

**A RISK ASSESSMENT AND ANALYSIS OF LOSS TO CONTROL THE
POTENTIAL OF INJURY AT XYZ SCHOOL DISTRICT**

by

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A Research Paper

Submitted in Partial Fulfillment of the

Requirements for the

Master of Science Degree in

Risk Control

Approved: 3 Semester Credits

A handwritten signature in black ink, appearing to read "Brian Finder", written over a horizontal line.

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ABSTRACT

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<u>A Risk Assessment and Analysis of Loss to Control the Potential of Injury at XYZ School District</u>			
(Title)			
Risk Control	Dr. Brian Finder	May, 2004	63
(Graduate Program)	(Research Advisor)	(Month/Year)	(# of Pages)
American Psychological Association, 5 th Edition			
(Name of Style Manual Used in this Study)			

In many school districts across the United States and Canada, losses are occurring as a result of injury to employees. Many of these injuries are taking place due to the fact that risk control efforts are not made to improve work conditions, employee actions, or the overall safety of the school system. In the XYZ School District, many of the same accidents are occurring. Therefore, the purpose of the study was to examine XYZ School District's insurance loss records and to determine where risk control efforts should be concentrated. The objectives of the study consisted of four areas of analysis,

which assisted in the development of solutions to the loss-producing circumstances. The goals of this investigation were to:

- 1) Assess previous losses incurred at XYZ School District to correlate their occurrence relative to tools and machines used, injury type, body part injured, and date of the loss.
- 2) Analyze accident/injury loss records of XYZ School District in order to quantify the monetary loss to the school district.
- 3) Prioritize the primary causes of loss in the XYZ school district based on occurrence as well as monetary loss.
- 4) Assess the current written policies, as well as employee practices, to determine what is being performed from a loss recordkeeping, as well as analysis, standpoint.

Loss data, provided by the XYZ School District, was entered into a spreadsheet and analyzed to determine loss trends. Through this analysis, top injury types were established, as well as total costs for the years examined (1999 to 2002). Policies and procedures of the district were also qualitatively analyzed to determine the safety status of the organization. Through this examination, deficiencies were recognized with the school district's current practices. The review of literature included national and state trends, major causes of loss in the school system, risk assessment activities, and the basics of a school health and safety program. Through the analysis, it was possible to recommend solutions which may help minimize loss-producing situations in the district.

ACKNOWLEDGMENTS

I would like to thank the University of Wisconsin-Stout Risk Control staff including Elbert Sorrell, Craig Jameson, Steven Senior, Lyle Koerner, and Gene Ruenger for being great facilitators for students in the program. Special thanks to Brian Finder, my research advisor, for his advice, support, and prompt feedback during the development of this research paper. I would also like to thank my parents, Randy and Nancy, for the continued support during my educational career. I would also like to thank my wife, Jamie for her encouragement and support throughout graduate school.

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CHAPTER I: INTRODUCTION

It appears that the occurrence of nonfatal occupational injuries/illnesses in the public school system today should be of a significant concern. From January of 1993 to April of 1999, the Wisconsin Association of School Boards (WASB) documented slips and falls and material handling as the highest areas of insurance claims in school districts throughout Wisconsin. During this time, there were approximately 7,000 slip and fall claims incurring nearly eleven million dollars in cost and 5,000 material handling claims costing nearly nine million dollars. Slips and falls and material handling account for approximately 65% of the total workers compensation costs in Wisconsin schools (Wausau Insurance Companies, 1999). It should be noted that these types of accidents are not only occurring in Wisconsin public schools. According to the U.S. Bureau of Labor Statistics (BLS), from 1998 to 2000, slips and falls and overexertion injuries were the top two injury types among schools in the nation. During these years, 3,840 claims were filed totaling \$12,065,455 in workers compensation costs (BLS, 1998 to 2000). Occupational injuries/illnesses incidence rates in public schools have not decreased in recent years (BLS, 1998 to 2001), attesting to the fact that school districts may not be focusing on the necessary risk control strategies to prevent, or at least reduce, loss.

The XYZ School District, which was the focus of this research study, employs approximately 650 full/part time employees and is located in the Fox Valley area of Wisconsin. Contrary to desired performance, losses resulting from injuries incurred at XYZ School District have not been consistently decreasing in the past four years. For example, in the XYZ School District's insurance contract's fiscal year 1999 (XYZ School District's insurance fiscal year runs from October to October), there were a total

of 24 claims in which the severity of the injuries was high. Workers compensation costs for these 24 claims totaled \$115,639. In the fiscal year 2000, there were 15 claims totaling \$3,436. During 2001, there were 26 workers compensation claims totaling \$9,031. In 2002, the number of claims decreased to 16, but incurred costs increased to \$14,737. Losses from injury at XYZ School District have also been high as far as lost workdays and worker compensation costs. Without the presence of a detailed loss analysis process, as well as the implementation of necessary risk control methods, it is probable that the occurrence of injuries will continue to result in losses for XYZ School District.

Purpose of the Study

The purpose of the study is to analyze XYZ School District's loss records and to determine where risk control efforts should be concentrated.

Goals of the Study

The goals of the study consist of four areas of analysis, which will serve as the outline for developing solutions to the loss-producing situation. The four goals of the study are to:

- 1) Assess previous losses incurred at XYZ School District to correlate their occurrence relative to tools and machines used, injury type, body part injured, and date of the loss.
- 2) Analyze accident/injury loss records of XYZ School District in order to quantify the monetary loss to the school district.
- 3) Prioritize the primary causes of loss in the XYZ School District, based on occurrence as well as monetary loss.

4) Assess the current written policies, as well as employee practices, to determine what is being performed from a loss recordkeeping, as well as analysis, standpoint.

Background and Significance

In any workplace, which includes a school setting, losses may occur in many forms. These forms of loss may consist of direct cost, such as workers compensation or indirect expense, such as the lost time of an injured employee. Ultimately, the direct and indirect costs result in lost assets. In the XYZ School District, the losses which were most recognizable have been workers compensation costs due to employee accidents. Many of these accidents have reoccurred due to the fact that problematic areas are not identified and further controlled. Losses resulting from these injuries have demonstrated an upward trend at the XYZ School District, resulting in direct costs and restricted or possibly lost, workdays. The losses which are occurring indicate deficiencies in the current methods being utilized to manage and reduce these incidents.

This study is the initial step in developing and implementing the risk control strategies necessary to identify and prioritize the causes of loss in the XYZ School District. The study will provide a framework which will examine the extent of the problem, provide a quantitative analysis of cost of the problem, and provide management with the information needed to make a well-informed decision regarding implementations of risk control methods to reduce loss.

Assumptions of the Study

All information provided by the participating parties is correct and accurate.

Definition of Terms

Accident-an unplanned, unwanted event that disrupts the orderly flow of the work process (Sinclair, 1997).

Incident-relates to any undesired or unwanted event that could (or does) degrade the efficiency of the business operation. These incidents could be accidents, quality or production problems, or security breaches such as theft (Sinclair, 1997).

Hazard analysis-systematic process for identifying hazards and recommending corrective action (Goetsch, 1996).

Hazard-condition or combination of conditions that, if left uncorrected might lead to accident, illness, or property damage (Goetsch, 1996).

Risk assessment-those activities that enable the risk manager to identify, evaluate, and measure risk and its potential impact on the organization (Williams, Smith, and Young, 1998).

Risk Control-all activities associated with avoiding, preventing, reducing, or otherwise controlling risk and uncertainties (Williams, Smith, and Young, 1998).

Risk identification-the process of identifying the exposures to potential human resource losses, as well as hazards and perils which lead to those losses (Williams, Smith, and Young, 1998).

Risk measurement-the process of determining the likelihood of a loss from an exposure and its probable severity (Williams, Smith, and Young, 1998).

CHAPTER II: LITERATURE REVIEW

The purpose of the study is to analyze XYZ School District's loss records and to determine where risk control efforts should be concentrated. This chapter will present a review of current literature in the area of safety analysis/hazard prevention and research to include the following topical areas: an analysis of the school loss trends at the national and state levels, the major causes of loss in the school system, an overview of risk identification/analysis and methods which may direct loss prevention strategies, and the basics of a school health and safety program.

The education system, in general, is far behind in health and safety in our schools. This is primarily due to budget cuts in schools, lack of training within management and workers, and a failure on management's part to take health and safety seriously (Sinclair, 1997). Injuries in public schools are a significant problem, but are often overlooked because of low frequency or severity rates. According to the Workers Compensation Board (WCB), the injury rate for employees in public school districts has increased by 11.3% from 1996 to 1999. This statistic attests to the pressing need for effective health and safety committees, training, education of all workers, and a fully implemented occupational safety/ health program in schools (British Columbia Teachers Federation, 2000).

National Trends

On the national level, falls from the same level is a major area of financial loss to the school districts. Across the United States, injuries resulting from slips and falls have demonstrated several dominant trends when U.S. Department of Labor, Bureau of Labor Statistics (BLS) data was examined (1998, 1999, 2000, and 2001). The Bureau of Labor

Statistics provides an analysis of nonfatal occupational injuries involving days away from work and illnesses by industry/selected events, which cause these losses. These events include: struck by object, struck against object, caught in or compressed, fall to lower level, fall on same level, slips or trips without fall, repetitive motion, exposure to harmful substance, transportation accidents, and fires/explosions (U.S. Department of Labor, Bureau of Labor Statistics, 1998 to 2001). It is important to report that the Bureau of Labor Statistics includes in their definition of days away from work, with or without restricted work activity, which is the same criteria used by OSHA in establishing workplace injury incidence rates. In the workplace, if employees are on a restricted work duty, they are counted as being away from work, thus recorded as lost workdays. For these reasons, the Bureau of Labor Statistics data is useful in identifying loss trends and injury patterns in school districts at the national level.

Injuries occurring in elementary and secondary schools in the United States for 1998 were the second highest of the years examined (1998 to 2001). Total injury cases in the elementary and secondary school for 1998 were 4,058. The top three types of injuries cases were slip and falls, overexertion, and struck by/or against. Slip and fall injuries were the highest, with 1,322 taking place, which was 32.6% of the total incidents. The quantity of struck by/or against injuries occurring for 1998 was 760. Injuries involving overexertion were the third highest, with 760 (U.S. Department of Labor, Bureau of Labor Statistics, 1998). The three most frequent injury types observed (overexertion, struck by or against, slip and falls) represented nearly 73% of the total incidents in 1998.

At the national level, for 1999, the total injuries decreased 31% from the previous year, but the top three injury types remained unchanged. Data accumulated by the BLS

reported a total of 2,820 injury cases which involved lost workdays in elementary and secondary schools. Of these 2,820 cases, 702 injuries were a direct result of slips and falls on the same level or to a lower level. Five-hundred forty one reported injuries were due to overexertion, with nearly half caused during lifting and material handling. The third highest cause of accident in 1999 was struck by an object or against an object, which totaled 522 injuries (U.S. Department of Labor, Bureau of Labor Statistics, 1999). Overall, injuries due to slips and falls, overexertion and struck by or against an object represented nearly 63% of the total incurred injuries for school districts in 1999.

BLS data from 2000 confirmed an increase in the number of occupational injuries in elementary/ secondary schools within the United States, resulting from overexertion, slips and falls, and struck by or against. During this year, total incidents rose to 3,695, a 24% increase from 1999. The number of slips and falls on the same level or to a lower level also elevated, to 977. 815 injuries involved overexertion, which was a 33.7% increase from 1999. Also, injuries involving struck by or against totaled 594, which was slightly higher than the previous year. Consequently, slip and fall injuries were the largest percentage, with 26.4% occurring in this category. Overexertion was the second highest percentage, with 22%. Injuries involving struck by or against dropped slightly from 1999, making up 16% of the total injuries (U.S. Department of Labor, Bureau of Labor Statistics, 2000). Overall, these three categories of injuries (overexertion, struck by or against, slip and falls) made up 64.5% of the total cases for the year 2000.

Injuries occurring in the nation's elementary and secondary schools, for 2001, were the highest of the years observed (1998 to 2001) and the top three injury types remained constant. For the year 2001, there was another increase in the total number of

injuries, with 4,159 which was a 22% increase from the preceding year. Slip and fall injuries were the highest, with 1,238, which was considerably higher than the slip and fall injuries for 2000. Overexertion injuries also rose to 1,007, while injuries involving struck by or against elevated to 759 from 594 a year earlier. Slip and fall injuries remained the largest injury type, with 29.7%; overexertion remained the second highest with 24.2%, while struck by or against injuries were at 18.2% (U.S. Department of Labor, Bureau of Labor Statistics, 2001). Injuries for school districts in the United States, in 2001, were the highest of the years under study (1998 to 2001), but the top three injury types (overexertion, struck by or against, slip and falls) were unchanged, representing 54% of the total incidents.

From an examination of the Bureau of Labor Statistics data, injuries occurring in school districts across the United States have not shown a positive change over the four years which were examined (1999 to 2001). From 1999 to 2001, total injuries were on the rise with the most significant occurring from overexertion, followed by slips and falls (U.S. Department of Labor, Bureau of Labor Statistics 1998 to 2001). This trend from overexertion and slips and falls is not only observed at the national level, but is also reflected in state figures, a fact that further confirms the persistent nature of the problem.

State Trends

The Wisconsin Association of School Boards (WASB) worker compensation claims and Department of Workforce Development (DWD) worker compensation claims in which the XYZ School District is located were examined in order to determine state trends in comparison to national trends. Data from the WASB was available from the years 1993 through 1998. As a whole, the WASB identified slips/ falls and handling as

the highest areas of claims, as well as total losses incurred. During this five year period, there were approximately 7,500 slip and fall claims, totaling slightly over \$10 million. During the same time period, nearly 5,500 handling injuries took place, totaling slightly under \$10 million in compensation costs. Overall, from 1993 to 1998, approximately 13,000 slips/ falls and handling injuries took place totaling nearly \$20 million in workers compensation costs (Wausau Insurance Companies, 1999).

Data from the Department of Workforce Development (DWD) in Wisconsin (1998 to 2001) demonstrates that the injury trend for school district employees is not declining. For example, in 1998, the state recorded 1,169 claims totaling \$3,473, 053. During 1999, the injury/illness claims increased slightly to 1,321 claims and a cost of \$4,321,615 in workers compensation expense. The figures for 2000 demonstrated a similar increase in claims to 1,350 and \$4,270,787 in costs. Then in 2001, the number of claims closed was 1,297, with the highest workers compensation costs for a four year time period (1998 to 2001), of \$4,963,820. According to the DWD, from 1998 to 2001, 5,137 injuries took place, costing slightly over \$17 million in workers compensation (State of Wisconsin, Department of Workforce Development, 1998 to 2001).

Teacher's top statistics (January 1, 1998 to February, 2003), distributed by the WASB and Wausau Insurance Companies, demonstrates the most common ways teachers and custodians are hurt, as well as the body parts which are injured. These figures display that the top injury categories for teachers and custodians were slips and falls, material handling, and struck by or against. The data also presents that back injuries are common among teachers and custodians, followed by injury to the hands, wrists, or fingers. A review of the data is shown in Tables 1 and 2 below.

Table 1a.**Teachers Top Statistics - January 1, 1998 to February, 2003**

	Material Handling	Slips and Falls	Struck by Objects	Violence	Other
How Teachers are Hurt 5,640 Injuries	454 (8%)	1,150 (20%)	679 (12%)	500 (9%)	2,857 (51%)

Table 1b.

	Back	Hands, Wrists, Fingers	Multiple Parts	Foot	Other
What Teachers Hurt (5,640 Injuries)	500 (9%)	597 (11%)	463 (8%)	400 (7%)	3,680 (65%)

Table 2a.**Custodians Top Statistics - January 1, 1998 to February, 2003**

	Material Handling	Struck by Objects	Slips and Falls	Other
How Custodians are Hurt (2,223 Injuries)	784 (35%)	542 (24%)	423 (19%)	474 (22%)

Table 2b.

	Lower Back	Knee	Hands	Other
What Custodians Hurt (2,223 Injuries)	523 (24%)	194 (9%)	304 (14%)	1,202 (53%)

Source: Wausau Insurance Companies (2003).

It is interesting to note that when the increase in compensation cost is compared to the state's average annual employment rate for elementary and secondary schools, there is a correlation with the increases observed in the figures (for direct comparison purposes, the rates from 1998 to 2001 were used). The average employment for schools in the United States has been consistently inclining for the years examined (1998 to 2001). For

example, average employment for 1998 was 7,131,000 workers compared to 7,451,000 in 1999, 7,629,000 in 2000, and 7,735,000 in 2001 (U.S. Census Bureau, 2002). This demonstrates an increase in the field of 604,000 employees for the years 1998 to 2001. It is probable that the increase in the number of employed workers and the subsequent increase in total number of hours worked did have some impact on the higher compensation claims/costs as observed in the data.

The trends and patterns in cases involving school employee injury/illness provide convincing evidences of the pervasiveness of the problem. At the national level, BLS data demonstrated that total injuries were progressing on an upward trend from 1998 to 2001. Incidences involving slips and falls, overexertion, and struck by or against, remained the top three injury types for years examined (1998 to 2001). In support of the employment rate data, the incidence rate for total lost workdays also increased from 2.9 in 1999 to 3.2 in 2000 (U.S. Census Bureau, 2002). Likewise, compensation claim figures at the state level demonstrated a slight upward trend in the average cost per claim, as well as the total workers compensation dollars paid. The loss trend data, at the national and state level, reveal the importance of developing and implementing risk control strategies to reduce the occurrence of injury in the school system.

Major Causes of Loss in the School System

Due to uncontrolled hazards in schools, many severe injuries tend to occur. Teacher cases to date point out that not only is there a great physical price for these injuries, but also psychological and social consequences (Sinclair, 1997). Therefore, better control of hazards in the school system is needed, due to the great personal price

that is paid by a worker. According to statistics compiled by Wausau Insurance Companies (1999), the leading causes for Wisconsin school employee injuries are:

- 1) Slips and falls
- 2) Handling (lifting/carrying, pulling/pushing, other strains)
- 3) Involuntary bodily motions (bending, reaching, and slipping, without falling to the ground—"catching balance")
- 4) Being struck by an object or objects (falling, flying, material being handled, other)
- 5) Contact (struck against)

(Wausau Insurance Companies, 1999).

The injury types listed above are common among teachers across the United States, as well as Canada. According to the British Columbia Workers Compensation Board, from 1992 to 1996, 73% of all claims were due to musculoskeletal injuries, which totaled slightly over \$6 million in claims cost (Sinclair, 1997). These injuries would include slips and falls, overexertion, struck by/or against and bodily motion. Due to the cost of these injuries, both personal and financial, it is probable that there is a real incentive on the part of the employer/teachers to ensure that the workplace is protected and the number of accidents is kept to a minimum.

Slips and Falls

Slips and falls are accidents which occur when the worker's center of gravity is suddenly thrown out of balance (e.g., slippery ice causes a foot to shoot out from under the worker). In a typical year, more than 10,000 lives are lost due to falls and more than 16% of all disabling injuries are the result of falls (Goetsch, 1996). The most common

setting for this type of accident is falls on the same level, such as parking lots, sidewalks, hallways, classrooms, and other level surfaces (Wausau Insurance Companies, January, 1998). Slips and falls may cause serious injury and long-term health problems, yet most of them can be prevented by implementing control measures and simply ensuring that the employer is maintaining the workplace in a responsible manner. Some of the reported causes of slips and falls by teachers are hallways crowded with boxes and other obstacles, floors wet and/or slippery, improper walkways from portable classrooms to main school, ice on the sidewalks/pathways, snow not cleared from sidewalks/pathways, classroom pathways/aisles blocked by materials, stairway treads broken, stairway handrails broken, and carrying too many materials that prevented worker from seeing the path ahead (Sinclair, 1997). It is likely that many serious injuries, as well as deaths, are the result of slips and falls and can be prevented if proper precautions are followed in the workplace.

Overexertion/Material Handling Injuries

Material handling/overexertion injuries are a major cause of loss for Wisconsin school districts and tend to occur when employees work beyond their physical limits. (Wausau Insurance Companies, 1999). According to the National Safety Council (NSC), almost 31% of all work injuries are caused by overexertion (Goetsch, 1996). Improper lifting, carrying, pulling/pushing, and other strains may cause what is called an overexertion injury. Sometimes the body or the stressed part is not adequately conditioned to perform or sustain the particular activity. Some of the common overexertion injuries include:

- 1) Muscle strains
- 2) Ligament strains

3) Herniated discs

4) Pinched nerves

5) Hernias

(Sinclair, 1997).

Many situations often arise in the school system that could cause overexertion injuries such as strains, herniated discs, pinched nerves, etc. The most common root cause that results in overexertion injuries is improper lifting (Sinclair, 1997). Improper lifting, in fact, accounts for approximately \$12 million in worker compensation costs annually (Goetsch, 1996). Teacher musculoskeletal injuries are often caused by lifting a student, carrying a box of books, pushing a heavy piece of equipment, moving classroom or school contents without assistance, and demonstrating a skill or technique in physical education. Overexertion injuries are often sustained when the body is in a poorly aligned position while exerting force to undertake a particular action. Cramped spaces, excessive workload, lack of mechanical or other aids, and poor ergonomic design are common causes of these injuries (Sinclair, 1997). In general, improper lifting techniques should be avoided to minimize material handling/overexertion injuries, consequently, reducing financial and personal costs.

Risk Assessment

Risk assessment consists of those activities that enable the risk manager to identify, evaluate, and measure risks and their potential impact on the organization. This assessment is a formal method of increasing the understanding of the risk associated with an activity. This process is used to develop information involving the identification of risk, measurement of the potential for loss, and analysis of hazards (Williams, Smith, and

Young, 1998). Through the identification of risks, safety personnel can continuously recognize hazardous areas and develop information on sources of risk, as well as risk factors. Some examples of risk identification activities would include an on-site inspection or analyzing loss records to determine areas which are frequently causing accidents. After the identification of hazards, risk measurement techniques are utilized to rank this possible area of loss and the likelihood of occurrence. A hazard analysis is then conducted to systematically reveal hazards which should be investigated more carefully (Goestch, 1996). Overall, the assessment components will help the risk manager gain a better understanding of hazards and their potential for loss.

Risk Identification

Risk identification is the method by which an organization systematically can continuously identify risks and uncertainties (Williams, Smith, and Young, 1998). Once hazards associated with the operations of the company/school district are identified, it is easier to develop and implement appropriate controls and to determine the necessity for formal written procedures. Some techniques/methods to identify risks of an operation or school include:

- 1) On-site inspections
- 2) Analysis of loss records
- 3) Employee surveys
- 4) Self inspection checklists

(Williams, Smith, and Young, 1998).

Risk identification is not only the duty of the risk manager, but all employees/teachers must also attempt to recognize risks so safe improvements can be

made to the general work environment. Proactive risk identification methods are preferred over reactive risk identification processes because the hazardous situations are fixed, optimistically, before they cause injury. Reactive risk recognition is an after-the-injury type of risk detection. Teacher self assessments, employee surveys, and on-site inspections, conducted by risk managers are proactive methods which are easily conducted, taking minimal time (Sinclair, 1997). The inspections may utilize checklists as a tool to help guide the assessment and to ensure accurate recording. The checklist will remind the inspector of the possible hazards and facilitates a comparison with existing conditions (Williams, Smith, and Young, 1998). It can also save time and will provide a permanent record of the inspection (Sinclair, 1997). By conducting inspections frequently and implementing risk identification techniques, employers, as well as employees, can keep their work areas free from hazards.

Measurement of Risk

Risk measurement is the process of determining the likelihood of a loss from an exposure and its possible severity. In other words, risk measurement is the estimation of the probability/severity of a potential loss. The probability of losses occurring depends on factors such as the number of people exposed to the hazards, the level of experience of the workers/teachers, and the frequency of exposure to possible hazards. For example, the more teachers who are exposed to icy parking conditions, the greater the chance for a slip and fall to occur. Routine operations are much less hazardous than non-routine operations (Williams, Smith, and Young, 1998). A routine operation is performed on a regular basis, whereas a non-routine operation may be executed less frequently. Estimates of possible financial consequences are then analyzed and ranked according to

the importance of the risks to the organization (Williams, Smith, and Young, 1998). In general, risk measurement methods will aid in rating hazardous situations, and consequently, control methods can be implemented to repair the most severe unsafe conditions/actions first.

Hazard Analysis

If a hazard is a condition that could cause an injury, hazard analysis is a systematic process for identifying these hazards and recommending corrective action. Hazards, which are evaluated through a hazard analysis, are usually identified through the experience of other organizations or insurers (Goestch, 1996). Analysis cannot be limited to hazards which have already caused loss. The hazards that have not caused loss are most commonly discovered through regular inspections (Williams, Smith, and Young, 1998). There are two basic approaches to a hazard analysis, including a preliminary analysis and a detailed analysis. A preliminary analysis is conducted to identify potential hazards and to prioritize them. A detailed analysis involves a more in-depth study using a number of different methods to decrease the potential of serious injury or loss. Some detailed analysis methods would include:

- 1) Failure mode and effect
- 2) Fault tree analysis
- 3) Risk analysis
- 4) Hazard and operability review (Goestch, 1996).

Typically, a preliminary hazard analysis is sufficient to identify potential hazards and to prioritize them accordingly (Goestch, 1996). Once a hazard is identified, there must be immediate corrective action to remove or reduce the hazard. This involves

documenting the corrective actions taken, supervision and training necessary, maintenance/housekeeping requirements, and responsibilities (Sinclair, 1997). Generally, hazard analysis, both preliminary and detailed, should reveal situations which need to be examined more cautiously and carefully.

Basics of a School Health and Safety Program

Every school district should have a safety and health program in place to prevent or minimize injuries. The program, in general, will have many components which need to be followed for the system to operate efficiently and successfully. The plan should take a comprehensive, preventive approach to tackle workplace problems at their source. For the program to be successful, there needs to be a real commitment from all employees to reduce the toll of workplace accidents and illnesses (Sinclair, 1997). A well-designed program may possibly include the following elements: school safety policy, school safety plan, health and safety committees, clear roles and responsibilities, safe work performance expectations, training of employees, workplace inspections, and accident investigations and recording (Sinclair, 1997). By implementing these key elements into the program, the following will be promoted:

- 1) Safe and healthy work environment for students and employees
- 2) Compliance with safety rules and regulations prescribed by state/federal agencies
- 3) Minimization of mechanical hazards and unsafe conditions in school facilities
- 4) Employee knowledge of acceptable safety procedures and practices
- 5) Development of a safety culture among staff that will help ensure a safe and healthy school (Wisconsin Association of School Boards, 1999).

The program, in general, will provide procedures, rules, and policies that, if followed, will provide a workplace where safety is promoted.

School Safety Policy

A school safety policy is a statement of the school district's aims and responsibilities of the school board, administration, and staff. Promoting safety begins by having a published safety policy in place (Goestch, 1996). The policy should state the program's main objectives and a financial commitment for health and safety. Also included in the policy statement is the school board's, administration's, and staff's general responsibilities (Sinclair, 1997). In addition, the program should indicate clearly to the employees that they are expected to perform their duties with safety foremost in their minds. The policy should convey at least the following messages:

- 1) The company/school district is committed to health and safety
- 2) Employees are expected to perform their daily duties in a safe manner

(Goestch, 1996).

All organizations should have a policy in place to promote health/safety in the workplace, as well as to demonstrate to employees the business's obligation to a hazard-free environment.

School Safety Plan

Since April 1st of 2000, Wisconsin school boards have been required to have a safety plan in effect for each school in their district. The law requirement was included in the 1999 Wisconsin Act 9 (Wisconsin Association of School Boards, 1999). The regulation is broad in scope in that it does not specify what the school safety plan must include. Local districts can determine what components to include in their individual

school safety plan. The Wisconsin Association of School Boards (WASB) recommends that school safety plans address the following components:

- 1) Preventive measures
- 2) Intervention strategies
- 3) Crisis management plans

Preventive measures involve setting clear expectations for individual behavior and reinforcing acceptable behavior. Preventive measures may include: establishing safety rules for staff and students, conducting regular on-site inspections of buildings and grounds, or appointing school safety patrols (Wisconsin Association of School Boards, 1999). These preventative measures are basic elements which will provide a healthy environment for staff/students through the reduction of unsafe acts or conditions.

Intervention activities seek to act quickly to create a safer environment and target attention/resources to an identified problem to isolate it. Although prevention measures have been effective in decreasing the number of accidents, alone they cannot eliminate all of them. Therefore, school officials must use intervention strategies when the potential for a problem exists or when accidents unfortunately occur. These intervention strategies involve minimizing the damage of accidents and preventing them from reoccurring. A few examples of intervention strategies used by school districts may include establishing a system for reporting accidents and unsafe conditions, providing training for staff, and having procedures in place for providing emergency first aid (Wisconsin Association of School Boards, 1999). With the application of intervention strategies, as well as prevention measures, the frequency and intensity of incidents should be minimized.

Crisis management is a response plan prepared for dealing with an emergency that endangers the health and welfare of staff/students. Although school officials may not be able to plan for every possible emergency situation that occurs, they can offer structure and organization for staff in trying to deal with the situation. This can help ensure swift action when timing is a critical factor. The crisis emergency plan, in general, should cover different crisis scenarios such as a bus accident, utility failure, hazardous material release, fire, tornado, etc. To prepare for a crisis situation, school officials should include components such as staff roles/responsibilities and staff training to their emergency plan development (Wisconsin Association of School Boards, 1999). By implementing a crisis management plan, the staff will have the skills necessary to lead others in the case of an emergency, and consequently, reducing possible loss.

Occupational Health and Safety Committees

The primary function of a safety committee is to create and maintain injury prevention as a goal (Wausau Insurance Companies, 2003). Safety committees are usually composed of four members in a small school; however, a large school will require a more diverse representation in order to encompass all types of work which are performed. Safety committees, in general, are constituted of one management representative and the remaining members are worker representatives (Sinclair, 1997). Members of safety committees are usually rotated periodically to give more employees a chance to participate (Wausau Insurance Companies, 2003). The most effective committees are those that are composed from a variety of workers representing all departments. This type of committee structure gives each member a constituent group for which he/she is responsible and also gives all employees a representative voice on the

committee (Goestch, 1996). Duties or typical activities in which safety committees are involved consist of:

- 1) Participating in workplace inspections and investigation of accidents.
- 2) Dealing with employee complaints relating to health and safety.
- 3) Consulting with workers and the employer regarding the improvements of the work environment (Sinclair, 1997).
- 4) Coordinating training programs to maintain employee knowledge of safe work activities.
- 5) Assisting new employees in becoming competent and familiar with the company's/school's safety policies.
- 6) Conducting monthly hazard surveillance tours to identify situations that may be unhealthy or unsafe for workers and putting forth efforts to respond to the situations.
- 7) Individually promoting safety activities through setting good examples in the workplace and responding to concerns/complaints in the area of safety.
- 8) Reviewing incident investigation reports/near misses which have occurred and helping determine corrective actions (Wausau Insurance Companies, 2003).

There are advantages to the safety committee approach which make it a valuable method. Usually, operating personnel know more about the processes and machines than a safety manager or administration and, in addition, can provide many valuable, as well as practical, ideas. Operating personnel may also accept new policies and procedures more easily if these procedures are developed by employees like themselves. Eventually, the safety committee becomes a vehicle for safety and health training (Asfahl, 1995).

Committees, in general, are a beneficial component of any organization and will offer workers some responsibility for safety in the workplace.

Safe Work Performance Expectations

Under the Occupational Safety and Health Act (OSH Act), all employees are expected to follow all objectives for safe work performance and to be responsible for their actions/behavior (U.S. Department of Labor, 1970). Workers, in general, play a very important role in the success or failure of the safety program. Some of the general safety expectations of employees are:

- 1) Practice safe work habits and follow all safety mandates, expectations, and regulations
- 2) Wear and maintain all safety equipment
- 3) Report injuries and incidents to management
- 4) Participate in safety by attending meetings or submitting suggestions for improvement

This list of expectations is not all-inclusive, but is the minimum general requirement with which employees should comply. Along with the general requirements, there are many job specific work expectations that should be followed to avoid accidents and injury. Job specific guidelines may include hand tool use, ladder use, material storage, lifting and carrying, housekeeping, etc. These work performance requirements are established to protect lives/property and should be followed by employees to help protect themselves and their coworkers (Sinclair, 1997). In a school setting, it is probable that an explanation of performance expectations may discourage many unsafe activities from occurring.

Clear Roles and Responsibilities

In order for a program to function, everyone in the system must know who is responsible for what part of the program and who ultimately has the authority to correct hazardous conditions or situations. In the school system, there may possibly be three groups of individuals who have different responsibilities. Group one may consist of the district administration or school board. Group two could be composed of the administrative officers/safety committees appointed by the district administration. Lastly, group three might consist of teachers, custodians, and other workers in the school. According to Sinclair (1997), the following are possible responsibilities for each of these groups:

Group one-Administration/School Board

- Develop proper work procedures
- Work with the district health and safety committees
- Provide workers and supervisors with information about OSHA regulations
- Train and instruct all workers/supervisors
- Provide first aid facilities and PPE
- Report accidents to proper authorities
- Conduct accident investigation of all work related illnesses, accidents, or unsafe conditions

Group two-Administrative Officers/Safety Committees

- Know and enforce OSHA regulations and other standards
- Provide orientation to all new workers, explaining the safety policies and procedures

- Organize health and safety training
- Ensure regular inspections and investigations are conducted
- Ensure all accidents or near misses are reported properly
- Ensure PPE are made available and maintained
- Stop work where hazardous conditions exist
- Only allow trained/authorized workers to operate equipment

Group three-Teachers/General Employees

- Follow safe work procedures
- Report unsafe acts/conditions (Appendix C)
- Report injuries and illnesses immediately
- Participate in workplace safety committees (Sinclair, 1997).

With all employees knowing who is accountable for each area of the program, it is less likely that certain responsibilities will be overlooked.

Training of Employees

Despite a recent trend toward concentration on unsafe conditions, a number of safety professionals still attribute most worker injuries to unsafe acts. Deep-rooted, unsafe habits and lack of overall knowledge about job hazards are major hurdles to worker safety and health. These are two areas where training should be focused (Asfahl, 1995). Safety training is one of the best ways to promote safety or safe acts in the workplace/school. Training should generally be part of the new employee orientation process to familiarize workers with safety policies and procedures. Teachers may need to know how to fill out certain forms, what to do in case of an emergency, general policy

and procedures, etc. Consequently, newly hired personnel should receive the following types of training as soon as possible:

- Orientation of facilities-emergency locations, cafeteria, restrooms, etc.
- Orientation of work area-primary location where he/she performs job-related tasks
- Equipment instructions-introduction to all tools, machinery, and vehicles the individual will be using
- Task oriented lessons-instructions on how to best perform individual's work tasks
- Expectations-clear explanation of what the individual must do to meet the requirements of the job
- Information/explanation of how the individual will be evaluated, such as performance standards and expectations (U.S. Department of Education, 2003).

The new teacher training checklist, which is shown in Appendix A, can help ensure that all areas of concern are explained during the orientation and documented. Another reason for safety training is because the Occupational Safety and Health Act, or OSH Act of 1970, mandates that all employers provide some type of safety training to their employees. The OSH Act recommends or requires the following: education and training of all employees, proper working conditions, provision of information about all hazards on the job, provisions of the symptoms of exposure to toxic chemicals that may be present in the workplace/school, and provision of information about emergency response and treatment procedures (Goestch, 1996). Admittedly, there is likely a

trade-off among the benefits of staff training and the cost of lost work time during training. Schools, however, often have professional development time available and could possibly use it to implement needed training.

Workplace Inspections

Regular inspections are one of the most important components of a health and safety program and involve observing the organization's operations, as well as identifying or analyzing possible hazards. Inspections warn all teachers and staff of these potential hazards, such as unsafe practices and conditions, before they occur. They also provide needed information to health and safety committees. During regular inspections, the employer's main objective should be to assess the workplace, but should not be limited to unsafe conditions. Unsafe work practices and methods should be included in the inspection.

The scope of the inspection could include, but is not limited to: housekeeping, buildings and grounds, hand and power tools, ergonomics, receiving and shipping, etc. (Wausau Insurance Companies, 2003). Locating dangerous conditions or disclosing unsafe practices are two of the best methods of demonstrating to employees the school district's interest in safety. Regular inspections help employees evaluate their own immediate work areas and correct unsafe conditions or actions themselves (Wausau Insurance Companies, 2003). Inspections are a component which is necessary for the identification and abatement of existing workplace hazards.

During the inspection, it is necessary to record any unsafe actions or conditions which were observed. To record inspection findings, checklists or developed forms may be used. Checklists may ensure inspections are completed thoroughly/consistently and

will also save time. A risk control specialist may develop a checklist created specifically for the organization, which can assist in the inspection process. In a school setting, this inspection may be performed by assistant principals, maintenance workers, or even teachers (Sinclair, 1997). By performing inspections at monthly intervals in schools, as recommended by the British Columbia Teachers Federation, the development of unsafe working conditions or practices should be reduced (Sinclair, 1997). These checklists can help to prioritize hazards which exist and list actions which can be taken to abate areas of risk.

After the workplace inspection takes place, a report should be completed to formally document conditions or actions which were observed. A written report will communicate to management, the administration, safety committees, and workers of the situation in the workplace or school. The report will be used to construct records, plot trends, and develop statistics on the hazards which were found. More importantly, the report will be used to repair unsafe or unhealthy acts/conditions (Sinclair, 1997). A final report should be developed to document that an inspection has occurred and should include the results of the assessment.

Incident Investigation and Recording

An accident investigation is a process to analyze an incident and determine the root cause. The investigation of accidents and incidents is essential for an occupational health and safety program. Without a correct and thorough investigation, cause of accidents will remain unknown. Therefore, no preventative measures can be introduced to make the workplace safer (Sinclair, 1997). The accident investigation is needed to determine and implement strategies to prevent the reoccurrence of an accident.

There is a series of events which must take place after an accident occurs. The first step that must be completed after an accident takes place is the implementation of emergency procedures. This involves bringing the situation under control and caring for the injured worker. After emergency procedures have been accomplished, the accident investigation should occur (Goestch, 1996). Each investigation should take place as soon as possible after the incident to reduce the chance of important facts being destroyed or removed (Wausau Insurance Companies, 2003). The purpose of the investigation is to collect facts, not to find a fault (Goestch, 1996). The following items should be covered in the incident investigation:

- 1) Describe injuries which were sustained by employees and/or damages to equipment
- 2) What was involved in the incident (cover events involved in the incident and how they occurred)
- 3) How was the incident caused (describe unsafe act, condition, or defective equipment/material)
- 4) How can the incident be prevented in the future (cover corrective action to prevent reoccurrence of the accident) (Wausau Insurance Companies, 2003).

Other activities which may be involved in a comprehensive accident investigation could include photographing the scene, interviewing witnesses, and recording all evidence (Goestch, 1996). By following the necessary procedural steps of the investigation, all the facts, which are needed to accurately determine the cause, will be collected.

An accident investigation should culminate in a comprehensive accident report which will verify all evidence pertaining to the incident. The purpose of this report is to

record all findings of the accident investigation, the cause of the accident, and recommendations for corrective action. The incident investigation form in Appendix B is an example which may be implemented to record observations during the accident investigation. Accident report forms vary from organization to organization; however, the information in them is fairly standard. Regardless of the type of form used, the report should contain at least the information needed to satisfy OSHA's minimum recording requirements (Goestch, 1996). By conducting a comprehensive investigation and report, the cause of an accident should be determined and corrective action can be implemented.

Summary

Injury and illnesses are a significant source of loss for many school districts. At the national level, figures from the Bureau of Labor Statistics highlight the relentless nature of the problem. This national data from the four year period (1998 to 2001), which was reviewed, demonstrated very little progressive change. The persistent nature of the accidents caused by slips/falls, struck by/against, and overexertion was brought out in the analysis of the data at the state level. The data at the state level also expresses an increase in the total number of injuries, as well as the average cost per claim. The total direct financial cost of accidents at the state level between 1998 and 2001 was \$17,029,275, a figure which underscores the importance of controlling injury in the school system.

A school safety program is a method to assist in the protection of assets such as employees or property. A program consists of many components to promote safe actions by workers and conditions of the workplace. Although most places of work in Wisconsin have a program implemented, many school districts do not have a program or safety plan

in place to deter injury/illness. Many districts do not have the time and money available to develop a program, or feel the need to do so, due to comparatively low frequency/severity rates. However, school districts end up sacrificing large amounts of resources, to workers compensation and medical bills, which could have been saved if risk control efforts had been implemented to reduce loss.

CHAPTER III: METHODOLOGY

The purpose of the study was to analyze XYZ School District's loss records and to determine where risk control efforts should be focused. The goals of the study were designed to provide a detailed analysis of losses resulting from accident/injury at the XYZ School District. These goals consisted of four areas of examination which provided the outline for developing solutions to the loss-producing circumstances. The four goals of the study were to:

- 1) Assess previous losses incurred at XYZ School District to correlate their occurrence relative to tools and machines used, injury type, body part injured, and date of the loss.
- 2) Analyze accident/injury loss records of XYZ School District in order to quantify the monetary loss to the school district.
- 3) Prioritize the primary causes of loss in the XYZ School District based on occurrence as well as monetary loss.
- 4) Assess the current written policies, as well as employee practices, to determine what is being performed from a loss recordkeeping, as well as analysis, standpoint.

The main objective of this chapter was to explain how the subjects were selected, data collection procedures, how data was analyzed, and the limitations of the study.

Subject Selection and Description

The subjects used in the study were part time and full time employees who have been injured while working in the XYZ School District from October 1, 1998 to October 1, 2003. The names of the employees, ages, and any other human identifiers were

undisclosed on the insurance loss record statements that the school district provided to the researcher. An agreement form was signed by a school administrator and the researcher, which stated that such information would not identify specific employees or school.

Data Collection Procedures

Loss data, as well as current written policies and procedures analyzed, were provided by the XYZ School District. To determine the status of the organization, a checklist (Figure 1) was used to analyze the policies, procedures, and the safety programs currently in place. To examine the position of the organization from an injury/loss standpoint, workers compensation data, as well as existing policies, were reviewed. The XYZ School District provided insurance loss records from the previous four years for the current study. This loss data was obtained from October 1, 1998 to October 1, 2002 and included the following information:

- 1) Date of the injury
- 2) Cause and description of the incident
- 3) Nature of the injury
- 4) Gender of the injured worker and number of years employed
- 5) Time of incurred injury
- 6) Type of injury (medical or indemnity)
- 7) Loss amount and total workers compensation costs

The loss data was made available under the conditions that employee names were undisclosed and the organization was referred to as the XYZ School District. The

insurance records provided the needed information to determine factors which verified why/how incidents have occurred in the district.

Figure 1.

Qualitative Analysis of the Safety Program (policies/procedures) currently practiced in the XYZ School District

Policy/Procedure	No	Yes
Safety program in place for all schools in district		
Written safety policy in place		
New teacher/employee orientation on policies and procedures		
Annual teacher/employee training on policies and procedures		
Training for all staff on safe work performance expectations (ladder use, PPE use, first aid, reporting of unsafe conditions, MSDs, chemical use, etc.)		
Training for staff about the reporting of accidents		
Written safety policies in place by individual departments		
Inspections performed regularly by trained professionals		
Incident recordkeeping performed		
Crisis management plan in place		

Data Analysis

The current written policies and law, which the XYZ School District follows, were reviewed to determine the organization's position on safety in the workplace. The Wisconsin Association of School Boards (WASB) law and Comm 32 regulations, which all school districts in the state must abide by, were examined to determine compliance. Also, the current safety programs, as well as the crisis management plan, were analyzed to verify that the district has appropriate guidelines in place to promote safety. A review of the policies, procedures and programs indicated how concerned the school district was with providing a safe/healthy workplace.

Criteria listed previously (type of injury, loss amount and total workers compensation costs, and lost/restricted workdays, body parts injured) was entered into Microsoft Excel spreadsheets (Figure 2 and Figure 3) and analyzed to identify loss trends. To accomplish this, the data was organized by injury type (i.e. slip and fall, material

handling, struck by/against object, etc.) and body part injured, as well as total workers compensation cost for these two categories. Total compensation costs and lost/restricted workdays, for the three years under study, were also calculated. Using this information,

Figure 2.

Incident Analysis for XYZ School District - October 1, xxxx to October 1, xxxx

Injury Type	Number of Incidents	Restricted Workdays	Lost Workdays	Compensation Cost
Slip and Fall (same level)				
Fall from an Elevation				
Material Handling/Overexertion				
Struck by/against				
Bodily Motion				
Repetitive Motion				
Caught in/compressed				
Transportation accidents				
Chemical Exposure/burn/rash				
Hearing Loss				
Others				
Totals				

Figure 3.

Body Parts Injured for XYZ School District - October 1, xxxx to October 1, xxxx

Body Part	Number of Incidents	Restricted Workdays	Lost Workdays	Compensation Cost
Back				
Knee				
Leg				
Shoulder				
Arm				
Chest				
Head/Face/Eye				
Hands/Fingers/Wrist				
Feet/Toes/Ankle				
Multiple Parts				
Ear (hearing)				
Unknown				
Totals				

it was possible to develop a loss profile of the injuries incurred in the district and to determine the location where loss control practices needed to be focused.

Limitations of the study

A limitation of the study was that the most recent loss data was not available. Loss records were obtained from October 1, 1998 to October 1, 2003. Also, loss data did not provide an in-depth description of the incidents, which limited the analysis of each injury-producing situation.

CHAPTER IV: RESULTS

In the XYZ School District, many accidents have occurred and reoccurred, due to the fact that problematic areas were not recognized and further controlled. Losses resulting from these injuries have demonstrated an upward trend in the XYZ School District, resulting in direct costs and restricted, or possibly lost, workdays. Therefore, the purpose of the study was to analyze XYZ school district's insurance loss records and to determine where risk control efforts should be focused. The goals of the study consisted of four areas of investigation, which provided the outline for developing solutions to the loss-producing situation. The four goals of the study were to:

- 1) Assess previous losses incurred at XYZ School District to correlate their occurrence relative to tools and machines used, injury type, body part injured, and date of the loss.
- 2) Analyze accident/injury loss records of XYZ School District in order to quantify the monetary loss to the school district.
- 3) Prioritize the primary causes of loss in the XYZ School District based on occurrence as well as monetary loss.
- 4) Assess the current written policies, as well as employee practices, to determine what is being performed from a loss recordkeeping, as well as analysis, standpoint.

Loss records from October 1, 1998 to October 1, 2002 were examined to determine where risk control techniques must be implemented to control losses which are continually occurring year to year. Also, the current written safety program (policies and procedures), Wisconsin Association of School Boards (WASB) law, and Comm 32

regulations, which are in effect in the district, were reviewed qualitatively to determine compliance.

Presentation of Collected Data

The goals of the study and collected data which corresponds to the objectives are shown below:

Goal 1. Assess previous losses incurred at XYZ School District to correlate their occurrence relative to tools and machines used, injury type, body part injured, and date of the loss.

Fiscal Year 1999. In comparison to the years examined (fiscal years 1999 to 2002), the data from fiscal year 1999 displayed an elevated number of total incidents with 24, as well as a high amount of workers compensation dollars paid. Injury types with the highest number of incidents for the year were struck by/or against, material handling, fall from an elevation, and slips and falls. The injury type fall from an elevation only incurred three incidents, but totaled \$115,639 in costs. The second most frequent injury type was struck by/or against, with eight incidents, followed by material handling, with six incidents totaling \$6,626 in workers compensation. There were five slip and fall incidents, three of which were a result of slippery floors.

Most of the injuries occurring in the fiscal year 1999 affected the back, hands/fingers/wrists, followed by injuries to multiple parts. Knee injuries incurred the highest costs with \$102,600, 89% of the total compensation expense. Not only were there high direct financial costs in fiscal year 1999, but also 98 days were lost and 44 days were restricted, as a consequence of injury. Overall, of the four years examined,

1999 had the highest workers compensation expense, as well as the second most lost workdays. Tables 3 and 4 demonstrate the totals for the fiscal year 1999.

Table 3.

Incident Analysis for XYZ School District - October 1, 1998 to October 1, 1999

Injury Type	Number of Incidents	Restricted Workdays	Lost Workdays	Compensation Cost
Slip and Fall (same level)	5	0	42	\$1,116.00
Fall from an Elevation	3	44	24	\$107,800.00
Material Handling/Overexertion	6	0	3	\$2,644.00
Struck by/against	8	0	29	\$3,982.00
Bodily Motion	0	0	0	0
Repetitive Motion	0	0	0	0
Caught in/compressed	0	0	0	0
Transportation accidents	0	0	0	0
Chemical Exposure/burn/rash	0	0	0	0
Hearing Loss	0	0	0	0
Others	2	0	0	\$97.00
Totals	24	44	98	\$115,639.00

Table 4.

Body Parts Injured for XYZ School District - October 1, 1998 to October 1, 1999

Body Part	Number of Incidents	Restricted Workdays	Lost Workdays	Compensation Cost
Back	5	0	0	\$218.00
Knee	2	0	35	\$102,600.00
Leg	1	0	0	0
Shoulder	1	44	0	\$1,810.00
Arm	2	0	6	\$1,008.00
Chest	1	0	0	0
Head/Face/Eye	1	0	0	0
Hands/Fingers/Wrist	5	0	23	\$3,102.00
Feet/Toes/Ankle	2	0	0	\$357.00
Multiple Parts	4	0	34	\$6,544.00
Ear (hearing)	0	0	0	0
Unknown	0	0	0	0
Totals	24	44	98	\$115,639.00

Fiscal Year 2000. The loss data from 2000 demonstrated a slight decrease in the total incidents, and a dramatic reduction in total workers compensation costs from the previous year, as indicated in Tables 5 and 6. Injury types which demonstrated a high number of incidents were material handling/overexertion, struck by/or against, slips and falls, and repetitive motion. Workers compensation costs for these four injury types were \$3,202, which accounted for 93% of the total. There were two repetitive motion incidents; both were carpel tunnel injuries to the hands/wrist. The two slip and fall injuries which occurred were a result of slippery floors and an icy parking lot. Of the 15 incidents for 2000, back injuries accounted for the highest compensation costs, with \$1,219.

Table 5.

Incident Analysis for XYZ School District - October 1, 1999 to October 1, 2000

Injury Type	Number of Incidents	Restricted Workdays	Lost Workdays	Compensation Cost
Slip and Fall (same level)	2	0	148	\$915.00
Fall from an Elevation	0	0	0	0
Material Handling/Overexertion	3	0	3	\$1,267.00
Struck by/against	4	0	0	\$484.00
Bodily Motion	0	0	0	0
Repetitive Motion	2	0	0	\$536.00
Caught in/compressed	1	0	0	0
Transportation accidents	1	0	0	0
Chemical Exposure/burn/rash	1	0	0	\$59.00
Hearing Loss	1	0	0	\$175.00
Others	0	0	0	0
Totals	15	0	151	\$3,436.00

One hundred forty eight of the 151 lost workdays were the consequence of slip and fall incidents, followed by three days lost due to material handling injuries. Fiscal year 2000, in general, had fairly low workers compensation expenses, but lost workdays resulting

from injury were the highest of the years examined, demonstrating the seriousness of the incidents which occurred.

Table 6.

Body Parts Injured for XYZ School District - October 1, 1999 to October 1, 2000

Body Part	Number of Incidents	Restricted Workdays	Lost Workdays	Compensation Cost
Back	2	0	3	\$1,219.00
Knee	3	0	0	\$915.00
Leg	0	0	0	0
Shoulder	0	0	0	0
Arm	0	0	0	0
Chest	1	0	0	\$48.00
Head/Face/Eye	3	0	0	\$543.00
Hands/Fingers/Wrist	3	0	0	\$536.00
Feet/Toes/Ankle	1	0	0	0
Multiple Parts	0	0	148	0
Ear (hearing)	1	0	0	\$175.00
Unknown	1	0	0	0
Totals	15	0	151	\$3,436.00

Fiscal Year 2001. Loss data from 2001 revealed an increase in the total incidents, as well as elevated compensation costs from the preceding year. Table 7 displays evidence that slips and falls were a significant problem for the year, with nine incidents totaling \$5,809. Slip and fall injuries also accounted for 44 lost workdays, 94% of the total. Of the nine slip and fall injuries incurred, five were the consequence of slippery, icy conditions in parking areas and sidewalks. Struck by/or against and material handling injuries accounted for a total of ten incidents, costing \$1,502.

As observed in Table 8, of the body parts injured during 2001, feet and ankles were most commonly hurt, followed by hands/fingers/wrists, which accounted for \$2,442 in direct costs. The highest workers compensation expenses were due to injuries to the chest/ribs which totaled \$3,729. Of the 26 incidents for the year 2001, 20 injuries took

place in the winter months from October to March. For the fiscal year 2001, total incidents, as well as workers compensation dollars paid out, indicated an upward trend.

Table 7.

Incident Analysis for XYZ School District - October 1, 2000 to October 1, 2001

Injury Type	Number of Incidents	Restricted Workdays	Lost Workdays	Compensation Cost
Slip and Fall (same level)	9	0	44	\$5,809.00
Fall from an Elevation	0	0	0	0
Material Handling/Overexertion	4	0	3	\$1,274.00
Struck by/against	6	0	0	\$228.00
Bodily Motion	0	0	0	0
Repetitive Motion	0	0	0	0
Caught in/compressed	0	0	0	0
Transportation accidents	1	0	0	0
Chemical Exposure/burn/rash	2	0	0	\$292.00
Hearing Loss	0	0	0	0
Others	4	0	0	\$1,428.00
Totals	26	0	47	\$9,031.00

Table 8.

Body Parts Injured for XYZ School District - October 1, 2000 to October 1, 2001

Body Part	Number of Incidents	Restricted Workdays	Lost Workdays	Compensation Cost
Back	1	0	44	\$578.00
Knee	3	0	0	\$47.00
Leg	1	0	0	0
Shoulder	2	0	3	\$63.00
Arm	3	0	0	\$228.00
Chest	2	0	0	\$3,729.00
Head/Face/Eye	3	0	0	\$292.00
Hands/Fingers/Wrist	4	0	0	\$2,033.00
Feet/Toes/Ankle	5	0	0	\$409.00
Multiple Parts	0	0	0	0
Ear (hearing)	0	0	0	0
Unknown	2	0	0	\$1,652.00
Totals	26	0	47	\$9,031.00

Fiscal Year 2002. The direct costs, shown in the loss data from 2002 (Tables 9 and 10), continued to display an upward trend from the previous two years; however, incidents decreased from 2001 to 16. Again, slips and falls remained the top injury type incurred, with eight incidents costing \$9,042.84, 61% of the total. Of the slip and fall accidents, three were caused by tripping over an object and only one was due to icy conditions.

Table 9.

Incident Analysis for XYZ School District - October 1, 2001 to October 1, 2002

Injury Type	Number of Incidents	Restricted Workdays	Lost Workdays	Compensation Cost
Slip and Fall (same level)	9	0	1	\$9,042.84
Fall from an Elevation	0	0	0	0
Material Handling/Overexertion	3	0	0	\$624.40
Struck by/against	3	0	0	\$4,892.49
Bodily Motion	0	0	0	0
Repetitive Motion	0	0	0	0
Caught in/compressed	0	0	0	0
Transportation accidents	0	0	0	0
Chemical Exposure/burn/rash	1	0	0	\$177.93
Hearing Loss	0	0	0	0
Others	0	0	0	0
Totals	16	0	1	\$14,737.66

Struck by/or against and material handling injuries accounted for seven incidents, totaling \$5,516.89 in worker compensation expense. For 2002, back and knees were the most common body parts hurt, costing \$8,070.19. Overall for the fiscal year 2002, lost/restricted workdays dramatically decreased to one, while the increasing workers compensation expenses continued to demonstrate an upward trend.

Table 10.**Body Parts Injured for XYZ School District - October 1, 2001 to October 1, 2002**

Body Part	Number of Incidents	Restricted Workdays	Lost Workdays	Compensation Cost
Back	5	0	0	\$2,712.63
Knee	3	0	1	\$5,357.56
Leg	1	0	0	\$2,302.51
Shoulder	2	0	0	\$1,550.13
Arm	2	0	0	\$177.93
Chest	0	0	0	0
Head/Face/Eye	0	0	0	0
Hands/Fingers/Wrist	2	0	0	\$902.87
Feet/Toes/Ankle	0	0	0	0
Multiple Parts	1	0	0	\$1,734.03
Ear (hearing)	0	0	0	0
Unknown	0	0	0	0
Totals	16	0	1	\$14,737.66

Goal 2. Analyze accident/injury loss records of XYZ School District in order to quantify the monetary loss to the school district.

The loss records were examined from the fiscal years 1999 to 2002 and the total loss amount was determined. Since the fiscal year 2000, although incident numbers have fluctuated, workers compensation costs have been consistently increasing. Total incidents for the years examined (1999 to 2002) were 81, totaling \$142,843.66 in direct expense. Lost workdays, although decreasing in recent years, totaled 291 days.

Monetary losses for 1999 to 2002 are shown in Table 11 below.

Table 11.**Workers Compensation Costs for the XYZ School District - Fiscal years 1999 to 2002**

Year	Restricted Workdays	Lost Workdays	Incidents	Total Cost/Year
1999	44	92	24	\$115,639.00
2000	0	151	15	\$3,436.00
2001	0	47	26	\$9,031.00
2002	0	1	16	\$14,737.66
Totals	44	291	81	\$142,843.66

Goal 3. Prioritize the primary causes of loss in the XYZ School District based on occurrence, as well as monetary loss.

The primary injury types resulting in the highest monetary loss for the years examined (1999 to 2001) were slips and falls, falls from an elevation, and struck by or against. These three injury types resulted in \$134,269.33 in compensation costs which comprised 94% of the total for the four years. Not only did these injury types result in high compensation expenses, but also an elevated number of lost workdays, with 243.

Top injury types by cost for the years examined are shown below in Table 12.

Table 12.**Top 3 Injury Types by Cost for the XYZ School District - Fiscal Year 1999-2002**

Injury Type	Number of Incidents	Restricted Workdays	Lost Workdays	Compensation Cost
Fall from an Elevation	3	44	24	\$107,800.00
Slip and Fall (same level)	25	0	190	\$16,882.84
Struck by/against	21	0	29	\$9,586.49
Totals	49	44	243	\$134,269.33

Injury types which incurred the majority of incidents, for 1998 to 2001, were slips/falls, struck by/against, and material handling. These three injury categories had 62 incidents, representing 77% of the total for the years examined. Although incident

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numbers were high for these injury types (slips and falls, struck by/against, and material handling), severity was minimal, averaging \$520 per claim. Top injury types, by the total number of incidents, are displayed below in Table 13.

Table 13.

Top 3 Injury Types by Number of Incidents for the XYZ School District - Fiscal Year 1999-2002

Injury Type	Number of Incidents	Restricted Workdays	Lost Workdays	Compensation Cost
Slip and Fall (same level)	25	0	190	\$16,882.84
Struck by/against	21	0	29	\$9,586.49
Material Handling/Overexertion	16	0	9	\$5,809.40
Totals	62	0	228	\$32,278.73

Goal 4. Assess the current written policies, as well as employee practices, to determine what is being performed from a loss recordkeeping, as well as analysis, standpoint.

When qualitatively analyzing the safety program, as well as the policies and procedures, it was determined that the district is deficient in many areas. As observed in Table 14, incident recordkeeping is currently performed and a crisis management plan is in place, but many elements of the program are not operational. Although the XYZ School District may be prepared for a crisis situation, the general policies and procedures that are recommended to help provide a safe and healthy workplace everyday, are incomplete. An analysis of the current policies and procedures in place are displayed below in Table 14.

Table 14.**Qualitative Analysis of the Safety Program (policies/procedures) currently practiced in the XYZ School District**

Policy/Procedure	No	Yes
Safety program in place for all schools in district	X	
Written safety policy in place	X	
New teacher/employee orientation on policies and procedures	X	
Annual teacher/employee training on policies and procedures	X	
Training for all staff on safe work performance expectations (ladder use, PPE use, first aid, reporting of unsafe conditions, MSDs, chemical use, etc.)	X	
Training for staff about the reporting of accidents	X	
Written safety policies in place by individual departments	X	
Inspections performed regularly by trained professionals	X	
Incident recordkeeping performed		X
Crisis management plan in place		X

Discussion

Injury statistics observed at the XYZ School District for 1999 to 2002 was analogous with data at the state, as well as national, level. Material handling/overexertion, slips and falls, and stuck by/or against were the top three injury categories at the state level, national level, and in the XYZ School District. When analyzing body parts which were hurt in schools throughout the state, the back, hands/wrists/fingers, and multiple parts incurred the most incidents (Wausau Insurance Companies, 2003). The data from the XYZ School District's insurance loss records demonstrated similar results. Injuries to the hands/wrists/fingers incurred the majority of incidents, followed by injuries to the back. Overall, insurance loss data from the XYZ School District was comparable to other organizations throughout the nation, demonstrating the reliability of the results. It should be noted that the various forms of loss experienced by the XYZ School District are likely to be the result of lacking policies and procedures.

CHAPTER V: CONCLUSIONS AND RECOMMENDATIONS

In the XYZ School District, losses due to accidents in the workplace are a significant problem. Many of these injuries are occurring due to the fact that risk control efforts are not made to improve work conditions, employee actions, or the overall safety of the school system. The injuries which have occurred resulted in not only direct financial costs associated with workers compensation claims, but also a loss of work time and days of restricted work. The continued losses are indicators of deficiencies in the current methods in place at the XYZ School District to effectively recognize and control existing hazardous situations. Therefore, the purpose of the study was to analyze XYZ School District's insurance loss records and to determine where risk control efforts should be concentrated to effectively minimize loss. The goals of the study consisted of four areas of investigation which summarized the loss-producing situations and identified problematic areas which jeopardized safety in the XYZ School District. The four goals of the study were to:

- 1) Assess previous losses incurred at XYZ School District to correlate their occurrence relative to tools and machines used, injury type, body part injured, and date of the loss.
- 2) Analyze accident/injury loss records of XYZ School District in order to quantify the monetary loss to the school district.
- 3) Prioritize the primary causes of loss in the XYZ School District based on occurrence as well as monetary loss.

4) Assess the current written policies, as well as employee practices, to determine what is being performed from a loss recordkeeping, as well as analysis, standpoint.

To examine the position of the district from an injury/loss standpoint, loss records from the previous four years (1999 to 2002) were examined. Loss data was entered into Excel spreadsheets (Figure 2 and Figure 3) and analyzed to identify the loss trends. Policies, procedures, and the safety programs currently in place were also examined, using a checklist (Figure 1), to determine the safety status of the organization.

Through the research performed, areas of deficiency were observed by the examination of policies and procedures, as well as the loss records analysis. Through the analysis, it was determined that necessary policies and procedures, which must exist to promote a healthy/safe workplace, were not implemented. It was observed that training, regular inspections, an operational program/policy, etc. were either not in place or not conducted to improve the overall welfare of the district.

During the insurance records analysis, it was determined that during the four years under examination (1999 to 2002), losses were high from a workers compensation standpoint, as well as lost/ restricted workday perspective. Throughout the fiscal year 1999, total workers compensation costs, resulting from the 24 accidents, was \$115,639. These costs were the highest of the years examined. The injury type with the most incidents were struck by or against with eight, followed by six material handling injuries and five slip/falls. Ninety eight lost workdays and 44 restricted days were also a result of injuries. The most frequent body type injured was the back and hands/fingers/wrists, each with five incidents.

For the fiscal year 2000, incident numbers decreased to 15 and total compensation costs dramatically declined to \$3,436. Injury types which demonstrated an elevated number of incidents were material handling, struck by/or against, slips and falls, and repetitive motion. Of the 15 total incidents, the majority of injuries occurred to the knees, head, and hands. The year 2000 also accumulated the greatest number of lost workdays for the years examined, with 151.

During the fiscal year 2001, the number of incidents, as well as the total compensation cost, increased from the preceding year. The total compensation cost for the 26 injuries was \$9,031. Slips and falls were the top injury type for the year, with nine incidents, followed by six struck by/or against injuries. The majority of the injuries for 2001 occurred to the feet, toes, and ankles. Although incidents increased during the year, lost workdays due to accidents decreased to 47.

In 2002, total workers compensation expenses continued to demonstrate an upward trend from the previous two years. The total workers compensation cost grew to \$14,737.66, while the total number of incidents declined to 16. Slips and falls remained the top injury type, with nine incidents, followed by material handling and struck by/or against. Lost workdays also demonstrated a dramatic decrease, with only one caused by a slip and fall.

Overall, for the four years examined, there were 81 incidents totaling \$142,843.66 in workers compensation costs. These 81 incidents also resulted in 291 lost and 44 restricted workdays. The top injury type for the years examined (1999-2002), by the number of incidents, was slips and falls, followed by struck by/or against and material handling.

Conclusions

The analysis of XYZ School District's loss records and policies/procedures revealed significant information regarding the safety condition of the organization. The following important findings were discovered through the investigation:

- Slips and falls, material handling/overexertion, and struck by/against were the top injury types for the XYZ School District from 1999 to 2002. These injury types were analogous with state, as well as national, data which confirmed the fact that districts throughout the country have similar accidents occurring.
- Many needed policies and procedures (training, inspections, work performance expectations, and safety program/policy) in the XYZ School District are non-existent, which places additional risks on the organization and its employees. According to Sinclair, districts should include the following elements in their safety program: school safety policy, school safety plan, health and safety committees, clear roles and responsibilities, safe work performance expectations, training of employees, workplace inspections, and accident investigations and recording (1997). The XYZ School District must make changes regarding the implementation of policies/ procedures to promote safety and reduce the chance for loss to occur.
- The top injury type in the district was slips and falls, most of which occurred due to icy conditions during winter months and slippery walkways. If proper work procedures are followed, housekeeping issues and icy circumstances will not exist; therefore slip and fall accidents will less likely occur.

- No training was provided on when or how an injury should be reported.
Consequently, it is unknown if all accidents which did occur were reported to the appropriate management or if they were reported at all. Many more accidents may have taken place in the district but were not reported.
- Many incidents in the XYZ School District have occurred due to unsafe acts. If thorough training was conducted to educate employees about safe standard work procedures, the staff would become aware of potentially hazardous situations and optimistically, execute the task at hand in a safe manner.

Recommendations

The analysis of the XYZ School District's loss records and policies/procedures resulted in the following recommendations for change:

- Implement safety programs in every school in the district (use of ladders, PPE, chemicals, etc).
- Ensure new teacher/employee orientation is conducted during in-service days at the beginning of every school year or within one week of new employee hire.
Appendix A may be used as a guide for the orientation.
- Ensure annual teacher/employee training on safe work performance expectations including: ladder use, PPE use, first aid, accident reporting, reporting of unsafe conditions, proper lifting technique, chemical use, MSDs (material safety data sheets), vehicle use, etc.
- Ensure accident investigations are promptly conducted.
- Implement written safety policies by individual departments. (i.e. technology education, special education, etc.)

- Ensure safety professionals are regularly inspecting facilities to identify and minimize hazards.
- Ensure prompt salting of sidewalks, parking areas, etc. throughout winter months.
- Strive to make three-foot ladders available in every classroom throughout the district, so as to minimize the potential for falls to occur.

Areas of Further Research

There were areas of research which could be further examined to ensure the district is making a progressive change managing safety. The areas include the following:

- Complete a detailed analysis of where the accidents are occurring. (i.e. high school, elementary school, special education department, technology education, etc.)
- Complete a detailed analysis of the work position which is experiencing most injuries and the reasons. (i.e. teachers, cooks, secretarial staff, busing personal, janitorial staff, etc.)
- Repeat the loss records analysis subsequent to training staff, regarding accident reporting. Many employees never were informed when or how to report an accident, and therefore numerous accidents may have gone unreported during the four years under study.

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Appendix A:

New Employee Safety Orientation Checklist

This is a brief, itemized summary of topics to cover with each new or transferred employee prior to having that employee start work:

	Covered	Not Covered
<ul style="list-style-type: none"> • Department Tour (Discuss specific hazards, locations of problems, and job safety controls) 	_____	_____
<ul style="list-style-type: none"> • Location/Use or First Aid and Responders/Facilities 	_____	_____
<ul style="list-style-type: none"> • Company Safety Policy and Their Role in the Program 	_____	_____
<ul style="list-style-type: none"> • Use, Care, and Maintenance of Personal Protective Equipment (Protective shoes, glasses, ear protection, respirators, gloves, etc.) 	_____	_____
<ul style="list-style-type: none"> • Specific Safety Expectations in your Department (Explain the specific precautions and the reasons for these rules) 	_____	_____
<ul style="list-style-type: none"> • Hazard Communication/Right to Know: Work with Toxic Materials (MSDS review) 	_____	_____
<ul style="list-style-type: none"> • Material Handling /Lifting Techniques and Body Mechanics 	_____	_____
<ul style="list-style-type: none"> • Use of Machine Safeguarding, Hand Tools, and Mechanical Material Handling Equipment 	_____	_____
<ul style="list-style-type: none"> • Defensive Driving, Company Expectations, and Responsibilities 	_____	_____
<ul style="list-style-type: none"> • Fire Safety Precautions (Designated smoking areas, control of flammable/combustible materials, etc.) 	_____	_____
<ul style="list-style-type: none"> • Location and use of Fire Extinguishers and Evacuation Planning 	_____	_____
<ul style="list-style-type: none"> • Fire or Other Emergency Preparedness (Natural disaster, medical or environmental spills, violence, etc.) 	_____	_____
<ul style="list-style-type: none"> • What to do if you Spot a Hazard or Unsafe Work Practice 	_____	_____
<ul style="list-style-type: none"> • When an Incident Occurs (Injury or property damage) (Reports, investigations, obtaining medical treatment, returning to work, follow-up, etc.) 	_____	_____

New Employee Safety Orientation Checklist Cont.

I acknowledge that information on the above subjects was furnished to me during my orientation.

EMPLOYEE'S SIGNATURE _____ Dept. _____

I have instructed the above-named employee in the fundamentals of safety practices.

SUPERVISOR'S SIGNATURE _____ Dept. _____

Sign and return immediately to our human resources office following the employee's date of hire or transfer into your department.

Appendix B:

**Supervisor's Incident Investigation Report
for Workplace Injuries**

1. Name of employee _____ Age _____
2. Occupation _____ Dept. & No. _____
3. Date of incident _____ Time _____ A.M. ____
P.M. _____
4. Place of incident _____
5. Witness (es) _____
6. Did you authorize first-aid or doctor? Yes No
Name and address of doctor _____
7. Did injured leave work? Yes No When _____
8. Did injured return to work? Yes No When _____
9. Describe nature and extent of injuries _____
10. Describe incident _____
11. Accident causes (mark those that apply)

Physical Sources

- Poorly maintained tools or equipment
 - Poor housekeeping, slippery floor, or tripping hazards
 - Unguarded equipment
 - Crowded work conditions
 - Poor storage practices
 - Personal protection and clothing not adequate for hazards
 - Insufficient lighting or ventilation
 - Cold or hot temperatures
 - Other contributing conditions
- _____

Unsafe behaviors

- Inadequate instructions
 - Did not use assigned personal protective equipment
 - Did not follow rules or instructions
 - Circumvented safety features
 - Used poorly maintained tools and machinery
 - Failed to follow established procedures and work practices
 - Unable to physically perform work
 - Other contributing behaviors
- _____

**Supervisor's Incident Investigation Report
for Workplace Injuries Cont.**

12. Describe actions to take to avoid recurrence: _____

13. Signatures:

14. Prepared By: _____
(Supervisor)

Reviewed By: _____
(Person Responsible for Safety)

(Manager)

Date: _____

(Must be completed within 24 hours of incident)
- Company Use Only -

Appendix C:

Unsafe Conditions Report Form

TO: All Employees

FROM: District Administrator

Providing safe and healthy conditions for all of our students, employees, and visitors is a high priority for this school district. I strongly encourage anyone who is aware of any unsafe condition, in or around their school building, to complete this form and present it to the building principal immediately. The school district is committed to taking corrective action on all issues brought to our attention. After we have made an investigation, you will be notified of the action taken to correct the problem.

Thank you for your concern.

Please fill out the following:

Individual completing this form: Name: _____

Date: _____ Building: _____

Description of Unsafe Condition:**PRESENT FORM TO BUILDING PRINCIPAL IMMEDIATELY**

(over)

For Office Use:

Note to building principals: Take immediate action. Send a copy of this form to the business office and follow regular procedure for dealing with safety issues.

Corrective Action Taken:

Administrators Name: _____ Date: _____

Signature: _____

Date of response given to person reporting unsafe conditions: _____