensation (BWC) was created. This agency which, became the administrative branch of the workers’ compensation system, was given the responsibility for processing claims, collecting premiums from employers, paying compensation to injured workers, reimbursing providers for medical care, and conducting audits of self-insured employers. The Ohio Revised Code governs the Industrial Commission and the Bureau of Workers’ Compensation.

While the original intent and underlying need for laws protecting the injured worker continue to exist, significant changes in the workplace and in the workforce as well as economics have forced the legislators and companies to again examine the entire system of workers’ compensation in Ohio and elsewhere across the country.

In Ohio, an increase in the number of claims filed, soaring medical costs, and increased litigation have caused an increase in workers’ compensation costs (Workers Compensation News-line, May/June 1991) Businesses were hit with progressively higher premium rates which drove up their cost of doing business. To address the needs of the employer and the employee and the cost associated with these changes, the Ohio workers’ compensation system has been restructured several times.

As a move to assist disabled workers in returning to gainful employment, the Rehabilitation Division of the Industrial Commission was established in 1979. Through the services provided by the staff of the Rehabilitation Division, the injured worker is able to participate in programs that can (1) get them back on the job and (2) reduce workers’ compensation cost to the employer. The Rehabilitation Division was later changed and became a part of the Bureau of Workers’ Compensation (BWC) and
continued to provide medical and vocational case management services to injured workers and cost containment services to employers.

This development of the rehabilitation division within the workers’ compensation insurance program was in part the evolution of industrial rehabilitation in Ohio. This form of rehabilitation involved medical and vocational case management: medical case management to monitor and coordinate medical services for the injured worker and vocational case management to monitor and coordinate return to work services through the development of a Vocational Rehabilitation Plan.

In November 1996, the BWC announced that private Managed Care Organizations (MCO) would replace the state-run Rehabilitation Division as a result of legislation under the Health Partnership Act. Consequently, the MCO assumed the responsibility for medical and return to work services for the injured workers under Ohio workers’ compensation insurance systems. Currently, it is the MCO’s responsibility to provide medical and vocational case management (return to work services) to injured workers and to work as a partner with employers to reduce their workers’ compensation cost. While the state bureau of workers’ compensation was revamping its structure and strategies, employers, who were dissatisfied with the government’s solutions, were seeking ways to gain control over increasing workers’ compensation costs, as well. Their answer was to become more proactive in managing their injured workers. Thus they adopted the disability management process. Today, the MCO and the employer are working together to develop Disability Management programs for their injured workers.
This chapter will review the literature related to the use of Early Return to Work programs as a component in an employers’ Disability Management program in controlling lost time and the associated cost benefits.

Inception/Rationale of Disability Management

In the 1980s, the concept of employer-based disability management and rehabilitation began to find its way into companies in the United States. This concept had been implemented with success in businesses in other countries including Finland, Sweden, and Australia. Burlington Industries in North Carolina in 1980 was the first American company to attempt to identify and manage injury/illness in the workplace (Tate et al., 1986). The term “Disability Management” has been widely discussed and defined since its inception in the 1980’s. Other companies including Control Data Corporation, Xerox, Kodak, 3M Corporation and General Motors began to develop programs and approaches to disability management for their employees. In the case of 3 M, a company with facilities in more than 100 countries and 35 states in the US, a Disability Management program was started in 1980 to (1) address the needs of employees who became disabled on the job, (2) meet federal laws regarding issues related to equal employment, affirmative action and state laws which required rehabilitation for injured workers and (3) control workers compensation costs through the return to work of disabled employees. There experience found that disability management can help departments return employees to productivity and hold down costs for disability payments (Beaudway, 1986).
Rising medical costs associated with disability, the aging American work force, and disappointments experienced due to reliance on third party insurance and claims administration resources are a few of the factors causing labor and management to take a more active role in managing disability (Bruyere & Shrey 1991).

As workers’ compensation costs continue to contribute to increasing health care costs for businesses, it became necessary to devise strategies that can assist employers in gaining control of these costs. Research has shown that a formalized return to work program that is a component of their Disability Management program may assist in reducing their compensation cost.

Breslin and Olsheski (1996), Shrey and Olsheski (1992), Habeck, Leahy, Hunt, Chan and Welch (1991), Bruyere and Shrey (1991), Tate, Habeck and Galvin (1989), among others, found that uncontrolled lost time prolongs the worker’s disability experience by eroding the employee’s identity as a worker and leads to deterioration of the worker-employer relationship. Rising medical costs associated with disability, the aging American work force, and disappointments experienced due to reliance on third-party insurance and claims administration resources are a few of the factors that cause labor and management to take a more active role in managing disability.

The negative impact of prolonged work disability on employees and employers alike was compounded by an accompanying decrease in the probability of early return to work (Snook & Webster, 1987; Krause & Ragland, 1994; Scheer, Radack et al., 1995). In fact, it is the minority of workers with long-term disability, who account for the majority of workers’ compensation costs (Snook, 1988) to offset this dilemma many
employers instituted modified work or Early Return to Work programs for temporarily or permanently disabled workers as part of their Disability Management program.

Components of a Disability Management Program

Tate, Habeck and Galvin (1989) and Habeck, Leahy, Hunt Chan and Welch (1991) reported that Disability Management programs consist of several components, each one essential to contributing to the overall effectiveness of the program. They identified the following components as central elements of a Disability Management program:

1. Top management commitment and supportive policies;
2. Education and involvement of employees at all levels, including union participation from the outset;
3. A coordinated team approach across departments for effective claim management and job placement;
4. Active use of safety and prevention strategies to avoid disability occurrence;
5. Early intervention and ongoing monitoring for health risks and disability cases;
6. Systematic procedures for effective use of health care and rehabilitation services;
7. An organized return-to-work program with supportive policies and modified duty options;
8. Use of incentives in benefit design, cost accounting, and performance evaluation to encourage participation of employees, supervisors, and managers; and
9. An integrated management information system to monitor incidence, benefit use, services, cost, and outcomes. (Habeck, Leahy, Hunt, Chan, & Welch, 1991, p. 212)

Schwartz, Watson, Galvin and Lippoff (1989) wrote that disability management involves the use of services, people, and materials to minimize the impact and cost of disability to employers and employees and encourages return to work for employees with disabilities. Shrey and Lacerte (1995) in their book entitled *Principles and Practices of Disability Management in Industry* defined “Disability Management” operationally as “an active process of minimizing the impact of an impairment (resulting from injury, illness, or disease) on the individual’s capacity to participate competitively in the work environment” (p. 5). They identified three basic principles governing the disability management process:

1. It is a proactive (not passive or reactive) process.

2. It is a process that enables labor and management to assume joint responsibility as proactive decision-makers, planners, and coordinators of work-place-based intervention and services.

3. It promotes disability prevention strategies, rehabilitation treatment concepts, and safe work- return programs designed to control the personal and economic costs of workplace injury and disability. (Shrey & Lacerte, 1995, p. 5)

For the Second Biennial Towers Perrin Survey, 1,050 employers nationwide responded to issues relating to strategies they had implemented in attempting to regain control of
workers’ compensation costs. In citing strategies engaged in reducing costs between 1991 and 1993, companies reported using the following strategies:

<table>
<thead>
<tr>
<th>Strategies</th>
<th>% Employers who Use the Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-certification of medical treatment</td>
<td>19  57</td>
</tr>
<tr>
<td>Case management</td>
<td>30  84</td>
</tr>
<tr>
<td>Negotiated provider discounts</td>
<td>18  46</td>
</tr>
<tr>
<td>Utilization review</td>
<td>28  70</td>
</tr>
<tr>
<td>Use of HMO/PPO other managed care</td>
<td>20  50</td>
</tr>
<tr>
<td>Coordination with group health</td>
<td>17  39</td>
</tr>
<tr>
<td>Fee schedule compliance</td>
<td>34  60</td>
</tr>
<tr>
<td>Medical bill audits</td>
<td>48  68</td>
</tr>
<tr>
<td>Claim administration</td>
<td>45  61</td>
</tr>
<tr>
<td>Return to work program</td>
<td>62  78</td>
</tr>
<tr>
<td>Vocational rehabilitation</td>
<td>54  66</td>
</tr>
<tr>
<td>Safety initiatives and injury prevention</td>
<td>84  85</td>
</tr>
<tr>
<td>Post employment-offer screening</td>
<td>64  57</td>
</tr>
</tbody>
</table>

Of the 13 strategies listed above, the current study focuses on the return-to-work program. According to the survey by Towers and Perrin (1993), implementation of these 13 disability management strategies was found to be effective in reducing costs by 27%.
80%. This suggests that by implementing cost-containment strategies, employers can have an impact on workers’ compensation costs. A comprehensive Disability Management program, which would include a combination of several or all of the above strategies, would have a significant impact on reducing an employer’s medical and lost-time cost.

Early Return to Work Programs as a Component of a Disability Management Program

The Transitional Work/Early Return to Work program evolved as a result of past vocational rehabilitation return to work practices such as the work adjustment program, work hardening program, light duty program, and modified duty program, to name a few. These programs were relatively effective, but they lacked coordination and were somewhat fragmented within the work environment. In the case of light duty programs, the assignments would turn into a permanent placement, which was not the goal of the program, and it became difficult for the employer to support the placement.

Shrey and Lacerte (1995) surmised that disability management was best characterized through employer-based Transitional/Early Return to Work programs. They defined Transitional Work programs as “integrating any combination of job tasks and functions which may be performed safely and with remunerations by an employee whose physical capacity to perform functional demands has been compromised” (p. 6). Shrey and Lacerte (1995) identify the following components as essential parts of a Return to Work program:
1. Objective worker evaluations;
2. An analysis of job tasks and physical functions;
3. Designated jobs or transition units; and
4. A gradual work-return plan that increases the workers’ capacity to return to full-duty. (Shrey & Lacerte, 1995)

The Towers Perrin Report (1993) entitled “Regaining Control of Workers’ Compensation Cost: The Second Biennial Report, 1993” reported that based on their survey, 78% of the 1050 responds indicated that they use Early Return to Work programs during disability as an initiative to control workers’ compensation costs (p. 8). They further reported that this number had grown since their first report in 1991. In addition, they reported that 85% of those responding indicated that an Early Return to Work program was one of the most effective initiatives in controlling workers’ compensation costs (p. 9).

Shoemaker, Robin and Robin (1992) conducted a survey of 248 private corporate managers in Michigan, and found that 55.7% of the corporations reported either having implemented an Early Return to Work policy (41.5%), having adopted but not yet implemented one (6.5%), or were considering one (7.7%). The remaining 26.6% of the corporate managers who responded reported that they had either rejected the idea of an Early Return to Work program (15.7%), or were considering one but were themselves not favorably disposed toward it (10.9).
Benefits of Early Return to Work programs in reducing medical and indemnity costs (lost time compensation payments) were highlighted by Groepper (1993), who reviewed several thousand cases handled by an insurance company. Groepper (1993) found that employees participating in an Early Return to Work program were back to work in one half the time as compared to employees who had no early return to work options.

Krause, Dasinger, and Wiegand (1997) at the RAND Institute for Civil Justice conducted a study at the request of the New Mexico Workers’ Compensation Administration entitled “Does Modified Work Facilitate Return to Work for Temporarily or Permanently Disabled Workers?” The main findings of their review were that Modified Work programs facilitate return to work for temporarily and permanently disabled workers. Those employees with access to modified return to work after a disabling injury were able to return to work about twice as often as employees without access to any form of modified duty. Krause, Dasinger, and Wiegand (1997) further surmised that the number of lost work days per disabling injury is also reduced by a factor of two, when companies implement Modified Work programs. However, they indicated that these estimates were based on a small number of studies of modest methodological quality and that they needed to be confirmed by higher quality studies. They recommended that future studies should include but not be limited to

“(1) standardization and quantification of modified work programs, (2) use of concurrent external control groups, (3) measurement and multivariate analyses of
potential confounding factors, (4) sufficient follow-up time to assess sustained return to work over longer periods, (5) simultaneous assessment of multiple outcome measures, and (6) comparisons between different types of modified work” (Krause, Dasinger, & Wiegand, 1997, p. 5).

**Characteristic of an Effective Early Return to Work Program**

**Top Management Support/Program Evaluation**

A review of the literature also suggests, it was not enough to have an ERTW program in place, but that program must be structured and formalized, and the process for implementation of the program must be focused and systematic. Open communication and commitment between the key stakeholders is essential to ensure success. Included in the structured and systematic approach to the development and implementation of an ERTW program has to be a program evaluation component to evaluate the effectiveness of the program and assure quality (Evangelista-Uhl & Loomis, 1999).

**Incentive**

The literature suggests that wage continuation should be part of an ERTW program. This would serve as an incentive to get injured employees to participate in the program and encourage rehabilitation, especially in those states where participation in rehabilitation is not mandatory. According to Towers-Perrin (1993), many employers reported that they use supplemental wage replacement to injured workers that equals or
nearly equals their pre-jury pay. However, Towers-Perrin (1993) cautioned employers who use this practice by indicating that the supplemental wage replacement benefit should not exceed the former employees’ take-home pay, in as much as paying out a richer benefit, may be a disincentive to return to work (p. 15).

**Network of Providers**

In addition to the structural components of an ERTW program, the literature suggests that external issues that encompass the process also need to be considered. One area is the providers of the therapeutic component associated with the ERTW program. According to Towers and Perrin (1993) and Scammell and Booth (1997), a network of healthcare providers who are knowledgeable about the unique needs of the organization in the workplace needs to be established.

**Early Intervention**

Early identification of employees who may benefit from an ERTW placement is critical in the return to work process. It has been widely acknowledged in the industrial rehabilitation community that the sooner you are able to get an injured employer involved in the rehabilitation/return to work process, the better the results will be. Additionally, numerous studies and research has shown that the longer an injured worker is away from the workplace, the less likely he or she is to return to work.

Mulholland, Sniderman, and Yankowski (1994) reported that an important distinction among Early Return to Work programs is the length of time, which elapses
between the time of the initial injury and involvement in an Early Return to Work program. Studies of early referral to rehabilitation have shown that the longer employees are off work on disability, the less likely they are to return to work at all. After six months, it was found that only 5% of injured workers return to work. Interestingly enough, few companies make participation in rehabilitation mandatory. In California where vocational rehabilitation is mandatory, employers realized an estimated $208 million in savings after implementing an Early Return to Work program.

King et al. (1995) in reviewing the literature and obtaining information from companies in Texas wrote “There is a remarkably strong consensus among workers’ compensation and VR policymakers and program staff, private rehabilitation professionals, employers, workers and researchers about some of the more essential elements of RTW and related policies. Such a consensus exists in few policy areas as it appears to surrounding RTW. Important related elements of this consensus include the following:

Disability (risk) prevention, rather than disability management, is key.

Expanded education for both the medical and business communities could yield substantial benefits for the workers’ compensation system, employers, carriers and workers.

Early intervention, once an injury has occurred, is absolutely vital to injured workers’ success in returning productively to the workplace. Fostering trust and mature, cooperative relationships the key players involved in the system,
especially employers, workers and the public entities responsible for serving them is essential as well.”

As Growick (1998) states in his multi-part series of articles in the workers’ compensation publication entitled “Cost Control,” as a result of the rising healthcare, workers’ comp, and litigation costs, companies have felt the need to take control of their policies regarding disability. One solution they have found was the development of ERTW that can not only reduce workers’ compensation costs, but also helps employers to comply with the Americans with Disability Act (ADA). Growick (1998) further indicates that the most important aspects of an ERTW program is time (TOW) and conciliation (outcome). He writes, “In workers’ comp, time is your enemy; the longer an employee is off work, the more costly it is. The sooner you can intervene in a case, the better- and the best way is through an ERTW program” (Growick, 1998, p. 1).

Like Growick (1998), Taylor (1992) also argues for ERTW. As he suggests, one component of a comprehensive Disability Management program that has been shown to be effective in helping to reduce workers’ compensation costs for the employer is the development of an Early Return to Work program. These programs help the injured worker to return to work under medical supervision, and perform modified jobs within their post-injury physical and medical capabilities, the rationale being that the sooner the worker returns to the workplace in any capacity, the more he or she is to return to regular employment, which clearly benefits both the employee and the employer.
Disability Types and Return to Work

Butler, Johnson, and Baldwin (1995) in their study entitled “Managing Work Disability: Why First Return to Work is not a Measure of Success” found that except for severe cases, the direct physical effects of injuries do not determine whether or not an injured worker returns to stable employment. They surmised that the nature of injuries influence return to work outcomes only partially, and offered a set of conditions that affect the return to work process. These conditions include workers’ characteristics, workplace accommodations that offset the limiting effects of impairments, employers’ incentives to accommodate injured employees, and the employees’ work environment.

A review of the United States Bureau of Labor Statistics (1998) study entitled “Lost-work Time Injuries and Illnesses: Characteristics and Resulting Time Away From Work,” reported the following results regarding disability type and lost-time from work: The trunk, including the back, was the body part most affected by disabling work incidents in every major industry. Most other injuries and illnesses were to the upper or lower extremities. Sprains and strains were reported as being the leading nature of injury and illnesses by far in major industry. More than 4 out of 10 injuries and illnesses resulting in time away from work in 1998 were back sprains or strains. As in preceding reports, the number of cases involving sprains or strains declined by nearly 26% from 1992 to 1998. Among the major disabling injuries and illnesses, median days away from work were the highest for carpal tunnel syndrome (25 days), fractures (21 days), and amputations (18 days).
A review of the United States Bureau of Labor Statistics (2001) study entitled “Lost-work Time Injuries and Illnesses: Characteristics and Resulting Time Away From Work” reported the following results regarding disability type and lost-time: The trunk, which includes shoulder and back, was by far the part of the body most affected by work incidents, accounting for 36.5% of all cases. As in the preceding ten years, more than 4 out of 10 injuries and illnesses resulting in lost days from work in 2001 were back sprains or strains. The number of cases of sprains and strains declined by 34.5% from 1992 to 2001. From 2000 to 2001, the number of lost workday cases due to amputations decreased by 10.8%, while cases involving bruises and contusions declined by 10.1% and those involving sprains and strains fell by 8.0%. Sprains and strains, although showing a decline of nearly 60,000 cases from 2000, continued to be the leading nature, or physical effect, of injury and illness in every major industry.

The service industries reported that musculoskeletal disorders (MSD) accounted for 25.8% of all cases. Manufacturing industries reported 22.9% of all MSD cases. Among the most frequent events or exposures, repetitive motion, such as grasping tools, scanning groceries, and typing, resulted in the longest absences from work—a median of 18 days, down from 19 in 2000. Since 1992, the median days for this event ranged from a low of 15 to a high of 20. Injuries to the wrist resulted in the longest absences from work - a median of 13 days—followed by injuries to the shoulder—a median of 12 days.

According to the literature reviewed, it does not appear that the type of occupation affects early return to work. However, the literature suggests that the type
of ERTW program does have a significant effect on early return to work. One of the key components needed for a successful Early Return to Work program is for labor and management to work together. This study will examine the effectiveness of such a finding in comparing the ERTW programs in the Municipalities of Cleveland and Toledo, whose ERTW programs are different in structure (supported vs. non-supported).
CHAPTER 3

METHODS

Lost time from work has been identified as a major cost driver in disability costs. Companies have developed Early Return to Work (ERTW) programs as one strategy to impact on these high costs. This study seeks to explore the effects of the implementation of a formalized labor/management agreement supporting the ERTW program (“supported”) versus a program without a formalized labor/management support/agreement for their ERTW program (“non-supported”) on time off work and rehabilitation outcomes. I use the case of the city of Cleveland, Ohio as a model for a non-supported ERTW program, and the city of Toledo, Ohio as a model for a supported ERTW program. This study will investigate the relationship between the implementation of an Early Return to Work program as a component of an Employers’ Disability Management program and its effects on one of the cost drivers affecting their compensation costs (lost time).

The purpose of this study is to determine to what extent there is a relationship between ERTW and the length of time off work (TOW) and successful return to work (outcomes). It will evaluate a sample of workers employed by the metropolitan
municipalities of Cleveland and Toledo in the state of Ohio who were involved in a state-funded workers’ compensation system between the years 1998 and 2000.

Research Questions

1. Did the type of Early Return to Work program make a difference in the length of time off work (TOW)?
2. Did the type of Early Return to Work program make a difference in employment outcome?
3. Did the type of occupation make a difference in the length of time off work (TOW)?
4. Did the type of occupation make a difference in the outcome of employment?
5. Did the type of injury make a difference in the length of time off work (TOW)?
6. Did the type of injury make a difference in the outcome of employment?

The Agencies

In this study, two models of service were utilized. Participants (Injured Workers) in one municipality (Toledo) were served by a Managed Care Organization. This type of program is termed “labor/management supported.” The second municipality (Cleveland) was contracted through a Private Rehabilitation Company (Transitional Work Systems). This type of program is termed “non-labor/management supported.”
A pre-experimental design was applied to the data collected from two Midwestern municipalities. Both of the municipalities studied used an Early Return to Work program (ERTW) as part of their disability management program to manage their lost time claims in a workers’ compensation setting. This study will seek to find which characteristics (program type, occupational group, nature of injury) were predictors of desired outcomes.

Pre-experimental designs are the most appropriate when the researcher is identifying relationships between variables. The pre-experimental design was used as the data analyzed was already compiled and the researcher was looking for relationships based on this data. The design was used to study the variables and outcomes, concentrating on the strength of the association.

The Early Return To Work programs in the municipalities studied were coordinated by Vocational Case Managers regardless of who they were employed by (Managed Care Organizations [MCO] or a Private Rehabilitation Company). Managed Care Organizations were involved with the participants until their disabilities were stabilized. The MCOs are specialists in working with the physicians, health care providers, and the employers, and they are proficient in providing disability management services. MCOs identify those individuals who could not return to employment without specialized rehabilitation services. The process they utilize is either to provide those services through their own organization or to contract out vocational (non-medical) services to private rehabilitation companies for vocational case management services.
Characteristics of the Two Programs

The main differences between the two programs (in Cleveland and Toledo) is (1) whether they were supported by labor/management, (2) the way in which workers enter the program, and (3) payment of wages while in the program. Entrance to the program for both cities required the approval of the Physician of Record (POR). The physician of record is the physician selected by the injured worker as the primary care giver. Both programs require the identification of a modified duty/temporary work assignment. This modified duty/temporary work placement would be located at the injured worker’s place of employment. Functional capability identified by the physician of record determined the modified duty/temporary work assignment. While in modified duty/temporary work assignment, aggressive physical restoration services were provided.

Both programs offered incentive for the injured worker to participate in the ERTW program in the form of wage continuation (payment of regular wages). Payment of regular wages in both ERTW programs was based on the injured worker agreeing to participate in the program once his Physician of Record had released the injured worker for modified duty assignment.

The Sample Frame

The participants chosen for this study had to be classified as having been injured on the job as supported by the employer and the insurance agent (Bureau of Workers’ Compensation) and they had to have participated in one of the two programs between
January 1998 through December 2000. In addition, the injuries sustained by the workers had to result in lost time from work. The most common diagnoses that were referred to these programs included sprains, strains, contusions, and carpal tunnel conditions, and this study was limited to these particular disability types.

Data from both municipalities (Cleveland and Toledo) was used in this study. The original data contained information about every participant in the workers’ compensation return to work program from 1998 to 2000. The individuals in these groups had numerous occupations and a variety of injuries/medical diagnoses.

During the period from 1998 to 2000, Transitional Work Systems Incorporated served 886 City of Cleveland injured workers. Of the total, 350 had occupations that would classify them as Safety Department Workers (police officers, firemen, and EMS workers).

The City of Toledo during the same period had 625 Injured Workers participate in their program. Of the total 325 had occupations that would classify them as Safety Department Workers (Police officers, Fireman, and EMS workers).

Based on the literature, the research was designed to look at those participants with injuries that were orthopedic sprains, strains, contusions, and carpal tunnel issues and whose occupations were in the safety department. This selection reduced the City of Cleveland population for study to 311 and the City of Toledo to 292. Participants who left the program for surgery or additional diagnostic work up were also eliminated. This left a final combined sample size of 603.
The Participants

The participants in this study were 603 of people who participated in the ERTW programs provided by the two cities, Cleveland and Toledo. The following demographic information pertaining to each subject was ascertained for descriptive purposes: (a) gender, (b) type of employment, and (c) type of injury.

This study used information about two Early Return To Work (ERTW) programs in large Midwestern cities, Cleveland and Toledo. Not all injured workers in a municipality participate in the two cities’ Return to Work programs. However in this study, all injured workers were potential study participants. The participants chosen for this study had to be classified as having been injured on the job as supported by the employer and the insurance agent (Bureau of Workers’ Compensation) and they had to have participated in one of the two programs between January 1998 through December 2000. In addition, the injuries sustained by the workers had to result in lost time from work. The most common diagnoses that were referred to these programs included sprains, strains, contusions, and carpal tunnel conditions, and this study was limited to these particular disability types.

The Data for this Study

The data was gathered from two large Midwestern Municipalities (Cleveland and Toledo) that had a form of Return to Work Programs for their injured workers. This data was collected to track the activities of the participants in the two programs.
Transitional Work systems Inc. (Private Rehabilitation Company founded by Robert A. Mosley) tracked every participant between 1998 and 2000 for the city of Cleveland for purposes of reporting to the Managed Care Organizations on activities provided by the contract.

The city of Toledo collected data for the purposes of tracking the activities of its injured workers. The City of Toledo’s Personnel Department employees were responsible for gathering the data for Workers’ Compensation Department. A report was generated and given to the assistant manager of workers’ compensation for review and approval.

Data Collection

This researcher knows a review of the data and procedures-generating collection. The State of Ohio’s Bureau of Workers’ Compensation was the primary driver of the collection of data. The Rehabilitation Department of the Bureau of Workers’ Compensation in Ohio developed and disseminated the coding format. The Managed Care Organizations in both cities distributed the coding system to their contractors and monitored the system, with the exception that the injury type was reported differently by the two cities.

Transitional Work Systems used ICD-9 codes for Cleveland, while Toledo used a description of the injury. The difference between coding of a sprain would be that Toledo might use the phrase “Sprain” as the diagnosis and then the body part would be listed such as “knee or back” in another field. The City of Cleveland, on the other hand,
would use the ICD-9 code, which described the same information of diagnosis numerically.

Transitional Work Systems Inc. data of the city of Cleveland was double-checked by a company representative familiar with data entry. The individual staff representative responsible for the data entry was a trained professional. The City of Toledo Municipality met the same high standards.

The individuals responsible for entering data were trained by the Investigator in proper data entry techniques, and they used a standard format that was in written form, which was easy to follow. They had to justify the use of all the codes that they used. The Investigator was responsible for overseeing all of the data entered into the system and reviewed all the entries. The Investigator also questioned the entries for their appropriateness. For Toledo, a manager who held a comparable position to the investigator reviewed all of the data entered. The Investigator and the assistant manager of workers’ compensation in Toledo checked all data in both municipalities for consistency.

Permission for using human subjects was obtained from The Ohio State University’s Research Department (See Appendix C). Permission to use the data obtained from both cities was obtained from the Risk Manager/Workers’ Compensation Manager of the City of Cleveland, Robert E. Lawson, and from the Loss Control Specialist of the city of Toledo, Edgar Irelan.
Data regarding injured worker status will be obtained from the files of the Managed Care Organization (MCO), which has been selected by the municipalities to manage their workers' compensation claims. Data related to workers participation in the ERTW program will be obtained from the Rehabilitation provider and the employer. All forms used in the collection of data for rehabilitation services are standardized documents developed by the Ohio Bureau of Workers' Compensation. These forms include the following:

<table>
<thead>
<tr>
<th>Form No.</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>RH-1</td>
<td>Rehabilitation Agreement</td>
</tr>
<tr>
<td>RH-2</td>
<td>Individualized Vocational Rehabilitation Plan:</td>
</tr>
<tr>
<td>RH-24</td>
<td>Gradual Return to Work Contract Employer Reimbursement Method</td>
</tr>
<tr>
<td>RH-25</td>
<td>Gradual Return to Work Contract Living Maintenance Reimbursement Method</td>
</tr>
<tr>
<td>RH-19</td>
<td>Employer Incentive Contract</td>
</tr>
<tr>
<td>RH-21</td>
<td>Vocational Rehabilitation Closure Report</td>
</tr>
</tbody>
</table>

Data Errors

It is not predicted that many errors caused by miss-entry are in the data. However, data entry mistakes may have been made, in spite of the double-checking. This study did not address all of the potentially relevant variables that may have impacted the dependent variables. Because this study did not include participants with
incomplete data, there may be a limitation to generalizations of this study to other settings.

Method of Data Analysis

This section provides a review of the steps the Investigator took. Those wishing to duplicate the study can use these procedures. The data was received in printout form and CD format. The data was first imported into Excel and then GB-Stat for Windows [Computer Statistical Software] Silver Spring, MD: Dynamic Microsystems, Inc. (1995).

Descriptive statistics were run on each of the following: (a) demographic variables, (b) type of injury, (c) outcome, (d) lost time days, (e) time off work, (f) etc.

An alpha level of 0.05 was established à priori for all statistical tests of significance. A Chi-square test was run to compare the labor/management support group to the Non-labor/management support group of the ERTW program as to outcome. For the dependent variables of time off work (TOW), t-tests were run to compare the labor/management support group to the Non-labor/management support group. ANOVA tests were run to compare the three occupational groups as to the dependent variables of time off work (TOW). ANOVA tests were also run to compare the three injury categories as to the dependent variables of time off work (TOW).

Coding of Variables

The data for the City of Cleveland contained over 17 variables. The data for the City of Toledo contained over 15 variables. Not all of the data were related to the
research questions. The variables under study reflect those found important in previous studies and the experience of the Investigator. The Investigator has 25 years of experience in the field. The experience of the Investigator also determined the selection of variables of interest. The City of Cleveland was coded “City One” and the City of Toledo was coded “City Two.”

Coding of Independent Variables

The first independent variable was whether the participant was in a program that had labor/management support through a formalized union contract versus one that did not. If the participant was an injured worker for the City of Toledo, it would be classified as “supported” and if the participant was an injured worker for the City of Cleveland, it would be classified as “non-supported.”

The second independent variable was the occupation of the injured worker at the time of injury. The type of the position was provided in each database. Safety Workers were classified as a Police Worker, a Firefighter, or an Emergency Medical Technician. Different categories of job titles referred to these occupations. Regardless of the classification within the police ranks, those whose titles referenced Police Work were classified as Police workers. The variable was operationalized according to the following assumptions:

- Police officers share commonalities pertinent to this study regardless of rank or job description.
• Firefighters share commonalities pertinent to this study regardless of rank or job description.

• Emergency Medical Technicians, Emergency Service Workers, Paramedics, and Emergency Services Captains share commonalities pertinent to this study regardless of rank or job description.

• Occupational programs have an impact on employees’ return to work.

• Subjects were honest in supplying data and reporting work-related injuries.

• There were no relevant differences between the labor/management support and the Non-labor/management support programs.

• The employees and employers of the two municipalities had no differences that would have impacted this study.

• Time served in occupation was not relevant to this study.

• Subjects had no other relevant health issues other than the job-related injuries that would have impacted return to work outcome and time off work (TOW), or lost time days.

Police officers share commonalities pertinent to this study regardless of rank or job description.
Regardless of the classification within the Firefighter ranks, those whose titles referenced Firefighter were classified as Fire Department workers. The variable was operational in the following way:

Firefighters share commonalities pertinent to this study regardless of rank or job description.

Regardless of the classification within the Emergency Medical Service ranks, those whose titles referenced Emergency Medical Service were classified as Emergency Medical Service workers. The variable was operational in the following way:
Diagnosis is the third independent variable to be examined. Diagnosis refers to the primary condition that resulted in injured worker sustaining a lost time claim. Seven different groups of diagnoses will constitute this variable. These seven diagnoses are grouped according to upper and lower extremities and the lumbar region.

**DISABILITY TYPE and ICD-9 CODES**

**Group #1**

**Back Strain, Lumbo Sacral Strain**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>720.2</td>
<td>724.2</td>
<td>739.3</td>
<td>739.4</td>
<td>846.0</td>
<td>846.1</td>
<td>846.2</td>
<td>846.3</td>
<td>846.8</td>
</tr>
<tr>
<td>847.3</td>
<td>847.2</td>
<td>846.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Group #2**

**Knee Strain, Knee Contusion**

**Leg, Ankle, Foot**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>726.0</td>
<td>730.06</td>
<td>730.16</td>
<td>730.26</td>
<td>842.8</td>
<td>844.9</td>
<td>844.2</td>
<td>730.07</td>
<td>730.17</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>730.27</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>821.01</td>
<td>845.00</td>
<td>845.01</td>
<td>845.02</td>
<td>845.03</td>
<td>845.09</td>
<td>845.10</td>
<td>845.11</td>
<td>845.12</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>736.0</td>
<td>845.13</td>
<td>845.19</td>
<td>736.0</td>
<td>843.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Group #3
Carpal Tunnel/Wrist/Strain/Contusion
726.4  727.04  727.05  728.6  728.79  842.00  842.01  842.  842.0

Group #4
Shoulder Strain
730.01  730.11  730.21  840.0  840.1  840.2  726.0  840.8  840.9  840.3
840.4  840.5  840.6  831.0

Group #5
Hand Puncture, Finger Cuts
730.04  730.14  730.24  815.0  816.0  842.10  842.11  842.12  842.13  842.19
825.

Group #6
Cervical/Neck Sprains/Strains
Thoracic Strain
722.0  723.1  739.1  847.0  847.1  847.2  724.1  739.2  847.1

52
Arm, Elbow Contusion

730.02  730.12  730.22  730.03  730.13  730.23  841.0  841.1  841.2  841.3
841.9

Coding of Dependent Variables

The Investigator developed a timeline that guided the selection of variables. The timeline recognizes important milestones in the return to work process. By viewing the milestones, one can measure program effectiveness. The milestones are Date of Injury, Date of Referral, and Date of Return to Work, as indicated in the time line below. The time between each milestone is a measure of time off work (TOW).

Time off Work (TOW) translates into cost savings and improved outcomes. TOW in both programs will be compared as well as for occupational classes and disability type.

Total Time in Program is a measure of TOW. By measuring the referral date and the date returned to work (regular duty), one measure of TOW is obtained. The number of days between the injury and the date returned will be calculated.

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of injury</td>
<td>Date of referral to ERTW</td>
<td>Date of return to work</td>
</tr>
</tbody>
</table>

53
“TOW” refers to the time line between points A and C

The number of days will be further categorized into three groups representing fast or slow progress. This classification system is a product of the Ohio Bureau of Workers’ compensation grading system for measuring how effective MCOs are in getting injured workers back to work. The process is referred to as the Degree of Disability Management (DoDM).

<table>
<thead>
<tr>
<th>Original</th>
<th>New</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-30 days</td>
<td>Total Time Superior Group (TTSG)</td>
</tr>
<tr>
<td>31 – 60</td>
<td>Total Time Average Group (TTAG)</td>
</tr>
<tr>
<td>61 or over</td>
<td>Total Time Marginal Group (TTMG)</td>
</tr>
</tbody>
</table>

Total Time between date of referral into the ERTW program and actual return to work is also a measure of TOW. By measuring the referral date and the date returned to work, one measure of TOW is obtained. The number of days between the injury and the date returned to work would be calculated. The number of days will be further categorized into three groups representing fast or slow progress.

<table>
<thead>
<tr>
<th>Original</th>
<th>New</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-14 days</td>
<td>Modified Superior Group (MSG)</td>
</tr>
<tr>
<td>15 – 29 days</td>
<td>Modified Average Group (MAG)</td>
</tr>
<tr>
<td>30 or over</td>
<td>Modified Marginal Group (MMG)</td>
</tr>
</tbody>
</table>
Research Design

The design of the study is static group comparison, which is a pre-experimental design. Although there are specific weaknesses to this design, it was selected as the treatment has already occurred and there can be no manipulation of the variables. This researcher is attempting to determine if any differences found between the two groups being compared can be associated (correlated) with the treatment. In this design one group experiences a treatment (X) and is compared to a group, which has not experienced X for the purpose of establishing the effect of X (Campbell & Stanley, 1963).

The design for this study can be depicted as: \[
\frac{X}{X} \quad \frac{O}{O}
\]

Both groups are measured over the same period of time and both received the same treatment. In the static group comparison design, there is no formal means of certifying that the groups would have been equal had it not been for X. The groups are pre-existing thus there is no random assignment and no pre-test measure.

For this study, Group 1 will consist of injured workers in the City of Cleveland (City One) from the Divisions of Police, Fire, and the Emergency Medical Services who did not participate in a Labor/Management-supported ERTW program (X). They will be compared with a similar group of injured workers from the City of Toledo (City Two) the division of Police, Fire, and Emergency Medical Services who participated in a Labor/Management-supported ERTW program.
This chapter provides the results derived after analyzing the data. The purpose of the study was to explore the effects of a labor/management-supported Early Return to Work program (Toledo) versus a non-labor/management-supported Early Return to Work program (Cleveland). The subjects had no other relevant health issues other than the job-related injuries that would have an impacted on time off work (TOW) or return to work (outcomes). This chapter offers the findings by each research question.

The chapter will first report the descriptive characteristics of the sampling frame. Before the statistical analyses were completed, a decision was made on how the missing data would be treated. The missing data could be ignored, or the participant with the missing data could be dropped from the study, or the data could be substituted based on format. In this study, the participants were dropped from the study if they were miscoded or their dates were not consistent.

Summary of the Characteristics of the Sampling Frame

The sampling frame combined for both cities totaled 310 participants of their Early Return to Work programs. Of this number, there were 151 participants in the city
of Toledo’s Early Return to Work program (supported) and 159 participants in the city of Cleveland’s Early Return to Work program (non-supported). Of the 310 participants, a total of 19 did not return to work and were not included in the final analysis. Of the 19 who did not return to work, 12 of them participated in the city of Toledo’s early return to work program (supported) and 7 of them participated in the city of Cleveland’s early return to work program (non-supported). Thus the population total for the analysis was 291 participants combined. The following is a breakdown of the 291 participants who were analyzed in the study. Of the 291 participants that were analyzed, 241 were males and 50 were females.

Of the population frame of 291, there were 115 males and 24 females in the Toledo Early Return to Work program (supported). There were 126 males and 26 females in the Cleveland Early Return to Work program (non-supported). Of the 291 participants, the combined total for the two cities was 144 were police officers, 99 were firefighters and 48 were emergency services workers. Of these, the total numbers, Toledo’s Early Return to Work program (supported) included 62 police officers, 63 firefighters and 14 emergency medical services workers. The total numbers in the Cleveland Early Return to Work program (non-supported) were 82 police officers, 36 firefighters and 34 emergency medical services workers.

Of the 291 participants, the combined total for the two cities was as follows: (a) 74 diagnosed with Back Strain, Lumbo Sacral Strain (Group 1); (b) 97 diagnosed with injuries of Knee Strain, Knee Contusion Leg, Ankle, Foot (Group 2); (c) 12 diagnosed with Carpal Tunnel/Wrist/Strain/Contusion (Group 3); (d) 34 diagnosed with Shoulder
Strain (Group 4); (e) 34 diagnosed with Hand Puncture, Finger Cuts (Group 5); f) 22 diagnosed with Cervical/Neck Sprains/Strains, Thoracic Strain (Group 6); and g) 18 diagnosed with Arm, Elbow Contusion (Group 7).

The breakdown of these diagnoses in the city of Toledo was as follows: Of the 139 participants in the city of Toledo’s Early Return to Work program (supported), (a) 32 were diagnosed with Back Strain, Lumbo Sacral Strain (Group 1); (b) 48 were diagnosed with injuries of Knee Strain, Knee Contusion Leg, Ankle, Foot (Group 2); (c) 6 were diagnosed with Carpal Tunnel/Wrist/Strain/Contusion (Group 3); (d) 23 were diagnosed with Shoulder Strain (Group 4); (e) 15 were diagnosed with Hand Puncture, Finger Cuts (Group 5); f) 9 were diagnosed with Cervical/Neck Sprains/Strains, Thoracic Strain (Group 6); and g) 6 were diagnosed with Arm, Elbow Contusion (Group 7).

The breakdown of the diagnoses in the city of Cleveland was as follows: Of the 152 participants in the city of Cleveland’s Early Return to Work program (non-supported), (a) 42 were diagnosed with Back Strain, Lumbo Sacral Strain (Group 1); (b) 44 were diagnosed with injuries of Knee Strain, Knee Contusion Leg, Ankle, Foot (Group 2); (c) 7 were diagnosed with Carpal Tunnel, Wrist, Strain/Contusion (Group 3); (d) 15 were diagnosed with Shoulder Strain (Group 4); (e) 19 were diagnosed with Hand Puncture, Finger Cuts (Group 5); (f) 13 were diagnosed with Cervical/Neck Sprains/Strains, Thoracic Strain (Group 6); and (g) 12 were diagnosed with Arm, Elbow Contusion (Group 7).
### Table 4.1: Summary of the Characteristics of the Sampling Frame

<table>
<thead>
<tr>
<th>DESCRIPTORS</th>
<th>TOLEDO</th>
<th>CLEVELAND</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Participants</td>
<td>151</td>
<td>159</td>
</tr>
<tr>
<td>No Return to Work</td>
<td>12</td>
<td>7</td>
</tr>
<tr>
<td>Number of Participants used in Study (excluding those who did not return to work)</td>
<td>139</td>
<td>152</td>
</tr>
<tr>
<td>Male</td>
<td>115</td>
<td>126</td>
</tr>
<tr>
<td>Female</td>
<td>24</td>
<td>26</td>
</tr>
<tr>
<td>Police Officers</td>
<td>62</td>
<td>82</td>
</tr>
<tr>
<td>Firefighters</td>
<td>63</td>
<td>36</td>
</tr>
<tr>
<td>Emergency Medical Services Workers</td>
<td>14</td>
<td>34</td>
</tr>
<tr>
<td>Back Strain</td>
<td>32</td>
<td>42</td>
</tr>
<tr>
<td>Knee Strain</td>
<td>48</td>
<td>44</td>
</tr>
<tr>
<td>Carpal Tunnel</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Shoulder Strain</td>
<td>23</td>
<td>15</td>
</tr>
<tr>
<td>Hand Puncture</td>
<td>15</td>
<td>19</td>
</tr>
<tr>
<td>Cervical Strain</td>
<td>9</td>
<td>13</td>
</tr>
<tr>
<td>Arm/Elbow Contusion</td>
<td>6</td>
<td>12</td>
</tr>
</tbody>
</table>

**Research Questions**

The statistical analysis addressed the following research questions:

1. Did the type of Early Return to Work program make a difference in the length of time off work (TOW)?

2. Did the type of Early Return to Work program make a difference in employment outcome?
3. Did the type of occupation make a difference in the length of time off work (TOW)?

4. Did the type of occupation make a difference in the outcome of employment?

5. Did the type of injury make a difference in the length of time off work (TOW)?

6. Did the type of injury make a difference in the outcome of employment?

Presentation of the Findings

Each of the following sections is grouped and displayed in the following sequence: (a) research question; (b) type of tests and statistics used to analyze the data; (c) the type of statistic used to measure the relationship between the explanatory and criterion variables; and (d) the results of the analyses;

**Research Question 1:**

Did the type of Early Return to Work program make a difference in the length of time off work (TOW)?

To analyze the type of programs, the means and standard deviations for time off work (TOW) were found for the Toledo group (n = 139) and the Cleveland group (n = 152). The Toledo group had a mean of 24.0 days (S.D. = ±32.7). The Cleveland group had a mean of 95.9 days (S.D. = ±82.6). To see if there was a relationship between program type and time off work, a t-test was performed. A significant difference was found with the t-test value being –9.92 (p = 1.985). Please see Table 4.2.
<table>
<thead>
<tr>
<th>T-Test: Two-sample assuming unequal variances</th>
<th>TOW1 Toledo</th>
<th>TOW2 Cleveland</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>24.04225352</td>
<td>95.91447</td>
</tr>
<tr>
<td>Variance</td>
<td>1067.005294</td>
<td>6830.701</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>32.7</td>
<td>82.6</td>
</tr>
<tr>
<td>Observations</td>
<td>139</td>
<td>152</td>
</tr>
<tr>
<td>Hypothesized Mean Difference</td>
<td>0</td>
<td>200</td>
</tr>
<tr>
<td>t Stat</td>
<td>-9.923756946</td>
<td></td>
</tr>
<tr>
<td>P (T&lt;=t) one-tail</td>
<td>1.98477E-19</td>
<td></td>
</tr>
<tr>
<td>t Critical one-tail</td>
<td>1.652508672</td>
<td></td>
</tr>
</tbody>
</table>

Table 4.2: Program versus time off work (TOW).

**Question 2:**

Did the type of Early Return to Work program make a difference in employment outcome?

The two programs were also evaluated for their relationship to outcome. For this analysis, data on outcomes were available on 151 participants in the Toledo program. There were 139 participants who returned to work and 12 who did not. For the Cleveland program, data on outcomes were available on 159 participants, of which, 152 returned to work and 7 did not. Combining both programs, 291 participants returned to work and 19 did not, making a grand total of 310 participants for both cities. A two-by-two frequency table was made and a chi-square analysis performed (See
Table 4.3). There was not a significant relationship between type of program and outcome (chi-square = 1.691, \( p = .1934 \)).

<table>
<thead>
<tr>
<th></th>
<th>Returned to work</th>
<th>Did not return to work</th>
<th>Grand total</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Toledo</td>
<td>139</td>
<td>12</td>
<td>151</td>
</tr>
<tr>
<td>City of Cleveland</td>
<td>152</td>
<td>7</td>
<td>159</td>
</tr>
<tr>
<td>Both Cities</td>
<td>291</td>
<td>19</td>
<td>310</td>
</tr>
</tbody>
</table>

Table 4.3: Program versus outcome for the cities of Cleveland and Toledo.

**Question 3:**

Did the type of occupation make a difference in the length of time off work (TOW)?

The two groups were also combined to study the participants’ type of occupation. The three occupations included in this study were as follows: (a) police officer \( (n = 145) \), (b) firefighter \( (n = 98) \), and (c) emergency medical service worker \( (n = 48) \). The length of time off work was determined for each occupational group in both cities with the following results: (a) the group of police officers had a mean TOW of 62.6 days \( (S.D. = \pm 67.47) \), (b) the group of firefighters had a mean TOW of 46.9 days \( (S.D. = \pm 64.51) \), and (c) the group of emergency medical service workers had a mean TOW of 89.2 days \( (S.D. = \pm 96.38) \). See Table 4.4.
<table>
<thead>
<tr>
<th>Groups</th>
<th>Count</th>
<th>Sum</th>
<th>Average</th>
<th>Variance</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Police</td>
<td>145</td>
<td>9080</td>
<td>62.62069</td>
<td>4552.682</td>
<td>67.47</td>
</tr>
<tr>
<td>Firefighter</td>
<td>98</td>
<td>4596</td>
<td>46.89796</td>
<td>4161.33</td>
<td>64.51</td>
</tr>
<tr>
<td>EMS Worker</td>
<td>48</td>
<td>4281</td>
<td>89.1875</td>
<td>9288.453</td>
<td>96.38</td>
</tr>
</tbody>
</table>

Table 4.4: Single factor analysis of occupation type versus time off work for both cities.

An ANOVA was run to ascertain whether there was a relationship between occupation and time off work (see Table 4.5). There was a significant relationship found ($F = 5.5704, p = .0042$). To further elucidate this relationship between occupation and time off work (TOW), $t$-tests between each group combination were run with the following results: (a) between the police officers and firefighter groups a significant difference was found ($t = 1.652, p = .0344$); (b) between the police officers and the emergency service workers a significant difference was found ($t = -1.771, p = .0407$); and (c) between the firefighters and the emergency service workers a significant difference was found ($t = 1.668, p = .0038$).
Table 4.5: Occupation type versus time off work for both cities.

To analyze each of the two programs, the type of occupation was analyzed by studying the length of time off work (time in days between date of the injury and the date of the return to work) for each occupational group.

The findings were as follows for the Toledo program: (a) the police officers ($n = 65$) had a mean TOW of 25.0 days ($S.D. = \pm 35.94$); (b) the firefighters ($n = 60$) had a mean TOW of 21.7 days ($S.D. = \pm 26.32$); and (c) the emergency medical service workers ($n = 14$) had a mean TOW of 32.4 days ($S.D. = \pm 43.80$). (See Table 4.6)
<table>
<thead>
<tr>
<th>Groups</th>
<th>Count</th>
<th>Sum</th>
<th>Average</th>
<th>Variance</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Police</td>
<td>65</td>
<td>1624</td>
<td>24.98462</td>
<td>1291.953</td>
<td>35.94</td>
</tr>
<tr>
<td>Firefighter</td>
<td>60</td>
<td>1300</td>
<td>21.66667</td>
<td>692.9718</td>
<td>26.32</td>
</tr>
<tr>
<td>EMS Worker</td>
<td>14</td>
<td>454</td>
<td>32.42857</td>
<td>1918.11</td>
<td>43.80</td>
</tr>
</tbody>
</table>

Table 4.6: Toledo occupation type versus time off work.

An ANOVA was run to see whether there was a relationship between the type of occupation and the length of time off work (TOW) for the Toledo program. There was no significant relationship found ($F = 2.34, p = 0.1002$). Please see Table 4.7 for the data.

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>27817.37</td>
<td>2</td>
<td>13908.69</td>
<td>2.341242</td>
<td>0.100.91</td>
</tr>
<tr>
<td>Within Groups</td>
<td>784176.3</td>
<td>132</td>
<td>5940.729</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>811993.7</td>
<td>134</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.7: Single factor analysis for the city of Toledo occupational type versus time off work (TOW).
The findings were as follows for the Cleveland program: (a) the police officers ($n = 65$) had a mean TOW of 77.3 days ($S.D. = \pm 53.27$); (b) the firefighters ($n = 36$) had a mean TOW of 90.4 days ($S.D. = \pm 85.29$); and (c) the emergency medical service workers ($n = 34$) had a mean TOW of 112.6 days ($S.D. = \pm 102.68$). (See Table 4.8)

<table>
<thead>
<tr>
<th>Groups</th>
<th>Count</th>
<th>Sum</th>
<th>Average</th>
<th>Variance</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Police</td>
<td>65</td>
<td>5023</td>
<td>77.27692</td>
<td>2837.766</td>
<td>35.94</td>
</tr>
<tr>
<td>Firefighter</td>
<td>36</td>
<td>3256</td>
<td>90.44444</td>
<td>7274.597</td>
<td>85.29</td>
</tr>
<tr>
<td>EMS Worker</td>
<td>34</td>
<td>3827</td>
<td>112.5588</td>
<td>10543.89</td>
<td>102.68</td>
</tr>
</tbody>
</table>

Table 4.8: Cleveland occupation type versus length of time off work.

An ANOVA was run to see whether there was a relationship between the type of occupation and the length of time off work (TOW) for the Cleveland program. There was a significant relationship found ($F = 0.6280, p = 0.5351$). Please see Table 4.9 for the data.
Table 4.9: Single factor analysis for the city of Cleveland occupational type versus length of time off work.

**Question 4:**

Did the type of occupation make a difference in the outcome of employment?

The type of occupation was also analyzed for its relationship between occupation and whether a person can return to work (outcome). For this analysis, data on outcomes from both programs were combined, making a total of 310 participants, 291 of whom returned to work and 19 of whom did not. The outcomes were as follows: (a) The group of police officers had 144 participants who returned to work and 10 who did not; (b) the group of firefighters had 99 participants who returned to work and 4 who did not; and (c) the group of emergency medical service workers had 48 participants who returned to work and 5 who did not.
A two-by-three frequency table was made and a chi-square analysis performed (See Table 4.10). There was not a significant relationship between the type of program and outcome (chi-square = 2.019, \( p = .3643 \)). It should be noted that there is one cell with fewer than 4 participants. Therefore, the data should be interpreted with caution.

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Police officers</th>
<th>Firefighters</th>
<th>Emergency medical service workers</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Returned to work</td>
<td>144</td>
<td>99</td>
<td>48</td>
<td>291</td>
</tr>
<tr>
<td>Did not return to work</td>
<td>10</td>
<td>4</td>
<td>5</td>
<td>19</td>
</tr>
<tr>
<td>Total</td>
<td>154</td>
<td>103</td>
<td>53</td>
<td>310</td>
</tr>
</tbody>
</table>

Table 4.10: Occupation versus outcome for both cities.

**Question 5:**

Did the type of injury make a difference in the length of time off work (TOW)?

To analyze the types of injury, data from participants from both the Toledo and Cleveland programs were combined. Then the means and variances of the (TOW), time in days between date of the injury and the date of the return to work) were determined for each type of injury. The findings were as follows: (a) The group with back strain injuries (\( n = 74 \)) had a mean of 61.7 days (\( S.D. = \pm 62.57 \)); (b) the group with either a knee strain, a knee contusion, or a leg, ankle, or foot injury (\( n = 97 \)) had a mean of 59.2 days (\( S.D. = \pm 74.03 \)); (c) the group with either a carpal tunnel or wrist strain or
contusion \((n = 12)\) had a mean of 87.5 days \(\text{S.D.} = \pm 105.49\); (d) the group with a shoulder strain injury \((n = 34)\) had a mean of 67.9 days \(\text{S.D.} = \pm 111.39\); (e) the group with a hand puncture or finger cuts \((n = 34)\) had a mean of 52.3 days \(\text{S.D.} = \pm 46.54\); (f) the group with either a cervical, neck or thoracic sprain or strain \((n = 22)\) had a mean of 63.0 days \(\text{S.D.} = \pm 63.85\); and (g) the group with either a arm or elbow contusion \((n = 18)\) had a mean of 63.8 days \(\text{S.D.} = \pm 48.36\). Please see Table 4.11.

<table>
<thead>
<tr>
<th>Groups</th>
<th>Count</th>
<th>Sum</th>
<th>Average</th>
<th>Variance</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Back strain</td>
<td>74</td>
<td>4563</td>
<td>61.7</td>
<td>3914.99</td>
<td>62.57</td>
</tr>
<tr>
<td>Knee, ankle, leg</td>
<td>97</td>
<td>5745</td>
<td>59.2</td>
<td>5480.86</td>
<td>74.03</td>
</tr>
<tr>
<td>Carpal tunnel</td>
<td>12</td>
<td>1050</td>
<td>87.5</td>
<td>11127.91</td>
<td>105.49</td>
</tr>
<tr>
<td>Shoulder strain</td>
<td>34</td>
<td>2310</td>
<td>67.9</td>
<td>12407.21</td>
<td>111.39</td>
</tr>
<tr>
<td>Hand, finger cut</td>
<td>34</td>
<td>1777</td>
<td>52.3</td>
<td>2166.08</td>
<td>46.54</td>
</tr>
<tr>
<td>Cervical, thoracic</td>
<td>22</td>
<td>1363</td>
<td>62.0</td>
<td>4076.24</td>
<td>63.85</td>
</tr>
<tr>
<td>Arm, elbow</td>
<td>18</td>
<td>1149</td>
<td>63.8</td>
<td>2338.50</td>
<td>48.36</td>
</tr>
</tbody>
</table>

Table 4.11: Types of injury for both cities.

An ANOVA was run to see whether there was a relationship between the seven types of injury and the length of time off work (TOW). There was no significant relationship found \((F = 0.3999, \ p = .8788)\). Please see Table 4.12 for the data.
ANOVA

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>P-value</th>
<th>F crit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>13015.65291</td>
<td>6</td>
<td>2169.275485</td>
<td>0.399882406</td>
<td>0.87883688</td>
<td>2.130569</td>
</tr>
<tr>
<td>Within Groups</td>
<td>1540638.519</td>
<td>284</td>
<td>5424.783517</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1553654.172</td>
<td>290</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.12: Type of injury versus length of time off work for both cities.

Injury Versus Time Off Work in The City of Toledo

To analyze the types of injury, data from participants from each program were analyzed. The means and variances of the TOW (time in days between date of the injury and the date of the return to work) were determined for each type of injury for the participants of the Toledo program. The findings were as follows: (a) The group with back strain injuries (n = 32) had a mean of 34.3 days (S.D. = ±48.88); (b) the group with either a knee strain, a knee contusion, or a leg, ankle, or foot injury (n = 51) had a mean of 19.6 days (S.D. = ±25.01); (c) the group with either a carpal tunnel or wrist strain or contusion (n = 5) had a mean of 31.2 days (S.D. = ±21.29); (d) the group with a shoulder strain injury (n = 21) had a mean of 16.9 days (S.D. = ±21.50); (e) the group with a hand puncture or finger cuts (n = 15) had a mean of 13.2 days (S.D. = ±18.30); and (f) the group with either a cervical, neck or thoracic sprain or strain (n = 9) had a mean of 30.6 days (S.D. ±33.46); and (g) the group with diagnosed with either an arm or an elbow contusion (n = 6) had a mean of 49.8 days (S.D. = + 39.98). See Table 4.13.
An ANOVA was run to see whether there was a relationship between the seven types of injury and the TOW. There was no significant relationship found ($F = 1.886$, $p = .0878$). Please see Table 4.14 for the data.

<table>
<thead>
<tr>
<th>Groups</th>
<th>Count</th>
<th>Sum</th>
<th>Average</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Back strain</td>
<td>32</td>
<td>1097</td>
<td>34.28125</td>
<td>2389.434</td>
</tr>
<tr>
<td>Knee, ankle, leg</td>
<td>51</td>
<td>999</td>
<td>19.58824</td>
<td>625.4071</td>
</tr>
<tr>
<td>Carpal tunnel</td>
<td>5</td>
<td>156</td>
<td>31.2</td>
<td>453.2</td>
</tr>
<tr>
<td>Shoulder strain</td>
<td>21</td>
<td>354</td>
<td>16.85714</td>
<td>462.4286</td>
</tr>
<tr>
<td>Hand, finger cuts</td>
<td>15</td>
<td>198</td>
<td>13.2</td>
<td>335.0286</td>
</tr>
<tr>
<td>Cervical, thoracic</td>
<td>9</td>
<td>275</td>
<td>30.55556</td>
<td>1119.778</td>
</tr>
<tr>
<td>Arm, elbow</td>
<td>6</td>
<td>299</td>
<td>49.83333</td>
<td>1598.167</td>
</tr>
</tbody>
</table>

Table 4.13: Type of injury for the city of Toledo

ANOVA

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>11833.66</td>
<td>6</td>
<td>1972.277</td>
<td>1.885929</td>
<td>0.087786</td>
</tr>
<tr>
<td>Within Groups</td>
<td>138043.6</td>
<td>132</td>
<td>1045.785</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>149877.3</td>
<td>138</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.14: Type of injury versus time off work for city of Toledo.

Injury Versus Time Off Work in The City of Cleveland

To analyze the types of injury, data from the participants from each program were analyzed. The means and variances of the TOW (time in days between date of the injury and the date of the return to work) were determined for each type of injury for the participants of the Cleveland program. The findings were as follows: (a) The group with
back strain injuries \((n = 42)\) had a mean of 82.5 days \((S.D. = \pm 64.29)\); (b) the group with either a knee strain, a knee contusion, or a leg, ankle, or foot injury \((n = 46)\) had a mean of 103.2 days \((S.D. = \pm 85.10)\); (c) the group with either a carpal tunnel or wrist strain or contusion \((n = 7)\) had a mean of 127.7 days \((S.D. = \pm 124.78)\); (d) the group with a shoulder strain injury \((n = 13)\) had a mean of 150.5 days \((S.D. = \pm 146.31)\); (e) the group with a hand puncture or finger cuts \((n = 19)\) had a mean of 83.1 days \((S.D. = \pm 37.88)\); (f) the group with either a cervical, neck or thoracic sprain or strain \((n = 13)\) had a mean of 83.7 days \((S.D. = \pm 71.66)\); and g) the group with diagnosed with either an arm or an elbow contusion \((n = 12)\) had a mean of 70.8 days \((S.D. = \pm 52.22)\). See Table 4.15.

An ANOVA was run to see whether there was a relationship between the seven types of injury and the length of time off work (TOW). There was no significant relationship found \((F = 1.714, p = .1216)\). Please see Table 4.16 for the data.
<table>
<thead>
<tr>
<th>Groups</th>
<th>Count</th>
<th>Sum</th>
<th>Average</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Back strain</td>
<td>42</td>
<td>3466</td>
<td>82.52381</td>
<td>4132.987</td>
</tr>
<tr>
<td>Knee, ankle, leg</td>
<td>46</td>
<td>4746</td>
<td>103.1739</td>
<td>7242.636</td>
</tr>
<tr>
<td>Carpal tunnel</td>
<td>7</td>
<td>894</td>
<td>127.7143</td>
<td>15570.9</td>
</tr>
<tr>
<td>Shoulder strain</td>
<td>13</td>
<td>1956</td>
<td>150.4615</td>
<td>21405.27</td>
</tr>
<tr>
<td>Hand, finger cut</td>
<td>19</td>
<td>1579</td>
<td>83.10526</td>
<td>1434.877</td>
</tr>
<tr>
<td>Cervical, thoracic</td>
<td>13</td>
<td>1088</td>
<td>83.69231</td>
<td>5135.564</td>
</tr>
<tr>
<td>Arm, elbow</td>
<td>12</td>
<td>850</td>
<td>70.83333</td>
<td>2727.242</td>
</tr>
</tbody>
</table>

Table 4.15: Type of Injury for the city of Cleveland.

**ANOVA**

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>SS</th>
<th>Df</th>
<th>MS</th>
<th>F</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>68321.92</td>
<td>6</td>
<td>11386.99</td>
<td>1.714349</td>
<td>0.121599</td>
</tr>
<tr>
<td>Within Groups</td>
<td>963114</td>
<td>145</td>
<td>6642.165</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1031436</td>
<td>151</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.16: Type of injury versus time off work for the city of Cleveland.
Question 6:

Did the type of injury make a difference in the outcome of employment?

The type of disability was also analyzed for the relationship between type of disability and whether a person returned to work, at all. For this analysis, data on outcomes were available on 301 participants. There were 292 participants who returned to work and 19 who did not. The outcomes were as follows: (a) The group with back strain injuries had 74 participants who returned to work and 5 who did not; (b) the group with either a knee strain, a knee contusion, or a leg, ankle, or foot injury had 97 participants who returned to work and 6 who did not; (c) the group with either a carpal tunnel or wrist strain or contusion had 13 participants who returned to work and 2 who did not; (d) the group with a shoulder strain injury had 34 participants who returned to work and 6 who did not; (e) the group with a hand puncture or finger cuts had 34 participants who returned to work and 0 who did not; (f) the group with either a cervical, neck or thoracic sprain or strain had 22 who returned to work and 0 who did not; and (g) the group with diagnosed with either an arm or an elbow contusion had 18 who returned to work and 0 who did not.

A two-by-six frequency table was made and a chi-square analysis performed (See Table 4.17). There was not a significant relationship between type of injury and outcome (chi-squared = 12.0, $p = .0622$). It should be noted that there were several cells that had fewer than 5 participants. Therefore, these data should be interpreted with caution.
<table>
<thead>
<tr>
<th>Outcome</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Returned to work</td>
<td>74</td>
<td>97</td>
<td>13</td>
<td>34</td>
<td>34</td>
<td>22</td>
<td>18</td>
<td>292</td>
</tr>
<tr>
<td>Did not return to work</td>
<td>5</td>
<td>6</td>
<td>2</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>19</td>
</tr>
<tr>
<td>Total</td>
<td>79</td>
<td>103</td>
<td>15</td>
<td>40</td>
<td>34</td>
<td>22</td>
<td>18</td>
<td>311</td>
</tr>
</tbody>
</table>

Table 4.17: Type of injury versus outcome for both cities.

These findings will be discussed in Chapter 5 as to the significance of the study, future implications, and recommendations for future research.
CHAPTER 5

CONCLUSION AND IMPLICATIONS

Chapter five contains the following two sections: (1) conclusion and (2) implications.

The purpose of this study was to determine to what extent there is a relationship between an Early Return to Work program as a component of an employer’s Disability Management program and the length of time off work (TOW) and successful return to work (outcome). The general questions this researcher sought to answer included the following: Is there a relationship between ERTW and the length of time off work (TOW) and successful return to work (outcome)? To what extent do the type of ERTW program, type of occupation, and nature of disability have an effect on the length of time off work (TOW) and outcome?

The sampling frame in this study consisted of 310 injured workers employed by the metropolitan municipalities of Cleveland and Toledo in the state of Ohio who were involved in a state-funded workers’ compensation system and participated in an Early Return to Work program between the years 1998 and 2000. The participants were dropped from the study if they were miscoded or their dates were not consistent.
The following pages will discuss the results of the study question-by-question and will examine the effects of the results.

**Question 1. Did the type of Early Return to Work program make a difference in the length of time off work (TOW)?**

To see if there was a relationship between program type and time off work (TOW), a t-test was performed. A significant difference was found with the t-test value being \(-9.92\) \((p = 1.985)\). Thus the null hypothesis was rejected. The point biserial correlation indicates a large association between program type and time off work, suggesting a strong correlation with type of program and time off work.

The results indicate that the type of program (supported versus unsupported) made a significant difference in the number of days that the participants from the various occupations were off work (TOW). The city of Toledo’s Early Return to Work program (supported) participants were off work for fewer days (24 days total) than the participants in the city of Cleveland’s (non-supported) Early Return to Work program (95.9 days total).

The researcher attributes this wide variance in lost time to the structure of the two programs. The city of Toledo’s program, which had top management and labor support in the form of a written contract agreement, was able to get employees involved in the Early Return to Work program at the time of injury per their contract. (See Appendix A.) In contrast, the city of Cleveland, which did not have a written, formalized agreement between top management and labor, had to develop a
rehabilitation plan, which would include employers’ incentives to have their injured workers participate in their Early Return to Work program. This process would take anywhere from 30 to 60 days. (See Appendix B.)

There do not appear to be any other differences between the two programs, as both required the physician of record’s approval before the injured worker was released for light/modified duty assignments. The city of Toledo’s program, through a written agreement with labor and management, had the light/modified duty assignment written into the contract, and this assignment was carried out without negotiation. In contrast, the city of Cleveland, which relied on incentives to acquire the participation of the union and management, had to negotiate the development of a light duty assignment through the development of a rehabilitation plan. Consequently, the injured employee entered the city of Toledo’s Early Return to Work program sooner and returned to work sooner than did the city of Cleveland’s injured employees.

This would support the contentions of the literature reviewed. A review of the literature also suggests that it was not enough to have an ERTW program in place, but that that program must be structured and formalized, and the process for implementation of the program must be focused and systematic. Open communication and commitment between the key stakeholders is essential to ensure success. As mentioned earlier, the city of Toledo’s program had top management and labor support through their written formalized union contract, which required all employees to cooperate with the ERTW program guidelines, and department supervisors likewise cooperated. Early intervention, once an injury has occurred, is absolutely vital to
injured workers’ success in returning productively to the workplace. Fostering a mature, cooperative, and trusting relationship between workers and management is the key to a successful ERTW program (King et al., 1995).

Another advantage that Toledo’s (supported) program demonstrated was how quickly their injured workers entered the program. Toledo’s ERTW program had a mean of 24 days from the date of referral to the actual return to work date, as opposed to the city of Cleveland’s ERTW (non-supported) program, which had a mean of 95 days. Early identification of employees who may benefit from an ERTW placement is critical in the return to work process.

Mulholland, Sniderman, and Yankowski (1994) reported that an important distinction among Early Return to Work programs is the length of time, which elapses between the time of the initial injury and involvement in an Early Return to Work program. Studies of early referral to rehabilitation have shown that the longer employees are off work on disability, the less likely they are to return to work. It has been widely acknowledged in the industrial rehabilitation community that the sooner you are able to get an injured employer involved in the rehabilitation/return to work process, the better the results will be. Additionally, numerous studies and research has shown that the longer an injured worker is away from the workplace, the less likely he or she is to return to work.

However the reader should be cautioned when considering this finding, as there may be other characteristics of the participants in the two city programs that were not examined in this study. Characteristics such as age, gender, participants’ work ethic,
geographical area, and unemployment rates may have an effect on time off work and outcome, as well.

**Question 2. Did the type of Early Return to Work program make a difference in employment outcome?**

A two-by-two frequency table was made and a chi-square analysis performed. There was not a significant relationship between type of program and outcome (chi-square = 1.691, p = .1934). Consequently, the null hypothesis was accepted. The literature supports this finding, as the critical issues was whether a program exists. Both the city of Cleveland and Toledo had ERTW programs as part of their disability management process. The literature is very strong regarding the need for an employer to have a formalized return to work program to assist in the quick and safe return of their injured employees. Growick (1998) indicates that the most important aspects of an ERTW program is time (TOW) and conciliation (outcome). He writes, “In workers’ comp, time is your enemy; the longer an employee is off work, the more costly it is. The sooner you can intervene in a case, the better- and the best way is through an ERTW program” (Growick, 1998, p. 1).

Like Growick (1998), Taylor (1992) also argues for ERTW. As he suggests, one component of a comprehensive Disability Management program that has been shown to be effective in helping to reduce workers’ compensation costs for the employer is the development of an Early Return to Work program. These programs help the injured worker to return to work under medical supervision, and perform modified
jobs within their post-injury physical and medical capabilities, the rationale being that the sooner the worker returns to the workplace in any capacity, the more he or she is to return to regular employment, which clearly benefits both the employee and the employer.

**Question 3. Did the type of occupation make a difference in the length of time off work (TOW)?**

The two program groups were also combined in order to study the participants’ type of occupation. An ANOVA was run to ascertain whether there was a relationship between occupation and length of time off work. There was a significant relationship found (F = 5.5704, p = 0.0042).

To further elucidate this relationship between occupation and time off work, t-tests between each group combination were run and a significant difference was found between the groups. No significant relationship was found for the city of Toledo (F = 2.34, p = 0.1002), while a significant relationship was found for the city of Cleveland (F = 0.628, p = 0.5351).

While there appeared to be a relationship between type of occupation and time off work when the two programs were combined, this finding may have been skewed in as much as there appeared to be no relationship between type of occupation and time off work for the city of Toledo and a very strong relationship for the city of Cleveland. It appears that the city of Cleveland programmatic numbers in regards to this question may have inflated this association.
The literature suggests that type of occupation is not in itself a contributing factor in how long it takes for an injured employee to return to work. Mulholland, Sniderman, and Yankowski (1994) reported that an important distinction among Early Return to Work programs is the length of time, which elapses between the time of the initial injury and involvement in an Early Return to Work program. Studies of early referral to rehabilitation have shown that the longer employees are off work on disability, the less likely they are to return to work at all. After six months, it was found that only 5% of injured workers returned to work. Interestingly enough, few companies make participation in rehabilitation mandatory. In California where vocational rehabilitation is mandatory, employers realized an estimated $208 million in savings after implementing an Early Return to Work program.

Question 4. Did the type of occupation make a difference in the outcome of employment?

A two-by-three frequency table was made and a chi-square analysis performed. There was not a significant relationship between the type of program and outcome (chi-square = 2.019, p = 0.3643). The findings failed to reject the null hypothesis.

The literature supports this finding as authors have indicated that early referral to an ERTW program is the primary issue as to whether an injured employee returns to work. Another factor that the literature has suggested would be the effects that external forces have on the return to work process after injury. King reports that early intervention, once an injury has occurred, is absolutely vital to injured workers’ success.
in returning productively to the workplace. It is also essential to foster trust and mature, cooperative relationships between the key players involved in the system, especially employers, workers, and the public entities responsible for serving them (King et al., 1995, p. 30).

In addition to the structural components of an ERTW program, the literature suggests that external issues that encompass the process also need to be considered. One area is the providers of the therapeutic component associated with the ERTW program. According to Towers and Perrin (1993) and Scammell and Booth (1997), a network of healthcare providers who are knowledgeable about the unique needs of the organization in the workplace needs to be established.

**Question 5. Did the type of injury make a difference in the length of time off work (TOW)?**

To analyze the types of injury, data from participants from both the Toledo and Cleveland programs were combined. Then the means and variances of the TOW (time in days between date of the injury and the date of the return to work) were determined for each type of injury. An ANOVA was run to see whether there was a relationship between the six types of injury and the TOW for both cities. There was no significant relationship found (F = 0.3999, p = .8788). The findings failed to reject the null hypothesis.

An ANOVA was run to see whether there was a relationship between the six types of injury and the TOW for the city of Toledo. There was no significant
relationship found (F = 1.513, p = 0.1903). The findings failed to reject the null hypothesis.

An ANOVA was run to see whether there was a relationship between the six types of injury and the TOW for the city of Cleveland. There was no significant relationship found (F = 1.727, p = .1326). The findings failed to reject the null hypothesis.

These results are discussed below, in combination with question 6.

**Question 6: Did the type of injury make a difference in the outcome of employment?**

A two-by-six frequency table was made and a chi-square analysis performed. There was not a significant relationship between type of injury and outcome (chi-squared = 1.691, p = .1934). The findings failed to reject the null hypothesis.

The literature reviewed supports the findings recorded for questions 5 and 6, suggesting that there is no relationship between the type of injury and how long it takes an injured worker to return or not return to work. Butler, Johnson, and Baldwin (1995) in their study entitled “Managing Work Disability: Why First Return to Work is not a Measure of Success” found that except for severe cases, the direct physical effects of injuries do not determine whether or not an injured worker returns to stable employment. They surmised that the nature of injuries influence return to work outcomes only partially, and offered a set of conditions that affect the return to work process. These conditions include workers’ characteristics, workplace accommodations
that offset the limiting effects of impairments, employers’ incentives to accommodate injured employees, and the employees’ work environment.

Implications of this Study

In summary, this study and a review of the literature suggest that the implementation of an Early Return to Work program as a component of a disability management process can have an effect on lost time from work resulting from injuries sustained on the job. A key factor as to how effective the return to work program is depends on the type of program.

It is suggested and supported by the findings from this study that the ERTW program must be structured, have labor and management support, that the external providers of services be knowledgeable regarding the return to work process. Furthermore, the return to work process should focus on functions and a key phrase may be to “return the injured employee to the functional demands of his or her occupation.”

Finally, the findings of this study strongly suggest that early intervention or early referral to the ERTW program or rehabilitation is essential in how effective an ERTW program will be in controlling the amount of time an injured employees is away from work. The study confirms that one of the essential components of an effective ERTW program is having top management and labor support. The study shows that injured workers are not off work for extended periods of time, when they have management and labor support and a formalized written agreement.
The literature suggests that the successes that an ERTW program has in reducing the amount of time off work in the workers’ compensation system may have far reaching effects in other venues. ERTW programs may serve to manage workplace absences in general, regardless of incidence of injury. The emergence of the concept of 24-hour care and integrated disability management has become a tool that is being considered by insurance companies and employers as away of controlling lost time from work in case where the injuries or disabilities sustained were away from the work environment. This is especially true with the passage of the Americans with Disabilities Act (ADA). The emergence of ADA has forced employers to consider accommodating individuals with disabilities by providing alternative placement opportunities and options in the employment environment. These employment options would include modified duty assignments or restructuring the workplace to accommodate the functional limitations associated with illness or injury regardless of incidence. Thus employers are going to need assistance from rehabilitation practitioners who can provide them with processes, programs, and strategies to handle ADA issues and lost time from work.

The findings of this study and the literature reviewed suggest that before one can be sure of the effects of an ERTW program on lost time, further quantitative studies need to be conducted relative to cost benefits analysis. Furthermore, qualitative studies as to the impact these programs have on employees participating in ERTW programs and the effectiveness of these programs on employer operations and production need to be conducted.
CITY OF TOLEDO RETURN TO WORK PROGRAM

INJURY PAY

Employees injured in the course of and arising out of their employment under such circumstances as would cause such injury or disability to be compensible under the Worker's Compensation Laws of the State of Ohio will be eligible to participate in the City's Injury Pay Program, which is described below. An on the job injury certified by the City of Cleveland, Division of Employee Accident Control, and the employee seen by one our selected medical health provider and is in the process of successfully complete a injury-related rehabilitation or return to work program. The Cost Containment Committee referenced herein will select the program physician(s) and medical facilities from submitted proposals.

Section 1: Employees sustaining a work related injury that requires medical attention at one of our medical treatment facilities (i.e., sprains, simple fractures, etc.) will be transported to, and treated by a program physician, EMS, private ambulance or medical facility. The program physician, along with rendering a diagnosis and prognosis, will determined if the employee is capable of returning to regular duties, whether a transitional work assignment is appropriate, and the necessary rehabilitation plan to be followed; this plan will include the duration of any transitional work assignment and indicate any physical therapy the injured employee may require. The program physician(s) may require follow-up medical evaluation.

SECTION 2: Employees sustaining a work related emergency/trauma injury (i.e., life treating, severe body injury) may be treated at any medical treatment facility to which emergency medical personnel transports them to. The employee will subsequently be examined by the program physician. The designated program physician will then determine if the employee is capable of returning to regular duties or if a transitional work assignment is appropriate, and the necessary rehabilitation plan to be followed: this opinion will include the duration of any transitional work assignment and indicate any physical therapy the injured employee may require. The program physician(s) may require follow-up medical evaluations.

SECTION 3: Until (January, 1997)? an employee may, after the initial evaluation by the program physician, elect to continue treatment with their personal physician provided the program physician's recommendations as followed. The employee will sign any necessary waivers to allow their personal physician to release information to the program physician. The employee's personal physician will be the physician of record for The Bureau Worker's Compensation purposes.
Beginning January 1, 1997, an employee who participates in this program must receive treatment only from the program physician, who will also be the physician of record for The Bureau of Worker's Compensation purposes.

SECTION 4: Upon the program physician's determination that an injury requires the employee to be off work, wherein the employee reports said injury within twenty-four (24) hours of the incident of illness or injury, paid leave shall be granted by the Department Of Personnel & Human Resources for up to thirty (30) days.

(a) Should such disability exceed thirty (30) calendar days, the Director of Personnel & Human Resources, upon application therefore and proof continued disability, may extend the period during which such person is carried on the regular payroll. The length of such an extended period or periods shall not exceed thirty (30) days at any one time, or one (1) year in total.

(b) Injury pay extension requests, accompanied by a "STATEMENT OF ATTENDING PHYSICIAN", setting forth the illness or injury and the need for additional time, must be presented to the Director of Personnel & Human Resources no later than one (1) week after the expiration of the original thirty (30) day disability period. If the above requirements are not fulfilled, the request for injury pay extension shall not be considered.

SECTION 5: Worker's Compensation: At the expiration of the injury leave granted, if the employee is still unable to return to work, the employee may elect in writing to use accumulated sick and other accrued time. If the employee is still unable to return to work, payment of normal wages will be stopped and the Industrial Commission will be requested to begin weekly payment under the provisions of the Worker's Compensation Act.

SECTION 6: Until January, 1996 if the opinion of the employee's treating physician conflicts with that of the program physician and such opinion is presented to the City in seven (7) calendar days of the program physician's evaluation, and if the physicians cannot agree after consultation, the employee will be referred for a third opinion. The Cost Containment Committee referenced below will establish a panel of occupational health specialists for third opinions. The third opinion shall determine the employee's injury pay status under the contract and shall not be subject to further appeal or review. If the third opinion is consistent with the program physician's plan, or if the employee fails to abide by the rehabilitation plan, or if the employee enters and later drops out of the plan, the City can recoup injury pay advanced from the employee's sick time accumulation or separation pay. If the employee does not have a sufficient sick time balance, the City shall recoup
injury pay by reducing future sick leave earnings by one-half until the injury pay is fully recouped, or from separation pay if the employee does not return to work as otherwise provided herein. If there is still an insufficient amount of accumulated benefit time for the City to fully recoup the injury pay, as described above, the City may seek an attachment of an affected employee's retirement benefit contributions, through the Public Employee Retirement System.

SECTION 7: Employees who sustain injuries in the course of and arising out of their employment under such circumstances as would cause such injury or disability to be compensable under the Worker's Compensation Laws of the State of Ohio who choose to be evaluated by the program physician or who choose not to follow that physician's recommended program, and go only to the physician of their choice, are not entitled to any paid injury leave benefits as are contemplated herein. Notice of intent not to participate in the City's injury program must be given at the time the injury report is filed by the affected employee. An employee's failure to provide said notification in a timely manner may subject the employee to disciplinary and/or legal action. Any and all work-related injury claims will be processed through and conform with the Worker's Compensation Act.

SECTION 8: False Claims: The City reserves the right to recoup benefit payments to any employee who is guilty of submitting a false claim, or abuse of the privileges covered in this Article, or working for another employer while on injury leave, and take disciplinary action. Examples of what might constitute "abuse", as used in this Section, include an employee's refusal to perform the duties associated with his or her transitional work duty assignment, failure to comply with the conditions outlined in this Agreement, etc.

SECTION 9: An employee working in a transitional work assignment will be compensated at their regular rate of pay. The employee will not be entitled to bid rights, overtime, etc., since the employee is not fit to perform all of the duties of the classification. With regard to the rights of other employees, the employee in the transitional assignment will be deemed not to be working out of classification. The program physician shall specify, as part of an affected employee's rehabilitation program, the date upon which an employee in the program may fully resume his or her normal work duties. Upon an employee's resumption of his or her full normal work duties, the affected employee's transitional work assignment shall be terminated.

(a) Transitional work assignments will be identified by the Departments, Divisions or Agency Head, occupational physician and the Bureau of Workers' Compensation Rehabilitation divisions who have appropriate tasks available. The currently available assignments and the tasks involved in each division will be provided in writing to the Union.
It is not the intent of this section to require divisions to provide transitional work above that identified, nor is a division required to provide transitional work where no such appropriate tasks have been identified and recognized.

Section 10: With the intent of this injury program being to minimize time away from work and return the healthy employee to active employment as soon as possible, the Joint Labor Management Health and Safety Committee will also serve as a cost containment committee for Workers' Compensation. The composition of said Committee shall be determined by the mutual agreement of the parties and said Committee will be responsible for organizing its own affairs, scheduling meetings, keeping and disseminating appropriate records, etc.

Section 11: Incentive Agreement:
(a) Once a Bargaining Unit member completes a rehabilitation plan through the Bureau of Workers' Compensation Rehabilitation Division, in accordance with the Bureau of Workers' Compensation Rule 4121-18-11, the City is eligible for and incentive from the Bureau of Workers' Compensation. Said incentive is a payment from the Bureau to an employer who hires, or retains claimants who have completed a rehabilitation plan in accordance with the rule cited above.

(b) The cited incentive only accrues to the employer if, as part of the employee's rehabilitation through the Bureau of Workers' Compensation, he or she is able to engage in transitional work duties in the workplace, as part of the rehabilitation program. Therefore, to the extent consistent with operational considerations, the City will cooperate with the Union to identify appropriate transitional duties that the City can make available for employees who require same as part of their rehabilitation. The City shall make the final determination as to the extent to which it can offer transitional duties to employees on rehabilitation and in no event shall such transitional duties involve work that is normally performed by employees in another union's bargaining unit, unless said union has given its' explicit written approval to the contrary.

(c) A member of the Bargaining Unit who declines to take part in a Bureau of Workers' Compensation rehabilitation program subsequent to a work-related injury, as is contemplated in the above-cited rule, shall be ineligible for any form of transitional work duties as otherwise contemplated herein. Furthermore, the City shall be under no obligation to identify potential transitional duties in any such case and its' failure to do so shall not be construed by the Union as unequal or disparate treatment of the Bargaining Unit member under the terms of the extant labor agreement between the parties.

(d) Once per calendar quarter, the City will divide any such incentives it receives from the Bureau of Workers' Compensation, related to the rehabilitation of Bargaining Unit members, with employees in the Bargaining Unit. The total amount of the aggregate incentive payments which will accrue and be payable to Bargaining Unit
members is twenty-five percent (25%) of the total amount of incentive money paid to the City by the Bureau during the preceding calendar quarter related to the rehabilitation of Bargaining Unit members. Specifically excluded from such payments are Living Maintenance Incentives, or travel expense or any other incentive.

(e) The twenty-five percent (25%) share of incentive money which accrues to Bargaining Unit members shall be divided equally among all members of the Bargaining Unit, payable in a lump sum to each, with the exception that Bargaining Unit members who have sustained a work-related injury who do not take part in a Workers' Compensation rehabilitation plan shall not be eligible for any such payments. Furthermore, an employee who has been injured and is involved in rehabilitation under the terms of this Agreement shall not, for the duration of said rehabilitation, be entitled to receive the incentive contemplated herein. At the conclusion of such employee's rehabilitation program, he or she will be given the amount of incentive to which he or she would otherwise have been entitled had he or she not been involved in rehabilitation pursuant to this Agreement at the time such payments were made to other employees in the bargaining unit.

(f) The above-cited payments shall be made to affected Bargaining Unit members as soon as possible after the end of each calendar quarter. The Union shall receive from the City a complete accounting of the total amount of incentive money available for any calendar quarter, as well as details of the calculations used to determine the gross amount of lump sum payment to be made to each affected Bargaining Unit member.

(g) The terms of this agreement shall become effective as of January 1, 1994 and shall be subject to review by the parties on an annual basis thereafter.

IN WITNESS WHEREOF, the parties set forth their hands this ______ day of November, 1993.

FOR L.I.U., LOCAL 1099                   FOR THE CITY OF CLEVELAND

______________________                  ___________________________
Paul M. Wells                             Daniel R. Hauenstein
President-Business Manager                Labor Relations Manager

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Question and Answer Related to the Worker's Compensation Rehabilitation Program

Question: If I am injured on the job, do I have to go to someone other than my personal physician?

Answer: You have to go to one of our City physicians at our selected health care providers first; however, if you want to follow up with your physician you can and participate in the rehabilitation through the Bureau of Worker's Compensation Rehabilitation Division. Be aware, though, that beginning January, 1997 your rehabilitation must be through a City-designated physician.

Question: Will I have to go to some facility for my rehabilitation that is nowhere near where I live, or normally go for medical treatment?

Answer: Not necessarily. It depends on the rehabilitation specialist from the Bureau of Worker's Compensation and the physician of record for your particular case.

Question: What if I do not want the transitional work assignment which has been available for me, as part of my rehabilitation?

Answer: You will lose, or not be eligible for the incentive monies, for participating in transitional work duties.

Question: What if I go through a complete rehabilitation program and I am still not able to perform all of the duties of my City job?

Answer: In such a situation, the Bureau of Worker’s Compensation will staff your case in the middle of your rehabilitation plan and recommend an ADA accommodation. You must process the proper A.D.A. forms with medical and send to the City A.D.A. committee will work with the Union in an attempt to find another City job that you can do, at a rate of pay which is appropriate for that position. If the rate of pay is lower than what you were previously receiving, the Bureau of Worker's Compensation will pay the difference in pay for 200 weeks, through the Rehabilitation Division, provided you are involved in a rehabilitation program through the Bureau of Worker's Compensation Rehabilitation Division. If such a job can be identified, it will then be up to you to accept or turn down the new job, Worker's Compensation will re-train you in job skills that are more suited to your physical limitations.
Question: If I choose not to take part in a Worker's Compensation rehabilitation program right after I am injured, but later change my mind, will I become eligible for transitional work duties and a share of the incentive money after I enter Worker's Compensation rehabilitation?

Answer: No. The only way the City can share incentive money with bargaining unit members is if you are involved in the program from the first day.

Question: When I am injured on the job, who do I notify that I want to take part in a Worker's Compensation rehabilitation program?

Answer: When you fill out the injury report of an on duty injury. You can indicate your intent on the Employee Injury Form (EI-4) Your supervisor will transmit these documents to the contact person in your division.
APPENDIX B

INDUSTRIAL INJURY ACCIDENT REPORTING PROCEDURES
Chapter 7A

INDUSTRIAL INJURY ACCIDENT REPORTING PROCEDURES

Industrial accidents result in direct and indirect costs. They have an adverse effect on both the employer and employee. Therefore, management, and employees must strive to curtail accident frequency within their respective work areas. It is not only a humanitarian approach, (protecting our human resources), but it is good business. It requires the assistance of all City of Cleveland employees. However, in spite of the best efforts of both management and labor, accidents may occur and must be reported. The following revised accident reporting procedures have therefore been established. Since industrial injury claims must be processed within specific time limitations established by the Bureau of Workers' Compensation, compliance with these reporting procedures is mandatory. Employees must report all accidents to their supervisor immediately. The supervisor must implement the following procedures as outlined. Enforcement shall be the responsibility of departmental/divisional authorities.

In the case of an industrial injury and the employee require medical attention. The following procedures are required to be followed by departments, division, and employees, including the completion of all necessary forms.

(A) Initial Physician Report): The Initial Physician Report is a "Request for Medical Treatment" due to an industrial injury. It must be filled out by the injured employee and presented to the medical treatment agency at the employee’s initial treatment. The treating agency will send the Initial Physician Report to the MCO. Is use is restricted to on-the-job injuries. Supervisors shall instruct injured employees to report to selected hospitals or clinics for medical treatment. If an employee is unable due to the nature of the injury to go alone, he/she must be accompanied. If the injury is very serious, regardless of time of day, the injured employee should be taken to the nearest hospital. When the patient is admitted, the hospital must be notified that it has a City of Cleveland industrial injury case under the jurisdiction listed on Personal Injury Treating Agency, identified on Page 11 of this manual. Recommended follow-up treatment must be provided by one of the selected treating agencies.

If the injured employee is taken directly home from the scene of the accident the above procedures are to be followed plus advising the treating agency of the employee's home address.

(B) Supervisor's Investigation of Employee Incident/Injury Report (EAC-3). Supervisors must investigate employee incident/injuries immediately and record facts of the investigation as outlined on the revised EAC-3 reporting form. Accident reporting and accident investigation is not the same. Accident reporting provides only minimal information useful to service organizations; legal agencies, and for internal
purposes. Accident investigation identifies, analyses and pinpoints the problem areas in order to develop corrective action that can be used to prevent a reoccurrence of the accident.

The supervisor's investigation should include identifying multiple events leading up to the accident, determining the direct and indirect causes of the accident, identifying hazards of the operation and recommending corrective measures. The supervisor in charge of the operation must perform the investigation. He/She is in the best position to acquire information quickly and completely by performing the investigation. The supervisor must be actively involved in analyzing the accident, determining the causes, and developing the corrective measures to prevent a reoccurrence. The supervisor is responsible for completing a thorough accident investigation. This responsibility, along with other safety and health activities, will be taken into consideration in evaluating supervisory performance. Each supervisor is responsible for the smooth operation of his/her department. The employee must report all accidents to his/her supervisor on the day and at the approximate time the incident occurs. Form EAC-1 should be used for this purpose. This awareness of the accident must result in the supervisor investigating the incident for fact finding, not fault finding. It is imperative that every question contained in the revised EAC-3 form be completed in detail by the injured employee's supervisor.

The “Supervisor's Investigation of Employee Incident/Injury Report, EAC-3,” shall be filled out in duplicate, with the signatures of the supervisor or divisional authority within 8 hours after the injury. The EAC-3 must be stapled to the employee’s accident report, medical reports, C1 (blue form) report, C3 (pink form) and/or First Report of Injury (FROI) report and forwarded by the contact person to Employees' Accident Control & Worker’s Compensation, Room 28, City Hall, within an 48 hour period.
Please review the following EAC-3 example:

EAC-3 example:

City of Cleveland
Department of Personnel/Human Resources
Employees’ Accident Control & Workers’ Compensation
Room 28, City Hall
Cleveland Ohio 44114

EAC-3 Supervisor, Foreman or Unit Leader investigation of an employee’s industrial injury report.

This form must be promptly completed in every detail by the Supervisor, Foreman, or Unit Leader and attached to the Employee Accident Report, Workers’ Compensation FROI, C-1 (wage Loss), or Workers’ Compensation C-3 (medical), with medical reports from the medical provider. All reports shall be stapled together and forwarded to Employees’ Accident Control within 36 hours after the injury.

Name of Supervisor, Foreman, or Unit Leader
____________________________________
(Please Print)

Division ________________________________
Union __________________ Local Number _________________
Department Organization Number _____ _____ _____
Social Security Number of Supervisor, Foreman or Unit Leader
______  _____  ________

Name of Injured Employee ___________________________________
Social Security Number of Injured Employee ______ ______ ___________
Date of Injury _______________________
Job Classification of Injured Employee _________________________________
Accident Location ____________________________________
Time of the Accident _____________ AM _______ PM _______
How long was the employee working before the accident? ________________
Was the employee performing regular duties? ____ Yes ____ No _____
What tool or equipment was the employee using at the time of the injury? Tool ___________________  Equipment ____________________ NA ______
Did the employee seek medical attention? _____ Yes _____ NO _______
Were did the employee go for medical attention? ____________________________
Briefly explain how the accident happened __________________________________
__________________________________________________________________________________________
What part or parts of the body did the employee injure? _________________
__________________________________________________________________________________________
Recommended corrective action.
What corrective action was taken? ____________________________________________
________________________________________________________________________________________
Were there any violations of any federal, state, or local laws and/ or City of Cleveland Occupational Safety & Health Standards?
Yes ___ No _______
If so, what were they?
________________________________________________________________________________________
________________________________________________________________________________________
________________________________________________________________________________________

Supervisor, Foreman or Unit Leader   Divisional Authority
Signature  ________________________________  ______________________________
Date ________________________  Date ________________________

E.A.C. 3 Revised October 1995  White copy Accident Control  Canary copy- Division

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C) **Employee's Report of Personal Injuries (EI-4):** The EI-4 forms contain the Employee's Report of his/her personal injury sustained during the scope of employment must be completed in 8 hours after the injury, unless the employee is unable to complete the reports due to the nature of the injury. An employee's supervisor may assist in completing this report; however, statements recorded shall reflect the views of the injured employee and not those of the employee’s supervisor. The reports must be completed in every detail, stapled to the EAC-3, medical reports, C-1 (B.W.C. blue form), C3 (B.W.C. pink form) BWC, and/or First Report of Injury (FROF) and forwarded to the contact person then to Employee's Accident Control no later than 48 hours following the date of accident. In instances where the severity of injury is such that an employee is unable to complete this form, supervisors are required to confer with the employee and record all statements made as required in the EI-4 form. **Please review the following EI-4 example:**
EI-4 Employee’s Report of Personal Injury

This form (EI-4) must be completed promptly in every detail by the injured employee. Attach to the Supervisor (E.A.C.3) accident report, Workers’ Compensation C-1 (wage Loss) or Workers’ Compensation C-3 (medical), with medical reports from the medical provider. All reports must be stapled together and forwarded to Employees’ Accident Control within 36 hours after the injury.

Employee’s Name ________________________________ Age ________ (Please Print)
Employee’s Social Security Number ______  _____  _______
Home Address _______________________________________
Home Phone Number ____________________________________
Sex:  Male ______  Female _______
Date Hired ___________________________________________
Employee’s Job Classification _____________________________
Division ______________________________________________
Department ____________________________________________
Department and Organization Number _______________________
The Organization Number must be filled out by the Payroll Clerk
Union __________________ Local Number _______________________
Time of the Accident _____________ AM _______ PM _______
Date of Accident _______________________
How long were you working before the accident? ________________
Accident Location ______________________________________
Parts of body injured: (Please circle the part/ or parts of body injured)

<table>
<thead>
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<th>Arms</th>
<th>Hand</th>
<th>Legs</th>
<th>Feet</th>
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<td>Upper Arm: Right ___ Left ___</td>
<td>Back of Hand: Right ___ Left ___</td>
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<tr>
<td>Face</td>
<td>Lower arm: Right ___ Left ___</td>
<td>Front of Hand: Right ___ Left ___</td>
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<td>Eyes: Right ___ Left ___</td>
<td>Wrist: Right ___ Left ___</td>
<td>Thumb: Right ___ Left ___</td>
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<tr>
<td>Ears: Right ___ Left ___</td>
<td>Other: Right ___ Left ___</td>
<td>Fingers: Right ___ Left ___</td>
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<td>Nose</td>
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<td>Other:</td>
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</tbody>
</table>

Dorsal
Shoulder: Right ___ Left ___ | Thigh: Right ___ Left ___ |
Chest       | Knee: Right ___ Left ___ | Right ___ Left ___ |
Abdomen     | Lower: Right ___ Left ___ |
Upper Back   |            |            |            |
Middle Back  |            |            |            |            |
Dorsal Leg   |            |            |            |            |
Lower Back   |            |            |            |            |
Hip          |            |            |            |            |
Buttocks    |            |            |            |            |
Groin        |            |            |            |            |
Other:        |            |            |            |            |

How did the accident happen? _______________________________________________________________________
_______________________________________________________________________
_______________________________________________________________________
Have you ever injured this part of your body before? Yes ____  No __
When did the injury happen? ________________ Was a Workers’ Compensation claim filed:
Employee Signature: ______________________ Supervisor, Foreman, or Unit Leader Signature: ______________________
D) **Medical Reports & Rehabilitation Referral Forms** from the treating agency should be mailed, or faxed, in 24 hours to the employee’s divisional contact person for processing. Medical reports must give a diagnosis of the employee’s condition and not be just a slip stating the employee is under a physician’s care. Please put a return mailing address and fax number in the information provided to the treating facility for a prompt reply.

(E) **The Ohio Bureau of Workers’ Compensation, C-3 (Part I, B.W.C. pink form) or First Report of Injury Application for Payment of Medical Benefits** is completed by the injured employee at the treating facility. Part II of the C-3 or First Report of Injury form is completed by the treating facility indicating pertinent medical information or diagnosis relating to the injury. The treating facility will have C-3 or First Report of Injury forms available for completion. The treating facility must send the C-3 or First Report of Injury and medical reports to the claimant’s divisional contact person.

Please review Bureau of Workers’ Compensation C-3 or First Report of Injury form following this section.

(F) **The Bureau of Workers' Compensation, C-1A, Attending Physician's Report** is completed by the treating agency or physician in duplicate and forwarded to the employee’s division contact person. Each division must keep a complete copy of employee reports in the division.

Please review Bureau of Workers’ Compensation C-1A form following this section.

(G) **The Bureau of Workers' Compensation, C-1 (wage statement) Application** is completed by the payroll clerk for payment of compensation. The EAC-3, EI-4 medical, C-1 (B.W.C. blue form), C-3 (B.W.C. pink form) or First Report of Injury are stapled together and forwarded by the contact person to EMPLOYEES’ ACCIDENT CONTROL, DEPARTMENT OF PERSONNEL & HUMAN RESOURCES, ROOM 28, CITY HALL, CLEVELAND, OHIO 44114 for the purpose of certification. The following "Administrative Control of Lost Time" procedural policy is intended to ensure a standardized enforcement by departmental and divisional authorities in monitoring their employees absences. It relates both to lost time resulting from an industrial injury and employee personal illness which results in the employee’s being off-work in excess of five working days.

Please review Bureau of Workers’ Compensation C-1 form following this section.

(F) **The Bureau of Worker’s Compensation, First Report of Injury** First Report of Injury replaced the BWC C-1 and C-3 forms. The EAC-3, EI-4 medical, C-1 (B.W.C. blue form), C-3 (B.W.C. pink form) and/or First Report of Injury are stapled together and forwarded by the contact person of the division to EMPLOYEES’ ACCIDENT

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CONTROL, DEPARTMENT OF PERSONNEL & HUMAN RESOURCES, ROOM 28, CITY HALL, CLEVELAND, OHIO 44114 for the purpose of certification. The following "Administrative Control of Lost Time" procedural policy is intended to ensure a standardized enforcement by departmental and divisional authorities in monitoring their employees absences. It relates both to lost time resulting from an industrial injury and employee personal illness which results in the employee’s being off-work in excess of five working days.

Please review Bureau of Workers’ Compensation First Report of Injury form following this section.

Where additional treatment is required, the attending physician will fill out the Physician’s Appointment Form, thus indicating the necessary appointment date and time. This form shall be presented to the appropriate divisional authority for scheduling of medical treatment by the treating physician or medical agency, as outlined in the Statement of Attending Physician. A copy is forwarded of the to Employees' Accident Control. Injured employees must advise their medical provider, that failure to comply may result in untimely delays in processing their Bureau of Workers' Compensation claim.

Once an employee has been off work in excess of five working (5) days, the employee's supervisor will be required to telephone the employee to inquire as to the employee’s condition and to try to determine an approximate return to work date. This contact must be documented as to content and submitted to the divisional authority or his/her designee.

If the employee does not return to work by the end of the tenth working (10th) day of illness or injury, the employee will be directed by the divisional authority to see the City's physician for independent verification of the employee's illness or extent of injury. Such a directive should be hand-delivered, with return receipt, in order to expedite the process unless they are involved in a approved transitional work program. *This policy is necessary to insure that the City’s Physician has an opportunity to review all medical reports to include Therapeutic, progress notes and vocational assessments.*

If an affected employee does not report to the City's physician at the designated time, he/she shall have hand-delivered immediately thereafter a notice which specifies that he/she is considered to be absent without leave. The division appointing authority shall have the responsibility for having said notice hand-delivered in a timely manner.

An employee reporting to the City physician is required to present documentation from his/her treating physician, or medical agency, which indicates the nature of the employee’s personal illness or industrial injury. It must contain an
estimated return-to-work date and the treating physician's signature. The documentation must indicate whether the lost time was caused by personal illness or an industrial accident.

If an industrial injury is claimed, a "Supervisor's Investigation of Employee Incident/Injury Report, EAC-3, must be on file with Employees' Accident Control. All required documentation shall automatically be sent to an absent employee once the employee has been absent from work for ten (10) working days. Each divisional appointing authority will implement appropriate procedures to ensure that absent employees receive said documentation in a timely fashion. An employee shall not be examined by the City's physician if the employee has not completed and does not present required documentation to the City physician at the time of the appointment.

If an employee fails to fill out required documentation and/or present it to the City’s physician at the time of his/her appointment, he/she shall immediately thereafter be construed as absent without leave and be subject to disciplinary action consistent with the City's policies. Supervisors who do not contact employees and/or document such contacts, as provided above, shall be subject to disciplinary action, for inefficiency/incompetence, etc., by divisional authorities. The disciplinary measures taken must be forwarded to the Labor Relations Manager in the Department of Personnel and Human Resources. Medical treatment for all employee personal illness or physical defects not related to an on-the-job injury must be reported as such by the employee to his/her treating agency using his/her health care plan and not filed as an industrial injury.

Any employee who files a fraudulent Bureau of Workers' Compensation claim may be terminated for falsifying official City records and attempting to obtain undeserved benefits. The employee must be so advised of the infraction and action taken by divisional authority.

POLICY & PROCEDURES FOR THE WEEKLY/MONTHLY SUMMARY OF ACCIDENTS AND OCCUPATIONAL DISEASES

In order to facilitate and expedite the City's Risk Management Program, it is necessary to develop an accurate and timely accident reporting system. Proper development and utilization of this system will enable the City to activate the proper Pre-Loss Activities and Post Injury Responses.

To establish this process, the following format and procedures shall be followed by all appointing authorities:

I. The weekly/monthly Summary of Accidents and Occupational Diseases will be the proper reporting mechanism.
II. The commissioners/appointing authorities will appoint a designated person who will be responsible for the following activities:

A. Collecting information about investigating any and all accidents that occur in their division. Keep in contact with injured employees on a weekly bases.

B. Coordinating and assisting the BWC Rehabilitation case manager in return-to-work strategies.

C. Tracking all forms related to injured employees from injury to recovery.

D. Contacting the employee and occupational physician at the hospital when the employee goes to the hospital for service. Providing wage information for the Claims Specialist from BWC.

E. Attaching EI-4, EAC-3, medical, BWC, C3, C1, and/or (FROI) First Report of Injury reports and any other reports related to a claim for workers’ compensation and forwarding it to Employees’ Accident Control and maintaining division workers’ compensation files.

F. Contacting the division and the Bureau of Workers' Compensation when the employee returns to work.

G. This person will collect all pertinent information on industrial accidents needed to complete the weekly summary.

H. This person will contact Employees' Accident Control in the following prescribed manner.

1) The representative will be: Robert E. Lawson II 664-3495.

2) Contact representative every Tuesday, between 8 a.m. and 2 p.m., to report the previous week's reporting activities.
III. The information will be tracked and distributed to key personnel for further Risk Management activities. Essential to the viability of this system is the immediate reporting of all injuries, no matter how minor, to proper divisional authorities by all employees of the City.

In the case of an industrial injury, if the employee requires medical attention, he/she should go (or be sent if unable to make a decision for himself/herself) to one of the medical facilities listed on the next page.

PERSONAL INJURY TREATING AGENCY

The following facilities should be used by City of Cleveland employees in the event they sustain an injury while on duty. The facilities have been selected and charged with medically managing industrial injuries for the City. Your attention is called to the following facilities:
East Side - Cleveland

Mt. Sinai Medical Center Emergency Room
One Mt. Sinai Drive
Cleveland Ohio 44114 (24 Hours services)

The Cleveland Clinic Foundation
9500 Euclid Av. (7 day a week)
Cleveland Ohio 44195 (24 hour service)

Central - Cleveland

Saint Vincent Charity Hospital
2351 East 22nd Street (7 days a week)
Cleveland Ohio 44114 (24 hour service)

West Side - Cleveland

MetroHealth Medical Center
2500 MetroHealth Drive (7 days a week)
Cleveland Oh. 44109-1998 (24 Hour Service)

Deaconess Hospital
4229 Pearl Road (7 days a week)
Cleveland Ohio 44109 (24 Hour Service)

Dr. Mitchell’s Immediate Medical Care

15380 Bagley Road 1985 Detroit Road
Middleburg Hts. Ohio Rocky River, Ohio 44116
8:00 am to 10:00 PM 8:00 am to 10:00 PM
Monday - Saturday Monday - Saturday
CHAPTER 7B

REHABILITATION/TRANSITIONAL WORK PROGRAM

Highlights of Rehabilitation/Transitional Work Program
(In conjunction with the Ohio Bureau of Workers’ Compensation)

MISSION STATEMENT

The mission of the Rehabilitation/Transitional Work program is to make every reasonable effort to provide suitable alternate employment or make reasonable accommodations to an employee who is unable to perform his/her normal job duties as a consequence of accident, or injury, that is work related, resulting in an allowed condition.

Each department will attempt to accommodate employees who cannot perform the basic duties of their former position. Where this is not possible, all departments will cooperate in an effort to locate suitable alternative employment.

Ultimately, the goal of the Rehabilitation/Transitional program is to reduce costs associated with injuries and illnesses, while concurrently promoting the best interest and employability of the employee.

The program’s objectives are:

• Promote the early referral of the injured worker to the rehabilitation process

• Promote Early Return-to-Work Programs which will minimize the results of injury and effect the safe return of an injured worker to full employment

• Reduce the costs of rehabilitation and the City of Cleveland’s workers' compensation premium rates

• Reduce the number of days off work due to lost time
Transitional Work Program

Upon receipt of the referral packet which will include medical information (diagnosis and functional capabilities and a functional job description) of the injured worker’s job and the transitional job assignment form from the medical provider, the Case Manager will contact the injured worker within forty-eight (48) hours.

The Case Manager will develop the Transitional/Rehabilitation Plan in concert with the injured worker and the City of Cleveland’s Divisional Program Coordinator. Upon completion of the development of the rehabilitation plan, the injured worker, Division Program manager, and the case manager sign the plan. Any incentive agreements must be signed by the Division Head and forwarded to the Rehabilitation Case Manager. The Division Program Coordinator will contact the Rehabilitation Case Manager with a starting date for the transitional work program. This date, along with the injured worker’s hourly rate, will be given to the Rehabilitation Case Manager prior to the completion of the Rehabilitation/Transitional Plan.

There will be an initial meeting with the chairman prior to the injured worker starting the Rehabilitation/Transitional Work Program.

INITIAL STAFFING

The Divisional Contact Person coordinates the initial staffing. The initial staffing date will be the same date that the injured worker is to start him/her program whenever possible. If it is not possible then the staffing will be held prior to the actual starting date. In no instance should the staffing occur after the injured worker begins his/her program.

There’s no need for the injured employee to be referred to the City’s physician prior to beginning the Transitional Work Program. The injured employee will see the City physician for a Return to Work Physical upon completion of the Transitional Work Program and/or a permanent position has been identified.

This policy is necessary to insure that the City’s physician has an opportunity to review all medical (to include all of the Therapeutic reports) and vocational assessments.

The Initial Staffing Agenda/Objectives for the Rehabilitation/ Transitional Program will be as follows:
• Discuss Program goal:
  1. Return to the original classification
  2. Return to a modified classification
  3. Return to a different classification through the ADA Committee

• Determine staffing schedule, i.e., mid-point staffing date
• Identify Transitional Work Assignment
• Discuss Program outline and structure
• Discuss any issues or concerns relating to the institution of the Rehabilitation/Transitional Work Program
• Review Rehabilitation/Transitional Plan with all participants

The Initial staffing Participants for the Rehabilitation/Transitional Work Program will be as follows:

• Injured employee
• Supervisor of injured worker at the time of injury
• Supervisor of the Transitional Assignment
• Union representative
• Physical restoration representative
• Divisional contact person
• Rehabilitation case manager
• Ergonomic Specialist
• Safety Consultant

MID-POINT Staffing

The objective of mid-point staffing will be to determine whether the injured employee will be able to return to his/her original classification upon completion of the Transitional Work Program.

The staffing will occur during the fifth week of the Rehabilitation/Transitional Work Program. The participants will be the same individuals who participated in the initial staffing.

• Review the physical restoration progress notes and recommendations
• Review the Transitional Work assignment activities and progress
• Determine whether the injured employee can return to the original classification.
• If the it is determined that the injured employee cannot return to the original
classification, or the original classification cannot be modified for the injured employee, the injured employee must formally apply for ADA Accommodation (See ADA Application) while the injured employee continues to participate in the Rehabilitation/Transitional Program.

- A transfer to another job which he/she may be able to perform without restrictions through the ADA Committee, or
- A transfer to another job which he/she may be able to perform with restrictions, or with assistance, or
- Non-traditional work. For example, this situation could be used as an opportunity to train the injured worker in another skill area that is appropriate or the injured individual could train other employees in an appropriate skill area.

All Medical, Therapeutic reports, and vocational assessments shall accompany the application for an ADA accommodation.

- At this point the Rehabilitation Case Manager will conduct a Vocational Assessment which will include, but is not limited to, skill analysis, educational competencies, aptitudes, and situation competencies.

- If modification of this job is considered as an option, referral to the Bureau of Workers’ Compensation Safety & Hygiene Department for an ergonomic assessment and recommendation must be made. If it is recommended that a modification to the original classification can accommodate the injured employee’s current abilities, an amended rehabilitation plan will be developed.

**TRANSITIONAL WORK: AN OPERATIONAL DEFINITION**

Transitional work is not an occupational goal. It is an interim step in the physical recovery and conditioning of an injured or impaired worker. Transitional Work represents:

- a) an opportunity for the employer to reduce the compensation liability associated with disability, while

- b) protecting the employability of the worker.

Transitional work is any job, task, function or combination of tasks or functions that a temporarily impaired worker may perform safely, for remuneration and without risk of re-injury or risk to the worker or other employees.
INJURY CLASSIFICATION

**Acute injuries** are defined as incidents in which:

a) the condition is readily apparent,
b) extent of disability is fairly obvious,
c) physical limitations are easily ascertained by the attending physician, and
d) the duration of disability is expected to be less than 14 days before the employee can return to normal duties without restrictions.

CRITERIA FOR ASSIGNING WORK

The Division Head will adhere to the following criteria in assigning the employee to suitable work within the limitations outlined by his/her physician.

a) Return the employee to his/her regular job with no restrictions for that particular job (e.g., the restriction may be that the worker should not lift 50 lbs., but the job does not require this amount of lifting.

b) Return the employee to his/her regular job with restrictions as specified by the physician. This may involve assistance from another employee in lifting, tightening, carrying, etc.

c) Return the employee to alternative work (Rehabilitation/Transitional assignment) which may or may not be considered "regular work" and is within the scope of the specified limitations but is outside all bargaining unit classifications.

Time Parameters of the Rehabilitation/Transitional Program

a) The Physician and Physical Restoration Professional determine the expected duration of the Rehabilitation/Transitional Program. Under extenuating circumstances, the program may be extended by the Physician and Physical Restoration Professional. Criteria for program extension may include the following:

1) The worker has demonstrated progress with respect to strength and endurance, and is expected to make a successful transition to work within an additional five weeks.

2) The nature and severity of the worker’s disability will depend on the recommendation from the Physician and Physical Restoration Professional
3) Due to an aggravation of the worker's impairment, the worker’s involvement in the program is temporarily disrupted, limited or modified.

4) Workers must be able to participate in the program a minimum of 12 hours per week, but not less than 3 hours per day.

Responsibilities of Rehabilitation/Transitional Program Participants

a) **Contact Person** will share with the Rehabilitation Case Manager the responsibility for the overall administration of the Rehabilitation/Transitional Program.

1) He/she will serve on the Safety Committee.

2) He/she will assume all responsibilities regarding the incentive agreement signed by the Department Head, keeping in contact with the injured employee during the Rehabilitation/Transitional Program period.

3) The Contact Person will also serve as a coordinator or liaison with the Rehabilitation Case Manager, the disabled worker, the union representative, the physician of record, all the worker’s supervisors and, other persons directly or indirectly involved in the administration of the Rehabilitation/Transitional Program.

b) **Rehabilitation CASE MANAGER** will be responsible for the following:

1) Establishing communication among key program participants, including the disabled worker, the physician of record, the worker’s supervisor, the Program Manager and union representatives.

2) Meeting with the disabled worker to explain program activities and to develop an Individualized Written Re-employment Plan, in collaboration with the physical therapist, if needed.

3) Developing a rehabilitation plan or worker retention plan. Rehabilitation plans for workers' compensation cases will be submitted to the Ohio Bureau of Workers' Compensation.

4) Conducting staff meetings with the Contact Person, disabled worker, supervisor, union representative and physical therapist to establish the basis for
an individualized work return transition plan. Also, when appropriate, the Case Manager will meet with the program participants.

5) Monitoring the progress of the disabled worker and providing details of program outcomes to the supervisor, the Program Manager, the physician of record and the Rehabilitation/Transitional Program.

6) Coordinating the worker’s discharge from the Rehabilitation/Transitional Program through coordination with the Contact Person.

7) Providing follow-up on the disabled worker’s adjustment to the original job or non-traditional job, coordinating additional interventions, as needed.

c) Disabled Workers participating in the Rehabilitation/Transitional Program will be responsible for the following:

1) Maintaining regular attendance in the program, as outlined in the Rehabilitation/Transitional Program Plan.

2) Workers will also be responsible for performing only those work tasks recommended by the physical therapists, while observing safe work practices.

3) Workers experiencing acute pain or discomfort should immediately notify the physical therapist and/or supervisor and/or the physician of record so that appropriate modifications or accommodations can be made.

d) Immediate Supervisors for the Rehabilitation/Transitional program will be responsible for the following:

1) Monitoring the safe work practices of workers participating in the program, as delineated in the worker’s Rehabilitation/Transitional Program Plan.

2) Supervisors will also take an active role in the Rehabilitation/Transitional Program by identifying work return transition options and non-traditional options, as necessary.

3) Supervisors will inform the Contact Person of perceived progress as well as potential obstacles to the successful operation of the program.
PHYSICIAN’S REPORT
The following services are available through the Rehabilitation Division to assist your patient to return to work. Please check those you feel are appropriate.

PHYSICIAN’S REPORT
CLAIMANT ____________________________ CASE #________________________
MANAGER:______________________________

CLAIM #_______________________________

1. Please state the following:
   a. Diagnosis of the allowed injury:
   b. Prognosis:
   c. Current treatment (include medications, therapies, orthotics, etc.):
   d. Expected time for recovery:

2. Is the claimant medically stable for participation in an active rehabilitation program with the goal of reemployment?

3. Are you aware of any unrelated medical illness, injury or psychological problem that may impede or delay rehabilitation or return to work? Is further evaluation needed?

4. Do you anticipate any future hospitalizations, surgeries or diagnostic testing? Please specify.

5. Are there limitations you expect to place on the claimant with respect to ability to work? If yes, please specify.

   ____ Sedentary Work (Lifting max. 10lbs & carrying objects weighting less then 10lb frequently)
   ____ Light Work (Lifting max. 20lbs & carrying objects weighting 10lb frequently)
   ____ Medium Work (Lifting max. 50lbs & carrying objects weighting 25lb frequently)
Heav Work (Lifting max. 100lbs & carrying objects weighing 50lb frequently)

Very Heavy Work (Lifting over 100lbs)

Climbing Balancing Crouching Crawling Fingering

Feeling Reaching Handling Stooping Kneeling

Talking Hearing Tasting Smelling Near Acuity

Far Acuity Depth Perception Accommodation Color Vision

Field of Vision

Key

N- No Restriction
O- Occasionally (Activity or condition can be performed up to 1/3 of the time)
F- Frequently (Activity or condition can be performed from 1/3 to 2/3 of the time)
C- Constantly (Activity or condition can be performed 2/3 or more of the time)

6. Following rehabilitation services, will the claimant be capable of returning to his/her original job as a__________________? If yes, estimate date. If no, when will the claimant be able to return to modified duties?

7. Comments:

________________________________________________________________________

________________________________________________________________________

Please submit copies of all diagnostic studies (and/or any pertinent medical information for the last year.

8. Please attach a prescription for requested services.
THIS WILL SERVE AS A PRESCRIPTION

EVALUATIONS

- Physical/Functional Capacities Evaluation
- Occupational Therapy Evaluation
- Physical Medicine and Rehabilitation Evaluation
- Physical Therapy Evaluation
- Nutritional Evaluation
- Orthopaedic Evaluation
- Neurological Evaluation
- Pain Management Program (CARF accredited only) Evaluation

TREATMENT

** Active Physical Therapy (Specific or same will be provided on therapist’s recommendation)
- Back School/Back Education Program
- Work Hardening Program (CARF accredited only)
- Occupational Therapy (Specific or same will be provided on therapist’s recommendations)
- Supervised Reconditioning Program
- Unsupervised Reconditioning Program
- Nutritional Counseling/Weight Reduction Program
- Kinesiotherapy (Number of Sessions): 
- Pain and Stress Program (CARF accredited only)
- Aquatic Exercises
- Work Simulation
- General Rehabilitation
- Carpal Tunnel Program
** Transitional Work

PHYSICIAN SIGNATURE ___________________________ DATE

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APPENDIX C

OCCUPATIONAL JOB DESCRIPTION...
373.364-010  FIREFIGHTER (military service)

Controls and extinguishes fires, protects life and property, and maintains equipment as volunteer or employee of city, township, or industrial plant: Responds to fire alarms and other emergency calls. Selects hose nozzle, depending on type of fire, and directs stream of water or chemicals onto fire. Positions and climbs ladders to gain access to upper levels of buildings or to assist individuals from burning structures. Creates openings in buildings for ventilation or entrance, using ax, chisel, crowbar, electric saw, core cutter, and other power equipment. Protects property from water and smoke by use of waterproof salvage covers, smoke ejectors, and deodorants. Administers first aid and artificial respiration to injured persons and those overcome by fire and smoke. Communicates with superior during fire, using portable two-way radio. Inspects buildings for fire hazards and compliance with fire prevention ordinances. Performs assigned duties in maintaining apparatus, quarters, buildings, equipment, grounds, and hydrants. Participates in drills, demonstrations, and courses in hydraulics, pump operation and maintenance, and firefighting techniques. May fill fire extinguishers in institutions or industrial plants. May issue forms to building owners, listing fire regulation violations to be corrected. May drive and operate firefighting vehicles and equipment. May be assigned duty in marine division of fire department and be designated Firefighter, Marine (any industry).

373.367-010  FIREFIGHTER, FIRST CLASS TO CHIEF

FIRE WATCHER. Inspects premises of industrial plant to detect and eliminate fire hazards: Inspects fire-extinguishing and fire-protection equipment to ensure equipment is operable and prepares reports listing repairs and replacements needed. Patrols plant areas and notes and investigates unsafe conditions and practices which might cause or increase fire hazards. Reports findings to FIRE MARSHAL (any industry) with recommendations for eliminating or counteracting hazards. Renders first aid in emergencies. Patrols plant areas in which raw and combustible materials are stored, takes temperature and pressure readings from instruments, and reports undesirable conditions or takes steps to correct such conditions. May instruct employees in fire safety practices. May perform tests on fire-prevention equipment in plants where explosive or flammable materials are processed. May participate in fighting fires [FIRE FIGHTER (any industry)].
373.364-010 DAMAGE CONTROL-ADVANCED SHIPBOARD FIREFIGHTER (military service)

Controls and extinguishes fires, protects life and property, and maintains equipment as volunteer or employee of city, township, or industrial plant: Responds to fire alarms and other emergency calls. Selects hose nozzle, depending on type of fire, and directs stream of water or chemicals onto fire. Positions and climbs ladders to gain access to upper levels of buildings or to assist individuals from burning structures. Creates openings in buildings for ventilation or entrance, using ax, chisel, crowbar, electric saw, core cutter, and other power equipment. Protects property from water and smoke by use of waterproof salvage covers, smoke ejectors, and deodorants. Administers first aid and artificial respiration to injured persons and those overcome by fire and smoke. Communicates with superior during fire, using portable two-way radio. Inspects buildings for fire hazards and compliance with fire prevention ordinances. Performs assigned duties in maintaining apparatus, quarters, buildings, equipment, grounds, and hydrants. Participates in drills, demonstrations, and courses in hydraulics, pump operation and maintenance, and firefighting techniques. May fill fire extinguishers in institutions or industrial plants. May issue forms to building owners, listing fire regulation violations to be corrected. May drive and operate firefighting vehicles and equipment. May be assigned duty in marine division of fire department and be designated Firefighter, Marine (any industry).

373.367-010 FIREFIGHTER, SENIOR CHIEF (military service)

FIRE WATCHER. Inspects premises of industrial plant to detect and eliminate fire hazards: Inspects fire-extinguishing and fire-protection equipment to ensure equipment is operable and prepares reports listing repairs and replacements needed. Patrols plant areas and notes and investigates unsafe conditions and practices which might cause or increase fire hazards. Reports findings to FIRE MARSHAL (any industry) with recommendations for eliminating or counteracting hazards. Renders first aid in emergencies. Patrols plant areas in which raw and combustible materials are stored, takes temperature and pressure readings from instruments, and reports undesirable conditions or takes steps to correct such conditions. May instruct employees in fire safety practices. May perform tests on fire-prevention equipment in plants where explosive or flammable materials are processed. May participate in fighting fires [FIREFIGHTER (any industry)].
375.263-014 POLICE OFFICER I (government services)

PATROL OFFICER; TRAFFIC OFFICER. Patrols assigned beat on foot, on motorcycle, in patrol car, or on horseback to control traffic, prevent crime or disturbance of peace, and arrest violators: Familiarizes self with beat and with persons living in area. Notes suspicious persons and establishments and reports to superior officer. Reports hazards. Disperses unruly crowds at public gatherings. Renders first aid at accidents, and investigates causes and results of accident. Directs and reroutes traffic around fire or other disruption. Inspects public establishments requiring licenses to ensure compliance with rules and regulations. Warns or arrests persons violating animal ordinances. Issues tickets to traffic violators. Registers at police call boxes at specified interval or time. Writes and files daily activity report with superior officer. May drive patrol wagon or police ambulance. May notify public works department of location of abandoned vehicles to tow away. May accompany parking meter personnel to protect money collected. May be designated according to assigned duty as Airport Safety And Security Officer (government ser.); Dance-Hall Inspector (government ser.); Traffic Police Officer (government ser.); or according to equipment used as Ambulance Driver (government ser.); Motorcycle Police Officer (government ser.); Mounted Police Officer (government ser.). May be designated: Emergency-Detail Driver (government ser.); Patrol Driver (government ser.); Pool-Hall Inspector (government ser.); Radio Police Officer (government ser.); Show Inspector (government ser.).

375.133-010 POLICE SERGEANT, PRECINCT I (government services)

DETAIL SERGEANT; DIVISION SERGEANT; PATROL SERGEANT; SERGEANT; SQUAD SERGEANT. Supervises and coordinates activities of squad of POLICE OFFICERS (government ser.) I 375.263-014 assigned to patrol, in car or on foot, designated area of municipality: Assumes command of squad at precinct or headquarters, inspects uniforms and equipment, and reads orders to squad. Cruises in car to observe POLICE OFFICER (government ser.) I on post or in cars for efficiency and appearance and to direct them in duties. Reports infractions of rules to superiors. Notifies superior of major crimes or disturbances within area and takes necessary action until arrival of superior. Reports dangers in streets or sidewalks, such as holes, obstructions, or leaking gas mains. May be designated according to assigned duty of force members supervised as Police Sergeant, Radio Patrol (government ser.); or according to type facility assigned as Airport Safety And Security Duty Officer (government ser.).
375.263-014 RADIO POLICE OFFICER (government services)

PATROL OFFICER; TRAFFIC OFFICER. Patrols assigned beat on foot, on motorcycle, in patrol car, or on horseback to control traffic, prevent crime or disturbance of peace, and arrest violators: Familiarizes self with beat and with persons living in area. Notes suspicious persons and establishments and reports to superior officer. Reports hazards. Disperses unruly crowds at public gatherings. Renders first aid at accidents, and investigates causes and results of accident. Directs and reroutes traffic around fire or other disruption. Inspects public establishments requiring licenses to ensure compliance with rules and regulations. Warns or arrests persons violating animal ordinances. Issues tickets to traffic violators. Registers at police call boxes at specified interval or time. Writes and files daily activity report with superior officer. May drive patrol wagon or police ambulance. May notify public works department of location of abandoned vehicles to tow away. May accompany parking meter personnel to protect money collected. May be designated according to assigned duty as Airport Safety And Security Officer (government ser.); Dance-Hall Inspector (government ser.); Traffic Police Officer (government ser.); or according to equipment used as Ambulance Driver (government ser.); Motorcycle Police Officer (government ser.); Mounted Police Officer (government ser.). May be designated: Emergency-Detail Driver (government ser.); Patrol Driver (government ser.); Pool-Hall Inspector (government ser.); Radio Police Officer (government ser.); Show Inspector (government ser.).

379.263-014 POLICE WOMAN (government services)

Patrols assigned beat and responds to emergency calls to protect persons or property from crimes, fires, or other hazards: Patrols assigned area on foot or horseback or using vehicle to regulate traffic, control crowds, prevent crime, or arrest violators. Responds to crimes in progress, initiating actions such as aid to victims and interrogation of suspects. Attends public gatherings to maintain order. Responds to fire alarms or other emergency calls. Forces openings in buildings for ventilation of fire or for entry, using ax or crowbar. Controls and extinguishes fires, using water and chemicals. Administers first aid and artificial respiration to injured persons. Participates in drills and emergency precautionary demonstrations. May inspect establishments for compliance with local regulations. May drive and operate firefighting and other emergency equipment.

379.263-014 POLICEMAN (government services)

Patrols assigned beat and responds to emergency calls to protect persons or property from crimes, fires, or other hazards: Patrols assigned area on foot or horseback or using vehicle to regulate traffic, control crowds, prevent crime, or arrest violators. Responds to crimes in progress, initiating actions such as aid to victims and interrogation of
suspects. Attends public gatherings to maintain order. Responds to fire alarms or other emergency calls. Forces openings in buildings for ventilation of fire or for entry, using ax or crowbar. Controls and extinguishes fires, using water and chemicals. Administers first aid and artificial respiration to injured persons. Participates in drills and emergency precautionary demonstrations. May inspect establishments for compliance with local regulations. May drive and operate firefighting and other emergency equipment.

375.264-010 POLICE OFFICER, CRIME PREVENTION (government services)

Inspects dwellings and public buildings to evaluate security needs and to recommend measures to make premises less vulnerable to crime, and installs burglar alarm systems: Inspects locks, window barriers, alarms, lighting, and other features to evaluate needs and to recommend actions to strengthen security. Lends etching tools to individuals to inscribe identifying information on personal and household articles. Installs portable self-contained protective signal systems and positions sensing devices at strategic locations to detect burglary or other irregularities and to notify police. Inspects equipment to detect malfunctions. Addresses community groups to inform citizens of crime prevention and security methods. May compile and analyze data from patrol unit reports to identify patterns of crime and to recommend changes in police patrols to prevent further crimes.

079.374-010 PARAMEDIC

Administers first-aid treatment to and transports sick or injured persons to medical facility, working as member of emergency medical team: Responds to instructions from emergency medical dispatcher and drives specially equipped emergency vehicle to specified location. Monitors communication equipment to maintain contact with dispatcher. Removes or assists in removal of victims from scene of accident or catastrophe. Determines nature and extent of illness or injury, or magnitude of catastrophe, to establish first aid procedures to be followed or need for additional assistance, basing decisions on statements of persons involved, examination of victim or victims, and knowledge of emergency medical practice. Administers prescribed first-aid treatment at site of emergency, or in specially equipped vehicle, performing such activities as application of splints, administration of oxygen or intravenous injections, treatment of minor wounds or abrasions, or administration of artificial resuscitation. Communicates with professional medical personnel at emergency treatment facility to obtain instructions regarding further treatment and to arrange for reception of victims at treatment facility. Assists in removal of victims from vehicle and transfer of victims to treatment center. Assists treatment center admitting personnel to obtain and record information related to victims' vital statistics and circumstances of emergency. Maintains vehicles and medical and communication equipment and replenishes first-aid
equipment and supplies. May assist in controlling crowds, protecting valuables, or performing other duties at scene of catastrophe. May assist professional medical personnel in emergency treatment administered at medical facility.

079.364-026 EMT-PARAMEDIC

EMT-PARAMEDIC. Administers life support care to sick and injured persons in prehospital setting as authorized and directed by physician: Assesses nature and extent of illness or injury to establish and prioritize medical procedures to be followed or need for additional assistance. Restores and stabilizes heart rhythm on pulseless, nonbreathing patient, using defibrillator, or as directed by physician. Monitors cardiac patient, using electrocardiograph. Initiates intravenous fluids to administer medication or drugs, or to replace fluids lacking in body. Performs endotracheal intubation to open airways and ventilate patient. Administers injections of medications and drugs, following established protocols. Inflates pneumatic anti-shock garment on patient to improve blood circulation. Administers initial treatment at emergency scene and takes and records patient's vital signs. Assists in extricating trapped victims and transports sick and injured persons to treatment center. Observes, records, and reports to physician patient's condition and reaction to drugs, treatments, and significant incidents. May drive mobile intensive care unit to emergency scene. May serve as team leader for EMERGENCY MEDICAL TECHNICIANS (medical ser.) 079.374-010. May communicate with physician and other medical personnel via radio-telephone.

079.364-026 PARAMEDIC

EMT-PARAMEDIC. Administers life support care to sick and injured persons in prehospital setting as authorized and directed by physician: Assesses nature and extent of illness or injury to establish and prioritize medical procedures to be followed or need for additional assistance. Restores and stabilizes heart rhythm on pulseless, nonbreathing patient, using defibrillator, or as directed by physician. Monitors cardiac patient, using electrocardiograph. Initiates intravenous fluids to administer medication or drugs, or to replace fluids lacking in body. Performs endotracheal intubation to open airways and ventilate patient. Administers injections of medications and drugs, following established protocols. Inflates pneumatic anti-shock garment on patient to improve blood circulation. Administers initial treatment at emergency scene and takes and records patient's vital signs. Assists in extricating trapped victims and transports sick and injured persons to treatment center. Observes, records, and reports to physician patient's condition and reaction to drugs, treatments, and significant incidents. May drive mobile intensive care unit to emergency scene. May serve as team leader for
EMERGENCY MEDICAL TECHNICIANS (medical ser.) 079.374-010. May communicate with physician and other medical personnel via radio-telephone.

079.374-010  PARAMEDIC (Administers first-aid treatment to and transports sick or injured persons to medical facility, working as member of emergency medical team: Responds to instructions from emergency medical dispatcher and drives specially equipped emergency vehicle to specified location. Monitors communication equipment to maintain contact with dispatcher. Removes or assists in removal of victims from scene of accident or catastrophe. Determines nature and extent of illness or injury, or magnitude of catastrophe, to establish first aid procedures to be followed or need for additional assistance, basing decisions on statements of persons involved, examination of victim or victims, and knowledge of emergency medical practice. Administers prescribed first-aid treatment at site of emergency, or in specially equipped vehicle, performing such activities as application of splints, administration of oxygen or intravenous injections, treatment of minor wounds or abrasions, or administration of artificial resuscitation. Communicates with professional medical personnel at emergency treatment facility to obtain instructions regarding further treatment and to arrange for reception of victims at treatment facility. Assists in removal of victims from vehicle and transfer of victims to treatment center. Assists treatment center admitting personnel to obtain and record information related to victims' vital statistics and circumstances of emergency. Maintains vehicles and medical and communication equipment and replenishes first-aid equipment and supplies. May assist in controlling crowds, protecting valuables, or performing other duties at scene of catastrophe. May assist professional medical personnel in emergency treatment administered at medical facility.

079.374-010  EMERGENCY MEDICAL TECHNICIAN (medical services)

Administers first-aid treatment to and transports sick or injured persons to medical facility, working as member of emergency medical team: Responds to instructions from emergency medical dispatcher and drives specially equipped emergency vehicle to specified location. Monitors communication equipment to maintain contact with dispatcher. Removes or assists in removal of victims from scene of accident or catastrophe. Determines nature and extent of illness or injury, or magnitude of catastrophe, to establish first aid procedures to be followed or need for additional assistance, basing decisions on statements of persons involved, examination of victim or victims, and knowledge of emergency medical practice. Administers prescribed first-aid treatment at site of emergency, or in specially equipped vehicle, performing such activities as application of splints, administration of oxygen or intravenous injections, treatment of minor wounds or abrasions, or administration of artificial resuscitation. Communicates with professional medical personnel at emergency treatment facility to
obtain instructions regarding further treatment and to arrange for reception of victims at treatment facility. Assists in removal of victims from vehicle and transfer of victims to treatment center. Assists treatment center admitting personnel to obtain and record information related to victims' vital statistics and circumstances of emergency. Maintains vehicles and medical and communication equipment and replenishes first-aid equipment and supplies. May assist in controlling crowds, protecting valuables, or performing other duties at scene of catastrophe. May assist professional medical personnel in emergency treatment administered at medical facility.
ICD-9 Codes for Family Practice: 1998-1999

I. Infectious and Parasitic Diseases

052.9    Chickenpox, NOS
111.9    Dermatophytosis, unspecified
009.1    Gastroenteritis, infectious
007.1    Giardiasis
098.0    Gonorrhea, acute, lower genitourinary tract
054.9    Herpes simplex, any site
053.9    Herpes zoster, NOS
042      Human immunodeficiency virus disease
V08      Human immunodeficiency virus positive, asymptomatic
075      Infectious mononucleosis
136.9    Infectious/parasitic diseases, unspecified
487.1    Influenza w/ upper respiratory symptoms
007.9    Intestinal protozoa, NOS
088.81   Lyme disease
055.9    Measles, NOS
112.0    Moniliasis, oral
112.3    Moniliasis, skin/nails
112.1    Moniliasis, vulva/vagina
072.9    Mumps, NOS
132.9    Pediculosis, unspecified
127.4    Pinworms
138      Polio, late effects
795.5    Positive PPD
082.0 Rocky mountain spotted fever
056.9 Rubella, NOS
003.0 Salmonella gastroenteritis
135 Sarcoidosis
133.0 Scabies
038.9 Septicemia, NOS
004.9 Shigellosis, unspecified
005.0 Staphylococcal food poisoning
034.0 Strep throat
097.9 Syphilis, unspecified
111.0 Tinea versicolor
131.9 Trichomoniasis, unspecified
011.90 Tuberculosis, pulmonary, NOS
099.9 Venereal disease, unspecified
077.99 Viral conjunctivitis
057.9 Viral exanthems, other, NOS
070.9 Viral hepatitis, NOS
079.99 Viral infection, unspecified
078.10 Warts, all sites
078.11 Warts, condyloma

II. Neoplasms
Malignant Neoplasms
188.9 Bladder, unspecified
174.9 Breast, female, unspecified
153.9 Colon, unspecified
184.9 Female genital, unspecified, CIS excluded
159.0 Gastrointestinal tract, unspecified
201.9 Hodgkin's, NOS
208.90 Leukemia, w/o remission, NOS
162.9 Lung, unspecified
187.9 Male genital, unspecified
185 Prostate
165.9 Respiratory tract, NOS
173.9 Skin, unspecified
199.1 Unspecified
189.9 Urinary, unspecified
Benign Neoplasms
211.3 Colon
214.9 Lipoma, any site
239.9 Neoplasm, unspecified
216.9 Skin, unspecified
239.2 Skin, soft tissue neoplasm, unspecified
229.9 Unspecified
218.9 Uterus (leiomyoma, unspecified)

**III. Endocrine, Nutritional & Metabolic Disorders**

266.2 $\text{B}_{12}$ deficiency w/o anemia
276.5 Dehydration
250.91 Diabetes mellitus, I, complications
250.01 Diabetes mellitus, I, uncomplicated
250.90 Diabetes mellitus, II, complications
250.00 Diabetes mellitus, II, uncomplicated
250.13 Diabetic ketoacidosis
271.9 Glucose intolerance
240.9 Goiter, unspecified
274.9 Gout, unspecified
275.42 Hypercalcemia
276.7 Hyperkalemia
276.0 Hypernatremia
252.0 Hyperparathyroidism
242.9 Hyperthyroidism, NOS
275.41 Hypocalcemia
250.80 Hypoglycemia, diabetic, unspecified
251.2 Hypoglycemia, nondiabetic, unspecified
276.8 Hypokalemia
276.1 Hyponatremia
252.1 Hypoparathyroidism
244.9 Hypothyroidism, unspecified
272.9 Lipoid Disorder, unspecified
269.9 Nutritional deficiencies, unspecified
278.00 Obesity, NOS
790.6 Other abnormal blood chemistry
241.0 Thyroid nodule

**IV. Blood Diseases**

288.9 Abnormal white blood cells, unspecified
285.1 Anemia, acute blood loss
280.9 Anemia, iron deficiency, unspecified
285.9 Anemia, other, unspecified
281.0 Anemia, pernicious
289.9 Blood disease, unspecified
287.9 Hemorrhagic conditions, unspecified
289.1 Lymphadenitis, chronic
238.4 Polycythemia vera
282.60 Sickle-cell anemia, unspecified
282.5 Sickle-cell trait

V. Mental Disorders
309.9 Adjustment reaction, unspecified
305.00 Alcohol abuse, unspecified
303.90 Alcoholism, unspecified
331.0 Alzheimers
307.1 Anorexia nervosa
300.00 Anxiety state, unspecified
314.01 Attention deficit, w/ hyperactivity
314.00 Attention deficit, w/o hyperactivity
307.51 Bulimia
312.90 Conduct disorder, unspecified
311 Depressive disorder, NOS
305.90 Drug abuse, unspecified
304.90 Drug dependence, unspecified
300.10 Hysteria, unspecified
307.40 Insomnia/nonorganic sleep disorder, unspecified
315.9 Learning disability/developmental delay, NOS
319 Mental retardation, unspecified
300.9 Neurosis, NOS
300.01 Panic disorder
301.9 Personality disorder, unspecified
298.9 Psychosis, unspecified
295.90 Schizophrenia, unspecified
290.0 Senile dementia, NOS
302.70 Sexual dysfunction, unspecified
308.3 Situational disturbance, acute
780.53 Sleep apnea w/ hypersomnia
307.81 Tension headache
305.1 Tobacco abuse

VI. Nervous System & Sense Organ Disorders
Nervous System Diseases
351.0 Bell's palsy
354.0 Carpal tunnel
438.9 CVA, late effect, unspecified
345.90 Epilepsy, unspecified, w/o intractable epilepsy
322.9 Meningitis, unspecified
346.90 Migraine, unspecified, w/o intractable migraine
333.90 Movement disorder, unspecified
340 Multiple sclerosis
359.9  Myopathy, unspecified
349.9  Nervous system, NOS
357.9  Neuropathy, unspecified
332.0  Parkinsonism, primary
333.99 Restless legs
333.1  Tremor, essential/familial
781.0  Tremor/spasms, NOS
350.1  Trigeminal neuralgia

**Eye Diseases**
373.00 Blepharitis, unspecified
366.9  Cataract, unspecified
373.2  Chalazion
372.30 Conjunctivitis, unspecified
918.1  Corneal abrasion
370.00 Corneal ulcer, unspecified
940.9  Eye burn, unspecified
379.90 Eye disorder, unspecified
930.9  Eye foreign body, external, unspecified
378.9  Eye movement disorder, unspecified
365.9  Glaucoma, unspecified
373.11 Hordeolum (stye)
367.9  Refractive errors, unspecified
362.9  Retinal disorder, unspecified
368.10 Visual disturbance, unspecified
369.9  Visual loss, unspecified

**Ear Diseases**
388.9  Ear disorder, unspecified
381.50 Eustachian salpingitis, unspecified
389.9  Hearing loss, unspecified
380.10 Otitis externa, unspecified
382.00 Otitis media, acute
382.01 Otitis media, acute w/ rupture of ear drum
381.10 Otitis media, chronic serous
386.2  Vertigo, central
386.10 Vertigo, peripheral, unspecified
380.4  Wax in ear

**VII. Circulatory System**
794.31 Abnormal electrocardiogram
410.10 Acute myocardial infarction, anterior, NOS (to 8 weeks)
410.40 Acute myocardial infarction, inferior, NOS (to 8 weeks)
410.70 Acute myocardial infarction, subendocardial (to 8 weeks)
410.60 Acute myocardial infarction, true posterior (to 8 weeks)
410.90 Acute myocardial infarction, unspecified (to 8 weeks)
428.1 Acute pulmonary edema
413.9 Angina pectoris, NOS
411.1 Angina, unstable
441.9 Aortic aneurysm, unspecified
447.9 Arterial disorder, other, unspecified
440.9 Atherosclerosis, NOS (excludes heart/brain)
427.31 Atrial fibrillation
861.01 Cardiac contusion
434.91 Cerebral artery occlusion, w/ infarction, unspecified
414.9 Chronic ischemic heart disease, unspecified
459.9 Circulatory disorder, unspecified
426.9 Conduction disorder, unspecified
428.0 Congestive heart failure
424.1 Disease of heart valve, aortic, NOS
394.9 Disease of heart valve, mitral, unspecified
424.3 Disease of heart valve, pulmonary
424.2 Disease of heart valve, tricuspid
796.2 Elevated BP w/o hypertension
429.9 Heart disease, other, unspecified
401.1 Hypertension, benign
401.0 Hypertension, malignant
403.91 Hypertension, renal disease, unspecified, w/ renal failure
402.91 Hypertensive cardiac w/ congestive heart failure
432.9 Intracranial hemorrhage, NOS
446.1 Kawasaki disease
412 Myocardial infarction, old
458.0 Orthostatic hypotension
427.0 Paroxysmal supraventricular tachycardia
420.91 Pericarditis, acute, nonspecific
443.9 Peripheral vascular disease, unspecified
427.60 Premature beats, unspecified
415.19 Pulmonary embolism, not iatrogenic
416.9 Pulmonary heart disease, unspecified
398.90 Rheumatic heart disease, unspecified
427.81 Sick sinus syndrome
451.9 Thrombophlebitis, unspecified
435.9 Transient ischemic attack, unspecified
454.9 Varicose veins w/o ulcer/inflammation
459.81 Venous insufficiency, unspecified

**VIII. Respiratory System**
478.1 Abscess/ulcer of nose
493.90 Asthma, unspecified
466.11 Bronchiolitis, acute, due to RSV
466.0 Bronchitis, acute
491.9 Bronchitis, chronic, unspecified
496 Chronic obstructive pulmonary disease, NOS
464.4 Croup
492.8 Emphysema
464.30 Epiglottis, acute
464.0 Laryngitis, acute
475 Peritonsillar abscess
462 Pharyngitis, acute
511.9 Pleural effusion, NOS
511.0 Pleurisy, NOS
486 Pneumonia, unspecified
512.8 Pneumothorax, spontaneous
860.0 Pneumothorax, traumatic, w/o open wound into thorax
861.21 Pulmonary contusion, w/o open wound into thorax
519.9 Respiratory disease, other, NOS
477.9 Rhinitis, allergic, cause unspecified
472.0 Rhinitis, chronic
461.9 Sinusitis, acute, NOS
473.9 Sinusitis, chronic, NOS
474.9 Tonsil/adenoid disease, chronic, unspecified
463.0 Tonsillitis, acute
465.9 Upper respiratory infection, acute, NOS

**IX. Digestive System**

565.0 Anal fissure, nontraumatic
540.9 Appendicitis, unspecified
575.0 Cholecystitis, acute
574.20 Cholelithiasis, NOS
571.9 Chronic liver disease, unspecified
571.5 Cirrhosis, NOS
555.9 Crohn's disease, NOS
525.9 Dental, unspecified
562.11 Diverticulitis of colon, NOS
562.10 Diverticulosis of colon
536.8 Dyspepsia
530.9 Esophageal disease, unspecified
530.10 Esophagitis, unspecified
575.9 Gallbladder disease, unspecified
535.50 Gastritis, unspecified, w/o hemorrhage
558.9 Gastroenteritis, noninfectious, unspecified
530.81 Gastroesophageal reflux, no esophagitis
455.6 Hemorrhoids, NOS
553.3 Hernia, hiatal, noncongenital
550.90 Hernia, inguinal, NOS
553.9   Hernias, other, NOS
560.1   Ileus
560.9   Intestinal obstruction, unspecified
564.1   Irritable bowel syndrome
557.9   Ischemic bowel disease, unspecified
579.9   Malabsorption, NOS
528.9   Oral, soft tissue diseases, unspecified
529.9   Oral, tongue diseases, unspecified
577.0   Pancreatitis, acute
533.90 Peptic ulcer disease, unspecified, w/o obstruction
569.1   Rectal prolapse
524.60 Temporomandibular joint disorder, unspecified
556.9   Ulcerative colitis, unspecified

X. Genitourinary System

Urinary System Diseases
595.0   Cystitis, acute
595.1   Cystitis, interstitial, chronic
580.9   Glomerulonephritis, acute, unspecified
582.9   Glomerulonephritis, Chronic, Unspecified
791.0   Proteinuria, nonpostural, nonobstetric
590.10 Pyelonephritis, acute, no necrosis
593.9   Renal disease, NOS
584.9   Renal failure, acute, unspecified
585   Renal failure, chronic
597.81 Urethral syndrome, nonvenereal disease, NOS
592.9   Urinary calculus, unspecified
599.6   Urinary obstruction, unspecified

Male Genital Organ Disease
607.1   Balanitis
603.9   Hydrocele, unspecified
302.72  Impotence, psychosexual dysfunction
607.84  Impotence, organic
608.9   Male genital disease, other, unspecified
604.90  Orchitis/epididymitis, unspecified
605   Phimosis
600   Prostatic hypertrophy, benign
601.9   Prostatitis, NOS
099.40  Urethritis, nongonococcal, unspecified
456.4   Varicocele

Breast Diseases
611.9   Breast disease, unspecified
611.72 Breast lump
610.2 Fibroadenosis
610.1 Fibrocystic disease
611.6 Galactorrhea
793.8 Mammogram, abnormal
675.9 Mastitis, lactating, unspecified
611.0 Mastitis, NOS

Female Genital Organ Diseases
616.2 Bartholin cyst
622.7 Cervical polyp, NOS
616.0 Cervicitis
618.9 Cystocele/rectocele/prolapse, unspecified
625.0 Dyspareunia
617.9 Endometriosis, unspecified
625.9 Female disease, other, unspecified
614.9 Pelvic inflammatory disease, unspecified
625.6 Stress incontinence, female
616.10 Vaginitis/vulvitis, unspecified

Disorders of Menstruation
626.0 Amenorrhea
626.2 Excessive/frequent menstruation
627.9 Menopausal disorders, unspecified
626.6 Metrorrhagia
625.3 Painful menstruation

V07.4 Postmenopausal hormone replacement
625.4 Premenstrual tension syndrome

Fertility Problems
628.9 Infertility, female, unspecified
606.9 Infertility, male, unspecified

XI. Pregnancy, Childbirth
635.90 Abortion, induced, w/o complication
634.90 Abortion, spontaneous, w/o complication
641.20 Abruptio placenta, unspecified
641.90 Bleeding in pregnancy, unspecified
669.90 Complicated delivery/labor, unspecified
655.70 Decreased fetal movements, unspecified
633.9 Ectopic pregnancy, unspecified
670.04 Endometritis, postpartum
642.30 Gestational hypertension, unspecified
650 Normal delivery
646.90 Other complications of pregnancy, unspecified
674.94 Other complications of puerperium/postpartum, unspecified
641.10 Placenta previa, w/ bleeding, unspecified
641.00 Placenta previa, w/o bleeding, unspecified
645.00 Post-term pregnancy, unspecified
V24.2 Postpartum follow-up, routine
642.40 Pre-eclampsia, unspecified
V22.2 Pregnancy
644.21 Premature labor, delivered
V23.9 Prenatal care, high risk, unspecified
V22.0 Prenatal care, normal, first pregnancy
V22.1 Prenatal care, normal, other pregnancy
640.00 Threatened abortion, unspecified
644.03 Threatened premature labor, undelivered
651.00 Twins, unspecified
646.60 Urinary tract infection in pregnancy, unspecified
643.90 Vomiting of pregnancy, unspecified

XII. Skin, Subcutaneous Tissue
706.1 Acne, other
702.0 Actinic keratosis
704.00 Alopecia, unspecified
682.9 Cellulitis/abscess, unspecified
707.9 Chronic skin ulcer, unspecified
692.9 Contact dermatitis, NOS
700 Corn/callus
691.0 Diaper rash
691.8 Eczema, atopic dermatitis
704.9 Hair disease, unspecified
704.1 Hirsutism
684 Impetigo
703.0 Ingrown nail
683 Lymphadenitis, acute
703.9 Nail disease, unspecified
110.1 Onychomycosis
709.9 Other skin disease, unspecified
696.3 Pityriasis rosea
698.9 Pruritus, NOS
696.1 Psoriasis
695.3 Rosacea
706.2 Sebaceous cyst
690.10 Seborrheic dermatitis, NOS
702.19 Seborrheic keratosis, NOS
692.71 Sunburn
705.9 Sweat gland disease, unspecified
708.9 Urticaria, unspecified
XIII. Musculoskeletal & Connective Tissue
736.9 Acquired deformity, limb, unspecified
716.90 Arthropathy, unspecified
724.4 Back pain w/ radiation, unspecified
723.9 Cervical disorder, NOS
710.9 Connective tissue disease, unspecified
722.2 Disc syndrome, no myelopathy, NOS
727.43 Ganglion, unspecified
717.9 Internal derangement, knee, unspecified
737.9 Kyphosis/scoliosis, unspecified
724.2 Low back pain
729.1 Myalgia/myositis, unspecified
721.90 Osteoarthritis of spine, NOS
715.90 Osteoarthrosis, unspecified
730.00 Osteomyelitis, acute, unspecified
730.10 Osteomyelitis, chronic, unspecified
733.00 Osteoporosis, unspecified
725 Polymyalgia rheumatica
714.0 Rheumatoid arthritis (not juvenile rheumatoid arthritis)
726.10 Shoulder syndrome, unspecified
727.00 Synovitis/tenosynovitis, unspecified
716.10 Traumatic arthropathy, unspecified

XIV. Congenital Anomalies
743.65 Blocked tear duct
746.9 Congenital heart anomaly, NOS
755.9 Limb anomaly, unspecified
751.0 Meckel's diverticulum
759.9 Other congenital anomaly, unspecified
750.5 Pyloric stenosis
752.51 Undescended testis

XV. Perinatal (Infant)
768.9 Birth asphyxia, unspecified
767.9 Birth trauma, unspecified
779.3 Feeding problem newborn
768.4 Fetal distress, unspecified
774.30 Jaundice, newborn, unspecified
764.00 Newborn, light-for-dates, weight unspecified
779.9 Preterm infant, weight unspecified
769 Respiratory distress syndrome
770.9 Respiratory problem, other, unspecified
771.8 Sepsis
778.9 Skin/temperature problem
798.0 Sudden infant death syndrome
XVI. Signs and Symptoms

789.00 Abdominal pain, unspecified
790.2 Abnormal glucose tolerance test, nonobstetric
790.4 Abnormal transaminase/LDH
795.0 Abnormal papanicolaou smear
790.0 Abnormal red blood cell
793.1 Abnormal X-ray lung
995.0 Anaphylaxis, NOS
783.0 Anorexia
719.40 Arthralgia, unspecified
789.5 Ascites
799.0 Asphyxia/hypoxemia
790.7 Bacteremia (not Septicemia)
569.3 Bleeding, rectal
578.1 Blood in stool, melena
792.1 Blood in stool, occult
427.5 Cardiac arrest
786.50 Chest pain, unspecified
780.01 Coma, nondiabetic/nonhepatic
564.0 Constipation
786.2 Cough
787.91 Diarrhea, NOS
780.4 Dizziness/vertigo, NOS
787.2 Dysphagia
788.1 Dysuria
782.3 Edema localized, NOS
719.00 Effusion/swelling of joint, unspecified
787.6 Encopresis, NOS, fecal incontinence
784.7 Epistaxis
783.4 Failure to thrive/short stature
783.3 Feeding problem, infant/elderly
780.6 Fever, nonperinatal
787.3 Gas/bloating
791.5 Glycosuria
784.0 Headache, unspecified
787.1 Heartburn
578.0 Hematemesis
599.7 Hematuria
786.3 Hemoptysis
789.1 Hepatomegaly
786.8 Hiccups
784.49 Hoarseness
306.1 Hyperventilation
788.30 Incontinence/enuresis, NOS
782.2 Localized swelling/mass, superficial
785.6 Lymph nodes, enlarged
780.79 Malaise and fatigue, other
781.0 Movement disorder
785.2 Murmur of heart, undiagnosed
787.01 Nausea w/ vomiting
787.02 Nausea, alone
788.43 Nocturia
799.8 Other ill-defined conditions
729.5 Pain in limb
785.1 Palpitations
788.42 Polyuria
782.1 Rash, nonvesicular, unspecified
780.31 Seizures, convulsions, febrile
780.39 Seizures, convulsions, other
780.09 Semicoma, stupor
782.0 Sensory disturbance skin
785.50 Shock, unspecified
786.05 Shortness of breath
789.2 Splenomegaly
780.8 Sweating excess
780.2 Syncope
780.02 Transient alterations of awareness
788.41 Urinary frequency
787.03 Vomiting, alone
783.2 Weight loss, abnormal
786.07 Wheezing

XVII. Injuries and Adverse Effects
824.8 Fracture: ankle, closed, unspecified
814.00 Fracture: carpal, closed, unspecified
810.00 Fracture: clavicle, closed, unspecified
820.8 Fracture: femur/hip, closed, unspecified
821.01 Fracture: femur/shaft, closed
823.81 Fracture: fibula, closed, unspecified
825.20 Fracture: foot, closed, unspecified (not toes)
813.80 Fracture: forearm, closed, unspecified
812.20 Fracture: humerus, closed, unspecified
802.20 Fracture: mandible, closed, unspecified
815.00 Fracture: metacarpal, closed, unspecified
802.0 Fracture: nose, closed
829.0 Fracture: other sites, closed, unspecified
808.8 Fracture: pelvic, closed, unspecified
826.0 Fracture: phalanges, foot, closed
816.00 Fracture: phalanges, hand, closed, unspecified
807.00 Fracture: ribs, closed, unspecified
803.00 Fracture: skull, closed, unspecified
823.80 Fracture: tibia, closed, unspecified
823.82 Fracture: tibia/fibula, closed, unspecified
805.8 Fracture: vertebral, closed, unspecified

Dislocations, Sprains & Strains
839.8 Dislocation: other, closed, unspecified
831.00 Dislocation: shoulder, closed, unspecified
836.2 Knee meniscus injury, unspecified
845.00 Sprain/strain: ankle, unspecified
845.10 Sprain/strain: foot, unspecified
842.10 Sprain/strain: hand, unspecified
844.9 Sprain/strain: knee/leg, unspecified
847.0 Sprain/strain: neck, unspecified
848.9 Sprain/strain: other site, unspecified
840.9 Sprain/strain: shoulder/arm, unspecified
847.9 Sprain/strain: vertebral, unspecified
842.0 Sprain/strain: wrist, unspecified

Other Trauma, Adverse Effects
919.0 Abrasion, unspecified
924.9 Bruise contusion, unspecified
949.0 Burn, degree unspecified
995.50 Child abuse, unspecified
991.9 Cold injury, unspecified
850.9 Concussion, unspecified
929.9 Crushing injury, unspecified
994.1 Drowning/submersion
994.4 Exhaustion due to exposure
938 Foreign body, digestive system, unspecified
931 Foreign body, ear
932 Foreign body, nose
919.6 Foreign body, skin, superficial, unspecified
E922.9 Gunshot wound, NOS
854.00 Head injury, NOS
992.9 Heat injury, unspecified
919.4 Insect bite
908.9 Late effects of injury, unspecified
995.2 Medication, adverse effects, unspecified
879.8 Open wound, head/neck/trunk, unspecified
894.0 Open wound, lower limb, unspecified
884.0 Open wound, upper limb, unspecified
959.9 Other trauma, unspecified
977.9 Poisoning, medicine overdose, unspecified
989.9 Poisoning, unspecified
V71.5 Rape
999.9 Surgery/medical care complications, unspecified

XVIII. Supplemental Classification
V68.9 Administrative, other, unspecified
V65.40 Advice/health instruction, NOS
V61.49 Caring for family/household member
V50.2 Circumcision, routine
V01.9 Contact/exposure, infectious disease, unspecified
V25.01 Contraception, oral
V25.02 Contraception, other (diaphragm, etc.)
V25.40 Contraception, surveillance, unspecified
V61.10 Counseling for marital and partner problems, unspecified
V61.20 Counseling for parent/child problem, unspecified
V60.2 Economic problem
V62.3 Educational problem
V61.0 Family disruption
V25.09 Family planning advice
V61.9 Family problem, other, unspecified
V04.8 Flu shot
V67.4 Follow-up exam, following treatment of healed fracture
V67.0 Follow-up exam, surgery
V67.9 Follow-up exam, unspecified
V72.3 Gynecological exam
V70.0 Health checkup, not pediatric
V60.0 Housing problem/homelessness
V06.9 Immunization, combination, unspecified
V05.9 Immunization, single, unspecified
V62.5 Legal problem
V68.0 Letter, form, w/o exam
V25.5 Norplant insertion
V62.2 Occupational problem
V62.89 Phase-of-life problem
V61.3 Problem w/ aged parents or inlaws
V62.9 Psychosocial problem, unspecified
V68.81 Referral w/o exam
V76.9 Screening, cancer, unspecified
V82.9 Screening, unspecified
V62.4 Social maladjustment
V25.2  Sterilization
V20.2  Well child check
V30.00  Well newborn, single, in-hospital birth

Note: Codes including "NOS" (not otherwise specified) and "unspecified" have alternative diagnosis codes within ICD-9-CM that are more specific. These alternatives can be found within or near the first three digit area of ICD-9-CM Volume 2. This list reflects changes as of Oct. 1, 1998.

Compiled by Allen Daugird, MD, MBA, and Donald Spencer, MD, MBA, of the Department of Family Medicine, University of North Carolina, Chapel Hill.

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