

ON-SITE OCCUPATIONAL HEALTH SERVICES
IMPLEMENTED AT WORZALLA PUBLISHING COMPANY

by
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ABSTRACT

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 Worzalla Publishing Company
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The purpose of this study will be to analyze the limited / non-occupational health support at Worzalla Publishing Company (WPC) which places the firm at risk for incurring elevated recordable incidents and increased worker compensation expenses.

The objectives of this study are to:

1. Provide a framework for management support and outsourcing for an On-Site Occupational Health Nurse.
2. Provide guidelines for implementation of an On-Site Occupational Health Nurse program.
3. Provide data to demonstrate the cost effectiveness of having an On-Site Occupational Health Nurse and

the benefits that can be contributed and dispersed throughout the company environment.

A significant part of WPC's business is to manufacture high quality juvenile market books. The manufacturing process often involves a high frequency & repetition of associate's upper extremities. Statistics indicate that nearly one-third of manufacturing associates were incurring musculoskeletal disorders (MSD's) related to the upper extremities. Therefore, without implementing adequate occupational health intervention to minimize the ergonomic risks, the current non-occupational health practices at WPC may place the organization at risk of increased recordable incidents to the associates and elevated worker compensation expenses.

In order to analyze the current exposures, the OSHA 200 & 300 logs must be broken down to identify ergonomic issues and body parts affected. The next step is to analyze the Detailed Loss Information Reports for Worker Compensation to examine the total incurred costs associated with the identified losses.

Once the recordable incidents have been identified, WPC must incorporate the perceptions of the current and future roles and activities of the occupational health nurse and the nurse's value added contributions to the facility. This will be accomplished by evaluating the current federal regulations / standards (OSHA, ANSI) and recognized industry

specific and risk control principles for minimizing and/or eliminating the risks associated with ergonomic issues.

Based upon this information, recommendations regarding an On-Site Occupational Health Nurse at WPC will be proposed to help reduce or eliminate the recordable incidents and the worker compensation expenses for the employees and the company.

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CHAPTER 1

Statement of the Problem

Introduction

The American workplace has changed rapidly in the 1990's and changes will continue to occur well into the current millennium. Downsizing, resizing, increased technology and globalization have placed new demands on workers. Working longer hours and a changing work force of older employees, part time and temporary help will create many challenges & opportunities for the occupational health nurse (Rogers, 2000). Successful companies that seek ways to improve their bottom lines realize that an employee's health and safety are vital components of the profitability equation (Nighswonger, 2001).

Worzalla Publishing Company (WPC) is a 100% employee-owned business that is located in Stevens Point, Wisconsin. WPC is known for its high quality printing and binding of juvenile books, over one hundred years of service and competitive pricing. The Worzalla Publishing Company's Mission Statement and Quality Policy states the following:

"To consistently manufacture, at a world class level, through its people who are its strength, a high quality printed and bound product at reasonable cost while providing fast and flexible service to our customers so as to attract and retain their business" (Nason, 1998).

In order to meet the above mission statement, WPC cannot function at a productive or profitable margin without strong and

healthy associates. WPC has become aware of the need for occupational health interventions through the increased occurrence of accidents / injuries as indicated by past fiscal year(s) data and the explosion in worker compensation expenses.

The challenge for an Occupational Health Nurse (OHN) is to provide services supporting the primary mission and goals of the organization (Nelson, 2001). WPC must earn a profit and provide a safe and healthy working environment for the associates. Production and risk control efforts must be fostered into a single, working relationship. On-site OHN services at WPC have been created to support WPC's Mission Statement, Quality Policy and Risk Control efforts. With the implementation of the On-site OHN, WPC is unsure if bringing an OHN on-site has provided a positive pay back and contributed to the operational efficiency that WPC expects and/or desires.

Purpose of the Study

The purpose of this study will be to analyze the Occupational Health Nurse services implemented at Worzalla Publishing Company to identify whether or not a reduction in recordable incidents and worker compensation expenses has occurred.

Goal of the Study

The study focused on the following objectives:

1. Collect data to identify the cost effectiveness of instituting an Occupational Health Nurse and the benefits that can be contributed and dispersed throughout the

company environment. Data shall be collected in the following areas:

- a. Incidents by General Activity
- b. Incidents by Body Part
- c. Claims Requiring Treatment
- d. Incidents by Cause of Injury
- e. Incidents by General Location
- f. Incidents by Injury Source
- g. Number of Lost Days
- h. Incidents by Nature of Injury
- i. Restricted Days
- j. Recordable Incidents & Worker Compensation Costs

Background and Significance

WPC experienced increased accident/injury rates related to ergonomic issues and subsequently witnessed its worker compensation expenses increasing steadily over the past three fiscal years of 1998, 1999 and 2000. WPC decided to outsource with SAINTS Health Services for Business and contract with an OHN to assist with ergonomic issues and case manage claims for worker compensation. The OHN has moved into roles once thought to be the exclusive territory of the safety department. The OHN provides guidance and support for risk control and hazard assessment programs; helps with facility and process planning, spearheads cost reduction efforts for managed care and worker compensation programs, and acts as an occupational health resource for the department supervisors and employees (Smith, 1997).

The printing and binding industry historically has been very labor and material handling intensive. Workers involved in the printing process may be at risk of developing Musculoskeletal Disorders (MSD's) from workplace activities (OSHA, 2002). One way that printing and binding organizations might control and/or eliminate MSD's within the printing and binding industry would be to outsource for on-site OHN services. Outsourcing with a OHN professional builds programs which are a collaborative effort between health care providers and departments within the company such as human resources, risk management and environmental (Smith, 1997). OHN also brings cost-effectiveness strategies to bear so that the investment in health services provides a return on investment, the return being that employees are more productive, they're healthier and there is less absenteeism (Minter, 2000). The introduction of on-site OHN services into the printing and binding industry is designed to build programs, which are collaborated by the company and the OHN services, that bring a positive return on investment for both the company and its employees.

Limitations

1. This study is limited to the effects of OHN services on recordable incidents within the WPC facility.
2. This study is also limited to the effects of OHN services on the worker compensation costs.

3. This study is also limited within the Standard Industrial Classification (SIC) code, which will be used for comparison with incident rates as determined by OSHA formulas and the Bureau of Labor Statistics (BLS) calculations.

Assumptions

At the time OHN services at the WPC facility were initially implemented, job rotation and JSA's were also being worked on and were later implemented in conjunction with the OHN services. Data that was collected may be influenced positively by the implementation of job rotation and JSA's that occurred concurrently with the OHN implementation. The current economic market may also have positively influenced the data collected due to reduced hours being worked by WPC associates dictated by decreased sales and soft market conditions.

Definition of Terms

BLS Bureau of Labor Statistics (OSHA, 2002).

Book Block Operations Signatures that have been collated, gathered and sewn are trimmed on the top, front and bottom, and now create the book block (Bruno, 1997).

Booklines The book block is automatically put into its case on a casing-in machine, which applies glue to the end leaves of the book block and fits the case into place (Bruno, 1997).

JSA Job Safety Analysis identifies the hazards associated with each step of the job & develops solutions for each hazard that either eliminates it or controls it (Peterson, 1995).

MSD Musculoskeletal Disorders are disorders of the muscles, nerves, tendons, ligaments, joints, cartilage or spinal discs that are not typically the result of any instantaneous or acute activity (such as a slip, trip or fall) but reflected a more gradual or chronic development (OSHA, 2002).

NSC National Safety Council (NSC, 2002).

OHN Occupational Health Nurse is defined as a specialty practice that provides for and delivers health care services to workers and worker populations. This practice focuses on promotion, protection and restoration of workers' health within the context of a safe and healthy work environment (AAOHN, 1995).

Outsourcing Buying services from external service providers who possess core competencies in specific tasks sought by the purchaser (Dyck, 2002).

Perfect Binders The signatures of a book are collated, gathered and glued using flexible adhesive. Perfect Binding eliminates the expense of sewing and case-binding books. This process is typically used on paperback books (Bruno, 1997).

RFI Request for Information (Amann, 1999).

RFP Request for Proposal (Amman, 1999).

SIC Standard Industrial Classification. WPC's SIC is 2732 for Book Printing establishments primarily engaged in printing, or in printing and binding of books & pamphlets, but not engaged in publishing (OSHA, 2002).

WPC Worzalla Publishing Company (Davis, 2002).

CHAPTER 2

Review of Literature

Introduction

The purpose of this chapter was to examine and evaluate literature that is relevant to Worzalla Publishing Company, Occupational Health Nurse services and the implementation of an outsourced service. The literature review is divided into the following subparts:

1. Historical aspects of WPC
2. Essentials for OHN services
3. Framework for OHN for WPC management
4. Analysis of Current Data
5. Steps for Outsourcing for OHN Services at WPC
6. Summary

Historical Aspects of WPC

Worzalla Publishing Company's roots date back to 1892 when Zygmunt Hutter and Teofil Krutza began publishing the ROLNIK ("Farmer"), a Polish newspaper for Central Wisconsin area farmers. Joseph and Stephen Worzalla purchased the ROLNIK in 1898 and created Worzalla Publishing Company. The company operated from the second story of a building at Main and Third Streets in downtown Stevens Point. The two brothers diversified into a variety of publishing endeavors, most notably the creation in 1908 of GWIAZDA POLARNA ("Polar Star"), a Polish weekly newspaper with a cosmopolitan flavor (Worzalla, 1998).

As business increased, the plant was moved in 1912 to buildings on Second Street in Stevens Point, where the brothers expanded their printing capabilities and entered the bookbinding field. Around the beginning of World War II, Worzalla began its main thrust into the expansion of the job printing and book manufacturing operation. Management duties passed to Stephen's son, Walter Worzalla, who remained with the company until his death in 1982 and to his son William, who continued the growth of the family business. In 1957 a new facility was built on Jefferson Street to house the expanding printing and binding operations (Worzalla, 1998).

The Worzalla family retained ownership until 1984, when two Chicago investors bought the company from William "Skip" Worzalla. The new owners created a great debt load on the company and used Worzalla working capital to fund other ventures. By 1986, Worzalla was in danger of closing its doors forever. On December 31, 1986, the employees bought the company through an Employee Stock Ownership Program (ESOP), making Worzalla one of a very few American corporations boasting 100% employee ownership (Worzalla, 1998).

Worzalla has enjoyed substantial growth since becoming employee owned, with sales increasing from \$14 million in 1986 to around \$60 million in fiscal year 2001. The work force has grown from 197 to 490 fulltime associates and an additional 80 or more temporary and part-time workers during peak production cycles. Modern one to six color sheetfed and web presses help feed a versatile book bindery that produces over 43 million books each

year. A 100,000 square foot plant addition was completed at the end of 1998, expanding WPC's production and warehouse facilities to 315,000 square feet. The company also leases 80,000 square feet of warehousing in the community. The 1998, \$13.5 million building expansion and equipment acquisition project included a 50% increase in manufacturing space, the addition of a 55" 4-color sheetfed press (the third of its kind in the country), a new perfect binding book line (the second of its kind in the country), a new single color web press, a jacketing machine, casemaker, and warehouse racking (Worzalla, 1998).

Worzalla has an established reputation as a high quality book manufacturer. Today Worzalla prints and binds books, magazines, catalogs, pamphlets, posters and maps for major publishers nationwide and several international accounts. Worzalla is particularly well known in the juvenile book field which accounts for about eighty percent of its business.

Essentials for OHN Services

The American Association of Occupational Health Nurses (AAOHN) defines the occupational health nursing practice as a specialty practice that provides for and delivers health care services to workers and worker populations. The practice focuses on promotion, protection and restoration of workers' health within the context of a safe and healthy work environment (AAOHN, 1995). The OHN supports client advocacy and walks a neutral line between the primary clients (i.e., the workers and management). To facilitate an effective health and safety program, a positive rapport and shared responsibility must be maintained among the

OHN, client and management, as well as with other health and safety team members (Slagle, Sun, Mathis, 1998).

With the implementation of an on-site OHN program, the OHN is typically located at the contracted facility rather than at a service office or clinic. The OHN is the only member of his/her profession in the facility and direct medical supervision is practically non-existent. The OHN is constantly faced with situations that require the use of good judgment and the ability to make decisions and to take action (Mayne, 2002). To be truly effective, the OHN must possess the skills of a manager and a leader. Effective management will be successful when programs and projects are properly implemented thus achieving the established goals and meeting the expectations of the intended recipients. Effective leadership stems from individuals who feel valued for their opinions, empowered to act independently, and accountable for setting and achieving personal goals (Haney, Amenn, 2001).

Occupational health experts contend that one of the best ways to improve worker health and productivity is with on-site OHN services. Providing the services, whether it is medical case management, clinical treatments or preventive measures, to employees can be expensive to initially set up, but will pay off in many different ways (Nighswonger, 2001). Consider the organization by which the nurse is employed. Hospitals are organized on a non-productive, non-profit basis and exist solely for the purpose of rendering service to the community. Industry on the other hand, is organized to produce goods and to make a

profit. This fact influences and affects the on-site OHN services to some extent (Mayne, 2002). The time factor in industry is of greater importance in how the above service positively or negatively affects the bottom-line -- profits. Services for an on-site OHN program can include:

- Post-offer physicals
- Physical examinations
- Emergency injury / illness treatment
- Injury / illness case management
- Assistance with on-site plant inspections
- Health and safety education (Konstantinos, Crespo, 1998).

When the OHN, employees and management come together to form teams, they create an organization in which all who participate benefit from the commitment and mutual desire to work towards a shared mission and vision (Haney, Amman, 2001). For WPC and the OHN, the shared mission is the case management of recordable incident worker compensation claims that affect the efficiency and profitability for the facility.

Framework for OHN for WPC Management

The framework that currently exists for the on-site OHN program is defined to set the foundation for support from the WPC Management Staff. The framework consists of the following six criteria:

- Client
- Worksite
- Work environment

- Resources
- Case management of worker compensation claims
- Goals

Client

The client is one individual and/or a group of individuals in a workplace whose demographics and characteristics influence the design and implementation of a specific OHN program (Slagle, Sun, Mathis, 1998). With WPC as the client, the OHN program must encompass all WPC associates and management. The client(s) within WPC's OHN program include not only the individual associate, but also must be expanded to accommodate the associate's family outside of work plus community activities and other functions.

Worksite

The worksite is a designated facility or area where work is conducted, which may be located outside and/or inside the facility. Dictating the parameters of a worksite include policies, standards, regulations, and laws from that particular organization as well as from industry and government agencies. Within the framework of a specific industry and its objectives / mission are job descriptions reflecting an employees' required skills, duties and potential hazards associated with a particular job (Slagle, Sun, Mathis, 1998). WPC's worksite is located at 3535 Jefferson Street in Stevens Point, Wisconsin. The WPC facility is 315,000 square feet and is the home for the entire management and production operations.

Work Environment

The work environment is the local and regional quality of physical surroundings, including water, soil, air, climate and facility characteristics. Beyond these physical characteristics, the work environment may also encompass governmental, socio-cultural and interpersonal forces continuously interacting as part of the work environment domain (Smith, Lusk, 2002). WPC's work environment is a mix of old-world skills, new technology and an aging workforce that are contributing to the rise of recordable incident illnesses and injuries.

Resources

The new role of the OHN may no longer be defined by a given title, but rather by those functions performed that add value to the organization (Olsen, Kochevar, McGovern, 1997). The resources are almost limitless, but may need to be modified to meet the specific client needs with the goal of ensuring optimal safety and health at the worksite (Slagle, Sun, Mathis, 1998).

A resource is defined as a source of supply or support, a source of information or expertise (Mish, 1990). A resource pool has been compiled to meet the needs of WPC's employees and to maximize the OHN program effectiveness at the facility. The resource pool includes, but is not limited to the following:

- Education
- Programs and agencies
- Regulations and standards (i.e., OSHA, Dept. of Labor, HIPPA)

- Professional organizations
- Community resources (i.e., SAINTS Health Services for Business)
- Ethics
- Nurse Practice Act
- Medical directives
- Internet, books and journals
- WPC policy and procedures

With the above resource pool the on-site OHN will be able gather the appropriate and most recent information that will support WPC's goals and objectives for controlling / eliminating recordable incident injuries and illnesses.

Case Management of Worker Compensation Claims

Through case management of recordable incident worker compensation claims, the OHN acts as a liaison between the health care provider, client and management to facilitate return-to-work as early as possible and to promote an optimal health status for the employee (Slagle, Sun, Mathis, 1998). The OHN's coordination with worksite team members and pertinent community health resources supports client advocacy in a cost effective and timely manner (Hall-Barrow, Hodges, Brown, 2001). Reducing worker compensation claims and providing quality care for work related injuries and illness are the main goals for the WPC OHN program.

With the introduction of the OHN at WPC, job descriptions and responsibilities were redefined to accommodate the occupational health services and foster a team approach for case

management. The case management of worker compensation claims would lift those obligations from the Human Resource Assistant and allow him/her more time for recruitment activities. The case management by the OHN would also assist the Safety and Health Coordinator with injury assessments, accident investigations and preventative measures to reduce / eliminate a possible hazard or unsafe condition. The OHN, the Human Resource Assistant, and the Safety & Health Coordinator would then adopt a team approach to handle program development, coordination, implementation and evaluation of those programs. The team would also consult and educate the employees as well as the management staff on recordable incident issues and the effects that they are having on worker compensation, insurance costs and decreased production due to lost time injuries and accidents. The team would also provide proactive leadership and participation at the worksite and within the work environment.

Goals

The main goal or objective to any new project is to reduce and/or eliminate a problem area or a source. WPC's main goal is to reduce worker compensation claims and provide quality care for ergonomic-related injuries. The additional goals of WPC's OHN program include, but are not limited to, the following:

- Injury and illness prevention
- Safe working conditions - proactive approach vs. reactive
- Optimize employee health and wellness
- Increase employee education

- Increase employee morale and job satisfaction
- Appropriate primary care and proper referral
- Maximize productivity & improve quality
- Decrease absenteeism, lost time and worker compensation claims

Engineering, administrative and personal protective equipment controls are the basis for eliminating and/or reducing hazards associated with risk control management programs. To effectively obtain the goals and objectives for the on-site OHN program, WPC worked to proactively engineer and/or use administrative controls to prevent recordable incident injuries and illnesses and thus reduce the number of worker compensation-based claims.

The goals of a comprehensive OHN program focus on optimal health protection and maintenance, legal and regulatory compliance, and reduction of liability (Kaczmarczyk, 1996). OHN uses all aspects of the nursing process to maximize client health and safety through education, consultation, collaboration and screening. The nursing process is a rational, ongoing, systematic manner of assessing, planning, implementing and evaluating care accomplished by and through communication and interaction (Baughn, 1987). The on-site OHN interacts with the client (the employee or management) in the work environment and in the realm of the client's work group, family and/or community (Slagle, Sun, Mathis, 1998).

Analysis of Current Data

For the purpose of this study, the information presented by WPC for the risk control measures concentrated on the two years prior to the implementation of the OHN services. The data from 1999 and 2000 provides the foundation for comparison against 2001 and ten months of 2002. The four-year window also coincides with WPC's new insurance carrier, The Hartford, and the related worker compensation reports.

The information presented in Appendix A identifies the areas of incidents by general activity as indicated in Figure 1. The top three general activities include Hand Operators, Machine Operators and Press-Related Operations.

Figure 1. General Activity

General Activity:	1999	2000	+ / -
Hand Operator	60	90	+30
Machine Operator	48	48	0
Press	17	14	-3

The information presented in Appendix B identifies the areas of incidents by body part affected as indicated in Figure 2. The top three body parts affected include the back, finger(s) and the wrist locations.

Figure 2. Body Part Affected

Body Part Affected:	1999	2000	+ / -
Back	41	36	-5
Finger	22	29	+7
Wrist	24	17	-7

The information presented in Appendix C identifies the months in which claims requiring treatment occurred as indicated in Figure 3. The top three months in which claims occurred requiring treatment include February, March and August.

Figure 3. Months with Claims Requiring Treatment

Month:	1999	2000	Total
February	13	13	26
March	11	12	23
August	10	14	24

The information presented in Appendix D identifies the areas of incidents by cause of injury as indicated in Figure 4. The top three causes for injury include bend / reach, repetitive motion and struck against.

Figure 4. Cause of Injury

Cause of Injury:	1999	2000	+ / -
Bend / Reach	43	50	+7
Repetitive Motion	26	35	+9
Struck Against	33	35	+2

The information presented in Appendix E identifies the areas of incidents by general location for the Bindery Department as indicated in Figure 5. With the information presented in Appendix A, the top two incidents by general activity are the Hand Operator and Machine Operator positions that are solely located in the Bindery Department. The top three incidents by general location for the Bindery Department include Book Block Operations, Booklines and the Perfect Binders.

Figure 5. General Locations for the Bindery Department

General Location:	1999	2000	+ / -
Book Block Operations	22	18	-4
Booklines	12	21	+9
Perfect Binders	31	30	-1

The information presented in Appendix F identifies the areas of incidents by nature of injury source as indicated by Figure 6. The top three causes of injury include ergonomics, other and repetitive motion.

Figure 6. Nature of Injury Source

Injury Source:	1999	2000	+ / -
Ergonomics	24	39	+15
Other	18	22	+4
Repetitive Motion	43	50	+7

The information presented in Appendix G identifies the months in which claims occurred that resulted in lost days as indicated in Figure 7. The top three months in which claims occurred resulting in Lost Days include March, June and August.

Figure 7. Months with Claims Resulting in Lost Days

Month:	1999	2000	Total
March	23	255	278
June	175	11	186
August	33	49	82

The information presented in Appendix H identifies the areas of incidents by the nature of the injury as indicated in Figure 8. The top three natures of injury include bruised, repeated exposure and sprain / strain.

Figure 8. Nature of Injury

Nature of Injury:	1999	2000	+ / -
Bruised	31	41	+10
Repeated Exposure	30	37	+7
Sprain / Strain	57	71	+14

The information presented in Appendix I identifies the months in which claims occurred that resulted in restricted days as indicated in Figure 9. The top three months in which claims occurred resulting in Restricted Days include February, March and August.

Figure 9. Months with Claims Resulting in Restricted Days

Month:	1999	2000	Total:
February	165	219	384
March	197	96	293
August	90	175	265

The data presented in Appendix J identifies the recordable incidents and total incurred cost for the appropriate fiscal year as indicated in Figure 10. The recordable incidents and total incurred cost for the appropriate fiscal year include 1999 and 2000.

**Figure 10. Recordable Incidents & Total Incurred Costs
By Fiscal Year**

Fiscal Year:	Recordable Incidents:	Total Incurred Cost:
1999	105	\$216,044
2000	120	\$564,472

Steps for Outsourcing for OHN Services at WPC

Outsourcing is defined as buying services from external service providers who possess core competencies in specific tasks sought by the purchaser (Amann, 1999). Outsourcing is a central management tool for reengineering and reenergizing business. It involves buying services from providers so the purchaser can leverage the unique skills and resources of other organizations to benefit their organization and customers. The goal is to develop a long-term, results-oriented relationship between two

organizations to leverage service demands and resources to reach a common goal and/or mission (Dyck, 2002).

WPC's decision to outsource was based upon increased recordable incident worker compensation claims, increased incurred costs from the insurance carrier and the lack of manpower, technology or facilities to provide the OHN services that WPC required. WPC created a Request for Information (RFI) document that indicated WPC's interest in contracting for basic OHN services and seeking qualified providers. SAINTS Health Services for Business then created a Request for Proposal (RFP) document that indicated their potential as a provider for OHN services and the opportunity to present information about their organization, the business they conduct and how that business could benefit a purchaser. The information provided in the RFI and the RFP formed the basis for WPC and SAINTS to create an outsourcing partnership. The four-part outline is as follows:

Part 1 (About the Requestor - WPC)

- Introduction
- Purpose of the RFI
- Description of services / product required

Part 2 (About the RFI)

- Schedule of events
- Criteria for evaluation
- Instructions to Bidders
- Details of contract

Part 3 (About the Bidder - SAINTS)

- Company description
- Purpose of the RFP
- Qualifications

Part 4 (The Bidder's Proposal - SAINTS)

- Description of services / products proposed
- Costs
- Signatures

Once the four-part outline was completed, WPC and SAINTS began laying out the foundation for a contract. A contract is an understanding between two or more parties that something will happen or be delivered (Amann, 1999). The function of a contract is to ensure that promises and conditions related to the promises are kept (Amann, 1999).

The following summarizes the charges and coverage associated with the on-site OHN services at WPC:

=====	
On-site nurse coverage	\$35/hour
Overtime hours (in excess of 40 hrs/wk)	\$50/hour
Call-in hours (include travel to/from residence in accordance with Wage & Hour regulations)	\$50/hour

The OHN services will start out with 1-3 months full-time and then anticipate 20-24 hours per week thereafter.

SAINTS provides the following:

- Mandatory hospital continuing education

- Certifications for urine and breath alcohol testing
- Continuing education as approved by SAINTS
- Insurance and benefit coverage through St. Michael's Hospital
- Periodic performance evaluation (i.e., feedback from WPC)
- Medical directives to guide nursing care
- Access to the SAINTS resources to enhance OHN effectiveness
- Annual verification of nursing competency & compliance with all federal and state regulations applicable to OHN position.

OHN services offered, but not limited to:

- Plan & develop educational programs related to worker safety, health promotion and risk prevention
- Supervise the provision of nursing care for job related emergencies & illnesses
- Provide follow-up of employees with worker compensation claims
- Evaluate the ability of absentees to safely return to work
- Assist in rehabilitation and relocation of injured workers
- Counsel employees regarding health risks

- Serve as a member of the Safety & Health Committee
- Perform periodic health assessments
- Participate in employee safety and orientation classes for high-risk areas
- Develop special health programs specific to WPC's corporate needs (Nelson, 2001)

The OHN is expected to comply with hospital and client (WPC) policies and procedures. In the event of a conflict, the OHN's supervisor must be notified and involved in resolution.

=====

Successful management of an outsourcing relationship produces a highly interactive, flexible relationship between two organizations. The unique skills and resources of the service provider (SAINTS) can be leveraged by the purchasing organization (WPC) to achieve its business and risk control goals (Dyck, 2002). The on-site OHN must be able to orchestrate the process and implement the on-site OHN program into WPC's management and work environment to ensure full integration and participation at all levels within WPC.

Summary

As indicated in the prior literature review, the cornerstones of an effective on-site OHN program are the resources (regulations, policies, etc.) and effective case management of worker compensation claims that ensure a safe and healthy worksite and work environment for the client. Acting as

a liaison between the employee and management, the OHN must facilitate the placement of workers according to their physical, mental and emotional capacities. The important role is to allow workers to perform the required work with an optimal degree of efficiency and without endangering their own health and safety or that of other co-workers (Slagel, Sun, Mathis, 1998). No matter what shape or form the on-site OHN program takes at WPC, the framework and support should concentrate on eliminating recordable incident injuries and illnesses and reducing the number of worker compensation-based claims.

CHAPTER 3

Methodology

Introduction

The purpose of this study was to analyze the effectiveness of the OHN services implemented at WPC to identify whether or not a reduction in recordable incidents and worker compensation expenses has occurred. The main focus of the study concentrated on the collection of data to identify the cost effectiveness of instituting OHN services and the benefits that can be contributed and dispersed throughout the company environment.

Data Collection Techniques

The data that was compiled for this study was taken from the Human Resource Assistant's computer that stores and generates the needed reports through the PC Compliance Safety Tracker Software. Data was also compiled from the WPC OSHA 200 & 300 Injury & Illness Logs that are kept in the Human Resource Assistant's office. The worker compensation information for the fiscal year totals and total incurred costs came from the Detail Loss Information report that is generated by WPC's current insurance carrier, The Hartford.

Statistical Analysis Formulas

The data that was compiled for this study was entered into NSC & BLS formulas and compared to the Bureau of Labor Statistics information for the same Standard Industrial Classification code. The formulas are as follows:

Lost-Time Accident (LTA) Frequency Rate

$$= \frac{\text{\# of lost-time cases} \times 200,000}{\text{\# of employee hours worked (calendar year)}}$$

(NSC, 2002)

Lost Workday Injury & Illness (LWDII) Incident Rate

$$= (N / EH) \times 200,000$$

N = \# of injuries & illness

EH = total hours worked by all employees during the calendar year

200,000 = base for 100 full-time equivalent workers (working 40 hours per week, 50 weeks per year (BLS, 2002))

The information gathered from the formulas was then compared to show positive and/or negative gains by comparing the calendar year (Jan.-Dec.) information for the two years prior and two years after the implementation of OHN services at WPC.

Detailed Loss Information Report**for Worker Compensation**

The Detailed Loss Information Report that is generated by The Hartford for WPC shows fiscal year (April - March) totals for recordable incidents and the total incurred costs associated with those incidents. The individual incidents are broken down to show the date the incident occurred, total incurred costs, location of accident, claim description and assigned job title at the time of the incident. The information compiled from the

Detailed Loss Information Report analyzes the relationship between the recordable incidents, the fiscal year in which the incidents occurred and the total incurred costs assigned to those incidents.

Summary

The data that was compiled from the data collection techniques, statistical analysis formulas and the detailed loss information report were compared to show positive and/or negative results for the OHN services at WPC. The positive and/or negative results have a direct correlation on recordable incident injuries and the expenses associated with the worker compensation claims.

Chapter 4

Results & Discussion

Introduction

The data compiled from the data collection techniques identified the following areas of incidents:

- General Activity
- Body Part Affected
- Months with Claims Requiring Treatment
- Cause of Injury
- General Locations for the Bindery Department
- Nature of Injury Source
- Months with Claims Resulting in Lost Days
- Nature of Injury
- Months with Claims Resulting in Restricted Days

The data compiled from the statistical analysis formulas and the detailed loss information report identified the following areas for the fiscal and calendar years:

- Recordable Incidents and Total Incurred Costs by Fiscal Year (Apr.-Mar.) Comparison
- Calendar Year (Jan.-Dec.) Comparison
- Fiscal Year (Apr.- Oct.) Comparison

Results

The information that was initially generated in Chapter 2 for Calendar Years 1999 & 2000 was compared against 2001 and the

first ten months of 2002 to determine the effectiveness of implementing OHN services at the WPC facility.

The information present in Appendix A identifies the areas of incidents by general activity along with their corresponding incidents totals as indicated in Figure 11. The top three activities include Hand Operators, Machine Operators and Press-Related Operations.

Figure 11. General Activity Comparison

General Activity:	1999	2000	2001	2002 (10 months)	+ / -	%:
Hand Operator	60	90	41	25	-84	(56)
Machine Operator	48	48	37	23	-36	(33)
Press	17	14	15	16	0	0

The information presented in Appendix B identifies the areas of incidents by body part affected along with their corresponding incidents totals as indicated in Figure 12. The top three body parts affected include the back, finger and wrist locations.

Figure 12. Body Part Affected Comparison

Body Part Affected:	1999	2000	2001	2002 (10 months)	+ / -	%:
Back	41	36	16	13	-48	(62)
Finger	22	29	22	11	-18	(35)
Wrist	24	17	9	9	-23	(56)

The information presented in Appendix C identifies the months in which claims requiring treatment occurred along with

their corresponding incidents totals as indicated in Figure 13. The top three months in which claims occurred requiring treatment include February, March and August.

Figure 13. Months with Claims Requiring Treatment Comparison

Month:	1999	2000	2001	2002 (10 months)	+ / -	%:
February	13	13	4	2	-20	(77)
March	11	12	3	5	-15	(65)
August	14	10	15	4	-5	(20)

The information presented in Appendix D identifies the areas of incidents by cause of injury along with their corresponding incidents totals as indicated in Figure 14. The top three causes for injury include bend / reach, repetitive motion and stuck against.

Figure 14. Cause of Injury Comparison

Cause of Injury:	1999	2000	2001	2002 (10 months)	+ / -	%:
Bend / Reach	43	50	25	10	-58	(62)
Repetitive Motion	26	35	16	13	-32	(52)
Struck Against	33	35	21	10	-37	(54)

The information presented in Appendix E identifies the areas of incidents by general location for the Bindery Department along with their corresponding incidents totals as indicated in Figure 15. With the information presented in Appendix A, the top two incidents by general location are the Hand Operator and Machine

Operator positions that are solely located in the Bindery Department. The top three incidents by general location for the Bindery Department include Book Block Operations, Booklines and the Perfect Binders.

Figure 15. General Locations for the Bindery Department Comparison

General Location:	1999	2000	2001	2002 (10 months)	+ / -	%:
Book Block Operations	22	18	16	7	-17	(43)
Booklines	12	21	7	3	-23	(70)
Perfect Binders	31	30	10	8	-43	(71)

The information presented in Appendix F identifies the areas of incidents by nature of injury source along with their corresponding incidents totals as indicated in Figure 16. The top three causes of injury include ergonomics, other and repetitive motion.

Figure 16. Nature of Injury Source Comparison

Injury Source:	1999	2000	2001	2002 (10 months)	+ / -	%:
Ergonomics	24	39	19	10	-34	(54)
Other	18	22	21	13	-6	(15)
Repetitive Motion	43	50	31	16	-46	(49)

The information presented in Appendix G identifies the month in which claims occurred that resulted in lost days along with

their corresponding incidents totals as indicated in Figure 17. The top three months in which claims occurred resulting in Lost Days include March, June and August.

Figure 17. Months with Claims Resulting in Lost Days Comparison

Month:	1999	2000	2001	2002 (10 months)	+ / -	%:
March	23	255	2	7	-269	(97)
June	175	11	3	0	-183	(98)
August	33	49	60	0	-22	(27)

The information presented in Appendix H identifies the areas of incidents by the nature of the injury along with their corresponding incidents totals as indicated in Figure 18. The top three natures of injury include bruised, repeated exposure and sprain / strain.

Figure 18. Nature of Injury Comparison

Nature of Injury:	1999	2000	2001	2002 (10 months)	+ / -	%:
Bruised	31	41	21	24	-27	(38)
Repeated Exposure	30	37	15	8	-44	(66)
Sprain / Strain	57	71	50	36	-42	(33)

The information presented in Appendix I identifies the month in which claims occurred that resulted in restricted days along with their corresponding incidents totals as indicated in Figure

19. The top three months in which claims occurred resulting in Restricted Days include February, March and August.

Figure 19. Months with Claims Resulting in Restricted Days Comparison

Month:	1999	2000	2001	2002 (10 months)	+ / -	%:
February	165	219	63	25	-296	(77)
March	197	96	28	53	-212	(72)
August	90	175	265	77	+77	29

The data presented in Appendix J identifies the recordable incidents and total incurred costs for the appropriate fiscal year along with their corresponding incidents totals as indicated in Figure 20. The recordable incidents and total incurred costs for the appropriate fiscal years 1999 and 2000 compared to 2001 and 2002.

Figure 20. Recordable Incidents and Total Incurred Costs by Fiscal Year Comparison

Fiscal Year (April - March)	Recordable Incidents:	Total Incurred Cost:
FY '99	105	\$216,044
FY '00	120	\$564,472
FY '01	95	\$196,1833
FY '02	57	\$128,860
+ / -	-73	-\$455,473
%:	(32)	(58)

The first ten months of 2002 and the full year of 2001 compared to 2000 and 1999 show further reductions in the following areas:

- Total Number of Recordable Incidents
- Total Number of Cases Involving Lost Work Days
- Total Number of Lost Work Days
- Lost-Time Accident (LTA) Frequency Rate
- Lost Workday Injury & Illness (LWDII) Incident Rate

The above comparisons are indicated in Figure 21.

Figure 21. Calendar Year (Jan.-Dec.) Comparison

Calendar Year	1999	2000	2001	2002 (10 months)	+ / -	%:
# of employees on payroll	510	561	505	434	-132	(12)
Total # of hours worked	978,542.1	1,043,189	936,117.1	671,337.2	-414,276	(21)
Total number of recordable incidents	105	120	65	21	-139	(62)
Total # of cases involving Lost Work Days	42	29	24	11	-46	(57)
Total # of Lost Days	360	548	239	69	-600	(66)
Total # of Fatal Accidents	0	0	0	0	-	-
Lost-Time Accident (LTA) Frequency Rate	8.6	7.5	5.1	3.3	-7.7	(49)
Lost Workday Injury & Illness (LWDII) Incident Rate	21.5	23	13.9	6.3	-24.3	(55)
BLS Incident Rate for SIC #2732	2.3	2.1	N/A	N/A	-	-

As indicated in Figure 22, WPC's current fiscal year (FY '03, 7 months) shows the following comparison and further reduction between recordable incident and total incurred costs for the first seven-month period.

Figure 22. Fiscal Year (Apr.-Mar.) Comparison

Fiscal Year: (Apr.-Oct.)	Recordable Incidents:	Compared to FY '03:	Total Incurred Costs:	Compared to FY '03:
FY '03	24	--	\$59,403	--
FY '02	41	42% decrease	\$86,691	32% decrease
FY '01	68	65% decrease	\$146,253	59% decrease
FY '00	62	61% decrease	\$116,349	49% decrease
FY '99	79	70% decrease	\$141,580	58% decrease

Discussion

To maintain a competitive edge, one must stay abreast of current trends in occupational health, safety and business. OHN's must be experts in documenting a link between occupational health services and improved business results, thus demonstrating their worth and value (Randolph, Willke, 2001). The main purpose of this study was to analyze the OHN services implemented at WPC to identify whether or not a reduction in recordable incidents and worker compensation expenses has occurred.

The data compiled during the collection techniques identified general activities, causes & nature of injuries and months affected by claims, lost days and restricted days. All areas compared showed significant reductions which correspond with the implementation of OHN services at the WPC facility.

The data compiled from the statistical analysis formulas and the detailed loss information report identified recordable incidents and total incurred costs associated with worker compensation claims. The information outlined in Figure 20, indicated further reductions in recordable incidents (32% reduction) and a savings of \$455,913.00 (58% reduction) in total incurred costs paid out to the insurance carrier.

The data compiled from the calendar year comparison in Figure 21 identified reductions in the total number of recordable incidents -- total number of cases involving lost workdays, total number of lost days, lost-time accident frequency rate, and lost workday injury & illness incident rates. Finally, the data compiled for the first seven month comparison for fiscal year '03 to past fiscal years for the same period showed substantial reductions in recordable incidents and total incurred costs.

Summary

The implemented OHN program at WPC has shown positive success and return on investment in the short time since its introduction into the manufacturing facility. OHN services at WPC range from assisting in rehabilitation of injured workers, blood pressure screenings and handling workers' compensation claims. These activities are adding value to the OHN program and building a proactive approach to risk control efforts for WPC associates and management. The business world is going through tremendous changes with less money to work with. The objective of return on investment is forcing many businesses to rethink and reinvest in services that will add value and contribute to the

profitability of an organization. In this instance, the OHN services at WPC is adding value to the worksite, helping reduce recordable incidents and contributing to the bottom line by lowering expenses paid out to the insurance carrier.

Chapter 5
Summary, Conclusions
& Recommendations

Introduction

The material in Chapter 5 includes the restatement of the problem and compares / contrasts the author's findings with those found in the literature review in Chapter 2. The author will identify conclusions developed as a result of this study and conclude with recommendations for future OHN improvements and strategies for WPC's OHN program.

Purpose of the Study

The purpose of this study was to analyze the Occupational Health Nurse services implemented at Worzalla Publishing Company to identify whether or not a reduction in recordable incidents and worker compensation expenses occurred.

Summary

Worzalla Publishing Company is a mix of old-world skills, new technology and an aging workforce that contacted an outsource service which created an on-site OHN program. Providing on-site occupational health services such as worker compensation claims management, education, direct care and counseling can be expensive to set up at first, but the short and long-term benefits are immediate and cost effective. As indicated in the prior literature review, the cornerstones of an effective on-site OHN program are the resources and case management of worker

compensation claims that ensure a safe and healthy worksite and work environment for the client.

Through effective management and leadership, established framework and support, the results of this study strongly indicate that the implemented OHN program has reduced recordable incidents by 35% and condensed total worker compensation claim incurred costs by 58%. This supports the belief that on-site OHN services are one of the best ways to improve the workers' health, performance and productivity without having them leave the facility and increases value added services that contribute to the bottom line -- the company's profits.

Conclusions

The data that was compiled from the data collection techniques, statistical analysis formulas and the detailed loss information report showed positive results for the OHN services at WPC. The positive results are highlighted below:

- General Activity for Hand Operators in the Bindery Department demonstrates a 56% decrease.
- Back incidents for Body Part Affected demonstrates a 62% decrease.
- February demonstrated a 77% decrease in Months with Claims Requiring Treatment.
- Bend / Reach incidents for the Cause of Injury demonstrates a 62% decrease.
- Perfect Binder location(s) demonstrates a 71% decrease in General Locations for the Bindery Department

- Ergonomic incidents for the Nature of Injury Source demonstrated a 54% decrease.
- June demonstrated a 98% reduction in Months with Claims Resulting in Lost Days.
- Repeated Exposure incidents for Nature of Injury demonstrated a 66% decrease.
- February demonstrated a 77% reduction in Months with Claims Resulting in Restricted Days.
- Recordable Incidents demonstrated a 32% reduction and Total Incurred Costs associated with worker compensation claims decreased by 58% for the fiscal year comparison.
- The Calendar Year Comparison in Figure 21 demonstrated continued reductions in incidents, cases and rates. However, when compared to the BLS Incident Rate for SIC #2732, WPC is still above the ratio for the Book Printing classification.
- Recordable Incidents and Total Incurred Costs demonstrated numerical and compensatory reductions in the seven-month fiscal year comparison.

The information that was presented in Chapter 4 and summarized above strongly indicates that OHN services on-site have positively influenced the decline of recordable incidents and decreased worker compensation expenses while adding valued services to the organization and contributing to company profits.

Recommendations

The recommendations of the study are as follows:

1. Expand the study to compare the effects of OHN services on recordable incidents and total incurred costs at other SIC #2732 Book Printing facilities.
2. Conduct a survey at the WPC facility to measure the added value of services from the OHN program for management and the employees.
3. Repeat the study when the production hours have increased from enhanced sales and an improved economic market.

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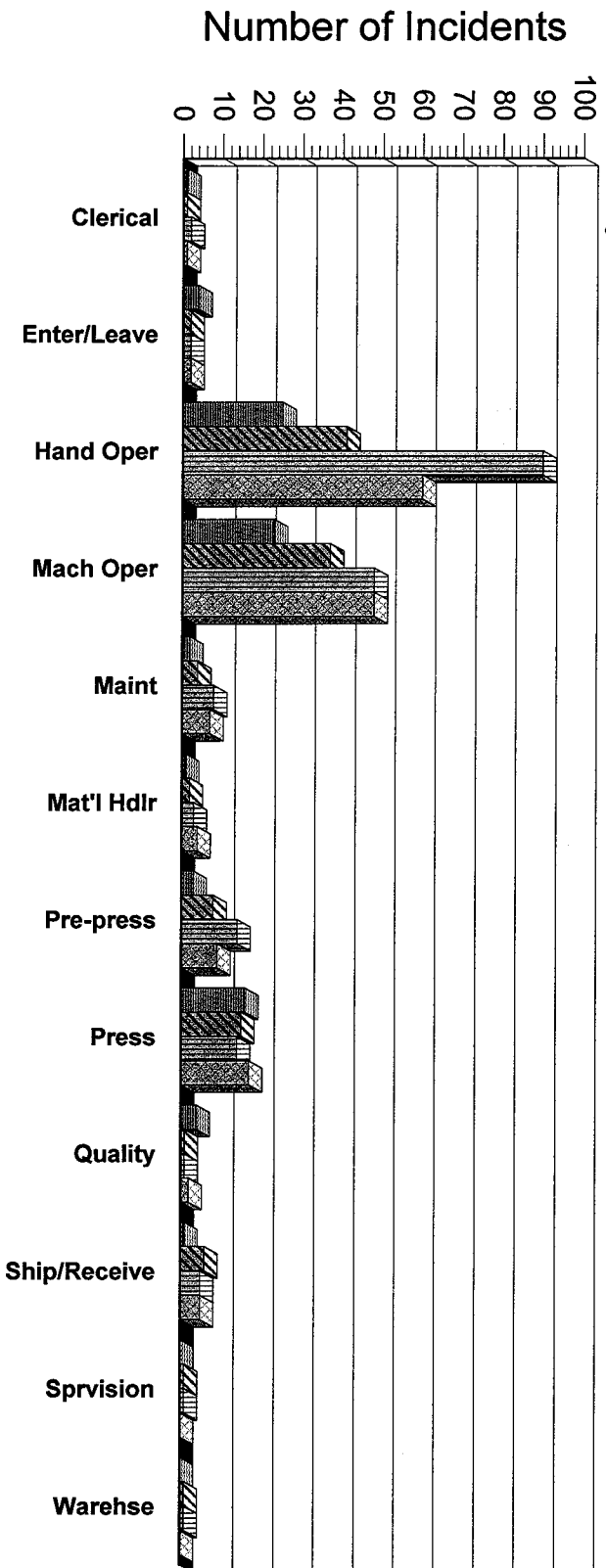
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Appendix A

Incidents by General Activity

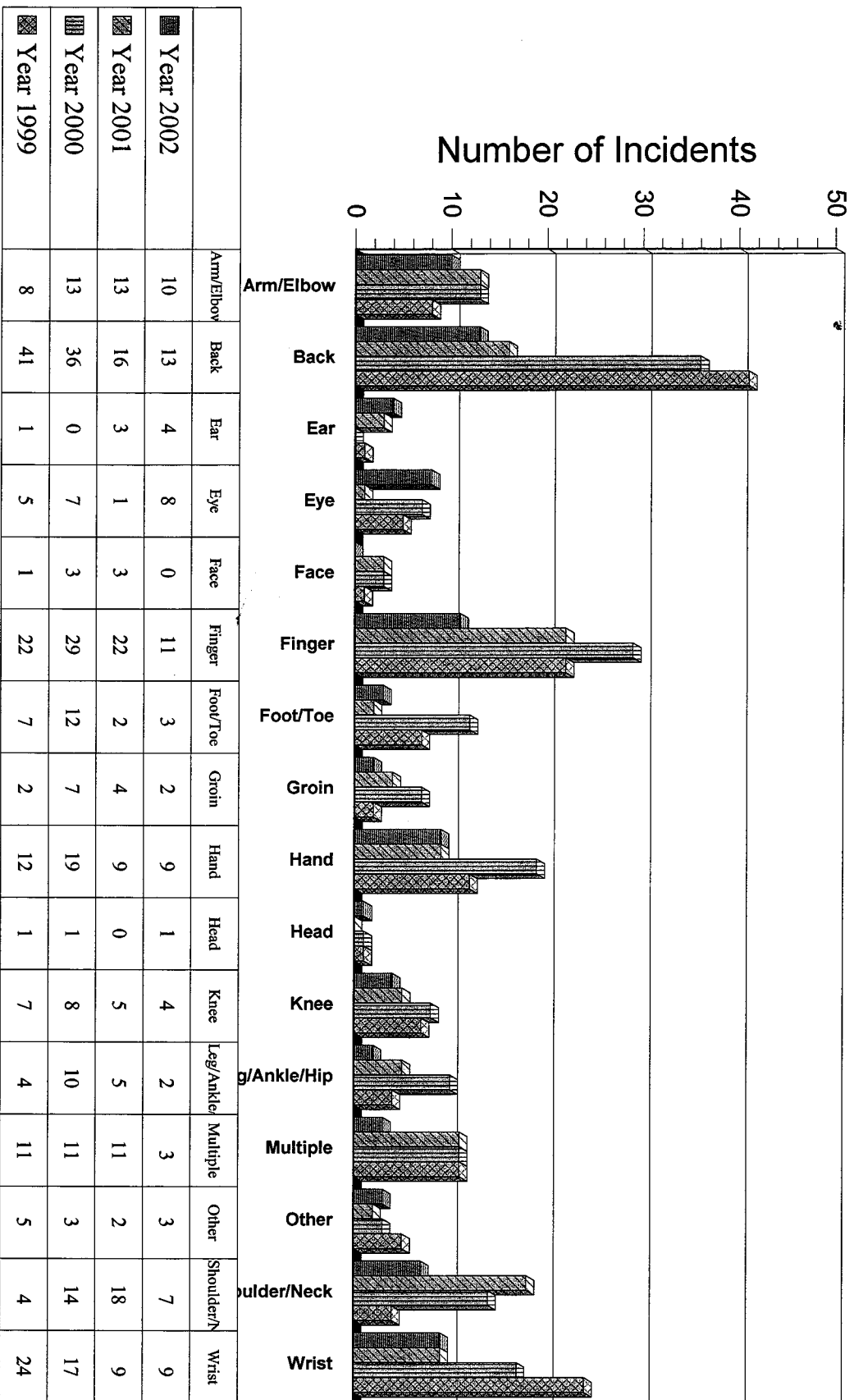
Incidents by General Activity



Data collected as of 10/31/02

Appendix B
Incidents by Body Part

Incidents by Body Part

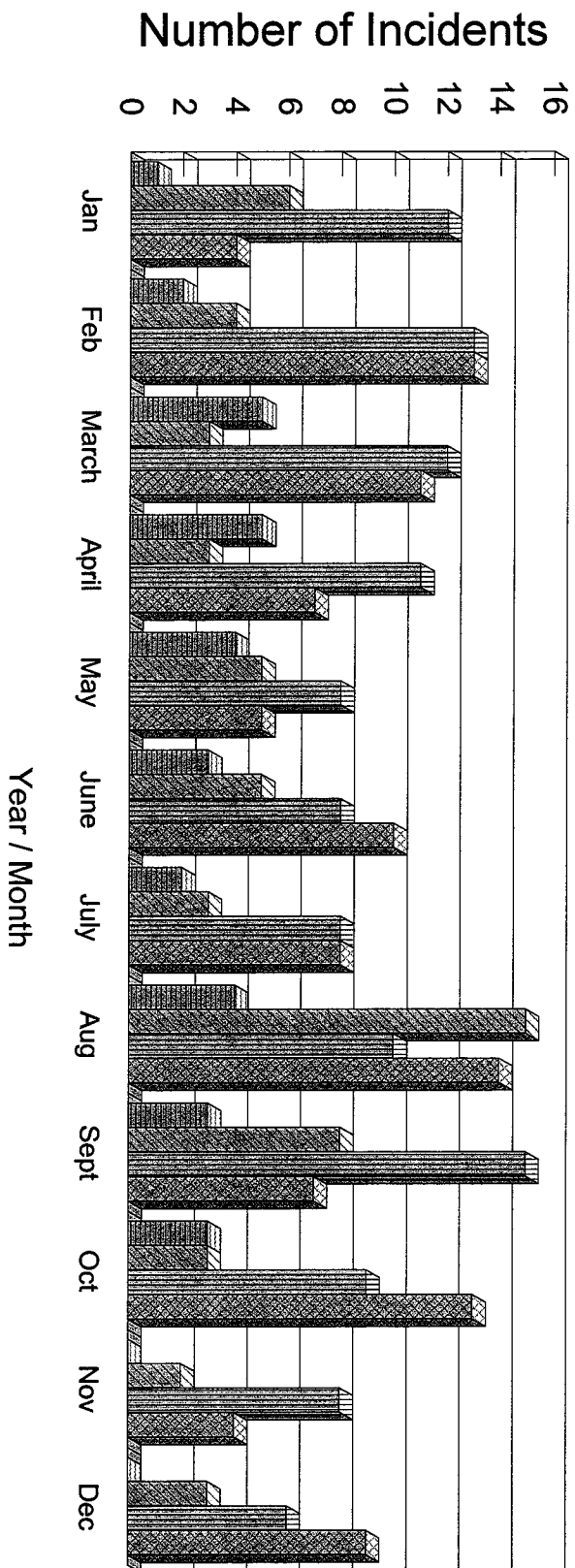


Data collected as of 10/31/02

Appendix C
Claims Requiring Treatment
(All Departments)

CLAIMS REQUIRING TREATMENT

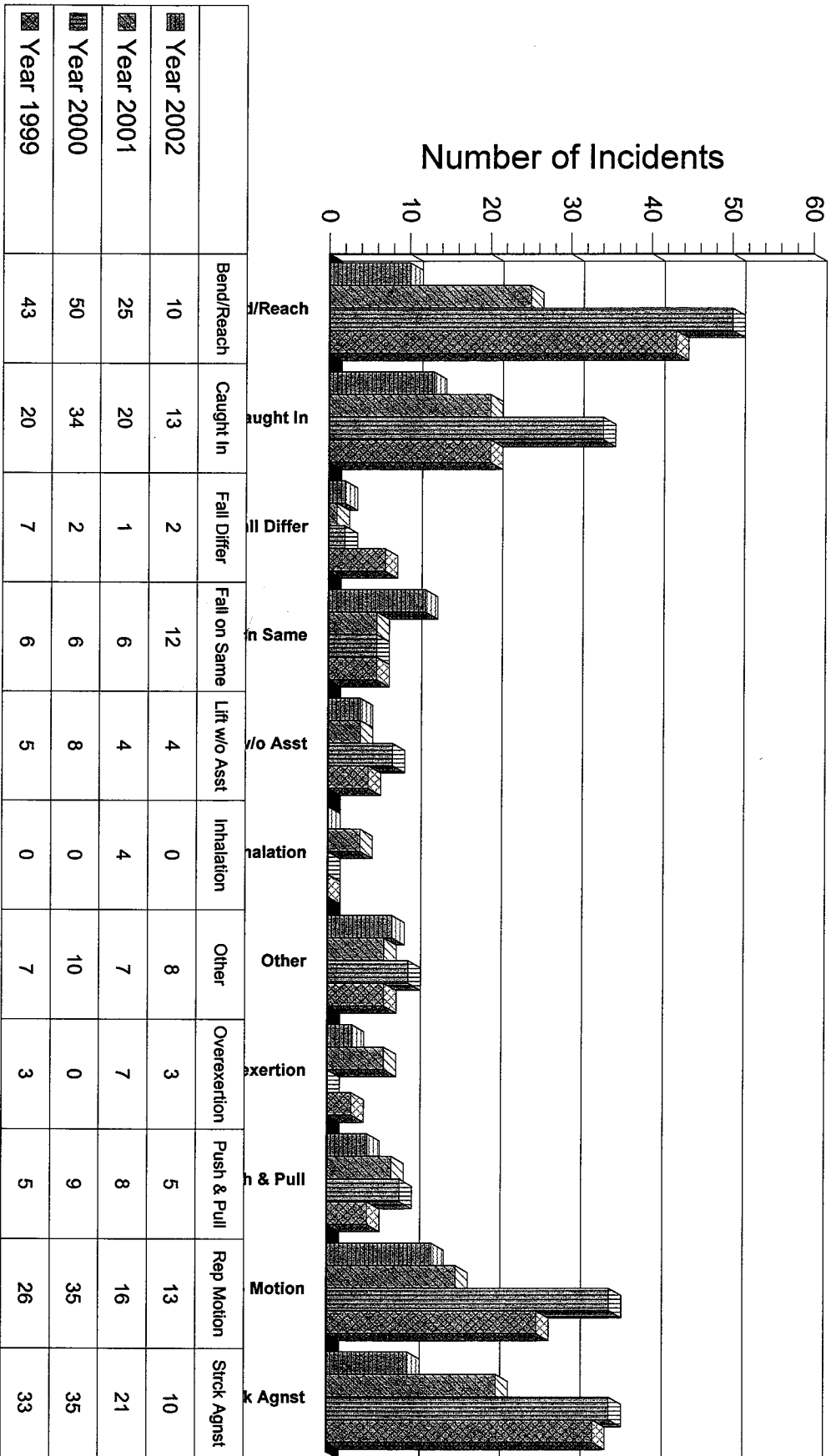
All Departments



Data collected as of 10/31/02

Appendix D
Incidents by Cause of Injury

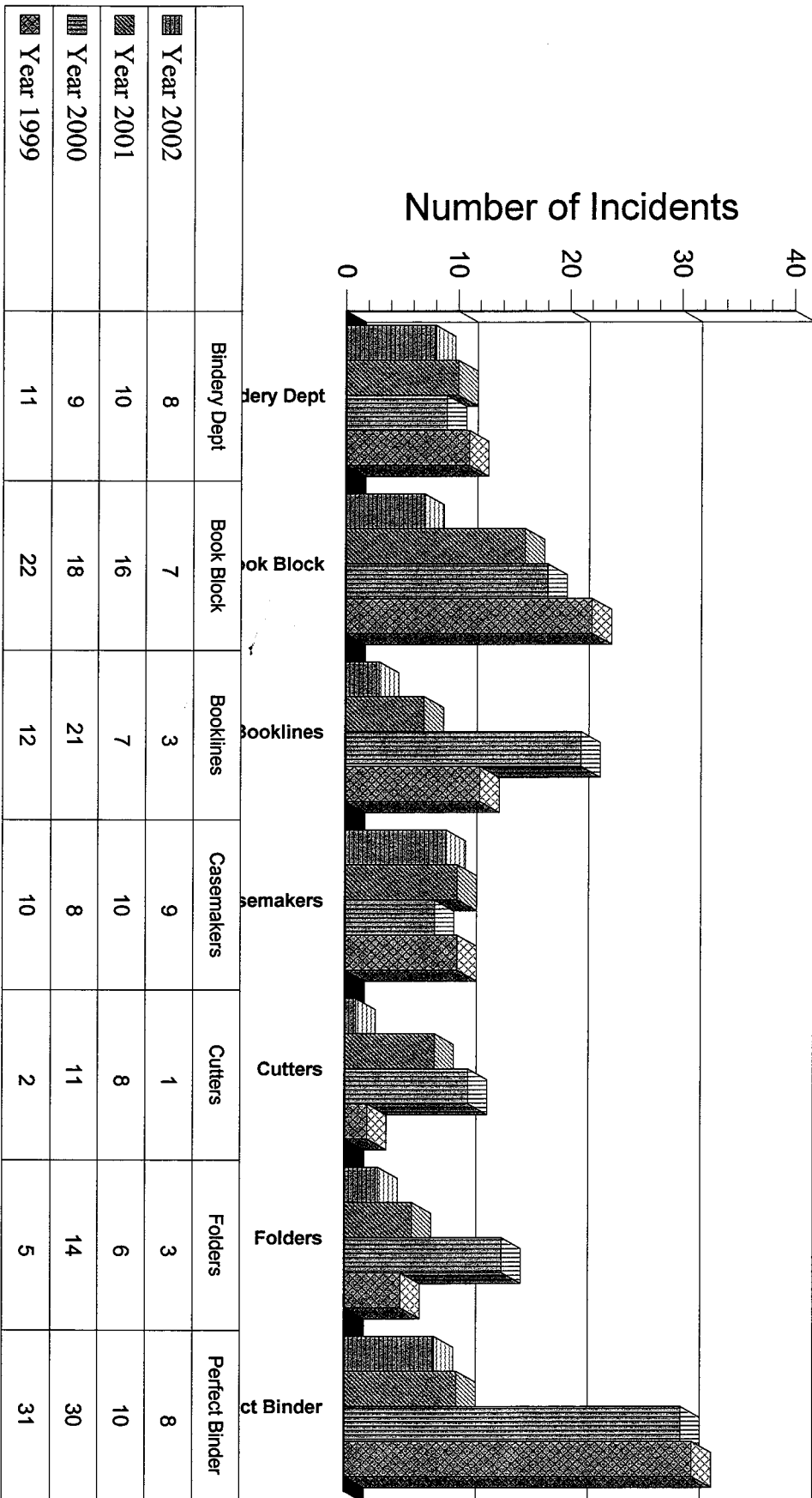
Incidents by Cause of Injury



Data collected as of 10/31/02

Appendix E
Incidents by General Locations
(Bindery Only)

Incidents by General Location Bindery Only

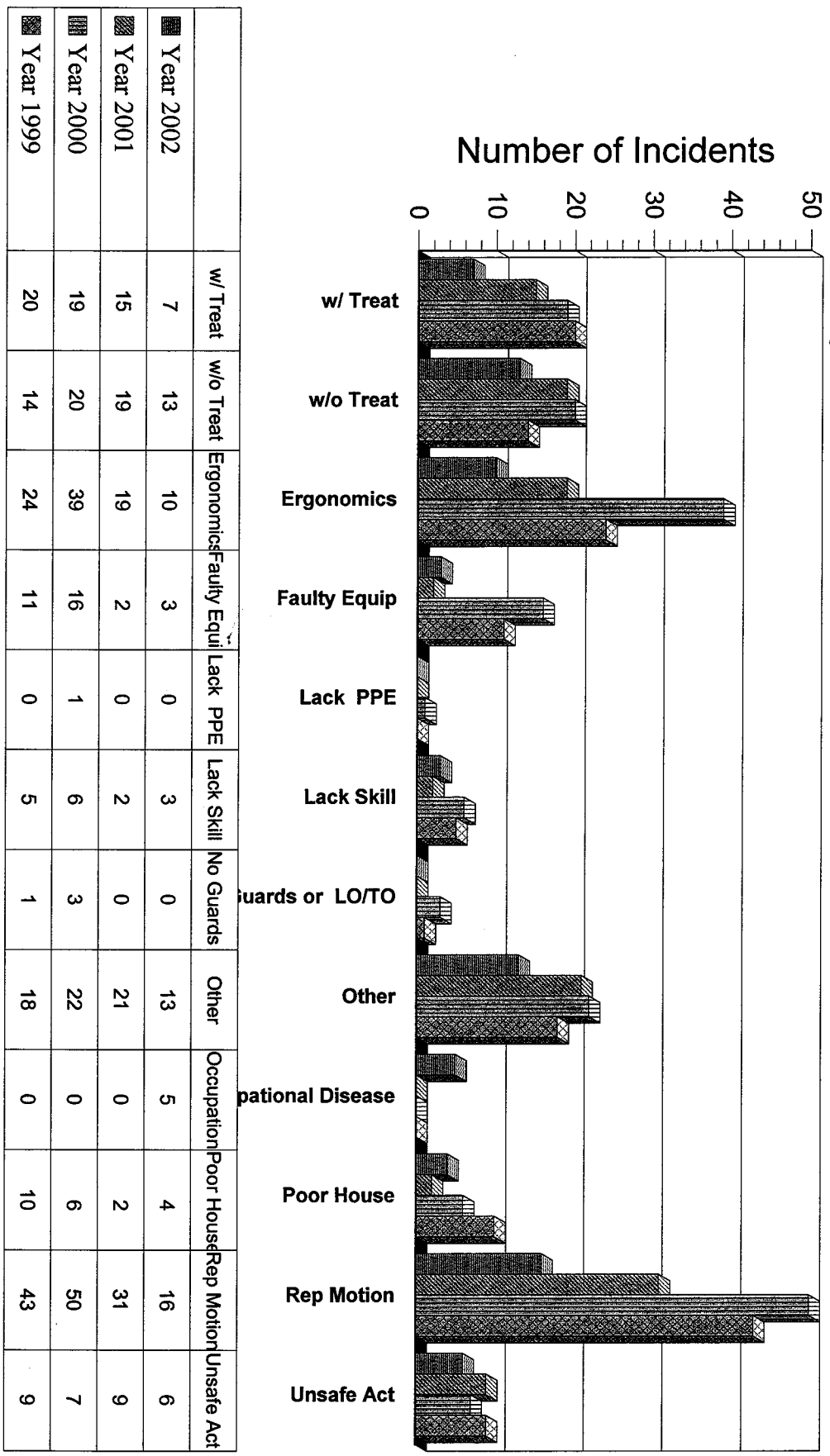


Data collected as of 10/31/02

Appendix F

Incidents by Injury Source

Incidents by Injury Source



Occupational Disease: Hearing shifts, Skin & Respiratory Disorders
 Data collected as of 10/31/02

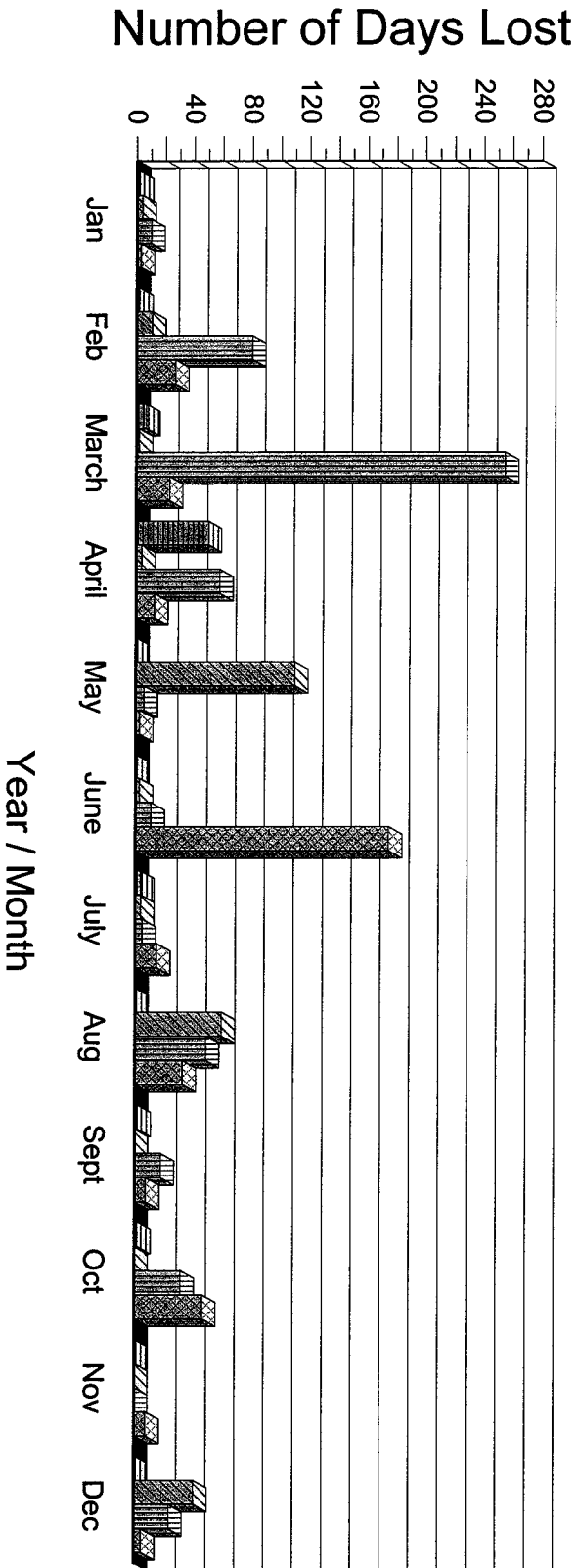
Appendix G

Number of Lost Days

(Based on Date of Injury)

Number of Lost Days

Based on date of injury

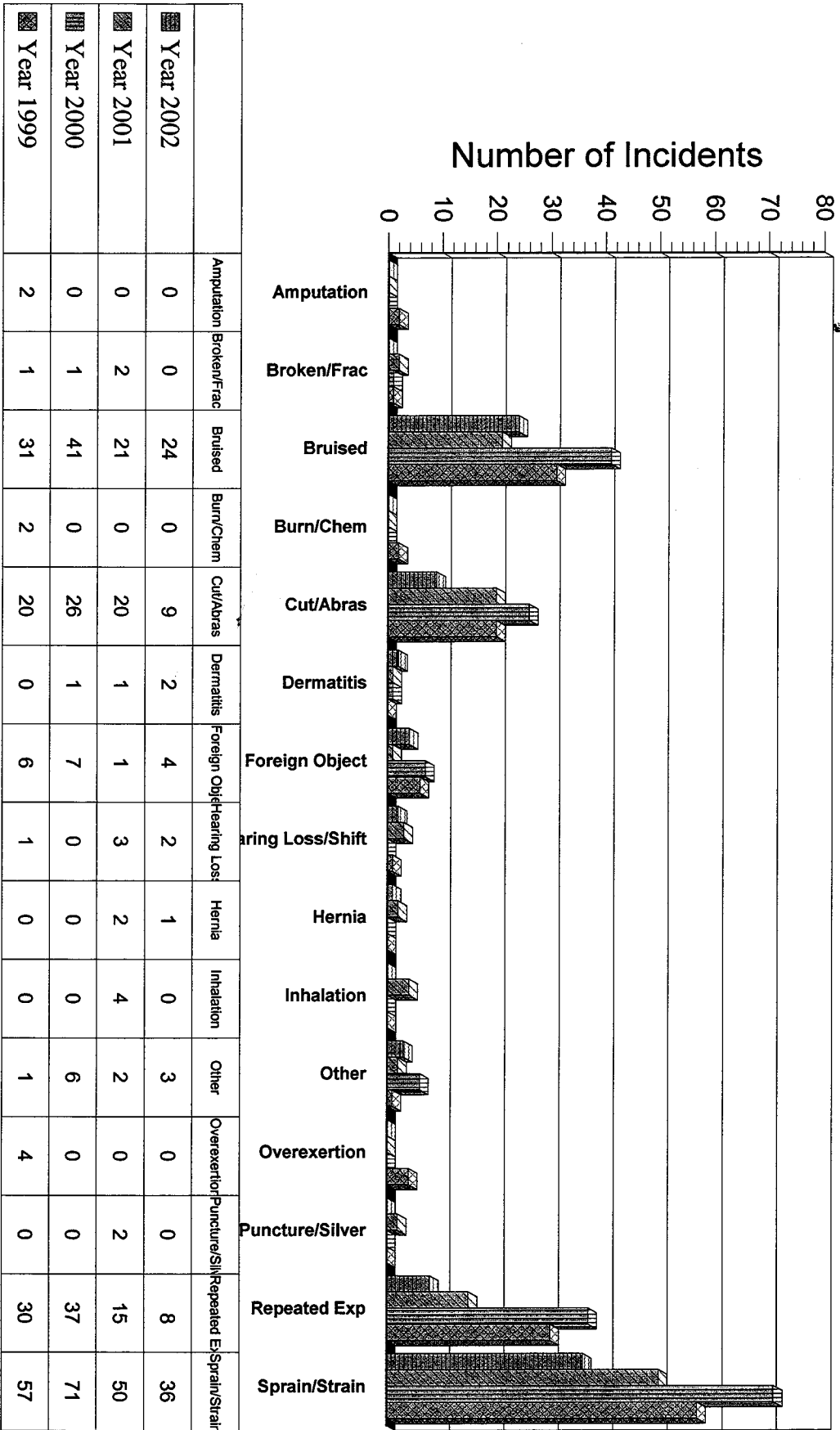


	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Year 2002	2	2	7	50	0	0	4	0	2	2	0	0
Year 2001	4	11	2	4	110	3	4	60	0	0	0	41
Year 2000	10	80	255	58	6	175	5	49	18	32	0	24
Year 1999	3	27	23	13	3	15	33	8	47	8	5	

Data collected as of 10/31/02

Appendix H
Incidents by Nature of Injury

Incidents by Nature of Injury

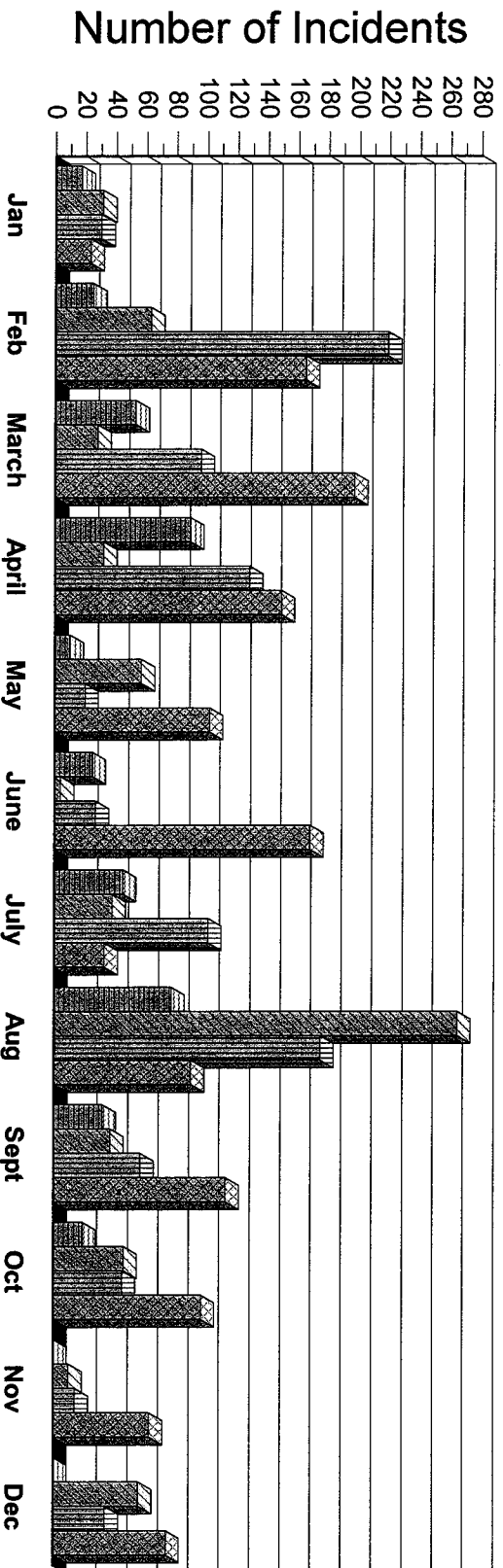


Data collected as of 10/31/02

Appendix I
Restricted Days
(Based on Date of Injury)

RESTRICTED DAYS

Based on date of Injury



	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Year 2002	17	25	53	89	10	25	45	77	32	19	0	0
Year 2001	31	63	28	32	57	4	38	265	37	46	10	56
Year 2000	30	219	96	128	20	27	101	175	57	45	14	34
Year 1999	23	165	197	149	102	168	33	90	113	97	63	74

Data collected as of 10/31/02

Appendix J

WPC Tracking Safety Report

(Recordable Incidents &

Total Incurred Costs)

Detailed Loss Information Report Summary

Generated by The Hartford Insurance Company on 11-04-02

<u>Total Claims For:</u>	<u>No. of Claims:</u>	<u>Paid Losses:</u>	<u>Paid Expense:</u>	<u>Open Losses:</u>	<u>Open Expense:</u>	<u>Total Incurred:</u>
WI - WPC (FY '99)	105	\$211,561.00	\$20,592.00	\$4,483.00	\$327.00	\$216,044.00
WI - WPC (FY '00)	120	\$219,140.00	\$57,187.00	\$345,333.00	\$6,558.00	\$564,472.00
WI - WPC (FY '01)	95	\$136,193.00	\$16,323.00	\$59,990.00	\$8,971.00	\$196,183.00
WI - WPC (FY '02)	57	\$84,186.00	\$13,210.00	\$44,674.00	\$7,462.00	\$128,860.00
WI - WPC (FY '03) 10 months	24	\$23,139.00		\$36,264.00		\$59,403.00

WPC Tracking Safety Report for Fiscal Year '03

Accidents / Injuries:	All Incidents	%	Recordable Incidents	%	Lost Days	Restricted Days	Total Incurred Cost: (W/C)	Lockout / Tagout	Near-Hit	Safety Conc.	Safety Viol.
Office:	1	2.3	0	0	0	0	\$0.00	0	0	0	0
Prep:											
First Shift	1	2.3	1	4	0	0	\$0.00	1	0	0	0
Second Shift	2	4.6	2	8	0	25	\$0.00				
Third Shift	0	0	0	0	0	0	\$0.00				
Press:											
First Shift	3	6.8	1	4	0	0	\$0.00	26	1	0	0
Second Shift	1	2.3	2	8	1	14	\$327.00				
Third Shift	5	11.3	1	4	3	36	\$7,121.00				
Bindery:											
First Shift	5	11.3	4	16	0	77	\$21,554.00	96	1	9	6
Second Shift	11	25	8	32	1	27	\$5,767.00				
Third Shift	10	22.7	3	12	48	71	\$24,096.00				
C.I. / Quality											
First Shift	1	2.3	0	0	0	0	\$0.00	0	0	0	0
Second Shift	0	0	0	0	0	0	\$0.00				
Third Shift	0	0	0	0	0	0	\$0.00				
Shipping:											
First Shift	3	6.8	1	4	0	14	\$402.00	21	0	2	0
Second Shift	1	2.3	2	8	3	14	\$136.00				
Third Shift	0	0	0	0	0	0	\$0.00				
Maintenance:											
First Shift	0	0	0	0	0	0	\$0.00	349	1	1	0
Second Shift	0	0	0	0	0	0	\$0.00				
Third Shift	0	0	0	0	0	0	\$0.00				
Inventory Control:											
First Shift	0	0	0	0	0	0	\$0.00	0	1	1	0
Second Shift	0	0	0	0	0	0	\$0.00				
Third Shift	0	0	0	0	0	0	\$0.00				
Totals:	44	100	24	100	56	278	\$59,403.00	493	4	13	6

Fiscal Year:	Recordable Incidents:	Compared to FY'03:	Incurred Cost:	Compared to FY'03:
FY'02 (APR - OCT)	41	42 % decrease	\$86,691	32 % decrease
FY'01 (APR - OCT)	68	65 % decrease	\$146,253	59 % decrease
FY'00 (APR - OCT)	62	61 % decrease	\$116,349	49 % decrease
FY'99 (APR - OCT)	79	70 % decrease	\$141,580	58 % decrease