Analysis of the Causes and Costs of Manual Handling Incidents in the Health Care Sector

Report submitted to
The Health and Safety Authority

Sara Dockrell, Muriel Johnson, Joe Ganly

September 2007

TABLE OF CONTENTS

Page No.

LIST OF TABLES

Table **Page No.**

LIST OF FIGURES

Figure **Page No.**

LIST OF APPENDICES

Page No.

GLOSSARY

TERMS

Allied Health Professional Includes chartered physiotherapist, occupational therapist, speech therapist

Attendant An employee who carries out general catering, cleaning, and portering duties on the ward or unit. The attendant could also assist the nursing staff and/or other members of the multi-disciplinary team in the delivery of patient care.

Back Pain Ache, pain or discomfort in the region of the spinal column

Back Injury Onset of back pain as a result of manual handling

Claimant Employee who makes a claim for compensation as a result of a manual handling incident

Claims file The file of documents and papers that is created by the insurers for the management of a claim

Ergonomics Ergonomics is the science of work, of fitting the job to the worker and the product to the user

Incident Any act or omission that results in harm to the employee or patient

Manual handling Any transporting or supporting of a load by one or more employees and includes lifting, carrying, pushing, pulling, supporting or putting down. The load can be animate or inanimate.

Manual handling incident Any manual handling activity that results in harm to the employee or patient

Musculoskeletal disorders Ache, pain or discomfort in the soft tissues and joints of the neck, back, arms or legs.

Psychosocial factors Factors that refer to the interrelation between psychological and social factors in a workplace context e.g. support from colleagues, relationships with supervisors, satisfaction with work, control over work.

Rehabilitation The restoration of productive activity

Safety Culture An organisations' values, attitudes, perceptions, competencies and patterns of behaviour that determine the commitment to an organisation's health and safety management (Health and Safety Commission (1993)

Zero lift policy/minimal lift policy Policy to eliminate/minimise the need to carry out manual, full body, lifts for patients who are mobility impaired.

ABBREVIATIONS

AHP	Allied health professional
BMI	Body Mass Index
CINAHL	Cumulative Index to Nursing and Allied Health Literature
COT (UK)	College of Occupational Therapists (United Kingdom)
CSO	Central Statistics Office
CSP	Chartered Society of Physiotherapists (UK)
EU	European Union
FETAC	Further Education and Training Awards Council
HSA	Health and Safety Authority
HSE (Ire)	Health Services Executive (Ireland)
HSE (UK)	Health and Safety Executive
ISCP	Irish Society of Chartered Physiotherapists
MH	Manual Handling
MSDs	Musculoskeletal Disorders
NBE (UK)	National Back Exchange
NHS (UK)	National Health Service
NICE (UK)	National Institute for Health and Clinical Excellence
NIOSH (US)	National Institute for Occupational Safety and Health (United States)
OIB	Occupational Injury Benefit
OSHA (EU)	European Agency for Occupational Safety and Health
PIAB	Personal Injuries Assessment Board
RCN (UK)	Royal College of Nursing
SAFE (HSA)	System for Accident and Field Enforcement
SLIC (EU)	European Union Senior Labour Inspectors Committee

ACKNOWLEDGEMENTS

The authors would like to acknowledge the following:

Dr. Kathleen Bennett, Dept. of Pharmacology and Therapeutics, Trinity College, Dublin for her help and expertise with the statistical analysis of the data.

Staff in Irish Public Bodies Mutual Insurances for providing the claims files and assisting with access to the claims files.

EXECUTIVE SUMMARY

The Health and Safety Authority requested tenders for an analysis of the causes and costs of manual handling incidents in the Healthcare Sector in September 2006.
A joint submission by Sara Dockrell, Muriel Johnson, and Joe Ganly was awarded the tender and work on the project began in January 2007.

Aims

The Health and Safety Authority had identified two aims of the proposed project:

1. The examination of the causes of manual handling incidents in the healthcare sector by scrutinising a number of claims files.
2. The analysis of the costs of manual handling incidents by scrutinising a number of claims files.

Literature Review

The literature review identified that back injury is a major cause of concern for employers and employees, that prevention efforts to date have primarily focused on manual handling training, that manual handling training as a single intervention is not effective, and that prevention efforts should be multifaceted. Management of the injured worker is important to facilitate the worker remaining at work, or returning to work, as soon as possible, and is cost effective.

Methodology

The sample for this study was taken from all lifting claims for the Health Boards from the 1st January 2000 to the 31st December 2002, as provided by the insurers. Inclusion criteria were agreed and thirty-five (n=35) files met the inclusion criteria, were accessible, and were therefore included in the final analysis.

Results

- Attendants accounted for the highest number of claimants. Catering staff accounted for the second highest
- The majority of claims (74.3% ; n=26) were for a back injury
- Fifty-one percent (n=18) of claimants were involved in a patient handling task at the time of the incident, and 45.7% (n=16) were involved in inanimate handling
- Specific cause of incident was ‘lifting heavy/awkward load’ (includes patients) (63.3% ; n=22), ‘handling a falling patient’ (23.3% ; n=8), ‘other’ (13.3% ; n=5)
- Sixty-three percent (n=22) of claims files had evidence of systems failure
- Ninety-one percent (91.4% ; n=32) of claimants took sick leave
- 51.5% (n=18) had more that 52 weeks sick leave
- 58% (n=20) of claimants returned to work and 42% (n=15) did not return to work
- The claimants who had been in communication with the employer were more likely to return to work than those who were not
- Total cost for the 35 claims was €2,393,527.23.
- Direct costs were 54% of total costs and indirect costs were 46% of total costs.

Discussion

The findings in this study concurred with many findings in the general literature. However the fact that attendants and catering staff featured so significantly is an unexpected finding. The length of time that the claimant was on sick leave and the high percentage of claimants who did not return to work are a cause for concern. The total direct and indirect costs associated with the claims are significant. The main elements of guidelines for prevention of manual handling incidents, for managing an incident, and for managing the injured worker are presented in the report.

Recommendations

1. There is a need for a multifaceted approach to prevention and management of manual handling incidents, with all stakeholders aware of the benefits of this approach.

1.1 Non-care staff should be specifically targeted in any strategy to prevent manual handling incidents.

1.2 Equipment should be used for handling heavy and awkward loads. The equipment should be suitable for the task and the environment, and training in the use of the equipment should be provided.

1.3 Falls prevention programmes and a policy for managing the falling patient should be developed and implemented in healthcare settings, particularly in 'care of the elderly' units.

1.4 Manual handling training programmes should not be delivered in isolation, but should be part of a multifaceted prevention strategy.

1.5 Manual handling training programmes should be specific to the actual work tasks of the healthcare workers and should be based on the documented manual handling risk assessments that have been carried out at management level.

1.6 Problem-solving and risk assessment skills, as well as practical handling skills, should be developed during manual handling training sessions.

1.7 There is a need for ongoing supervision and additional onsite training to ensure that skills taught in training are translated into the actual workplace.

2. Accurate and comprehensive documentation should be completed when a manual handling incident occurs, and a timely investigation carried out that reflects the severity of the incident.

3. Lessons should be learned from the investigation and control measures put in place to prevent the incident occurring again.

4. Improved management of the injured worker is recommended, with timely access to appropriate healthcare and efforts made to keep the worker at work if possible.

5. Communication should be maintained with any worker who is absent from work as a result of a manual handling incident, to facilitate an early return to work.

6. Workplace supervisors/managers and other relevant stakeholders should be involved in the return to work process.

7. This report has many recommendations for further research including:

- investigation of the levels of risk assessment, with particular emphasis on multidisciplinary risk assessment, in the Irish healthcare sector
- assessment of the impact and effectiveness of multifaceted prevention strategies
- investigation of the management of the injured worker in a variety of healthcare settings
- development of a standardised policy for the falling patient from a manual handling perspective.

1. INTRODUCTION

The Health and Safety Authority, which has responsibility for promoting occupational safety and health and for developing and enforcing relevant legislation, requested tenders for an analysis of the causes and costs of manual handling incidents in the Healthcare Sector in September 2006.
A joint submission by Sara Dockrell of Trinity College Dublin, Muriel Johnson of Occupational Physiotherapy Solutions Ltd and Joe Ganly of Joe Ganly International Ltd. was awarded the tender.
The work on the project began in January 2007.

1.1 Aims and Objectives

The Health and Safety Authority had identified two aims of the proposed project.

Aim 1: The examination of the causes of manual handling incidents in the healthcare sector by scrutinising a number of claims files.

This aim was achieved by:

- scrutinising a sample of claims files from the healthcare sector
- extracting qualitative and quantitative data from the claims files in relation to the causes of manual handling incidents
- analysing the data patterns
- identifying major system failures
- developing an evidence-based model to represent the major systems failure

Aim 2: The analysis of the costs of manual handling incidents by scrutinising a number of claims files.

This aim was achieved by:

- scrutinising a sample of claims files from the healthcare sector
- calculating the direct costs of incidents (case and aggregate) in the healthcare sector from information contained in the files
- calculating/estimating the indirect costs of incidents (case and aggregate) in the healthcare sector from information in the files.
- calculating aggregate costs
- analysing the findings

The research findings and the results of the literature review will be presented in this report under the following headings

- Causes of manual handling incidents in the healthcare sector
- Prevention of manual handling incidents in the healthcare sector
- Management of manual handling incidents in the healthcare sector
- Management of the injured worker in the healthcare sector
- Costs related to manual handling incidents in the healthcare sector.

The Deliverables for the Project are:

- Report on findings
- Summary of available best practice guidelines on the prevention of manual handling incidents in the healthcare sector
- Summary of available best practice guidelines on the management of manual handling incidents in the healthcare sector
- Summary of available best practice guidelines on the management of the injured worker
- Powerpoint presentation of the main points of the project.

2. BACKGROUND INFORMATION

2.1 Prevalence of Manual Handling Incidents in the Workplace

Manual handling incidents have consistently been associated with back injury in the workplace, even though other areas of the body can also be injured. Statistics on workplace injuries for Ireland are compiled by the Health and Safety Authority (HSA), the Central Statistics Office (CSO), the Occupational Injury Benefit scheme (OIB) and Eurostat which is an agency which compiles statistics for the European Union (EU).

Recent statistics from the Health and Safety Authority (2007) indicate that, consistent with previous years, approximately one third of all reported work-related incidents are triggered by manual handling. The proportion of incidents associated with manual handling is particularly high in the wholesale and retail trade (47%), manufacturing (40%) and health and social care (38%). The most common type of injury in 2006 was 'physical stress or strain to the body' (41%) and the most frequently injured body part was the back (24%).

Figures from the OIB indicate that injury to 'the back/neck/rib/disc' was the most common injury in 2006. This is consistent with previous years. Health and related occupations are ranked sixth in the 'top 10 occupations of workers injured' (Health and Safety Review 2007).

2.2 Prevention of Manual Handling Incidents

Primary prevention efforts for manual handling incidents and their associated personal and financial costs have been made at government level through legislation and at organisation level through training, equipment provision and through workplace design. However the statistics demonstrate that manual handling incidents and back injury are a continuing problem in the workplace, so these initiatives have not been totally successful to date

2.2.1 Legislation

Part VI of the Safety, Health and Welfare at Work (General Application) Regulations 1993 transposes EU Council Directive 90/269/EEC on the minimum health and safety requirements for the manual handling of loads into Irish Legislation. The regulation is titled the Manual Handling of Loads Regulation.[1]

The main requirements of the 1993 Manual Handling of Loads Regulation are that employers must:

- Make efforts to avoid manual handling activities that present a risk of injury, if possible.
- Where it is not possible to avoid the manual handling activity, an assessment of the manual handling activity must be carried out with reference to the factors identified in the Eight and Ninth Schedule to the regulations.
- Efforts must then be made to reduce the risk of injury, particularly back injury, by applying appropriate control measures.
- Where possible the weight of the load being handled and the centre of gravity of the load should be available for employees handling the loads.

The Regulations set no specific requirements such as weight limits. However numerical guidelines are available in guidance documents that take into account the weight of a load, the repetition of the task and the location of the load during the lift, as a means of identifying handling activities that involve risk (HSA 2005).

2.2.2 Manual Handling Training

Training has been provided as the main, and often sole, measure to prevent manual handling incidents and back injury in the workplace. The training generally has a theory content and a practical content that focuses on technique training. The aim of the training is for employees to develop good practical handling skills and apply these skills in the workplace and thereby reduce the risk of injury. There is ample evidence that existing training programmes do not achieve these aims and the number of reported manual handling incidents and back injuries is not reducing significantly, despite the training that is provided.

[1] A more recent version (Safety, Health and Welfare at Work (General Application) Regulations 2007 has been signed into law and comes into operation on 1 November 2007.

2.3 Management of Manual Handling Incidents

An incident is an adverse event that results in harm e.g. a manual handling incident may result in a back injury. Once an incident happens it is desirable to manage any adverse outcomes from the incident, particularly if an employee is injured. It is also important to find the causes of the incident and to prevent the incident occurring again. There are generally many contributing factors to an incident, particularly a manual handling incident. A systematic investigation aims to identify the factors that contributed to the incident. This investigation is most valuable if it takes place as soon as possible after the incident occurs. This allows timely measures to be put in place to prevent the incident occurring again. If litigation occurs as a result of an incident, the report from the timely incident investigation will provide valuable information for the insurance and legal personnel who are managing the claim and carrying out their own investigations.

2.3.1 Role of the Insurance Industry in Managing and Processing Claims

The role of the insurance industry is to provide liability insurance cover for the health care sector. The role of the industry in managing and processing a claim is to accept notifications of employers' liability incidents, to register employer liability claims, and to process and manage claims arising out of those incidents. The insurers are also involved in the investigation of the claim, determination of the liability and ensuring a satisfactory outcome. They also assist and advise the employers with the risk management process.

2.3.2 Role of PIAB in Managing and Processing Claims

The Personal Injuries Assessment Board (PIAB) is a statutory body that was set up in 2004 with the explicit purpose of providing a method of dealing with uncontested personal injury claims that would be less costly than the traditional approach of litigation. The PIAB objectives are to reduce the overhead cost of delivering compensation to the victims of personal injuries without compromising the level of compensation, and to do so more quickly than the litigation system. It was also intended that resulting cost savings would be passed on to consumers in the form of reductions in insurance costs (Hogan 2006).

Almost all the claims files that were included in this project were pre - PIAB. One file went through the PIAB process initially, but was released from the PIAB system as the claim was contested.

The Civil Liability and Courts Act of 2004 is also designed to reduce the time taken, and the costs involved, in processing personal injury claims.

2.4 Management of the Injured Worker

Many manual handling incidents result in injury to the worker involved. The injury may result in the worker taking time off work, sometimes for prolonged periods. The financial cost to employers of worker absenteeism is significant in many cases. The financial and social cost is also significant for the worker, as the longer a worker is away from the workplace the less likely he/she is to return to work. It is therefore beneficial for the employer and for the worker to manage the treatment of the injured worker and to facilitate the return to the workplace as soon as possible.

2.5 Costs of Manual Handling Incidents in the Healthcare Sector

There is a dearth of information on the costs of manual handling incidents specifically for the healthcare sector. A report for the Department of Enterprise, Trade and Employment by Indecon Consultants (2006) extrapolated the costs of Irish Workplace Accidents and Ill Health to be between 3.3 and 3.6 billion Euro per annum. The Health and Safety Authority commissioned a number of research reports into the costs of accidents in the workplace (Millward Brown 2005, Dalley 2004, Mottiar 2004). The most recent report looked at costs and effects of accidents using twenty case studies (Hrymak and Perezgonzalez 2007). Nine case studies focused on healthcare workers. Only one of the nine healthcare studies looked at a manual handling incident. In this case the cost to the employer was €12,328.00 and the cost to the employee was €10,180.00. The report states that these figures are probably an underestimation of the true costs, both direct and indirect. There was no litigation in this case.

3. LITERATURE REVIEW

3.1 Search Terms

A literature search was carried out using key words and three relevant databases. English language journals that were published since 2000 to date were mostly considered.

The key words were:
Hospital workers; healthcare workers; healthcare settings; hospitals; nursing homes; lifting; pushing/pulling; patient handling; manual handling; manual handling incidents; patient handling incidents; back injury; causes of back injury; costs of back injury; prevention of back injuries; manual handling assessments; patient handling assessments.

The databases searched were:

- Pubmed
- Science Direct
- CINAHL

Websites from the following organisations were browsed for relevant reports and guidance documents:

1. Health and Safety Authority (Ireland)
2. Health and Safety Executive (UK)
3. Health Services Executive (Ireland)
4. National Back Exchange (UK)
5. Irish Society of Chartered Physiotherapists
6. Chartered Society of Physiotherapists (UK)
7. College of Occupational Therapists (UK)

8. Royal College of Nursing (UK)
9. National Patient Safety Agency (UK)
10. National Institute for Clinical Excellence (UK)
11. Personal Injuries Assessment Board
12. EU Health and Safety Agency
13. National Institute for Occupational Safety and Health (US)
14. Worksafe (Australia)
15. WorkCover (NSW Australia)
16. Occupational Safety and Health Service of New Zealand

Information was also provided through personal communication with key personnel within the healthcare sector in Ireland.

3.2 Terms Used in the Literature

Terms and definitions used in the literature can vary e.g. definition of a healthcare worker. The term 'healthcare worker' may refer to patient care staff only, or to nurses only, or to all workers involved in a healthcare setting and include staff who are not involved with patient care.

Back problems are most frequently associated with manual handling incidents, particularly in the healthcare sector (Hignett et al 2007). These problems can be cumulative i.e. occur over time, or can be sudden and occur as a result of one specific manual handling incident. The literature does not always distinguish between these two mechanisms of injury.

The terms 'back injury', 'back pain' and 'musculoskeletal disorder' are used in the literature to describe the outcome of a manual handling incident. Therefore these terms will be used in this literature review to describe the outcome of manual handling incidents. Studies looking at the prevention and management of manual handling incidents, back pain, back injury and musculoskeletal disorders (MSDs) will be referred to.

3.3 Causes of Manual Handling Incidents

Numerous factors are presented as causes of manual handling incidents resulting in back injury, back pain or MSDs. These factors tend to interact with each other. Lifting and transferring patients is the task that is most often cited as a cause of manual handling incidents and of back injury in the healthcare sector (Nelson and Baptiste 2004, Charney et al 2006, Hignett 2001)

Hignett (2001) states that one of the difficulties with manual handling in the healthcare sector is that the 'load' is a patient who is often unpredictable and offers its own opinion. Nelson and Baptiste (2004) state that 'patient moving and handling tasks are physically demanding, often performed under unfavourable conditions and are often unpredictable in nature. Patients offer multiple challenges, including variations in size, physical abilities, cognitive function, level of cooperation and fluctuation in condition. As a load to be lifted, they lack the convenience of handles, even distribution of weight, and have been known to become combative during the lift process'. This difficulty with the 'load' is obviously one of the main reasons why patient handling tasks are so often cited as causes for handling incidents and back injury. Other causes identified are summarised in table 1.

Waters et al (2006) refer to focus group meetings conducted by NIOSH where healthcare workers rated housekeeping tasks as being as physically demanding as patient lifting and transferring tasks. A study by Thomas et al (2006a) is one of the few studies that identified non-patient handling workers as being a high-risk group. Another study by Thomas et al (2006b) highlighted the need to ensure that the employees' physical ability matched the demands of the job, particularly in relation to older workers.

Table 1. Causes of manual handling incidents

Author	Article	Causes identified
Hignett & Crumpton (2007)	Competency based training for patient handling (secondary sources)	• Patient handling tasks • Poor posture • Stress • Organisational factors
Nelson and Baptiste (2004)	Evidence based practices for safe patient handling and movement	• Patient transfers • Unpredictable patient behaviour. • Postural stresses • Confined spaces
Charney et al (2006)	Zero lift programs in small rural hospitals in Washington state	• Lifting and transferring patients • Poor postures • Staffing levels • Age
Waters et al (2006)	NIOSH research efforts to prevent musculoskeletal disorders in the healthcare industry	• Patient handling tasks • Awkward postures • Pushing and pulling forces Long work hours • Shift work.
Murphy et al (2005)	The impact of profiling beds on manual handling risk and patient experience	• Assisting patients to move in the bed
Betts (2006)	Catching, supporting or letting go – an ethical dilemma	• Managing falling, or fallen, patients
Ferrreira and Stanley (2005)	Evaluation of manual handling tasks involving the use of carry chairs by UK ambulance staff	• Transferring patients in ambulances using carry chairs.
Aasa et al (2005)	Relationships between work-related factors and disorders in the neck-shoulder region among female and male ambulance personnel	• Physical work demands • Psychological work demands
Carrivick et al (2005)	Evaluating the effectiveness of a participatory ergonomics approach in reducing the risk and severity of injuries from manual handling	• Heavy physical work • Awkward postures • Repetition of task
Thomas et al (2006a)	Risk profiles for four types of work related injury among hospital employees	• Increased age • Increased BMI • Employment type • Female gender • Full time employment
Thomas et al (2006b)	Factors associated with work related injury among hospital employees	• Increased Age • Higher BMI • Female gender • Full time work • Maintenance staff

3.4 Prevention of Manual Handling Incidents

Manual handling is a hazard as it has the potential to cause harm. The harm or outcome from a manual handling incident is most often a back injury but other body parts can also be injured.

Hignett et al (2003) carried out a systematic review of the literature on patient handling activities in order to provide an evidence-based foundation for further guidance publications in the area of patient handling. This review cited 12 studies that showed that the provision of manual handling training was ineffective in preventing manual handling incidents or back injuries. Other, more recent publications, (Nelson and Baptiste 2004, Hignett et al 2005, Hignett et al 2007) refer to the complexity and high cost of the back injury problem in healthcare and suggest that multifaceted, prevention programmes involving the employees are more likely to be effective than a prevention programme based on a single intervention.

A number of studies and reviews present the results of successful, multifaceted, intervention, prevention programmes in the healthcare sector (Collins et al 2004, Waters et al 2006, Nelson and Baptiste 2004, Nelson et al 2006, Hignett 2001, Hignett et al 2007, Carrivick et al 2001, Carrivick et al 2005, Thomas et al 2006b, Smedley et al 2004). Hignett et al (2005) referred to the difficulty in evaluating many of these programmes in the actual workplace as there is often organisational restructuring happening during the intervention period. Smedley et al (2003) carried out a controlled ergonomics intervention study and found that the intervention had no effect on patient handling activities, or on the prevalence of MSDs. They commented that controlled intervention studies are difficult to carry out because of the need for sustained commitment from management and for certain ethical reasons. Smedley et al (2005) applied a scoring system for manual handling risk management in a number of NHS Trusts in the UK and found that the high scoring hospitals and Trusts had invested in expert manpower, and scored well on all aspects of risk management. Hospitals/Trusts who achieved low scores had invested very little resources in expert manpower, or in patient handling equipment. They had a basic manual handling policy, tended to provide manual handling training and to keep a record of sickness absence.

The intervention studies and reviews in the literature generally focus on patient handling tasks and the staff who carry out these tasks e.g. nurses and care assistants. Very few intervention studies focus on non-patient handling tasks and the workers who carry out non-patient handling tasks in the healthcare sector e.g catering, cleaning and maintenance staff. Carrivick et al (2001) and (2005) have investigated interventions for hospital cleaning staff in Australia. Table 2 summarises the intervention studies and reviews. All the studies cited in table 2 reported successful outcomes. Charney et al (2006) also reported improved patient satisfaction, fewer patient skin tears, fewer patient falls during transfers, greater dignity and less pain for the patients.

The outcome measures for these studies primarily were:

- Reducing frequency and severity of manual handling incidents
- Reducing reported back injury rates
- Reducing absenteeism associated with back injury
- Reducing the costs associated with manual handling incidents and back injury.

Table 2. Interventions for prevention of manual handling incidents

Author	Article Title	Intervention
Waters et al (2006)	NIOSH Research Efforts to prevent MSDs in the healthcare industry	• Equipment provision • Risk assessment of tasks • Ergonomic evaluations of hazardous tasks • Work shift • Work hours
Hignett (2001)	Embedding ergonomics in hospital culture: top down and bottom up strategies	• Equipment provision • Risk management • Training • Ergonomic input at all stages of new build or refurbishment • Culture change • Organisational changes • Product development and trials • Audit
Carrivick et al (2005)	Evaluating the effectiveness of a participatory ergonomics approach in reducing the risk and severity of injuries from manual handling	• Equipment provision • Risk identification • Risk assessment • Training • Environment changes • Organisation changes • Job rotation
Nelson and Baptiste (2004)	Evidence based practices for Safe patient handling and Movement	• Equipment provision • Adjustable beds • Patient handling assessment • Minimal lift policy • Patient transfer teams
Hignett et al (2005)	Finding Ergonomic Solutions – Participatory approaches	• Work organisation • Work practices • Work environment
Collins et al (2004)	An evaluation of a best practices musculoskeletal injury prevention program in nursing homes	• Equipment provision • Training in equipment use • Minimal lifting policy
Charney et al (2006)	Zero lift programmes in small rural hospitals in Washington State	• Equipment provision • Training in equipment use • Patient assessment • Minimal lift policy and procedures • Availability of expert advice • Patient and family education • Multidisciplinary committees • Root cause analysis of all manual handling incidents
Nelson et al (2006)	Development and evaluation of a multifaceted ergonomics program to prevent injuries associated with patient handling tasks	• Equipment provision • Patient handling assessment • Ergonomic assessment protocol • Minimal lift policy • Expert advice • Peer leader role • Incident investigations

3.4.1 Impact of Relevant Legislation

There is a specific obligation under the 1993 Manual Handling Regulations to prevent manual handling incidents and back injuries by assessing the risk associated with manual handling tasks and by controlling the identified risks. A report was produced by the Health and Safety Authority (Power 2001) on the results of a Manual Handling Inspection Programme in selected sectors of industry which were; wholesale/retail, construction, manufacturing, hotel/restaurant. The healthcare sector was not included in this report. However it is interesting that in 2001, 83% of all sites inspected across the sectors did not carry out any risk assessments and 60% did not carry out any manual handling training. Therefore the basic elements of a prevention programme, as required in legislation, were not in place in these sectors.

Hignett et al (2007) reported on a benchmarking exercise to investigate the implementation of the EU Directive on manual handling in the healthcare and social care industries and to gather expert opinions on the residual problems for patient handling in nine countries (including Ireland) in the EU. It was felt by Hignett et al (2007) that the healthcare industry is one of the more complex environments for the implementation of the manual handling directive, due to the challenges of handling patients. The study found that most of the EU countries implemented the EU directive within two years of issue, that three countries had national guidance on patient handling – Sweden, Finland and the UK. The study also found that residual problems remained at a macro and at a micro level in all nine countries. In conclusion, Hignett et al (2007) suggested that interventions to reduce the risks associated with patient handling should be based on an organisational safety culture approach, where patient handling is fully integrated into clinical training and is based on educational standards and competencies.

3.4.2 Manual Handling Training

Manual handling training has often been provided as the sole method of preventing back injuries in the workplace. Smedley et al (2004) found a consistent pattern in the provision and content of training in the UK Trusts they surveyed. The most common regime was one full days training at induction level, followed by an annual update lasting a half-day for care staff. They did not comment on training for non-care staff.

There is anecdotal evidence that the standard for training of care staff in Ireland is similar to the UK, with an initial full day training session provided. Follow-up training does not appear to have such a consistent pattern in Ireland and, if provided, will often occur at three-year intervals, as this guideline is provided by the HSA (2005). Non-care staff tend to have a half-day manual handling training session with inconsistent patterns of follow-up training. The HSA document (2005) provides guidance on the content of training sessions. The document does not provide guidance on the duration of training, as it is not possible to give guidance that would be suitable for all situations. The document states that the objective of training must be to ensure that the training received is put into effect in the work situation and is supplemented by appropriate supervision.

The emphasis on training as a prevention measure has been primarily driven by the legislative requirement to provide manual handling training for workers and by the importance placed on manual handling training in the litigation process. Manual handling training is also considered to be an easy prevention option for employers (Graveling 1991). However, as previously stated, Hignett et al (2003) found strong evidence that interventions relying on manual handling technique training alone had no impact on working practices or injury rates.

The Royal College of Nursing in the UK aimed to address the inconsistencies in training content and competencies and published guidelines on manual handling training and competencies (RCN 2003). These guidelines set out a framework for a safer manual handling culture, instead of providing a prescriptive approach to training that was concerned with content, length and duration of training. A competency approach to patient handling risk management has also been used in New South Wales, Australia (WorkCover 1998).

Hignett et al (2007) investigated whether different levels of safety culture, based on competency-based training, resulted in different behaviour (physical and cognitive) for patient handling tasks. The study concluded that the RCN competencies provide a good framework for developing an improved patient handling safety culture. The results showed that in organisations with a more positive safety culture, the nursing staff demonstrated more complex decision making about patient handling tasks and

had lower levels of associated postural risk. Compliance with the RCN competencies seems to reflect a higher level of problem solving skills.

A number of studies looked at the training provided for student nurses in the area of safer handling, as nurses have a high level of back problems associated with manual handling (Waters et al 2006, Swain et al 2003). Swain et al (2003) identified that there is a theory-practice gap for safer handling among student nurses. Technique based training is provided for student nurses at undergraduate level. However there are barriers to implementing the theory in the workplace. One possible reason identified is that the ward situation with mobility-impaired patients, is so dissimilar to the training environment, where techniques are practised on healthy colleagues, that memory retrieval processes are not triggered. Nursing knowledge and skills acquired in the actual work context have a better chance of being activated when required at work, than knowledge and skills acquired in the classroom. Waters et al (2006) also had concerns about the technique-based training provided for student nurses.

3.5 Management of Manual Handling Incidents

Once a manual handling incident occurs it is vital to manage the incident and to manage any injuries that may have resulted from the incident. The HSE (UK) published guidelines on accident investigation in 2004. The four steps for accident investigation featured in the guidance document are:

- The gathering of information
- The analysing of information
- The identification of risk control measures
- Development of an action plan and the implementation of that plan.

This investigative process helps determine why the incident happened. Lessons are learned from the investigation and the action plan will reduce the likelihood that a similar incident will happen again.

A Systems Analysis protocol called ‘Systems Analysis of Clinical Incidents – The London Protocol’ (Taylor-Adams and Vincent 2005) is used in many healthcare

settings to investigate and manage clinical incidents. The theory underlying the protocol and its application are based on research in settings outside healthcare e.g. aviation, oil and nuclear industries. Analyses used in these industries and in the healthcare setting have illustrated the complexity of the chain of events that may lead to an adverse outcome or incident (Taylor-Adams and Vincent 2005). The approach used in the protocol is based on James Reason's model of organisational accidents, which has less focus on the individual who appears to make an error, and more emphasis on pre-existing organisational factors that contribute to the error or incident. The system used in 'The London Protocol' is being extended and applied to the investigation and management of all incidents in the healthcare sector, including the management of manual handling incidents. This should result in improvements in the documentation used to record the circumstances of the manual handling incident and identify the reasons why the incident happened. It should ultimately lead to timely control measures being put in place to prevent the incident happening again.

3.6 Management of the Injured Worker

Back injury is the most common outcome of a manual handling incident and the injury may result in the worker taking time off work. The length of time that the worker is away from the workplace following an incident varies and does not always depend on the severity of the injury. It has been reported that those employees who are absent from work for 12 months have less than a 20% chance of returning to work (Conroy 2007). The length of time away from the workplace may be more dependent on psychosocial factors such as satisfaction with work, social support from colleagues/supervisors and job autonomy (Waddell 2004). The litigation process may also contribute to a delayed return to work for the employee. The employer may be reluctant to facilitate the employee to return to work until the litigation process is finished and the litigation process itself can be lengthy.

Smedley et al (2004) felt that programmes to manage the injured worker are also beneficial in mitigating the litigation process. Worker absenteeism is a significant cost for the employer and is also a cost for the employee. Therefore it is in the interest of the employer and the employee to facilitate an early return to work programme for the employee. Evidence based guidelines for the management of occupational low back

pain at work were published by the Faculty of Occupational Medicine (UK) (Carter and Birrell 2000). The guidelines advocate that employees with back pain or a back injury should remain as active as possible, should remain at work if possible, or should return to work as soon as possible. They also advocate that the workplace should facilitate this return to work process.

A significant report was produced for the HSE (UK) on 'The Costs and Benefits of Active Case Management and Rehabilitation for MSDs' (Hanson et al 2006). An extensive literature review was undertaken for this report that focused on high quality international studies. The review identified that programmes for managing employees with MSDs, using case management and rehabilitation principles, can be an effective intervention, and these programmes have been widely adopted in industrialised countries. An evidence-based model for managing workers with MSDs was developed and is presented in the report with the evidence for the model. Certain myths are also dispelled in the report i.e. the myth that a worker must be 100% better before returning to work and the myth that light duties must always be provided on returning to work.

Smedley et al (2004) in a review of risk management procedures in the NHS Trusts found that systems for managing injured workers were in place in all the NHS Trusts that were surveyed, with a fast track physiotherapy service widely available. However the criteria for referral to occupational health were inconsistent. Franche et al (2005) looked at procedures for optimising the role of all stakeholders in the return to work process and made recommendations for future research to include the development of methods to engage stakeholders and develop return to work interventions that reflect the interests of all stakeholders. The stakeholders include the employees, their families, employers, employees' representatives, medical personnel, legal advisors and insurers. This aims to mitigate any friction between stakeholders and identify the stakeholders who need to be involved, and at what stage of the process they should be involved.

Shaw et al (2006) stated that supervisors play a vital role in integrating the worker back into the workplace. They developed a programme for supervisor training in facilitating the return to work process and felt that such a programme would be

particularly beneficial in work settings where the corporate culture supports supervisor involvement in health and safety.

3.7 Costs of Manual Handling Incidents

The dearth of information on costs of manual handling incidents in general, and of the costs of manual handling incidents in the healthcare sector, has been mentioned in section 2.5 above. In 2006 a Cost-Benefit Analysis of the Personal Injuries Assessment Board was carried out (Hogan 2006). This report provides information on the types of costs involved when litigation resulted from a workplace incident and was processed through the courts system. It also details some of the factors that influenced the costs of litigation. It compares these costs with the costs now involved if a claim is successfully processed by PIAB. The report states that there is a saving of 88% for circuit court cases and of 97% for High Court cases. These are obviously significant costs savings and are applied to cases that are not contested. Cases that are contested are released from the PIAB system and are processed through the courts system as before. However the rules of the Civil Liability and Courts Act 2004 may speed up the litigation process and thereby reduce costs, even for contested cases that still go through the courts system.

4. GUIDELINE DOCUMENTS

There are numerous guideline documents available and many of them have been referred to in the literature review. Authoritative organisations, or agencies, or professional bodies generally produce these guideline documents. The guideline documents are generally based on:

- research carried out by that agency or professional body
- information in the general research literature
- legislative requirements
- expert opinion.

The guidelines referred to below may not all be specific to the healthcare sector but some guidelines do not need to be sector specific, as they are relevant to all workplaces e.g. guidelines on management of the injured worker. This is not an exhaustive list.

In Ireland, the only sourced published guidance document that specifically addresses manual handling is the HSA document *Guidance on the Management of Manual Handling in the Workplace* (2005). The HSA also produced a leaflet in 1998 called *Caring with Minimal Lifting* and this leaflet is directed at patient handling activities in the healthcare sector.

4.1 Guidelines for Prevention of MH Incidents and Back Injuries

A list of the organisation or agency that produced the guidelines, the title of the document, the year it was published and the main guidelines for prevention of manual handling incidents are presented in table 3.

Table 3. Guidance for prevention of manual handling incidents

Organisation	Title	Guidelines for prevention of MH incidents
HSA (2005)	Guidance on the management of manual handling in the workplace	• Risk assessment • Implementation of controls • MH Policy • Training • Consultation • Ergonomics at design phase
HSE (1998)	Manual Handling in the health services (2nd ed)	• Risk assessment • Risk reduction • Training • Health surveillance • Rehabilitation of injured worker
NBE (2004)	Manual handling standard Interim document for healthcare providers	• Risk management • Education and training • Manual handling policy • MH strategy • Suitable handling environment • Suitable equipment • Competent advice • Organisational responsibility • Occupational health • Adverse incident investigation • Audit
NBE (2002)	Essential Back Up	• Ergonomic approach • Competent advice through a back care adviser • Suitable environment • Handling equipment • Education and training • Management of change
CSP (2002)	Guidance in Manual Handling for Chartered Physiotherapists	• Risk assessment • Risk reduction • Training at undergraduate level to develop competence • Ongoing training at post graduate level as part of CPD
COT (2006)	Manual Handling Guidance	• Risk management • Handling policy • Handling equipment • Training
NIOSH (2007)	Ergonomic Guidelines for manual handling	• Risk Assessment • Ergonomic interventions – engineering and administrative • Training
NIOSH (2006)	Safe lifting and movement of nursing home residents	• Risk assessment • MH policy • Handling equipment • Training
Worksafe Australia (1990)	National Standard for manual handling	• Risk assessment • Risk control • Continuing training • Workplace design • Work equipment design

WorkCover New South Wales Australia (2005)	Implementing a safe patient handling programme	• Risk management • Equipment provision • Training • Minimal lifting approach • Management commitment • Consultation • Policy and procedures • Management of change • Evaluation of programme

4.2 Guidelines on Manual Handling Training

Many of the guidance documents mentioned in table 3 will also provide guidance on manual handling training as part of their overall prevention programme.

Table 4. Guidance on manual handling training

Organisation	Title	Main points in guidance on MH training
HSA (2005)	Guidance on the management of manual handling in the workplace	• Specific to tasks involved • Objective is to ensure that training is put into effect in the workplace • Supplemented by supervision • Training content should have theory & practical elements • Timeframe for updates
NBE (2002)	NBE Training Guidelines	• Planning for training • Training delivery and content • Supervision • Monitoring of handling practices in the workplace • Specification for competency of trainers • Pre-training requisites • Recording of information
NBE (2004)	Manual Handling Standard. Interim document for healthcare providers Criterion 9	• Training appropriate to the job • Based on training needs analysis • Workplace supervision • Competent trainer • Theory & practical components in content • Time to practice handling skills during training • Suitable training venue • Assessment of participant after training • Regular updates
Royal College of Nursing (2003)	Safer handling, better care: RCN Manual Handling training Guidance and competencies	• Training not prescriptive • Emphasis on supervision and facilitation in the actual workplace • Focus on competencies of staff at different levels • Focus is on changing behaviour & attitudes to managing MH risks in various work settings • Principles of change management & participative ergonomics underpin the guidance • Terminology changed from 'training' to 'education' • Need for standards in MH training
Smith (2005)	The guide to the handling of people 5th Ed	• Training based on risk assessment • Evidence based practice • Guidance on practical people handling techniques
Wales NHS and Wales HSE (2003)	All Wales NHS Manual handling training passport and information scheme	• Training specific to the job • Competent trainers • Management involvement • Suitable venue • Ratio of one trainer to six trainees for practical sessions Theory and practical content in training • Feedback on training and on trainees • Annual updates • Full records • Audit and review
NIOSH (2007)	Ergonomic Guidelines for manual handling	• Mainly practical content • Training in equipment use • Small groups for problem solving sessions
WorkCover NSW, Australia (1998)	Manual Handling Competencies for Nurses	• Focus is on the specific activities, responsibilities, knowledge skills, and attributes of nurses in relation to MH • Used as a reference point for curriculum development at undergraduate and postgraduate levels of nurse education

4.3 Guidelines on the Management of the Injured Worker

Guidelines on the management of occupational low back pain have been published (Carter and Birrell 2000). They focus on managing the worker with low back pain. Back pain is ubiquitous and may result from a specific manual handling incident, or may result from exposure to a number of risk factors for back pain in the workplace and in the home. The guidelines make recommendations for a number of key stages in the management of the worker with back pain e.g. at pre employment stage, at initial reporting of pain, when on sick leave and when returning to work.

Hanson et al (2006) developed an evidence-based case management model to assist employers and healthcare providers to help workers with MSDs to stay at work, or to return to work. The report emphasises the importance of workers remaining active and staying at work if possible with temporary modifications to the workplace, or work tasks, if necessary. It also outlines the specific actions to be taken by the various stakeholders e.g. employee, employer, healthcare provider, and case manager and gives guidance on the stages that these actions should be taken. The model emphasises the need to maintain communication with the worker at all stages, to provide access to advice from a health professional, and to focus the rehabilitation process on normal work tasks, as workplace-based rehabilitation is often the most effective. This is a comprehensive document and it appears to be applicable for all settings, including healthcare.

5. METHODOLOGY

5.1 Identification of the Sample

There were preliminary meetings with the insurers (who have been insurers of the Health Boards since 1926) in order to establish the sample of manual handling incident claims files for inclusion in the project. The sample was taken from all lifting claims for the Health Boards from the 1st January 2000 to the 31st December 2002 as provided by the insurers. The time frame was identified on the basis that it was the most recent time frame where most claims were likely to be closed or settled. The claims files were on microfiche tapes that could be read, or sections of which could be printed as required.

The usual format of the claims files is to place all financial information in relation to the expenses and the settlement of the claim at the beginning of the file. Then there are copies of letters and memos to and from legal teams for the claimant and the defendant with legal opinion on the management of the case from senior counsel. The pleadings are included with responses to the pleadings from the defendant. Copies of investigation reports, medical reports and reports from independent experts are included. Copies of any documentation that is relevant to the manual handling incident and is relevant to the claimant and the defendant is also included e.g. an organisations' policies and procedures, equipment available, training records, sick leave documentation, medical records. The documents are usually in chronological order as the claim progresses.

5.2 Criteria for Inclusion

The criteria for inclusion were established and the list of claims files was scrutinised for those that matched all of the inclusion criteria. The total number of "lifting claims" for the period under investigation was two hundred and forty seven (n=247).

The criteria for inclusion were:

(1) manual handling (lifting) claim, as coded in the data base provided by the insurers
(2) closed or "settled" file (as all potential information is in the file)
(3) file closed with costs (as the total costs can be calculated)
(4) files within the chosen timeframe (incident date between 01/01/2000 and 31/12/2002).

The total number of claims that met the inclusion criteria was forty (n=40), which represented 16% of the total. See table 5 for further information on selection of the files.

Table 5. Sample data

Year incident occurred	**2000**	**2001**	**2002**	**Total**
No. of MH claims	106	81	60	247
Settled with costs*	20 (18.8%)*	10 (12.3%)*	10 (16.7%)*	40*
Settled no costs	71 (67%)	57 (70.4%)	32 (53.3%)	160
Not settled	15 (14.2%)	14 (17.3%)	18 (30%)	47

* Files that met the inclusion criteria

Forty files met the inclusion criteria and were included in the investigation. Of the forty files, three (n=3) could not be included as the microfiche files were not available, and two (n=2) were deemed not to be manual handling incident claims by the authors. Therefore the number of files included in the final analysis was thirty-five (n=35). All files that were included in the sample were on microfiche and were viewed at the office of the insurers.

5.3 Data Collection Checklists

5.3.1 Data Related to Causes and Management of the Claim

Data relating to cause(s) of manual handling incidents were collected onto a checklist that was developed specifically for the study. The development of the checklist was based on the literature and on the research team's opinion of best practice for the

prevention, investigation and management of manual handling incident claims. The checklist comprised 98 items. The checklist comprised 13 sections, each containing a number of items. See table 6 for a description of the section headings.

Table 6. Cause and management data collection checklist

Section Heading	Number of items
Demographic information	16
Profile of Health Care setting	3
Work organisation	3
Incident details	22
Incident report	7
Investigation	16
Investigation report	9
Claimant's actions	13
Management of claimant (by employer)	2
Management of claim	3
Corrective actions	1
General	2
Comments	1

5.3.2 Data Related to Costs

Data relating to costs of manual handling incidents were collected onto a checklist that was developed specifically for the study. The development of the direct costs checklist was based on the identification of the types of payments made on the files. This was followed by scrutiny of each of the thirty-five files and extracting the payment details from each of the files.

The development of the indirect costs checklist was based on the authors' opinion of what indirect costs would be incurred. This was followed by scrutiny of each of the thirty-five files and recording the activities, which were attributed as an indirect cost to each claim. If a file had information about indirect costs, the actual value was used, but in cases where there was no information on indirect costs, the costs were estimated. Conservative estimates have been made for activities for which a cost was not readily available from the files. An explanation for the basis of calculation of the

indirect costs is in Appendix 1. The checklists had ten items on direct costs[2] and six items on indirect costs[3]. See tables 7 and 8 for a description of the checklist headings.

Table 7. Direct costs data collection checklist

Section Heading	**Financial Value €**
Claimant - damages	
Solicitors for claimant	
Solicitors for defence	
Barristers for claimant	
Barristers for defence	
V.A.T to government	
Court filing fees	
Medical expert report fees	
Consulting engineers fees	
Other experts fees	

Table 8. Indirect costs data collection checklist

Section Heading	**Financial Value €**
Sick pay paid by employer	
Medical, rehabilitation, treatment costs paid for by employer	
Insurance companies claims management and handling charges	
Pension contributions for claimant	
State benefits	
Cost to the health care unit	

[2] **Direct costs** are the actual payments made by insurers, the details of which have been extracted from the 35 claims files.

[3] **Indirect costs** are those costs that have not been included in insurers' payments but nevertheless should be taken into account as being a cost of the incident to the insurer, the employer or the State. A conservative estimate has been made where such information is not readily available from the claims file.

5.4 Pilot Study

The “cause” checklist was piloted on four (n=4) claims files, and minor adjustments were made to the checklist subsequently. For example, the time frame for which a claimant was on sick leave was amended to include a longer timescale (>52 weeks). The term “community home” was inserted instead of “nursing home”. A question relating to ‘body part injured’ was inserted.

6. RESULTS

Thirty-five (n=35) files met the inclusion criteria, were accessible, and were therefore included in the final analysis. The findings are based on the available information in the files, and in many cases all the required information was not provided. Therefore some of the results are not based on n=35 but on fewer numbers, and are identified as such throughout the results.

6.1 Demographic Information

6.1.1 Gender

The sample comprised 15 males (43%), 19 females (54%) and one other (3%) whose gender could not be determined from the file.

6.1.2 Age

The mean age at the time of the incident was 42 years (SD=10.9) with a range from 22.9 to 59 years. A greater percentage of the claimants were 40+ years of age than the percentage of those who were <40 years of age (Table 9). Male and female claimants had a similar mean age at the time of the incident (males 42.9, females 41.6), which was not statistically different.

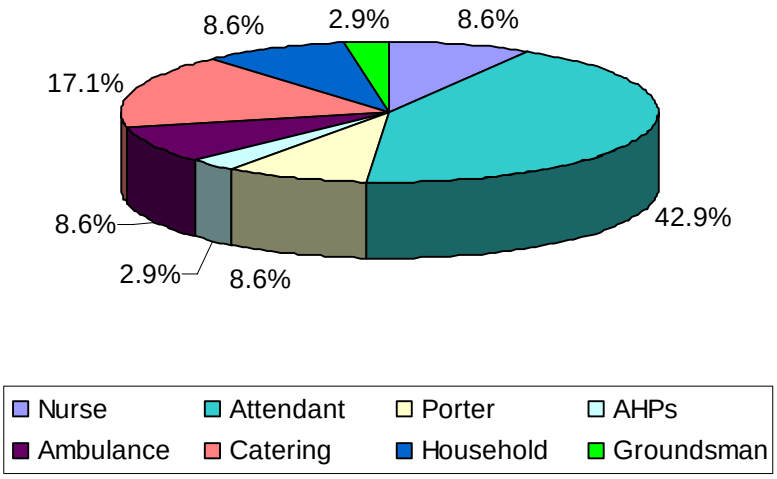
Table 9. Age at time of incident

Age at time of incident	**N (%)**
<40 years	15 (42.9%)
40+ years	20 (57.1%)
Total	**35**

6.1.3 Occupation

Attendants accounted for the highest number of claimants (42.9%). Catering staff accounted for the second highest. See figure 1 for the occupations of the claimants.

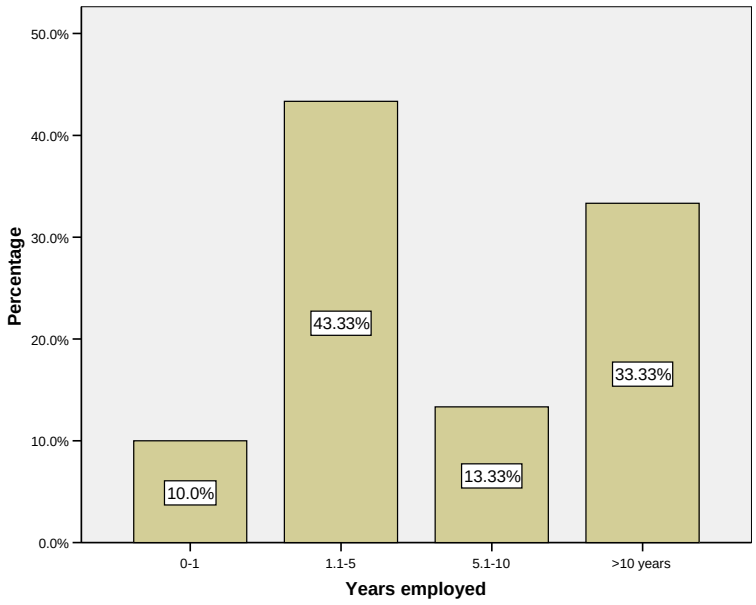
Figure 1. Occupation of claimants



6.1.4 Years Employed

The breakdown of the number of years that the claimants were in the current employment is presented in figure 2.

Figure 2. Years in current employment



6.1.5 Relevant Medical History

Forty-nine percent (49%) had evidence in the file of a relevant medical history prior to the injury sustained in the incident. Fifty-one percent (51%) of the sample did not have a relevant medical history.

6.1.6 Psychosocial Factors

Seventy-one percent (71%) of the files had some evidence or reference to associated psychosocial factors in the claim file e.g. dissatisfaction with workplace or work colleagues, and 29% of the claimants did not.

6.2 Profile of the Organisation

The sample included small, medium and large hospitals, community homes and community settings. Fifty-one percent (51%) of the health care settings had evidence in the file of some form of health and safety management system e.g. manual handling policy, manual handling risk assessment. Forty-nine percent did not have evidence of such a system.

6.3 Manual Handling Training

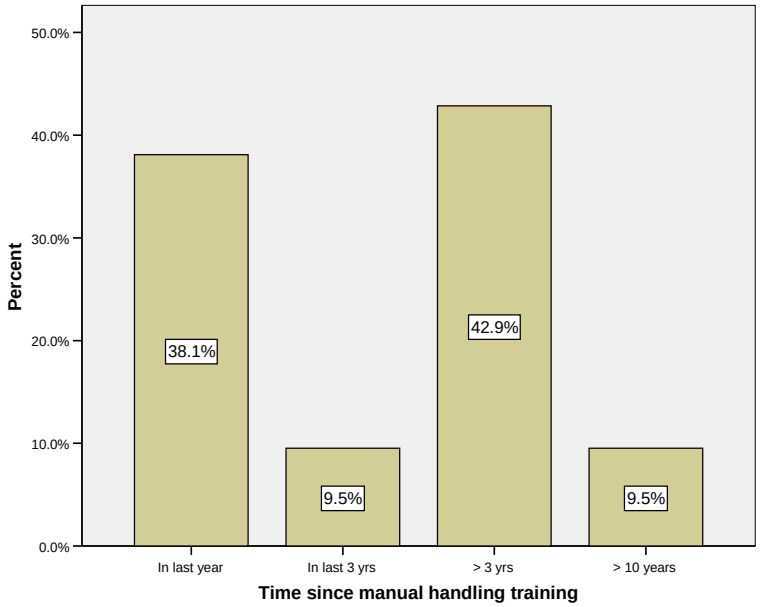
6.3.1 Provision of Manual Handling Training

The majority (62.9%) of claimants had manual handling training, while 22.9% did not. No information about training was given in the remaining 14.2% of the claims files.

6.3.2 Time Since Manual Handling Training

There were considerable differences in the time since the last manual handling training course was attended and these are represented in figure 3.

Figure 3. Time since manual handling training

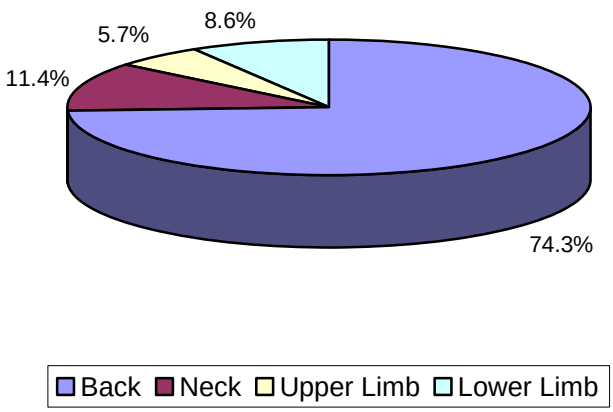


6.4 Incident

6.4.1 Body Part Injured

The majority of claims (74.3%) were for a back injury. The neck was the next most common body part injured (11.4%). See Figure 4.

Figure 4. Body part injured



6.4.2 Time of the Incident

The time the incident occurred (n=24) and the stage of the work shift (n=25) were noted and are represented in figures 5 and 6. Most of the incidents occurred between 6am and 6pm i.e. during daytime, as opposed to night time. Incidents were most likely to occur in the middle of the work shift.

Figure 5. Time of incident

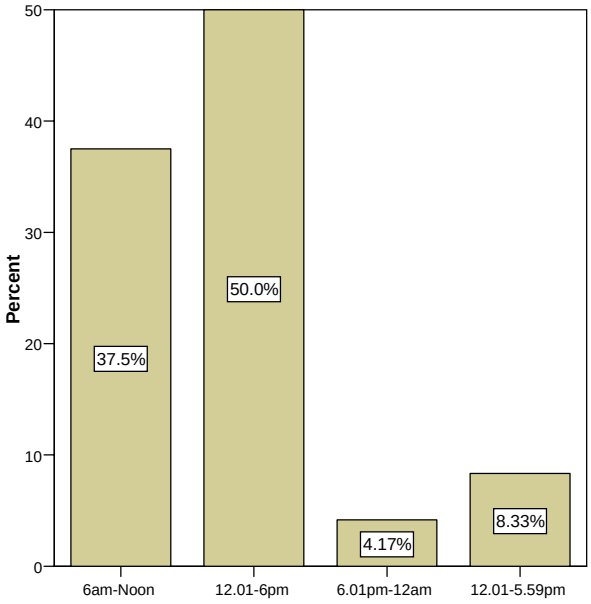
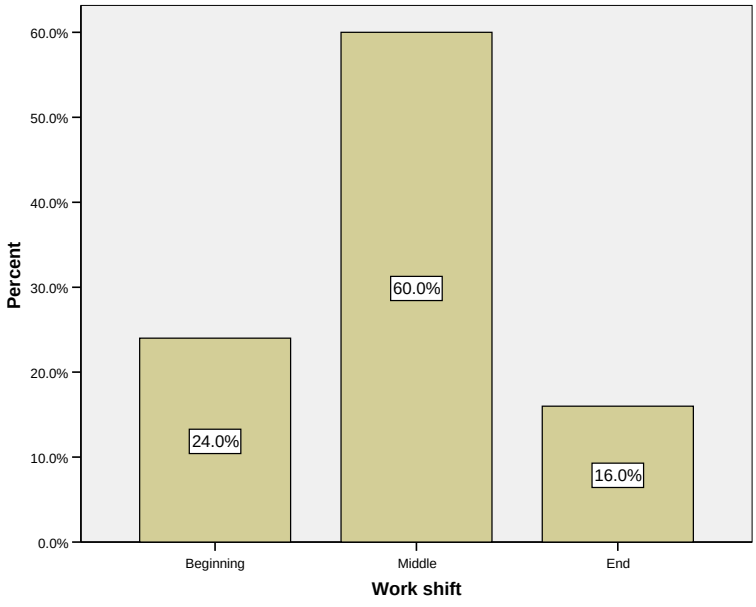


Figure 6. Time during work shift when incident occurred



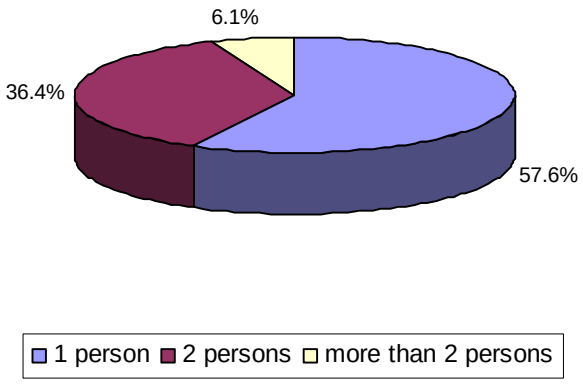
6.4.3 Type of Handling Activity

Fifty-one percent (n=18) of claimants were involved in a patient handling activity at the time of the incident, and 45.7% (n=16) were involved in inanimate handling at the time of the incident. 2.9% (n=1) was not specified.

6.4.4 Number of Persons Involved in the Manual Handling Activity

The number of persons involved in the manual handling activity varied, and is represented in figure 7. The figure is based on n = 33.

Figure 7. No. of persons involved in manual handling activity



6.4.5 Use of Handling Equipment

At the time of the incident handling equipment was used by only 9% (n=3) of the claimants.

6.4.6 Evidence of Risk Assessment

Only 11% (n=4) of files contained evidence of prior risk assessment of the manual handling activity.

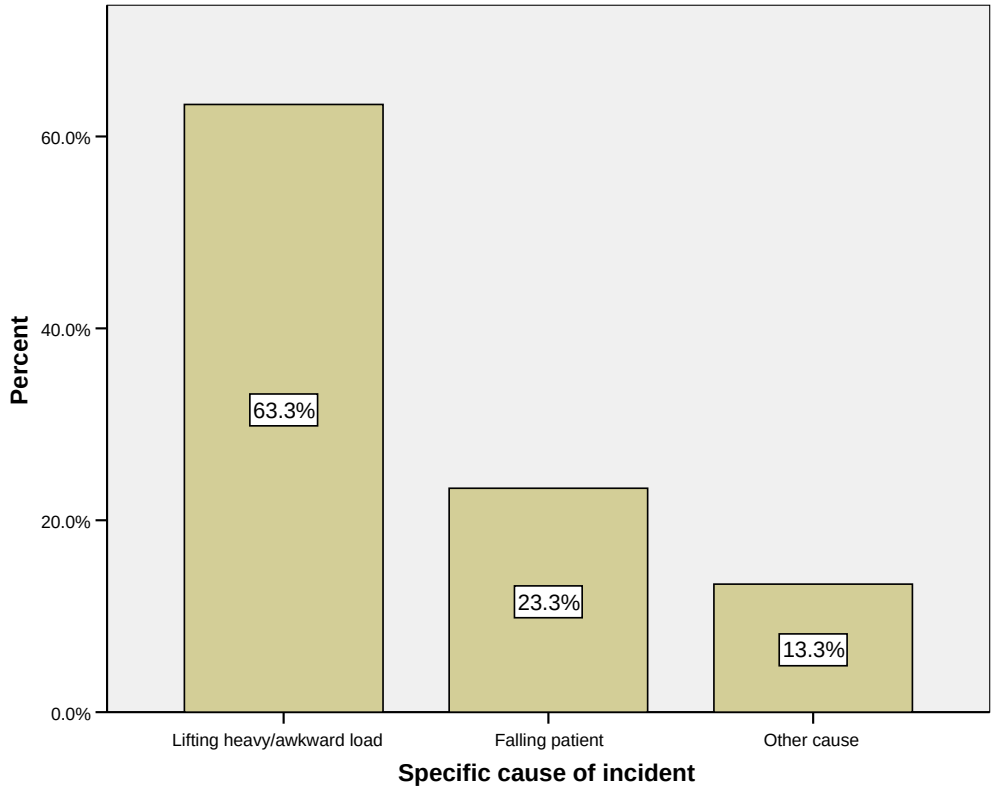
6.5 Cause of Incident

Almost three quarters (74.3%) (n=26) of the sample had an incident report in the file. One quarter (25.7%) (n=9) did not, but of those, two had an IR1 form, which is the form to be completed when reporting an incident to the Health and Safety Authority.

6.5.1 Specific Cause of Incident

The specific cause of the incident was sought from the incident or investigation documents. See figure 8 for the causes given. “Other causes” included environmental fault/design and overestimation of a light load.

Figure 8. Specific cause of incident



Note: “Lifting heavy/awkward load” includes patient and inanimate loads.

6.5.2 Cause of the Incident Categorised by Age

Table 10. Cross tabulation of age and cause of incident

Age at time of incident		**Lifting heavy/awkward load**	**Falling patient**	**Other cause**
<40 years	N (%)	7 (36.8%)	3 (42.9%)	1 (25.0%)
40+ years	N (%)	12 (63.2%)	4 (57.1%)	3 (75.0%)
Total		**19**	**7**	**4**

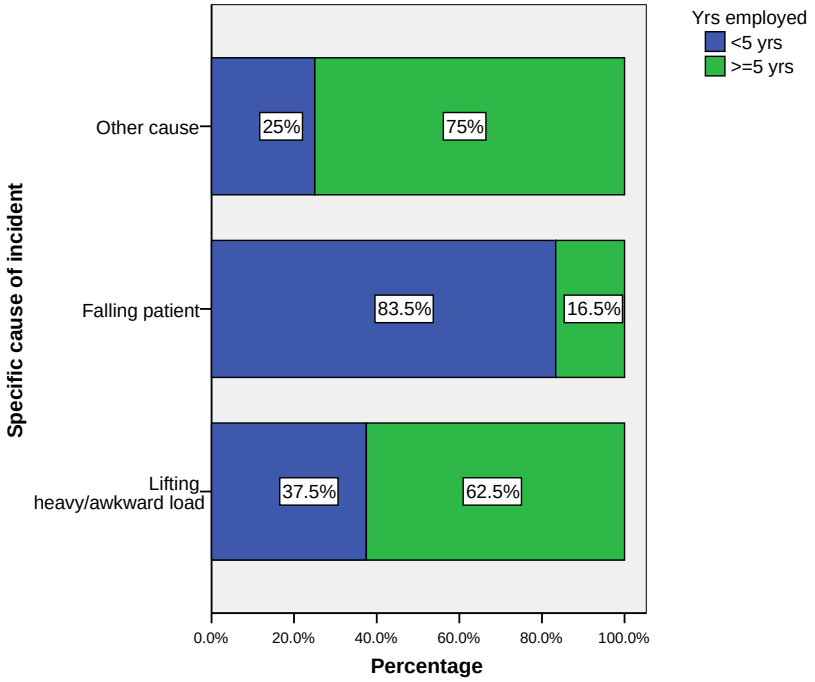
6.5.3 Cause of Incident Categorised by Occupation

Table 11. Cross tabulation of occupation and specific cause of incident

	Specific cause of incident		
Job categorised	**Lifting heavy/awkward load**	**Falling patient**	**Other cause**
Attendant	5 (26.3%)	4 (57.1%)	1 (25%)
Catering	5 (26.3%)	1 (14.3%)	0 (0%)
Others	9 (47.4%)	2 (28.6%)	3 (75%)
Total	**19**	**7**	**4**

6.5.4 Cause of Incident Related to Years of Employment

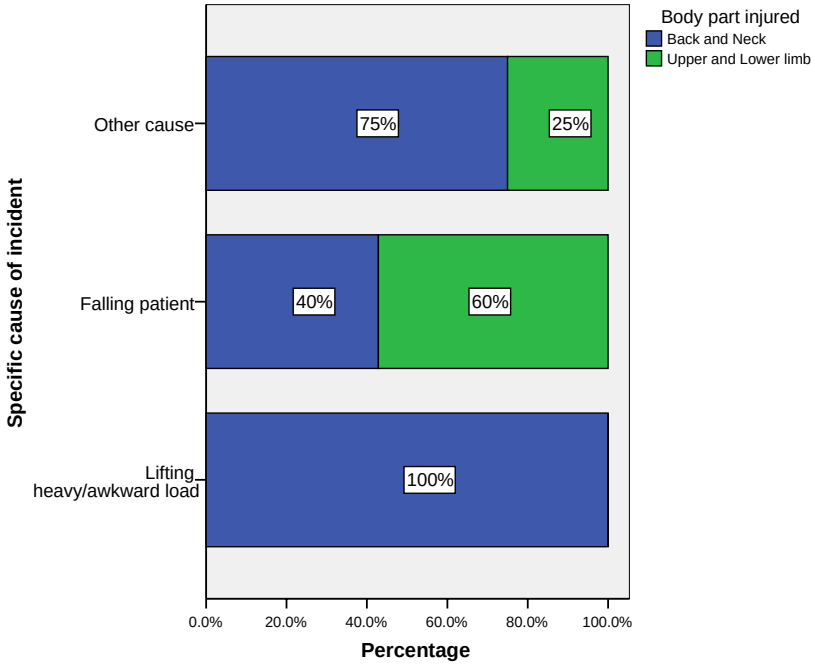
Figure 9. Cause of incident and years of employment



6.5.5 Cause of Incident and Body Part Injured

All (n=19) lifting of heavy/awkward load resulted in back/neck injury. Patient falling resulted in more upper/lower limb injury (n=4) than back/neck injury (n=3). See figure 10.

Figure 10. Cause of incident and body part injured



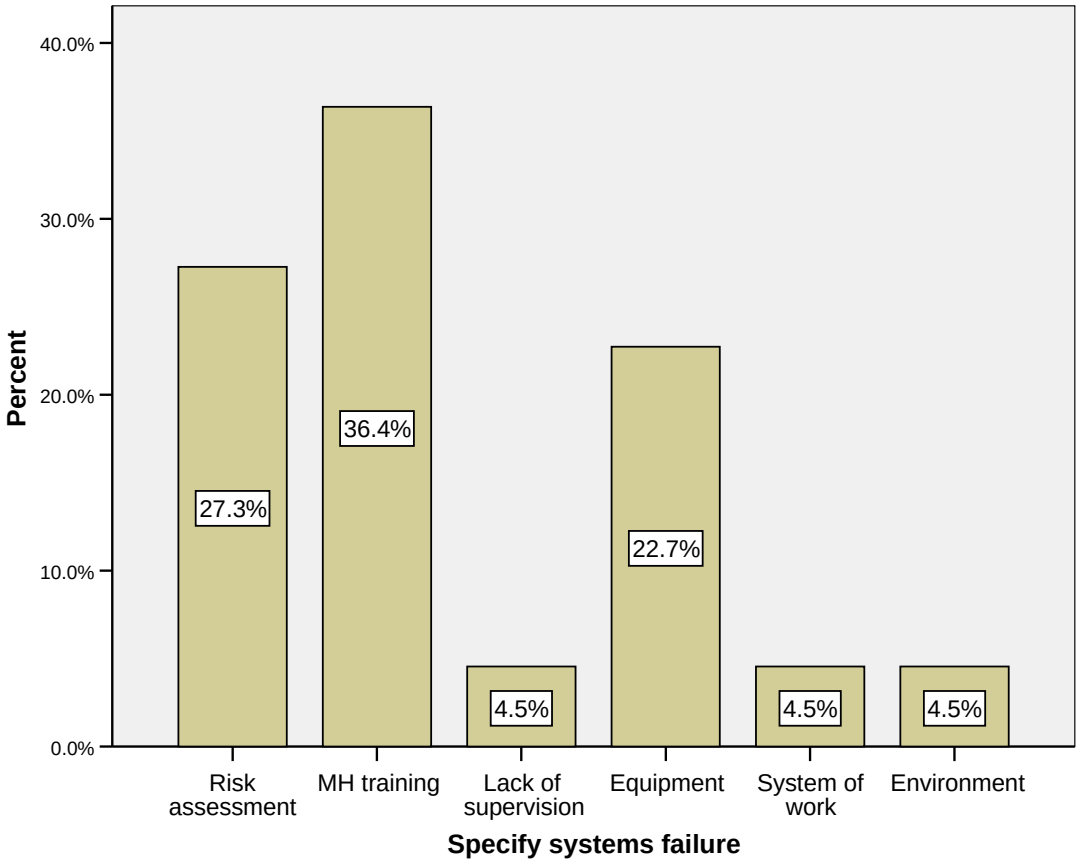
6.5.6 Cause of Incident and Gender

There was no association between gender and cause of incident. Males and females were similarly represented in all three categories of 'cause of incident'.

6.6 Evidence of Systems Failure

Sixty-three percent (n=22) of claims files had referred to evidence of systems failure contained within an investigation report. There was no evidence of systems failure in 11.4% (n=4). The remaining 25.6% (n=9) of claims files had no incident investigation report. The categories of systems failure are detailed in figure 11.

Figure 11. Evidence of systems failure



6.6.1 Manual Handling Training

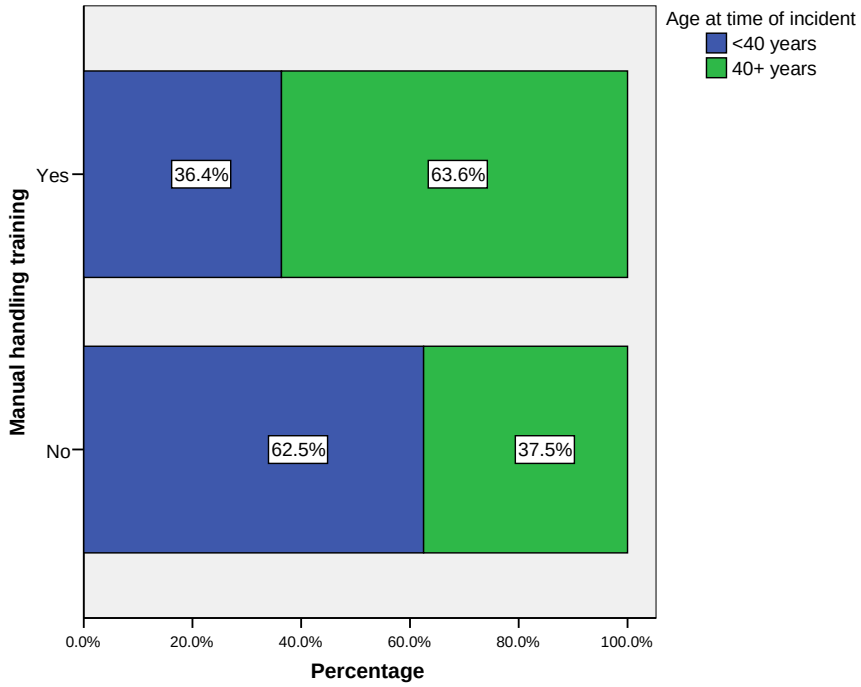
Manual handling training has been identified as the most common systems failure for lifting heavy/ awkward load. Therefore some further analysis was undertaken to examine this factor more closely. See table 12 and figures 12 and 13.

* Note: In the context of this section, manual handling (MH) training was considered a systems failure if the training had not been provided or was not up to date.

Table 12. Cross tabulation of manual handling training and activity at the time

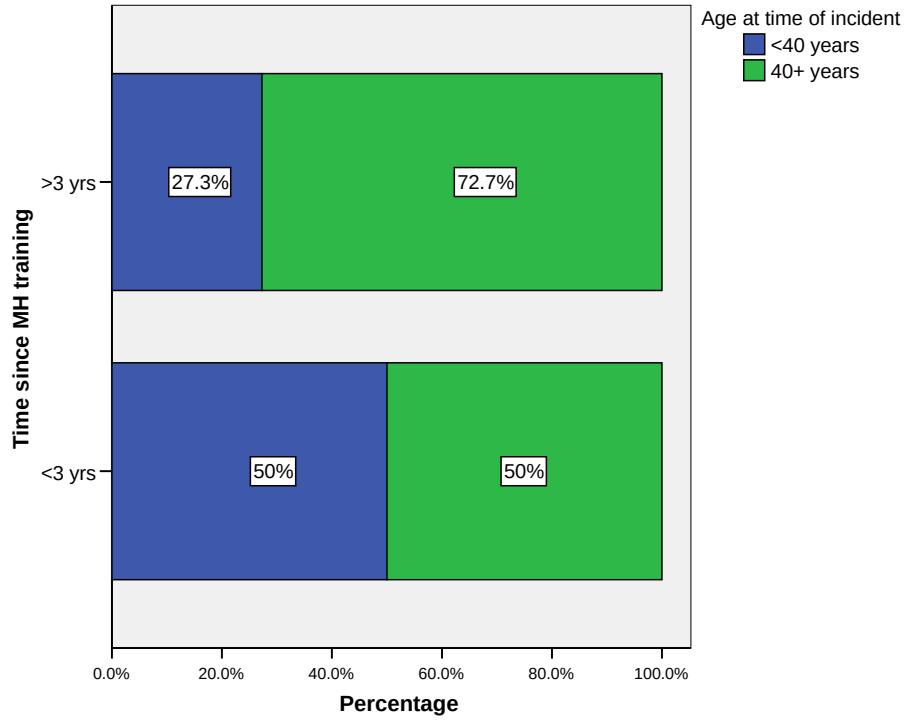
	Activity at time	
Manual handling training	**Patient handling**	**Non patient handling**
No	3 (20%)	5 (35.7%)
Yes	12 (80%)	9 (64.3%)
Total	**15**	**14**

Figure 12. Manual handling training related to age of claimant



The time since manual handling training was greater for older claimants (40+ years) than for younger claimants (<40 years). See figure 13.

Figure 13. Time since manual handling training related to age of claimant



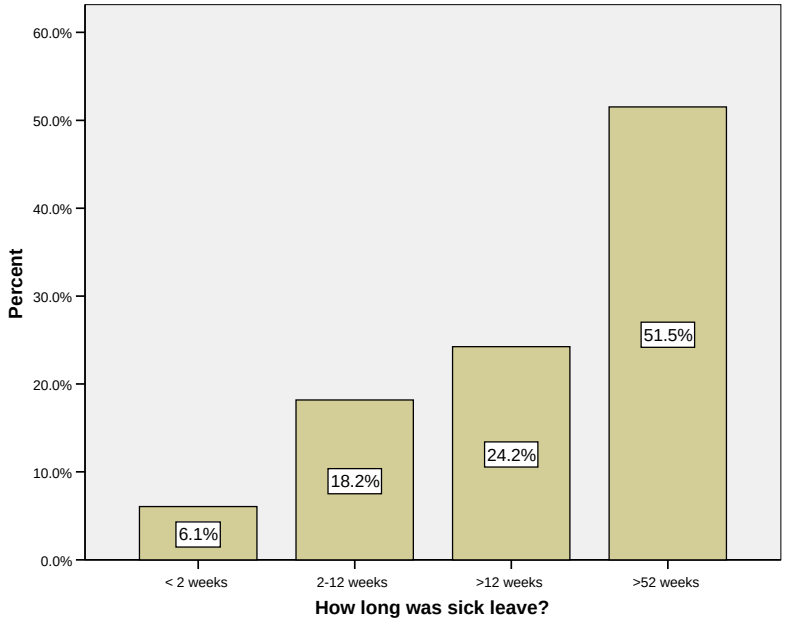
6.7 Sick Leave

Ninety-one percent (n=32) of claimants took sick leave, with 34.3% (taking sick leave immediately, 34.3% taking sick leave after some time, 22.9% taking sick leave episodically, 5.7% other, and 2.9% unknown.

6.7.1 Length of Time for Sick Leave

Fifty one and a half percent of the claimants took more than 52 weeks of sick leave following the manual handling incident. The length of time for sick leave is represented in figure 14.

Figure 14. Length of time for sick leave



6.7.2 Medical Treatment

Almost all (97%) claimants had medical treatment for the injuries they sustained in the manual handling incident.

6.8 Management of the Claimant by the Employer

This study documented the evidence of communication between employer and employee under 3 headings: 1) monitor the claimant's progress, 2) in regular communication and 3) made efforts to return the claimant to work. Only 54% had evidence of communication. The claimants who had been in communication with the employer were more likely to return to work than those who were not in communication with the employer and the association was statistically significant. (Fishers exact test, p=0.017)

6.9 Return to Work

Of those that could be determined (n=31) 58% of claimants returned to work and 42% did not return to work. See figure 15. The type of work that claimants returned to is shown in figure 16. There was no significant difference in age between those who did not return to work and those who did return to work, although the mean age of those who did not return to work was higher than those who did. See table 13.

Figure 15. Return to work

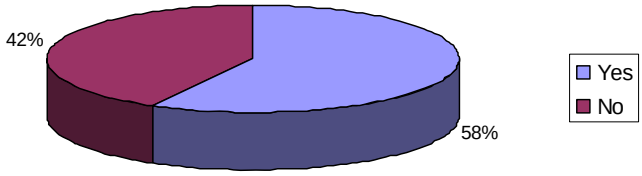


Figure 16. Type of work claimants returned to

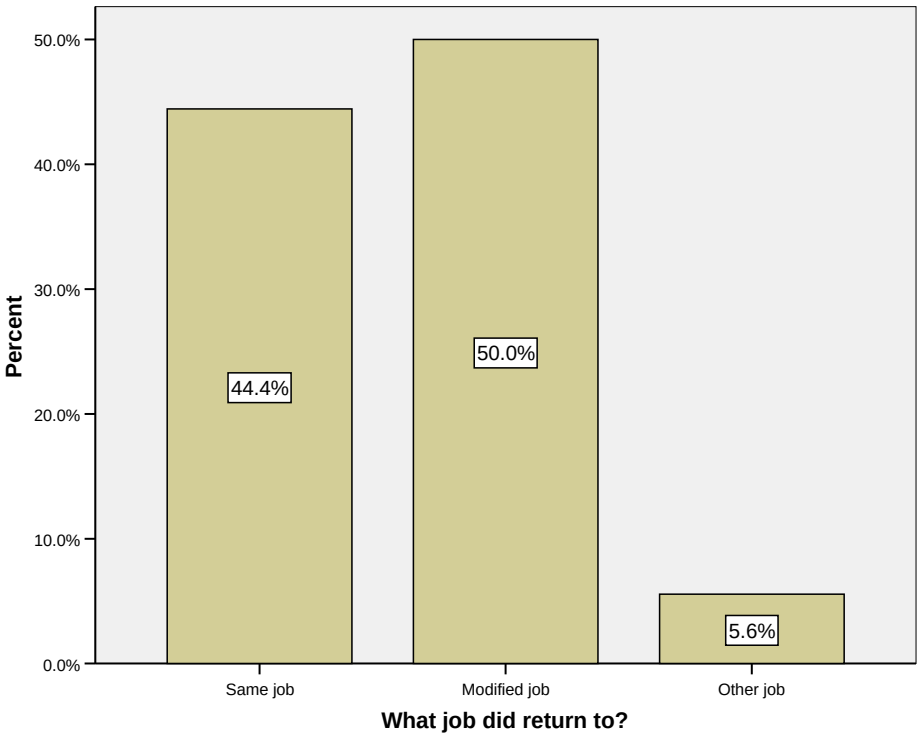


Table 13. Mean age and return to work

Did claimant return to work?	N	Mean age	Std. Deviation
No	13	44.5	12.30847
Yes	18	40.4	10.52995

6.10 Evidence of Change since the Incident

In response to the question (n=31) “Has anything changed since the incident?”, 58% of situations had not changed, and 42% of situations had changed e.g. equipment had been provided or the system of work had changed.

6.11 Modelling Systems Failures

Logistic regression models were used to predict the following system failures:

1) Risk assessment versus no risk assessment and

2) Manual handling training versus no manual handling training

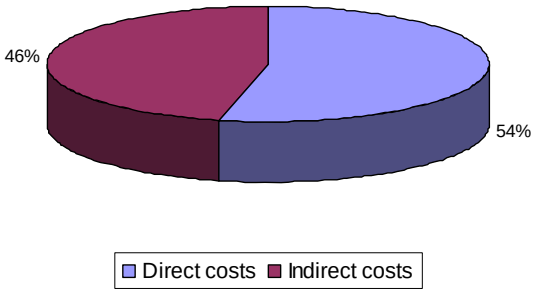
Predictors of these systems failures included: gender, age at the time of the incident, occupation, activity at the time (patient vs. inanimate handling). Time since MH training was included in the second model.

None of the listed predictors were independently significantly associated with the systems failure. The reason for this is likely to be due to the lack of power (sample size) associated with the analysis, as only 22 cases had data on systems failures identified.

6.12 Costs

The total cost for the 35 claims was €2,393,527.23. Fifty-four percent of the total costs were direct costs and 46% were indirect costs as shown in figure 17.

Figure 17. Comparison of direct and indirect costs



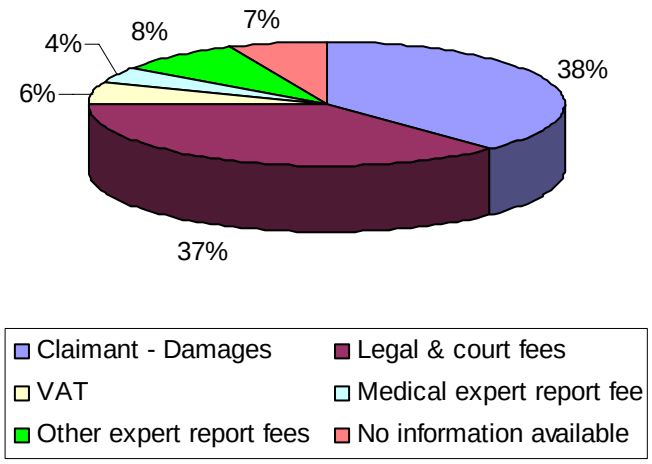
6.12.1 Direct Costs

The total cost to the insurers for the 35 claims was €1,281,913.03. The range of the amounts paid with respect to individual claims varied considerably, with a minimum of €103.91 and a maximum of €129,293.90. A description of cost items included in direct costs is shown in table 14.

Table 14. Description of direct costs

Cost item	Description
Claimant damages	This is amount paid to the claimant by way of compensation.
Legal fees	This includes claimant's solicitor fees, defence solicitor fees, claimant's barrister fees, defence barrister fees and court filing fees.
Value added tax (VAT)	This is the amount paid to the government in taxes by way of VAT on experts' fees.
Medical report fees	This is the cost of medico-legal reports.
Consulting expert report fees	This includes consulting engineers, external investigators, private investigators, ergonomic experts, actuarial experts, loss adjusters and vocational consultants

Figure 18. Distribution of direct costs



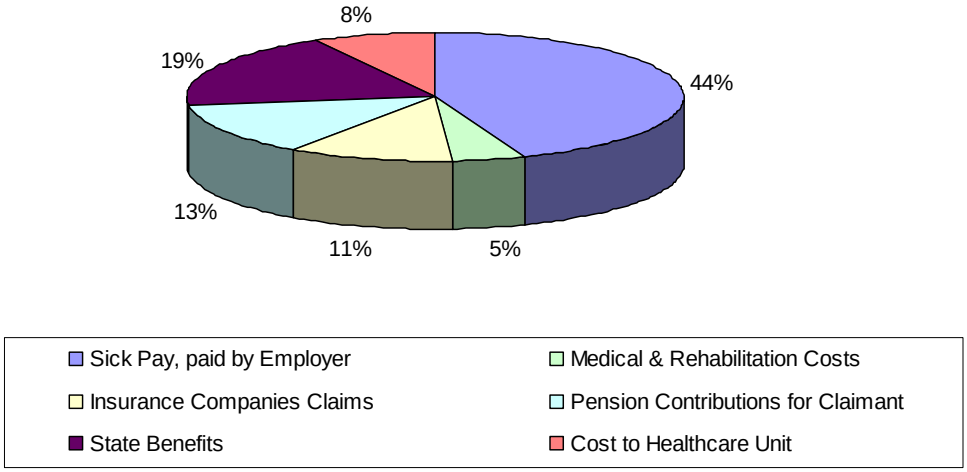
6.12.2 Indirect Costs

The total indirect cost for the 35 claims was €1,111,614.20. The range of costs varied considerably, with a minimum of €206.15 and a maximum of €77,133.77. A description of cost items included in indirect costs is shown in table 15.

Table 15. Description of indirect costs

Cost item	Description
Sick pay paid by employer	This is the amount paid to the claimant by the employer
Medical/ rehabilitation costs paid by employer	This is the amount paid by the employer for medical treatment and rehabilitation of the claimant
Insurance companies claims handling, management and processing costs	This is the cost to the insurance company in their handling of the claim. The figures presented here are conservative estimates of costs based on the amount of activity and correspondence in the claims files.
Pension contributions for claimant	This records payments by way of short service gratuities as a result of early retirement due to injury.
State Benefits	State benefits are payments made by the state for Occupational Injury and Disability Benefits.
Cost to healthcare unit	This is the cost to the healthcare unit of investigating the incident, preparing reports, collating personnel medical and training records, meeting with lawyers, supervising workplace inspections by liability investigators, consulting engineers, other expert witness, responding to queries from insurers and lawyers. The figures provided here are conservative and are based on the amount of correspondence in claims files.

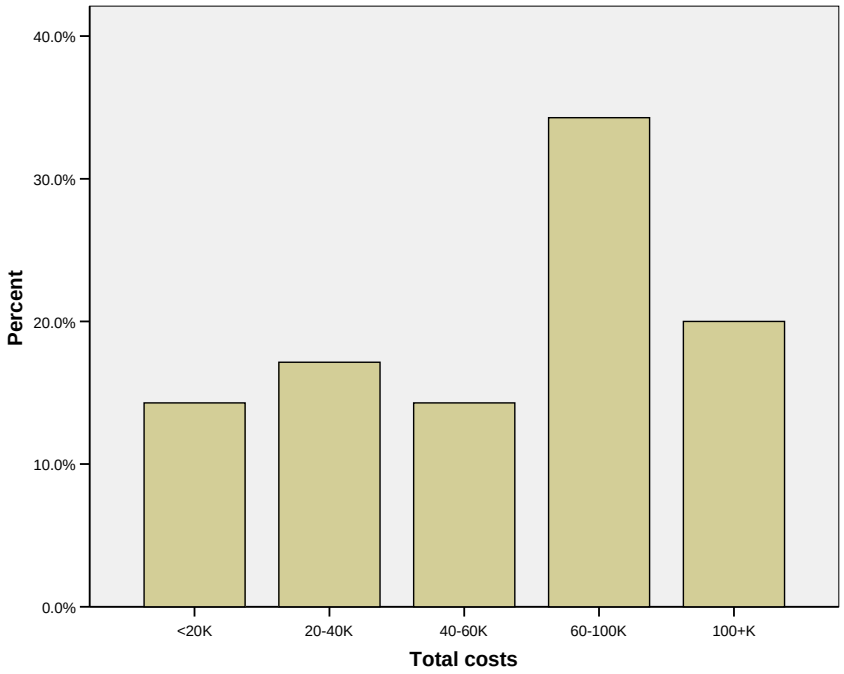
Figure 19. Distribution of indirect costs



6.12.3 Distribution of Total Costs among the Claimants

Total costs most frequently were between €60k and €100k, followed by €100k+. See figure 20.

Figure 20. Percentage claimants related to total costs



7. DISCUSSION

Manual handling incidents, and the resulting employee injury, are a problem for healthcare employers and for employees. Many manual handling incidents do not become claims, but when they do, the claims process is lengthy, difficult and costly for the employer and for the employee. The need to minimise the costs associated with litigation drives the prevention effort in many workplaces. The need to minimise costs also drives reform of certain legislation e.g. PIAB Act 2003 and Civil Courts and Liability Act 2004.

Efforts to manage manual handling incidents should ideally be effective in preventing the injuries and in assisting with defending any claims that may arise. Therefore the Quality and Risk departments in organisations are concerned with managing risk to reduce the likelihood of manual handling incidents occurring. They also aim to minimise the impact on employees and patients if a manual handling incident does occur. A comprehensive risk management approach involves the timely investigation of any incident that occurs, in order to identify the systems failures that led to the incident. Lessons can be learned from the investigation to prevent the incident occurring again. This investigation is carried out by competent personnel within the context of a 'no blame culture' and is a positive approach to risk management and injury prevention.

The approach to an investigation is different when litigation has commenced as a result of a manual handling incident. The incident investigation may create a negative, 'blame culture' and does not always identify the underlying reasons why the manual handling incident happened and therefore the investigation may not be particularly beneficial to the stakeholders. The legal system in Ireland is an adversarial system where blame is apportioned to one side so that the case can be won by the other side. The provision of manual handling training is an important element in defending a claim and therefore employers often provide it solely for this reason.

7.1 Description of Files

The data for this research was obtained from claims files and the results will be discussed in this section. Files varied considerably in length and content - factors that did not always relate to the gravity of the injury or to the outcome of the claim.

7.2 Demographics

The sample comprised more females (54%) than males (43%), but given the small numbers, this difference did not reach statistical significance. The sample also comprised more persons who were 40+ years of age (57%) than those who were less than 40 years of age. Although this study did not include a control or uninjured group, both of these findings compare favourably with Thomas et al (2006a) who found that in the healthcare sector, injured employees tended to be older than uninjured employees and that women were injured more often than men.

Attendants accounted for the highest number of claimants, and catering staff accounted for the second highest. This was an unexpected finding, as much of the previous literature has found that nurses are the health care staff that are mostly affected by manual handling incidents. It may be that other studies have focused on nursing staff and therefore their findings relate solely to them. It may be the case that nurses in Ireland are not involved in manual handling incidents. It may also be the case that nurses are not reporting incidents or injuries, as has been found by others (Geiger Brown et al 2005, Dockrell et al 2002). A further explanation is that nurses are involved in manual handling incidents, but the incidents are not developing into claims. These reasons may partly explain why nurses are under-represented in this sample. However the findings of this study highlight the need to focus attention on attendants and catering staff as part of any manual handling incident prevention strategy.

Claimants with more than 10 years experience in the current employment, or less than 5 years experience in the current employment, had a greater representation in the sample than those who were in the current employment for between 5 and 10 years. It is well established in the literature that health care workers that are new to a job, are more at risk of an injury due to manual handling. The incidence and pattern of injury

due to manual handling is less well established among attendants and catering staff who are not involved in patient care. Manual handling incident prevention information tends to be aimed at those new to employment e.g. induction programmes, with less well defined plans for experienced workers e.g. updated training and onsite training and coaching. However from the results of this study it appears that the development of prevention strategies is equally important for the experienced and the inexperienced workers alike.

Seventy-one percent of the claims files had a reference to associated psychosocial factors. This data was gleaned from the claims file and a psychosocial factor was considered to be present if it was mentioned in any of the reports or correspondence that were contained within the file. As such, the findings could be somewhat reliant on hearsay, or on a claimant's behaviour that is not correctly interpreted. However, the fact that 71% of the claims files referred to psychosocial factors, is an indication that this is an issue that merits further investigation. Further investigation could determine if psychosocial factors contribute to the cause of the incident, act as a catalyst for a claim to be made, or influence a claimant's return to work.

7.3 Health and Safety Management Systems

There was evidence of some elements of a health and safety management system for just over half (51%) of the health care settings in the sample. It is possible that a greater percentage of the healthcare settings have health and safety management systems, but the evidence was not in the files. The Health and Safety Authority published two documents on this topic in 2006. One is a guidance document on the development of a safety and health management system, and the other is a tool for auditing a safety and health management system. The availability of these documents may increase the future implementation of safety and health management systems in the health care sector.

7.4 Manual Handling Incidents

The majority (74.3%) of incidents resulted in a back injury. This is in agreement with the literature, where back injuries are the highest reported site of injury and the most

common cause of absence from work (Thomas et al 2006b). The neck was the next most common (11.4%) body part injured in this study.

This study included all workers in the health care sector and as such differs from much of the published literature. It was found that non-nursing staff were more likely to be involved in the incidents than nursing staff. This finding is similar to that of Thomas et al (2006b) who found that maintenance and "custodial" staff were at risk of strain injuries.

This study showed that more than half (51%) of the claimants were involved in a patient handling activity at the time of the incident, and interestingly that inanimate handling activities were almost equally represented (49%) as causes of manual handling incidents in the healthcare sector.

This study found that claimants were more likely to be carrying out manual handling tasks on their own when the incident occurred. It is difficult to compare this finding with findings in the literature, as there is a dearth of published information that investigates if incidents are more likely to happen when staff are handling loads on their own, or with others.

Only 9% of claimants were using manual handling equipment at the time of the incident and none of the claimants implicated equipment failure, or equipment use, as a contributory factor. However a lack of equipment was cited in investigation or expert reports and represented 22.7% of reasons for systems failure. The use of manual handling equipment seems very low, but the current study did not investigate whether or not equipment should have been used in the various incident situations. The provision of handling equipment in Ireland has improved in recent years (Gallagher et al 2006), but the provision of patient handling equipment continues to be a problem throughout the European Union (Hignett et al 2007). Many guidance documents on prevention of manual handling incidents, recommend the provision of suitable handling equipment (Table 4), and many of the intervention studies cited in the literature provided equipment as an intervention (Table 2). Zhuang et al (1999) demonstrated that the compressive forces on the spine were reduced by 60% when equipment was used for patient handling tasks. However the equipment must be

suitable for the task and for the work environment if it is to be effective, otherwise the use of the equipment itself may actually increase the forces on the spine (Waters et al 2006). The staff must also know how to use the equipment, and training in the use of handling equipment is recommended in the literature (Nelson and Baptiste 2004) and in many of the guidance documents on prevention of manual handling incidents (Table 4).

Only 11% of the files had evidence of prior risk assessment of the manual handling activity undertaken at the time of the incident. This is lower than the overall levels of risk assessment in the Irish workplace reported by Power (2005). Such low levels of risk assessment raise serious concerns, as the need for risk assessment of hazardous handling tasks is an important element of a programme to prevent manual handling incidents and back injury (Hignett et al 2003). There is the additional requirement for ongoing risk assessment in patient handling, as the patient's abilities change over time. There is anecdotal evidence that risk assessments are carried out more frequently now than during 2000-2002 in the healthcare sector, but there is a need for ongoing, longitudinal research in this area, to accurately monitor and document the changing levels of risk assessment in the healthcare sector.

7.4.1 Cause of the Incident

Lifting heavy/awkward loads (includes patient and inanimate loads) was the most common cause of incident. This is in keeping with the literature, where lifting heavy loads is frequently cited as the most common cause of injury. All the claimants who were lifting a heavy/awkward load sustained a back/neck injury, and the older workers were associated with this cause.

Catching a falling patient was the second most common cause of incident. This finding is also in keeping with the literature (Betts 2006, Brady et al 2002). Those who were involved with a falling patient sustained various injuries but slightly more upper/lower limb injuries than back/ neck injury. Catching a falling patient was more likely to be associated with the less experienced workers. There is a lack of consensus on the protocol for managing a falling patient and on what training should be provided for staff who may need to manage a falling patient. It can be difficult to simultaneously protect the safety of both the patient and the health care worker when

a patient is falling. The natural instinct for the worker is to catch the patient, but this puts the staff member at considerable risk of injury. Betts (2006) states that most patient falls can be successfully managed by preventing their occurrence in the first place.

In the UK, NICE (2004) has produced fall prevention guidelines for healthcare settings in order to reduce the number of patient falls and subsequent disability for the patient. In Ireland, a working group are preparing a Falls and Osteoporosis Prevention Strategy at national level on behalf of the HSE. Using best practice guidelines to prevent falls in healthcare settings will have obvious benefits for the patients, but there are also benefits for staff, given that the falling patient has been shown to pose a risk of injury to healthcare staff. It is suggested therefore that falls prevention strategies should be part of any back injury prevention programme. Consensus on the procedure for managing the falling patient and consensus on what training is effective for healthcare staff who may be exposed to falling patients would also be beneficial.

7.5 Systems Failure

Sixty-three percent of files had evidence of systems failure. Manual handling training has been identified as the most common systems failure for manual handling incidents. The majority of the claimants had manual handling training but this study also looked at how long it had been since they had training. Therefore, although the majority had received manual handling training, many had been trained more than three years prior to the incident and had not been updated, or the training had not been appropriate, or had not been considered to be specific to the claimants needs. There may be an increased emphasis on manual handling training as a systems failure in this report, as the data is based on information in the claims files and the provision of manual handling training is an important element in defending a manual handling claim.

7.5.1 Profile of those whose cause of incident is "lifting heavy/awkward load":

- Have had manual handling training
- Had sustained a back injury

- Were involved in a non-patient handling activity
- Were over 40 years of age

7.5.2 Profile of those whose cause of incident is "falling patient":

- Less likely to have had manual handling training
- Had sustained a back injury, or upper limb injury, or lower limb injury
- Were involved with a patient handling activity
- Were less than 40 years of age

7.6 Prevention of Manual Handling Incidents

The research literature recommends that prevention programmes should be multifaceted. Training is an important element of these programmes but should not be delivered in isolation. The multifaceted, intervention, prevention programmes summarised in table 2 provide guidance for risk management personnel and health and safety personnel who want to implement successful prevention programmes. All of the studies reported positive outcomes from the intervention. Some authors have added a word of caution and generally recommended that more research is needed to determine exactly which mix of elements is appropriate for different types of healthcare settings (Smedley et al 2004).

Nelson and Baptiste (2004), Charnley et al (2006) and Smedley et al (2005) comment on some of the barriers to implementing good prevention programmes e.g. insufficient funding, lack of expert advice, staff turnover rates, lack of consistency in documentation and policies, lack of good incident investigation, lack of consistency in commitment from senior management.

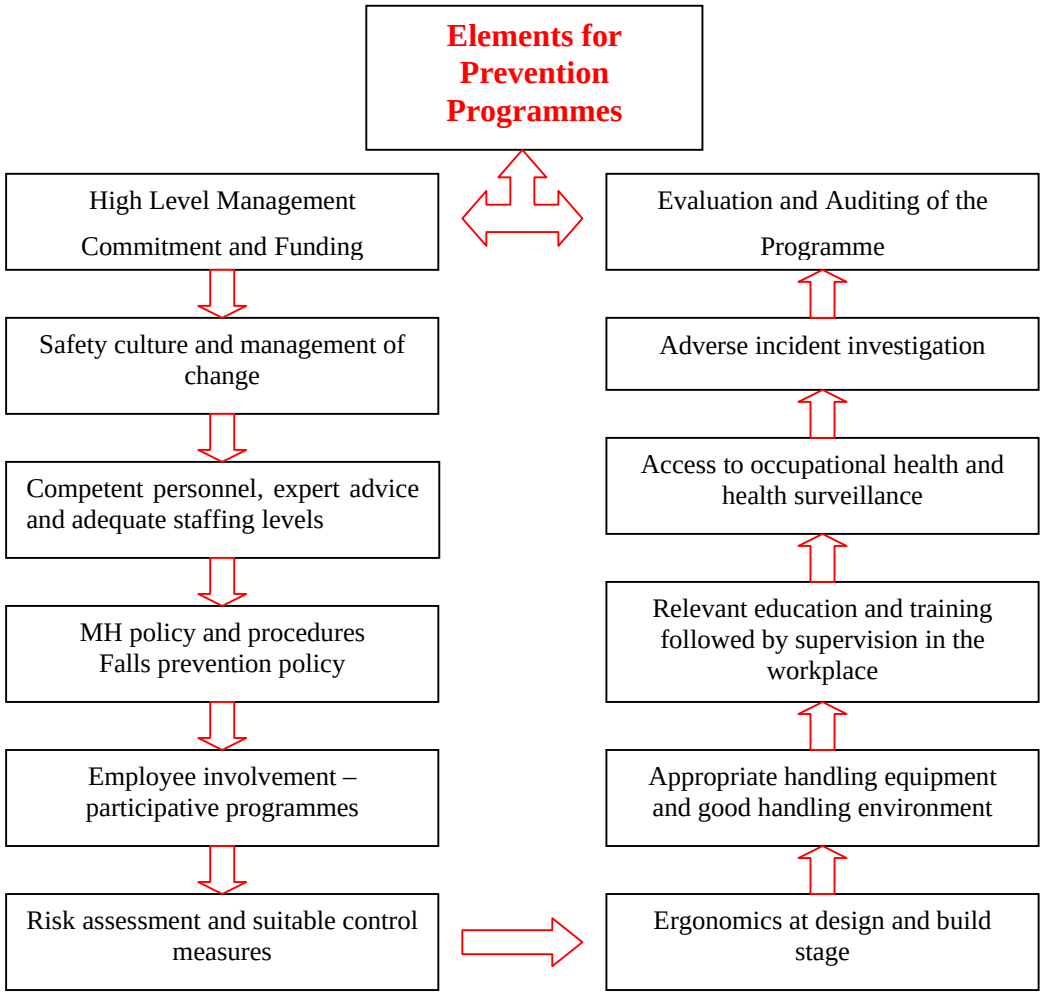
There was little evidence in the claims files of elements of a multifaceted prevention programme, apart from manual handling training. The EU Health and Safety Agency has a campaign in 2007 to reduce musculoskeletal disorders in the workplace. As part of this campaign, the Senior Labour Inspectorate Committee in the EU has an inspection campaign planned for 2007 to promote better compliance with EU Directive 90/269/EEC 'Manual Handling of Loads' in order to reduce

musculoskeletal disorders. This campaign is specifically targeting the transport and the healthcare sectors. This campaign should heighten awareness of the requirements of the 1993 Manual Handling Regulations and may improve risk management systems for manual handling activities in the key areas of transport and healthcare.

The HSE (UK) website has examples of good practice for safer patient handling within some of the NHS Trusts. The information is targeted at inspectors in the HSE (UK). A number of case studies are presented but it is acknowledged that there is currently no single model for best practice. However the HSE (UK) notes that commitment from high-level management and the drive generated by dedicated, competent persons in a trust have been the influential factors in the successful Trusts.

A diagrammatic model that summarises the important elements for back injury prevention programmes is presented in figure 21.

Figure 21. Summary of elements for prevention programmes



7.6.1 Manual Handling Training

The manual handling of loads and of patients is associated with back injury, and consequently, information and training is an integral part of any programme to prevent manual handling incidents and back injury. The majority (63%) of claimants had received manual handling training.

A significant percentage (23%) of claimants was not provided with manual handling training in this study. This is similar to the finding in the inspection study carried out by the HSA in 2001. The HSA study was carried out within the same time period that the incidents for inclusion in this study were reported. Anecdotal evidence would indicate that training provision in the healthcare sector has improved in recent years, but further research should be carried out to verify this and to determine its effectiveness.

This study found that there was no association between manual handling training and the occurrence of manual handling incidents, which concurs with the suggestions of others (Hignett 2001, Hignett et al 2003, Nelson and Baptiste 2004, Waters et al 2006). In most cases, manual handling training was delivered in a vacuum, without any other elements of a prevention strategy, or any consideration for workplace ergonomics.

The current study showed that a high percentage of the staff who were injured as a result of a manual handling incident were attendants and catering staff. It is possible that the manual handling training for attendants and catering staff is not based on risk assessment of their handling tasks and is not specific to their work, but follows a generic health care sector format. However the content, relevance, or quality of training was not under investigation here and the quality and relevance of the training was not evident from the information in the claims files. The findings of this study highlight the need for attendants and catering staff to be specifically targeted when manual handling incident prevention strategies are being developed. They should also be given relevant information and training in order to develop good handling skills and good problem solving and risk assessment skills.

The consistent finding in the literature that manual handling training, on its own, is not effective in preventing manual handling incidents or back injury does not mean

that manual handling training should be discontinued. There is a legal requirement to provide training, and training is an important element of a comprehensive prevention programme. It is however difficult to truly evaluate the effectiveness of training when the content, length, frequency, relevance and expected outcomes of training are so varied and when the background, knowledge and competence of trainers vary greatly. A number of guidance documents have been published, and initiatives taken, which aim to improve the approach, content, context, relevance, effectiveness and delivery of manual handling education and training (Table 3). All these guidance documents and initiatives recommend that manual handling education and training be provided as part of an overall programme to prevent manual handling incidents and back injuries in the healthcare sector. The Royal College of Nursing focuses on the development of competencies in manual handling and problem solving skills, rather than focusing on the content and length of a training programme. Lack of training, or inadequate training, or outdated training was often given as the cause of the incident in this study, without any in-depth analysis of whether different, or improved training would actually have prevented the incident occurring.

Student nurses were not represented in this study, but some authors have highlighted the need to consider manual handling training and education for nurses at undergraduate level so that basic competencies are achieved which can then be built on throughout the nursing career (Swain et al 2003, Waters et al 2006). Swain et al (2003) identified that the context of training is important and therefore it should be provided in the actual workplace/ward, as well as in a classroom setting. They found that student nurses tend to follow practices used by qualified nurses on the wards rather than use the practices taught in training. They summarised that this is because student nurses are more concerned with fitting in to the ward environment than looking after their own health and safety. This may also apply to other categories of healthcare workers such as those included in this study. Supervision of handling practices in the workplace may be one way of improving compliance with what has been taught in training. There was no evidence in the files of any training being provided at the workplace and in the context in which it would be applied. There was also poor evidence of onsite supervision of manual handling.

Hignett et al (2007) state that patient handling should be one of the basic competencies for nurses and considered as part of the European Healthcare Training and Accreditation Network Project to facilitate EU nurse workforce mobility. There are efforts within an Irish context to develop standards for manual handling training. The ISCP has developed guidelines for its members on the provision and assessment of moving and handling training (ISCP 1995, 1997). More recently, a HSA working group has been established to develop training standards at operative and at instructor level for patient handling training and for inanimate handling training. These standards will be developed with FETAC and all manual handling instructors will be required to reach this standard before delivering training. This working party was set up after an extensive consultation process between the HSA and relevant organisations, professional bodies and safety professionals. The need for standards in manual handling training and in patient handling training was highlighted during this consultation process. Initiatives are also being taken to improve the content and outcomes from manual handling training by the HSE (Ire) and by the Minimal Handling Advisory Group; a subgroup of the Dublin hospital group risk management forum.

7.7 Management of Incidents

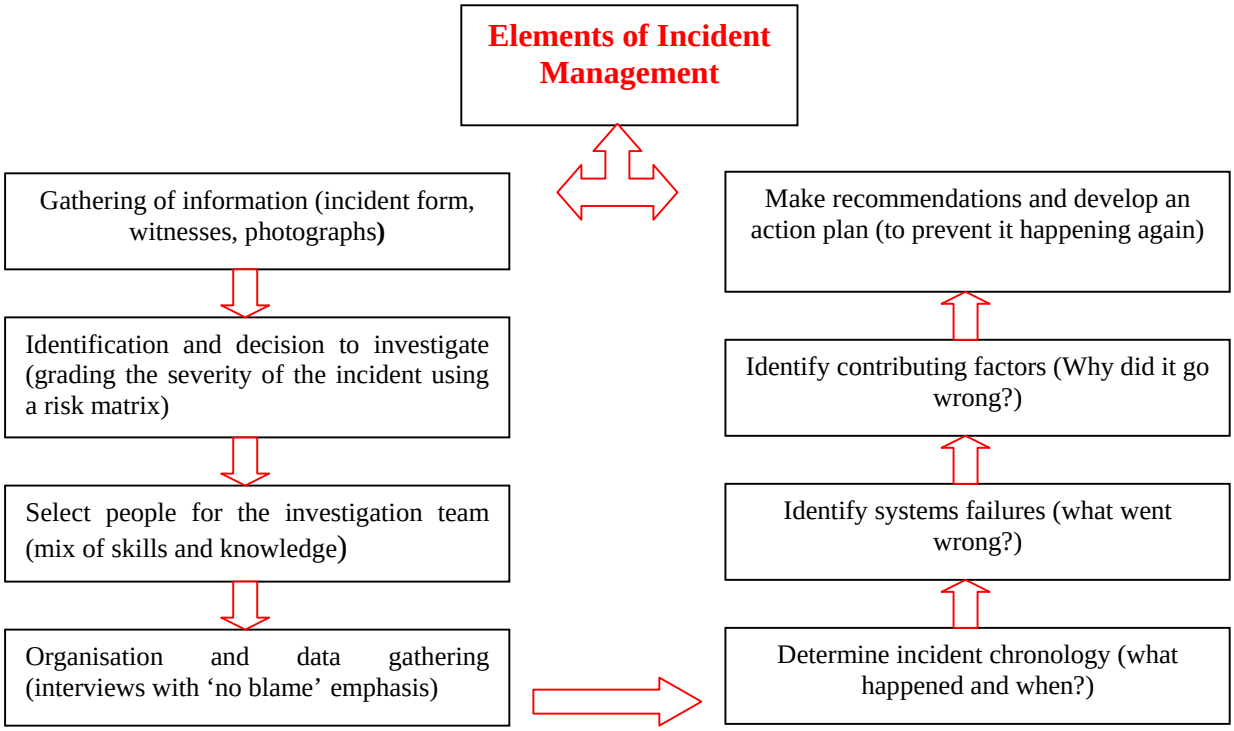
There was little evidence in the claims files of the manual handling incidents being formally managed after they occurred. There did not appear to be one department or person organising the management of the incident. Incident forms were available on file for only 75% of the claims. However the information on the forms was not always comprehensive and in some instances was illegible. In some cases the claimant filled out the form him/herself and a senior staff member did not verify the information. The forms were sometimes completed some time after the incident occurred, or were completed after a solicitor's letter was received from the claimant's solicitor, rather than at the time of the incident. It is a concern that only 75% of incidents that developed into claims have an incident form on file, and therefore it is probable that the number of completed incident forms for those incidents that do not develop into claims, is considerably less. Investigations that were carried out were usually part of the litigation process and therefore were not necessarily focused on

finding the root causes of the incident but were focused on deciding who was liable for the incident. These investigations were also carried out some time after the incident occurred. This resulted in evidence being disputed in a number of cases.

Good risk management practices include incident investigation by competent personnel. The first step in the process of incident management is to fill in a comprehensive incident form and to grade the incident and then decide at what level within the organisation it will be dealt with. More serious incidents will have a significant investigation and minor incidents can be dealt with at local level with local control measures. The main aim of this process is to identify the contributing factors to the incident, to learn lessons from the incident and to put control measures in place to prevent the incident happening again.

There was evidence in some files that changes had been made after the incident occurred e.g. the purchase of equipment, or a change in manual handling policy, but in general it appears that incident investigations did not necessarily lead to any change that would prevent the incident occurring again. There is some anecdotal evidence that risk management systems have improved in many of the larger healthcare organisations in Ireland. Quality and Risk Management departments, or committees, are developing policies and procedures for managing all incidents (clinical and employer liability incidents) in a similar way. The guidance in the London Protocol forms the basis for the investigation and management of many of these incidents.
A diagrammatic model summarising the management of an incident is presented in figure 22.

Figure 22. Summary of elements of incident management



7.8 Management of the Injured Worker

As expected, a large majority (91.4%) of claimants took sick leave. The pattern of when sick leave was taken varied considerably with only 34% taking sick leave immediately after the incident. There was little evidence of any organised or standardised process to be followed when a worker was injured. There was also little evidence of an organised or standardised process for managing the worker when she/he was on sick leave. This is a significant finding as the management of the injured worker while on sick leave is of the utmost importance in determining the outcome of a successful return to work.

The trend towards lengthy periods of sick leave is also a cause for concern. More than 50% of the claimants had more than 52 weeks sick leave and the majority of the claimants had back problems. Best practice evidence for the management of back pain is to continue to be active and to stay at work if possible, or to return to work as soon as possible. It is unclear from data in the claims files if the length of sick leave

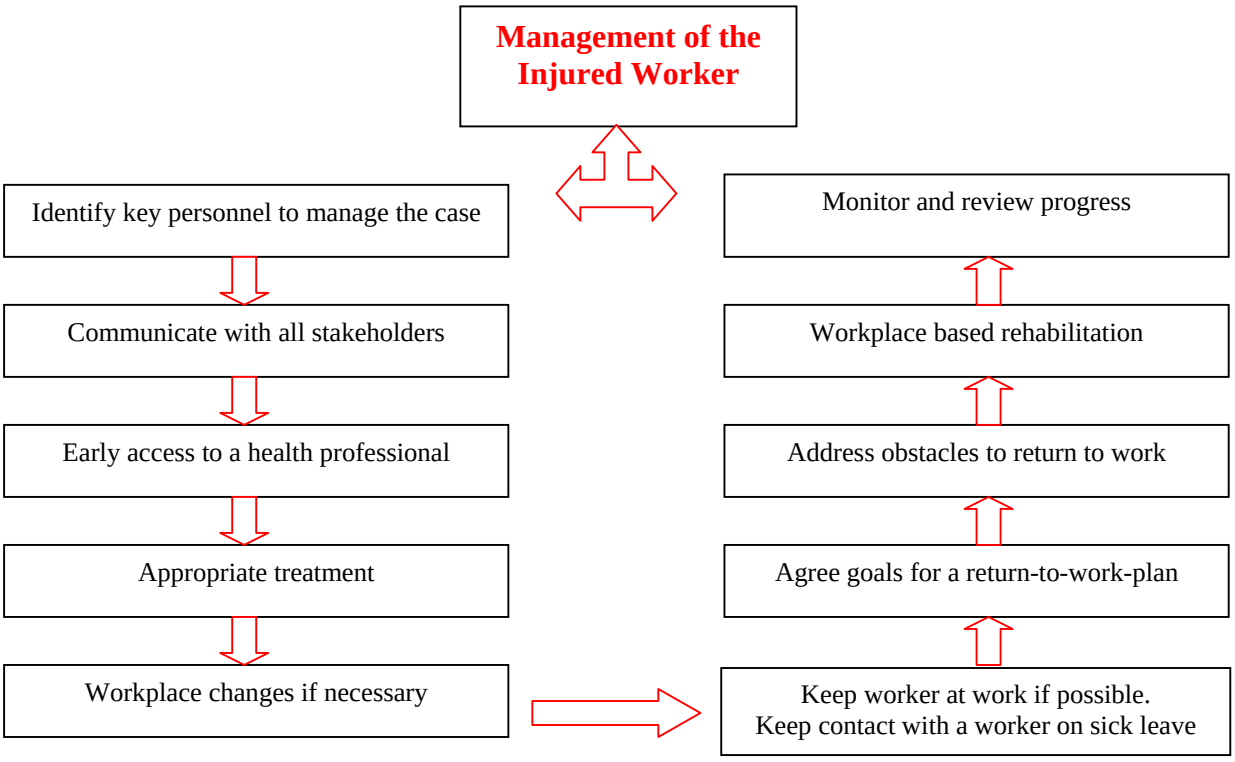
is linked to the severity of the injury and the resultant disability, or if it is linked to other factors, such as the length of time that it takes to process a claim.

Only 54% of claims files in this study had evidence of communication between claimant and employer when the claimant was on sick leave. This may have contributed to the high percentage of claimants who were off work for longer than 52 weeks. This study also showed that claimants who had been in communication with their employers were significantly more likely to return to work than those who had not. This is in agreement with Pransky et al (2004) who state that an important element in the successful return to work programme is good communication between all stakeholders e.g. employee, employer, medical personnel, occupational health, GP. Facilitating the worker to remain at work, or to return to work, ensures that the worker keeps up contact with his/her workplace and does not lose confidence in his/her ability to work.

Forty-two percent of the claimants did not return to work at all after the incident. This could be linked to the poor communication between employer and employee or could be linked to other barriers to a return to work. This study has raised some interesting questions about the management of the injured worker and further investigation with a larger sample and focussing specifically on this issue is recommended.

A comprehensive report produced by Hanson et al (2006) demonstrated that it is cost effective to facilitate the worker to return to work, as the considerable costs associated with worker absenteeism are reduced. However there are barriers to implementing this process and one of these barriers is the perception that work 'caused' the injury and therefore returning to work will impede the recovery process. The litigation process reinforces this belief and therefore can hamper the return to work programme. A consistent approach to managing the worker at the time of the incident, when the worker is on sick leave and when the worker returns to work, will increase the likelihood of a successful return to work process for the claimant. This has benefits for the claimant and for the employer. A diagrammatic representation of a summary of the management of the injured worker is presented in figure 23.

Figure 23. Summary of the management of the injured worker



7.9 Costs

The total cost of the claims included in the study was €2,393,527.23. However, it must be acknowledged that only a subset of the total number of claims (n=247) for the time frame under investigation could be included for analysis. If the cost found for the 35 claims files was extrapolated to the total number of claims (n=247), this would equate to a total estimated cost of €16,891,463.59.

Of the individual claims, over 50% had a total cost of more than €60,000. The costs were calculated under two main headings, direct costs and indirect costs (see 5.3.2). Information on direct costs was mainly available in the claims files whereas the indirect costs were mostly estimates as there was little or no information on indirect costs in the claims files.

7.9.1 Direct Costs

The total direct cost of the claims included in the study (n=35) was €1,281913.03. This represented 54% of the total costs. Figures 17 and 18 illustrate how these costs were distributed. It is interesting to note that the claimant and the legal professionals received similar percentages (38% and 37% respectively) of the total direct costs.

There did not appear to be a pattern in how the direct costs were distributed. For example, in one of the claims files the claimant received €875 from a total direct cost of €22,287.75 or equivalent to 4% of the total direct costs, whereas the legal professionals received €16,461.10 which is equivalent to 74% of the total direct costs. Medical and other experts and VAT accounted for the remainder. However in another case the claimant received 60% of the total direct costs and the legal professionals received 26% of the total direct costs. Greater detail on the costs and their distribution is given in Appendix 2.

The majority of claimants (n=26, 74%) received monies by way of reimbursement of medical expenses and / or compensation. For the remaining 26% (n=9), the amount of compensation paid to the claimant could not be established from the files (n=3), or the claimant withdrew the claim or received no compensation (n=6).

7.9.2 Indirect Costs

The total indirect cost of the claims included in the study (n=35) was €1,111,614.20 and this represented 46% of the total costs. The analysis of indirect costs is difficult because of a lack of information on these costs, particularly in claims files. Where these costs are considered, they generally exceed the direct costs (Birnbaum et al 2000). Although in this study the indirect costs were lower than the direct costs, there were cases where the indirect costs exceeded the direct costs. For example, in one claim, the direct costs were €1,443.63 and the indirect costs were estimated to be €17,322.01.

The analysis of each of the files showed that a wide range of costs and effects resulted from the incidents. This study included all relevant aspects of indirect costs, but it is acknowledged that there may have been other indirect costs that were not included in the calculations e.g. cost of replacement staff, and the cost of recruitment and training

of replacement staff. However, there was no evidence of these costs ever having been considered in the claims files, or having actually been incurred in the workplace. For some of the claimants, their losses may be ongoing and the State may also be involved in providing on-going care and benefits.

Sick pay, paid by the employer represented 44% of the total indirect costs. This is a significant cost to the employer and highlights the need to facilitate the injured worker to remain at work or to return to work as soon as possible.

State benefits accounted for 19% i.e. the second largest category of the total indirect costs, which is a considerable cost to the State. The benefits calculated only cover state benefits up to the date of settlement of the claim and do not cover any on-going or future state benefits. Therefore this is likely to be an underestimate of the actual costs incurred.

The insurance company's in-house claims handling charges accounted for 11% of the total indirect costs. It is not the practice of insurance companies to record or allocate their in-house claims handling charges within the claims file. Therefore the costs under this heading have been very conservatively estimated.

Medical & Rehabilitation Costs accounted for only 5% of the total indirect costs. In comparison with the other categories of costs, this appears to be very low, given the nature of the incidents and injuries.

The cost to the healthcare units of investigating incidents, collating medical, personnel, training and wages information, responding to queries from insurers and lawyers and court attendance accounts for 8% of the total indirect costs. It was clear from the review of the files that a considerable amount of time and effort was put in by healthcare personnel from junior staff to senior management level during the lifespan of the claim. However, there was no information in the claims files about the financial cost of healthcare staff involvement in the claim. It is possible that this information has been collated but is not in the claims file. In order to allow for more detailed analysis of costs in future studies, healthcare units should be encouraged to

keep detailed records of time spent and expenses incurred in connection with a claim to allow for more accurate costings to be prepared.

Although direct and indirect financial costs have been included in this study, it must also be acknowledged that there are other non-financial costs e.g. human suffering costs associated with manual handling incidents.

7.10 Limitations

This study aims to provide information on the causes of manual handling incidents in the healthcare sector. However a limitation of the study is that the analysis of claims files will not necessarily provide comprehensive information on the root causes of manual handling incidents, as claims files may concentrate on a limited number of supposed causes for the incident and not necessarily consider all contributing factors to the incident. It must also be acknowledged that all manual handling incidents do not necessarily end up as a claim.

A further limitation is that the number of claims files included in the study is small (n=35). The number of cases available for analysis limited statistical comparisons. However this was the total number of claims files that fulfilled the inclusion criteria from all of the files that existed for the time frame under investigation.

There is a limitation in the capacity of the modelling of systems failure because there are a small number of files in the sample and there was no control group included in the study.

8. CONCLUSIONS

The report provides a profile of the manual handling claims in the healthcare sector within a specific time frame, and the costs associated with these claims. This time frame is before the introduction of PIAB. However the majority of the claims files that were looked at for this study were contested claims and therefore would not be dealt with by PIAB.

This research produced some interesting results on the causes of manual handling incidents, and on the systems failures in the prevention of manual handling incidents. There was evidence that incidents were not managed satisfactorily when they occurred, and that the management of the injured worker was generally poor. The results highlight the need for action in all these key areas. There is anecdotal evidence that systems have improved in some sectors of the health services since the time frame of the study.

The literature review showed that there are a number of guidance documents available to assist managers implement improved programmes. The elements in these guidance documents are reasonably consistent. They all recommend that management commitment is essential, that expert advice is required and that a safety culture within an organisation can facilitate the implementation of such programmes. Incident investigation, with 'no blame' emphasis can assist with finding the true reasons why the incident occurred and valuable lessons can be learned to prevent the incident occurring again.

Manual handling training, on its own, is not an effective measure to prevent manual handling incidents, or back injuries. In order to be effective, manual handling training should be part of a comprehensive, multifaceted prevention programme and should be relevant to the work tasks carried out. It should be delivered in the workplace as well

as in the classroom and should be based on developing risk assessment and problem solving skills, as well as practical handling skills. It needs to be ongoing with continuous skill development. The legal requirement to provide manual handling training means that manual handling training is considered to be an important element in the defence of a manual handling claim.

The costs associated with claims vary greatly. It is possible to calculate direct costs but is difficult to comprehensively calculate indirect costs. Good documentation completed at the time of the incident, good records on relevant training and risk assessments, better management of the injured worker and speeding up the claims process, will help to contain these costs.

There is a need for further research in this area in an Irish context.

9. RECOMMENDATIONS

The recommendations below are based on the findings in this study and on the literature available for best practice guidelines for the three key areas of prevention of manual handling incidents, management of manual handling incidents and management of the injured worker.

Recommendations

1. There is a need for a multifaceted approach to prevention and management of manual handling incidents, with all stakeholders aware of the benefits of this approach.

1.1 Non-care staff should be specifically targeted in any strategy to prevent manual handling incidents.

1.2 Equipment should be used for handling heavy and awkward loads. The equipment should be suitable for the task and the environment, and training in the use of the equipment should be provided.

1.3 Falls prevention programmes and a policy for managing the falling patient should be developed and implemented in healthcare settings, particularly in 'care of the elderly' units.

1.4 Manual handling training programmes should not be delivered in isolation, but should be part of a multifaceted prevention strategy.

1.5 Manual handling training programmes should be specific to the actual work tasks of the healthcare workers and should be based on the documented manual handling risk assessments that have been carried out at management level.

1.6 Problem-solving and risk assessment skills, as well as practical handling skills, should be developed during manual handling training sessions.

1.7 There is a need for ongoing supervision and additional onsite training to ensure that skills taught in training are translated into the actual workplace.

2. Accurate and comprehensive documentation should be completed when a manual handling incident occurs, and a timely investigation carried out that reflects the severity of the incident.

3. Lessons should be learned from the investigation and control measures put in place to prevent the incident occurring again.

4. Improved management of the injured worker is recommended, with timely access to appropriate healthcare and efforts made to keep the worker at work if possible.

5. Communication should be maintained with any worker who is absent from work as a result of a manual handling incident, to facilitate an early return to work.

6. Workplace supervisors/managers and other relevant stakeholders should be involved in the return to work process.

7. This report has many recommendations for further research including:

- investigation of the levels of risk assessment, with particular emphasis on multidisciplinary risk assessment, in the Irish healthcare sector
- assessment of the impact and effectiveness of multifaceted prevention strategies
- investigation of the management of the injured worker in a variety of healthcare settings
- development of a standardised policy for the falling patient from a manual handling perspective.

10. REFERENCES

Aasa U., Barnekow-Bergkvist M., Angquist K, Brulin C. (2005) Relationships between Work-related Factors and Disorders in the Neck-shoulder and Low-back Region among Female and Male Ambulance Personnel, *Journal of Occupational Health,* **47,** 481-489.

Betts M. (2006) Catching, supporting or letting go: an ethical dilemma, *Column,* **18,** 12-15.

Birnbaum H., Barton M., Greenburg P., Sisitsky T., Auerbach R., Wanke L., Buatti M. (2000) Direct and indirect costs of rheumatoid arthritis to and employer, *Journal of Occupational and Environmental Medicine,* **42,** 588-596.

Brady A., Dolan L., Jarvis K., Dockrell S. (2002) Prevalence of low back pain in nurses working in a teaching hospital in Ireland, *All Ireland Journal of Nursing and Midwifery,* **2,** 30 –35.

Carrivick P., Lee A., Yau K. (2001) Consultative team to assess manual handling and reduce the risk of occupational injury, *Occupational Environmental Medicine,* **58,** 339-344.

Carrivick P., Lee A., Yau K, Stevenson M. (2005) Evaluating the effectiveness of a participatory ergonomics approach in reducing the risk and severity of injuries from manual handling, *Ergonomics,* **48,** 907-914.

Carter J., Birrell L. (Eds) (2000) *Occupational health guidelines for the management of low back pain at work-principal recommendations,* London: Faculty of Occupational Medicine.

Charney W., Simmons B., Lary M., Metz S. (2006) Zero Lift Programs in Small Rural Hospitals in Washington State: Reducing back Injuries Among Health Care Workers, *American Association of Occupational Health Nurses Journal*, **54,** 355-358.

Chartered Society of Physiotherapy (UK) (2002) *Guidance in manual handling for chartered physiotherapists,* http://www.csp.org.uk

Collins J., Wolf L., Bell J., Evanoff B. (2004) An evaluation of 'best practices' musculoskeletal injury prevention program in nursing homes, *Injury Prevention*, **10,** 206-211.

College of Occupational Therapists (UK) (2006) *Manual Handling*, London: College of Occupational Therapists Ltd.

Conroy M. (2007) *Supporting an injured worker to return to work,* Dublin: Workplace Safety Group.

Dalley J. (2004) *An assessment of the cost of reported accidents in high-risk workplaces, Health* and Safety Authority http:/www.hsa.ie

Dockrell S., Brady A., Dolan L., Jarvis K. (2002) An investigation of the reporting of low back pain by nurses, in Proceedings of the 3rd annual international research conference, *Transforming healthcare through research, education and technology*, Dublin, 13-15 November, p.68.

Ferreira J., Stanley L. (2005) *Evaluation of manual handling tasks involving the use of carry chairs by UK ambulance personnel*, Health and Safety Executive Research Report 314 http:// www.hse.gov.uk

Franche R., Baril R., Shaw W., Nicholas M., Loisel P. (2005) Workplace-based return-to-work interventions: optimizing the role of stakeholders in implementation and research, *Journal of Occupational Rehabilitation,* **15,** 525-542.

Gallagher P., Flynn C., Dockrell S. (2006) Availability and use of patient handling sliding devices, *International Journal of Therapy and Rehabilitation*, **13,** 264-271.

Geiger Brown J., Trinkoff A., Rempher K., McPhaul K., Brady B., Lipscomb J., Muntaner C. (2005) Nurses Inclination to Report Work-Related Injuries, American *Association of Occupational Health Nurses Journal,* **53,** 213-217.

Graveling R. (1991) The Prevention of Back pain from Manual Handling, *Annals of Occupational Hygiene*, **35,** 427-432.

Hanson M., Burton K., Kendall N., Lancaster R., Pilkington A. (2006) *The costs and benefits of active case management and rehabilitation for musculoskeletal disorders,* HSE Research Report no 493 http://www.hse.gov.uk

Health and Safety Authority (1998) *Caring with Minimal Lifting* http://www.hsa.ie

Health and Safety Authority (2005) *Guidance on the Management of Manual Handling in the Workplace,* http://www.hsa.ie

Health and Safety Authority (2007) *HSA summary of injury illness and fatality statistics 2005-2006,* http://www.hsa.ie

Health and Safety Commission (1993) *Organising for Safety: Third report of the Advisory Committee on the safety of Nuclear Installations study group on human factors,* London: HSE Books

Health and Safety Executive (1998) *Manual Handling in the Health Services* 2nd Edition, London: HSE Books http://www.hsebooks.com

Health and Safety Executive (2004) *Accident Book,* London: HSE Books www.hsebooks.com

Health and Safety Review (2007) *OIB figures suggest accidents increasing,* January/February.

Hignett S. (2001) Embedding ergonomics in hospital culture: top-down and bottom-up strategies, *Applied Ergonomics*, **32**, 61-69.

Hignett S., Crumpton E., Ruszala S., Alexander P., Fray M., Fletcher B. (2003) *Evidence-Based Patient Handling: Tasks, equipment and interventions*, London: Routledge.

Hignett S., Wilson J., Morris W. (2005) Finding ergonomic solutions –participatory approaches, *Occupational Medicine*, **55,** 200-207.

Hignett S., Fray M., Rossi M., Tamminen-Peter L., Hermann S., Lomi C., Dockrell S., Cotrim T., Cantineau J., Johnsson C. (2007) Implementation of the manual handling directive in the healthcare industry in the European Union for patient handling tasks, *International Journal of Industrial Ergonomics*, **37,** 415-423.

Hignett S., Crumpton E. (2007) Competency-based training for patient handling, *Applied Ergonomics, 38,* 7-17.

Hogan V. (2006) *A Cost-benefit analysis of the Personal Injuries Assessment Board* http://www.piab.ie

Hrymak V., Perezgonzalez J. (2007) *The costs and effects of workplace accidents, Twenty case studies from Ireland*, Health and Safety Authority Research Series 02/2007 http://www.hsa.ie

Indecon (2006) *Report on economic impact of the safety, health and welfare at work legislation*, Dublin: Department of Enterprise, Trade and Employment.

Irish Society of Chartered Physiotherapists (1995) *Back Care Programmes: Guidelines for Chartered Physiotherapists providing training in moving and handling*, Dublin: Irish Society of Chartered Physiotherapists

Irish Society of Chartered Physiotherapists (1997) *Back Care Programmes: Guidelines for assessment of moving and handling training*, Dublin: Irish Society of Chartered Physiotherapists

Millward Brown (2005) *Health and Safety Authority Workplace Accidents*, Health and Safety Authority http://www.hsa.ie

Mottiar Z. (2004) *Feasibility study on estimation of costs of workplace accidents, work related ill health and non-injury incidents in Ireland,* Health and Safety Authority http://www.hsa.ie

Murphy D., Charles S., Monnington S., Powell R. (2005) The impact of profiling beds on manual handling risk and patient experience, *Column,* **17,** 18-21.

National Back Exchange (2002) *Essential back-up: an employer's guide for setting up and maintaining an effective back care advisory service*, Northants, National Back Exchange.

National Back Exchange (2002) *Training Guidelines*, Northants: National Back Exchange.

National Back Exchange (2004) *Manual Handling Standard: Interim Document for Healthcare Providers* Northants: National Back Exchange.

Nelson A., Baptiste A. (2004) Evidence-based practices for safe patient handling and movement, *Online Journal of Issues in Nursing,* **9,** 1-26. http://www.nursingworld.org/ojin/topic25/

Nelson A., Matz M., Fangfei C., Siddharthan K., Lloyd J., Fragala G. (2006) Development and evaluation of a multifaceted ergonomics program to prevent injuries associated with patient handling tasks, *International Journal of Nursing Studies,* **43,** 717-733.

NHS Wales (2003) *All Wales NHS Manual Handling Training Passport and Information Scheme,* http:/www.wales.nhs.uk

NICE (2004) *Falls: Assessment and Prevention of Falls in Older People,* http://guidance.nice.org.uk/

NIOSH (2006) *Safe Lifting and Movement of Nursing Home Residents,* Publication no. 117 http:/www.cdc.gov/niosh/

NIOSH (2007) *Ergonomic Guidelines for Manual Material Handling,* Publication no. 131 http:/www.cdc.gov/niosh/

Power F. (2001) *A Report of the Results of the Manual Handling Inspection Programme,* Health and Safety Authority http:/www.hsa.ie

Power F. (2005) A review of manual handling in Ireland, presented at International conference on *Health care systems, ergonomics and patient safety,* Florence, 30 March-2 April

Pransky G., Shaw W., Franche R., Clarke A. (2004) Disability prevention and communication among workers, physicians, employers and insurers-current models and opportunities for improvement, *Disability and Rehabilitation*, 26**,** 625-634.

Royal College of Nursing (2003) *Safer staff, better care, RCN manual handling training guidance and competencies,* London: Royal College of Nursing.

Shaw W., Robertson M., Pransky G., McLellan R. (2006) Training to optimize the response of supervisors to work injuries - needs assessment, design and evaluation, *American Association of Occupational Health Nurses,* **54**, 226-235.

Smedley J., Trevalyan F., Inskip H., Buckle P., Cooper C., Coggan D. (2003) Impact of ergonomic intervention on back pain among nurses, *Scandinavian Journal of Work, Environment and Health*, **29**, 117-123.

Smedley J., Poole J., Waclawski E., Harrison J., Stevens A., Buckle P., Coggan D. (2004) Manual handling risk controls in hospitals (MARCH): a cross-sectional survey of UK hospitals, *Health Services Management Research,* **17,** 121-131.

Smedley J., Poole J., Waclawski E., Stevens A., Harrison J., Buckle P., Coggan D. (2005) Assessing investment in manual handling risk controls: a scoring system for use in observational studies, *Occupational Environmental Medicine,* **62,** 63-65.

Smith J. (2005) *The guide to the handling of people* 5th Edition, Middlesex: Backcare.

Swain J., Pufahl E., Williamson G. (2003) Do they practice what we teach? A survey of manual handling practice amongst student nurses, *Journal of Clinical Nursing,* **12,** 297-306.

Taylor-Adams S., Vincent C. (2005) *Systems analysis of clinical incidents: The London Protocol,* London: Imperial College London.

Thomas N., Brown N., Hodges L., Gandy J., Lawson L., Lord J., Williams D. (2006a) Risk profiles for four types of work-related injury among hospital employees, *American Association of Occupational Nurses Journal*, **54**, 61-68.

Thomas N., Brown N., Hodges L., Gandy J., Lawson L., Lord J., Williams D. (2006b) Factors associated with work-related injury among hospital employees, *American Association of Occupational Nurses Journal,* **54,** 24-31.

Waddell G. (2004) *The Back Pain Revolution* 2nd Edition Chapter 13, London: Churchill Livingston.

Waters T., Collins J., Galinsky T., Caruso C. (2006) NIOSH Research Efforts to Prevent Musculoskeletal Disorders in the Healthcare Industry, *Orthopaedic Nursing,* **25,** 380-389.

WorkCover (1998) *Manual Handling, Competencies for Nurses,* New South Wales, Australia: WorkCover www.workcover.nsw.gov.au

WorkCover (2005) *Implementing a Safer Patient Handling Program, An Industry Guide for the Health and Community Services Sector,* New South Wales, Australia: WorkCover www.workcover.nsw.gov.au

WorkSafe Australia (1990) *National Standard for Manual Handling*, Australian Safety and Compensation Council, http://www.ascc.gov.au

Zhuang Z., Stobbe T., Hsiao H., Collins J., Hobbs G. (1999) Biomechanical evaluation of assistive devices for transferring residents, *Applied Ergonomics*, **30,** 285-294.

APPENDIX 1

The Basis of Calculation for Estimating the Indirect Costs

Sick Pay paid by Employer

This is calculated on the number of weeks absent from work multiplied by salary scales obtained from Department of Health Website (Salary Scales as at 2004). Where actual data was available, it was provided (n=5).

Medical and Rehabilitation Treatment Costs paid by Employer

The medical reports in the claims files summarised the treatment afforded to the claimant, albeit in many cases not a complete list of all treatment was provided.
GP visits were costed at €45.00 per visit.
Consultants' visits were costed at €100.00 per visit.
X-rays were costed at €50.00.
Physiotherapy was costed at €40.00 per session.
MRI Scans were costed at €400.00.

Insurance Companies In-House Investigation and Claims Handling Costs

Insurance companies internal claims handling costs i.e. the cost of their staff involved in the handling of the claim was not documented on any of the files. These costs were estimated based on an analysis of the activity on the claims file. Included in the estimation is:

- the cost of deploying an in-house claims inspector to investigate the incident on site at the Healthcare Unit, meet with witnesses and court attendance.
- the cost of processing and managing the claim by claims handlers
- the cost of typing letters dictated by claims handlers i.e. correspondence with Healthcare Units in gathering information regarding the incident, personnel records and wages information and processing cheque payments.
- the cost of the involvement of senior Claims Management in file reviews, court attendance and approval of payments.

A sum of €200.00 has been included for each claim to cover photocopying, postage and telephone charges except for those cases where claimant was only looking for reimbursement of medical expenses (n=2).

The In-house investigation charges have been charged out at a fixed fee of €484.00 as that is the fee charged by external investigators where they have been used on some of the files.

Administration staff to include Dictaphone typists attract salaries of upwards of €25,000.00.

Salary scales for personal injury claims handlers are dependent on the size of the organisation number of year's service and complexity of claims handled. Personal injury claims handlers with a minimum of five years claims experience salaries would range from €38,000.00 to €45,000.00.

Claims managers salaries can range upwards of between €45,000.00 and €65,000.00 (this would be the lower end of the scale) and again are dependent on the size of the operation, number of staff in the department and whether or not the claims manager is dealing with a portfolio of claims or analysing statistics.

Costs were estimated based on the involvement of a claims handler and administration staff. The work input broken down into the number of hours of both of these categories of employees was estimated based on a review of the correspondence in the claims files and the following hourly rate was used:

- Administration staff: €13.73 per hour (based on an Annual Salary of €25,000.00).
- Personal Injury Claims Handler: €20.87 per hour (based on an Annual Salary of €38,000.00).

The source of salary scales used in this report was recruitment companies involved in recruiting staff for the insurance industry, and the estimates used are conservatively low.

Pension Contributions for Claimant

Pension contributions were calculated using a formula of 30.75% of salary (salary scales obtained from Department of Health website as at 2004) i.e. 20% pension and 10.75% P.R.S.I contribution.

State Benefits

Two State Benefits were considered under this heading:

(i) Occupational Injuries Benefit

Injury Benefit is one of the benefits available under the Occupational Injuries Scheme. It is a weekly payment made to a person who is unfit for work due to an accident at work or because he/she has contracted a disease due to work. Injury Benefit is normally paid from the fourth day of illness or incapacity. Payment can be made for up to 26 weeks starting from the date of the accident or development of the disease. If the person is still unable to work after 26 weeks he/she may be entitled to Disability Benefit if he/she satisfies certain PRSI contribution conditions.
The rate from 2001 to 2004 was found on one of the claims files, and is the rate used in this study.
Personal Rate: €131.54
Qualified Adult[4]: €87.69 (based on two thirds of personal rate)

[4] A **qualified adult** is a person who is in employment that is insurable at PRSI Class, A, B, D, J or M. (Under Occupational Injuries Scheme). Civil servants insured at PRSI Class B are not eligible for Disablement Benefit for the first 26 weeks after the date of the accident. Ref: www.dohc.ie

(ii) Disablement Benefit
Disablement benefit can be paid if, as a result of an accident at work or a prescribed disease contracted at work, a person suffers a loss of physical or mental faculty. Disablement Benefit is paid by the Department of Social and Family Affairs by weekly or monthly cheque. Payment is made where the level of disablement following the accident or disease is assessed at 20% or more. Where the level of disablement is less than 20%, the benefit is paid as a lump sum. The size of the lump sum will vary depending on the degree of disablement and for how long the person is reasonably expected to be disabled. A person may also qualify for an increase for his/her spouse / partner or child dependent.

For the purpose of this study the Minimum Personal Rate (Based on the 2001-2004 rates found on one of the claims files) for Occupational Injury Benefit + 50% of the rate for a Qualified Adult i.e. €131.54 plus 50% of €87.69 = €175.38.

This rate was applied to the number of weeks absent from work, and although the Occupational Injury Benefit is not payable for the first four days no discount for the four days has been made due to the fact that a conservative rate has been used.

Given the fact that the allowance for child dependants of €22.00 was so small; that information on child dependants was not sought from the claims files, and that the average age of claimants was 42, no estimation was made for dependent children in the calculation of indirect costs.

Conservative estimates were used and where actual data was available that was provided (n=5).

Cost to the Healthcare Unit

This is the cost to the Healthcare unit of investigating the incident, collating medical, personnel, training and wages records. It also includes meeting with legal advisers, insurers and accident investigators and court attendance.

Costs were estimated based on the involvement of a Clerical Officer and Clinical Nurse Manager with minimum salaries as at 2004 as per Department of Health website of €24,592.00 and €37,965.00 respectively.

The work input broken down into the number of hours of both of these categories of employees was estimated based on a review of the correspondence in the claims file and the following hourly rate was used:

Clerical Officer: €13.51per hour (based on an annual salary of €24,592.00).
Clinical Nurse Manager: €20.86 per hour (based on an annual salary of €37,965.00).
All of the costs under this heading have been estimated conservatively.

A sum of €100.00 has been included for all cases for photocopying, telephone and postal charges except for those claims where the claimant only sought medical expenses, where no provision for this cost was made (n=3).

APPENDIX 2

Cost Case Studies:

A Detailed Analysis of the Costs of Five Claims

Claim File (ID 10)

Claim settled for a total cost of €32,994.89

Direct Costs

Claimant		€20,000.00
Claimants Legal Fees		€7,135.47
This amount is broken down as follows:		
- Solicitors Professional Fee, Postage and Scheduled Items	€4,200.00	
- VAT @ 21%	€882.00	
- Court Filing Fees	€90.00	
- Barristers Fees	€1,007.00	
- VAT @ 21%	€211.47	
- Medical Report Fees	€745.00	
Defence Legal Fees		€5,859.42
This amount is broken down as follows:		
- Solicitors Professional Fee, Postage	€2,125.00	
- VAT @ 21%	€446.25	
- Barristers Fees	€1,132.00	
- VAT @ 21%	€237.72	
- Medical Report Fees	€898.45	
- Private Investigators Report	€850.00	
- VAT @ 21%	€170.00	
Total:		**€32,994.89**

Indirect Costs

Sick Pay Paid by Employer for duration of Claimants absence (actual)	€14,556.23
Medical and Rehabilitation Treatment Costs paid by Employer (estimate)	€2,000.00
Insurance Companies In-House Claims Handling Costs (estimate)	€2,813.74

Pension Contributions for Claimant (estimate)	€4,476.04
State Benefits (actual)	€7,009.01
Cost to Healthcare Unit (estimate)	€1,717.47
Total:	**€32,572.49**

Combined Total of Direct Costs and Indirect Costs
€32,994.89 + €32,572.49 = **€65,567.38**

Distribution of Direct Costs in percentage terms:-
Claimant = 60%
Solicitors = 20%
Barristers = 6%
VAT to Government = 6.5%
Medical Report Fees = 5%
Other Expert Report (Private Investigator) = 2.5%

Distribution of Indirect Costs in percentage terms:
Sick pay paid by employer = 45%
Medical and Rehabilitation Treatment Costs = 6%
Insurers In-House Investigation and Handling Costs = 9%
Pension Contributions for Claimant = 14%
State Benefits = 21%
Cost to Healthcare Unit = 5%

Distribution of Direct and Indirect Costs in percentage terms:
Direct Costs: 50%
Indirect Costs: 50%

Claim File (ID 24)

Claim settled for a total cost of €18,454.17

Direct Costs

Claimant was paid a sum to include all legal fees		€12,500.00
Claimant (estimated)		€7,000.00
Claimants Legal Fees		€5,450.00
This amount is broken down as follows:		
- Solicitors Professional Fee, Postage and Scheduled Items	€4,350.00	
- Barristers Fees	€1,100.00	
Defence Legal Fees		€6,004.17
This amount is broken down as follows:		
- Solicitors Professional Fee, Postage	€2,125.40	
- VAT @ 21%	€456.83	
- Barristers Fees	€950.00	
- VAT	€199.50	
- Medical Report Fees	€1,022.44	
- Private Investigators Report Fee	€1,000.00	
- VAT @ 21%	€200.00	
Total:		**€18,454.17**

Indirect Costs

Sick Pay Paid by Employer for duration of Claimants absence (estimate)	€22,757.00
Medical and Rehabilitation Treatment Costs paid by Employer (estimate)	€1,000.00
Insurance Companies In-House Claims Handling Costs (estimate)	€1,648.87
Pension Contributions for Claimant (estimate)	€6,997.78

State Benefits (estimate)		€9,119.76
Cost to Healthcare Unit (estimate)		€1,104.08
	Total:	**€42,627.49**

Combined Total of Direct Costs and Indirect Costs
€18,454.17 + €42,627.49 = **€61,081.66**

Distribution of Direct Costs in percentage terms:-
Claimant = 38%
Solicitors = 36%
Barristers = 11%
VAT to Government = 5%
Medical Report Fees = 5%
Other Expert Report (Private Investigators) = 5%

Distribution of Indirect Costs in percentage terms:
Sick pay paid by employer = 53%
Medical and Rehabilitation Treatment Costs = 2%
Insurers In-House Investigation and Handling Costs = 4%
Pension Contributions for Claimant = 17%
State Benefits = 21%
Cost to Healthcare Unit = 3%

Distribution of Direct and Indirect Costs in percentage terms as follows:
Direct Costs: 30%
Indirect Costs: 70%

Claim File (ID 26)

Claim settled for a total cost of €129,293.90

Direct Costs

Claimant		€75,000.00
Claimants Legal Fees		€31,091.21
This amount is broken down as follows:		
- Solicitors Professional Fee, Postage and Scheduled Items	€13,500.00	
- VAT @ 21%	€2,835.00	
- Court Filing Fees	€301.74	
- Barristers Fees	€4,470.60	
- VAT @ 21%	€938.70	
- Medical Report Fees	€6,545.17	
- Actuaries Report	€2,400.00	
Defence Legal Fees		€23,202.69
This amount is broken down as follows:		
- Solicitors Professional Fee, Postage	€6,910.50	
- VAT @ 21%	€1,451.20	
- Barristers Fees	€6,145.00	
- VAT @ 21%	€1,290.45	
- Court Filing Fees	€35.43	
- Medical Report Fees	€1,316.75	
- Private Investigators Fee	€1,519.84	
- VAT @ 21%	€275.10	
- Court Stenographers Fees	€542.82	
- VAT @ 21%	€114.00	
- Vocational Assessment	€1,100.00	
- Ergonomic Report	€1,702.60	
- VAT @ 21%	€315.00	
- External Investigation Report	€400.00	
- VAT @ 21%	€84.00	
Total:		**€129,293.90**

Indirect Costs

Sick Pay paid by Employer for duration of Claimants absence (estimate)	€22,757.00

Medical and Rehabilitation Treatment Costs paid by Employer (estimate)	€5,000.00
Insurance Companies In-House Claims Handling Costs (estimate)	€11,254.96
Pension Contributions for Claimant (estimate)	€6,997.78
State Benefits (estimate)	€12,949.09
Cost to Healthcare Unit (estimate)	€8,954.11
Total:	**€67,912.94**

Combined Total of Direct Costs and Indirect Costs
€129,293.90 + €67,912.94 = **€197,206.74**

Distribution of Direct Costs in percentage terms:
Claimant = 58%
Solicitors = 16%
Barristers = 8%
VAT to Government = 6%
Medical Report Fees = 6%
Other Expert Report (Actuary, Ergonomic, Stenographer, Vocational, External Investigation & Private Investigators) = 6%

Distribution of Indirect Costs in percentage terms:
Sick Pay paid by Employer = 34%
Medical and Rehabilitation Treatment Costs = 7%
Insurers In-House Investigation and Handling Costs = 17%
Pension Contributions for Claimant = 10%
State Benefits = 19%
Cost to Healthcare Unit = 13%

Distribution of Direct and Indirect Costs in percentage terms:
Direct Costs: 66%
Indirect Costs: 34%

Claim File (ID 37)

Claim settled for a total cost of €32,001.36

Direct Costs

Claimant		€15,565.00
Claimants Legal Fees		€12,368.58
This amount is broken down as follows:		
- Solicitors Professional Fee, Postage and Scheduled Items	€4,150.00	
- VAT @ 21%	€976.50	
- Court Filing Fees	€228.10	
- Barristers Fees	€1,158.00	
- VAT @ 21%	€243.18	
- Medical Report Fees	€806.20	
- Consulting Engineers Report	€2,860.00	
- VAT @ 21%	€600.60	
- Nursing Consultants Report	€1,346.00	
Defence Legal Fees		€4,067.78
This amount is broken down as follows:		
- Solicitors Professional Fee, Postage	€2,100.00	
- VAT @ 21%	€441.00	
- Barristers Fees	€1,048.00	
- VAT @ 21%	€220.08	
- Medical Report Fees	€258.70	
Total:		**€32,001.36**

Indirect Costs

Sick Pay paid by Employer for duration of Claimants absence (estimate)	€5,251.62
Medical and Rehabilitation Treatment Costs paid by Employer (estimate)	€1,000.00
Insurance Companies In-House Claims Handling Costs (estimate)	€2,813.74
Pension Contributions for Claimant (estimate)	€1,614.87

State Benefits (estimate)		€2,104.56
Cost to Healthcare Unit (estimate)		€1,371.69
	Total:	**€14,156.48**

Combined Total of Direct Costs and Indirect Costs
€32,001.36+ €14,156.48 = **€46,157.84**

Distribution of Direct Costs in percentage terms:
Claimant = 49%
Solicitors = 20%
Barristers = 7%
VAT to Government = 8%
Medical Report Fees = 3%
Court Filing Fees = 1%
Other Expert Report (Consulting Engineer & Nursing Report) = 12%

Distribution of Indirect Costs in percentage terms:
Sick Pay paid by Employer = 37%
Medical and Rehabilitation Treatment Costs = 7%
Insurers In-House Investigation and Handling Costs = 20%
Pension Contributions for Claimant = 11%
State Benefits = 15%
Cost to Healthcare Unit = 10%

Distribution of Direct and Indirect Costs in percentage terms:
Direct Costs: 69%
Indirect Costs: 31%

Claim File (ID 38)

Claim settled for a total cost of €21,441.08

Direct Costs

Claimant withdrew claim

Defence Legal Fees		€21,441.08
This amount is broken down as follows:		
- Solicitors Professional Fee, Postage	€7,600.00	
- VAT @ 21%	€1,596.00	
- Barristers Fees	€4,500.00	
- VAT @ 21%	€945.50	
- Court Filing Fees	€340.91	
- Medical Report Fees	€2,058.87	
- Nursing Report	€726.00	
- Ergonomic Report	€2,710.00	
- VAT @ 21%	€504.00	
- External Investigation Report	€380.00	
- VAT @ 21%	€79.80	
Total:		**€21,441.08**

Indirect Costs

Sick Pay paid by Employer for duration of Claimants absence (estimate)	€26,314.00
Medical and Rehabilitation Treatment Costs paid by Employer (estimate)	€1,000.00
Insurance Companies In-House Claims Handling Costs (estimate)	€2,813.74
Pension Contributions for Claimant (estimate)	€8,091.56
State Benefits (estimate)	€9,119.76
Cost to Healthcare Unit (estimate)	€1,641.68
Total:	**€48,980.74**

Combined Total of Direct Costs and Indirect Costs
€21,441.08+ €48,980.74 = **€70,421.82**

Distribution of Direct Costs in percentage terms:
Claimant = 0% as claim was withdrawn
Solicitors = 35%
Barristers = 21%
VAT to Government = 15%
Medical Report Fees = 10%
Court Filing Fees = 2%
Other Expert Report (Nursing Report, Ergonomic & External Investigation) = 17%

Distribution of Indirect Costs in percentage terms:
Sick Pay paid by Employer = 54%
Medical and Rehabilitation Treatment Costs = 2%
Insurers In-House Investigation and Handling Costs = 6%
Pension Contributions for Claimant = 17%
State Benefits = 18%
Cost to Healthcare Unit = 3%

Distribution of Direct and Indirect Costs in percentage terms as follows:
Direct Costs: 30%
Indirect Costs: 70%