

Aftermath

*How the lives of fifteen ordinary
New Zealanders have been affected by
workplace injury and illness*



Research team:

Mary Adams, Jo Burton, Frances Butcher, Sue Graham, Andrew McLeod, Rashmi Rajan, Richard Whatman (Department of Labour); Margaret Bridge (ACC); Roberta Hill, Roopali Johri (Centre for Research on Work, Education and Business).

Disclaimer:

This study summarises qualitative research conducted during 2001, and reflects the views and perceptions of individuals affected by the consequences of workplace injury occurring between 1992 and 2001.

Researchers have taken all care to accurately reflect the views of individuals while maintaining their privacy. Wherever possible within the limitations of the research, where those views were about factual circumstances, data that bears on those views has been gathered to establish their accuracy. In publishing the views and recollections of participants, the Department of Labour reminds readers that the views and recollections expressed by participants are not necessarily those of the Department or of other organisations, institutions or individuals discussed by participants

Published by the
Department of Labour
PO Box 3705
Wellington
New Zealand
www.dol.govt.nz

in association with ACC

First edition: November 2002

Printed by PrintLink

ISBN 0-477-03670-8

Foreword

This booklet tells how the lives of fifteen ordinary New Zealand employees have been affected by workplace injury and illness. These cases are drawn from a Department of Labour and ACC study *Aftermath: The Social and Economic Consequences of Workplace Injury and Illness*.

The booklet presents, in a shortened form, the case histories featured in the study and concentrates on the human and personal dimension, omitting the detailed social and economic analyses of the full report. To protect the privacy of the individuals concerned, all names have been changed.

For those interested in the full report, it may be viewed online at <http://www.dol.govt.nz>.

Contents

<i>Foreword</i>	5
<i>Introduction</i>	9
<i>Barbara: Asthma Linked To Chemicals In Dye Room</i>	11
<i>Brian: Brain Damage And Spinal Injuries After Fall From Roof</i>	15
<i>Grant: Hand Severely Crushed In Moving Machinery</i>	22
<i>John: Chemicals Used In Boat Building Caused Personality Change</i>	27
<i>Mark: Multiple Fractures When Telephone Pole Broke</i>	34
<i>Murray: Workplace Chemicals Caused Solvent Neurotoxicity</i>	40
<i>Paul: Panel Beating Caused Occupational Deafness</i>	47
<i>Sarah: Life Disrupted by Farm ATV Accident</i>	53
<i>Thomas: Fingers Amputated In Skilsaw Kick Back</i>	60
<i>Peter: Engulfed by Fireball While Spray Painting Boat</i>	67
<i>Julia: In Constant Pain From OOS Condition</i>	73
<i>Ian: Died From Complications After Crushing Injuries</i>	79
<i>Martin: Leptospirosis Forced Changes In Lifestyle</i>	85
<i>Philip: Stress of Hospital Work Led To Breakdown</i>	91
<i>Lisa: OOS Condition Due To Workplace Factors</i>	97
<i>Appendix: Summary Of The Economic Costs</i>	102

Introduction

No one person experiences, sees or accounts for the full consequences of a workplace injury or illness. The full extent of costs and consequences are often not measured or recorded in any official statistic. Often they are not recorded anywhere.

Employees who are harmed will inevitably bear the brunt of the consequences themselves, as other people cannot fully understand the degree of pain or isolation that they may experience. The costs and consequences to family, friends and work colleagues often go unrecorded and unobserved as well, although they are nonetheless real. Many consequences cannot be measured directly as an economic or other cost, such as a loss of intimacy between spouses, or the breakdown of a family unit due to an unexpected death.

The experience of being harmed at work can be devastating, with profound emotional consequences for all involved. People may become isolated, estranged from their community and depressed. Isolation and estrangement can become permanent.

The *Social and Economic Consequences of Workplace Injury and Illness* study aimed to gain an understanding of the full range of consequences of workplace illness and injury. It examined the experiences of fifteen participants, their family, friends, colleagues, employers and supervisors in the workplace. As much as possible, the study tried to gain a depth of understanding of each case and chart the intangible effects on society.

The study was initiated by Department of Labour's Occupational Safety and Health Service (OSH), which invited groups with interests in injury prevention, such as the Labour Market Policy Group and the Accident Compensation Corporation, to participate. Three objectives were identified:

- to explore the social and economic consequences of workplace injury and illness for injured and ill employees, their families, and the workplace;

- to identify key characteristics that determine social consequences; and
- to inform investment in health and safety in the workplace.

A case study approach, with both quantitative and qualitative methods was used, which involved triangulating data from a number of sources including existing ACC and OSH research, analysis of stakeholder views, and case study interviews with the affected person, their family, workmates, and if appropriate OSH and other health professionals.

The fifteen cases in the study were selected using criteria such as age, family status, socio-economic status, occupation, gender, nature of workplace accident, and conditions or environment. All but one of the cases had been the subject of an OSH investigation and were, in the opinion of the inspector involved, characterised by serious consequences to the participants. As such, they should not be seen as ‘average’, but were selected to represent what happens when things go seriously wrong. Therefore, while the cases are illustrative of ‘ordinary’ people in common industries, they also represented the potential for serious consequences when things go wrong.

The consequences of workplace injury and illness ripple out and affect all of us. Estimates of the costs to GDP of injury and illness at work range between three and five percent. We all pay, even if not directly, for unnecessary occupational illness and injury. Consequences may be temporary or permanent; or sometimes fatal. To understand the total social and economic consequences requires going beyond statistics and recorded economic costs. Gaining a human perspective of costs incurred allows us to understand the non-economic ‘costs’ and the complex inter-relationship between economic and non-economic consequences.

Understanding how the social and economic consequences apply increases our understanding of the impacts on people of policy and legislation. But importantly, it also contributes to our understanding of how to minimise the aftermath of occupational injury and illness, and plan appropriate preventative measures and

support systems. The fifteen case studies illustrate common experiences of employers, working people and their families, but they also show how certain factors are likely to alter the outcome in a positive or negative way.

This study highlights not only the debilitating effect and costs of failure to prevent workplace injury and illness for the injured or ill worker, their friends and family, and their workplace, but shows examples of courage and strength, where adverse outcomes are avoided through good health and safety systems, appropriate and timely information, and support from all sectors of society.

Barbara:

Asthma Linked To Chemicals In Dye Room

Barbara is a New Zealand European woman in her fifties, with two adult children. She was employed as a dyer in a button manufacturing company. Over the course of her employment, she developed asthma. Her workplace had doubts over the occupational illness diagnosis.

The sequence of events

Barbara began working over five years ago at a button manufacturing company in a small town. She was primarily employed as a dye-person. This involved mixing the dyes and colours for the buttons. On a daily basis she worked with both polyester and casein dyes. The position was an important one for the company, requiring both skill and artistic sense.

The dye room where she worked was small, measuring four by five metres. On one side there were pots for boiling the dyes and the chemicals were stored on the other. There was ventilation opposite her, but it would have pulled any fumes past her nose. Health and safety equipment such as respirators were available but, due to their impracticality in a hot dye room, were not used regularly.

Twelve months before she was diagnosed, Barbara began to notice her health declining. Tiredness, shortness of breath and sick days became more common. Initially, she put this down to sickness but increasingly she found her daily activities curtailed. Disturbed at his mother's symptoms, her son insisted she go to the doctor. After the first consultation Barbara's doctor said that she should have three days off work. Still feeling unwell after re-

turning to work, she went to the doctor again and was hospitalised for six days.

Occupational Safety and Health (OSH) were called in by the doctor to investigate. The inspector performed a compliance visit and interviewed managers and supervisors at the company. After reviewing the evidence, OSH believed that Barbara's asthma was caused by her occupation but could not prove it beyond all doubt. The main problem was that the potentially toxic chemicals she had been using had been slowly phased out of the system.

Eventually, the proof for the inspector was that although Barbara had smoked for a long period of time, she improved away from work. This indicated an occupational relationship. The union also became involved on Barbara's behalf.

Impact on Barbara

Barbara faced a number of difficulties arising from her illness. These covered a wide gamut from ongoing health issues, financial issues, curtailed social life and conflict with her workplace.

As Barbara's asthma took hold, her symptoms became progressively more acute. Difficulties in breathing, inability to engage in even light physical activity, and recurring illness all affected her day-to-day life. Favourite hobbies such as bowls and dancing at her local RSA club were no longer possible. Even going out for a walk with her granddaughter proved difficult. She recalled:

... my little granddaughter ... says to me, 'Come on Nan, we'll go for a walk up to the park', but I just couldn't walk it. Well, not at the moment.

The financial situation was extremely stressful for Barbara. The drop in Barbara's income impacted on her ability to survive day to day. Bills and mortgage repayments accumulated. Barbara applied for a sickness benefit and began her claim for compensa-

"... curtailed social life and conflict with her workplace."

tion with ACC. The sickness benefit was significantly less than ACC income replacement and imposed strict budgeting requirements:

And the sickness benefit, too, is only \$166 a week. That's all I was getting, and by the time I paid my mortgage and power and telephone and everything, there was \$28 left for food.

There were difficulties in proving that her condition was occupational, and finding the requisite evidence for it, and this caused delays with her claim for compensation. Barbara felt aggrieved that the burden of proof was on her, as was the need to provide evidence. She found ACC's requests for further information frustrating. But she did recognise the difficulties in the process:

But apparently that's what happens. If it had been an accident at work, like I'd injured myself and you could see it, that would be different. But they had to prove that it was industrial-related . . . so that's why it's taken so long.

After her illness, Barbara moved to the sorting room in the same company. ACC accepted her claim for occupational asthma but declined any entitlement to compensation. Specialist medical advice provided to ACC concluded that the main cause of her inability to work was due to smoking.

Barbara's symptoms began to recede but she still required medication to take part in sporting and social activities. Reflecting on what had happened, she commented:

I don't know, what's done is done, there's no need to mope about it. I mean, you're only going to stress yourself out even more, aren't you, and it's not going to do you any good . . . You've got to do something in your life, you can't sit around and mope, because that doesn't do any good either . . . You've got to keep on going, and that's it.

“. . . they had to prove it was industrial-related . . .”

The workplace

Barbara's illness caused tension and worry for the company managers and employees. The company was working hard to stay afloat in a highly competitive international environment. It had been through a restructuring, with several staff being made redundant.

The involvement of OSH and the union resulted in more uncertainty, with some employees fearing that if further financial burdens were placed on the company, it might be forced to close, and their jobs lost. Workers were unsure about the chances of finding another job in the depressed small town labour market. Some were openly hostile to Barbara.

There were some costs to the company resulting from Barbara's illness. Another worker had to be brought in part-time to replace Barbara in the dye room. There were also plans to improve the dye room ventilation. However, management did not consider these costs unduly high.

EPILOGUE

Barbara's condition has worsened since the interview and she has been back in hospital twice, the second time spending six days in intensive care. She is on oxygen 16 hours a day and her family are very concerned about her condition. She is no longer able to work and feels she is unlikely to do so again. ACC did not, in the end, accept her claim for compensation as the occupational link was not proved. She is now receiving an invalid's benefit. In Barbara's opinion, OSH should have prosecuted her employer. Despite this, she seems quite positive about her situation, commenting: "yeah, you've just got to get on with it".

Brian:

Brain Damage And Spinal Injuries After Fall From Roof

Brian, a forty-five-year-old man, fell through a skylight while attempting to clean the roof gutters at his place of work, and suffered brain and spinal injuries. From being a fun-loving, outdoor person who enjoyed life with friends and family, he became a completely dependent individual who appears not to recognise those around him and needs constant care and supervision.

Brian and Elizabeth had been married just nine weeks before the accident. Elizabeth had to give up her job to become his full-time caregiver. Rose, a family friend, has known Elizabeth for the last sixteen years. She helped with Brian's care for four or five hours each day, reducing the hours she worked in her own job.

The sequence of events

Brian was a seasonal supervisor whose main roles included forklift driving, shifting and cleaning out the cool stores. But during the off-season, supervisory staff were retained for maintenance. Cleaning of the gutters was normally done once a year when time permitted.

The canopy roof to which the gutters were attached ran the entire length of the cool store. In the middle of the canopy, and running its length, was a row of skylights. The skylights were made of a profiled plastic material and were three metres long and about one and a half metres wide. There was no support under or over them to stop persons falling through. Anyone walking across the roof would encounter the skylights. There was a gap of about 0.8 metres between each skylight, formed by the solid roof.

Access to the canopy roof was provided by a machine-lifted platform. When the garbage was cleaned from the gutters and the bins had to be emptied, the staff would have to walk across the roof and deposit the garbage in drums which had been raised to the roof height on a small forklift. To do this, the staff had to negotiate the roof skylights by walking across the areas of solid roof.

On the morning of the accident, the depot supervisor received a phone call from a transport company advising that they would be calling for a load of cartons. The truck arrived just as the depot supervisor was raising Brian on to the roof. It was decided that the depot supervisor would deal with the truck, while Brian began cleaning the gutters.

Ten minutes later, the depot supervisor heard a noise and saw Brian crashing through the skylight on to the concrete floor five metres below. The fall resulted in Brian fracturing his skull and damaging his spinal cord, leading to severe brain and spinal injuries and partial paralysis.

The supervisor stopped the forklift and ran over to where Brian lay and called for the truck driver to phone an ambulance. The engineer who was close by was also called on to assist. Brian was covered with a blanket and kept warm till the ambulance arrived. The depot supervisor then contacted his supervisor, who notified OSH. It was later concluded that Brian had been walking across the roof to empty his bin into the drums when he fell through the skylight.

Cleaning of the gutters was a task undertaken on an annual basis. Yet no formal hazard identification for the task had been carried out, no controls had been put in place, and the skylight hazard was not discussed with Brian on the morning the work was to begin. This was despite the fact that in the previous week, the depot supervisor had nearly stepped through a skylight while he was on the roof investigating the guttering. It later came to

**“. . . severe brain and spinal injuries
and partial paralysis.”**

light that Brian had been unwilling to go on the roof, and had discussed this with Elizabeth a week before the accident. Had this been known earlier, it would potentially have affected the outcome of the subsequent Court trial. However, by the time the OSH inspector found out about it, Elizabeth was in Christchurch with Brian and the budget did not permit the inspector to travel to Christchurch to talk to Elizabeth in person.

Medical treatment

Immediately following the accident, Brian was admitted to the intensive care unit, where he underwent an urgent surgical burr hole and the evacuation of a small subdural. He was then flown to the Wellington neurosurgical unit and underwent a left frontal lobotomy and craniotomy. A tracheotomy was also performed.

Elizabeth was upset with what she saw as the “cavalier” attitude of the doctors who, because of the extent and severity of Brian’s injuries, advised her to take him off life support:

You haven’t given him a chance . . . He has not had a chance and they sort of tell me, we’ve taken out x amount of his brain, the rest of it is like a bowl of jelly dropped from a height. It’s just shattered. He will be no good. They really push you to put off the ventilator.

Brian and Elizabeth then spent about ten months at the Brain Injury Rehabilitation Service at Burwood Hospital in Christchurch.

Impact on Brian

The accident left Brian totally dependent on others (mainly his wife, Elizabeth, and the caregiver and family friend, Rose) for his basic daily functioning. He became incontinent, had little control over the management of his bowel, and required full assistance with personal hygiene and toileting. He expressed no interest in food or drink and gave no indication of experiencing normal sensations of hunger, thirst or satiety. Food and fluid had to be

administered through a tube directly into his stomach.

Brian was unable to communicate through speech or writing. His speech was unintelligible, and when he did attempt to articulate words they made no sense. He was unable to recognise anybody who was not well known to him in his present life, and gave no sign that he recognised family members or friends known prior to the accident. He recognised his wife Elizabeth only as someone who provided care for him and was there constantly:

So whether he reacts to me because I was there the whole time, every day and I was always the one there, the main one, or whether he remembers we were married, you never know.

Months of intensive rehabilitation helped restore Brian's ability to sit and walk with assistance. He regained a degree of physical strength and 'wellbeing', meaning he could be expected to live a normal life span. However, the medical opinion was that no amount of further rehabilitation would restore his intellect, memory or ability to recognise his family and friends.

The family

Every member of Brian's family, as well as his friends, had to come to terms with the loss of the Brian they knew. Many were unable to cope with the damage the accident did to Brian. His daughters coped with the grief by simply not visiting and this was also the case with his colleagues. Said one colleague:

Brian's children don't have anything to do with him . . . I heard [his daughter] say that's not her father. So she doesn't bother to come and see him at all.

The grandchildren Brian had loved did not recognise him or know how to react to him, often treating him like a child, which annoyed Elizabeth:

**“. . . the grandchildren don't know
how to take it . . .”**

And the grandchildren don't know how to take it, and they don't know what to do round him. And they do stupid things that annoy me. They treat him like a child.

Life for Brian and Elizabeth had changed irrevocably. They had enjoyed a satisfying marital relationship and a good sex life. Both loved the outdoors — fishing, camping, boating and visiting friends. Both had been employed and able to enjoy their incomes. They could afford to dine out, go to the pub, play darts, or go to the casino. They could have their grandson stay for the weekend. None of these things were now possible.

Elizabeth became committed to caring for Brian and continued to assist full-time with his rehabilitation. Her devotion meant a loss of income for the couple, who now had to manage on forty percent of their previous income. After a considerable struggle, Elizabeth was able to persuade her insurance company to provide financial assistance so she could purchase a house to accommodate Brian's special needs.

Elizabeth and Rose had to cope on their own in working out physiotherapy for Brian. Elizabeth felt that her nursing background was some help but often did not know where to turn for help. Elizabeth and Brian were socially isolated now as they lost contact with their old friends. Elizabeth's caregiving commitments meant that she was unable to participate in social events, or take holidays:

I really don't have a social life any more . . . We don't go fishing, we don't go for trips away any more.

Neither she nor Rose felt they could take a break from caring for Brian, and worried that not even a professional could care for Brian and understand his needs the way they could.

The accident also had an enormous impact on Rose. She gave up working full-time, and began to devote four to six hours a day on week days (and when required on weekends) to helping Elizabeth care for Brian. Rose had a family of her own but made it clear to them that her first priority was looking after Brian and

helping Elizabeth whenever she needed it:

I basically sat my family down and said right from here on, if Elizabeth needs me, you kids . . . are old enough to look after yourself. If I have got to go, I have got to go. I have made this my number one. And my family my number two . . .

Her husband had been a good friend of Brian's before the accident, but now could not cope with his condition, to the extent of not even going to visit him. As Rose said:

. . . because he can't cope with it himself, he sort of makes that much more allowance for me to.

The workplace

There was horror and shock at Brian's workplace when the accident occurred. Managers and colleagues did what they could to help around the house, such as mowing the lawn. The company also helped financially with the initial hospital and ambulance expenses, paying for the purchase of the car, and paying Brian's salary.

Over time, however, when the extent and permanency of Brian's injuries sank in, colleagues and friends stopped visiting. Most have visited him only once. The reason was not callousness or lack of caring, but the fact that Brian bore almost no resemblance to the person they had known. Said one co-worker:

I don't know whether it's trying to ignore it or what it is . . . I know a lot of the guys really want to go and catch up with Brian . . . it's a stupid thing really, he's still Brian at the end of the day. He's just not [the person] we remember. I think a lot of the guys want to remember him the way he was.

Most felt guilty over this inadequacy in themselves but were unable to do anything about it. The Brian they had known was

“. . . colleagues and friends stopped visiting.”

well-liked, popular and happy-go-lucky — nothing like the person they saw after the accident. Although their response was to shut the whole thing out, it was apparent that the accident was not far from everyone's minds and was there as a constant undercurrent. Said one colleague:

I mean, everybody's been so much aware of what happened to Brian, it could so easily happen to them. The thing is that he was a mate and that's the hardest part.

The company was prosecuted by OSH for breaches in the HSE Act, and fined \$20,000. Subsequently, a number of health and safety measures were incorporated into the company's policy and there appeared to be a definite increase in awareness of health and safety at work. The results remain to be seen.

EPILOGUE

Brian has not improved since the interview but is no worse and is better settled. Elizabeth feels more adjusted and confident — she was able to take a short vacation overseas with Rose, and thought Brian was fine with the care he received in their absence. Elizabeth says that this has given her the confidence that she can do it again in the future and take breaks from care giving as required. However, she is disappointed with the reaction of family (particularly Brian's daughters) and friends who, she feels, have let Brian down badly as they have stopped visiting. The same is true of his former colleagues and workplace, who have never phoned or visited to ask about Brian — a case, Elizabeth feels, of "out of sight, out of mind".

Grant:

Hand Severely Crushed In Moving Machinery

Grant is in his mid-forties and worked in heavy manufacturing. He had moved two years before the accident to a major centre so he could spend more time with his adult son. Grant suffered severe crush injuries to his right hand when it became caught in moving machinery, including three broken fingers, and extensive loss of tissue at the base of his thumb. Plates were inserted in the first segment and the base of his thumb. He now has severe scarring and limited grip.

Grant's son kept in close contact with him after the accident and during his rehabilitation. His ex-wife and daughter also kept in touch.

Sequence of events

Work in the part of the plant where Grant was employed was done in a rotating shift system, with morning, afternoon and night shifts. Grant was working the night shift. A bonus system encouraged workers to increase productivity. In addition, there was a degree of competition between shifts, as Grant explained:

There's a lot of rivalry between the shifts. There's three shifts and we try to produce steel better than the last shift, or they try to outdo us. That's just the way it is.

A couple of times a shift, the rollers in the machine had to be checked. This process entailed stopping production and running a small piece of metal rod through the equipment, which was then measured. An hour before the end of the shift, at about 6 am, production was stopped so the test could occur. Safety pro-

cedures required the test to be conducted from a specified direction. However, because production had to be stopped while the testing was done, it was common practice to carry the test out in a way that was unsafe, but quicker.

While conducting the test with a colleague, Grant's glove became caught, pulling his hand into the rollers:

By the time I realised that my glove was caught it seemed like eternity, it was only ten seconds or something like that. I had to wait for my hand to go through. I could hear the bones cracking as it was going through . . . I could actually physically hear it and there was nothing I could do.

It was immediately obvious that the injuries were serious. His thumb was almost severed from the hand, bones in two fingers were broken, and crush injuries to the middle finger had caused it to burst open. Grant walked to the shift manager's office (about fifty metres away) and requested that an ambulance be called. First aid was provided at the site. The ambulance arrived fifteen minutes later.

Medical treatment

Grant was taken straight to hospital for surgery. Metal plates were fixed in the first segment and the base of his thumb, and in one finger. A metal pin was also used in his thumb. He remained in hospital for two weeks initially, returning later for another two weeks for skin grafts. He received physiotherapy for a considerable period, as well as psychological counselling for the mental trauma caused by the accident. He returned to work on light duties four months after the accident, gradually building up to resuming shift work three months later.

Impact on Grant

Grant was right-handed, and the injury had a major impact on his ability to perform normal tasks, especially while his hand was healing. Even after the injury had healed, Grant's grip and movement in the injured hand were limited, and it continued to

ache, especially in cold weather. His thumb was stiff and the middle finger clawed. He was concerned about what might happen in the future, and worried that his hand might get worse and develop arthritis in the future.

The OSH inspector involved initially explored the possibility of prosecuting Grant for breaches of the HSE Act, as well as the company, to drive home the importance for workers of taking responsibility for their own safety. Grant found this possibility extremely stressful, which affected his rehabilitation. OSH did not go ahead with this individual prosecution, but charges were laid against the company.

Although the company had found other work for him since the injury, and was supportive, Grant was concerned about his job security. He was unable to return to his pre-injury role, because of the psychological impact of the injury:

Obviously I am very reluctant to go back to my old job . . . to tell you the truth, I don't like the turning rolls and all that sort of thing. It really freaks me out.

He continued to have flashbacks to the accident. He was apprehensive about causing further injury or stress to his hand, and felt that his injury had severely narrowed his future employment options:

It's narrowed my options down something shocking really, and it's quite scary sometimes to think about it . . . because everybody likes to think they can do whatever they like. And I have been able to up until now.

His injury affected his ability to participate in recreational activities, in particular his passion for training horses. He could no longer play rugby socially. He lost self-confidence, and was self-conscious about the appearance of his hand, especially in social situations.

**"I could hear the bones cracking
as it was going through . . ."**

The family

Grant's son Kevin was advised of the accident while he was at work, but he was not aware of the severity of the injuries until he arrived at the hospital that evening:

It was unreal, I got up there, and Dad was there and he was all half-pie, all blanked out, y'know. And he was just vomiting the whole time I was there, anaesthetic and shock, but it sank in how serious it was. I just sort of brushed it off all day and got up there and hell . . .

Kevin visited his father regularly during his stay in hospital, and was in close contact with him throughout his rehabilitation. Grant's adult daughter and his ex-wife, who lived in a different city, also kept in touch.

The workplace

The plant where Grant worked was a subsidiary of a large company. The company had previously had some serious injuries occur at the site, including a fatality, and this had prompted them to devote considerable resources to health and safety, including employing a dedicated compliance unit and having an in-house occupational health, safety, and environmental programme.

The company was an accredited employer under the ACC accredited employer scheme. This meant that the company directly bore the costs of the accident, including paying Grant for the time he was off work, medical expenses, and costs of lost production, modification of equipment, and investigation of the accident.

The company pleaded guilty to a charge of failure to take all practicable steps to ensure the safety of an employee. They were fined \$15,000, with \$3000 being awarded to the worker. The award may have been lower than normal as the Summary of Facts

“. . . self-conscious about the appearance of his hand . . .”

indicated to the Court that the worker was undertaking the activity in a manner that was likely to cause him serious harm.

The workplace had a definite culture — described by one of the interviewees as ‘macho’ — that seemed to be inherent in the industry. Associated with this was a ‘hierarchy of injury’, which resulted in Grant receiving less support from his colleagues than might otherwise have been the case. A more visible injury had occurred not long before Grant’s accident, which resulted in colleagues feeling that his injuries were comparatively minor. The company occupational health nurse commented:

I think he has been short-changed because of [the more visible earlier injury], definitely. It’s just the wrong type of injury. I mean if he had ripped a leg [off] it would probably have got the whole support and sympathy and everything else . . .

EPILOGUE

Grant feels all right now but he and his family are keen to change his workplace. He has attended a couple of interviews but has not been successful in finding other employment, due he feels, to the condition of his hand. Meanwhile, he continues to work at the same place where he had his accident and is now doing a full-time job. He feels “trapped” and, much as he wants to, doubts he will be able to change careers.

John:

Chemicals Used In Boat Building Caused Personality Change

John is a twenty-eight-year-old pakeha male who had used chemicals and solvents in his work in the boat building industry for over five years. John's personality began to change around June 1999. His symptoms gradually worsened, and in September 2000 he quit work and moved back with his parents. Previously confident, outgoing and competent, John now finds it hard to be around people and to be motivated about life. He was not able to return to the boat building industry and, at twenty-nine, had to retrain.

The sequence of events

John had trained as a cabinet maker, and began work with the company in 1995, when he was twenty-three. The boats he worked on were mainly fibreglass with a foam core. He worked mostly in boat construction, dealing with fibreglass and glassing using glue and epoxy resin. Six months after arriving at the company, John was offered the job of running a crew. This involved making sure everyone was busy, ordering materials and dealing with owners in addition to his everyday work.

John loved the work and the responsibility he was given. A good organiser, he thrived on having a team to work with. As his father said:

He tended to be good at organising things, organising the guys on the jobs, and he felt responsible. If [the owner] came and bawled one of the guys out for doing something wrong, he would go and see him and say 'look if I told them wrong, bawl me out not them'. He was always like that.

The company's health and safety standards were lax. There were no fans, and no dust masks were worn. Nor did John wear gloves.

You didn't know what could happen to you. Like some stuff used to give you a headache, but within a day or two the headache would be gone so you didn't worry about it. There's no real noticeable effect of what it would do to you, unless you end up with epoxy rash.

John used to come away from company meetings frustrated, as the workers would ask for equipment and protective gear that never eventuated. Initially, chemicals were stored in the factory, which worried John, but they were later moved outside. John worked long hours including weekends. The pressure — which seems to be inherent in the boat building industry — was always on as completion dates loomed.

In 1998, after he had worked for the company for three years, John began to have mood swings, headaches and was unable to sleep. These symptoms intensified during the winter of 2000. He began to worry about his mental health, saying:

I thought I was going nuts. Because I couldn't explain a lot of the things like the non-sleep. Just a lot of things I couldn't explain so, I was starting to feel like a freak.

His personality began to change and he began to be extremely cold towards his family, partner and workmates. His workmates began to call him Mr Antifreeze. He would also feel nauseous and the side of his face felt numb. He would throw up often and couldn't eat. His teeth, which had always been strong, began to decay and he had to visit the dentist frequently. Other symptoms were chest pains, shaking of the right hand and loss of his sense of smell.

Things came to a head in August 2000 when, out of fear over

“. . . I was starting to feel like a freak.”

his mental state and worried he might strike out at someone, he went home for four days and locked himself in his room. On the Monday he returned to work and went back to his partner. Two weeks later, he couldn't sleep on a Sunday night, so he walked out of his house and went to stay with his parents.

I honestly felt I couldn't cope, you know. If somebody came and asked me something, I would have either burst into tears or hit them or walked out so . . . yeah, I don't know why. I couldn't sleep that night, I got up and left.

Medical treatment

Appropriate medical treatment was delayed for some time, as John's GP was initially unable to diagnose his illness, instead prescribing antidepressants and a series of tests. He was finally diagnosed after his parents read about the condition in a local newspaper.

Impact on John

The changes in John had a big impact on his life. He avoided his friends, as he wasn't able to act normally around them:

Well, a lot of my friends, especially near the end, I didn't really see because I wouldn't go out, and if I did it was only for a few hours. [I'd] sort of perk up or try and liven up so they didn't really know anything was going on. And even now I do it because you don't know about talking about what's going through your head . . . I try hard not to show it.

John's self-confidence was shattered and his motivation lost. He did not look forward to anything, and felt he was a totally different person. Derek, an ex-workmate, who also left the company after developing solvent neurotoxicity said:

John was a leader down there ok and you could see his confidence being shattered, and in some ways you could see him like a little boy. And you do, he has to start over again, but he has to get his confidence back. And I've actually asked him if he

wanted to come here and work. Just get his confidence up, to meet people and talk to people. Because you can see sometimes his moods change like he's going to snap. Yeah, I try and bring the best out of him every time I see him.

In the months leading up to leaving work and in the ten months since, one of the few activities which brought John any respite was driving:

When I first left, the only place I'd actually find peace would be driving. So I'd probably spend anywhere from two to five hundred dollars a week on petrol. Like even now it's probably anywhere from eighty to one hundred and forty . . .

John was unhappy that he could not return to an occupation that would involve contact with solvents. At twenty-nine years of age, had to come to terms with retraining:

ACC and my neuropsychologist have said they recommend [against] me going back to anything related to boat building or furniture making or cabinet making so I guess it's a new career now, a new start, something different.

Ten months after leaving work, John was still unable to cope with any stress or pressure. A recent neuropsychological assessment suggested that he might be able to cope with part-time study or working, and John was contemplating beginning study.

John felt frustrated in his dealings with ACC. He had a number of different case managers since leaving his job. He found it took a long time to get compensation cover, partly because his employer took a long time to send in the required forms. Cover was granted in March 2001 and was backdated to September 2000. In the six months before cover was granted, however, John had to use his savings.

John asked his parents to ring ACC as he couldn't cope with

**“. . . you could see his confidence
being shattered . . . ”**

it himself. His parents found it difficult as the case managers would ask why John was not on the phone. As John's mother said:

I mean for the first six months we had to initiate everything, he couldn't do it, we had to do all that. And they say 'why are you doing it?' and then he'd start feeling guilty. We were probably on the back foot too, because we've never been involved with anything like this. We don't know the system. I can understand ACC being cautious because you do hear some pretty horrific things of what people are doing because they know how to work the system. But it's very hard for us who've had nothing to do with it to know where to go and how to get help.

The family

John's illness had a major impact on his family. His relationship with his partner ended, and he moved in with his parents, who had a substantial role in his care. John's parents were traumatised by what had happened to him. They noticed the change in the way he treated his partner. As John's mother stated:

I was really quite horrified with the way he was treating her because it wasn't John, and I thought I'd done a better job than that.

His parents worried that John might be suicidal. Their distress was exacerbated initially by not knowing the reason behind John's personality change, and later by the lack of support they received from services. As his father said:

It sort of screwed me up for a while, because I'd look at him [and think] he looks good, why isn't he getting his act together, and you feel like shaking him. Sometimes I found it hard, really hard. I've got over it to a degree, and accept it, but I still find it hard.

John's illness also affected other members of the family. For a long time he was not able to be around his nieces and nephews.

In fact, it was his intolerance of his family that first indicated something was wrong. As John's father said:

He'd been looking after the kids and he didn't know how to handle it. And that would have been about six months before he left his job . . . the signs were probably there then but we just didn't click.

However, his family was supportive. An older sister lived down the road and the family made sure that someone was always around if John needed it. John's parents were self-employed so they had the flexibility in their professional lives to help John. They thought that if they had been working nine to five, however, that it would have been a lot harder.

The workplace

The company John worked for was expanding rapidly. On average, John worked fifty-hour weeks although in busy periods the hours could easily top seventy. He was not made aware of the risks associated with solvents. All staff were issued with latex hospital-type gloves. Organic masks were only available two years after he started work at the firm. John used these only when he painted. Dust masks would otherwise be used. John was not aware of any extraction systems in use during the first three years he was there.

Derek also got solvent neurotoxicity and left work about the same time that John became sick. Neither Derek nor John knew the other had solvent neurotoxicity. About seven months after John left work, he went to see Derek at his new job. The meeting helped both of them. As Derek said:

He came round three months ago and I could see he was twitchy. So I started talking to him about how I used to feel and what I used to think. And he thought some really crazy thoughts,

**“. . . he thought some really
crazy thoughts . . .”**

and I opened up to him. He just went ‘whew, I thought I was the only one’. You’re not the only one, the good thing is you do get better, but it takes you a while.

At least five other employees at the company became sick and all the staff seemed to have health problems. To date, this does not seem to have had an effect on the employer, at least in John’s case, as any costs due to John’s absence were absorbed as the expanding company took on new employees. The employer did not see the effects of solvent neurotoxicity on his employees as they left before the illness was diagnosed or linked to their work.

The employer appeared to have a low awareness of the health and safety hazards at his workplace and displayed a lack of interest in John’s case and his current health. He maintained that while the company had some responsibility for John’s illness, it was John’s non-work activities (working on his own boat and for personal clients) that also contributed to his symptoms. However, OSH and an independent occupational physician found that John’s symptoms were as a result of his paid work activities.

EPILOGUE

John comments that he feels seventy percent better now than when he was interviewed. He has changed careers, and on advice from his doctors has removed himself from the environment that caused him the problem. His employer has not contacted him, not even to find out how he is doing. His family, too, are doing better and are grateful to the part played by the OSH inspector.

Mark:

Multiple Fractures When Telephone Pole Broke

Mark, a New Zealand European male in his late forties, was married with three children, two of whom lived at home at the time of the accident. In August 1999, he fell four and a half metres from a telephone pole and suffered multiple fractures. At the time, he was working in a job for which he had little experience. He continued to have some physical limitations due to his injuries at the time of the interview.

The sequence of events

Mark worked in a pole reconstruction team for a telecommunications company. Over the previous month he had been involved in a complex employment dispute with his employer. His former position had been contracted out and he was in negotiation for a new job. In the interim, he had been seconded to a temporary position and was having to ask for work to do. When the colleague of the foreman was taken ill, Mark moved to the pole reconstruction team.

On the day of the accident, Mark and his co-worker were replacing poles in a suburban area. The morning had passed without incident and they had installed several new poles. This involved putting in a new pole, removing the telephone wires from the old one and connecting the wires up to the new pole. At one site they installed a new pole next to what was suspected to be an unsafe one. Because they had to finish a job at another site, they left the wiring until later in the day.

In the afternoon, they returned to complete the transfer of wires from the old pole to the new pole. Mark positioned a lad-

der against the new pole, climbed it, and installed a new terminal. Meanwhile, his co-worker completed the jointing work on the underground joints of the cables. Once the preliminary preparation was complete, he asked Mark to check which houses were working off the terminal of the old pole. This was to enable the original individual connections on the old pole to be fitted to the correct place on the new pole. Mark's co-worker then went to warn the customers whose telephones were about to be disconnected.

Mark moved the ladder to the old pole, climbed it, and made a note of what was connected where. His co-worker was between houses, and told Mark to cut the wires in the terminal and they would fix it up later. Mark cut the wires and was trying to pull them out of the terminal when the pole broke at the base, and he fell four and a half metres to the ground. Mark landed feet first but was attached to the pole by a safety harness, and was dragged down with the pole landing on his right arm.

While waiting for the ambulance and fire brigade to arrive, the co-worker did what he could to assist Mark. He put a crowbar under the pole and raised it to ease the pressure on Mark's arm. He secured the area as best he could until the fire brigade and ambulance arrived.

Medical treatment

Mark suffered lacerations down the right side of his face, cracked ribs along the left side of his body, and most seriously, a fracture of the humerus bone in his right arm. He was taken to hospital where his arm was set. After an overnight stay, he was given painkillers and released into the care of his wife and family, still in significant discomfort. He wondered how someone in a similar situation without the support of family would have managed by themselves. He summarised the situation:

It was frustrating to be released from hospital. I could barely go to the toilet by myself. I couldn't get dressed by myself. I was in intense pain, [the] first [week] was the shocker . . .

[The hospital] just assumed that the woman taking him [will look after him], he'll be ok, we don't have to worry about him now.

Impact on Mark

Mark was off work for ten months while his injuries healed. During this time he suffered considerable pain and discomfort. For the first three months, his movement was limited and physical activity impossible. He lost fitness and gained a considerable amount of weight.

Mark was frustrated with the attitude of the company during his rehabilitation. The dispute over his employment situation continued, and although colleagues dropped in, his boss did not visit him after the accident. He felt that the company could have done better:

It was just a bit of a shame, after nearly 30 years working for the place . . . They were only prepared to do what they felt they had to.

After being given clearance to return to work, Mark gained new employment working for another company as a field engineer and enjoyed his new job. But he still experienced ongoing health issues and disrupted sleep:

My shoulders are stuffed really. There are things I just can't do any more. I haven't slept all the way through a night since the accident. There is not a night that goes past that I get my arm in some sort of position and I wake up in pain.

He still could not lift his arm above the horizontal position or reach easily. This made participating in hobbies and sport either hard or impossible, and affected his ability to do jobs around the house.

“. . . frustrated with the attitude of the company . . .”

Like his family, Mark considered that he was lucky not to have been killed in the accident. He tried to make the most of opportunities put in front of him. He described it:

I have turned it around, I have a completely different attitude to life. I've always been quite an honest person, but I guess I've realised that I could be easily dead and I realise how lucky I am.

The family

At 2:30 pm on the afternoon of the accident, Mark's wife Allison was working in her administration job at a local school when she received a call from Mark's workmate Ian. He told her there had been an accident and that Mark was in hospital with a broken arm. Allison went immediately to the hospital and found Mark in the accident and emergency ward. She and the rest of family spent the afternoon and evening with Mark.

When Mark was released next day, Allison found that she had to begin caring for him. Fortunately, her employer was able to give her time off in the initial recovery period. This was important, as Mark was not able to perform many personal care tasks in the early stages of his recovery, and Allison needed to help him with these.

The physical effort to help Mark to a sitting or standing position was demanding. For the first two months, Allison had to return home from work at lunchtime to feed and check on him. Until he was sufficiently recovered to help, she had to do all the housework, in addition to having to care for her husband. This was a significant burden for her.

Friends provided support to Allison and Mark throughout this period. They would come in and keep Mark company during the day and ring her up to see how she was coping.

Mark's son Justin was shocked at how close his father had come to death:

For a long, long time, every time I thought about the acci-

dent, I started to realise how close he was to dying. I mean, if [the pole] had been a foot the other way, he'd be dead.

As the recovery period wore on, Mark becoming increasingly frustrated by his enforced inactivity. He was keen to return to work. His irritation with his situation caused some tension within the family. As Justin said:

. . . he drove everyone mental because he wanted so much to get back to work. And he was so relieved when he was told that he could, and he was so excited, and so positive about finding another job, he was actually quite fun to be around. There was such a big change in the space of about two weeks . . . [my brother] was like 'let's go down to the park and kick a ball round, because Dad's home', and then two weeks later, it was 'Dad, do you want to come down to the park and kick a ball round?'

In the long term, Justin believed that the accident brought his family closer together. He also felt that his father's accident made him more safety-conscious in his own work.

The workplace

Both Mark's workmate and the workplace as a whole were affected by his accident. His colleague suffered personal distress from the accident and felt unable to continue in his job. He moved to a different area of work within the same company, taking a seven percent pay cut. Six months after the accident he was made redundant. After this, he found it hard to regain employment in his profession. He was concerned that OSH and his employer blamed him for the incident. In his opinion, there were wider work process issues that had not been resolved. Reflecting on what had happened, he thought that for a time he had lost all confidence in himself.

“. . . I started to realise how close he was to dying.”

The company faced a range of costs and impacts arising out of Mark's accident. There was the immediate need to find replacement workers and address the morale problems stemming from the accident.

Costs began to mount, as there was an OSH and an internal company investigation into the incident. Five people were interviewed, taking up eight hours. Internally, as a result of the health and safety officer's report, there were new procedures and training established.

The OSH inquiry resulted in a prosecution against the company in which they pleaded guilty. They were fined \$8,500 and had legal fees of \$45,000. Extra health and safety procedures for ISO 9001 accreditation were instituted.

EPILOGUE

Mark still has moments of pain and immobility and is frustrated by that and the fact he is still unable to participate in sport. Though no longer in the same company he is in the same industry, and often sees his old colleagues, who, he says, are still sympathetic and show interest. He is now more involved with indoor computer-based tasks. However, he feels that his lack of mobility restricts what he can do in an office job as he has always had jobs that were largely outdoors. This year he was turned down for a job because the prospective employer felt Mark would not be able to cope with working indoors all the time.

As far as his personal life is concerned, he feels he is a very honest person and the lack of honesty following his accident was unpleasant. He realises how easily he could have died in the accident and how lucky he was, and that has "turned his life around". He now enjoys each moment of each day.

Murray:

Workplace Chemicals Caused Solvent Neurotoxicity

Murray is in his mid-thirties, and was working as a life raft repairer when he developed solvent neurotoxicity after exposure to chemicals in his workplace. As a result of his illness, Murray had to give up his job. Since that time he suffered ongoing anger, irritability and depression. His illness also contributed to the temporary breakdown of his marriage. His wife Jane had difficulties in coming to terms with his illness. Murray was concerned about his employability and future prospects.

The sequence of events

Murray worked in life raft survey for a small engineering company, checking the safety of life-saving appliances. Murray's duties involved collecting the life rafts, checking them and repairing them if necessary, and then returning them. The repair involved the use of an epoxy resin, and the area to be repaired was cleaned with solvents. Murray worked in two rooms of the factory: one room for the boat and a smaller room for mixing the chemicals needed for the process.

The health and safety equipment was, in Murray's view, inadequate. In the glue room there was a small Expel-Air fan and to mix the glue he used kitchen gloves. A breathing mask with air supply was available but frequently in use in other parts of the workplace. For most of the time he worked at the boat repairers, Murray was not aware of the dangers of the chemical he was using.

Because of previous OSH concerns, an inspector was sent to the company to do a compliance check. The inspector, having previously worked in the printing industry, noticed a distinct smell

of solvents. There was little ventilation and the Expel-Air in the mixing room was actually drawing foul air from the factory to the glue room.

The inspector made a number of suggestions, including monitoring for vapour levels. Further, he asked that procedures be put in place to minimise any vapour that was there. The inspector checked the Expel-Air. He was concerned that it was not adequate for the job and could possibly spark, igniting any vapour that was present. When he checked the breathing equipment in the workplace, Murray initially told the inspector that he knew about it and used it. Two months later, he told the inspector that the equipment was not available and not used.

The inspector, concerned that Murray may have developed solvent neurotoxicity, called in an OSH medical practitioner to do a notifiable occupational disease notification. A monitoring company was employed to examine the vapour levels at the workplace. Tests showed that vapour levels were actually below the workplace exposure standards. The inspector had some doubts over the results as they were taken in winter and levels would be higher in the heat of summer. Also, less repair work was being done at the time of the tests. Nevertheless, there was not enough evidence for prosecution. Murray was not pleased with the result, and felt that the company was not made accountable.

Medical treatment

Initially, there was a long delay before there was treatment for Murray. The main treatment was visits to his local doctor and to a clinical psychologist. Murray had no drug treatment due to possible concerns over adverse effects on his illness.

Impact on Murray

Murray began to notice changes in his health up to a year to a year and a half before leaving his workplace. Initially the symptoms were not severe. They included anything from pins and needles in his fingertips to rashes on his face and bad circulation. Often in the morning he would awaken smelling a glue residue.

Murray remarked:

It was probably about eighteen months before, because my daughter used to come running in and give me a kiss before she went to school or I went to work in the morning. She goes 'gees it stinks' at my sheets, because I used to sweat at night. Even in the middle of the night in winter. And I don't have electric blankets on. It used to stink so much and [I'd] think 'what's going on here?' I didn't put it down to anything.

As time went on, Murray's symptoms began to increase in range and severity. He developed problems with his breathing. This culminated in what he and staff at the local hospital thought was a heart attack. He began to notice changes in his personality and memory. Increasingly, he became angry and irritable and experienced frequent mood swings. He found that his short-term memory suffered and he had to make notes to remind himself of things. He remarked:

Initially what I noticed mostly was short-term memory was going pretty bad . . . When my day planner was starting to get full of scribbles and things like that, and clients were ringing up saying you didn't get back to me yesterday. Do you still want this or do you still want that? And [I said] 'gee what was it? Who are you again?' Things like this.

There were further changes in concentration and motivation. In his spare time Murray had been studying for a Bachelor of Commerce degree. Murray noticed that his academic performance began to decline, his grades dropping from As to Cs:

It's been a big thing because I've never failed anything before in my life.

These changes in Murray's personality began to affect his personal relationships both within and without his family. He

“. . . angry and irritable and experienced frequent mood swings.”

found he could no longer cope with his stepchildren. The marriage began to come under strain. Despite seeing a marriage counsellor for several months, Murray and Jane eventually separated. Murray moved out of the family home into a nearby townhouse. He became more antisocial, giving up hobbies and sports. Despite having played and coached several sports, Murray no longer had the motivation. His circle of friends declined. Social situations became difficult and Murray felt safer isolating himself from others:

I feel safer, I feel like if I'm by myself and nobody is coming into my world then nothing can go wrong. I can't get angry, I don't feel threatened or intimidated, all these sorts of things.

Murray's plans since the accident revolved around trying to secure employment in IT and writing about solvent neurotoxicity. Murray hoped to present an idea to government on developing a licence, a qualification system and a database for using chemicals in the workplace. However, he was concerned about his future when his ACC rehabilitation plan ended. Murray commented:

I don't really know what the future brings or anything. Probably the shit will hit the fan early next year. That's when [the] rehab plan finishes . . .

He was concerned about his future employment prospects, about his ability to get and keep a job.

Who wants to hire a crazy?

Although Murray was coming to terms with his illness, he still struggled with it daily:

I just hate living like this, I really do. The main focus I've got in life like most of the guys in relationships is to make sure that

“Who wants to hire a crazy?”

their partner is well-catered for when they die, sort of thing. That's my focus. I want to make sure that the mortgage is paid and everything like this, then I don't mind doing something, disappearing or whatever . . . But that's not the way to solve things.

The family

When Murray began his job at the boat repairers, Jane noted that he seemed to enjoy himself. But over the time he worked there, she began to notice changes in him. It began with physical symptoms like a recurrent rash. Then Murray's personality began to change. Jane commented:

And then he started to get really moody and lazy and, yeah, he just changed from this placid person to this big monster.

She observed that Murray was hard on the children and found it difficult to deal with them. At times she attributed Murray's problems to laziness. Jane noted that Murray gave up his hobbies and their social life declined. Many friends no longer visited. As a result, they did very little as a couple. Jane still kept up her visits to friends and to the gym.

Of further concern to Jane was Murray's contribution to the household. She felt it was unfair that he could receive more money through compensation than she did working full-time. Nor did she feel that he made up for it by doing chores around the house. Overall, she was not interested in his illness. She had her own problems, including two nervous breakdowns.

All these pressures affected their relationship. Although they reconciled in June and July of 2000 after a separation, Jane was doubtful about the future of their marriage:

Hmmm, yeah . . . it's not a marriage, we're sort of like . . . flattening together. That's what it's like. Yeah, half the time we

“. . . gave up his hobbies and their social life declined.”

don't even talk.

Jane's doubts extended to Murray's future and his ability to find lasting employment. Although Murray had returned to work at a computer firm, he was not able to hold down the job.

The workplace

The workplace is a small business offering a variety of services which, at the time of the accident, included life raft survey and repair. The manager noted that Murray seemed to enjoy the work. Murray had won his position against six others. The company recognised his competence and gave him opportunities for extra training and certification.

When Murray began to notice health problems, he reported them to the manager. It was immediately decided to send Murray to a doctor. It became apparent that OSH would have to be brought in to investigate the situation. Initially, Murray was not enthusiastic about this. Management insisted that if there was a problem, it had to be dealt with. The result of the OSH investigation was that Murray had to be removed from the workplace for his own health.

For Murray's employer, there were a number of concerns. The manager could not understand how Murray had become affected. To the best of his knowledge, Murray was the first worker to be affected by the chemical. The problem for the company was that the job could not be done without the chemical.

The company changed to a new thinner. Even though the new chemical was less reactive, there was still the possibility that Murray would be intolerant to it, and he could not be allowed to return to the job.

Murray's employer had further concerns about the diagnosis of solvent neurotoxicity. It did not seem to be clear-cut and there was no resolution resulting from the diagnosis. The manager thought it would have been much simpler if the condition could

**“ . . . concerns about the diagnosis
of solvent neurotoxicity.”**

be diagnosed with a single blood test. This lack of clarity made the manager wonder if there were other factors involved, such as possible drug use.

Murray's manager believed the costs arising out of the incident for the company were minimal. The general morale of the other workers, in his view, did not suffer from Murray's experiences or the OSH investigation. Overall losses from the incident were estimated to be 5-6% and a slight increase in the ACC levy. There were no increased costs from changing the chemicals they used in repair work.

EPILOGUE

Murray feels worse now than he did at the time of his interview. His family have left him (he and his wife have separated again) and he is still not working. He describes himself as "the loneliest man in the world".

He thinks his employer believes that his problem is associated with alcohol and drugs use and he has not heard from them since OSH got involved. He feels angry about the position he is in because of his condition and is concerned about the problem of solvent neurotoxicity in New Zealand. He feels the Government needs to take more interest and action in this area.

Paul:

Panel Beating Caused Occupational Deafness

Paul, a former panel beater in his mid-forties, suffers from noise-induced hearing loss. In the early 1990s his gradual hearing loss was exacerbated by a battery exploding in his workplace. Paul had owned a successful panel beating business until his occupational injury became so acute that he was forced to sell it to his brother-in-law after 27 years in the trade. He now owns a second-hand dealership.

Paul is married with two teenage children. His family were all employed in the vehicle repair business — one brother was a panel beater, the other a mechanic. Paul's father and many of his parents' friends were also panel beaters. Paul's mother described the effect on his family and friends over the years as gradual and immeasurable.

The sequence of events

Paul began panel beating as an apprentice in 1973 in a business which at its height employed thirty-two panel beaters and painters. It was a situation with a very high noise level in an industry that, at the time, did not have a culture that encouraged the use of personal protective equipment such as earmuffs.

Paul became self-employed and eventually ran his own panel business, employing up to fifteen staff. He worked hard to make the business viable: as his former co-worker observed, Paul was out on the floor “day and night” until the company was financially secure.

Although it is likely that some gradual hearing loss was occurring throughout his earlier employment, it was exacerbated

when a car battery exploded close to Paul in 1990. At this point, Paul became aware of his hearing difficulties, although OSH was not notified (under the Notifiable Occupational Disease System) until some years later. Following a series of tests, one specialist noted Paul had previously had exceptional hearing and that thirty-four was a young age to be suffering from hearing loss:

. . . in other cases there has been a period of years to adjust to gradually increasing acoustic damage; but where acoustic trauma occurs suddenly, the readjustment is a greater challenge. This is particularly so when the victim is a young man unprepared for the accompaniments of old age.

Paul was diagnosed with a bilateral hearing loss. This meant he found it difficult to have a conversation, especially if there was background noise, whether on the telephone, in a crowded room or when there was machinery noise present. He also suffered from tinnitus. The OSH guidelines on noise-induced hearing loss (NIHL) describe tinnitus as:

. . . a high-pitched ringing, hissing or whistling, or a low-pitched rushing or buzzing. Short periods of high-pitched whistling can be experienced before NIHL is established and can be taken as a warning sign of impending hearing damage¹.

It also had other impacts on his health, including considerable loss of sleep, and a high degree of stress.

Paul began having conflicts with his workmates, largely because of misunderstandings. His relations with co-workers became strained, and there were times when they mistook his actions for arrogance or a lack of concern about the business. In reality, Paul was finding it harder to cope at work due to fatigue and increasing job dissatisfaction. Looking back, Paul says that he lost his confidence and the job held no real joy for him any more. Paul

¹ Occupational Safety and Health Service. *Noise-Induced Hearing Loss of Occupational Origin: a Guide for Medical Practitioners*. April 1994. p.13.

recalled that he quickly became frustrated at being limited to clerical work in his own business:

Well, you're working with your hands, and then all of a sudden you've got a pen in your hand. It's as though you've lost a part of your life. You think you've got it wrong. No bloody good at it, who am I any good to? I'm not doing anything. What am I accomplishing? I like to see a car come in all bashed up and I do the whole job — paint it, the whole thing, and she bowls out the door. And you can take a bit of pride in your work . . . there's no job satisfaction writing the jobs. So you lose a big part of your life, it's gone.

Paul was also feeling the pressure of having to bring in extra work to pay for the additional staff he employed to replace him on the shop floor. Eventually, the negative impact of the panel beating environment on his hearing, combined with lack of job satisfaction and other associated problems, resulted in Paul's decision to sell the business:

I just got that depressed, I had to take three weeks off. I couldn't do the job properly, things were festering at work, festering at home. The whole thing in the end just blew up. And [I thought] I've got to get out of here, otherwise something drastic is going to happen.

He bought a second-hand dealership, a working environment with substantially less background noise, in which it was easier to communicate with customers and staff.

Impact on Paul

Paul still suffered from a constant ringing in both his ears. In addition to this, he sometimes got a piercing scream in his ears twice a month but occasionally twice a day. The tinnitus was a permanent condition, which became worse when he used loud

“. . . he sometimes got a piercing scream in his ears . . . ”

machinery. Despite taking sleeping tablets, he still had problems:

. . . [last week] I was up from one to half-past four. And then you're really tired . . . you wake up and you feel absolutely shattered now, you haven't had enough sleep and you feel grumpy.

Paul's mother agreed that the constant ringing was difficult for Paul to cope with. She said:

. . . it's something I don't think you can explain to anybody. It's something you can't run away from. You don't even have half an hour off from it, from what I can understand. You just constantly live with it. Someone with a migraine headache can take something to ease it, but I believe with this Paul can't do anything.

Paul still had difficulty hearing if there was background noise. He needed a quiet environment to talk. This had an effect not only on his business, but also his social and family life. The OSH inspector remarked that the social consequences of hearing loss were acute, as people become more isolated as their hearing degenerates. The problem is especially acute among large groups of people. Paul agreed, saying that in social situations he tended to miss out on a lot. But he believed that friends and family had adapted to his hearing loss:

In my circle of friends, they make sure they speak clearly. And . . . they make sure I hear things. If you are in a social thing, I'd be standing probably against the wall so no one can stand behind me.

Paul's community participation also suffered. He gave up sport refereeing and playing music. His mother did not think Paul would ever take up these hobbies again. Later Paul took up running and swimming to keep fit.

**"He gave up sport refereeing
and playing music."**

Noise-induced hearing loss is an invisible injury, which means it is not readily apparent to others. His mother commented that:

. . . if they could wear a head bandage around their head, they would get all the sympathy in the world. But because you can't see anything, I'm afraid it is invisible.

Paul remarked that he got some satisfaction in his new workplace as it was 'hands on' but he missed not doing the job he trained for. It also meant adjustments to how he worked. However, Paul was still frustrated that, while permanent, his noise-induced hearing loss was preventable:

. . . because I know I've got this for the rest of my life and I've got to live with it. That's the hard bit.

Paul believed that a major benefit of what had happened was his increased awareness of noise as a hazard, which had extended into his family life:

If the kids want to do the lawns or anything like that, I tell them don't start up unless you've got earmuffs on . . . because I'd hate anyone else to get it.

The family

Paul's hearing loss placed a considerable strain on his family. Paul remembered he would growl at his children more, and become irritable and withdrawn. He was aware of the extra burden on his wife when the children misbehaved, or when his hearing loss caused family arguments. In a letter written at the time, he stated that:

At home, my wife and children are constantly repeating themselves. They are frustrated and so am I. Socially we do not attend any functions with any amount of noise as the headaches and ringing are not worth it. Before the accident I rarely suffered from any headaches, now they are a constant reality. I am awake at least three to five hours every night with con-

tinnual ringing. I take sleeping pills as a last desperate measure.

Paul's family moved home to be by the sea, as they found the sound of the sea helps him to sleep.

Paul's mother experienced temporary hearing loss after an accident at home. She said this made her appreciate more what her son was going through. She recognised the symptoms in her husband and in many of their friends from the panel beating business. She was determined her grandchildren would not enter the panel beating business:

If I had known today how it was going to affect panel beaters, there is no way I would let my son take up one of those jobs now.

The workplace

Paul and his mother both mentioned former panel beaters with acute hearing problems. His mother commented:

Their hearing is absolutely shot. Because in those days there were no earmuffs. There was no control whatsoever. And even when they first started to come in, you could tell the panel beaters to wear them, but they didn't always wear them.

The OSH inspector also believed tinnitus was common in the industry. The inspector noted that Paul's former workplace was still operating, although with improved health and safety equipment (such as hearing protection) and increased awareness (for example, they were now monitoring noise levels).

EPILOGUE

Paul is coping better and is feeling less stressed. He says that dealing with customers is becoming easier as there is less noise than in his former panel beating business. His family is also dealing with the situation much better now, with stress levels for all of them being lower.

Sarah:

Life Disrupted By Farm ATV Accident

Sarah is a dairy farmer in her mid-forties. After the sudden death of her husband two years before the accident, she was left to manage their three hundred hectare farm. She has four children, aged between twenty-six and fifteen at the time of the accident. Three days before Christmas, Sarah's four-wheel all-terrain vehicle (ATV) collided with a ute driven by her son, causing lacerations to her left knee, and fractures to both thumbs, as well as her left middle finger.

At the time of the accident, Sarah's children were all at the farm for Christmas. The family was preparing for the wedding of one of her daughters in January. Both daughters, in their twenties, normally worked in cities. William, the eldest son (seventeen), was studying at Auckland University, and was home for the holidays. He was driving the ute that collided with the ATV. Gordon, the youngest son (fifteen), was still living at home and attending a local school.

Sarah employed two farm workers. Bruce had been working for her for some time, and had a position of responsibility. The other worker was temporary.

The sequence of events

The day of the accident was to be a busy one for Sarah. It was three days before Christmas, and the last day both her farm workers would be there. Bruce was due to go on holiday the next day, and it was the temporary worker's second-to-last day. Milking was completed and they were all in the house having their morning meal. Sarah admitted they were all feeling pressured to get things

done, and she felt annoyed they were running behind schedule.

The house and farm buildings were connected to the road by a tanker track. This track was narrow (although two vehicles could pass, it was a tight squeeze), and had trees growing alongside it, limiting visibility on the corners. Sarah asked William to go down in the ute to get the mail, while she made some phone calls. Once the calls were completed, she went to the cowshed to load up the ATV with weighing, neutering and drenching equipment. She then headed off down the tanker track to deliver it to the stockyards.

By now, she assumed that William would have returned to the house with the mail. However, he was coming up the tanker track in the ute as she was going down in the ATV. Sarah cut the corner and was on the wrong side of the track when she encountered the ute. When they saw each other they were only a few metres apart and had no time to brake or take evasive action. The vehicles collided. Sarah came off the bike and was thrown past the ute on to the track:

. . . both of us just saw each other when there was no time to avoid each other . . . I flipped over the passenger front and then went flying off, I think . . .

Bruce was following William up the tanker track on a two-wheel farm bike and witnessed the accident. He ran to help Sarah, and after ascertaining there were no head or spinal injuries, he and the other employee carried her to the house. Gordon, hearing the impact, ran out of the house to the accident scene. He then called for an ambulance. William, having ascertained that his mother was not critically injured, ran back to the house where, in shock, he shut himself in his room.

Medical treatment

Although the farm was geographically isolated, the ambulance arrived in sixteen minutes, as it had been in the area. The driver assessed Sarah's injuries and contacted the air ambulance, as he did not believe she should be transported over the bumpy

country roads for the hour it would take to reach the nearest hospital. She was given intravenous drugs in the air ambulance.

The emergency department staff assessed Sarah and diagnosed a lacerated left knee, a fractured left wrist, and a fractured right thumb. Both her hands were put in plaster but when the left hand was being done, Sarah could not understand the intense pain she suffered, particularly when her finger was touched or knocked:

And when they had been setting [my left wrist] they had to give me oxygen because every time they knocked my fingers I just about fainted.

Next day, repeat X-rays were done and it was found that it was not Sarah's wrist that was fractured but her middle finger, which accounted for the pain she was suffering. The cast was removed and a slab put in its place. She was in hospital for two days before being discharged home with both arms in plaster.

Ten days later, she went back to the hospital to have the plaster on her left arm removed and replaced with a bandage, and six weeks after that the bandage was removed. Sarah went in before her follow-up appointment was due as she was experiencing intense pain in her left thumb. It was found that the bone was chipped. The hospital advised pain relief for this injury.

Four months after the original injury, an X-ray showed a clearly visible fracture line in her hand. There was a suggestion that Sarah might need a bone graft, but she was adamant that she did not want surgery and opted to go back into a cast.

While the original injuries were diagnosed as above, Sarah's actual injuries were a lacerated knee, a fractured left middle finger and thumb, and a fractured right thumb. The cast on her right hand was removed five months after the accident. She did not have physiotherapy during her rehabilitation because of her geographical isolation from a treatment provider.

“. . . could not understand the intense pain she suffered . . .”

Impact on Sarah

When she was released from hospital, Sarah had limited mobility:

Initially I couldn't even walk, and I had one good leg. I came home from hospital after two days and I could go to the toilet by myself if I had a skirt on, but that was all I could do. Absolutely nothing else.

Sarah's injuries meant that she was unable to engage in farm and home activities, and was dependent on others throughout her recovery, which she found difficult:

[The family] would leave the house to shift stock, or do something on the farm, and I'd think, 'I can't get a drink of water, I can't get anything to eat, because I can't even get the fridge door open, and even if I could, what could I do with it?' As far as being dependent on people, it was a very difficult time.

Initially she was unable to have any physical contact with her children, as they could knock her hands when they hugged her. By the time of her daughter's wedding, a month after the accident, she was still only able to endure limited physical contact.

The worst result of the accident for Sarah was isolation, both from the physical work on the farm, and from those around her. Sarah was self-employed. She had worked long hours but loved farm work, despite its physical demands. She felt frustrated at not being able to actively run the farm:

. . . because my whole life revolved physically on being on the farm. I really, really missed that because I wasn't working or interacting with anybody . . . Bruce was hardly likely to bowl in to talk to me for half an hour, whereas we may have talked

“. . . only able to endure limited physical contact . . .”

while shifting stock or whatever. I've never felt so alone and isolated in my life.

Unable to work for several months, Sarah was confined to the house with little or no social interaction. Six months after the accident, she was only fifty percent recovered and unable to carry out farm tasks such as riding the bike or putting the cups on for milking, because of the weakness and pain in her hands.

The family

For Sarah's children, the accident had both a physical and an emotional impact. The emotional cost for William was particularly severe, as he held himself responsible. The impact was exacerbated by the attitude of the police, who were called on the advice of the ambulance driver. Sarah recalled:

He locked himself in his room, the police arrived, and he didn't want to talk to them. And the policeman went up there and said to him, 'If you don't come out we'll knock the door down and drag you out and it will make things worse'. So obviously he came out. They asked what sort of relationship [he] had with me. And basically the police said, 'Do you want to kill your mother?', or something like that.

Although the police took no further action, their response to his involvement caused him considerable stress. He became physically sick soon after the accident and more withdrawn, which Sarah attributed to the event.

Sarah assumed that the children would manage to keep the farm running without difficulty but they were deeply upset by the accident, particularly as it had been just two years since their father had died:

The reality was that they were incredibly upset by it from the fact that it was nearly two years since my husband had died.

“. . . physically sick soon after the accident and more withdrawn . . .”

And the fact if anything like this happened, it showed how vulnerable everything was.

Because Sarah carried most of the information for running the farm in her head, the family found it difficult to manage and weren't sure about what was required. Sarah commented:

It made me realise that to get two people to milk cows seven days a week is actually quite an undertaking. When you do it yourself fourteen times a week, you don't even think about it. But [it's difficult] when you are asking people to get up at 4.45 in the morning who are not used to it . . .

The workplace

The farm was three hundred hectares, of which half was run as a dry stock unit and the other half as a dairy unit. When Sarah and her husband took over, they engaged a share milker and focused on developing the farm. After her husband died, Sarah took over the milking of the cows. She had two employees at the time of the accident. One was due to go on leave and the other was due to finish his employment that day.

Bruce had been working for Sarah for two years. They had a good working relationship and enjoyed working together. After the accident, Bruce remained on the farm instead of going on his planned two-week holiday. He took over the management of the farm. Initially, the children helped with the milking but Bruce felt it got too much for them and noticed that they got tired. He observed that it was difficult to be milking alongside the children as he and Sarah were used to working as a team.

Within four weeks of the accident, he and Sarah organised another worker to help. Farm production was noticeably down for the period of Sarah's rehabilitation.

“. . . the family found it difficult to manage . . .”

EPILOGUE

Although Sarah still has aches in her thumbs and hands and feels her wrists are weak, she feels a lot more positive now. She is completely rehabilitated and independent, and able to work full-time on the farm. Bruce is still employed, with a new person taken on just after the accident. It took her staff time to adjust to her being back full-time after being in an advisory role for six months and she still feels excluded at times.

Sarah's children are doing well and have chosen their careers. But they are now extremely aware of how suddenly accidents and death can happen, and their concern for Sarah remains high, to the extent of checking on her regularly.

Thomas:

Fingers Amputated In Skilsaw Kick Back

Thomas, a Cook Islands Maori in his late twenties, was employed at a large sawmill. He and his partner Karen have four small children, all under six at the time of the accident. In 1998, a skilsaw Thomas was using kicked back, amputating three fingers and partially severing the fourth. One of the amputated fingers was subsequently reattached. In addition to the permanent loss of two fingers, the remaining two have severe scarring and limited function.

The accident and its aftermath placed Thomas's family under severe financial strain. The stress was such that it nearly led to the breakdown of the relationship.

The sequence of events

Thomas was employed as a contract defilletee in the timber mill. His normal role involved working through stacks of timber, taking out the fillets that separated them and then restacking the timber ready for shipment. Workloads at the plant varied as the timber had to be processed first before defilleting could begin. On these occasions, defilleting staff were expected to find other tasks to do until new work was available. Usually this was just a clean-up of the work area, such as sweeping floors.

On the morning of the accident, Thomas and other defilletees had been told by their supervisor to find more to do in the down time between defilleting jobs. Thomas decided to use this time to cut cardboard 'corners', used in packaging export timber. The corners were made by splitting a thick cardboard tube vertically, and then cutting the resulting half-round into sections. These

were used on the corners of the timber packs to stop the securing bands from cutting into the wood. Although not approved by the company, it was a common practice.

To cut the cardboard rolls, Thomas used a hand-held skilsaw. He placed the cardboard tube between two small stacks of timber to hold it steady. Holding the saw in his right hand, he cut half-way down the tube when it began to turn. He placed his left hand behind the saw, on the section already cut, to steady the roll. The saw jammed and kicked back, severing his first two fingers and the little finger, and partially severing the ring finger. At first, he was unaware of what had happened:

I knew something had happened. I didn't know what had happened at the time, sort of had the saw in my hand, put the saw down and my mate was beside me when it happened and. . . 'shit, shit, shit!' . . . He saw it before I did. I knew something wasn't right, I saw [the saw] kick back or jam or make a funny noise and I knew it had come back.

Thomas and his colleague headed to the site office to get an ambulance. Halfway there, they decided it best to wait. With help from his colleague, Thomas held his hand over his head to help reduce the bleeding. A colleague applied a tourniquet to staunch the bleeding and they waited for the ambulance.

Medical treatment

The ambulance took Thomas to the local medical centre for initial treatment. After a preliminary assessment and giving him morphine they sent Thomas to the nearest town hospital. The doctors there then assessed Thomas's fingers to see what could be saved. Describing the process he said:

. . . but a doctor came along starting prodding around with a needle, into the fingers, into the raw nerves, trying to find if the nerves were viable and that was when the pain was really, excruciating. I was teary-eyed and just ready to punch the doctors . . .

The doctors found two nerves and decided that it would be possible to save two fingers. Not having the facilities to perform such delicate surgery, they prepared to send him to a nearby city public hospital. Thomas was flown there by Cessna later that day.

Thomas spent six days in hospital, his mother-in-law minding the children while his wife was with him. He had physiotherapy every second day during the first month of recovery, then every week, and finally every fortnight. As the injuries healed, one finger rotated, crossing over the middle finger. This prompted a second operation to straighten the finger. This had limited success, as poor communication between hospitals resulted in a delay in commencing physiotherapy.

Impact on Thomas

Thomas was off work for three months while his injuries healed sufficiently to allow him to return on light duties. Physically, he had extremely limited hand function. For the first two months he could not wash half his body or do many normal everyday personal care activities. Household chores such as washing dishes and bathing his children became impossible because of his wounds and stitches. His hand could not get wet or, because of the pain it caused, be bumped. Most of the household chores were left to his partner.

Thomas's hobbies and social life were changed by accident. Before having children, Thomas had been a keen rugby player, and he had planned to return to the football field. This was no longer possible. He had to give up playing the guitar. Although his hand had improved, Thomas still experienced problems at the time of the interview, more than two years after the accident. Function in his remaining fingers was limited, and he was still self-conscious about the appearance of his hand:

Still sometimes in public I might be paying money or collect-

“. . . I was teary-eyed and just ready to punch the doctors . . .”

ing money and then people stare . . . Sometimes I do wear gloves or keep my hands in my pockets just so people don't see it's missing . . .

Although he had some concerns about his future, in particular his employment prospects with an injured hand, he remained positive:

. . . they put two [fingers] back so there's no using crying about missing two, you know. I'm lucky to have two. I sort of made a goal of going ahead, moving forward.

The family

Not being able to work led to financial pressure on the family. Initial confusion between the company and ACC resulted in Thomas receiving \$100 compensation a week. Even when this was corrected to 80% of his pre-injury earnings, as set in legislation, the family struggled to meet their financial commitments:

. . . the bills were getting penalty rates on top of penalty rates.

Other activities that he had used to supplement his income, such as bartering and shearing, were no longer possible. He had to sell his shearing gear. This loss of income affected all facets of family life. Even celebrating his children's birthdays during this time was a struggle. As the OSH inspector commented:

. . . they had no money for their twin's first birthday. Thomas was so upset because [he saw] himself as the provider and was very adamant that it was his job to provide for Karen and the girls. And he just couldn't cope with the fact that he couldn't give his girls a birthday. They couldn't go and buy a cake.

The financial and emotional pressures mounted, straining the relationship with both his wife and children. The stress built until

“. . . the bills were getting penalty rates on top of penalty rates.”

Karen threatened to leave. Thomas, who was having a second operation on his hand, returned early to deal with the situation:

I just sensed something wasn't quite right talking over the phone. She herself will tell you that she was willing to get up and leave. I'm not sure if it [was] stress, frustration or a number of things . . . we had a heart to heart and a good talk about the problems . . .

Karen felt under extreme pressure. She recalled:

But yeah it was a real struggle . . . a very trying time. I wanted to pack up the kids and run away. I didn't want to deal with it . . . I was trying to run away, so to speak, from the whole situation . . . We came through it, we've been together for eight years and we've actually got five children (we lost one) so yeah, I think we've come through that, we've weathered the storm. But it was very depressing.

She believed the company had not treated them fairly. There was, in her opinion, insufficient follow-up or contact with them after the accident. Overall she had concerns for Thomas' continued employment there. Both felt victimised by the company.

The workplace

The accident affected not only Thomas but his colleagues and managers. The sight of severed fingers shocked the workforce. The health and safety officer at the plant observed how visible the accident had been:

Because the way it happened was quite dramatic . . . The three fingers went flying all round the shed. One guy standing there saw it happen, another guy had his back to him and was reaching up to get a bottle on the shelf and a finger came flying over and plopped on the floor in front of him . . .

**"I wanted to pack up the kids
and run away."**

Thomas's supervisor noticed that morale was affected throughout the workplace, in the site office as much as on the shop floor. When, after an investigation, OSH decided to prosecute, a further wave of apprehension swept through the company. A meeting was called with the workers to allay their fears and encourage them to co-operate. When the case went to Court, the company was convicted and fined \$8000. The fine was paid to Thomas.

For their part, the company felt dubious about the charges and the resulting conviction. They felt Thomas should not have been using a piece of equipment he had not been trained or instructed to use. The health and safety officer commented:

OSH had four charges in case the other ones missed . . . but we got off on three. We were found guilty on one [charge of] no training, no supervision, which we thought was totally unfair.

The incident cost the company financially. During his rehabilitation period they supported Thomas with an interest-free loan. Once he was recovered enough to resume some duties, they created a new position at the plant. At the same time, wider questions over company systems arose from the prosecution pursued by OSH. New health and safety systems were instituted and internal reports were done on the accident.

The company estimated the accident cost them between \$80,000 and \$90,000. They felt that they were working hard to improve and maintain health and safety. As well as having new systems, they enforced them rigorously. When necessary they had disciplined workers over health and safety systems. They commented that while an accident may induce temporary change, often learning is forgotten and complacency sets in again.

“. . . estimated the accident cost them between \$80,000 and \$90,000.”

EPILOGUE

Although Thomas is still with the same employer, his relationship with them is, in his words, “tolerable, only just”. This is because he feels that they still blame him for the accident. Thomas is looking for other employment which “pays better and treats the workers better”. On a positive note, his family are doing well; his relationship with his partner is strong, and the girls are enjoying town life.

Peter:

Engulfed By Fireball While Spray Painting Boat

Peter is a New Zealand European man in his thirties who was employed as a spray painter in a boat building firm. On the day of the accident, he was spray painting the interior of a large boat. Paint fumes built up and with a spark from a halogen light there was an explosion and a fireball. Peter was engulfed by the fireball and suffered burns to forty percent of his body. He suffered significant physical and psychological harm. The resulting stress of the accident and his recovery contributed to the breakdown of his marriage.

Nicole was Peter's wife when the accident occurred. They had been married just a few months. At the time, she was in the third year of a psychology and sociology degree. Her life was just as heavily impacted. She had to take time off to care for Peter and then return to work to support them both. Plans for further education and a family had to be set aside.

The sequence of events

On the day of the accident Peter was spray painting inside a forty-foot catamaran. He was working in and around a forward cabin. The area was enclosed, there were no windows and no natural light. A sealed halogen light was being used to illuminate the work area. A longer extension cord had been placed on the light. The sealing boot where the wire went into the light had not been put back in correctly.

For protection Peter was wearing disposable overalls; under that he had shorts and a tee-shirt and he was breathing through a positive-pressure mask. Before the accident, Peter had requested

a portable extraction unit to draw the fumes out of the work area. However, the company had supplied a 150-millimetre diameter plastic hose, which in turn was connected to the extractor fan of a spray booth twenty metres away. It provided virtually no extraction of fumes.

After spraying a second coat of paint, Peter stepped out of the bathroom he had been working in and turned to climb the stairs. At that moment, the paint fumes ignited and he was engulfed in a fireball. Peter described the final moments before the accident:

I was downstairs painting the inside front cabin, the bathroom and then the wall. I had the light looking round and making sure I hadn't missed anything, put the light down and there was a spark in the light and it just erupted. Everything around me erupted as I put the light down.

Peter dropped everything and ran up the steps and out of the boat. Outside the boat there was panic and it was Peter himself who rang for an ambulance. One of the office workers said he needed to cool the burns with water. Since there were no safety showers, she took him outside to the toilet block and turned a fire hose on his burns, the water from which was hard and very cold.

Medical treatment

After the accident Peter was taken to hospital:

They jammed me full of morphine. Cut my wedding ring off. Took all the bits of burnt clothing off. Picked all the bits out of my skin and stuff.

His treatment in the hospital lasted eight weeks. Burns covered forty percent of his body, on his arms and legs. Fortunately, the mask he was wearing had prevented burns to his face and

“Everything around me erupted as I put the light down.”

protected his lungs. In places, the burns reached the second and third layer of skin. For most of his time in hospital he was on intravenous morphine. Every second or third day his bandages were removed, the affected areas were cleaned, and then redressed. So painful were these procedures, that he had to be placed under a general anaesthetic.

At three weeks Peter had recovered enough to walk. Skin grafts were done on his legs. The hospital suggested a second batch of skin grafts but Peter, in consultation with Nicole, decided to decline them and accept extra scarring and a longer period of rehabilitation.

Impact on Peter

Physically, Peter had a lengthy rehabilitation with ongoing symptoms. The pain was constant and, at times, excruciating. As time wore on, he experienced trouble with mobility, maintaining body temperature, and sensitive and tight skin. On release from hospital, he was unable to use his hands, and his ability to perform any physical activity was severely limited. He had to wear pressure bandages on his arms and legs for nearly two years after the accident to ensure the new skin formed correctly and to aid circulation. There was physical scarring on his arms and legs. He had to work to maintain the condition and flexibility of his skin. His physical discomfort is ongoing.

Less obviously, Peter experienced psychological difficulties arising from the incident. He had continuing nightmares, claustrophobia and sleeping problems. He had post-traumatic stress counselling for some time after the accident. At times, he suffered self-consciousness over the burn scars but found methods of coping with this.

Peter's accident placed a burden on his relationship and affected the couple's plans for the future. This led to tension and the marriage broke down irretrievably. Socially, Peter became iso-

**“. . . nightmares, claustrophobia
and sleeping problems.”**

lated from friends and networks and less able to participate in recreational activities.

A positive aspect was that Peter's career took a new direction. Unable to return to spray painting or heavy physical work, he went to university to retrain as an engineer. This gave him a sense of empowerment. The university was supportive, providing assistance with study when necessary. However, this training was at his own expense, and he had to take out a substantial student loan. Long term, Peter believed that the degree would enhance his life.

Impact on Nicole

Nicole, like Peter, was immediately affected by his accident. She gave up university study to care for him, and later returned to work to support them both. There were immediate issues of care, finances and future plans:

We had no income, we couldn't have a family, we couldn't plan for the future. Peter had to completely retrain. I couldn't finish my study.

This was further complicated by Nicole's feelings of loneliness and not being supported.

On Peter's return home, Nicole had to care for Peter. Despite previous nursing experience, she was disturbed by his injuries:

I was absolutely revolted by these burns, they were just so horrific. They were third-degree burns, so they were very deep and very raw and very pusy and just horrible. And all over somebody's body, it was just horrible.

Even with financial support from ACC, there was considerable strain. Once Peter was able to look after himself, Nicole looked for employment to help support them.

"I was absolutely revolted by these burns . . ."

Just as significant were the effects Peter's accident had on their relationship. Nicole had to cope with his feelings of depression and anger over the incident, as well as with trying to process her own reactions. She felt that she didn't receive the support she needed. She also felt isolated by their friends and relatives:

Friends found it difficult to come and visit us because what happened was so huge and so horrific. And nobody really wanted to talk about it and yet it was so in [your] face that you couldn't ignore it. It was hard for friends, I think, and hard for us too. We drifted apart from a lot of people, that's really the biggest thing. We became very isolated, I didn't have the same contact with my friends.

Nicole's own family was unable to provide the support that she needed. She felt a lack of acknowledgement by the government services involved contributed to their separation and the eventual breakdown of their relationship.

The workplace

Peter's employers built yachts for local and overseas clients. Upwards of twenty people were employed at any one time, the numbers depending on the volume of work. There was anecdotal evidence that the company had a high employee turnover, with few people staying long-term.

There had been difficulties in the relationship between Peter's employers and OSH. Staff had complained on several occasions over the company's inadequate health and safety systems, hazard identification and ownership of health and safety.

Following Peter's accident, the employer was prosecuted by OSH under the HSE Act and fined \$18,000. Change began at the boat builders. For fellow employees at the workplace, Peter's accident had made health and safety more real for them. The employer was forced to take a more vigorous approach to health

**"We drifted apart from
a lot of people . . ."**

and safety systems. OSH took a new approach to the employer. The employer had previously regarded OSH as the ‘enemy’, and felt pushed around by inspectors who, in the employer’s opinion, had little experience of boat building. OSH encouraged the health and safety culture that was beginning to manifest itself at the company. Where appropriate, further guidance in terms of advice and information was provided.

EPILOGUE

Peter’s skin is still sensitive and fragile, which affects his mobility. He and Nicole are getting divorced but Peter comments that his immediate family and siblings are now in much closer contact with him. Peter feels that he is more accepting of his situation, and is less self-conscious about his scars. He is not currently employed and has heard nothing from his previous employers.

Peter joined an honours programme at the university and is due to finish in November. He is looking forward to financial independence once he has finished. He has taken out a student loan as he received no financial assistance for retraining after his accident, either from his employers or from ACC. This, he feels, will apply other pressures to his life along with the ongoing ones suffered as a result of the accident.

ACC cannot provide retraining, however, unless Peter’s skills are inadequate for him to return to work. Until he regains an ability to work, ACC provides weekly compensation.

But, overall, is Peter confident that his retraining and additional qualifications will help put his unpleasant experiences behind him and that he will again be able to enjoy life to the best of his abilities.

Julia:

In Constant Pain From OOS Condition

Julia was a female financial services worker with over twenty years' experience in a competitive high-stress industry when she developed an OOS condition. A high achiever, she was well regarded as a supervisor of staff. She was active in her roles as homemaker, mother and wife, as well as helping her invalid father, and was physically fit, enjoying swimming and gardening. Her mobility is now limited, and she is in constant pain.

Julia is married to Darren and they have adult daughters, both tertiary students in another city.

The sequence of events

Julia worked as head teller in a local branch of a large bank. Among her daily tasks were customer service, handling commercial customers, and selling products within the bank. She loved the work, and was part of a well-established team:

I enjoyed my job, I enjoyed the customer service, I enjoyed the people I worked with, I got on with them all.

The bank's workstations were not adjustable and it was estimated she was reaching forward at her desk up to five hundred times a day, repeatedly twisting and lifting. Breaks were often not possible in such a busy environment where the focus was on weekly sales statistics. Julia commented that she felt 'burnt out' at the end of the day. Looking back, Julia reflected that the drive to achieve the top statistics meant she was going too fast:

I had one speed and that was fast. I always have had.

The first sign of Julia's injury was a persistently sore neck:

. . . and it would get down my lower shoulder as well. And I would complain to my co-workers, 'oh my back'. At the end of the day when I went to finish . . . it used to get more severe. I didn't take much notice. It would come and go . . . I thought 'Julia, you must have slept funny at night'.

Other workmates were suffering from backache but Julia ignored the pain and kept working faster to keep up with the branch statistics and was, in her words, 'running to time'. As the pain got worse she thought she was having heart problems, as it now affected her chest, arm, shoulder and back:

It was so severe I was walking around with a wheat bag around my neck. The pain just down my arm was just something shocking. Oh it's hard to explain . . . it's like pins and needles but throbbing . . .

Julia recalled that there was no change to her workstation at that time, but the pressure to sell more products, while keeping up with customer service, continued. At the same time, the pain made sleep impossible:

You are like that all day and all night . . . I can only sleep in one position. So I have to be absolutely fatigued to sleep.

Medical treatment

Julia did not seek medical help immediately. After a long delay, she was diagnosed with a gradual process injury, a pain she described as 'radiating down her left side like throbbing pins and needles'. Because of constant severe pain down one side of her body, she was virtually immobile for almost a year, and found it nearly impossible to sit for more than a few minutes at a time.

A specialist told Julia that it would take eighteen months for the numbness to go out of her fingers. She was advised that the best treatment was complete rest. To achieve this, she resigned from her job. Over several months the pain started to recede.

Impact on Julia

The first summer the pain was so severe, Julia was virtually immobile. She described how it felt to be unable to enjoy her usual summer activities of walking, swimming and boogie boarding:

. . . and I never would be sitting like this, I would be out. I mean, I never used to be still, you know. Okay I was working full-time but I was a very active person . . . I never had one swim over summer. I got in the water . . . tried to go for a little paddle. And I tried to move my arm and I couldn't even move it.

As time went on and treatment continued, Julia felt the pain was slowly receding but she was largely confined to sitting in her chair, smoking. She could not do basic activities such as hanging out washing or walking up stairs easily. Julia described her main pastime as 'sitting doing nothing'. Looking back, Julia reflected that her injury meant that:

. . . for months I couldn't even bend down to get lower things out of cupboards. I was just confined to an armchair and one space. Read books, boring. Absolutely changed my whole life around.

Julia found the imposed lack of activity very frustrating:

At this time I just keep saying to myself I've got to get myself back to normal. I will go back to some sort of work because I am just an active person. Well, I have been an active person. I do not like this at all . . . no it's just not me.

As a result of stopping work, Julia had lost her financial independence and the social contact from working in a team. Her self-employed husband took on extra work to cover the bills. Her

“. . . I've got to get myself back to normal.”

superannuation scheme from the bank had now gone.

Julia's acceptance of her condition, and her self-imposed rest, were beneficial. She reflected that the pain had lessened, and she had learnt, although not by choice, to relax. This made her 'take a good look at herself'. Previously, her drive meant she enjoyed producing the top statistics at work, but her new priority was to slow down, 'right across the board' — at her future job and at home:

I have got no pain in my arm . . . and I know my limitations. If I do the wrong thing, I will pay for it. I will [go back to work] because I'm not a person to sit around like this and do nothing. But I'm not well enough, I know myself I am not right. And it's made me realise . . . how bloody stupid and how naive, how I was just negative to the whole thing . . .

The physical impact on Julia was heightened by a long struggle seeking compensation from ACC. Despite evidence of repetitive movement and repeated twisting at high speed in a pressured environment, specialist opinion provided to ACC suggested that her condition was degenerative in nature. On this basis, ACC declined Julia's claim for compensation.

Julia's union organiser commented that:

. . . she seemed to think she wasn't worthy . . . She had lost her self-confidence entirely, [she thought] she wasn't worthy of being helped.

The family

Julia was aware that her family and friends were affected. As her condition progressed, she isolated herself from family and friends:

I just could not be bothered with people, what they wanted or why. The pain just took over the mind.

"The pain just took over the mind."

Her husband, Darren, was a great support. He took over most of the household duties and drove her to the holiday bach where she could relax and get better. Julia felt guilty that she could not do the same for him:

I can't give him the hundred percent that I used to be able to.

Her bouts of depression had put a strain on the relationship. However, Julia felt that, as she recovered, this had improved.

Another support was Julia's best friend Margaret, who was aware of how wearying and frustrating the pain was for her. Margaret felt guilty that she was not able to help Julia more with household jobs. She was angry that ACC did not cover Julia for things she could no longer do herself, or costs she incurred as a result of the injury. Said Margaret:

She's very disappointed because ACC didn't come to the party, like pay for housework or gardening . . . These things still go on in your life.

The workplace

Julia's industry had highly developed training procedures in place for risks such as armed robbery or fire. Staff in this particular branch, however, had not been trained to look out for symptoms of OOS or stress, such as pain or tingling and numb fingers. Although Julia believed that health and safety was becoming more of an issue, at that time training was largely limited to reading manuals, for which staff did not have the time. Staff were expected to manage their own health and safety. As to her own responsibility for her staff member, Julia's manager reflected that:

Who knows, maybe it was left too long before she physically went and did something. Maybe I should have written to her when she got told to take a week off by the doctor and made her take a week off. But you hope that adults are going to, you know. You can't do everything for them.

However, she was supportive, helping Julia later when she was confused about contact with her ACC case managers, often in her own personal time. She believed it was important to stay in touch with Julia, to offer support and encouragement. She felt the impact on Julia had been profound:

*. . . it's cost her, her way of life she had before this happened
. . . Julia's not really the Julia we used to know.*

There have been some improvements in health and safety at the workplace. Julia felt that people were more aware of the risks of repetitive and stressful work. She felt it was positive, for example, that her workmates were taking extra precautions, and that it had 'opened their eyes'. Julia's manager agreed:

. . . the tellers are more aware of looking after their bodies and all of the staff. . . because they can see what happened to Julia and they know it can happen [to them].

EPILOGUE

Julia's symptoms have not completely gone. She still experiences stabs of pain when driving or bending (which medication reduces) and gets numbness down her left side to her legs. She has not returned to her workplace because of her ongoing discomfort and spends her time caring for her elderly and sick father. This mainly involves getting his meals.

Being able to return to work has placed additional financial strain on the family. Julia sees her future as a receptionist without the pressure of computer work.

Ian:

Died From Complications After Crushing Injuries

Ian was an employee of a heavy industry manufacturer where he had worked for twenty-eight years. A fitter and turner by trade, he had worked in this capacity during his first period of employment with the mill, returning after a period away to work in maintenance. He had served with the military in Northern Ireland and in Vietnam. Following the accident, in which he sustained severe crushing injuries, Ian spent a month in the intensive care unit before dying of complications from his injuries.

Jenny was Ian's wife of nearly thirty years. Craig, the eldest son, was twenty-five at the time of the accident. He was flailing, but spent a lot of time at home. Tony was twenty-two and suffered from epilepsy. Luke was sixteen, and the youngest, Daniel, was fourteen. All three were living at home.

The sequence of events

On the day of the accident, Ian was working an afternoon shift. That morning, he had been cleared of prostate cancer by his doctor, and he and Jenny were planning a weekend away to celebrate.

Over the previous days, Ian had overheard his fellow employees discussing a problem with the plant. The shift engineer had noted a lack of air pressure in the plant, which had occurred on other occasions and was still causing problems. Ian had been determined to fix the problem even though it was not in his work area and used his own initiative and previous experience to work out a solution. When he arrived at work that day, he went into the area to fix it.

Before entry into the area, a register had to be signed and there was a requirement to report to the operator at the far end of the plant. However, there was no system to stop the operation upon entry into the area, nor was there a system to warn the operator working in that area of the plant. The controls for lock-out in this area of the plant were non-existent and Ian was able to gain entry without the operator's knowledge.

It was unclear exactly what happened at the time, as the only witness to the accident was Ian and he could not be interviewed. However, it was ascertained that he entered the area to fix the problem, was crushed by heavy machinery, and then managed to crawl back up to the top of the stairs where he was found by an electrician. How long he was there before being found is unknown.

Ian sustained massive internal injuries and died one month later in hospital of complications from his injuries.

Medical treatment

Ian was in intensive care for a month, receiving treatment for his injuries, which included a crushed pelvis and a lacerated liver and kidney, before he died of multiple organ failure. Throughout his time in intensive care, he was in intense pain. During this time, he experienced night psychosis, causing him to experience flashbacks of his service in Vietnam.

After two weeks, Ian's condition appeared to stabilise, and he showed signs of improvement. He was taken out of his medically induced coma, and was able to have short conversations. However, his condition worsened. Jenny said:

Even then the doctors thought he would survive; everybody thought he would survive. And it was the smallest thing that killed him off. He had a cyst in his back . . . they were treating it, but they didn't realise how bad it was. It was growing in the arteries . . . The hospital was good, they allowed us to be there when he died and they did everything to save him and they were very discrete. Because he just bled and bled and bled.

And we saw the covers when he died, the covers got more bloodied. [Being there when he died] gave us closure . . . But overall if Ian had died in the first week, it would have actually been easier.

The family

Jenny and Ian had been married for nearly thirty years, and Jenny found his loss almost overwhelming:

There was never a point to say goodbye to a marriage, and that of all things I feel I have lost. I have lost my marriage. I always feel I walk in the shade, I no longer walk in the sun. You live, you survive, but the joy's gone.

Ian's death was, for Jenny, the loss of thirty years of companionship, and having her husband there to talk to:

[I miss] the conversation and all the kisses and cuddles . . . It is companionship . . . your life entirely changes because you can't do things together.

The company initially laid the blame for the accident on Ian, and it was not until the trial, a year later, that Jenny discovered he was not at fault. Up until that time she had been blaming him for his death. This made it harder for her to come to terms with the accident:

You love somebody that much and they did it to themselves. And it's horrible, and how dare they do it to themselves.

Ian's sons struggled without their father. They all felt anger towards the company. Jenny described Ian as the boys' friend as well as their father. They developed problems after his death, including depression and substance abuse. Tony's epilepsy became worse, exacerbated by grief and stress. Craig began to drink heavily and use drugs. Luke became suicidal, and eventually moved to

"I always feel I walk in the shade, I no longer walk in the sun."

Australia. Jenny spoke of the impact on her sons:

[After Ian's death] my son came back [to live with me]. Back on the booze and drugs. Drink and driving. So I had problems with him. Tony was epileptic. He was having seizures left, right and centre. I had to get him put into a hospital . . . the fits were from the stress. It took months to get him an appointment to get his drugs changed. And my other son, the year before he was fifteen, form five, suicidal. [Ian and I] had spent the whole year with him . . . keeping him alive. He was suicidal, we got him right . . . He was actually a lot better, but he went back to being suicidal [after Ian died].

Daniel, the youngest son, was also hugely affected by his father's death, having to take two months off school. At the time of the interview, three years after Ian's death, he spoke about the loneliness associated with losing his father unexpectedly:

[I miss] just like talking to him, yeah, 'cause he was the one I could always go to. And yeah, we were just becoming friends.

Ian's death resulted in a total change of lifestyle for Jenny. Theirs had been a traditional marriage, with Ian providing for the family. She now had to assume responsibility for things he had taken care of, and plan for a very different future. As the company's occupational health nurse explained:

And she's had to be [strong] because now you see her whole life has completely changed. Ian would have been retired this year. She's still a fairly young woman. She had a lot more before her, and a lot of the ideas and the things she wanted to do are never going to materialise now.

The stress led to health problems for Jenny, and also resulted in her taking up smoking again.

One of Ian's brothers had worked at the company and was a

"He was actually a lot better, but he went back to being suicidal . . ."

union delegate there. He explained the OSH report to Jenny. Ian's other brother came over from the United States. He and Daniel formed a close relationship, which helped both of them in recovering from Ian's death.

Jenny received compensation but there were considerable delays and obstacles in her doing so. This led to the family's weekly compensation being paid initially as a lump sum. Jenny and her sons found it difficult to budget their lump sum payments. When Luke received his, he was just fifteen and still grieving for his father. He spent it all in a short time, much of it on alcohol.

The workplace

There was a heavy emphasis on production in the workplace, and the nature of the industry presented a number of risks. The company's occupational health nurse noted that:

[There] were times when I think production overrode a lot of things. I think the general consensus was most people at some stages used to feel unsafe about doing certain things.

The company nurse was very supportive to Jenny during Ian's hospital stay and after his death. The nurse was angry when she heard the unit manager had told Jenny that the accident was Ian's fault. She felt irreparable damage was done to the relationship with Jenny and the company. She visited the hospital every day and was there when Ian died. Like Jenny, she never believed he would die and was planning to help with his rehabilitation back to work. His death had a considerable impact on her personally.

The company pleaded guilty to breaches of the HSE Act. They were fined \$35,000, with \$25,000 of this going to Jenny. As a result of the accident, the company employed a dedicated compliance team to cover health and safety. They also developed a good working relationship with OSH, the site manager commenting that:

“. . . most people at some stages used to feel unsafe . . .”

What we have is a relationship where we've both got exactly the same intent, and that is to make the workplace . . . safer.

The accident led to substantial financial costs to the company, effects on worker morale and bad publicity. The intangible cost to the company of being found to be responsible for the death of one of its employees was huge. As the company's occupational health nurse put it:

He had gone through Northern Ireland . . . He had gone through Vietnam. And we bloody killed him.

EPILOGUE

Jenny still feels lost without Ian, and although she is planning her own future, wishes she did not have to. The family have been getting on with their lives but still miss Ian terribly and talk about him a lot. The children still have many questions they would have liked to ask him.

Jenny began an intensive six-month computer course, knowing she would have to start working the following year to support the household and realising that many jobs now require computer skills. She realises that at her age jobs are not easy to come by. However, the training has given her confidence.

Recent fatalities reminded Jenny and her children of what they went through when Ian died, and it has taken them several weeks to recover. People have been suggesting Jenny remarries, but the thought upsets her as she feels it is disloyal. Paradoxically, however, she questions herself about living in the past. Overall though, Jenny is hopeful of the future and is glad that the children are doing all right.

Martin:

Leptospirosis Forced Changes In Lifestyle

Martin is a meatworker in his mid-fifties who contracted leptospirosis from a pig chain. After three days of feeling ill, he was admitted to hospital with septic shock and renal failure. He had been an employee of the meatworks for almost thirty years.

Martin's wife Helen worked part-time and took over most of Martin's jobs around their lifestyle block when he became sick. They have two adult children who did not live at home.

The sequence of events

Working on the pig chain entailed the removal of various organs from the pig, including the liver, heart, lungs and kidneys. It is likely that Martin contracted leptospirosis by being splashed with urine from the carcass during this process. It may have entered through, for example, a small cut in his hand. Although workers were issued with safety gloves and face masks, for some jobs Martin said fingernails were needed.

Martin described the day he began to feel ill:

One [lunch time], I felt I had absolutely had it. And I went and had a couple of drinks of water and someone says 'have you been on the grog last night or something?' I said 'no, I'm dry you know'. . . and [at lunchtime] I knocked off, usually I'd have seen the day out. I was shaking. It's quite funny actually, on the drive home my hands started shaking . . .

There was no improvement, and that night he felt drained of energy. On his GP's recommendation, Helen took him to hospital, where he was put through a series of tests. He was sent home

that night after being told to keep drinking water, but his condition became progressively worse. As Helen described it:

. . . that night he said that he wasn't hot and cold, [but] he had a funny sort of body heat. When you touched him it's not like your temperature is really hot, it [was] clammy. It was really weird to touch his skin, it didn't feel like normal skin. It had a funny cold sweat feel, it was horrible.

Martin vomited for the following two nights. His wife took him back to hospital where he was immediately admitted to the intensive care unit.

Medical treatment

Martin was given almost eight litres of fluid to reverse his severe dehydration. He spent four days in the intensive care unit until his condition stabilised, and then a further eight days in a general ward. At one point, there were indications his kidneys would permanently fail. Helen found the hospital experience quite daunting:

. . . he was in intensive care, they had no idea what was wrong and what was going on. The heart monitors were going absolutely crazy. At one stage [when] we were in there . . . they made us leave. . .

Martin was not given antibiotics until he was admitted to intensive care. This meant the leptospirosis had a chance to become quite established in his system, which made his illness more acute.

During this time, Martin lost a lot of weight (his wife estimated he lost about twelve kilogrammes in this time). He did not eat solids for over a week; the only food he could keep down was milk. Once he was discharged from hospital, Martin spent two weeks at home resting and keeping warm.

Martin found holistic treatments were beneficial. He went to an alternative practitioner and felt a lot more positive about his recovery. However, the lack of available information on leptospiro-

sis was frustrating, so Martin resorted to searches on the internet to become informed about his condition.

Impact on Martin

Martin suffered from ongoing fatigue and had not recovered his energy levels. This meant staying on the lifestyle block was no longer an option. Martin could no longer cope with the work required to maintain the property:

It's never come right . . . I'm still convinced I am nowhere near as strong as I was before. I wouldn't even try and do some of the things [that I used to]. [I] definitely lost a lot out of it.

The couple sold the block, and moved into town.

Martin was still sensitive to cold temperatures and remarked that his kidneys had suffered permanent damage. The OSH hygienist agreed. He commented that while leptospirosis should follow the normal progression of a disease by activating antibodies and making people resistant after one exposure, some people believed it was a chronic illness.

Returning to work had been difficult. Martin had trouble getting clearance from his doctor, and the light duties he was assigned (working in the chiller) were inappropriate, as leptospirosis made cold temperatures very painful. Martin described the effects:

I came home at night or even at dinner time just in pain you know. Aching all over.

Martin reflected that his personality had changed. He believed he was more prone to bad moods and his tiredness had meant a lack of patience when dealing with others, such as the staff of ACC:

. . . it's just so frustrating especially when you are not a

“. . . I am nowhere near as strong as I was before.”

hundred percent . . . basically everything was an effort. . . and then you get there and they turn round and say you haven't got a signature. You know what you feel like telling them, and you can't.

Helen also noticed that Martin became tired a lot more quickly, and had less energy. However, one change she saw as positive was that Martin was more inclined to speak his mind about what was bothering him, instead of 'keeping it bottled up inside'. She thought that although he had been given the option of working somewhere else, Martin was generally happy at his job so he had chosen to return there after his illness.

The family

Helen found the experience quite traumatic, especially in the early stages when Martin was in the intensive care unit and a diagnosis had not yet been given. She remembered:

. . . lines and tubes and oh bloody hell, I was a mess . . . it was absolutely unreal.

Fortunately, their daughter was a nurse and was able to provide explanations of what was happening, which Helen and Martin found helpful.

While Martin was recovering, Helen had to take on additional work on the lifestyle block. She felt that there were some positive results of selling up and moving closer to the city. They had more time to spend together:

We've both got more spare time . . . we do more together since we've been here.

The workplace

Martin's supervisor believed his staff felt a degree of indifference towards leptospirosis, many of them having already been exposed during the course of their work and believing they were immune. While he was not totally responsible for the health and safety of his staff, it was a necessary task:

It's just up to them to do it. I can't be going round wiping their bums for them . . . [but] if it's got to be done, it's got to be done.

The OSH hygienist believed that many leptospirosis cases were not reported to OSH. He remarked that approximately ten per cent of sheep, for example, have the infection, which meant a lot of animals going through the meatworks potentially infected with leptospirosis. Martin agreed. In his opinion:

. . . there wouldn't be many in the pig house who haven't had it at some stage.

Martin believed that the best strategy was to vaccinate the herds before they reached the meatworks, and for companies to refuse infected or unvaccinated stock:

The only way they are going to do something is like with brucellosis in cattle, to get them vaccinated so they can't send them to the works like that . . . it doesn't affect the pig in any way. It's only a carrier of it [leptospirosis]. The farmer says there's no money [in vaccinating]. But that makes it hard.

At the time of Martin's exposure, his workplace had tried various visors without success, and had an ongoing education programme. They used antiseptic wash creams and workers were instructed to cover all cuts and abrasions. The OSH hygienist believed the company was 'above average' when it came to protecting their workers.

Proving the link to work activity is difficult and time-consuming. There are currently approximately eight different strains of leptospirosis in New Zealand, common to different animals. Two blood samples are required, at least three weeks apart. The test may take up to four weeks before specific antibodies have formed. This means later tests may give more definite results¹.

“. . . vaccinate the herds before they reach the meatworks. . .”

The company's personnel officer was frustrated that a newly diagnosed case of leptospirosis had a temporary positive impact on the workers' health and safety behaviour, but then they fell back into old habits:

All of the employees before they go into the pig house are warned about leptospirosis . . . when someone gets leptospirosis, it's like a wake-up call. Give it six months after the event and I'll go into the pig house and I'll find somebody not wearing [personal protective equipment]. And so I have to be the big bad ogre and go through the process to get them to wear it.

Martin believed that preventing leptospirosis by vaccination was preferable to trying to solve the ongoing difficulties workers had with their personal protective equipment:

They had some [face masks] but the trouble was they're all right in the summer but in the winter time when it gets cold and all the steam . . . they just fog up on you. They have never found a decent one yet.

Following Martin's exposure, the workplace again made changes to the pig killing process. Goggles were issued for high-risk areas, and an alcohol hand wash was introduced. The company sent letters to breeders to confirm they vaccinated their sows. However, the OSH hygienist noted there had been no increase in the number of vaccinated pigs.

EPILOGUE

Martin is doing better and his family is fine. He is in the same workplace doing the same work.

¹Occupational Safety and Health Service. *Guidelines for the Control of Occupationally Acquired Leptospirosis*, 2001.

Philip:

Stress Of Hospital Work Led To Breakdown

Philip is a New Zealand Asian in his late twenties. He was working as a house surgeon when he suffered a stress-related breakdown after experiencing a long period of work without adequate levels of supervision, with a difficult manager, and long hours of work. He was unable to return to work at the hospital, but after three months began practice as a locum GP. However, he subsequently left the medical profession.

Philip's breakdown had a profound impact on the family. Philip's father, a GP himself, still had concerns for his son some years later, and described the event as 'devastating'. The relationship Philip was in at the time broke up. Subsequent to his breakdown, he became engaged to Mary, who was also studying medicine.

The sequence of events

Philip was a very able physician, and he had received excellent appraisals of his round just two weeks before his breakdown. He worked as a resident and house surgeon in large hospitals and he hoped to specialise.

Medical school did not prepare Philip for what he encountered as a resident and then a house surgeon:

I don't think anything can prepare you for what it's going to be like when you start working as a house officer or house surgeon or doctor in hospital. You hear the stories, but it's not until you actually do it and actually try and survive the on-call days that you realise what it's all about. And it's not a gradual thing, it's a baptism of fire.

Working at busy urban hospitals, junior doctors are at the bottom of a hierarchical system, undertaking relatively menial tasks under the direction of registrars and consultants, and much needing the support of experienced nursing staff. House surgeons were nicknamed house dogs. Philip had completed about two-thirds of his training as a house surgeon, about eight years through his medical training.

The hospitals were very busy, and in Philip's view understaffed. He often found himself in situations where, with little supervision, he had to undertake important diagnostic or other tasks where there were considerable risks to patients.

On one run, Philip had up to one hundred patients under his care on a general ward. One Sunday he recalled having 400 messages on his pager:

On the pager it fills up after twenty beeps and you have to clear [it] so that the next lot can come through. So my first Sunday I cleared it twenty times. That's four hundred times I was paged in the space of sixteen hours.

Amongst these were some that could have indicated life-threatening situations, such as a patient who was experiencing chest pain or suspected internal bleeding. On two occasions in one rotation, Philip worked more than a hundred and forty hours in a two-week period.

There was no particular event that triggered Philip's breakdown. Philip was on rotation in the speciality that he wanted to pursue, and had just received an excellent rating for his work. The unit he was a part of was, however, understaffed in house surgeons and Philip found the registrar a difficult and at times aggressive person. Philip and others were commonly sworn at and Philip had things thrown at him on one occasion.

Philip found he increasingly doubted his ability to safely treat patients:

“. . . it's not a gradual thing, it's a baptism of fire.”

I was drained, I was emotionally drained and wrecked . . . I realised that I was losing control . . . I didn't know what a nervous breakdown was, I had just read about these things. I was tearful. I was not sleeping well. I was getting anxious. I'd be worried about patients that I'd seen. I'd be worried about whether they were going to come back and blame me.

Towards the end of his time at hospital, Philip became increasingly aware of the stress that he was under, and anxious that he was putting patients at risk. Although he hid this from his immediate colleagues, he phoned a psychiatric registrar in the hospital and disclosed his worsening state. The contact was unhelpful, as Philip felt that the registrar simply did not want to deal with the problem:

I rang up the psychiatric registrar on call and burst out crying and said 'I am a doctor, I need help'. He didn't know what to do . . . He said 'I think you have got the wrong person, you're going to have to call someone else'. I was in the department crying and saying that I just feel terrible and hopeless . . . And then he actually said — I could hear him whisper to another person — 'There's some medical student who's losing it or something'. So here was the greatest irony, that I was calling up a psychiatric registrar trained to help with such crises, and he was trying to flick me off.

As a result of the accumulation of all these pressures, Philip had a sudden and dramatic breakdown. He could not go through the doors of the hospital one morning. He turned round and sought out the hospital's occupational health service. He was fortunate to find experienced and sympathetic staff, who undertook to provide the protection and the space for him to recover. Philip spent some time convalescing in his parents' home. After three months he returned to medicine as a part-time locum GP, to "get

"I . . . burst out crying and said 'I am a doctor, I need help.'"

back on the horse” before he completely lost confidence in his ability. Philip received counselling and other support after the breakdown, but the nature of that support remained confidential to ensure that his career was not adversely affected.

Impact on Philip

Philip withdrew from personal relationships, other than the limited ones that he had with colleagues. He found that talking about others’ concerns came to seem trivial. The life-and-death situations that he encountered made the problems of others seem inconsequential:

. . . you’d be totally unsympathetic towards anyone else’s need or worries or anything like that. What can compete with someone spurting up blood and dying in front of you . . . how can someone’s bad day compete with your bad day?

His relationship with his girlfriend broke up as a result.

Returning to medicine was at times hard. On occasions he could barely get out of bed, as he feared facing patients. At these times his relationship with his father was vital, as he could talk to him about his fears and be reassured, and could then work in a professional way. The advantage of locum work was that it did not require any investment in the practice other than the medical tasks of seeing one patient at a time. Several GPs offered Philip shares in practices, but he did not want that level of responsibility in medicine again.

Philip’s economic situation was never dire because of the resources that the family had. But the loss of his ability to earn a specialist’s income represented a very significant loss of potential earnings.

Philip became less outgoing than he used to be. He was more prone to moodiness. Some of the generous and empathetic nature that he demonstrated at school and university, before his hospital training, was lost. Philip lost confidence in his own ability. Having invested many years of his life and his expectations in becoming a specialist, he was angry at a system that he felt im-

posed high levels of stress and fatigue on those in it. The experience changed Philip as a person:

I'm a different, stronger person. I grew up really fast. I went from a medical student who didn't know anything to nothing shocks me now. Nothing in terms of what I have seen, blood, guts, gore. Nothing shocks me . . .

The family

Philip found that his family provided invaluable support during this period, both financially and emotionally. Philip's father described the breakdown as 'devastating' for the family. He had become concerned about his son, and even several years after the breakdown was still anxious. It was difficult to watch the impact of their son's illness:

To see your own child suffering, you know, anxious and then not being able to cope . . .

Philip's father had a sense of guilt that he, a doctor, had been unable to recognise that his son was ill:

I feel guilty sometimes, that I didn't recognise it as a sickness. I thought it was a stressful situation. [I thought] he's sort of learning to cope with it and one day he will be all right . . .

Mary is training as a house surgeon, also hoping to specialise. Philip naturally had concerns about Mary's future, given his own experiences.

The hospitals in which Philip worked faced budgetary constraints. There was considerable pressure on staff to cut costs and carry vacancies, but they faced increasing expectations from the public about the level of care that they were going to receive. There was a pervasive sense among the medical professionals interviewed that doctors now face considerable risks in being held

“. . .nothing shocks me now. Nothing in terms of what I have seen . . .”

responsible, rightly or wrongly, for the consequences of treatment given. A culture of defensiveness has sprung up. Philip was unable to share the difficulties he faced out of fear that things said to colleagues could be held against him.

Philip's manager threatened that if Philip did not return to work soon after his breakdown, he would not work again at the hospital. This exacerbated the situation for Philip. OSH intervened and the threat was removed.

The department was reorganised following Philip's leaving. A new manager and an additional house surgeon were appointed. The hospital lost a considerable sum because of Philip's departure: the cost of cover, recruitment and loss of productivity were all significant.

EPILOGUE

Philip feels better now and has returned to work part-time — 20 to 30 hours a week. He feels he cannot cope with a full-time job yet because he still gets anxious and depressed. His family, he feels, are sad for what he has gone through, as well as the loss of the potential they feel he had. Philip admits that they bear the brunt of his illness and its symptoms.

Philip is now working in a GP clinic. He comments that though the different work is helpful, it can be just as demanding. He has learned to "let go and relax". Overall however, things are better as he now has more free time and is treated better by staff and colleagues.

Lisa:

OOS Condition Due To Workplace Factors

Lisa is a 34-year-old New Zealand Maori woman who was employed as payments officer in a multinational insurance company. In the course of her employment, she developed an occupational overuse syndrome (OOS) condition. The clinical diagnosis was medial epicondylitis.

The sequence of events

Lisa began working for the insurance company three years earlier. She was primarily employed as a payments officer. This entailed investigations as well as data entry of cash and cheques that came into the company. She was also studying part-time.

Lisa first developed pain about September. It started as stiffness and sensitivity in her elbows. She received some massage treatment for her arms, and this helped but did not totally relieve the ‘niggling’ discomfort.

The discomfort became constant about a month later, when she was doing a lot of data entry, for a specific project that was not her usual work. She was inputting data to a spreadsheet, with about 80 percent of her day involving keyboarding activity. The discomfort became worse over October, and she went to the doctor in November. By this time the pain had become progressively worse and extended to her fingers, wrist and forearms, as well as the elbow and the whole arm. As Lisa described it:

It was pains in fingers, in the wrist and in the forearms. It was getting a lot tighter. It was no longer just [the elbow], it was more the whole arm right through the fingers.

She reported her condition to her manager. The employer contracted a health and safety advisor from the Employers and Manufacturers Association to assess her work, workstation and work habits. The manager reduced the amount of data entry work Lisa was to do and spread it round the other members of her team. Lisa was allowed to self-monitor — to identify when she was feeling pressure and reduce her data processing.

Lisa's ACC claim was declined because the diagnosis (which was later confirmed by a second doctor) did not meet the criteria for a gradual process injury under ACC legislation. Specialist medical advice provided to ACC considered that keyboard activity alone did not cause or contribute to her injury. However, both the doctors who saw Lisa accepted that her work contributed to her condition.

Lisa consulted a lawyer, and took the case to review. Having to undertake the process was time-consuming and unsettling:

When the claim was declined and I decided to go [to review] it was really stressing. I wasn't sure whether or not my claim would come through and it was the expense of getting a lawyer and . . . just trying to get together all the information that would be helpful to my case. And not understanding why my claim was declined.

Bringing the review had the potential to be expensive for Lisa if, for instance, she elected to be represented by a lawyer. However, the review was successful, the original decision was overturned, and her claim covered by ACC. Costs for the review, including part of Lisa's legal fees, were paid by ACC.

Medical treatment

Lisa began massage therapy on her own initiative in the early stages of the condition. She saw a doctor two months later. The doctor initiated an ACC claim in November for the diagnosis of medial epicondylitis and advised her of the delay in having the claim actually accepted by ACC and the process for acceptance of OOS conditions as ACC claims. This meant she had to pay the

cost of physiotherapy and massage for up to two months. No medication was prescribed. Lisa continued with the massage therapy herself. She did not take any time off work. She also saw a second doctor, who immediately recommended physiotherapy.

Impact on Lisa

The main impact for Lisa was the effect of the pain. She chose not to let this interfere with her day-to-day life, her studies or social activities. She felt well-supported in her workplace and did not take time off or sacrifice any of her usual activities as a result of her discomfort. She was able to continue with most light physical activities. She was able to cook and clean, but some actions such as lifting an item like a heavy pot caused strain.

The time it took ACC to accept her claim impacted on her finances as she had to repay the physiotherapy costs and be in a position to pay her legal costs.

Proving that her condition was work-related, and finding the requisite evidence for it, was a concern. Lisa felt confused but accepted that the burden of proof was on her and she was confident she could provide evidence. Both doctors agreed that her work would have contributed to her condition. She found the ACC procedure confusing, as she had to deal with different people and all her letters from ACC came from and went to Dunedin. The reasons for this were not apparent to Lisa.

This episode of OOS caused additional concern due to the career decision she had made to pursue a future in the IT industry. She was worried that this was threatened by her OOS condition.

Lisa also had to come to terms with her condition, and accept that it would be ongoing. She was putting in a lot of effort at work to do her exercises, take her breaks (as prompted by the software programme) to make sure the problem did not recur:

“. . . she had to pay the cost of physiotherapy and massage . . .”

I'm trying to get this in a manageable state because I know that it's not going to clear up in a few months. It's going to take longer . . . The problem was that [I thought] ok, I'm healed, and I stopped doing all of that. I slowed down and I didn't realise that that was the worst thing to do. So I've had to kind of come back again and start doing that.

The workplace

Lisa was given a health and safety handout as part of her employment package, with pictures of exercises to do and how to set up her workstation. It included advice on seating and the correct angle of hands when keyboarding. There was also a software programme installed on her computer that introduced micropauses, breaks and prompted exercises. But staff could switch off this programme.

Lisa's OOS condition caused concern and uncertainty for her manager. Her employer paid for her workplace assessment and the second medical opinion. Her manager arranged for the purchase of a new mouse and a new keyboard. The manager felt limited by inadequate funding and relevant information on the risks associated with the work.

The manager was unhappy that she had not been given any occupational safety and health training until after Lisa's problem developed. She subsequently undertook training. In fact, the health and safety representative in Lisa's team taught the manager how to fill in the forms. This representative was experienced and active in her role. She noted that the employer was supposed to monitor for early signs of discomfort and fatigue, but had not done so. Lisa's colleagues claimed they all had some signs of discomfort.

Lisa said her manager was very supportive:

My manager has been really good in supporting me. She was part of my review . . . gave supporting evidence for me.

The manager took the situation seriously and found it hard

emotionally. She felt out of her depth in dealing with the legal paperwork for the review and knowing how to manage OOS. She commented that her and Lisa's involvement represented a significant loss of productivity in a division where productivity was closely monitored.

Lisa praised her colleagues as well, as they were supportive of the changes the manager had introduced in the workplace as this meant the workload did not increase for them.

After this incident, the workplace had clear procedures for identifying and managing OOS, although the manager reflected:

Well, the problem with Lisa's issue is that we did all the things after the horse had bolted . . . It was very reactive on our part. So I think what the team has seen is reactivity rather than preventative measures.

EPILOGUE

Lisa's condition continues though the severity has reduced significantly. She continues to have acupuncture up to twice a week to maintain the improvement and to provide relief. She recently returned to the gym and has not experienced any problems. She uses this as an opportunity to keep up with the stretching exercises.

Lisa wanted a challenging career in the IT field and had been studying for an IT certificate. She began a new job earlier this year in which data entry makes up fifty to sixty-five percent of her daily tasks, writing about thirty percent, and the rest reading and phone discussions. Since the data entry work is less intense and repetitive than in her previous job, and she has more freedom and control of her time, she can better manage her tasks and thereby her condition.

Lisa's current employer was told of her OOS condition at the outset and has been supportive of her, as well as taking health and safety seriously. Things are, she feels, definitely better now.

Summary Of The Economic Costs

These include documented costs only. Opportunity costs, and costs to individuals incurred through loss of income, are not included. Company and individual costs are subject to personal recall and cannot be considered complete. The actual costs would be much greater.

	Individual/ Household	Workplace
Barbara	290.00	200.00
Brian	Undocumented	54,761.18
Grant	100.00	22,882.48 + 60 hours
John	9,860.00	Undocumented
Mark	1,080.00	53,500.00
Murray	3,460.00	2 weeks lost time
Paul	1,516.00	60,000.00
Sarah	337.00	10,740.00
Thomas	380.00	90,000.00
Peter	25,870.00	23,130.85
Julia	9,967.00	8,257.00 (Union 800.00)
Ian	Undocumented	109,402.05
Martin	350.00	2,836.34 + 101 hours
Philip	Undocumented. Potential income loss of 105,833.33 p/a	Undocumented
Lisa	3,742.00	3,905.00
Total	56,952.00	440,414.90

The total documented costs for these fifteen cases are \$1,167,471.80. The total projected future costs of the seven cases who are still receiving ACC and, in Brian's case(*), payments from a private insurer (Fusion)* are expected to be \$3,985,989.00.

This does not include ongoing costs, or the time of OSH inspectors, ACC case managers, workplaces, individuals, and their families. Costs of emergency medical treatment are estimated. It also does not include the loss of income borne by individuals and their families as a result of their injury or illness. The actual costs for these fifteen cases would far exceed this figure.

ACC	OSH (and Other) Government Agencies	ACC Projected Future Costs
6,557.68	1,482.64 + 47.5 hours	0
194,177.44(*)	4,012.00 + 39.5 hours	3,100,000
16,249.60	1,270.50 + 86 hours	0
24,509.00	12 hours	460,993
37,631.86	13,265 + 6.5 hours	0
96,090.88	20.75 hours	297,047
9,360.25	2 hours	19,579
11,638.24	11 hours	12,250
28,264.24	25,191.25	25,748
113,653.74	106.5 hours	42,483
2,264.00	1.5 hours	0
72,912.08	1,267.50 + 50.5 hours	32,097
9,226.00	7 hours	0
Undocumented	Undocumented	0
1,081.00	-	10,267
621,352.01	46,488.89	3,985,989